

Rehabilitation of Fire Protection Systems at Port Newark, Elizabeth Port Authority Marine Terminal, and Port Jersey

Stage I Report

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Engineering Department
The Port Authority of NY & NJ

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Structural Engineering Port Authority Engineering Department Structural Unit Traffic Engineering Port Authority Engineering Department Traffic Unit

Estimating Services Port Authority Engineering Department Management Services

Materials Engineering Port Authority Engineering Department Materials Engineering Unit

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EXECUTIVE SUMMARY

The Port Authority of New York and New Jersey Port Department authorized and requested to perform a Stage I Condition Assessment Design Report for existing fire protection systems at the following buildings at the New Jersey Marine Terminal (NJMT).

Port Newark: Building 111,
 , 255, 260, 263,
 , 301, and

The objective of this project is to evaluate the existing fire protection systems and recommend repairs/upgrades for these systems to ensure that they detect, extinguish, and limit the extent of damage and loss of life during fire in the selected buildings. The existing fire protection systems include automatic fire suppression systems, such as sprinklers (wet fire sprinklers, dry pipe, pre action, and deluge systems), clean agent or other specialized extinguishing systems along with the associated fire alarm detection systems. The assessment of the selected buildings would determine the condition of the existing sprinkler systems such as piping, hangers, sprinkler heads, valves, backflow preventers, fire protection/ fire alarm control panels, and related fire alarm and electrical apparatus.

Many of the selected buildings located at Port Newark, Elizabeth Port Authority Marine Terminal, and Port Jersey are old and their fire protection systems are beyond their useful service lives. While some of the buildings have been upgraded, their fire protection systems have not been upgraded. It is vital that fire protection life safety systems, and related fire alarm and heating ventilation and air conditioning (HVAC) systems comply with the latest applicable codes and are in a fully operational condition.

Stage I reviewed the existing documentation including available quality assurance division (QAD) /life safety reports and existing design drawings to verify the condition of the existing fire protection, power distribution, fire alarm and other related systems at the selected buildings. In addition, Engineering conducted field visits to verify locations of existing equipment such as fire alarm panel, emergency generator, and associated devices. The report reviewed and analyzed applicable code requirements for fire suppression and fire alarm systems based on building and space occupancy classification.

An environmental assessment was also performed, and its findings are included in this report. Refer to Section 9 Summary of Recommendation in Table 1.

The report's recommendations will provide a code compliant solution for the fire protection system upgrade or replacement at each of the selected building at Port Newark, Elizabeth Port Authority Marine Terminal, and Port Jersey.

All surveyed fire protection systems in selected buildings demonstrated certain code compliance issues needed to be addressed. However, the report prioritized the fire protection systems' condition in each selected building based on visual assessment and classified them into three categories as Good, Fair and Poor.

CONDITION PRIORITIES:

Good ("C") - Fire protection systems have minimal signs of corrosion and relatively clean. Minor system components improvements needed. The systems show minimal damage or defect with no functional impact.

<u>Fair ("B")</u> – Fire protection systems have minor signs of damage and contain notable amounts of corrosion on the components. Equipment has little damage on the exposed surface or finishes but functioning as intended.

Poor ("A") – Fire protection systems have signs of damage or deteriorating wear, and shows excessive corrosion, that are affecting equipment operation and reliability. This classification is associated with the age of the equipment and where a condition of prolonged absence of maintenance exists.

To minimize interruption to the facilities' operation, construction must be phased and staged for the selected buildings. All work is to be performed during nights and weekends. Estimated Stage III design duration and construction duration are also included in Table 1 Fire Protection Rehabilitation Recommendations Summary Matrix. The quantitative risk analysis is included in Appendix C.

Per the direction of the Port Department, Design-Bid-Build (DBB) will be the project delivery method in lieu of Design-Build (DB).

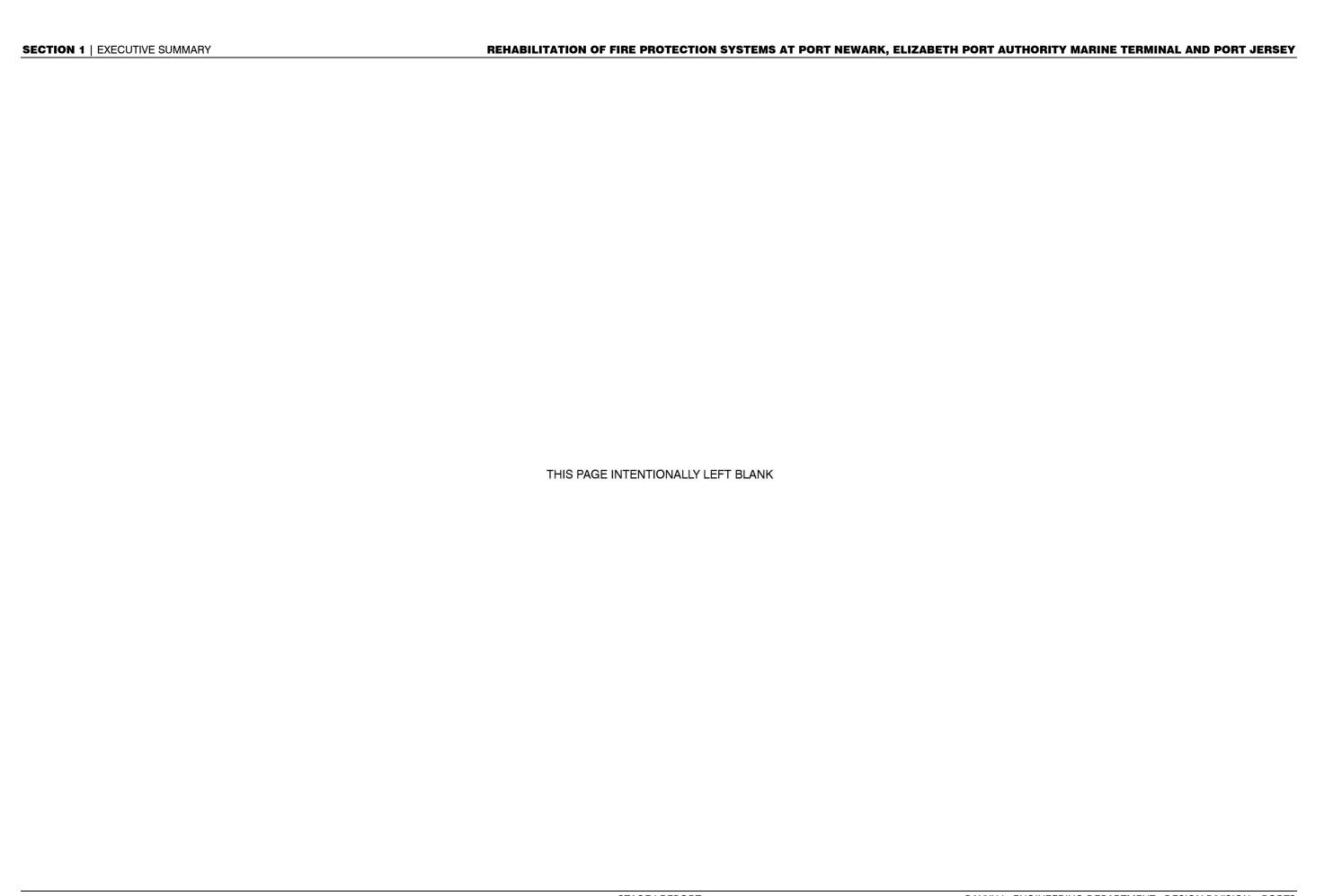
The conceptual construction cost including net cost, extra work, and contingency is listed in the Table 1. The conceptual construction cost estimates can be found in Appendix A.

Table 1: Fire Protection Rehabilitation Recommendations Summary Matrix

| Tubic 1. | THOTTOLOGIA | ii iionabiiitaaoii | necommendations | outilitary matrix | | - | | | e · |
|----------|-----------------|-----------------------------|---|--|----------------|--------------------------------|--------------------------------|----------|--|
| Items | Building No. | Building Occupancy | Occupant | Recommendations – Refer to Section 9 for more detailed information | TCC (\$M *) | Design Duration (months) | Construction Duration (Months) | Priority | Remarks |
| Port No | ewark | | | | | | | | |
| 1 | 111 | Pump Station | PA Pump House | Replace the branch piping, pipe supports, and sprinkler heads; Address miscellaneous wall patching, ceiling tile replacement, and lead paint incidental abatement. | | | | 25 | PA occupied building. The report does not assume any relocation of stakeholders or building occupants. |
| 1000 g | | | | | | | | | |
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| • | | | | | | | | • | |
| | | | | | | | | | |
| 6 | 255 | Office, shop, and garage | PA Sign Shop | Replace the branch piping, supports, sprinkler heads, alarm valve, and associated fire alarm supervisory equipment. Install 6" backflow preventer. | | | | | PA occupied building. The report does not assume any relocation of stakeholders or building occupants. |
| 7 | 260 | Warehouse/ Office | PA Administration Bldg. / Service Garage | Replace the sprinkler and standpipe systems in the Maintenance garage area and adjacent offices and toilets/ locker space at the north section of Bldg. 260. The sprinkler system serving the first, second, and third floor office spaces at the south section of Bldg. 260 will remain. Install a 6" backflow preventer. | | | | | PA occupied building. The report does not assume any relocation of stakeholders or building occupants. |
| 8 | 263 | Manufacturing | East Warehouses (A&B) | Replace the sprinkler heads, piping, valves, air compressor system, and fire alarm devices. Install two 8" backflow preventers. | | | | | The report does not assume any relocation of stakeholders or building occupants. |
| | | | 1 | | | | | I 6524 | |
| 10 | 301 | Office/ Warehouse | International Motor Freight (IMF) | Replace the sprinkler heads, piping, valves, fire department connections, air compressor system, and associated supervisory equipment. Install two 8" backflow preventers. Install deployable resiliency solutions to prevent floodwater intrusion as per PA Climate Resilience Design Guidelines. | | | | | The report does not assume any relocation of stakeholders or building occupants. |
| | | | | | | | | | |
| Sub To | tal | | | | | | | | *TCC includes a 20% contingency. |

STAGE I REPORT

| Items | Building No. | Building Occupancy | Occupant | Recommendations | TCC (\$M *) | Design Duration (Months | Construction Duration (Months) | Priority | Remarks |
|-----------|-----------------|-----------------------|----------|-----------------|----------------|-------------------------------|--------------------------------------|---------------|---------------------------------|
| , | | | 25 | | | _ | - | | |
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| • | A | 3.0 | , | | , | | a.— | s. = . | |
| Sub Tota | al | ASAY | | | | | | | *TCC includes a 20% contingency |



LIST OF ABBREVIATIONS

The following is a list of abbreviations used throughout this report.

NUMBER

⁰F OR F DEGREES FAHRENHEIT

AASHTO AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS

AC AIR CONDITIONER
ACH AIR CHANGE PER HOUR

ACI AMERICAN CONCRETE INSTITUTE
ACM ASBESTOS CONTAINING MATERIALS
ADA AMERICANS WITH DISABILITIES ACT

ADA AIVIERICANS WITH DISABILITIES ACT

AFA AFA FIRE PROTECTIVE SYSTEMS, INC.

AISC AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AMCA AIR MOVEMENT AND CONTROL ASSOCIATION
ANSI AMERICAN NATIONAL STANDARDS INSTITUTE

APW AIR-PRESSURIZED WATER

ARI AIR CONDITIONING AND REFRIGERATION INSTITUTE

ASCE AMERICAN SOCIETY OF CIVIL ENGINEERS

ASD ALLOWABLE STRESS DESIGN

ASHRAE AMERICAN SOCIETY OF HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS

ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS

ATS AUTOMATIC TRANSFER SWITCH

B OR BLDG BUILDING

BFE BASE FLOOD ELEVATION
BFP BACKFLOW PREVENTER
BTU BRITISH THERMAL UNIT

CCCU CROSS-CONNECTION CONTROL UNIT

CFM CUBIC FEET OF AIR PER MINUTE

CL COLUMN LINE

CMDA CONTROL MODE DENSITY AREA
CMU CONCRETE MASONRY UNIT

CO2 CARBON DIOXIDE

CRG CLIAMTE RESILIENCE DESIGN GUIDELINES

DFE DESIGN FLOOD ELEVATION

EADD ENGINEERING ARCHITECTURE DESIGN DIVISION

EF EXHAUST FAN

EPAMT ELIZABETH PORT AUTHORITY MARINE TERMINAL

FDC FIRE DEPARTMENT CONNECTION

FA FIRE ALARM

FACP FIRE ALARM CONTROL PANEL FACU FIRE ALARM CONTROL UNIT

FAS FIRE ALARM SYSTEM

FFE FINISHED FLOOR ELEVATION
FPLS FIRE PROTECTION LIFE SAFETY

FT OR 'FEET GALLONS

HVAC HEATING VENTILATION AIR CONDITIONING

HP HORSEPOWER

HR HOUR

HX HEAT EXCHANGER

IBC INTERNATIONAL BUILDING CODE IFC INTERNATIONAL FIRE CODE

IMDB INTERNATIONAL MECHANICAL CODE

IN OR " INCH

I/O INPUT/OUTPUT

ITM INSPECTION TESTING AND MAINTENANCE

KW KILOWATT KWH KILOWATT HOUR

LBS POUNDS

LD LINE DEPARTMENT

LE/A LEAD ENGINEER ARCHITECT

LRFD LOAD AND RESISTANCE FACTOR DESIGN

MCB MAIN CIRCUIT BREAKER

MPH MILES PER HOUR

MSS MANUFACTURER STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY

MUTCD MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

NAVD88 NORTH AMERICAN VERTICAL DATUM OF 1988

NEC NATIONAL ELECTRIC CODE

NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

NFPA NATIONAL FIRE PROTECTION ASSOCIATION

NJ NEW JERSEY

NJAC NEW JERSEY ADMINISTRATIVE CODES

NJMT NEW JERSEY MARINE TERMINAL

NJUCC NEW JERSEY UNIFORM CONSTRUCTION CODE

NJUFC NEW JERSEY UNIFORM FIRE CODE

NTS NOT TO SCALE
O.C. ON CENTER

OD OUTSIDE DIAMETER

OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PA PORT AUTHORITY OF NEW YORK AND NEW JERSEY
PANYNJ PORT AUTHORITY OF NEW YORK AND NEW JERSEY

PCB POLYCHLORINATED BIPHENYLS

PFIRM PRELIMINARY FLOOD INSURANCE RATE MAP

PJ PORT JERSEY
PN PORT NEWARK

PSI POUNDS PER SQUARE INCH
QAD QUALITY ASSURANCE DIVISION

RPZ REDUCED PRESSURE ZONE BACKFLOW PREVENTER

RSD RESILIENCE & SUSTAINABLE DESIGN

RTU ROOF TOP UNIT

SLRDFE SEA LEVEL RISE-ADJUSTED DESIGN FLOOD ELEVATION

SMACNA SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION

SQFT OR SF SQUARE FEET UH UNIT HEATER

UL UNDERWRITERS LABORATORIES

V VOLTS W WATTS

BACKGROUND

General Description

The Port Authority New Jersey Marine Terminal (NJMT) includes Port Newark (PN), Elizabeth Port Authority Marine Terminal (EP), and Port Jersey (PJ). The Port Newark is one of four container terminals at the Port of New York and New Jersey, serving for goods entering and leaving the New York metropolitan area and the northeast quadrant of North America. Operations in the facilities of Port Newark Marine Terminal began in 1948, followed by operations in the facilities of Elizabeth Port Authority Marine Terminal beginning in 1952. The container buildings are located between Port Newark and Elizabeth Port Authority Marine Terminal shipping channels.

Port Newark is a 930-acre facility that was leased by PANYNJ since 1948 and expanded in 1963. The marine terminal houses containers, autos, bulk, warehouses, and intermodal transport.

Elizabeth Port Authority Marine Terminal is a 1200-acre facility constructed by PANYNJ in 1958 as the world's first dedicated container port. The marine terminal houses containers, bulk, intermodal transport, and warehouses.

Port Jersey is a 169-acre facility constructed by PANYNJ in 1976. The marine terminal houses containers, auto, warehouses, cruise, intermodal transport, and the western terminus of Cross Harbor Railcar Float.

Port Timeline

- 1910 Excavation of shipping channel forming Port Newark
- 1915 City of Newark constructs Port Newark
- 1948 Port Authority takes over operations of Port Newark after it serves as a major shipyard during WWI & WWII and provides reparations
- 1958 First container ship departs as container carrier from Port Newark
- 1958 Excavation of shipping channel between Port Newark and Port Elizabeth. Construction of Elizabeth Port Authority Marine Terminal
- 1962 Elizabeth Port Authority Marine Terminal container port opens

Objective

Many of the buildings located at Port Newark, Elizabeth Port Authority Marine Terminal, and Port Jersey are old. Some of the buildings have been upgraded over time but in some instances, their fire protection systems have not been upgraded or the systems are beyond their useful life and require rehabilitation or replacement. It is vital that fire protection systems, related HVAC, and Fire Alarm equipment comply with the latest codes and are in operational condition.

The objective of this project is to evaluate the existing fire protection systems at the selected NJMT buildings that exceeded their useful lives or are in a deteriorated condition and, if necessary, install new fire protection systems designed to detect, control, and limit the extent of fire damage and enhance life safety. The existing fire protection systems at the selected NJMT buildings include automatic fire suppression systems, such as sprinklers (wet fire sprinklers, dry pipe, pre action, and deluge systems), clean agent, foam, or other specialized extinguishing systems along with associated fire alarm detection systems which are required to be fully compliant with the applicable building and fire codes. All the selected buildings were inspected to determine the condition of the existing fire

protection systems such as piping, hangers, sprinkler heads, valves, backflow preventers, fire protection/ fire alarm control panels, and related fire alarm and electrical apparatus.

Below is the list of the selected NJMT buildings that require the rehabilitation or replacement of fire protection systems.



Site Plan

Figure 1: Port Newark Site Plan

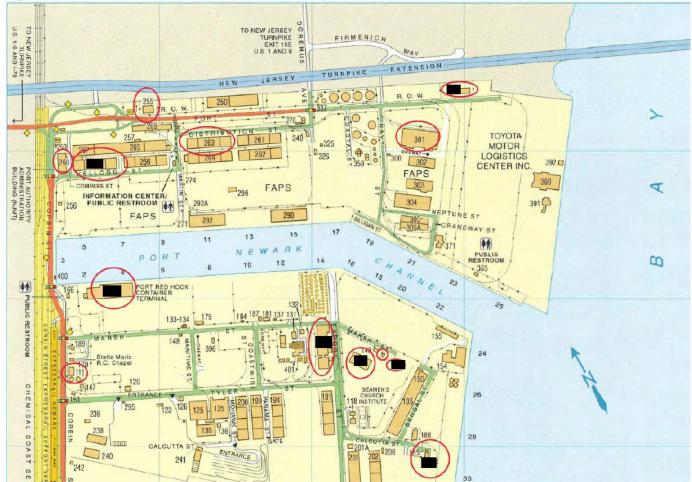


Figure 2: Elizabeth Port Authority Marine Terminal Site Plan

MAHER TERMINALS

MAHER TERMIN

Figure 3: Port Jersey Site Plan



DESIGN CRITERIA

Architecture

Criteria for the selection and installation of fire protection systems are included in the New Jersey State Uniform Building Code and Fire Code. These standardized codes and their applicable subcodes and referenced standards provide minimum performance criteria for the installation and maintenance of fire protection systems. The codes provide design criteria that can be used in both new buildings and existing buildings. Over time, the fire protection engineering field has evolved to allow the provision of higher levels of protection through the introduction of new and improved equipment and technologies to increase the reliability of fire protection systems and their associated response times.

For the 18 sites included in this project, the architects have been assigned to prepare base plans and gather physical information based on surveys and research of available documents. This will assist the engineering disciplines involved in the scoping of the required work to renovate, modernize, or update existing fire protection systems in the project buildings and to, in certain circumstances, provide fire protection in buildings or building areas that were not previously fire protected.

Upon completion of the scoping of fire protection improvements for each of the buildings, an architectural scope of work will be developed to provide the necessary associated required architectural design work needed to provide a complete fire protection system installation that is also in compliance with the New Jersey Building Subcode or the New Jersey Rehabilitation Subcode. Some of these key design tasks include the removal and replacement of non-code-compliant building elements. Additional work includes closure of openings building walls, floors, ceilings, and roofs to maintain weathertight conditions. Similarly architectural work includes the repair or restoration of interior building elements will be designed to maintain required fire separations. Restoration of surfaces and finishes including partitions, suspended ceilings and other interior building elements may require repair or replacement due to construction activities performed by other disciplines relating to the installation of fire protection systems.

All scheduled new work will be designed in accordance with the current version of the New Jersey Uniform Construction Code and New Jersey Uniform Fire Code including the Building Subcode, the 2018 International Building Code New Jersey Edition. During the architectural survey work, if non-conforming construction is found, an evaluation will be made to determine if the provisions of the Rehabilitation Subcode should be applied or if said construction should be replaced if it presents an ongoing fire risk if left in place if the rehab code permits it.

In association with the drawings and details for the Stage I design, architecture will prepare a list of the necessary technical specifications to implement included in the contract scope.

Architectural work will be dependent on existing building conditions, a code analysis of each building and the scope of fire protection work for each building. In general, but with some exceptions, roof repairs and replacements and exterior envelope repair will not be included under this design work. Roof repairs, unless otherwise noted, will be prepared under a separate contract.

The cost estimate for all work included under this project will be compiled by the design groups. The PA Estimating group will review and comment on the 50% and 100% submission. The architectural scope of work will be coordinated with the scope determined by the Fire Protection and related work of other engineering disciplines as required.

In addition to the design criteria noted above, the architectural group, working in concert with PA Sustainability Group and the rest of the project team, will assist in the Stage I effort to scope out work to protect critical fire protection equipment from flood damage in cases where the installation of equipment is below the applicable flood elevation.

This work may include elevation of equipment, floodproofing of spaces or installing other means to protect flood damage. All final decisions to protect equipment will be made in accordance with Climate Resilience Design Standards.

It should be noted that Section 5:23-6.3A Flood Resistant Construction in the Rehabilitation Subcode provides criteria for when work on buildings in designated flood hazard areas are required to comply with the applicable flood-resistant construction requirements. It states that any work that constitutes a substantial improvement or repair of substantial damage of the existing building, as determined by the local floodplain administrator, shall comply with the applicable flood-resistant construction requirements. As defined in the National Flood Insurance Program rules, 44 CFR 59.1, "'substantial improvement' means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the 'start of construction' of the improvement. This term includes structures which have incurred 'substantial damage,' regardless of the actual repair work performed." As defined in these Federal rules, " 'substantial damage' means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred."

Where the above conditions occur the following sections of the building subcode shall apply:

• Building subcode: Sections 802.4, 1202.4.4, 1403.6, 1403.7, 1603.1.7, 1605.2.1, 1605.3.1.2, 1612, 1804.5, and 1805.1.2.1.

Civil

No Civil related scope of work identified that is required by the sprinkler system at this point. See Section 6, 7, and 8 for details.

Electrical

An active fire protection system shall perform the functions of detecting a fire, alerting the occupants or fire department of a fire emergency, mass notification, gas detection, controlling smoke, and controlling or extinguishing the fire. These requirements are based on the occupancy and height/area of the building since these are factors that affect firefighting capabilities and the relative hazard of a specific building or portion of building. In general, a fire alarm system consists of a fire alarm control panel, primary power supply, backup power supply, initiating devices, and notification devices. The fire alarm devices are coordinated with the fire suppression system. In a typical sprinkler configuration, there will be components such as tamper switches, flow switches, and supervisory switches that send a supervisory and/or alarm signal to the fire alarm control panel which will activate the appropriate notification devices and notify personnel. The existing fire suppression systems in coordination with any existing fire alarm equipment in the Port buildings are being evaluated against required design criteria as per the 2015 International Fire Code New Jersey Edition, 2018 International Building Code New Jersey Edition, NFPA 101 Life Safety Code, and NFPA 72 National Fire Alarm and Signaling Code requirements. This also includes any new equipment added such as those specified by the Plumbing and Fire Protection recommendations. See Table 2 below for information pertaining to fire alarm system requirements based on occupancy group classification (for more details such as exceptions and required devices for each occupancy group refer to IBC New Jersey Edition and NFPA 101).

Table 2: Fire Alarm Device Requirements based on Occupancy Classification

| Occupancy Group | Conditions for Mandatory Fire Alarm | Typical Areas Covered |
|----------------------------------|---|---|
| Assembly Group (A) | System Occupant load of 300 or more, or more than 100 persons above or below the lowest level of exit discharge. | Any number of occupants: civic or social functions, worship, recreation, food or beverage consumption, transportation waiting areas, or similar group activities. 75 persons or more: educational or instructional purposes. |
| Business Group (B) | At least one of the following conditions: The combined occupant load of all floors is above 500 or more More than 100 occupants above or below the lowest exit discharge level A fire area containing an ambulatory healthcare facility | Office spaces, professional and service-type transactions, public or civic services, limited record and account storage, and limited stocked goods for office usage. |
| Factory and Industrial Group (F) | Both of the following conditions exist: Two or more stories in height Combined occupant load of 500 or more above or below the lowest level of exit discharge | Industrial activity with non- combustible materials, including cleaning, laundering, fabrication, manufacturing, finishing, packing, or processing, among others. |
| High Hazard Group (H) | Subgroup H-5 occupancies, and all occupancies used for the manufacture of organic coatings. Automatic smoke detection system shall be installed for highly toxic gases, organic peroxides, and oxidizers. | Manufacturing, processing, generation, or storage activities, with dangerous materials that represent a physical or health hazard in the quantities present. |

| Institutional Group (I) | All Group I occupancies. | Supervised environments for people with physical limitations due to health or advanced age, for caretaking or treatment. Also includes facilities where people are detained for penal or correctional purposes. |
|-------------------------|--|---|
| Mercantile Group (M) | At least one of the following conditions: Combined occupant load of all floors is 500 or more persons. Occupant load is more than 100 persons above or below the lowest level of exit discharge. | Spaces uses to display and sell merchandise, which may include storage areas. |
| Storage Group (S) | Group S public and self-storage occupancies three stories or greater in height for interior corridors and interior common areas (visible notification devices are not required within storage areas) | Warehouses, storage rooms, freight depots and distribution centers that are not classified under Group H. |

Key code references summarizing basis of fire alarm design features as per this project scope include, but not are limited to, as follows:

- NFPA 101 Life Safety Code
 - Section 6 Classification of Occupancy and Hazard of Contents: This section is used to classify the occupancy of a building or structure. Fire alarm system requirements vary based on this classification. Section 6.1.14 identifies how to categorize buildings with multiple types of occupancies.
 - Section 9.6 Fire Detection, Alarm, and Communication Systems: For systems required to have a fire alarm system as per sections 11-43, this section is used to provide the various requirements for appropriate coverage and protection of the fire alarm system. This includes signal initiation, occupant notification, annunciation, and other required features of the system.
 - Section 9.7 Automatic Sprinklers: This section lists the requirements for automatic sprinklers as required by other sections of the code. This section also details transmission of alarm signals for supervisory attachments as required by NFPA 72.
 - Sections 11-43: These sections detail requirements for installation of fire alarm system based on occupant loads, exit discharge, etc. See Table 2 above for more information. Based on the occupancy type and criteria, certain initiation and notification devices are required as per the Detection, Alarm, and Communication Systems subsection within each respective section.
- NFPA 72 National Fire Alarm and Signaling Code
 - Section 10 Fundamentals: Provides design requirements for a complete fire alarm and/or signaling system.
 - Section 10.4 Design and Installation provides some basic design requirements for installation of devices such as vibration considerations and types of manual alarms. Section 10.4.5 specifies that in areas not continuously occupied an automatic smoke detector shall be installed at each fire alarm control unit, notification appliance circuit power extender, and supervising station which is providing notification for that location. As per PANYNJ Electrical Design Guidelines section 4.6.1.L a spot-type smoke detector must be located within 15 feet (horizontally) of this equipment.
 - Section 10.6 Power Supplies: Provides information on primary power supplies, secondary power supplies, and storage batteries including appropriate circuit identification and markings.

- Section 17 Initiating Devices: Provides requirements for initiating devices including but not limited to smoke/heat detectors, sprinkler waterflow alarm initiating devices, detection of automatic extinguishing systems, manually actuated alarm initiating devices, and supervisory signal initiating devices.
- Section 18 Notification Appliances: Provides characteristic requirements for audible and visual notification devices such as horns and strobes.

Environmental

Applicable Building Codes, Standards and Guidelines

- Department of Community Affairs Subchapter 8 Asbestos Hazard Sub Code (N.J.A.C. 5:23-8)
- Air Quality Permitting Program (N.J.A.C. 7:27).
- OSHA Hazard Communication Standard 29 CFR 1910.1200
- N.J.A.C section 5:17, Subchapter 17- Lead Hazard Evaluation and Abatement Code
- EPA 40 CFR Part 761
- EPA 40 CFR Part 273

An asbestos survey shall be performed by ATC on the sprinkler system and adjacent existing structures that may be impacted because of the proposed upgrade to the fire protection system, per the requirements of the New Jersey Administrative Code (N.J.A.C) section 5:23-Subchapter 8 – Asbestos Hazard Abatement Sub-code. Asbestos materials impacted by the renovation of existing facilities, shall be abated in accordance with NJAC 5:23, Subchapter 8 prior to demolition.

A lead paint survey testing will not be performed, however painted areas will be visually inspected, noted, and assumed to contain lead. This is in accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200, and the (N.J.A.C) section 5:17, Subchapter 17- Lead Hazard Evaluation and Abatement Code. Incidental lead paint abatement is assumed to be required on 10% of the painted pipes.

PCBs testing shall be conducted on caulk/grout materials suspected of containing PCBs. Materials containing PCBs shall be disposed in accordance with 40 CFR Part 761 regulations. Materials classified as Universal Wastes shall be properly packaged and disposed in accordance with 40 CFR Part 273.

Environmental Permits

Soil disturbance is not anticipated, based on the scope. Therefore, a Soil Erosion and Sediment Control plan/permit from the Soil Conservation District is not required.

NJPDES General Permits

Since soil disturbance is not anticipated, the NJPDES General Permit is not required.

Dewatering discharge to surface water is not anticipated on this project.

A Water Allocation Permit is not expected for the diversion of ground and/or surface water.

Design Criteria Assumption

- 1. No Army Corps permits required.
- 2. No Soil sampling for disposal.
- 3. No wetlands impact.
- 4. No endangered species of plants and animals.
- 5. No sanitary sewer connection /discharges.
- 6. No Soil Erosion and Sediment Control plan/permit
- 7. No Historic fill and Deed Noticed area impact.

Mechanical

Heating Requirements for Fire Sprinkler Valves, Piping and Appurtenances

The mechanical design criteria shall be provided for protection of piping against freezing of fire sprinkler valves, piping, and appurtenances as per NFPA 13 Chapter 16.4. Above ground water-filled supply pipes, risers, and sprinkler branch piping shall be maintained at or above 40 °F, 24/7 all year around. For valve rooms, source of heat shall be of permanently installed type. Heat tracing shall not be used in lieu of heated valve enclosure rooms to protect the piping in the valve room from freezing. Where above ground water-filled supply pipes, risers, system risers, or feed mains pass through open areas, cold rooms or other areas exposed to temperatures below 40°F, the pipe shall be protected against freezing as per 2019 NFPA 13 Chapter 16.4.1.3. The weather temperature used to determine if an unheated portion of a system is subject to freezing and required heating, the lowest mean temperature for one day shall be used as per the NFPA 13 Chapter 16.4.1.1.1.

Ventilation Requirements

The mechanical design criteria shall be provided for occupied spaces where air inlets and outlets will be removed and replaced. The design and performance of air inlets and outlets shall provide the required ventilation air quantity as per the International Mechanical Code (IMC) 2018 as amended by the State of New Jersey and ASHRAE Standards 62.1/2016 - Ventilation for Acceptable Indoor Air Quality. Criteria for supply airflow rates will be as follows:

- Cooling and heating load requirements
- ii. Minimum ventilation requirements
- iii. Exhaust air make-up requirements

Table 3: Minimum Ventilation Rates in Breathing Zone

| Area | Minimum Ventilation rates | | | |
|-----------------|---------------------------|-----------------|--|--|
| - | CFM/Person | CFM/Square Feet | | |
| Offices | 5 | 0.06 | | |
| Breakrooms | 7.5 | 0.12 | | |
| Lobby | 5 | 0.06 | | |
| Conference room | 5 | 0.06 | | |

Table 4: Minimum Exhaust Rates

| Area | Required Exhaust Airflow | | | | | |
|------------------|--------------------------|-----------------|------------|------------|--|--|
| - | CFM/Sq. Ft. | CFM/Shower Head | CFM/Toilet | CFM/Urinal | | |
| Locker Rooms | 0.5 | - | - | - | | |
| Breakrooms | 0.7 | - | - | - | | |
| Shower/Restrooms | | 50 | 70 | 70 | | |

Building Space Envelope and Interior Loads

Envelope and interior loads will be calculated using Carrier Hourly Analysis Program.

Table 5: Internal Load Criteria

| Area/Degree of Activity | People Metabolic Rates | | Equ | ıipment | Lighting |
|-------------------------|------------------------|---------|------------|---------------|---------------|
| - | Sensible | Latent | Sensible | Latent | Sensible |
| - | BTU/hr. | BTU/hr. | BTU/sq.ft. | BTU/hr/sq.ft. | Watts/Sq. ft. |
| Offices | 250 | 200 | 2 | - | 1.11 |
| Locker Rooms | 275 | 475 | 1 | | 0.75 |
| Conference/Breakrooms | 245 | 155 | 1 | 0.5 | 0.73 |
| Lobby | 250 | 200 | 1 | - | 1.11 |
| Storage | 250 | 200 | 0 | 0 | 0 |

Plumbing and Fire Protection

Automatic Fire Sprinkler Systems

There are several systems that can be used for fire protection applications: a wet system, dry system, pre-action system, or deluge system. Each system has its own set of advantages and disadvantages. NFPA 13 chapter 8 describes the basic requirements of all types of sprinkler systems. Section 8.1.1 gives the main points for sprinkler instillation such as sprinklers shall be installed throughout the entire space and sprinkler heads must be located as to not exceed the maximum protection area per sprinkler. The systems must meet requirements to provide satisfactory performance with respect to activation time and water distribution. Section 8.1.2 mandates that the system and all system components such as valves and gauges must be accessible for operation, inspection, testing and maintenance. Chapter 8 also details the maximum system size in section 8.2, defining the maximum allowable floor area that can be served by a single sprinkler system riser. This maximum area ranges for varying levels of hazard can be found in the table below.

Table 6: NFPA 13 8.2 System Protection Limitations

| Hazard Classification | Maximum Floor Area | Maximum Protection | Maximum Spacing |
|-----------------------|--------------------|--------------------------|-------------------------|
| | | Area by a Sprinkler head | between sprinkler heads |
| Light Hazard | 52,000 sq ft | 225 sq ft | 15 ft |
| Ordinary Hazard | 52,000 sq ft | 130 sq ft | 15 ft |
| Extra Hazard | 40,000 sq ft | 90 sq ft | 12 ft |
| Storage | 40,000 sq ft | 100 sq ft | 12 ft |

Wet systems are the most common fire protection systems. They consist of overhead piping and sprinklers that are always filled with water. During a fire event, the system delivers water immediately at the activation of a sprinkler head. Chapter 7 of NFPA 13 describes the systems requirements for fire protection systems. Wet pipe systems are required to have pressure gauges connected to the system risers, relief valves or expansion tanks to relieve pressure in the system along with a vent pipe attached to the system to allow air to leave the system. (Section 7.1.1, 7.1.2, 7.1.5) Compared to other system types, a wet system is the simplest requiring the fewest number of different components. Section 7.1.3 allows for auxiliary systems to connect to a wet system. The main issue with wet systems is that they cannot be used in spaces that experience freezing temperatures.

Dry systems are typically used in places where a wet system is unsuitable, such as an area that may experience freezing temperatures. In a dry system, the overhead sprinkler piping is filled with pressurized air or nitrogen. This pressurized air holds a dry pipe valve closed. The dry pipe valve separates the water supply from the air-filled sprinkler piping. When a sprinkler head is activated, the air in the system bleeds from the sprinkler head. This decreases the pressure in the sprinkler piping allowing the dry pipe valve to open and charge the system with water. This delays the application of water to the sprinkler head by a maximum of 40 – 60 seconds depending on the hazard the system is protecting. (NFPA 13 7.2.3.6) Dry systems are more complex than wet systems due to the inclusion of the dry pipe valve. Dry systems are also limited to a maximum system size of 750 gallons. (NFPA 13 7.2.3.4) Dry systems include a few more components than a standard wet system. These include an antiflooding device (NFPA 13 7.2.4.8), high water level protection device (NFPA 13 7.2.5.4), a pressurized air supply (NFPA 13 7.2.6), a relief valve (NFPA 13 7.2.6.5) and an automatic air maintenance device (NFPA 13 7.2.6.6). The only benefit of using a dry system is its ability to protect a space that experiences freezing temperatures. It is important to note that in a dry system, everything back from the dry valve is filled with water and must be in a heated space to prevent freezing. (NFPA 13 7.2.5)

Pre-action systems are like a dry system in that the overhead sprinkler piping is charged with air or nitrogen instead of water. Pre-action systems differ from dry systems in that it typically takes two events for the system to discharge water. A pre-action system is connected to an alarm system with sensors for detecting flame, smoke, heat, or any

combination of the three. When the alarm system is triggered, a pre-action valve in the system opens, charging the system with water. (NFPA 13 7.3.2.1) Water is discharged when a sprinkler head is activated like a wet system. Pre-action systems are limited in size to 1000 automatic sprinklers per one pre-action valve. (NFPA 13 7.3.2.2) Additionally, for a double interlock pre-action system, a system requiring both an alarm and an automatic sprinkler head to activate, the size of the system is limited to 500 gallons. (NFPA 13 7.3.2.3.1.1) Pre-action systems tend to be more expensive to install and maintain due to a larger number of components and the complex control systems necessary for operation.

Deluge systems are very similar to pre-action systems. The major difference is the sprinkler head type. In a deluge system all heads in the system are open. When the system is activated, typically through a control system linked to a flame, smoke or heat detection, water will enter the system through the deluge valve and flow from all heads in the system. The primary use for a deluge system is for protection of high hazard spaces where a large quantity of water over a large area is desired.

Chapter 8 of NFPA dictates the installation of sprinkler systems for fire protection. Sections 8.5 and 8.6 define the protection area of coverage and maximum spacing for sprinkler heads. Sprinkler heads must be placed in such a way that their spray pattern is unobstructed without exceeding maximum spacing and maximum protection area.

Along with this maximum coverage area, sprinkler heads can be located no closer than 6 feet together on center (NFPA 12 8.6.3.4.1) and must be located at least 4 inches from any vertical walls (NFPA 13 8.6.3.3). Chapter 8 of NFPA continues by describing the various cases in which sprinklers may be obstructed and how handle the obstructions on a case-by-case basis. Section 8.16.2 specifies the necessity of pitching withing sprinkler systems. Wet systems are permitted to be level, but dry and pre-action systems must be pitched in such a way that the systems can be completely drained after testing. Section 8.16 also describes the need for low point drains to be included in dry and pre-action systems.

Commodity Classification and Storage Requirements

As part of the fire protection efforts, it is necessary to identify commodities, storage arrangements, packaging materials, storage heights, clearances, as well as other general protection criteria for storage conditions. General requirements for storage and commodity classifications can be found in NFPA 13, Chapter 20.

As per Chapter 20 Section 20.2, protection of storage shall follow the following steps:

- 1. Identify the storage commodity class in accordance with Sections 20.3 and 20.4.
- 2. Identify the method of storage in accordance with Section 20.5.
- 3. Establish storage height, building height, and associated clearances in accordance with Section 20.6.
- 4. Define the general protection criteria that are common to all storage protection options in accordance with Sections 20.7 through 20.15.
- 5. Select the appropriate system/sprinkler technology for protection criteria (Chapters 21 through 25).

Design and install system in accordance with the remainder of NFPA 13.

It is important to note that the type of commodity, amount of commodity, the packaging of commodity, and the individual storage units (i.e., pallet types and unit loads) used for the commodity must be considered in the classification of the commodity. Pallet types include but are not limited to plastic pallets (unreinforced and reinforced), slave pallet, open-top container, solid unit load of nonexpanded plastic. Please refer to NFPA 13 section 20.3 for further information on the makeup of individual storage units. Chapter 12 contains the design approaches for the protection of storage, including idle pallets, miscellaneous storage, storage less than 12 ft (low-piled storage), palletized, solid pile, bin box, and shelf storage, rack storage less than 25 ft, shelving, aisles, flues, rack storage

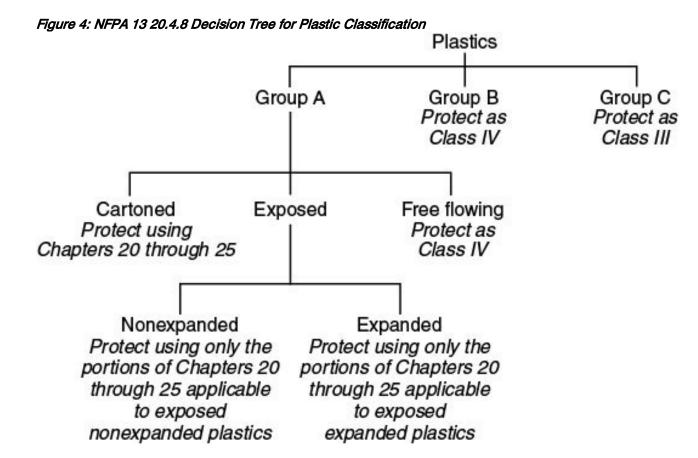
greater than 25 ft, rubber tire, baled cotton, rolled paper, and special storage designs. Further details on storage arrangement are available in NFPA 13 20.5.

When combustible materials are being stored, they are classified and sub-categorized based on their respective fire risks. The classification of commodities is as follows:

- Class I Commodities: These are products that are noncombustible that are stored either on a wood pallet, single-layered corrugated cartons, or shrink-wrapped or paper-wrapped as a unit load with or without pallets. Examples of Class I Commodities are included in NFPA 13 Table A.20.4.1.
- Class II Commodities: These commodities are products that are Class I but also stored in combustible packages, such as slatted wooden crates, solid wooden boxes, or multiple-thickness paperboard cartons, with or without pallets. Examples of Class I Commodities are included in NFPA 13 Table A.20.4.2
- Class III Commodities: These commodities are made of wood, paper, or natural fiber material, or Group C plastics. Examples of Class III Commodities are included in NFPA 13 Table A.20.4.3.
- Class IV Commodities: These commodities are those that are in Class I, II, or III that also contain Group A
 plastics in ordinary corrugated cartons. If Group A plastic packaging is used in Class I, II, or III products they
 are also given a designation of Class IV (NFPA 13, 20.4.4.1). Examples of Class IV Commodities are included
 in NFPA 13 Table A.20.4.4.

Plastics, elastomers, and rubber shall be classified as Group A, Group B, or Group C as per NFPA 13 20.4.5. Plastic commodities shall be protected in accordance with Figure 4.

- Group A Plastics: These are the most combustible types of plastics. Many plastics fall into Group A. (See NFPA 13 20.4.5.1 for examples of Group A plastics)
- Group B Plastics: Group B plastics have a lower heat combustion and burning rate than Group A plastics but are higher than that of normal, non-combustible plastics (See NFPA 13, 20.4.6 for examples of Group B plastics)
- Group C Plastics: Group C plastics are those that have the lowest fire risk, such as most thermosetting, fluorinated, and lightly plasticized plastics (See NFPA 13, 20.4.7 for examples of Group C plastics)



For general storage applications, rack storage, rubber tire storage, roll paper storage, and baled cotton storage being protected with upright and pendent spray sprinklers with required densities of greater than 0.2 gpm/ft2 to 0.34 gpm/ft2, standard-response sprinklers with a nominal K-factor of K-8.0 or larger shall be used (NFPA 13 21.1.3). Refer to Chapter 21 of NFPA 13 for more details regarding Control Mode Density Area (CMDA) specifications.

The storage of rubber tires for passenger automobiles, aircraft, light and heavy trucks, trailers, farm equipment, construction equipment (off-the-road), and buses will be a point of consideration. For storage of rubber tires that is incidental to the main use of the building; storage areas do not exceed 2000 sq ft, and on-tread storage piles, regardless of storage method, do not exceed 25 ft in the direction of the wheel holes. Acceptable storage arrangements include (a) on-floor, on-side storage up to 12 ft high; (b) on-floor, on-tread storage up to 5 ft high; (c) double-row or multirow fixed or portable rack storage on-side or on-tread up to 5 ft high; (d) single-row fixed or portable rack storage on-side or on-tread up to 12 ft high; and (e) laced tires in racks up to 5 ft in height (NFPA 13 3.3.124). NFPA 13 Table 21.6.1(a) lists the protection criteria for rubber tire storage using Control Mode Density/Area Sprinklers. The clearance from the top of storage to sprinkler deflectors shall be not less than 36 in. where rubber tires are stored (NFPA 13 20.6.6.5). For further information on rubber tires, rolled paper, and plastic motor vehicle components please refer to NFPA 13 20.4.9, 20.4.10, and 20.4.11, respectively.

Storage is considered miscellaneous when it does not exceed 12 ft in height, is incidental to another occupancy use group, does not constitute more than 10 percent of the building area or 4000 sq ft of the sprinklered area, whichever is greater, does not exceed 1000 sq ft in one pile or area, and is separated from other storage areas by at least 25 ft (NFPA 13 3.3.123).

The fire protection system design should also consider the maximum storage height. Maximum storage height is the usable height at which commodities can be stored above the floor while the minimum required unobstructed space below sprinklers is maintained. Table 20.6.4.2 indicates the requirements that shall apply for maximum clearance from top of storage to ceiling for CMDA protection criteria. Further details regarding storage heights and clearances can be referenced in NFPA 13 20.6.

Table 7: Maximum Clearance from Top of Storage to Ceiling for CMDA Protection Criteria (From NFPA 13 Table 20.6.4.2)

| Commodity | Class I to IV | Group A Plastic |
|---|---------------|-----------------|
| Palletized, solid-piled, bin box, shelf, or | 20 ft | 20 ft |
| back-to-back shelf storage | | |
| Rack storage up to 25 ft (7.6 m) | 20 ft | 10 ft |
| Rack storage >25 ft (7.6 m) | 10 ft | 10 ft |

For permissible use of in-rack sprinklers, please see NFPA 13 Table 20.6.4.3 and Table 20.6.4.4 for CMDA criteria that exceed the maximum allowable clearance in Table 20.6.4.2.

Fire spreads at different rates for different directions. High-Piled Storage requires extra consideration due the greater risk of fire spreading quickly and rapidly at the base. Solid-piled, palletized, rack storage, bin box, and shelf storage more than 12 ft in height is considered High-Piled Storage (NFPA 13 3.3.95). NFPA 13 Chapter 21 contains the requirements and considerations for protection of high-piled storage using CMDA sprinklers.

Early suppression fast-response (ESFR) sprinklers shall not be used in buildings with automatic heat or smoke vents unless the vents use a high-temperature rated, standard-response operating mechanism (NFPA 13 20.6.5.2). Additionally, unless the requirements of 20.6.6.2 through 20.6.6.5 are met, the clearance between the deflector and the top of storage or contents of the room shall be 18 in. or greater (NFPA 13 20.6.6.1).

Concealed spaces of noncombustible and limited-combustible construction with minimal combustible loading having no access shall not require sprinkler protection. For un-sprinklered combustible concealed spaces, the density/area method or room design method states that the minimum area of sprinkler operation for that portion of the building shall be 3000 sq ft, however NFPA 13 20.7.2 outlines un-sprinklered combustible concealed spaces that do not require a minimum design area of sprinkler operation of 3000 ft2.

As per NFPA 13 20.8.1, the water supply requirements for sprinklers are based upon the room that creates the greatest demand.

High expansion foam system offers a fire extinguishing procedure that engulfs the fire with a high volume of foam. The foam blanket transports water to the fire, suffocates and cools the fire, suppresses escaping vapors, and encapsulates the toxic vapors and particulate. NFPA 13 20.9 outlines the requirements and specifications regarding high-expansion foam systems.

In accordance with NFPA 13 20.10, when a small higher hazard area is larger than the required minimum area dictated by the surrounding occupancy, even when separated by draft curtains, barriers, or partitions capable of delaying heat, the size of the operating area is determined by the higher hazard storage.

Hose stream allowance and water supply duration for NFPA 13 Chapters 20 through 25 shall be in accordance with Section 20.12.

Wet systems are generally recommended for storage occupancies. Dry pipe systems should be permitted only where it is impractical to provide heat, such as areas that are subject to freezing.

Idle pallet storage presents a severe fire hazard. Stacking idle pallets in piles promotes rapid spread of fire, heat release, and complete combustion. Pallets may dry out and their edges may become frayed and splintered. In this condition, they are subject to easy ignition. Therefore, high piling is not desirable, and it is preferable to store pallets outdoors where possible. NFPA 13 20.14.1 and 20.14.2 indicates the arrangements of wood pallets and plastic pallets, respectively.

Columns at the ends of racks or in the aisles need to be protected from the heat of a fire in the racks if they are near the racks. NFPA 13 20.15 outlines the specifications for column protection in relation to rack storage and rubber tire storage.

Fire Extinguishers

There are basically four different types or classes of fire extinguishers, each of which extinguishes specific types of fire. Fire extinguishers, correctly used on the type of fire they are intended for, can have a large role in stopping major fire damage. However, it should be noted that it may not be possible to extinguish every fire with fire extinguishers. When personal safety is in jeopardy, personnel should not attempt to extinguish the fire but should evacuate the building. In all instances, the fire department should be called immediately if a fire occurs.

A fire extinguisher is an active fire protection device used to extinguish or control small fires, often in emergency situations. It is not intended for use on an out-of-control fires, such as one which has reached the ceiling or can endangers the user. For these types of fires, it requires the expertise of the fire department. Typically, a fire extinguisher consists of a hand-held cylindrical pressure vessel containing an agent which can be discharged to extinguish a fire.

There are two main types of fire extinguishers: stored-pressure and cartridge-operated. In stored pressure units, the expellant is stored in the same chamber as the firefighting agent itself. Depending on the agent used, different propellants are used. With dry chemical extinguishers, nitrogen is typically used; water and foam extinguishers typically use air. Stored pressure fire extinguishers are the most common type.

Portable fire extinguishers are central in helping to prevent fire damage and loss, however, their effectiveness hinges on proper maintenance. Therefore, every effort should be made to ensure that, as a minimum, fire extinguishers are located and maintained in accordance with NFPA's standards.

Fire extinguishers are further divided into handheld and cart-mounted also called wheeled extinguishers. Handheld extinguishers weigh anywhere from 1.1 to 30.9 lbs. and therefore, are easily portable by hand. Cart-mounted units typically weigh more than 51 lb. These wheeled models are in the parking areas of the terminal.

The water extinguishers or the APW extinguishers are only suitable for class A fires. Water extinguishers are filled with water and are typically pressurized with air. There are several these types of extinguishers throughout the terminal. Water extinguisher must never be used on grease fires, electrical fires, or class D fires. If this should occur the flames will spread and make the fire bigger. The fire extinguishers are generally divided into categories, based on different types of fires. Each fire extinguisher also has a numerical rating that serves as a guide for the fire that extinguisher can handle. The higher the number, the more fire-fighting power.

Beyond the requirements of NFPA 10 there is no official standard for the color of fire extinguishers, However, they are typically red, except for class D extinguishers which are usually yellow, water and Class K wet chemical extinguishers which are usually silver, and water mist extinguishers which are usually white.

Extinguishers are also marked with pictograms depicting the types of fires that the extinguisher is approved to fight. In the past, extinguishers were marked with colored geometric symbols, and some extinguishers still use both symbols. See Table Below:

Fire extinguishing capacity is rated in accordance with ANSI/UL 711: Entitled Rating and Fire Testing of Fire Extinguishers. The ratings are described using numbers preceding the class letter, such as 1-A:10-B: C. The number preceding the A multiplied by 1.25 gives the equivalent extinguishing capability in gallons of water. The number preceding the B indicates the size of fire in square feet that an ordinary user should be able to extinguish. There is no additional rating for class C, as it only indicates that the extinguishing agent will not conduct electricity, and an extinguisher will never have a rating of just C.

Table 8: Fire Extinguisher Types

| Fire class | Geometric symbol | Pictogram | Intended use | Mnemonic |
|------------|------------------|-----------|--------------------------------|------------------|
| А | A | | Ordinary solid combustibles | for "Ash" |
| В | B | | Flammable liquids and gases | B for "Barrel" |
| С | | | Energized electrical equipment | C for "Current" |
| D | D | | Combustible metals | D for "Dynamite" |
| К | K | | Oils and fats | K for "Kitchen" |

The Fire Code and OSHA require that the facility select and distribute fire extinguishers based on the classes of anticipated workplace fires and on the size and degree of the hazard that would affect their use. The following chart contains requirements for classes of fires. This general guide of the fire extinguisher types, and applicable fire class is based some of the most common uses.

Table 9: Fire Extinguisher Applications

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| TYPE OF EXTINGUISHER | CLASS A FIRES | CLASS B FIRES | CLASS C FIRES | CLASS D FIRES |
|--------------------------|---------------|---------------|---------------|---------------|
| Water cartridge expelled | Yes | No | No | No |
| Water stored pressure | Yes | No | No | No |

| Water pump tank | Yes | No | No | No |
|-----------------|------|------|--------------------|----------------|
| Foam | Yes | Yes | No | No |
| Loaded steam | Yes | Yes | No | No |
| Carbon dioxide | No | Yes | Yes | No |
| Dry chemical | No | Yes | Yes | No |
| ABC | Yes | Yes | Yes | No |
| | | | Based on | Within 30ft of |
| Travel distance | 75ft | 50ft | appropriate A or B | Cooking |
| | | | Hazard | Equipment |

Class A extinguishers are for ordinary combustible materials such as paper, wood, cardboard, and most plastics. The numerical rating on these types of extinguishers indicates the amount of water it holds and the amount of fire it can extinguish. The Geometric symbol is a green triangle.

Class B fires involve flammable or combustible liquids such as gasoline, kerosene, grease, and oil. The numerical rating for class B extinguishers indicates the approximate number of square feet of fire it can extinguish. The Geometric symbol is a red square.

Class C fires involve electrical equipment, such as appliances, wiring, circuit breakers and outlets. Never use water to extinguish class C fires - the risk of electrical shock is far too great. Class C extinguishers do not have a numerical rating. The C classification means the extinguishing agent is non-conductive. The Geometric symbol is a blue circle.

Class D fire extinguishers are commonly found in a chemical laboratory. They are for fires that involve combustible metals, such as magnesium, titanium, potassium, and sodium. These types of extinguishers also have no numerical rating, nor are they given a multi-purpose rating - they are designed for class D fires only. The Geometric symbol is a yellow decagon.

Class K fire extinguishers are for fires that involve cooking oils, trans-fats, or fats in cooking appliances and are typically found in restaurant and cafeteria kitchens. The Geometric symbol is a black hexagon.

**Note: There are no kitchen areas in the PA public spaces. The Class K fire extinguishers are predominantly associated with the tenant spaces.

Some fires may involve a combination of these classifications, in such scenario the fire extinguishers should have ABC ratings on them. Water extinguishers can be very dangerous in the wrong type of situation and should fight the fire if it contains ordinary combustible materials only.

Dry Chemical Extinguishers

Dry chemical extinguishers are filled with foam or powder, usually potassium bicarbonate or sodium bicarbonate (baking soda) and pressurized with nitrogen. Baking soda is effective because it decomposes at 158 degrees Fahrenheit and releases carbon dioxide, which smothers oxygen once it decomposes. Dry chemical extinguishers interrupt the chemical reaction of the fire by coating the fuel with a thin layer of powder or foam, thereby separating the fuel from the surrounding oxygen.

- The type of flammable metal you are dealing with determines which type D fire extinguisher you will require.
- Copper extinguishing medium should be used when you are dealing with lithium and lithium alloy metals.
- Sodium chloride extinguishers should be used when you are dealing with magnesium, sodium, potassium, uranium, and powdered aluminum.

Dry chemical extinguishers come in a variety of types and are suitable for a combination of class A, B, and C fires.

- ABC This is the multipurpose dry chemical extinguisher. The ABC type is filled with monoammonium phosphate, a yellow powder that leaves a sticky residue that may be damaging to electrical appliances such as a computer.
- BC This is the regular type of dry chemical extinguisher. It is filled with sodium bicarbonate or potassium bicarbonate. The BC variety leaves a mildly corrosive residue which must be cleaned immediately to prevent any damage to materials.

Dry chemical extinguishers have an advantage over CO2 extinguishers since they leave a non-flammable substance on the extinguished material, reducing the likelihood of re-ignition.

CO2 extinguishers are used for class B and C fires. CO2 extinguishers contain carbon dioxide, a non-flammable gas, and are highly pressurized. The pressure is so great that it is common for bits of dry ice to shoot out of the nozzle. They do not work very well on class A fires because they may not be able to displace enough oxygen to put the fire out, Therefore, causing the fire to re-ignite.

CO2 extinguishers have an advantage over dry chemical extinguishers since they do not leave a harmful residue - a good choice for an electrical fire on a computer or other favorite electronic device. Flames need fuel, oxygen, and heat to burn. Fire extinguishers are designed to remove one of these elements by applying an agent that either cools the burning fuel or removes or displaces the surrounding oxygen. Fire extinguishers contain either water or a smothering material, such as CO2. By pulling out the safety pin and depressing the lever at the top of the cylinder, the fire extinguishing material is released under high amounts of pressure. At the top of the cylinder, there is a smaller cylindrical container filled with compressed gas. A release valve acts as a locking mechanism and prevents this gas from escaping. When you pull the safety pin and squeeze the lever, the lever pushes on an actuating rod that presses the valve down to open a passage to the nozzle. The compressed gas is released, applying a downward pressure on the fire-extinguishing material, and pushing it out the nozzle under tremendous force. Although the temptation is to aim the extinguishing material at the flames, the proper way is to aim it directly at the fuel.

Water Extinguishers

Water extinguishers are filled with regular tap water and typically pressurized with air. The most common way to remove heat is to spray water on the fire; however, depending on the type of fire, this approach is not always the best option.

Distribution

Fire extinguishers are required for all types of occupancies and are distributed based on building areas and degree of hazard. Rooms or areas shall be classified as being light (low) hazard, ordinary (moderate) hazard, or extra (high) hazard in accordance with the guidelines specified in section 5.4.1of NFPA 10. The requirements of the occupational safety and health act (OSHA) of the federal government must also be fulfilled.

Class A hazard:

Class I occupancy - This class includes "light hazard" occupancies such as offices, assembly halls and public buildings where the number of combustibles is relatively small. In such areas, a 2A-UL rated unit (2.5 gallons' water or nonfreezing solution, pressurized) should be provided for each 6000 ft.² area, no more than 75 feet of travel should be needed in a point reached extinguisher.

Based on the requirements of NFPA 10 Section 5.4.1.1: Light (low) hazards shall be classified as locations where the quantity and combustibility of Class A combustibles and Class B flammables are low and fires with relatively low rates of heat release are expected. These occupancies consist of fire hazards having normally expected quantities

of Class A combustible furnishings, and/or the total quantity of Class B flammables typically expected to be present is less than 1 gal in any room or area.

Class II occupancy- This class includes "ordinary hazard" occupancies such as mercantile or retail stores. In such areas, a 2A-UL rated unit should be provided for each 3000 ft.² area. In fully sprinkle red buildings coverage for extinguisher may be increased to 5000 ft.² however extinguishers should be located within 50feet of travel to a point of application. Based on the requirements of NFPA 10 Section 5.4.1.2: Ordinary (moderate) hazards shall be classified as locations where the quantity and combustibility of Class A combustible materials and Class B flammables are moderate and fires with moderate rates of heat release are expected. These occupancies consist of fire hazards that only occasionally contain Class A combustible material beyond normal anticipated furnishings, and/or the total quantity of Class B flammables typically expected to be present is from 1 gal to 5 gal in any room or area.

Class III occupancy- This class includes "extra hazard" occupancies such as woodworking, paint spraying and dipping and flammable liquid handling. The same rule for class II occupancy applies with the exception that the fire extinguisher unit should have 3-A ratings and additional units may be required to serve a specific hazard. It is important to note that in areas where there are hose-stations equipped with a 1 ½ inch hose the requirement for "Class A" extinguishers may be reduced.

Based on the requirements of NFPA 10 Section 5.4.1.3: Extra (high) hazard occupancies shall be classified as locations where the quantity and combustibility of Class A combustible material are high or where high amounts of Class B flammables are present and rapid developing fires with high rates of heat release are expected. These occupancies consist of fire hazards involved with the storage, packaging, handling, or manufacture of Class A combustibles, and/or the total quantity of Class B flammables expected to be present is more than 5 gal in any room or area.

Class B hazard:

Area other than fires in flammable liquids of appreciable depth.

Minimal size and number of extinguishers for the type of hazard shall be provided based on the following criteria:

- Locate extinguishers so that the maximum travel distance does not exceed 50 feet.
- Light hazard-rating 4B minimum.
- Ordinary hazard-rating 8B minimum.
- Extra hazard-rating 12B minimum.

Two or more extinguishers of lower rating shall not be used to meet the protection requirements, except for foam extinguishers where up to three (3) foam extinguishers may be used.

Area in flammable liquids of appreciable depth.

Provide Class B extinguishers based on one numerical units of class B extinguishing value per square foot of flammable liquid surface of the largest Tank hazard in the area.

Two or more extinguishers of lower rating shall not be used in place of extinguishers for the largest tank. except for foam extinguishers where up to three (3) foam extinguishers may be used.

Extinguishers for the protection of special hazard should be located out of the fire area but not more 30 feet distance from the tank or booth on the protection.

Class C hazard:

Extinguishers with class "C" rating are required where energized electrical equipment is used. This pertains to fire either involving or surrounding electrical equipment. Since the fire, itself is a Class A or Class B hazard, the extinguishers are sized and located based on a Class A or Class B hazard but must bear the Class "C" designation to prevent electric shock. It is also important to de-energize electrical equipment, whenever possible before attacking with a class C fire with extinguisher.

Special distribution requirement: for enlarged areas there should be an approved class B wheel type dry chemical or CO2 extinguishers. The parking garages areas are equipped with these types of extinguishers. In accordance with NFPA 10 5.3.2.7, wheeled fire extinguishers shall be considered for hazard protection in areas in which a fire risk assessment has shown the following:

- High hazard areas are present.
- Limited available personnel are present, thereby requiring an extinguisher that has the following features:
 - High agent flow rate
 - o Increased agent stream range
 - o Increased agent capacity

As per section 5.4.2.5 of NFPA 10, where fire extinguishers have more than one letter classification (such as 2-A:20-B:C), they shall be permitted to satisfy the requirements of each letter class.

Signage and Support

Since fire extinguishers are necessary to be functional and use as first aid, they are to be kept in their designated locations, fully charged, operable, and ready for the emergency. They must be accessible, not blocked by stock, wire partitions, or even closets. They should be readily seen and available in the event of fire. Extinguishers intended for different classes of fire, when grouped, shall be plainly marked to ensure quick identification and proper application of the correct extinguishing media on the class of fire encountered. In the selection of extinguishers, it is important to consider the following measures in their maintenance and their use:

- Caution labels relating to the usage should be prominent and their wording quickly understandable.
- Warning signs should be evident at every point's confined space and area subject to total flooding.

Method of Support:

Extinguishers shall be in conspicuous and readily accessible areas. They should be supported on hangars, brackets, or set the shelves, unless they are of the wheeled type, so that the top of the extinguisher is not more than 5 feet above the floor if not more than 40 pounds or more than 3.5 feet for those over 40 pounds.

Table 10: Fire Extinguisher Installation

| Туре | Method of Support | Height Above Floor | Max Weight |
|--------------|-------------------|--------------------|------------|
| Portable | Hangers/Brackets | 5'-0" | 40 Lbs. |
| Portable | Hangers/Brackets | 3 1/2' | >40 Lbs. |
| Wheeled Type | Floor | Mounted | N/A |

Where the extinguishers cannot be readily observed the location of the extinguishers should be indicated by the appropriate signs or identification markings for example striped columns, red band around columns etc. When the extinguisher is supported against a wall, the location should be indicated by hanging overhead isle sign reading "fire extinguisher" with a directional arrow as indicated below.

Figure 5: Fire Extinguisher Signage



Where combination standpipe hose fire extinguisher cabinets are used, the sign on the doors should read" fire extinguishers" in letters 2 inches high on a contrasting background as well as the standpipe designation fire hose.

For cabinets in public areas extinguishers should be placed within the cabinet and the door clearly marked "fire extinguisher". Where mounted in cabinets or recessed or set on shelves ensure that operating instructions faced outwards. Because of the diversity in today's population bilingual signage should be considered. For a list of regular fire extinguisher signage refer to the section entitled "SIGNAGE"

Consideration must be given to range a remote application extra-long-range nozzles, operation in unventilated areas, use of breathing apparatus, and other personal protective equipment. While firefighting entails an amount of calculated risk such risk is not to be compounded by poor training. Taking unnecessary chances, lack of or insufficient protective equipment, or blind heroism. The potentially toxic effects of some extinguishing agents in high concentration and product decomposition, must also be considered. Therefore, where the fire extinguishers are provided for use, the staff must be provided with an educational program to familiarize each person on the principles and use of the extinguishers. This educational program should be maintained annually.

Inspection Requirements and Checklist

Fire extinguishers in all buildings other than residential houses are generally required to be serviced and inspected by a fire protection service company at least annually. Some jurisdictions require more frequent service for fire extinguishers. Generally, the servicer places a tag on the extinguisher to indicate the type of service performed for example if it is an annual inspection, recharge, or new fire extinguisher.

Based on today's camera technology and tools that are already in place, periodic inspection and electronic monitoring of fire extinguishers can be performed and include a check of at least the following items:

- · Location in designated place
- No obstruction to access or visibility
- Pressure gauge reading or indicator in the operable range or position.
- Fullness determined by weighing or hefting for self-expelling-type extinguishers, cartridge-operated extinguishers.
- Condition of tires, wheels, carriage, hose, and nozzle for wheeled extinguishers
- Indicator for non-rechargeable extinguishers using push-to-test pressure indicators.

Nevertheless, the fire extinguishers shall be visually inspected, if they are located where any of the following conditions exist:

- High frequency of fires
- Severe hazards
- Locations that make fire extinguishers susceptible to mechanical injury or physical damage
- Exposure to abnormal temperatures or corrosive atmospheres.

Where at least monthly manual inspections are conducted, the date of the manual inspection was performed and the initials of the person performing the inspection shall be recorded. This information can be incorporated into the facility's asset management system.

A visual inspection alone cannot ensure that a portable fire extinguisher is safe or will operate properly when needed. Over time, normal handling or workplace conditions can impact the structural integrity of the extinguisher and cause it to malfunction or burst. To prevent this from happening, all portable fire extinguishers are required to be inspected and pressure tested by a qualified individual using the proper equipment and facilities. [OSHA-29 CFR 1910.157(f)(1)]

Hydrostatic testing is the method used to pressure test an extinguisher's critical components (cylinder, shell, hose assembly, etc.) for leaks and structural flaws by pressurizing them with a liquid. For stored-pressure fire extinguishers this is required every 6 years, and for dry chemical it requires 12-year hydrostatic examination procedures as detailed in the manufacturer's service manual and the requirements of NFPA 10.

Fire Extinguishers Summary and Recommendations

Water and Foam fire extinguishers extinguish the fire by taking away the heat from the fire. Foam agents also separate the oxygen from the fuel and heat. Water extinguishers are for Class A fires only, they should not be used on Class B or C fires. The discharge stream could spread the flammable liquid in a Class B fire or could create a shock hazard on a Class C fire. Foam extinguishers can be used on Class A & B fires only. They are not for use on Class C fires due to the shock hazard.

Carbon Dioxide fire extinguishers extinguish the fire by separating the oxygen element from the fuel and heat, and by removing the heat with a very cold discharge. Carbon dioxide can be used on Class B & C fires. They are usually ineffective on Class A fires.

Wet Chemical is a new agent that extinguishes the fire by removing the heat from the fire and prevents re-ignition by creating a barrier between the oxygen and fuel elements. Wet chemical or Class K extinguishers were developed for modern, high efficiency deep fat fryers in commercial cooking operations. Some may also be used on Class A fires in commercial kitchens.

Clean Agent extinguishers are either based on halocarbon agents or on the older and no longer made halon 1211 agent, which can no longer be used for training. Halocarbon agents replaced halon 1211 within the last 8 years and are much more environmentally acceptable. Commercialized halocarbon agents extinguish the fire by removing heat from the combustion zone. Halon 1211 extinguishers, however, were chemically active and interfered with the chemical reactions occurring in the combustion zone. Halocarbon and halon 1211 extinguishers are effective on Class A, B, and C type fires, although very small sizes do not achieve the lowest UL Class A rating, 1-A.

Dry Powder extinguishers are like dry chemical except that they extinguish the fire by separating the fuel from the oxygen element of the fire. However, dry powder extinguishers are for Class D or combustible metal fires, only. They are ineffective on all other classes of fires.

Water Mist extinguishers are a recent development that extinguishes the fire by taking away the heat from the fire. They are an alternative to the clean agent extinguishers where contamination is a concern. Water mist extinguishers are primarily for Class A fires, although they are safe for use on Class C fires as well.

Extinguishers are to be properly supported from hangers and brackets approved for extinguisher use.

The extinguisher shall be tested and labeled. Also, based on today's camera technology and available tools that are already in place, periodic inspection and electronic monitoring of fire extinguishers can be performed.

Table 11: Fire Extinguisher Matrix

| BUILDING | LOCATION | CLASS/TYPE | QUANTITY | CAPACITY | REMARKS | | | |
|---------------------|-----------------------------|--------------------|----------|----------|---------|--|--|--|
| | | | | | | | | |
| Building - 301 | Maintenance Areas | ABC/DRY | 1 | 20 lbs. | | | | |
| | | | | | | | | |
| PN - Sub - Total | | | | | | | | |
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| Sub – Total | • | | | | | | | |
| | | | | | | | | |
| Grand – Total | Grand - Total | | | | | | | |
| Coordination is req | uired in these areas to fir | nalize the coveraç | je. | | | | | |

Protection of Telecommunications Rooms

There are three recommended measures to prevent the spread of fire and effective extinguish the fire in telecommunications rooms. They are clean agent gaseous fire suppression systems, pre-action fire sprinkler systems and combination primary clean agent gaseous and secondary pre-action fire suppression systems.

Clean Agent Gaseous Fire Suppression System

A clean agent is an electrically non-conducting, gaseous extinguishing agent that does not leave a residue upon evaporation. The clean agent is stored in tanks under pressure as a liquid and when released, floods the room as a gas, interrupting the combustion process. To operate effectively, clean agent systems must produce a specified concentration. To accomplish this, the room being protected must be airtight. Computer rooms do not always meet this requirement. These agents are governed by the National Fire Protection Association Standard for Clean Agent Fire Extinguishing Systems – NFPA 2001. The system typically consists of the agent, agent storage containers, agent release valves, fire detectors, fire detection system (wiring control panel, actuation signaling), agent delivery piping, and agent dispersion nozzles.

A clean agent system is preferred for telecommunication rooms because fires can be rapidly extinguished without residues from the gas. The result is minimal service interruptions because no clean-up is required and limited fire damage because agents are discharged within seconds.

Pre-action Fire Sprinkler System

These systems are like dry pipe systems in that water is discharged through a sprinkler head as a cooling agent; however, a pre-action system's piping is not filled with water but uses air to maintain the system pressure. The protected area is provided with smoke and heat detectors set below the melting point of the sprinkler link. When conditions in the protected area activate a detector, a valve is released allowing water to fill the piping in the exposed area. If the temperature in the area exceeds the melting point of the sprinkler link, water is then discharged onto the fire.

This type of system is preferred for high value equipment because it requires two events to initiate water flow. Typically, the detector causes a local alarm to sound that should bring personnel to investigate. Additionally, the alarm circuitry can be interfaced with computer equipment to shut down critical equipment before water is discharged. By initiating an alarm earlier than the application of water, on-site personnel can often extinguish the fire using fire extinguishers, thus limiting water damage. Further, when the alarm is interfaced to shut down the equipment power, damage from short-circuiting of equipment is eliminated.

Combination Gaseous / Pre-action Fire Suppression System

Clean agent systems are designed with the purpose of protecting the contents of water sensitive hazards, such as IT or telecom equipment. Automatic sprinkler systems are intended and designed as primary fire protection as they offer life safety to occupants and provide building protection. A dual agent system provides the highest level of protection for mission critical facilities.

Automatic sprinklers are required in all compartments of completely sprinklered buildings as defined in NFPA 13. Pre-action systems are specialized sprinkler systems that provide security against accidental water damage by using supervisory air pressure in the piping instead of water. When used in combination with sprinkler systems, clean agent systems are designed to serve as initial fire protection with the intent of extinguishing the fire, thereby reducing the potential for sprinkler discharge, and thus minimizing damage to the electronic equipment.

The water-based system gives a code-compliant approach to providing automatic sprinklers for all areas of the building, or a fully sprinklered building. This option should be explored when fully automatic sprinkler protection is required and the use of the clean agent system in lieu of sprinklers is not allowed. The clean agent system gives a first line of defense against a fire that, if extinguished, should not actuate the water-based system. If fire growth continues, the water-based system will provide protection of the building.

It is not uncommon for a pre-action sprinkler system to meet the automatic sprinkler system code requirements and then supplement a clean agent system for protection of the equipment. The pre-action system does not have water in the system prior to activation, thus mitigating the potential for water damage. The pre-action system can be designed to require two detection components to operate before the water is released into the room. This can be a combination of smoke detection and sprinkler actuation.

The ideal system would incorporate a clean gas system and a pre-action water sprinkler system in the ambient space. Gas suppression systems are friendlier to the hardware in the event of a discharge. There is some concern regarding the use of water on sensitive electronic equipment, whereas the hardware in a room subjected to a gas discharge can often be brought back online soon after the room is purged. Gas systems are, however, one-shot designs. If the fire is not put out in the initial discharge, there is not a second chance. The gas system cannot be reused until it is recharged or connected to a backup source. Water systems can continue to address the fire until it has been brought under control. While a water system is more likely to damage the hardware, it is also a better means of protecting the building structure. Water-suppression systems are often preferred or mandated by building owners or insurance companies. Water systems are also highly recommended in areas containing a high level of combustible material use of storage. The decision of what means of fire suppression to utilize must incorporate numerous factors, including the mission and criticality of the data center operations.

Table 12: Fire Protection Systems in Electrical and Computer Rooms Matrix

| 10000 | Fire From Systems in Electrical and Computer Hooms Matrix | | | | | | | |
|-------|---|---|---|--|---|--|--|--|
| Rank | Protectio n System | Advantages | Disadvantages | Testing | Remarks | | | |
| 1 | Pre-Action Sprinkler System (NJ: Double Interlock) | Provides a higher level of reliability and an additional safety protection from accidental water discharge. Pre-action system reliability is based on a primary detection system. Water only based preaction system is good for the environment. Uses unlimited public water supply. No redundancy is required. | Sprinkler is more expensive than wet and dry sprinkler systems and does not eliminate the possibility of water damage to the protected space. Drainage is required. | System shall be tripped tested annually at full flow. No water discharge from sprinkler heads is required. | Pre-action system is recommended because it provides superior reliability and an additional safety protection from accidental discharge while alleviating challenges associated with clean agent system testing. | | | |
| 2 | Combinati on Pre- Action sprinkler and Clean Agent System | Provides Fire Protection to both the electronic equipment and building. Minimizes the chance of water damage to electronic equipment. Provides two (2) distinct, separate sources of fire protection for the space. | Combination system is more expensive than other options. Difficult to seal (airtight) the room for clean agent system initial acceptance and annual room integrity test. Drainage is required. | Initial and annual room integrity (air leakage) tests need to be performed to confirm and maintain room's integrity. System shall be tripped tested annually at full flow. No water discharge from sprinkler heads is required. | Combination system's additional cost may be justified when both the prevention of damage to electronic equipment and prevention of fire spreading from electrical or computer room to the rest of the building are prioritized. Room integrity must be maintained. Clean agent system acts as main system and preaction acts as reserve (redundant) system. | | | |
| 3 | Clean Agent System (Cross Zoned) | Discharge of gaseous system in protected space will not damage critical equipment. No water is utilized in fire protection system. No significant adverse impact to the environment. | Difficult to seal (airtight) the room for clean agent system initial acceptance and annual room integrity test. Supply of clean agent may be depleted in the event of reoccurring fires. | Initial and annual room integrity (air leakage) tests need to be performed to confirm and maintain room's integrity. | Clean agent system is recommended when the building has no water supply. A risk analysis is generally required with owner's input. Main and reserve cylinders are required. | | | |

Resilience & Sustainable Design

The project is exempt from the PANYNJ Sustainable Design Guidelines. The project is subject to the PANYNJ Climate Resilience Guidelines. The Resilience & Sustainable Design unit assessed the flood risk of the fire protection valves at an additional 18 locations throughout Port Jersey, EPAMT, and Port Newark. All locations are situated in the 1% annual chance floodplain ("100-year floodplain") per the FEMA Preliminary Flood Insurance Rate Maps. In the state of NJ, when determining the flood hazard area, the preliminary FEMA map that has not been superseded by a new effective FEMA map must be used where these maps depict higher flood elevations than depicted in the most recent effective FEMA Flood Insurance Study. In this case, the PFIRMS were found to be more conservative. The following table summarizes the FEMA flood maps utilized at each facility.

Table 13: Summary of FEMA Flood Maps

| Facility | FEMA PFIRM Panel # | Year |
|--|--------------------|------|
| Elizabeth Port Authority Marine Terminal | 34039C0025G | 2015 |
| David Marriants | 34013C0159G | 2014 |
| Port Newark | 34013C0167G | 2014 |
| Port Jersey | 34017C0112E | 2013 |

Figure RSD-1 presents the FEMA Preliminary Flood Insurance Rate Maps for the area.

CRG require a comprehensive flood protection strategy based on each asset's location with a sea level rise-adjusted design flood elevations (SLRDFE) commensurate with the asset's current and future flood risk. The SLRDFE is the sum of FEMA base flood elevation (BFE) obtained from the PFIRMs, a code-required freeboard safety factor for critical assets, and a sea level rise adjustment to maintain flood protection levels across the design life of the asset.

It is assumed that fire protection valves have a 40-year design life, according to the agency's Asset Class Manual; however, according to the facility, the valves in question have been in use for approximately 30-40 years and are nearing the end of their useful life. The exceptions to this are Port Newark Building 111, Port Newark Building 260, and Port Jersey Building 51, which were rehabbed and or replaced more recently based on photo documentation. The minimum 1.33' sea level rise adjustment is used for the fire protection assets near the end of their design life, whereas 2.33' is used for the newer equipment. Fire protection valves are critical infrastructure, requiring 2' freeboard.

RSD worked with the Mechanical unit to pinpoint the locations of the fire protection equipment within each building, at which locations, a moderately precise digital elevation tool was used to approximate the finished floor elevations at the equipment locations. For most locations, the valves are inside the buildings with the finished floor elevations (FFE) flush with the adjacent grade and therefore the nearest adjacent ground elevation was used. One exception is Port Newark Building 255, where the equipment is at the level of the loading dock 48" above grade. The elevations provided are not exact and require survey. Building 111 is the only location that was equipped with priority protective measures (stop logs) following Superstorm Sandy to an elevation of 4.5' above FFE, or 13' NAVD88; this location should be retrofitted to meet the SLRDFE. Table RSD-14 provides a summary of the SLRDFE criteria for each asset under review.

Note that Structural calculations for flood loads would apply a DFE that includes a sea level rise adjustment but omits the freeboard.

Table 14: Summary of Sea Level Rise-Adjusted Design Flood Elevations at Each Asset

| Building No. | SLRDFE (ft NAVD88) | Lowest Adjacent Grade (ft NAVD88) | Approx. Feet Above Grade | |
|--------------|--|--------------------------------------|---------------------------------|-------------------|
| ort Newark | | | - | |
| 11 | BFE (12' NAVD88) + 2' freeboard + 2.33' SLR | 16.33 | 8.5 | 7.8 |
| | | | | |
| | | | <u> </u> | |
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| | | | _ | |
| | | | | |
| 55 | BFE (11' NAVD88) + 2' freeboard + 1.33' SLR | 14.33 | 8.5 + 4' loading dock = 12.5 | 1.8 |
| :60 | BFE (11' NAVD88) + 2' freeboard + 2.33' SLR | 15.33 | 9 | 6.3 |
| .63 | BFE (11' NAVD88) + 2' freeboard + 1.33' SLR | 14.33 | 8 | 6.3 |
| | | | | |
| 01 | BFE (12' NAVD88) + 2' freeboard + 1.33' SLR | 15.33 | SW: 6.5 S: 6.6 | SW: 8.8 S: 8.7 |
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| Building No. | SLRDFE (ft NA\ (BFE + freeboard | | Lowest Adjacent Grade (ft NAVD88) | Approx. Feet Above Grade |
|--------------|------------------------------------|-------|--------------------------------------|-----------------------------|
| Port Newark | | | | |
| 111 | 12' NAVD88 + 2' + 2.33' | 16.33 | 8.5 | 7.8 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 255 | 11' NAVD88 + 2' + 1.33' | 14.33 | 8.5 + 4' loading | 1.8 |
| | | | dock = 12.5 | |
| 260 | 11' NAVD88 + 2' + 2.33' | 15.33 | 9 | 6.3 |
| 263 | 11' NAVD88 + 2' + 1.33' | 14.33 | 8 | 6.3 |
| | | | | |
| 301 | 12' NAVD88 + 2' + 1.33' | 15.33 | SW: 6.5 | SW: 8.8 |
| | | | S: 6.6 | S: 8.7 |
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Table 15:

Structural

The design of the fire sprinkler system vertical hangers and seismic braces will follow the National Fire Protection Association 13, Standard for the Installation of Sprinkler Systems 2019, which follows Allowable Stress Design (ASD) as per section A.18.5.9.4.

Design loads have been established utilizing the codes and standards mentioned in section 5 of this report and industry standard practices. Key components of the structural loading can be summarized as follows:

Dead loads consist of the self-weight of the fire sprinkler pipes, the vertical hangers, the seismic braces, and other miscellaneous components. In addition, it will be assumed that all pipes are filled with water.

Per NFPA 13, section 18.5.9.2, for seismic loading the weight of the system shall be taken as 1.15 times the weight of the water filled piping to account for miscellaneous hardware attached to the pipe.

Per NFPA 13, section 17.1.2.(1), vertical hangers shall be designed to support five times the weight of the water-filled pipe plus a 250 lb. point load at one pipe support at the worst-case location within a beam span. From field photos and visits, existing vertical hangers seem to be hung from every steel roof framing beam or from every other steel roof framing beam, but initial vertical hanger calculations indicate that the vertical hanger spacing might have to be smaller than the existing roof framing spacing. It is possible that historical NFPA standards had a factor of less than 5, which could account for the larger spacing of the existing vertical hangers for these buildings built between 1951 to 1996, but the earliest copy of NFPA found was 1999 which had a factor of 5. PA Structural was not able to find older copies of NFPA around the time the buildings were built to confirm this assumption.

Site Class for each building was provided by PA Geotechnical. Refer to table 16 below.

Per NFPA 13, section A.18.5.9.1, sprinkler systems are emergency systems and should be designed with an importance factor (Ip) of 1.5.

Per NFPA 13, section A.18.5.9.1, short period response parameters, Ss, used in Table 18.5.9.3 for determining seismic coefficients, Cp, are based on assuming a response modification factor of Rp = 4.5 and a component amplification factor of ap = 2.5.

Per NFPA 13, Table 17.4.2.1.(a), maximum spacing for vertical hangers of steel pipe except threaded light wall is 12 ft on-center for 1 in to 1.25 in diameter pipe and 15 ft on-center for 1.5 in to 8 in diameter pipe. Existing conditions for fire sprinkler system had vertical hangers spaced every roof frame beam or every other roof frame beam. For this stage 1 design, PA Structural design approach is to have the maximum spacing match the roof steel and timber framing spacing of around 5 to 6 ft on-center. For concrete slabs, PA Structural design approach is to have a similar maximum spacing of 5 to 6 ft on-center. Refer to Vertical Hanger Load Calculation Table in Appendix H for further details on vertical hanger spacing for each building.

Per NFPA 13, 2019, section 18.5.5.2.2, lateral sway brace spacing are not to exceed intervals of 40ft on center.

Per NFPA 13, 2019, section 18.5.6.1, longitudinal sway brace spacing are not to exceed intervals of 80ft on center.

PA Structural has provided stage 1 structural calculations for the design of vertical and seismic hangers which can be found in Appendix H. In addition, stage 1 structural calculations were provided to analyze the existing loads on the roof structures to determine how much additional loading the sprinkler system with its hangers would add to the existing roof structure. Due to lack of as-built drawing information, the analysis of the existing member capacity could

not be performed for all the buildings and would require further investigation in stage 3 design to finalize this review. For the buildings where analysis was performed, refer to Sections 6, 7 and 8 for result information.

Refer to the tables below for summary of design load parameters.

Table 16: Allowable Stress Design Load Combinations

| Equation | Density |
|------------|--------------------------------|
| 16-8 | D |
| 16-9 | D + L |
| 16-10. a | D + Lr |
| 16-10. b | D + S |
| 16-10.c | D + R |
| 16-11. a | D + 0.75L + 0.75Lr |
| 16-11. b | D + 0.75L + 0.75S |
| 16-11.c | D + 0.75L + 0.75R |
| 16-12. a | D + 0.6W |
| 16-12. b | D + 0.7E |
| 16-13. a.1 | D + 0.75L + 0.75*0.6W + 0.75Lr |
| 16-13. a.2 | D + 0.75L + 0.75*0.6W + 0.75S |
| 16-13. a.3 | D + 0.75L + 0.75*0.6W + 0.75R |
| 16-14 | D + 0.75L + 0.75*0.6E + 0.75S |
| 16-15 | 0.6D + 0.6W |
| 16-16 | 0.6D + 0.7E |

Notes:

- 1. Equations from IBC NJ edition.
- 2. D = dead load
- 3. E = earthquake load
- 4. L = live load
- 5. Lr = roof live load
- 6. R = rain load
- 7. S = snow load
- 8. W = wind load

Table 17: Material Density

| Component | Density |
|-----------|---------|
| Concrete | 150 PCF |
| Steel | 490 PCF |

Table 18: Fire Sprinkler Pipe Parameters

| Table To. The o | Table 10. The opinities ripe ratameters | | | | | |
|-----------------|---|-------|----------|-------|----------|--------------|
| Schedule | Diameter (IN) | Outer | Diameter | Inner | Diameter | Weight (PLF) |
| | | (IN) | | (IN) | | |
| 40, Black | 1.25 | 1.66 | | 1.38 | | 2.27 |
| Steel | | | | | | |
| 40, Black | 1.5 | 1.9 | | 1.61 | | 2.72 |
| Steel | | | | | | |
| 40, Black | 2 | 2.375 | | 2.07 | | 3.66 |
| Steel | | | | | | |
| 40, Black | 3 | 3.5 | | 3.07 | | 7.58 |
| Steel | | | | | | |

| 40, Black | 4 | 4.5 | 4.03 | 10.8 |
|-----------|---|-------|------|-------|
| Steel | | | | |
| 40, Black | 5 | 5.563 | 5.05 | 14.63 |
| Steel | | | | |
| 40, Black | 6 | 6.625 | 6.07 | 18.99 |
| Steel | | | | |
| 40, Black | 8 | 8.625 | 7.98 | 28.58 |
| Steel | | | | |

Table 19: Fire Sprinkler Seismic Design Parameters

| Category | Parameter |
|---|-----------|
| Seismic Design Category | See Table |
| | Below |
| Mapped Spectral Acceleration at Short Periods, SS | See Table |
| | Below |
| Mapped Spectral Response Acceleration at 1-Second | See Table |
| Periods, S1 | Below |
| Site Class | See Table |
| | Below |
| Risk Category | IV |
| Seismic Importance Factor, I.e., | 1.5 |
| Response Modification Factor, R | 4.5 |
| Component Amplification Factor, ap | 2.5 |

Table 20: Building Site Classes

| Facility / Building | Site | Seismic | Mapped Spectral | Mapped Spectral |
|---------------------|--------------------|----------|----------------------|-------------------------|
| racility / Building | Class | | Acceleration at Shor | |
| | Class | Design | | • |
| | | Category | Periods, SS | at 1-Second Periods, S1 |
| Port Newark / 111 | D | С | 0.286 | 0.059 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Dort Novemby / 055 | - - - | | 0.000 | 0.050 |
| Port Newark / 255 | D | С | 0.286 | 0.059 |
| Port Newark / 260 | D | С | 0.286 | 0.059 |
| Port Newark / 263 | D | С | 0.286 | 0.059 |
| | | | | |
| Port Newark / 301 | D | C | 0.286 | 0.059 |
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| Elizabeth Port Authority Marine Terminal / 1180 | D | С | 0.284 | 0.059 |
|---|---|---|-------|-------|
| Port Jersey / 51 | D | С | 0.285 | 0.059 |

Table 21: Dead and Roof Live Loading Details

| rable 21. Dead and ricor Live Loading Details | | |
|---|------------------|--|
| Load Type | Uniform (PSF) | |
| | (1 01) | |
| Dead Load - Deck | 3 | |
| Dead Load - Insulation | 1.5 | |
| Dead Load – Waterproof | 1.5 | |
| Membrane | | |
| Dead Load -Low Hung Ceiling Tile | 2 | |
| Dead Load – Hung Utilities | 3 | |
| Roof Live Load - Maintenance | 20 | |
| Personnel | | |

Table 22: Snow Loading Details

| Item | Value |
|----------------------------|--------|
| Ground Snow Load, pg. | 25 PSF |
| Risk Category | II |
| Importance Factor, Is | 1.00 |
| Minimum Snow Load, PS | 20 PSF |
| Surface Roughness Category | D |
| Exposure Factor, Ce | 0.8 |
| Thermal Factor, Ct | 1.1 |

Table 23: Wind Loading Details

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|------------------------------|---------|--|
| Item | Value | |
| Exposure Category | С | |
| Basic Wind Speed | 130 MPH | |
| Design Wind Pressure | 34 PSF | |
| Thermal Factor, Ct | 1.2 | |

Table 24: Building Structural Document References

| Building | QAD Report Reference | Contract Drawing | Available As-built |
|--------------------------|---------------------------|------------------|--|
| | | Reference Number | Structural Drawings? |
| Port Newark Building 111 | P05-925.650, January 2018 | PN-354.004 | Yes. PN-354.004 DWG S-4: joists 36LH9, 44LH14-SP1, 44LH14-SP2, 44LH15-SP3, max. @ 5'-6"O.C., 62 and 82ft long, drawing has load diagram for joist design |
| | | | |
| | | | |

| Port Newark Building 255 Port Newark Building 260 Office Building | P05-925.111, March 2014 P05-925.111, March 2014 | None on EDOCS PN-130.226, PN-158, PN-196, PN-226, PN226A, PN-315.011, PN-466.203, PN-466.204, PN-994.553, PN-FC-065 | No No |
|---|--|---|----------|
| Port Newark Building 260 Main Building | P05-925.111, March 2014 | PN-130.226, PN-158, PN- 196, PN-226, PN226A, PN-315.011, PN-466.203, PN-466.204, PN-994.553, PN-FC-065 | No |

| Port Newark Building 263 | P05-925.103, March 2012 | PN-110.052, PN- 110.052A, PN-1223, PN- 1235, PN-1342, PN-1495, PN-198, PN-199, PN- 502.339, PN-560.005, PN-560.007, PN-560.010, PN-560.012, PN-560.015 | Yes. 12x16 steel beam 5'-6" O.C. |
|--------------------------|---------------------------|--|----------------------------------|
| | | | |
| Port Newark Building 301 | P05-925.650, January 2018 | PN-1359, PN-140.077, PN-140.078, PN-1534, PN-183, PN-201, PN-209, PN-710.013, PN-710.015 | No |
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Traffic

Any work on or adjacent to active travel lanes shall be protected as per Chapter 6 of the MUTCD.

CODES AND STANDARDS

As a bi-state agency, the PANYNJ enforces the construction codes of the jurisdiction in which the work is performed. The PANYNJ Tenant Construction Review Manual specifies the applicable codes for each jurisdiction and outlines certain specific requirements unique to PANYNJ projects. All construction work at the NJMT shall comply with the PANYNJ and the local building codes and standards apply to construction on PANYNJ property.

The Design shall comply with all applicable Federal, State and Local laws, ordinances, regulations and codes, and the latest industry guidelines and standards including, but not limited to, the entities listed below:

Codes

- International Building Code New Jersey Edition 2018
- International Fire Code New Jersey Edition 2015
- International Mechanical Code (IMC) 2018 as amended by the State of New Jersey
- National Electrical Code 2017 as amended by NJUCC
- New Jersey Energy Subcode Compliance N.J.A.C. 5:23-3.18 ASHRAE 90.1-2016
- New Jersey Uniform Construction Code
- New Jersey Rehabilitation Subcode
- Department of Community Affairs Subchapter 8 Asbestos Hazard Sub Code (N.J.A.C. 5:23-8)
- Air Quality Permitting Program (N.J.A.C. 7:27)
- OSHA Hazard Communication Standard 29 CFR 1910.1200
- N.J.A.C section 5:17, Subchapter 17- Lead Hazard Evaluation and Abatement Code
- EPA 40 CFR Part 761
- EPA 40 CFR Part 273

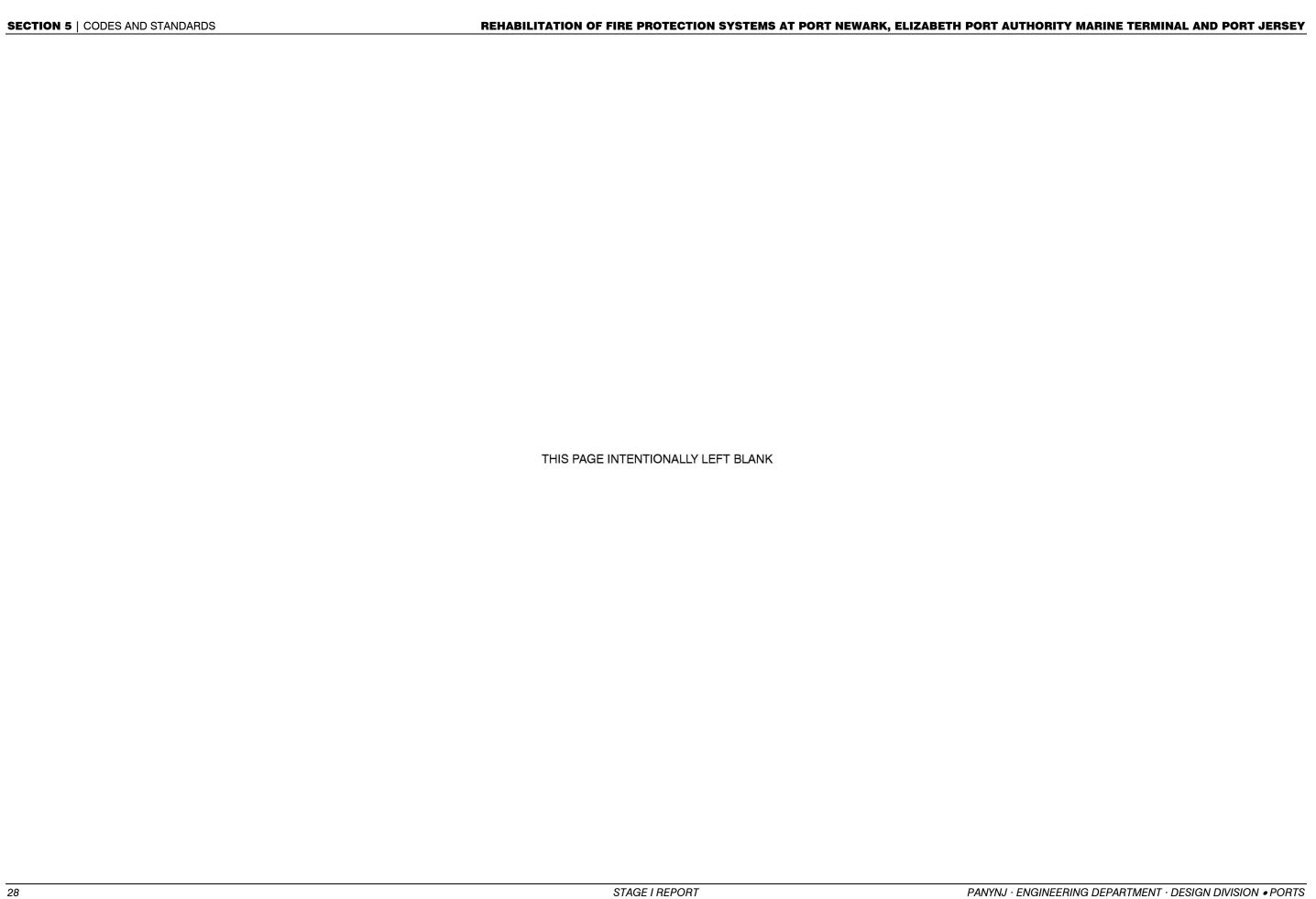
Reference Standards

- Air Conditioning and Refrigeration Institute
- Air Movement and Control Association
- American Concrete Institute 318, Building Code Requirements for Structural Concrete
- American Institute of Steel Construction
 - 360-16, Manual of Steel Construction
 - o Design Guide 15, Rehabilitation and Retrofit, Second Edition
- American National Standards Institute
- American Society of Civil Engineers ASCE 7-16, Minimum Design Loads and Associated Criteria for Buildings and Other Structures
- American Society of Heating, Refrigeration Air-Conditioning Engineers
 - ASHRAE Standard 90.1
 - o ASHRAE Applications Handbook ASHRAE Equipment Life Expectancy
- American Society of Mechanical Engineers
- American Society for Testing and Materials
- Manufacturers Standardization Society of the Valve and Fittings Industry

- National Fire Protection Association
 - NFPA 10 Standard for Portable Fire Extinguishers
 - NFPA 12 Standard on Carbon Dioxide Extinguishing Systems
 - NFPA 13 Standard for Installation of Sprinkler Systems
 - NFPA 14 Installation of Standpipe, Private Hydrants and Hose Systems
 - NFPA 20 Standard for the Installation of Stationary Pumps for Fire Protection
 - NFPA 24 Standard for the Installation of Private Fire Service Mains and Their Appurtenances
 - NFPA 25 Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
 - NFPA 31 Standard for the Installation of Oil Burning Equipment
 - NFPA 45 Standard on Fire Protection for Laboratories Using Chemicals
 - NFPA 70 National Electrical Code
 - NFPA 72 National Fire Alarm and Signaling Code
 - NFPA 75 Standard for the Protection of Information Technology Equipment
 - NFPA 76 Standard for the Fire Protection of Telecommunications Facilities
 - NFPA 90A Standard for the Installation of Air-Conditioning and Ventilating Systems
 - NFPA 90B Standard for the Installation of Warm Air Heating and Air-Conditioning Systems
 - o NFPA 101 Life Safety Code
 - NFPA 241 Standard for Safeguarding Construction, Alteration and Demolition Operation
 - NFPA 2001 Clean Agent Fire Extinguishing Systems
- Sheet Metal and Air Conditioning Contractors' National Association
- Steel Joist Institute, American National Standard SJI-LH/DLH-2010
- Underwriters Laboratories

PANYNJ Standards

- PANYNJ Construction Tenant Review Manual
- PANYNJ Electrical Design Guidelines
- PANYNJ Structural Design Guidelines
- PANYNJ Mechanical Design Guidelines
- PANYNJ Climate Resilience Guidelines



PORT NEWARK

BUILDING 111

Architecture

Existing Conditions

Building 111 is located on the east side of Corbin Street between Marsh Street and Tyler Street. According to the 2010 Quality Assurance Division (QAD) report the building serves as a pump station for the Port Newark domestic and firefighting water systems. There are two adjacent circular water storage tanks which are not included in the scope of this report. For Building 111, the architectural team conducted a walkthrough visual field survey of the building interior to verify the layout of existing building spaces. Subsequently, a review of the provided Port Authority Quality Assurance Building Condition Inspection Report was undertaken. Building 111 is a one-story reinforced block building, approximately 17' high, with full-height storefront window system infill primarily along its west side. The building is approximately 128' long by 82' wide for a total area of approximately 10,500 SF. The floor space is generally open except for rooms partitioned in the northeast corner. Pump machinery is located towards the south and west sides of the open area. These rooms include entry vestibule, toilet room, control room/office, generator room, fuel tank room and electrical room. The fuel storage, generator and electrical rooms are each constructed with concrete masonry walls which continue to the underside of a metal roof deck below the level of the main roof. This metal roof deck is supported on steel beams with a concrete cover. A suspended ceiling system with 2' x 4' acoustical lay in panels is provided in the vestibule, toilet room and control room/office. The building has a flat roof system composed of a corrugated metal deck. The floor system construction is a concrete slab.

Reference the code analysis drawings in Appendix G for information related to occupancy, construction type and fire resistance ratings.

<u>Assumptions</u>

Although a comprehensive condition survey was not performed, existing conditions visually identified from the building interior which appeared to compromise the ability of the exterior envelope to maintain a habitable interior environment are noted in the evaluation section as required. The building envelope should be maintained, repaired, or upgraded as required to maintain an interior environment which sustains the long-term operational state of fire protection equipment. This includes prevention from premature corrosion or damage to systems from flooding events.

It should be noted that Building 111 is a part of an ongoing NJMT Roofs Rehabilitation Stage 1 project. The results of that study should be referenced for pertinent repair items regarding the facility's roof. Note that the Roofs study did not evaluate the integrity of the building envelope.

Also, note that in accordance with the flood protection elevation determinations by the Port Authority, the flood mitigation measures recommended in Port Newark NJMT Building 111 Electrical and Mechanical Equipment Resiliency Stage I Report (PID # 16501000) should be considered. The architectural aspects of the following options in the report include:

- Option 1: Elevate all critical electrical and mechanical equipment to meet the DFE in a new building addition and on exterior enclosed platforms.
- Option 2 Dry flood proof the building by creating a watertight barrier around the building perimeter using stop logs and sealing windows.

• Option 3 – combines elements of first two options by elevating critical electrical and mechanical equipment and dry flood proofing other parts of the building.

Evaluation

No significant architectural issues were noted during the field survey that would compromise the interior environment or sprinkler system operation.

Recommendations

- Acoustical ceiling tile replacement due to sprinkler heads replacement.
- Repair and patch wall at new fire department connection in brick with block backup exterior wall.
- Roof repairs and flood mitigation measures referenced in the Assumptions section above should be undertaken.

Civil

No Civil related scope of work identified on Building 111 that is required by the sprinkler system at this point.

Electrical

Existing Conditions

Building 111 is divided up into pump room, generator room, electric room, office, and fuel tank storage room. As per 1996 as-built drawings PN-354.004, there was a single Simplex fire alarm control panel installed near the building entrance inside the pump room. However, per field inspection this configuration has changed. Inside the office area and just outside the door the electrical room there are several fire alarm system components installed include the main fire alarm control panel, (4) fire alarm control/communicator panels, and (2) battery backup enclosures. There is also an unidentified red enclosure with red indicator light in this location which appears to be no longer in service. There appears to be an existing communicator panel, but during Stage 3 will need to verify with AFA as to whether this is communicating with central station. The fire alarm panel appears to be tied into the Main Control Panel for the building as per 1996 as-built drawings. The Main Control Panel seems to work as an annunciator panel for alarms in addition to monitoring pump and tank controller levels and provides selector switches and indicator lights for pump control. Nothing is obstructing opening of fire alarm panel enclosures but there is a shelf with binders/books installed directly underneath some of the panels which can make access/maintenance work more difficult. The office area is sprinklered and contains smoke detector and horn/strobe. The bathroom area inside the office is also sprinklered and contains strobe (could not identify if there is horn too per visual inspection). The main fire alarm control panel appears to be fed from panel RP (208/120V, 3PH) circuit #3 even though there is writing in black marker on the fire alarm control panel itself which states "Power Panel 2P circuit #2". The as-built drawings showed the fire alarm panel supplied by panel RP circuit #1 so since the panel schedule has since been updated it is assumed that panel RP is still the primary power supply. Circuit breaker #3 does not have marking as per NFPA 72 section 10.6.5.2. Panel RP also appears to serve some of the heaters for the generator and pumps along with generator battery charger and day tank controls. The main fire alarm control panel is a Radionics panel which is maintained by AFA Protective Systems. All the other control/communicator panels appear to be Radionics brand equipment as well, but this should be verified with AFA. One of the two battery backup enclosures is Altronix brand. The electrical room is not sprinklered and contains a manual pull station box and a smoke detector. The generator room is sprinklered and contains horn/strobe and smoke detector. The fuel tank storage room is sprinklered and contains smoke detector. The pump room is sprinklered and contains remote fire alarm annunciator panel, horn/strobe, and manual pull station box. Inside the pump room there are several fire pumps which are backed up by the emergency generator located in the generator room. The fire pumps also appear to have tamper switches, flow switches, and supervisory signals connected to the main fire alarm system. The fire pump controller is listed as 460V, 3-phase with built-in fire pump transfer switch for emergency power all contained within NEMA 3R rated enclosure (HP rating varies with pump). The booster pump disconnect switch is rated for 400A, 600V. There is a red telephone by one of the rolled-up doors labeled as "AFA HOT LINE" which needs to be verified during Stage 3 with AFA whether this is still in service and if so, what function it serves. All fire alarm devices appear to be in good working condition.

Assumptions

- The base building fire alarm system is operating normally, and the existing sequence of operations provides appropriate notification and signaling. This project scope only evaluates required additional or replacement signaling as per other discipline recommendations in this report. All new fire alarm related equipment added will require testing and verification by AFA and witness testing by QAD.
- Any existing sprinkler system devices not being replaced as per recommendations in this report shall be functionally tested against the requirements of NFPA 72 and transmit supervisory and alarm signals in compliance with NFPA 101. This should be verified with AFA.
- The existing fire alarm system, initiating devices, and notification devices outside the scope of this project meet the design criteria as per NFPA 72.
- The existing lighting system, including emergency, has not been evaluated as this is outside the project scope. Any lighting modifications pertain to Architectural recommendations for ceiling replacement in coordination with replacement of sprinkler piping system.
- The existing fire pump and emergency power supplies are sized adequately. The sprinkler heads are being
 replaced in kind as per Plumbing and Fire Protection recommendations. Therefore, no modifications are
 being made to the overall system distribution requirements and it is assumed the original installation
 complies with NEC requirements.
- The existing electrical distribution equipment in the building is outside the project scope requirements. Only
 condition of electrical equipment directly correlated with fire alarm system has been considered.

Evaluation

No fire alarm system issues noted during the site survey that would compromise the sprinkler system operation. Normal power and emergency power supply are provided for existing fire pump system. Occupancy group classification for building is primarily S-2 with a secondary occupancy of B as per code analysis drawings in Appendix G. As per NFPA 101 section 6.1.14.1.3, where incidental to another occupancy, the storage (S-2) occupancy is permitted as the predominant occupancy and is subject to provisions of the code for said occupancy. Therefore, this building is evaluated under criteria of S-2 occupancy. The area is provided with sprinkler protection as per NFPA 101 section 42.3.4.2(3) with a minimum of one manual fire alarm box. There also appears to be a manual pull box located all exit doorways as per NFPA 72 section 17.15.9.4. Further investigation would be required to verify if the travel distance to the nearest manual fire alarm box does not exceed 200 feet as per NFPA 72 section 17.15.9.5. The adequacy of the existing sprinkler coverage is as per the assessment of the Plumbing and Fire Protection section. The electrical room is the only area not provided with sprinkler coverage but uses a smoke detector for automatic fire detection in accordance with 42.3.4.2(2) with a minimum of one manual fire alarm box. The existing branch circuit feeding the fire alarm control panel needs to be appropriately marked as per NFPA 72 section 10.6.5.2. A smoke detector is installed near existing fire alarm control panel as per NFPA 72 section 10.4.5 however it should be verified that it is within 15 feet as per PANYNJ Electrical Design Guidelines. Any modifications to sprinkler system must provide supervisory and alarm signaling as per NFPA 101 section 9.7.2 for automatic sprinkler system.

Recommendations

It is recommended to replace all fire alarm I/O in kind that are affected by sprinkler system work as noted in Plumbing and Fire Protection recommendations. Verify smoke detector near existing fire alarm panels is within 15 feet horizontally. Primary power disconnecting means for fire alarm panels must be marked appropriately as per NFPA

72 section 10.6.5.2. During Stage 3, Verify with AFA if current system communicates with central station. If not, then communicator panel must be configured so that signals are sent to approved alarm receiving facility. Verify functionality of all new and existing initiating and notification devices related to fire protection system and update programming of existing fire alarm control panels accordingly.

Environmental

Existing Conditions

An Environmental survey with sample collection and testing was completed on the sprinkler system and adjacent areas. The intent of this survey was to locate and identify all Asbestos Containing Materials (ACM), Lead Paint, Polychlorinated Biphenyls (PCBs), and Universal Wastes that could be impacted by the renovation of the sprinkler system.

The following five (5) homogeneous materials were inspected and sampled for ACM:

Table 25: ACM Testing Matrix

| Table 25. Acid Testing matrix | | | | |
|---|--|--|--|--|
| Suspect Material | Location | | | |
| 2' X 4' Suspended Ceiling Tile | 1st Floor – Office Space, Lobby & Bathroom | | | |
| Cinder Block Wall Mortar | 1st Floor –Lobby, Bathroom & Generator Room | | | |
| Soft Concrete Decking | 1st Floor – Above Pump Room, Above Generator Room & Above Electric Room | | | |
| Expansion Board (Brown) on Decking Wall Perimeter | 1st Floor – at Pump Room & Generator Room Walls | | | |
| Vertical Expansion Caulking on CMU Wall | 1st Floor - Generator Room, Pump Room & East wall | | | |

Based upon visual inspection and analytical results of bulk samples collected, none of the materials tested are asbestos-containing (> 1%).

<u>Assumptions</u>

The existing sprinkler system pipes are painted. The paint was not tested but is assumed to be lead-containing.

Recommendations

The assumed lead paint on the sprinkler system does not have to be completely abated/removed, but an estimated 10% of the paint on the sprinkler system will be impacted, and thus will require incidental abatement/removal. The 10% of the existing sprinkler system to be impacted is estimated to be 102 linear feet.

Mechanical

Existing Condition

Building 111 consists of an office space, bathroom, controls and electrical equipment room, generator room, and diesel and electric fire pump room. Existing HVAC system is comprised of eight (8) indirect gas-fired unit heaters (UH), four (4) exhaust fans (EF) and one (1) split system type air conditioner (AC) unit. The gas-fired UHs and EF-1 and EF-2 serve the fire pump and valve areas.

Assumptions

There is no HVAC assumption.

Evaluation

Building spaces are maintained at 65°F temperature setpoint. Building spaces are provided with adequate heating to maintain the wet sprinkler system above the required 40°F as per NFPA 13 Chapter 16.4.1.3. Existing HVAC equipment including ceiling attached gas-fired indirect unit heaters and ductwork do not obstruct the fire sprinkler replacement work.

Recommendations

There is no HVAC recommendation.

Plumbing and Fire Protection

Existing Conditions

Building 111 was constructed in 1997, its a 1 story reinforced concrete building, with approximate length of 128' by a width of 82' by a height of 17' with approximate area of 10,500 SF. The building serves as a pump station for the Port Newark domestic and fire water systems. The building is divided up into pump room, generator room, electric room, office, bathroom, and storage room. The entire building is fully sprinklered with a wet, tree system served by 4" alarm check valve and an inspector's test connection southeast corner of the building. There is one (1) 4"x 2-1/2" x 2-1/2" fire department connection (FDC) northwest corner of the building that supplies the wet sprinkler system. There are two (2) incoming water services one 20" for domestic water and second 24" which is a combination domestic and fire service entering the west side of the building. The third incoming domestic water service enters south into the building is split into three (3) supplies that go into reduced pressure zone (RPZ) backflow preventers. There is additional take off from the fire service that splits into two (2) supply lines that feed two (2) RPZ's which in turn feed the domestic water jockey pumps. There are two (2) diesel and two (2) electrical fire pumps with capacity 1500 @ 80psi with associated jockey pumps with that serve Port Newark. Building 111 pumping station also serves as a backup for the fire protection system at Elizabeth Port Authority Marine Terminal.

Assumptions

Based on historic record, the hydraulic capacity of the pumping station is adequate for the water demand. The systems are inspected tested and maintained in accordance with current codes and the agencies fire protection life safety (FPLS) Manual. The "Inspection, Testing and Maintenance (ITM) requirements for all FPLS throughout the building are maintained.

Evaluation

Evaluate existing sprinkler system to maintain code compliance, enhance the system effectiveness, reliability, and reduce the operation and maintenance cost. The building sprinkler system is approximately 24 years old and appears to be in relatively good shape, however, the sprinkler heads have exceeded their useful lives and require replacement. Therefore, based on the age of the system the sprinklers heads should be replaced.

There were no major issues regarding the building fire protection system from the facility maintenance staff.

Replace the branch piping, miscellaneous pipe supports, and existing sprinkler heads.

Structural

Existing Conditions

Recommendations

For Building 111, the structural task lead performed a review over the as-built drawings, the latest Port Authority Quality Assurance Division condition inspection report (P05-925.650, January 2018) and field photos of other disciplines to determine the condition of the fire sprinkler system vertical hangers, seismic braces, and roof framing that the sprinkler pipes are attached to. Building 111 is a single-story pump station that consists of flat, corrugated metal deck roof spanning between steel open web joist beams (spaced 5'-6" O.C.) supported on concrete masonry

unit bearing walls. The fire sprinkler system spans through the open web joists and is supported off the top chord of every other joist with c-clamps, threaded rods, and swivel rings. The main line has seismic lateral sway braces made of steel rods.

Assumptions

The following are the assumptions used to develop the structural cost estimate:

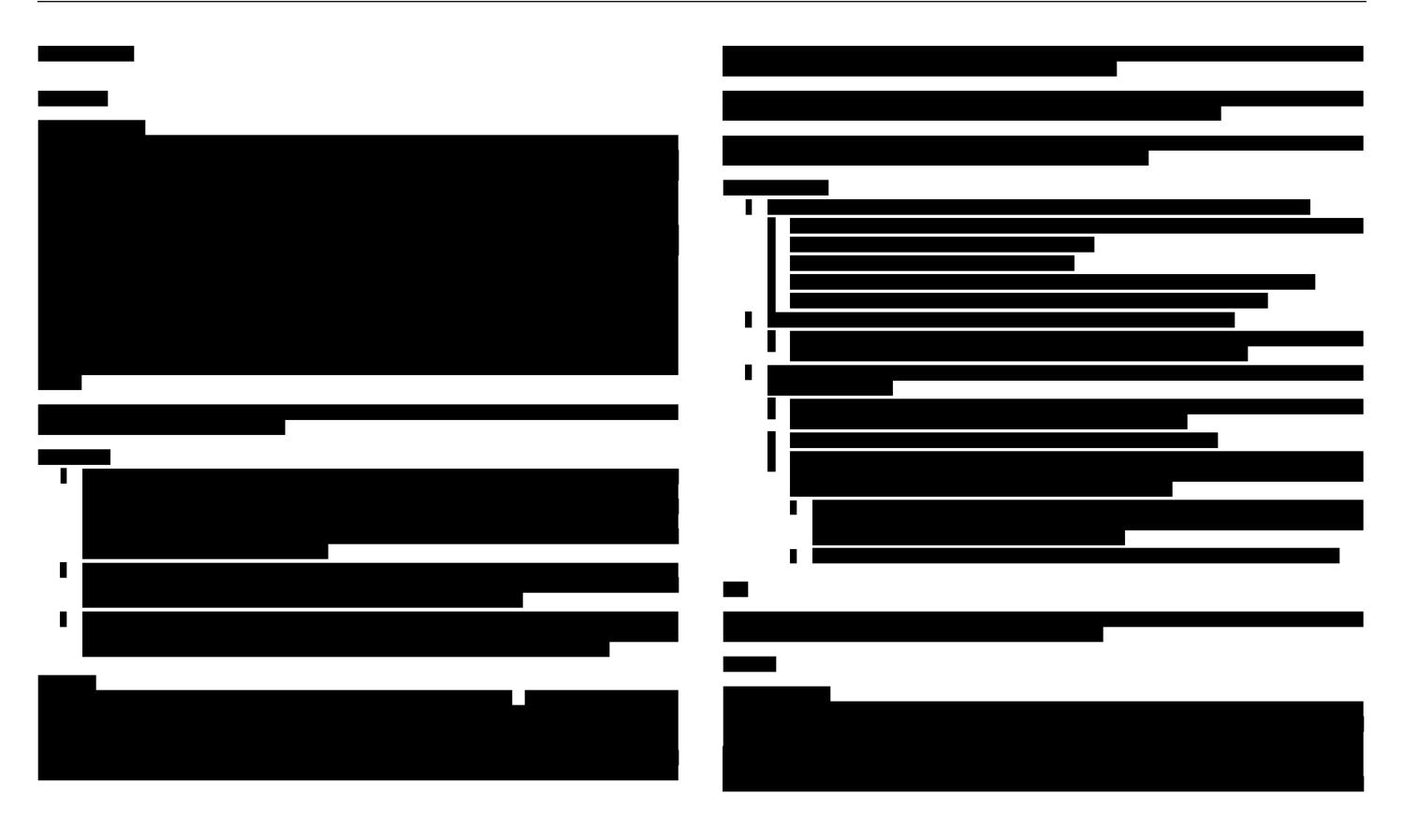
- The linear feet of main and branch fire sprinkler pipe installation provided in the cost estimate by the Plumbing and Fire Protection group will be used in the structural estimate to quantity the vertical hangers and seismic bracing removal and installation.
- The Plumbing and Fire Protection group linear feet of main and branch fire sprinkler pipe removal and installation assumes that all sprinkler pipes in each building need to be replaced. This means that the quantity of vertical hangers and seismic bracing provided by the Structural group are based on worst case conditions.
- The structural estimate assumes a production rate of 6 vertical hanger or seismic brace removal or
 installation per hour. The estimate also assumes that the tenant will assist in relocation of their merchandise
 to accommodate contractors' access to roof section where vertical hangers and seismic braces need to be
 removed or installed.

Evaluation

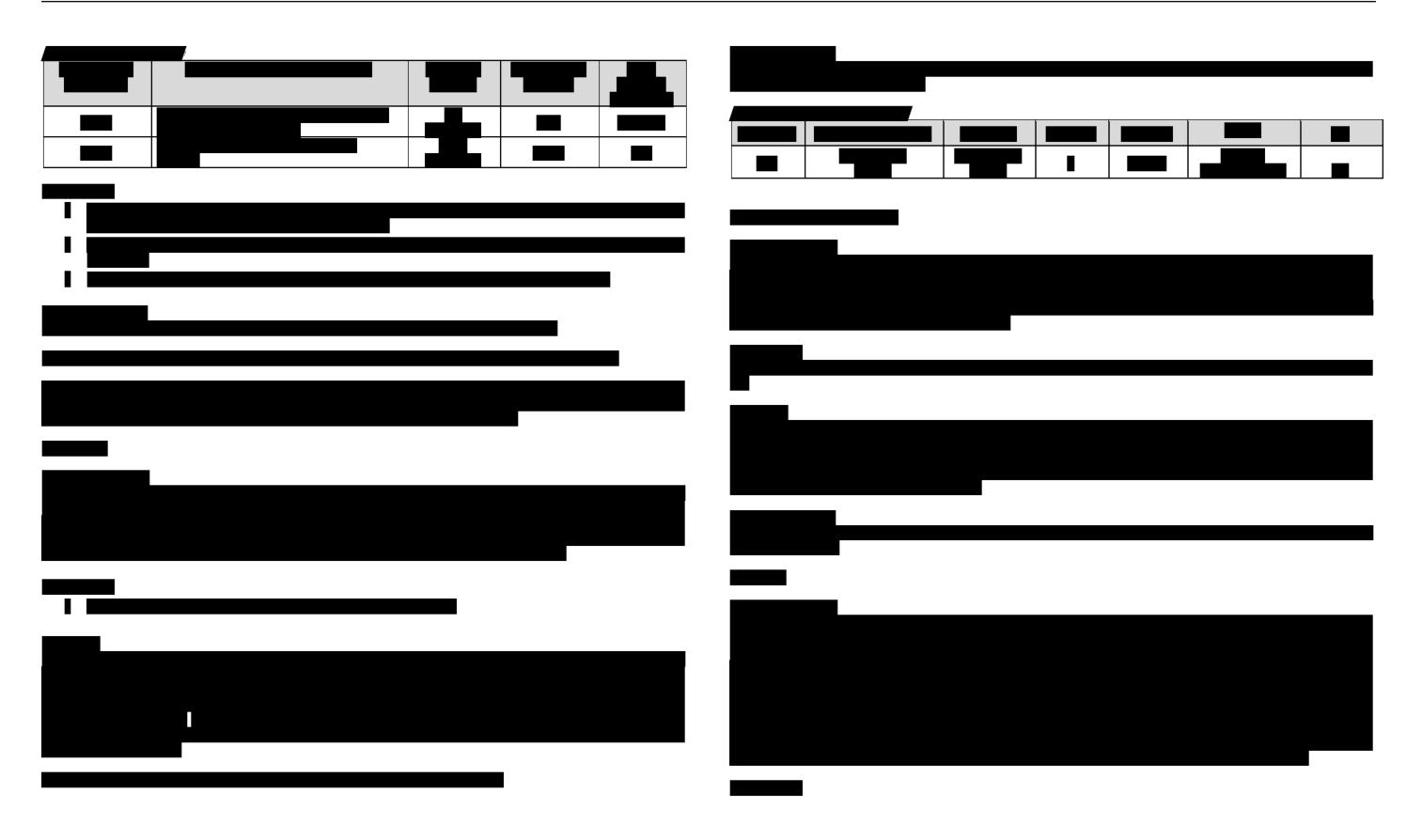
- Structural task leader reviewed available field photos of the existing vertical hanger and seismic braces to evaluate their conditions and reviewed the Quality Assurance Division condition survey reports for any structural roof priority repairs that might affect the sprinkler pipes attachment to the roof structure.
- Available field photos and Quality Assurance Division condition survey reports review showed no significant structural issues that would compromise the feasibility of the sprinkler system attachment to the roof member.
- Scope of the structural evaluation was limited to the existing roof members, and their availability of supporting the additional load from the proposed sprinkler system.
- The structural task leader preformed preliminary analysis of the existing roof loading and sprinkler loading on the existing roof beam members and found that they were not overstressed.

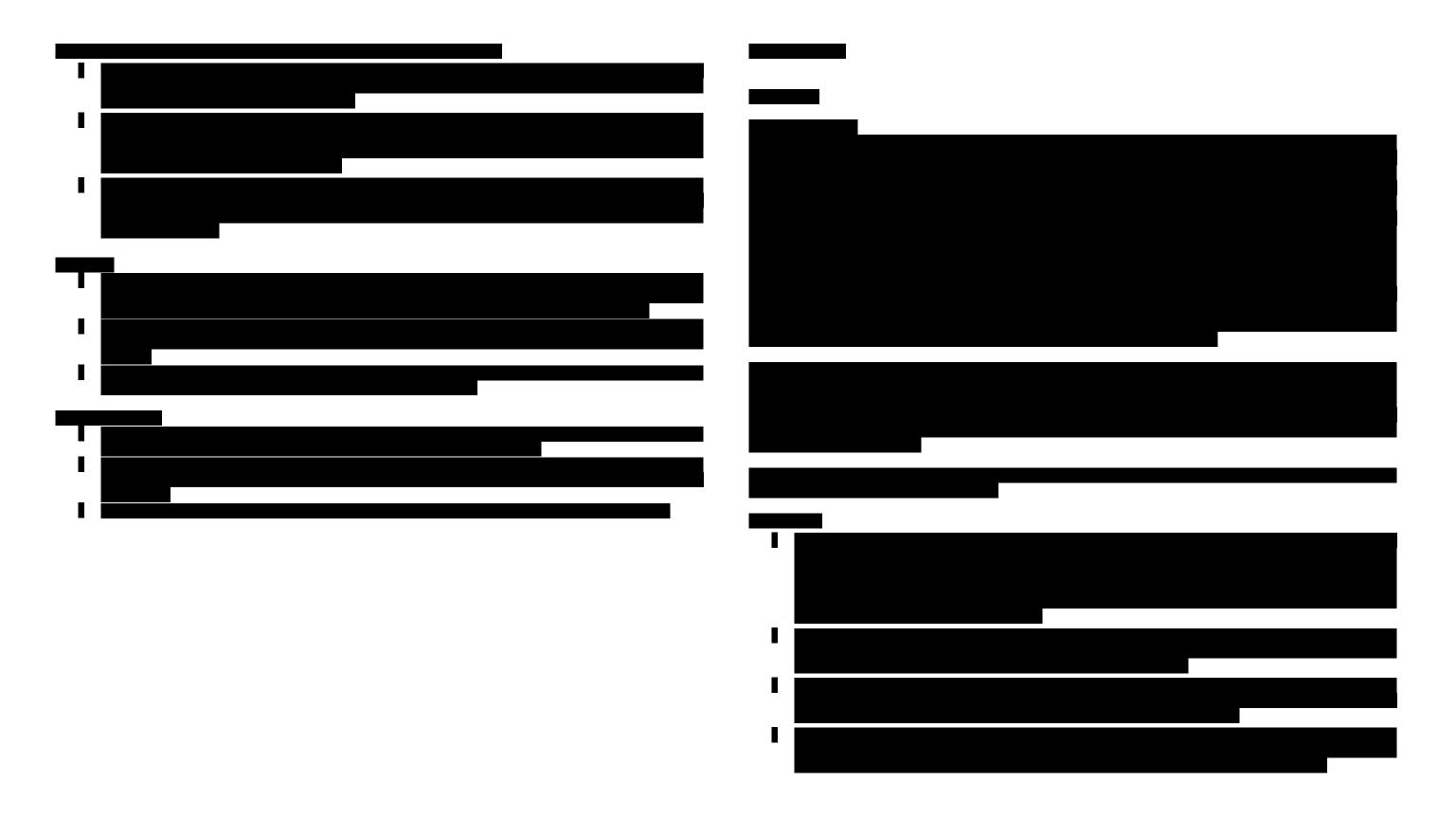
Recommendations

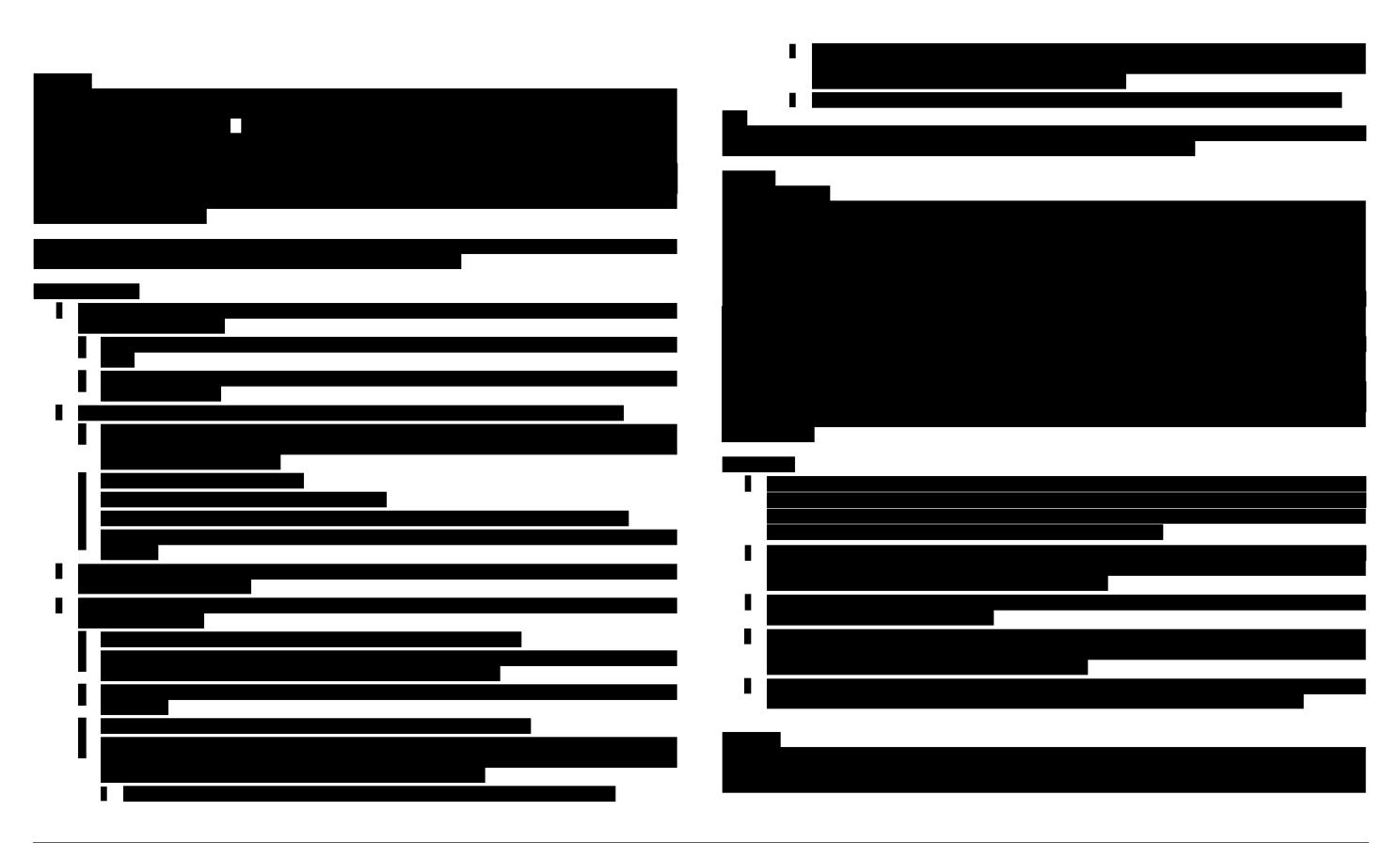
- Replace all vertical hangers in kind, as directed by the Plumbing and Fire Protection group. Install seismic braces for main pipe (diameters equal to or greater than 3 inches in diameter).
- Site specific structural analysis will be required in stage 3 design, based on the final sprinkler layout. Due to the larger quantity of utilities hung from the existing roof beam members, recommend increasing existing utility load to a value higher than 3 psf.

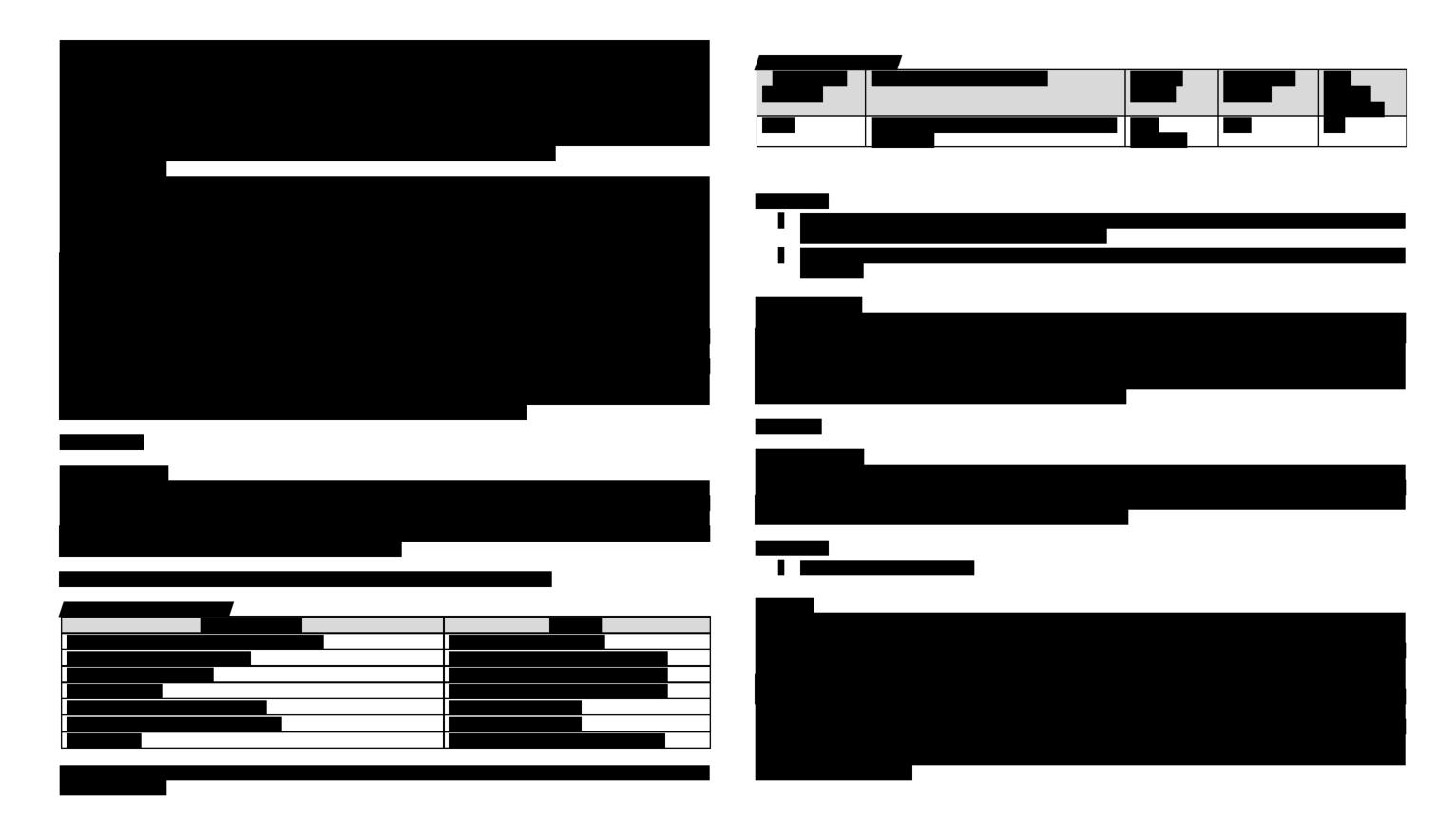


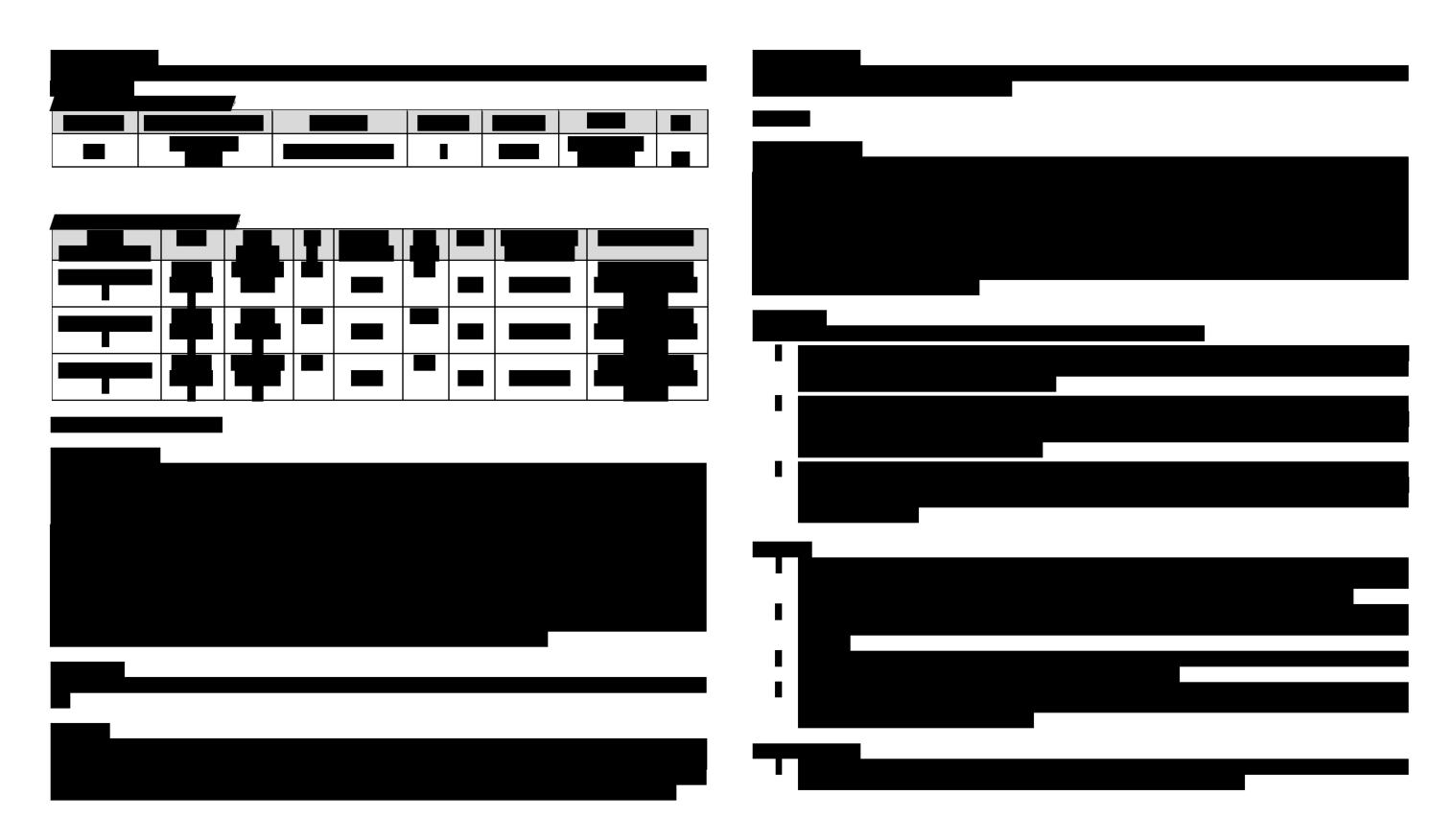


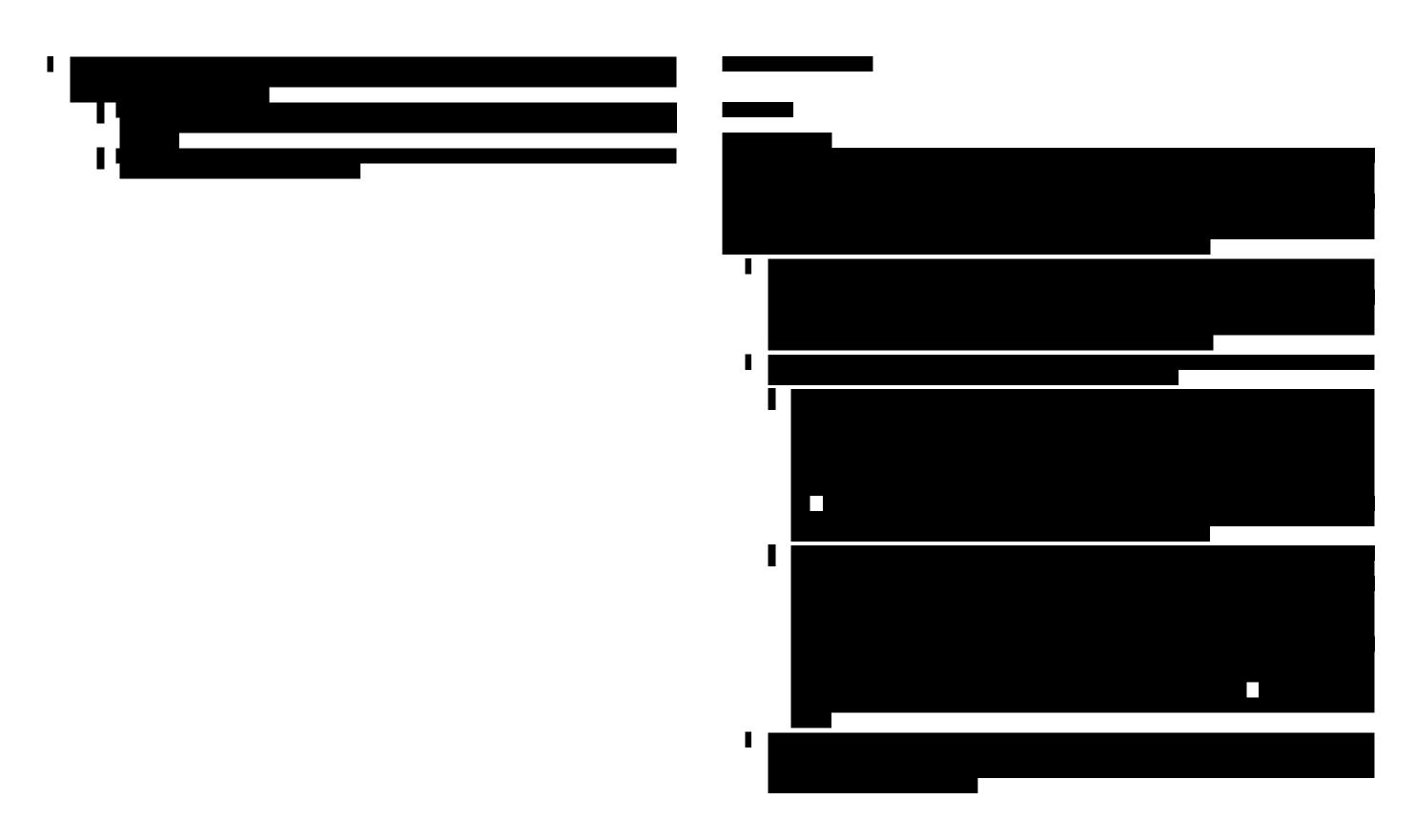


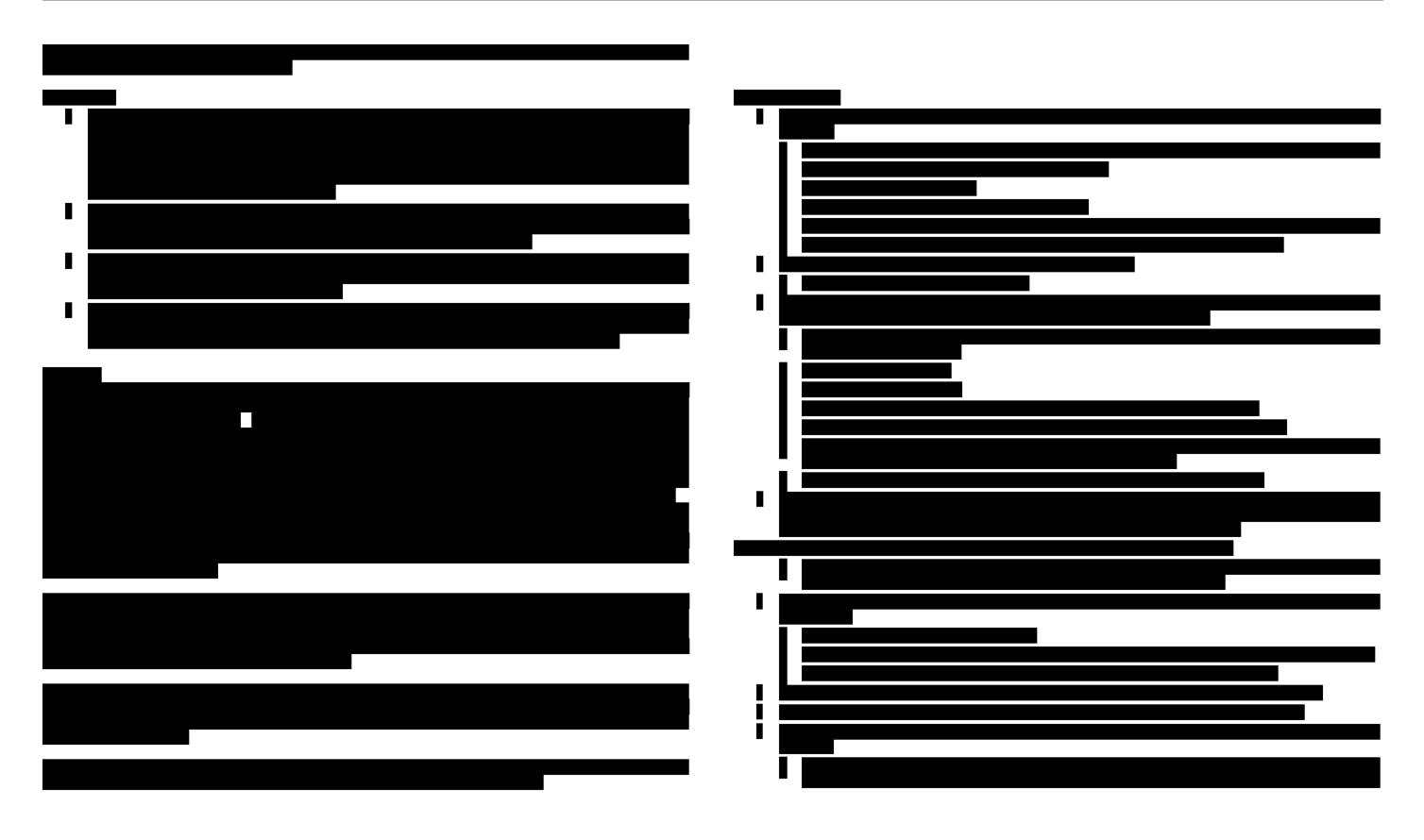






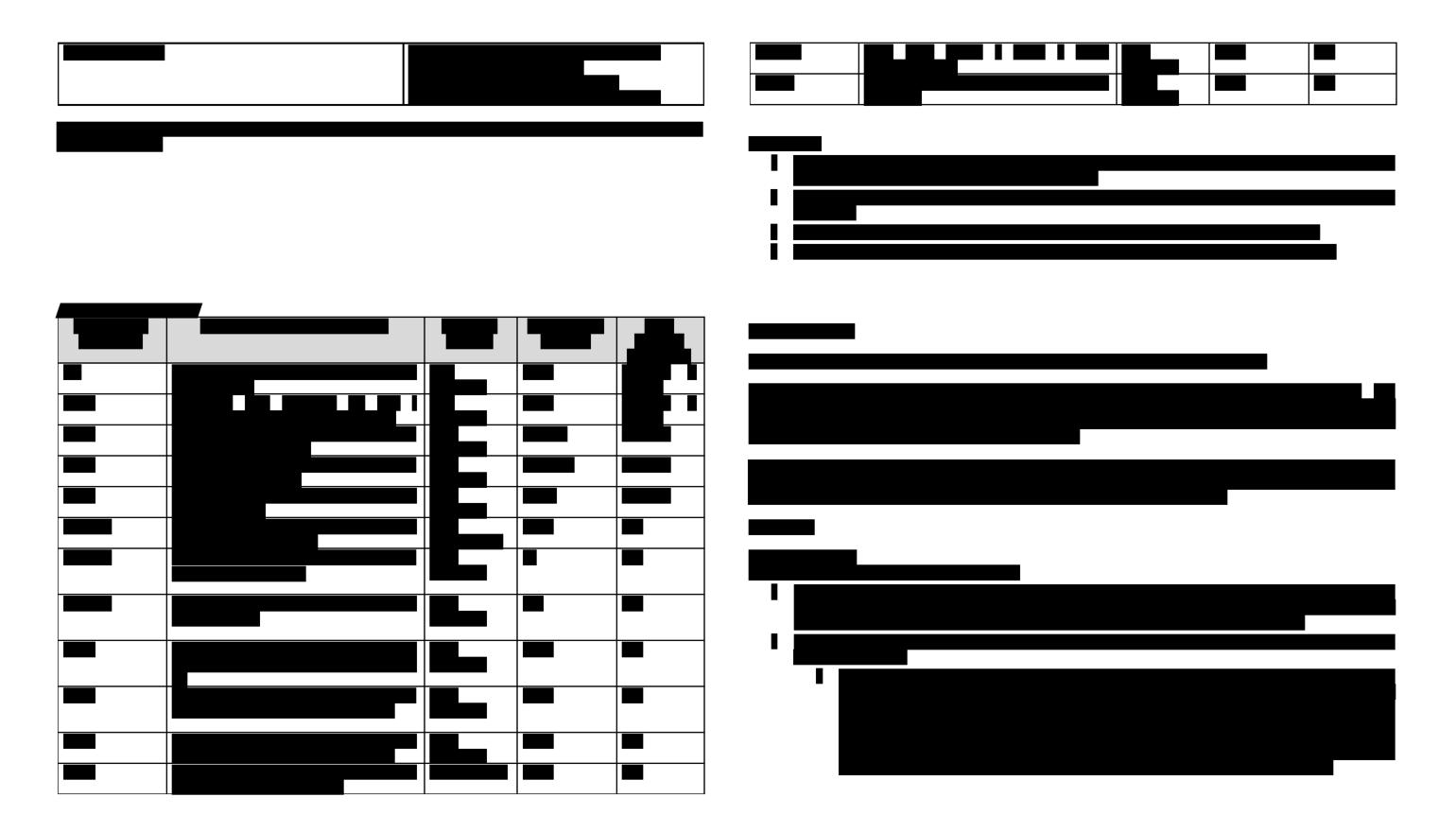


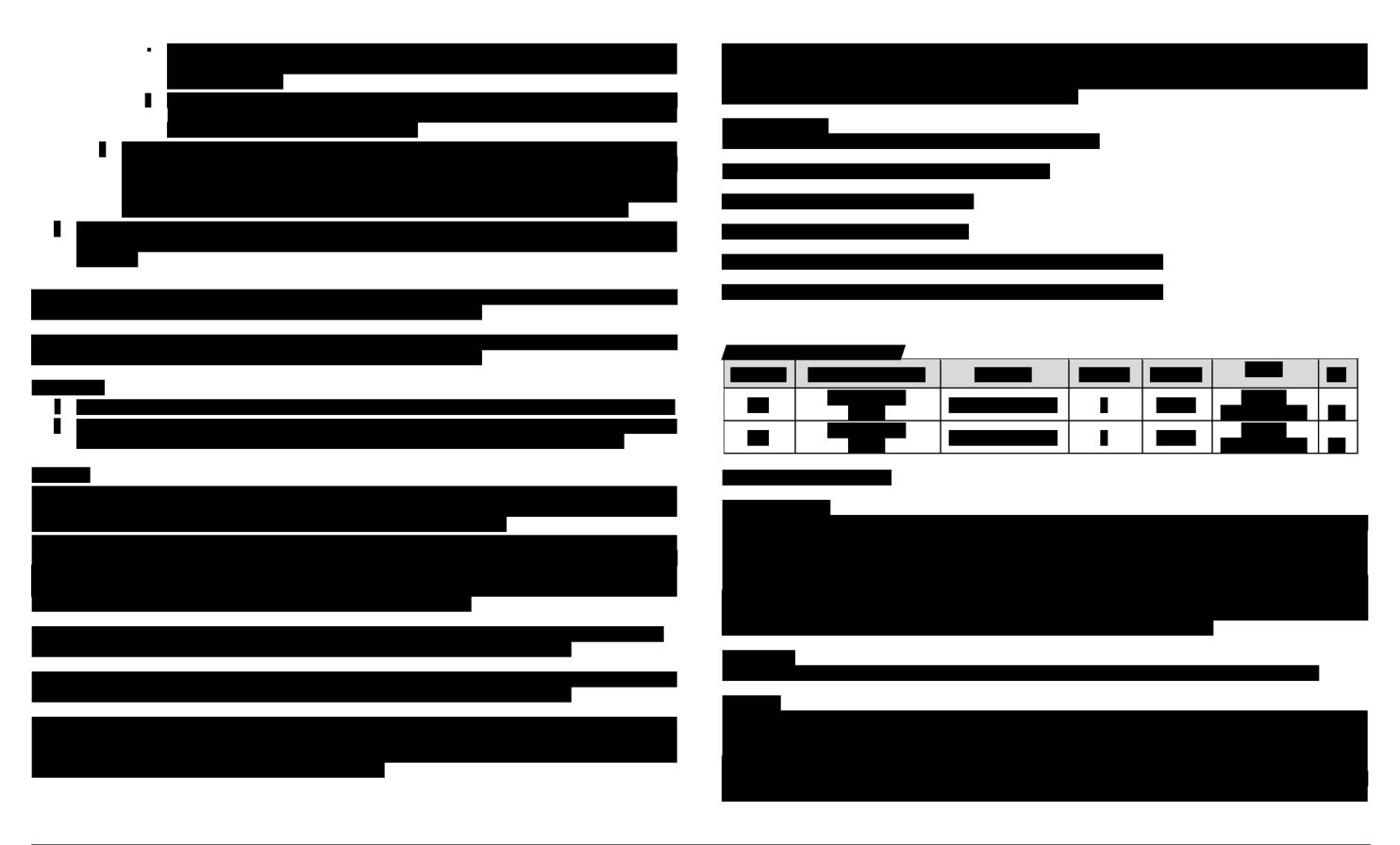


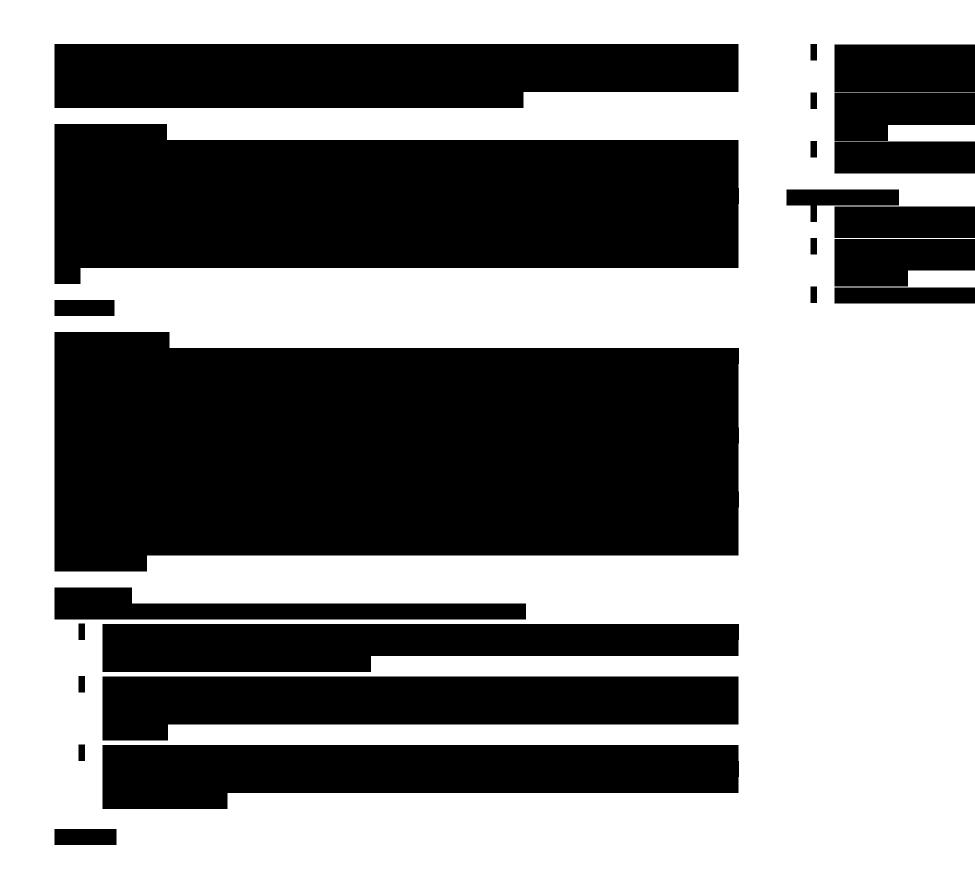


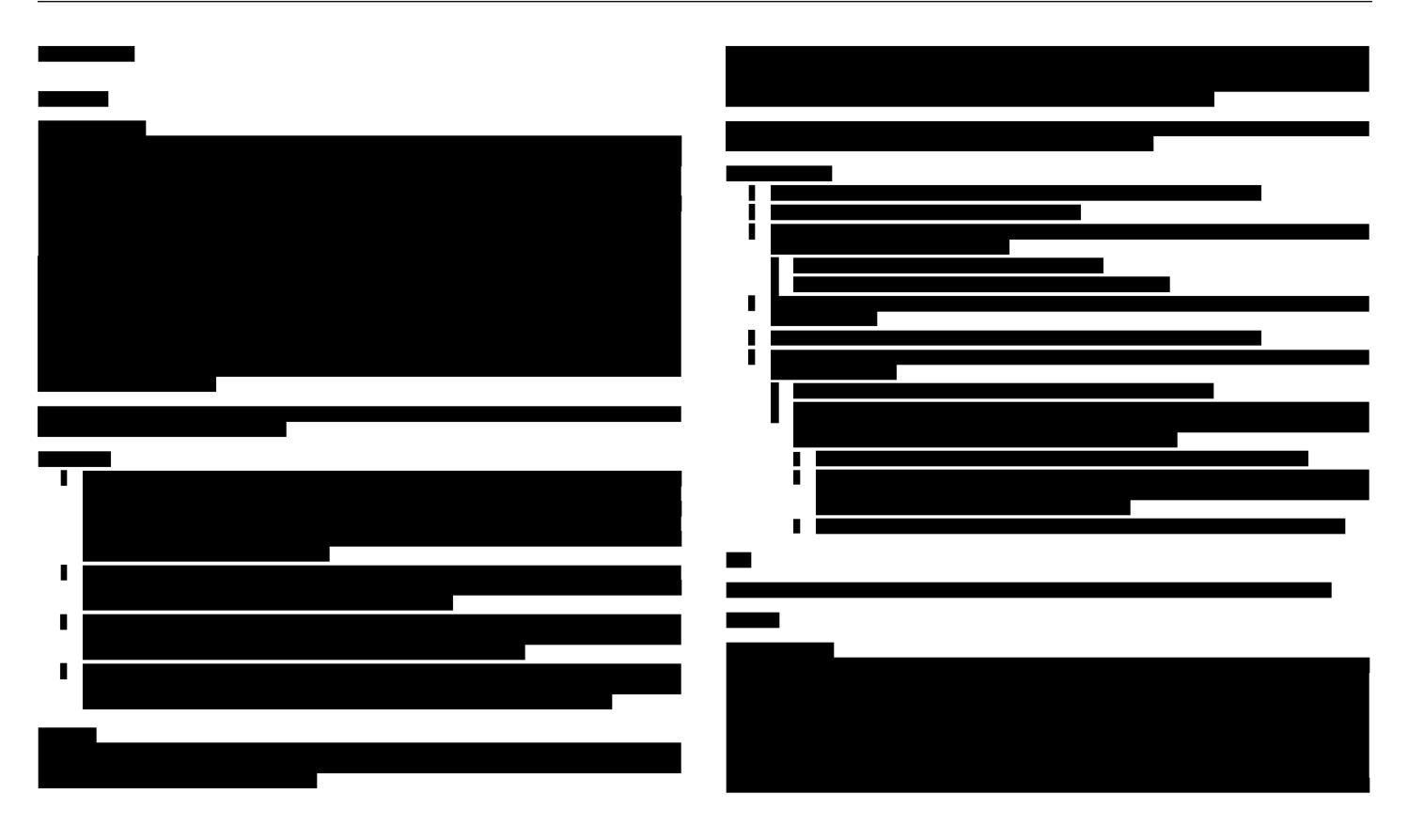




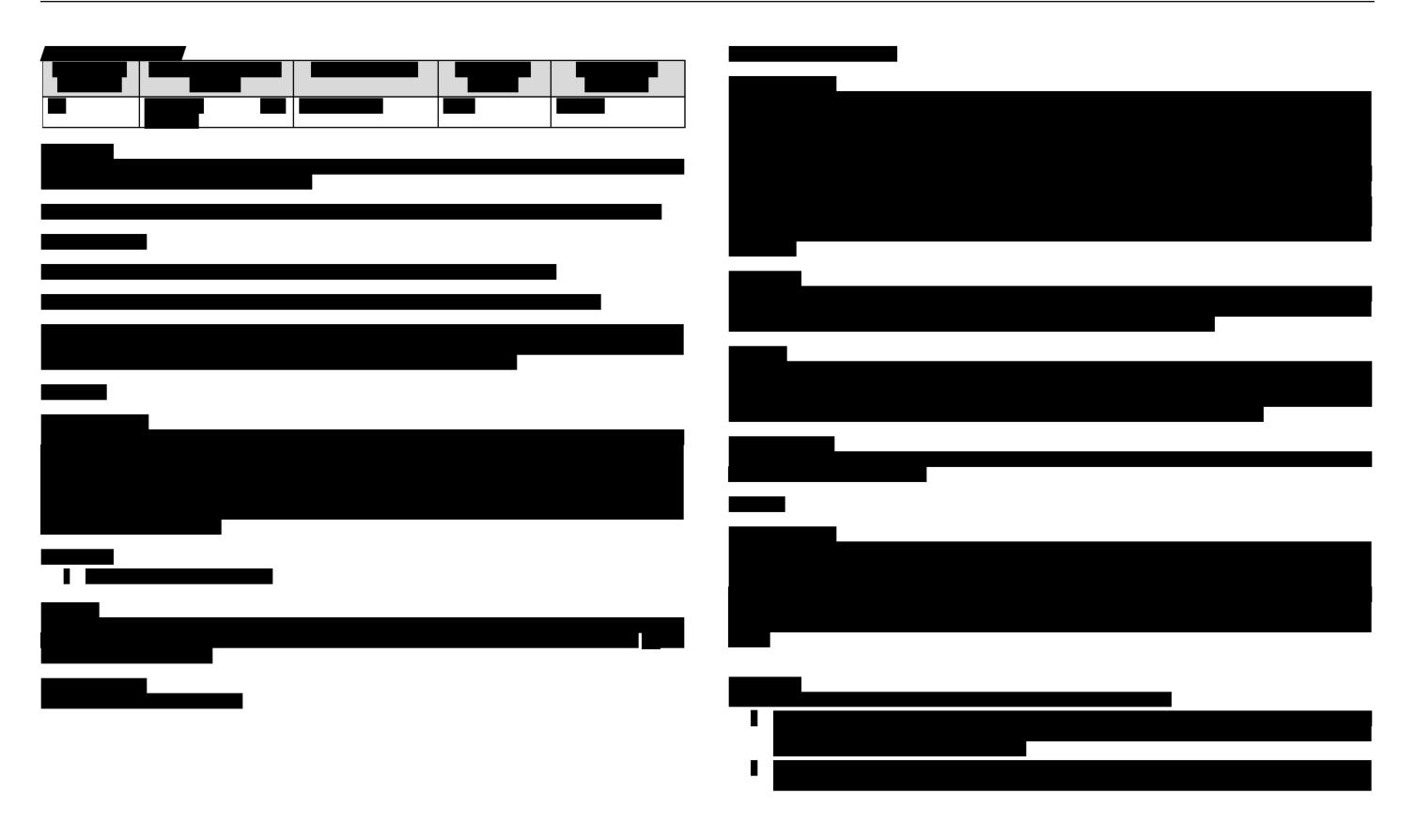


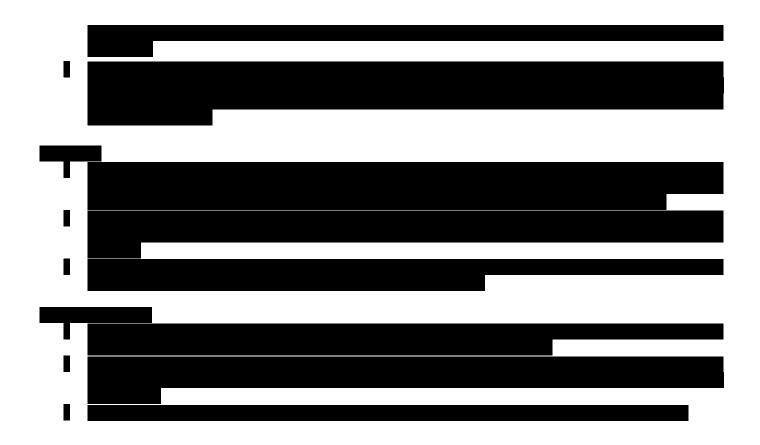












BUILDING 255

Architecture

Existing Conditions

Building 255 is located on Port Street just west of the intersection of Port and Marlin Streets. The building is occupied by the Port Newark Sign Shop. For Building 255, the architectural team conducted a walkthrough visual field survey of the building interior to verify the layout of existing building spaces. Subsequently, a review of the provided Port Authority Quality Assurance Building Condition Inspection Report was undertaken. Building 255 is a one-story steel frame structure which measures approximately 110 ft by 158 ft with a total floor area of 17,075 SF. Steel columns support four rows of steel girders running east-west which support open web steel joists and a flat gypsum panel roof system. The building's interior height is approximately 25 ft. The exterior walls consist of a 6 ft high concrete grade beams which supports a reinforced translucent panel system that extends to the roof line. The building is currently being used by the Port Authority for fabricating signs.

Offices and support spaces including bathrooms, break rooms and locker rooms occupy the southeast corner of the building. This includes a modular office structure along the south wall and the building entrance vestibule at the southeast corner of the building. The garage area occupies the north side of the building and has roll up door access to a rear yard and provides access to the sprinkler room and the electrical room. An elevated loading dock runs the entire length of the garage space and the sprinkler room, and several storage rooms are accessed directly from this level. The electrical room is accessed from inside the garage space at grade level. The remainder of the building's interior spaces are open workspaces or storage rooms.

The office spaces have partial height partitions with a combination of gypsum board, and ceramic tile finishes and partial height block wall partitions. The office areas contain suspended lightweight acoustical tile in 2' x 2' or 2' x 4' configurations and perforated metal 1' x 1' layouts. The open work areas, the garage and storage room are open to the structure above and have full height concrete block partitions. The floors are concrete throughout with vinyl tile and ceramic tile finishes in the office areas.

Reference the code analysis drawings in Appendix G for information related to the building occupancy classification, construction type and fire resistance ratings.

<u>Assumptions</u>

- Although a comprehensive condition survey was not performed, existing conditions visually identified from the building interior which appeared to compromise the ability of the exterior envelope to maintain a habitable interior environment are noted in the evaluation section.
- It should be noted that Building 255 is a part of an ongoing NJMT Roofs Rehabilitation Stage 1 project. The results of that study should be referenced for pertinent repair items regarding the facility's roof. Note that the Roofs study did not evaluate the integrity of the building envelope.
- In accordance with the flood protection elevation determinations by the Port Authority and the designation of the fire protection valves as critical infrastructure one or a combination of the options indicated in the current Port Authority Climate Resilience Design Guidelines are recommended.
- Site observations during field surveys indicate that spraying operations occur in the central space between C.L. C & D and 3 & 4.
- Quantities of hazardous materials are within the prescribed NJ Building Code limits and stored in appropriate containers.

 We presume that wood framed structures, where they exist in non-bearing partition walls, are permitted by the current codes in buildings of Type IIB construction when materials are fire retardant treated. A review of these interior constructions should be undertaken in future stages to verify their continued use.

Evaluation

It appears the application of flammable finishes occur in the area indicated in assumptions section above. In accordance with NJ Building Code section 307.1.1(1) these spaces should conform to the relevant requirements in Section 416 of the Building Code and Chapter 2404 of the Fire code of New Jersey (IFC 2015). Spraying spaces or limited spraying spaces shall be operated and ventilated accordingly. Noncombustible spray curtains should be provided to restrict the spread of flammable vapors in spraying spaces. Other fabrication or application spaces or enclosed rooms should be identified and classified in accordance with the applicable sections of the NJ codes.

No other significant architectural issues were noted during the field survey that would compromise the interior environment or sprinkler system operation. Replacement of the sprinkler system as indicated by the Plumbing and Fire Protection design will require replacement of suspended ceiling systems as indicated in recommendations.

It should be noted that wood constructions such as storage lofts or partition walls should be of fire retardant treated materials in accordance with designated non-combustible construction type.

Recommendations

- To accommodate fire protection system upgrades, remove and replace suspended ceiling system throughout.
 - o Remove suspended ceiling system.
 - o Provide suspended ceiling system and 2' x 2' acoustical ceiling tiles:
 - Vinyl coated and scrubbable acoustical lay in panels in the toilet rooms and showers.
 - Standard acoustical lay in panels elsewhere.
- Patch and repair wall at new fire department connection in concrete wall.
- Install spray curtains in open spraying spaces to comply with requirements in Section 416 of the NJ Building Code and the Fire Code of NJ:
 - Provide suspended curtain assembly around spraying spaces attached to existing structure.
- Recommended repair work not under the scope of the Fire Sprinkler Rehabilitation Project includes the following:
 - Roof repair recommendations as part of NJMT Roofs Rehabilitation project.
 - In accordance with the flood protection elevation determinations and the designation of the fire protection valves as critical infrastructure one or a combination of the following options as indicated in the current Climate Resilience Design Guidelines are recommended:
 - Elevation of fire protection valves and other relevant critical infrastructure above the DFE
 - Dry floodproofing the sprinkler valve room perimeter by placing permanent, deployable, or temporary mitigation measures (e.g., flood walls, sealing openings and or deployable protection measures like stop logs to prevent floodwater intrusion).
 - Installing pumps to prevent build-up of incidental leakage in a dry floodproofed sprinkler room.

Civil

No Civil related scope of work identified on Building 255 that is required by the sprinkler system at this point. The cost associated with the 6" backflow preventer is included in the fire protection work.

Electrical

Existing Conditions

Building 255 consists of a garage/storage area which also contains the electrical and sprinkler room, the work/spray room/storage area, and office/bathroom area. There are no relevant electrical as-built drawings that could be found. Inside the sprinkler room, there is a main fire alarm control/communicator panel, annunciator panel, communicator panel, and battery backup enclosure. The main fire alarm control/communicator panel is a Radionics panel maintained by AFA Protective Systems and the battery backup enclosure is Altronix. The fire alarm equipment seems to be in generally good condition. In this room there are some sprinkler switches and signaling devices that appear to be connected to the fire alarm system. Per visual inspection only, fire alarm system might be fed from panel LPA (208/120V) located in the work/storage area near column E-2/3, however, this would need to be field traced and verified during Stage 3. Per the panel schedule, circuit breaker #31 feeds "Fire Alarm Lt; S. Exit Lights.; Assembly Area Night Lights." so this most likely only feeds the lighting circuits but was the only circuit that mentioned fire alarm. None of the electrical panel directories seemed to indicate power supply for fire alarm control panel and there was no visible marking on fire panel indicating primary power feed location. The existing electrical equipment inside the Electrical/Communications Room is in very poor condition. This includes panels with covers removed, exposed wiring, and significantly aged. It is assumed that the fire alarm power is not fed from this equipment and therefore rehabilitation of existing equipment inside this room is not required. Battery backup power is provided for fire alarm panel. There was no smoke detector observed above fire alarm panel. There was a visible communicator panel seen near fire alarm panel, but it needs to be verified with AFA during Stage 3 if this communicates with central station. There was also a single ASCO break glass fire alarm box located outside of the electrical communications room. This appeared to be very aged and no longer in service. The electrical equipment in this room was also very degraded, missing covers, and in generally poor condition. There did not appear to be any initiating or notification devices installed in the building. There were devices mounted in the ceiling of the office areas which appeared to be occupancy sensors as opposed to smoke detectors. The area is sprinklered.

<u>Assumptions</u>

- The base building fire alarm system is operating normally, and the existing sequence of operations provides
 appropriate notification and signaling. This project scope only evaluates required additional or replacement
 signaling as per other discipline recommendations in this report. All new fire alarm related equipment added
 will require testing and verification by AFA and witness testing by QAD.
- Any existing sprinkler system devices not being replaced as per recommendations in this report shall be functionally tested against the requirements of NFPA 72 and transmit supervisory and alarm signals in compliance with NFPA 101. This should be verified with AFA.
- The existing fire alarm system, initiating devices, and notification devices outside the scope of this project meet the design criteria as per NFPA 72.
- The existing lighting system, including emergency, has not been evaluated as this is outside the project scope. Any lighting modifications pertain to Architectural recommendations for ceiling replacement in coordination with replacement of sprinkler piping system.
- The existing electrical distribution equipment in the building is outside the project scope requirements. Only
 condition of electrical equipment directly correlated with fire alarm system has been considered.
- No work is required inside the existing Electrical/Communications Room.

Evaluation

This area is split up into (3) unseparated mixed occupancies, which include B, F-1, and S-1 as per code analysis drawings in Appendix G. As per NFPA 101 section 6.1.14.3.2 the building shall comply with the most restrictive requirements of the occupancies involved. A fire alarm system is required as per NFPA 101 section 40.3.4.1 since there is more than 25 persons above or below the level of exit discharge. Therefore, since the area is sprinklered, as per NFPA 101 section 40.3.4.2(3) a minimum of one manual pull box needs to be installed and as per NFPA 72 section 17.15.9.4 a manual pull box should be installed at each exit doorway. The adequacy of the existing sprinkler coverage is as per the assessment of the Plumbing and Fire Protection section. There were no observed notification devices that appeared to be connected to the fire alarm system. As per NFPA 101 section 40.3.4.3 an occupant notification system must be installed, and it shall comply with NFPA 72 section 18 requirements. The existing power supply to the fire alarm control panel needs to be field verified and evaluated as to whether it meets appropriate criteria as per NFPA 72 section 10.6 during Stage 3. A smoke detector must be installed near the existing fire alarm control panel to meet criteria as per NFPA 72 section 10.4.5 and should be installed within 15 feet horizontally as per PANYNJ Electrical Design Guidelines. Confirm supervisory and alarm signal supervision complies with NFPA 101 section 9.7.2 for automatic sprinkler system.

Recommendations

It is recommended to replace all fire alarm I/O in kind that are affected by sprinkler system work as noted in Plumbing and Fire Protection recommendations. In addition to this, a manual pull box should be installed at every exit doorway to comply with NFPA 72 section 17.15.9.4. Horn/strobe devices should be installed throughout building to comply with NFPA 72 section 18 requirements. The power feed for the main fire alarm control/communicator panel needs to be field traced and verified during Stage 3. Confirm primary disconnecting means is compliant with NFPA 72 section 10.6. During Stage 3, verify with AFA whether existing main fire alarm control panel has sufficient spare I/O points for new devices or if an auxiliary panel needs to be added. Verify functionality of all new and existing initiating and notification devices related to fire protection system and update programming of fire alarm control panels accordingly. A smoke detector needs to be installed near existing fire alarm control panel as per NFPA 72 section 10.4.5 within 15 feet horizontally as per PANYNJ Electrical Design Guidelines. If current system does not communicate with central station, then signals must be sent to approved alarm receiving facility as per NFPA 101 9.7.2.2.1. As per Architecture recommendations for renovations of ceiling areas, lighting in all associated areas will need to be replaced with new. The power feed for the lighting should be traced and verified during Stage 3.

Environmental

Existing Conditions

An Environmental survey with sample collection and testing was completed on the sprinkler system and adjacent areas. The intent of this survey was to locate and identify all accessible Asbestos Containing Materials (ACM), Lead Paint, Polychlorinated Biphenyls (PCBs), and Universal Wastes that could be impacted by the renovation of the sprinkler system.

The following seventeen (17) homogeneous materials were inspected and sampled for ACM:

Table 38: ACM Testing Matrix

| Suspect Material | Location | | |
|--|---|--|--|
| 2' X 2' Ceiling Tile Type I | 1st Floor – Office by the Entrance | | |
| 2' X 2' Ceiling Tile Type II 1st Floor – Lunchroom | | | |
| 2' X 2' Ceiling Tile Type III | 1 st Floor – Locker Room | | |
| Ceiling Blanket Insulation Backing | 1st Floor – Locker Room | | |
| Fiberglass Pipe Insulation Paper on Ceiling | 1st Floor – Office by the Entrance, Lunchroom & Locker Room | | |
| 2' X 2' Ceiling Tile Type IV | 1st Floor – Storage Rooms | | |
| Fiberglass HVAC Duct Insulation Cover | 1st Floor – Office by the Entrance, Lunchroom & Locker Room | | |

| CMU Wall Mortar | 1st Floor – Office by the Entrance, Lunchroom & Locker Room | |
|--|---|--|
| Gypsum Board Paper on Wall | 1st Floor – Office by the Entrance, Lunchroom & Locker Room | |
| Gypsum Board on Wall 1st Floor – Office by the Entrance, Lunchroom | | |
| Joint Compound on Wall | 1st Floor – Office by the Entrance, Lunchroom & Locker Room | |
| Fiberglass HVAC Duct Insulation 2 nd Layer | 1st Floor – Office by the Entrance, Lunchroom & Locker Room | |
| 2' X 2' Ceiling Tile Type V | Printer Room | |
| Fiberglass Insulation Cover (3" & 4" Pipes) | Sprinkler Room | |
| Mudded Fitting Insulation 3" Pipe | Sprinkler Room | |
| CMU Wall Mortar | Sprinkler Room | |
| 2' X 2' Ceiling Tile Type VI | Main Lobby | |

Based upon visual inspection and analytical results of bulk samples collected, none of the materials is asbestos-containing (> 1%):

Assumptions

Gaskets inside the sprinkler pipes could not be tested but are assumed to be asbestos containing. A total of 15 gaskets are assumed to be asbestos containing.

The existing sprinkler system pipes are painted. The paint was not tested but is assumed to be lead-containing.

Recommendations

The assumed 15 asbestos gaskets will require abatement/removal with the sprinkler system renovation.

The assumed lead paint on the sprinkler system does not have to be completely abated/removed, but an estimated 10% of the paint on the sprinkler system will be impacted, and thus will require incidental abatement/removal. The 10% of the existing sprinkler system to be impacted is estimated to be 101 linear feet.

Mechanical

Existing Conditions

Building 255 consists of office spaces, building areas for fabricating signs, spray finishing application, garage space, bathroom, male lockers, and a lunchroom. The HVAC system is comprised of one (1) rooftop air conditioning unit, two (2) un-operational rooftop gas-fired make-up air units, twelve (12) exhaust fans, ten (10) ceiling mounted unit heaters and one (1) air intake hood. Painting, assembly, carpentry sign shop and vehicle garage areas are interconnected spaces. RTU-1 serves the existing offices and lounge areas through the existing supply air distribution ductwork. Existing offices along the Southeast and Southwest perimeter are provided with supply air distribution system through a 24"x14" ductwork. Fire sprinkler valve room is located inside the building.

Assumptions

 RTU provides the required minimum outdoor ventilation airflow rates and adequate supply airflow for the heating and cooling of the building spaces served the supply air distribution system.

Evaluation

The fire valve room is provided with adequate heating. Existing 5.5 kW electric unit heater provides adequate heating to the valve room and maintains the space temperature above the 40°F as per NFPA 13 Chapter 16.4.1.3 requirement. Building spaces are maintained at 75 °F. Additional heating for the valve room is not required.

In the offices, bathroom, and the lunchroom, there are supply air diffusers and return air registers. There are ten (10) supply air diffusers and eight (8) return air registers that require removal due to the removal of the suspended ceiling system. Existing supply air diffusers and exhaust air registers obstruct the sprinkler piping replacement work.

There are three (3) spray finishing booth spaces in the Work/Storage area at the south end of the building between columns C&D. The booths are intermittently used, and the frequency of spray operation is not a continues application. There are three (3) exhaust fans serving the spraying booths and the Work Area/Storage space. The EF-3, EF-4 and EF-5 serve the spraying booths directly through existing exhaust hoods located above the booths and have airflow capacities of 2,300 CFM, 3,700 CFM and 3,000 CFM, respectively. As per NJ IMC Section 502.7.2 and IFC Section 2404.9.1, the positive ventilation systems serving the "Limited Spraying Spaces" shall be at a minimum of six (6) complete air changes per hour (ACH). The EF-3, EF-4 and EF-5 provide a total of 9,000 CFM and with 25 FT. interior space height, this corresponds to eleven (11) ACH, which is greater than the code required six (6) ACH.

Recommendations

Remove and replace existing supply air diffusers and return air registers in spaces including manager's office, secretary office, lunchroom, bathroom, and locker area.

- Perform air quantity readings from the RTU serving the 1st floor spaces and its existing supply air distribution and return air ductwork prior to removal of air inlets and outlets.
- Testing, adjusting, and balancing for new air inlets and outlets will be required.

Plumbing and Fire Protection

Existing Conditions

Building 255, built in 1974, is 1 story building with approximately 16,848 sq. ft. The building has 6" incoming fire service which enters in the building on the northeast end into the sprinkler room with access to the room from the garage area. The building is protected by wet sprinkler system in a tree system configuration layout. The building is fully sprinklered and the sprinkler system has reached the end of its useful life.

Assumptions

Based on the current condition of the building, the sprinkler system is very old and is beyond its useful life.

Evaluation

The existing sprinkler system and sprinkler heads appear to be original to the building. The 6" Star Sprinkler Corp. alarm looks to be in good condition however, due to its age and it is no longer manufactured it should be replaced.

Recommendations

The sprinkler heads, piping, related valves, and fire alarm devices have reached the end of their useful life and will require replacement. Replace the sprinkler heads, piping, related valves, 6" OS&Y valve, check valves, 6" alarm valve, water flow indicator, tamper switch, and fire alarm panel. Install a new 6" backflow preventer.

Structural

Existing Conditions

For Building 225, the structural task lead performed a review over the as-built drawings, the latest Port Authority Quality Assurance Division condition inspection report (P05-925.111, March 2014) and field photos of other disciplines to determine the condition of the fire sprinkler system vertical hangers, seismic braces, and roof framing that the sprinkler pipes are attached to. Building 255 is a single-story, flat roof building consisting of steel framing that supports bar joist. The fire sprinkler system spans between the bar joist and is supported off from the top flange

of each bar joist (spacing unknown) with c-clamps, threaded rods, and swivel rings. The main line is not supported by seismic braces.

Assumptions

The following are the assumptions used to develop the structural cost estimate:

- The linear feet of main and branch fire sprinkler pipe installation provided in the cost estimate by the Plumbing and Fire Protection group will be used in the structural estimate to quantity the vertical hangers and seismic bracing removal and installation.
- The Plumbing and Fire Protection group linear feet of main and branch fire sprinkler pipe removal and
 installation assumes that all sprinkler pipes in each building need to be replaced. This means that the
 quantity of vertical hangers and seismic bracing provided by the Structural group are based on worst case
 conditions.
- The structural estimate assumes a production rate of 6 vertical hanger or seismic brace removal or
 installation per hour. The estimate also assumes that the tenant will assist in relocation of their merchandise
 to accommodate contractors' access to roof section where vertical hangers and seismic braces need to be
 removed or installed.

Evaluation

- Structural task leader reviewed available field photos of the existing vertical hanger and seismic braces to
 evaluate their conditions and reviewed the Quality Assurance Division condition survey reports for any
 structural roof priority repairs that might affect the sprinkler pipes attachment to the roof structure.
- Available field photos and Quality Assurance Division condition survey reports review showed no significant structural issues that would compromise the feasibility of the sprinkler system attachment to the roof member.
- Scope of the structural evaluation was limited to the existing roof members, and their availability of supporting the additional load from the proposed sprinkler system.

Recommendations

- Replace all vertical hangers in kind, as directed by the Plumbing and Fire Protection group. Install seismic braces for main pipe (diameters equal to or greater than 3 inches in diameter).
- No structural as-built drawings were found in stage 1 review; additional Stage 3 research of available data and / or site survey will be required to determine existing structural member sizes and layout. This will require a scissor lift
- Site specific structural analysis will be required on Stage 3 design, based on the final sprinkler layout.

BUILDING 260

Architecture

Existing Conditions

Building 260 is located on Kellogg Street at the intersection of Kellogg and Corbin Streets. The building is a multifunction facility used as the Administration Building for the Port Authority's New Jersey Marine Terminals, offices for the Port Authority Police and a maintenance shop for Port Authority vehicles. For Building 260, the architectural team conducted a walkthrough visual field survey of the building interior to verify the layout of existing building spaces. Subsequently, a review of the provided Port Authority Quality Assurance Building Condition Inspection Report was undertaken. The building consists of three-story office and a double height garage. Its structure consists of steel girders and open web joists supported by steel columns. The roof deck consists of a flat insulated gypsum panel system. The office building's exterior wall system is brick and concrete, and the garage is a reinforced translucent panel system that extends to the roof line with roll-up overhead doors at the long side elevations. The facility has concrete floors throughout with carpet and tile finishes in the offices and restroom areas. The office area measures 129 ft by 46 ft and is approximately 36 ft. tall. The double-height garage has a rectangular footprint of 121 ft. wide by 216 ft. long and is approximately 24 ft. tall. There is approximately 50,000 SF of floor space throughout the structure.

The garage includes an approximately 40 ft deep open mezzanine used for storage along the entire length of its east side. Beneath the mezzanine are enclosed rooms used as breakrooms or storage. Several of these storage spaces were not entered. At the south side of the garage area is an enclosed two bay garage with two roll up doors for direct access to the exterior. The space, which is open to the garage roof structure has full height masonry walls and two storage lofts. The west storage loft is over ground level storage and break rooms accessed from the garage while the east storage loft is over a shed built with wood partitions and access stairs. There are also office and support spaces built under the roof of the garage space. This includes a modular two-level office structure at the northwest corner and a one level office suite just to the south. Both spaces have suspended 2' x 2' ceilings and partial height gypsum board partitions. Directly east of the one-story office suite is a large open space with full height gypsum board partitions. The space, which is open to the garage roof structure above, appears to be used as a break room and locker area. The sprinkler room and electrical room are in a suite of rooms accessed from the exterior. These are primarily concrete the same space at the southwest corner of the building.

The building's entrance lobby is within the footprint of the three-story office space at its west side. An egress stair and two elevators open onto the lobby and a conference room, a suite of offices and a toilet room are accessed from this area. The office spaces are primarily gypsum board partitions with 2' x 2' suspended ceilings. The men's restrooms and lockers and women's restrooms are also within the footprint of the three-story space but are accessed through the garage. The women's locker room is in the space of the garage. The restrooms are a mix of CMU walls and partitions with gypsum board and tile finishes. There are 2' x 2' suspended ceilings throughout these spaces except for the women's toilet room which has gypsum board ceilings.

The second and third floor office spaces include a mix of offices at the perimeter with open seating areas furnished with modular office furniture partitions. Meeting rooms, restrooms and office pantries are located on each floor. A secondary egress stair is located at the southeast corner of the office space. Both levels appear to have been recently renovated and contain gypsum board partitions throughout with 2' x 2' suspended ceilings. The second floor contains a data room with a clean agent suppression system.

Reference the code analysis drawings in Appendix G for information related to the building occupancy classification, construction type and fire resistance ratings.

Assumptions

- Although a comprehensive condition survey was not performed, existing conditions visually identified from
 the building interior which appeared to compromise the ability of the exterior envelope to maintain a
 habitable interior environment are noted in the evaluation section. The building envelope should be
 maintained, repaired, or upgraded as required to maintain an interior environment which sustains the longterm operational state of fire protection equipment. This includes prevention from premature corrosion or
 damage to systems from flooding events.
- It should be noted that Building 260 is a part of an ongoing NJMT Roofs Rehabilitation Stage 1 project. The results of that study should be referenced for pertinent repair items regarding the facility's roof. Note that the Roofs study did not evaluate the integrity of the building envelope.
- In accordance with the flood protection elevation determinations by the Port Authority and the designation of the fire protection valves as critical infrastructure one or a combination of the options indicated in the current Port Authority Climate Resilience Design Guidelines are recommended.
- Quantities of hazardous materials are within the prescribed NJ Building Code limits and stored in appropriate containers.
- We presume that wood framed structures, where they exist in non-bearing partition walls, are permitted by the current codes in buildings of Type IIB construction when materials are fire retardant treated. A review of these interior constructions should be undertaken in future stages to verify their continued use.

Evaluation

No significant architectural issues were noted during the field survey that would compromise the interior environment or sprinkler system operation. Replacement of the sprinkler system in garage and adjacent support spaces as indicated by the Plumbing and Fire Protection design will require replacement of suspended ceiling systems as indicated in recommendations.

The field survey indicated several unsealed penetrations in the interior perimeter wall of the second-floor data room. These were visible above the suspended ceiling system in areas where acoustic tiles had been removed. The clean agent suppression system in this space requires construction features which control the dissipation of the fire suppression agent in an event. This is achieved using joint and penetration sealants at walls, floors, and doors as required. Reference standards include applicable versions of NFPA 75 - Standard for the Fire Protection of Information Technology Equipment and NFPA 2001 (Chapter 6 Construction Requirements) - Standard on Clean Agent Fire Extinguishing Systems (Annex C - Enclosure Integrity Procedure).

Recommendations

- To accommodate fire protection system upgrades, remove and replace suspended ceiling systems at first floor toilet rooms, locker rooms, low roof offices constructed in the garage area, two rooms beneath storage mezzanine, and locker/breakroom adjacent to auto repair space.
 - Remove suspended ceiling systems and gypsum ceilings.
 - Provide suspended ceiling system and 2' x 2' acoustical ceiling tiles:
 - Vinyl coated and scrubbable acoustical lay in panels in the toilet rooms and showers.
 - Standard acoustical lay in panels elsewhere.
- o Provide suspended glass mat faced gypsum board ceiling in women's locker and men's showers.
- Ensure data room construction meets construction requirements for installed clean agent suppression system

- o 1)At the second-floor data room, inspect the interior perimeter walls from floor to ceiling for unsealed openings. Inspection should include walls above any suspended ceilings. Seal existing penetrations with a listed fire-stop system rated for a minimum of one hour. Assume 10 locations require wall firestopping application.
- At the second-floor data room, inspect the interior floor and ceilings for unsealed openings. Seal existing penetrations with a listed fire-stop system rated for a minimum of one hour. Assume 10 locations require wall firestopping application.
- o Perform a 'Room Integrity Test' in accordance with NFPA 2001 to ensure room containment meets requirements for effective operation of suppression system.
- Furnish and install 2' x 2' ceiling tile replacement due to sprinkler heads replacement in office areas on first, second and third floor.
- Patch and repair wall at new fire department connection in brick with block backup wall.
- Recommended repair work not under the scope of the Rehabilitation of Fire Protection Systems project includes the following:
 - Roof repair recommendations as part of NJMT Roofs Rehabilitation project.
 - o In accordance with the flood protection elevation determinations and the designation of the fire protection valves as critical infrastructure one or a combination of the following options as indicated in the current Climate Resilience Design Guidelines are recommended:
 - Elevation of fire protection valves and other relevant critical infrastructure above the DFE
 - Dry floodproofing the sprinkler valve room perimeter by placing permanent, deployable, or temporary mitigation measures (e.g., flood walls, sealing openings and or deployable protection measures like stop logs to prevent floodwater intrusion).
 - o Installing pumps to prevent build-up of incidental leakage in a dry floodproofed sprinkler room.

Civil

No Civil related scope of work identified on Building 260 that is required by the sprinkler system at this point. The cost associated with the 6" backflow preventer is included in the fire protection work.

Electrical

Existing Conditions

Building 260 consists of a three-story office and double height warehouse garage and within the garage area are breakrooms and storage areas. There most recent and relevant electrical as-built drawing is PN-FC-065 dated 2003 which just pertains to female restroom area, however, there is a note in the drawing that states to connect fire alarm devices to existing fire alarm system which is Pyrotronics Co. System. This does not seem to reflect the current configuration as observed during the field visit. The existing electrical room is entered through the sprinkler room area which is accessed through the building exterior. Outside the sprinkler room there is a Star Sprinkler Corp. sprinkler alarm bell installed and in between the sprinkler room and the stairway entrance there is a break glass pull station installed. The sprinkler alarm bell appears to have a significant crack in the housing and the pull station shows signs of corrosion, so it's unverified if these are still in use. Inside the sprinkler room there is a pull station installed at the doorway along with an ASCO break glass station on the opposite wall. The ASCO switch is most likely no longer in use, but this should be verified. There were also many sprinkler switches and signaling devices which appeared to be connected to the fire alarm system. Inside the electrical room in the back of the sprinkler room, there is a main fire alarm control panel, communicator panel, power supply cabinet, battery backup enclosure, an enclosure labeled "Keltron relay" and what appear to be some Notifier modules. The main fire alarm control panel is a Notifier NFS-320 and the communicator panel is a HWF2V-COM all manufactured by Honeywell. Communicator

panel is labeled stating "call central alarm before shutdowns" so this appears to communicate with central station but should be verified with AFA during Stage 3. Next to these fire alarm panels are electrical panels LPHX and LPLX. Panel LPHX is a 480/277V, 3-phase, 100A panel and panel LPLX is a 240/120v, 1-phase, 100A panel. Fire alarm panel is fed from panel LPLX circuit #4 based on panel schedule. There was no marking/label on control panel indicating source of primary power. There is a smoke detector installed in the electrical room.

Inside the 1st floor office area there is a remote fire alarm annunciator panel near the building entrance (Notifier by Honeywell), smoke detectors located above both elevator entrances, a pull box with horn/strobe device located near first elevator unit, along with several other horn/strobe devices located throughout the area. In the 1st floor warehouse garage area, there is a two-story office space. Running alongside this office space is ductwork where a red device was seen installed. It is unverified whether this was a horn/strobe, duct detector, or some other device during the site visit. There was an AFA Protective Systems enclosure affixed to the exterior of this office building, however, there is no visible conduit connection, so it is assumed that this is not connected to the fire alarm system (should verify during Stage 3). Walking through spaces such as the restroom area there appeared to be several horn/strobe devices installed. Most areas on the 1st floor had strobe device installed in nearby location (some horn/strobe). All the exit doorways in the maintenance garage area appeared to have horn/strobe device and manual pull box installed. The exit doorway near column 3-D did not have a pull station box installed. No manual pull boxes were installed in any of the rooms on the 1st floor east side of the building (shops/break rooms), however, there were horn/strobe devices installed at each of the room entrances from the maintenance garage. There is also a bell near the stairway to the mezzanine area on the east side of the building, but it is not believed this is connected to the fire alarm system. There were no fire alarm devices seen on the mezzanine.

The 2nd floor office area has a pull station and horn/strobe near the stairwell doorway, a smoke detector above the elevator entrance (which appears to provide adequate coverage to nearby clean agent panel), along with some other horn/strobe devices scattered throughout the floor. There is also an Aegis 2.0 Clean Agent control panel, dedicated clean agent strobe/horn alarm, Notifier module, L.E.D. model TA-123PP purge indicator panel, and maintenance switch located in the hallway area. Battery backup for the Aegis panel and communication with central station would need to be confirmed with Kistler Obrien Fire Protection (tag on panel so this is the assumed maintainer for this system). Inside the fire suppression system room, there is a Kidde FM-200 pull station box with dedicated horn/strobe alarm, system abort button with dedicated bell/strobe alarm, and fire alarm horn/strobe alarm. In the corner of this room there are (2) Kidde clean cylindrical agent storage containers with HFC-227ea agent. Mounted on the ceiling above the data/communication cabinets there are (2) fire alarm smoke detectors and a golden nozzle to disperse clean agent solution.

The 3rd floor office area has a pull station and horn/strobe near the stairwell doorway, a smoke detector above the elevator entrance, along with some other horn/strobe devices scattered throughout the floor. In the break room/kitchen area on this floor a device which appeared to be a smoke detector was observed. All areas were sprinklered.

Assumptions

- The base building fire alarm system is operating normally, and the existing sequence of operations provides
 appropriate notification and signaling. This project scope only evaluates required additional or replacement
 signaling as per other discipline recommendations in this report. All new fire alarm related equipment added
 will require testing and verification by AFA and witness testing by QAD.
- Any existing sprinkler system devices not being replaced as per recommendations in this report shall be functionally tested against the requirements of NFPA 72 and transmit supervisory and alarm signals in compliance with NFPA 101. This should be verified with AFA.
- The existing fire alarm system, initiating devices, and notification devices outside the scope of this project meet the design criteria as per NFPA 72.

- The existing lighting system, including emergency, has not been evaluated as this is outside the project scope. Any lighting modifications pertain to Architectural recommendations for ceiling replacement in coordination with replacement of sprinkler piping system.
- The existing electrical distribution equipment in the building is outside the project scope requirements. Only
 condition of electrical equipment directly correlated with fire alarm system has been considered.

Evaluation

This area is split up into (3) unseparated mixed occupancies, which include B, F-1, and S-1 as per code analysis drawings in Appendix G. As per NFPA 101 section 6.1.14.3.2 the building shall comply with the most restrictive requirements of the occupancies involved. A fire alarm system is required as per NFPA 101 section 39.3.4.1(1) since the building is three or more stories in height. Therefore, since the area is sprinklered, as per NFPA 101 section 39.3.4.2(3) not less than one manual fire alarm pull box shall be installed and as per NFPA 72 section 17.15.9.4 a manual pull box shall be installed at each exit doorway. Not all exit areas were seen during the site visit but of the ones observed only (1) on the 1st floor near column D-3 was observed to be missing a manual pull station. The adequacy of the existing sprinkler coverage is as per the assessment of the Plumbing and Fire Protection section. As per NFPA 101 section 39.3.4.3 an occupant notification system must be installed, and it shall comply with NFPA 72 section 18 requirements. There are several horn/strobe devices installed throughout all floors and areas of the building. It cannot be determined without further discussion with the fire alarm maintainer, AFA, whether the currently installed system also provides a positive alarm sequence, pre-signal system, or voice communication/public address system. The fire alarm control panel should be marked/labeled with primary power location as per NFPA 72 section 10.6.

Recommendations

It is recommended to replace all fire alarm I/O in kind that are affected by sprinkler system work as noted in Plumbing and Fire Protection recommendations. In addition to this, a manual pull box should be installed at exit doorway near column D-3 and any other exit doorways missing a manual pull station to comply with NFPA 72 section 17.15.9.4. Audible and visual coverage seems adequate but need to verify with fire alarm maintainer whether a positive alarm sequence, pre-signal system, or voice communication/public address system is installed as per NFPA 101 section 39.3.4.3. The primary power source should be labeled on fire alarm control panel in sprinkler valve room. During Stage 3, the power feed for the clean agent system on the 2nd floor should also be field traced and verified, however, it is believed this is connected to panel LPLX circuit #1 based on panel schedule. During Stage 3, verify with AFA whether existing main fire alarm control panel has sufficient spare I/O points for new devices or if an auxiliary panel needs to be added. Verify functionality of all new and existing initiating and notification devices related to fire protection system and update programming of fire alarm control panels accordingly. As per Architecture recommendations for renovations of ceiling areas, lighting in all associated areas will need to be replaced with new. The power feed for the lighting should be traced and verified during Stage 3.

Environmental

Existing Conditions

An Environmental survey with sample collection and testing was completed on the sprinkler system and adjacent areas. The intent of this survey was to locate and identify all accessible Asbestos Containing Materials (ACM), Lead Paint, Polychlorinated Biphenyls (PCBs), and Universal Wastes that could be impacted by the renovation of the sprinkler system.

The following five (39) homogeneous materials were inspected and sampled for ACM:

Table 39: ACM Testing Matrix

| Suspect Material | Location | | | |
|---|--|--|--|--|
| CMU Wall Mortar | 1 st Floor – Sprinkler Room, Hallway, Warehouse | | | |
| Cementitious Plaster | 1st Floor – Sprinkler Room | | | |
| 2' X 2' Ceiling Tile Type I | 1 st Floor – Lobby, Lunchroom, South Offices | | | |
| · · | 1st Floor - Lobby, Lunchroom, South Offices, Men's | | | |
| Spray-on Fire Proofing on Ceiling Deck Metal Beams | Locker Room | | | |
| 2' X 4' Ceiling Tile Type II | 1st Floor – Men's Locker Room, Entrance from Lunchroom | | | |
| 2' X 4' Ceiling Tile Type III | 1 st Floor – Hallway Men's Room | | | |
| Spray-on Fire Proofing on Ceiling Deck & Metal Beams | 1 st Floor Warehouse – East Offices | | | |
| Gypsum Board Paper - Wall | 1 st Floor Warehouse – East Offices | | | |
| Gypsum Board - Wall | 1 st Floor Warehouse – East Offices | | | |
| Joint Compound on Gypsum Board Wall | 1 st Floor Warehouse – East Offices | | | |
| | 1st Floor Warehouse – East Offices by Main entrance Door, | | | |
| HVAC Duct Insulation | Hallway Restroom | | | |
| Gypsum Board Paper - Ceiling | 1 st Floor - U.S.M. Shop | | | |
| Gypsum Board - Ceiling | 1 st Floor - U.S.M. Shop | | | |
| Joint Compound on Gypsum Board Ceiling | 1st Floor - U.S.M. Shop | | | |
| HVAC Duct Insulation Cover Beige | 1 st Floor - Warehouse East Office Mezzanine | | | |
| Fiberglass Ceiling Insulation Blanket | First Floor - Entry Room by U.S.M. Shop | | | |
| Fiberglass Insulation Metal Jacket Covering | 1 st Floor - Locker Room | | | |
| Mudded Joint Packing Pipe Fitting Insulation associated with Fiberglass Pipe Insulation | 1 st Floor - Locker Room | | | |
| 2' X 2' Ceiling Tile Paper | 1 st Floor - Hallway Restroom Ceiling | | | |
| 2' X 2' Ceiling Tile Type I | 1 st Floor - Lunch Room | | | |
| HVAC Duct Insulation Cover | 1 st Floor - Lunch Room | | | |
| CMU Wall Mortar | 1 st Floor – Electric Shop, Carpenter Shop & Plumbing Shop | | | |
| 2' X 2' Ceiling Tile | 2 nd Floor – Office Space | | | |
| Gypsum Board Paper - Wall | 2 nd Floor – Office Space | | | |
| Gypsum Board - Wall | 2 nd Floor – Office Space | | | |
| Joint Compound on Gypsum Board Wall | 2 nd Floor – Office Space | | | |
| HVAC Duct Insulation Cover | 2 nd Floor – Office Space | | | |
| Spray-on Fire Proofing on Ceiling Deck Metal Beams | 2 nd Floor - Office Space | | | |
| Fire Stop Sealant - Red | 2 nd Floor - Office Space @ Deck Level | | | |
| 2' X 2' Ceiling Tile Type II | 2 nd Floor – Slope Sink | | | |
| 2' X 2' Ceiling Tile Type I | 3 rd Floor - Office Space | | | |
| HVAC Duct Insulation Cover | 3 rd Floor - Office Space | | | |
| Gypsum Board Paper - Wall | 3 rd Floor - Office Space | | | |
| Gypsum Board - Wall | 3 rd Floor – Office Space | | | |
| • | | | | |
| Joint Compound on Gypsum Board Wall | 1 3.° Floor – Office Space | | | |
| Joint Compound on Gypsum Board Wall Spray-on Fire Proofing on Ceiling Deck Metal Beams | 3 rd Floor – Office Space 3 rd Floor – Office Space | | | |
| Spray-on Fire Proofing on Ceiling Deck Metal Beams | 3 rd Floor – Office Space | | | |
| • | · | | | |

Based upon visual inspection and analytical results of bulk samples collected, the following materials are asbestos-containing (> 1%):

Table 40: ACM Schedule

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|--|---------------------|-------------------------|-----------------------------|
| 56-58 | Mudded Joint Packing Pipe Fitting Insulation | 10% | 6 L.F. | ACM001 |
| | associated with Fiberglass Pipe Insulation | Chrysotile | (See Note 1) | |

Assumptions

- Gaskets inside the sprinkler pipes could not be tested but are assumed to be asbestos containing. A total
 of 25 gaskets are assumed to be asbestos containing.
- The existing sprinkler system pipes are painted. The paint was not tested but is assumed to be leadcontaining.

Recommendations

The confirmed asbestos materials shall be abated as part of the sprinkler system renovation.

The assumed 25 asbestos gaskets will require abatement/removal with the sprinkler system renovation.

The assumed lead paint on the sprinkler system does not have to be completely abated/removed, but an estimated 10% of the paint on the sprinkler system will be impacted, and thus will require incidental abatement/removal. The 10% of the existing sprinkler system to be impacted is estimated to be 407 linear feet.

Mechanical

Existing Conditions

Building 260 consists of administrative office spaces, bathroom and locker rooms, and maintenance garage area. The HVAC system consist of three (3) packaged rooftop AC units, fifteen (15) exhaust fans, sixteen (16) gas-fired indirect unit heaters, and six (6) mini-split air-cooled condensing units. The building 260 Administrative office areas consist of offices, conference and break rooms, and bathrooms. The 1st floor areas include office spaces, bathrooms men's locker rooms and the garage area. The offices and lockers areas in the 1st floor areas are served by the existing rooftop AC unit (RTU-3) located on the roof. The 1st floor women's lockers, corridor and bathroom areas are interconnected in a single zone and served by return air register and supply air diffusers located in the bathroom. The 1st floor maintenance garage has two modular offices. The supervisor modular office is served by a make-up unit air. The second modular office space is used as offices and conference room and served by window type AC units. There are also two storage lofts, west and east storage lofts. The East storage loft is in the MES/welding shop.

Assumptions

HVAC equipment and supply air ductwork serving the 1st floor areas do not require modifications or upgrade.

Evaluation

The fire valve room is provided with adequate heating. Existing 5.0 kW electric unit heater provides adequate heating to the valve room and maintains the space temperature above the 40°F as per NFPA 13 Chapter 16.4.1.3 requirement. This heating output is sufficient given that the heating load for this space is 13,934 BTU/hr. or approximately 4.1 kW. Building spaces are provided with adequate heating for the fire sprinkler piping. No additional

heating is required since the building indoor temperature is maintained above the minimum required 40°F as per NFPA 13 Chapter 16.4.1.3.

Garage spaces do not have visible HVAC equipment obstruction for the replacement of fire sprinkler piping work. In the 1st floor toilet and lockers and offices areas, there are supply air diffusers and return air registers that obstruct the sprinkler replacement work and require removal. The 1st floor women's lockers, corridor and bathroom areas are interconnected spaces as single zone and served by return air register and supply air diffusers located in the bathroom.

Recommendations

Remove and replace existing supply air diffusers and return air registers in the 1st floor restrooms, locker rooms and office areas. Install new supply air diffusers and return registers.

- It will be required to perform air quantity readings from the existing supply air distribution, return air ductwork and air inlets and outlets serving the 1st floor areas.
- Testing, adjusting, and balancing of new air inlets and outlets will be required.

Plumbing and Fire Protection

Existing Conditions

Building 260 is a three (3) story office with a one (1) story shop/garage section in the back. The office space has an approximate area of 5,520 sq. ft. per floor with a total of 16,560 sq. ft. for all three (3) floors. The shop has an approximate area of 26,262 sq. ft. with the total building area of 42,822 sq. ft. The 6" incoming fire service enter the building

<u>Assumptions</u>

Based on the current condition of the building, the sprinkler system in the shop/ garage section is very old and is beyond its useful life. The sprinkler system in the 3-story office area is in good condition.

Evaluation

The evaluation includes the system effectiveness and reliability and reduce the operation and maintenance cost. The building sprinkler system is approximately 32 years old, however, sprinklers that have been in service for several years should not be expected to have all the performance qualities of a new sprinkler.

Recommendations

Replace the sprinkler heads and related sprinkler and standpipe piping system in the Maintenance garage area and adjacent offices and toilets/ locker space at the north section of Bldg. 260, 6" OS&Y and check valves, 6" alarm valve and tamper switches, and water flow indicator. The sprinkler system serving the first, second, and third floor office space at the south section of Bldg. 260 is existing to remain. Install a new 6" backflow preventer.

Structural

Existing Conditions

For Building 260, the structural task lead performed a review over the as-built drawings, the latest Port Authority Quality Assurance Inspection condition inspection report (P05-925.111, March 2014) and field photos of other disciplines to determine the condition of the fire sprinkler system vertical hangers, seismic braces, and roof framing that the sprinkler pipes are attached to. Building 260 has a flat roof, three story office building and a flat roof, one-story garage shop. The office building consists of cast-in-place concrete floors supported on metal decks that spans between steel framings. The roof structure is metal decking supported on steel bar joist. The fire sprinkler system

either supported from of the concrete slab (spacing unknown) with anchor, threaded rods and swivel rings or spans between the steel bar joists and is supported off each bar joist (spacing unknown) with c-clamps, threaded rods, and swivel rings. The main line is not supported by seismic braces.

Assumptions

The following are the assumptions used to develop the structural cost estimate:

- The linear feet of main and branch fire sprinkler pipe installation provided in the cost estimate by the Plumbing and Fire Protection group will be used in the structural estimate to quantity the vertical hangers and seismic bracing removal and installation.
- The Plumbing and Fire Protection group linear feet of main and branch fire sprinkler pipe removal and
 installation assumes that all sprinkler pipes in each building need to be replaced. This means that the
 quantity of vertical hangers and seismic bracing provided by the Structural group are based on worst case
 conditions.
- The structural estimate assumes a production rate of 6 vertical hanger or seismic brace removal or
 installation per hour. The estimate also assumes that the tenant will assist in relocation of their merchandise
 to accommodate contractors' access to roof section where vertical hangers and seismic braces need to be
 removed or installed.

Evaluation

- Structural task leader reviewed available field photos of the existing vertical hanger and seismic braces to
 evaluate their conditions and reviewed the Quality Assurance Division condition survey reports for any
 structural roof priority repairs that might affect the sprinkler pipes attachment to the roof structure.
- Available field photos and Quality Assurance Division condition survey reports review showed no significant structural issues that would compromise the feasibility of the sprinkler system attachment to the roof member.
- Scope of the structural evaluation was limited to the existing roof members, and their availability of supporting the additional load from the proposed sprinkler system.

Recommendations

- Replace all vertical hangers in kind, as directed by the Plumbing and Fire Protection group. Install seismic braces for main pipe (diameters equal to or greater than 3 inches in diameter).
- No structural as-built drawings were found in stage 1 review; additional Stage 3 research of available data and / or site survey will be required to determine existing structural member sizes and layout. This will require a scissor lift.
- Site specific structural analysis will be required on Stage 3 design, based on the final sprinkler layout.

BUILDING 263

Architecture

Existing Conditions

Building 263 is a warehouse structure located at the intersection of Distribution and Marlin Streets. For Building 263, the architectural team conducted a walkthrough visual field survey of the building interior to verify the layout of existing building spaces. Subsequently, a review of the provided Port Authority Quality Assurance Building Condition Inspection Report was undertaken. Building 263 is a single-story steel frame warehouse which measures approximately 161 ft by 634 ft for a total of approximately 104,000 SF. The framing consists of steel girders which support steel roof purlins which support the corrugated metal roof decking. The building's height varies from approximately a minimum of 26 ft at the north and south sides to 40 ft at the ridge. The side and end walls consist of a concrete knee foundation wall at the base with corrugated metal siding above supported by metal girts. A concrete masonry fire wall divides the building into west and east portions (Area 1 and Area 2). There are roll-up doors around the perimeter with truck loading dock along the north side of the building. The floor appears to be bituminous concrete throughout most of the structure.

The west side of the warehouse (Area 1) is separated into three areas by full height corrugated metal partitions. The northwest quadrant of Area 1 has an office suite constructed within the space that totals approximately 5,000 SF. We presume from earlier information if this is a wood framed structure which may be permitted in certain circumstances in Type IIB buildings and will remain. Partial height gypsum board partitions support the office area's suspended gypsum and acoustical ceiling systems beneath the warehouse roof. The top of the office suite is accessed by a stair and has an exposed wood framed mezzanine floor/ceiling. Duct runs and sprinkler piping servicing the office suite are visible from this mezzanine level. The southeast quadrant of Area 1 contains a small toilet room with partial height CMU walls and a trailer office structure. The CMU walls at the toilet support a concrete plank roof/ceiling and the trailer office has a suspended ceiling. Neither of these spaces appear to be sprinklered. The balance of the space contains several storage racks and a storage trailer and appears to be in use as a garage. The east side of Area 1 contains a partial height CMU bathroom block and a fenced storage area. The top of the CMU walls and concrete plank roof/ceiling of the Area 1 sprinkler room are also visible from this space. The sprinkler room is accessed from the exterior and sits at grade approximately 4 feet below the level of the warehouse space. There are four vents located in the Area 1 roof visible from the north quadrant.

The east side of the building (Area 2) is undivided space which connects to the west side via two large rolling shutters and a man door. There is a CMU bathroom block with concrete plank ceiling/roof and a sprinkler room like that described above. Area 2 also connects to an adjacent building via a connector structure accessed thru a rollup door at the southwest corner. The space contains a draft curtain and four roof vents.

Reference the code analysis drawings in Appendix G for information related to the building occupancy classification, construction type and fire resistance ratings.

Assumptions

Although a comprehensive condition survey was not performed, existing conditions visually identified from
the building interior which appeared to compromise the ability of the exterior envelope to maintain a
habitable interior environment are noted in the evaluation section. The building envelope should be
maintained, repaired, or upgraded as required to maintain an interior environment which sustains the longterm operational state of fire protection equipment. This includes prevention from premature corrosion or
damage to systems from flooding events.

- In accordance with the flood protection elevation determinations by the Port Authority and the designation
 of the fire protection valves as critical infrastructure one or a combination of the options indicated in the
 current Port Authority Climate Resilience Design Guidelines are recommended.
- We presume that wood framed structures, where they exist in non-bearing partition walls, are permitted by the current codes in buildings of Type IIB construction when materials are fire retardant treated. A review of these interior constructions should be undertaken in future stages to verify their continued use.

Evaluation

Visible deterioration to the building envelope was noted during the walkthrough. Examples observed in the warehouse interior include multiple small penetrations and impact damage in the corrugated metal exterior wall panels. At the sprinkler room, the exterior metal door shows signs of deterioration including rust at its bottom and edges. The continued deterioration of the existing exterior envelope could compromise the interior environment and long-term life expectancies of new and existing equipment and utilities.

The design team has proposed that the sprinkler piping above the offices in the northeast is accessible from the partial mezzanine/low roof area above and sprinkler system replacement therefore does not require removal of suspended ceilings in the offices located at northwest.

Where Building 263 connects to an adjacent structure via an opening in its south wall a rated separation is required as indicated in recommendations and the code analysis in Appendix G.

It should be noted that wood constructions such as storage lofts or partition walls should be of fire retardant treated materials in accordance with the designated non-combustible construction type. The office suite in the northeast corner of the building has wood roof/ceiling construction which should be investigated to determine if it is constructed from fire retardant treated material.

Recommendations

- Provide replacement exterior doors and frame at sprinkler rooms:
 - At two locations, provide exterior insulated hollow metal doors and frames with associated hardware and labeling indicating sprinkler valve room.
- Provide replacement insulation at exterior wall of sprinkler rooms:
 - At two locations, remove existing damaged insulation at interior side of sprinkler room exterior wall and replace with new rigid insulation, fiberglass mat faced gypsum panel attached to galvanized metal furring
- Fire rated wall construction and opening protection at connection to adjacent building (Between column lines 17 & 18 and E):
 - o 2-hour fire resistant rated block wall construction: 30 linear feet (20' AFF).
 - 1½ hour rated rollup door with approved automatic closing device (20'Wx10'H).
- Furnish and install 1x1 ceiling tile replacement due to sprinkler heads replacement in office areas in northwest.
- Patch and repair wall at two new fire department connection in concrete wall.
- Recommended repair work not under the scope of the Fire Sprinkler Rehabilitation Project includes the following:
 - o Provide complete exterior envelope survey and repair penetrations and impact damage to existing metal siding and roofing which compromise envelope integrity around building perimeter.

- In accordance with the flood protection elevation determinations and the designation of the fire protection valves as critical infrastructure one or a combination of the following options as indicated in the current Climate Resilience Design Guidelines are recommended:
 - Elevation of fire protection valves and other relevant critical infrastructure above the DFE
 - Dry floodproofing the sprinkler valve room perimeter by placing permanent, deployable, or temporary mitigation measures (e.g., flood walls, sealing openings and or deployable protection measures like stop logs to prevent floodwater intrusion).
 - Installing pumps to prevent build-up of incidental leakage in a dry floodproofed sprinkler room.

Civil

No Civil related scope of work identified on Building 263 that is required by the sprinkler system at this point. The cost associated with the 8" backflow preventers is included in the fire protection work.

Electrical

Existing Conditions

Building 263 is split into two main areas: Area 1 contains a warehouse area split up into (3) main areas with an office constructed within the space along with bathrooms and sprinkler room whereas Area 2 is a single open area which also contains bathrooms and sprinkler room. There are electrical as-built drawings PN-110.052 dated 1990 which seem to indicate a Keltron fire alarm system which has power fed from the life/safety panel 263-PA circuit #15 (says "24V Back-Up Battery" which appears to be for the fire alarm system) in the Sprinkler Valve room #2. As per the as-built drawings the system is connected to the central alarm station. This does not seem to reflect existing conditions since existing fire alarm panel in sprinkler valve room only contains module devices and there is a new Honeywell fire alarm panel installed in the building.

In Area 1, there were manual pull boxes and horn/strobe devices noted at the exit doorways in areas seen during site visit. There are (2) horn/strobe devices located on the exterior of the office structure. Inside the office area there were smoke detectors, pull boxes, and horn/strobe devices installed. There are also horn/strobe devices located throughout the warehouse area. Many of these pull station boxes, and horn/strobe devices appear to be aged and experiencing signs of degradation. In the warehouse area for the exit doorway at Column D/E-1, there was a Honeywell panel which appeared to be a remote annunciator. This was in fairly, poor condition. Going up the stairs next to the office area, on the 2nd floor, there is a Fire-Lite Alarms MS-10UD fire alarm control panel manufactured by Honeywell, According to the sticker label on the panel, the power feed is from Panel A circuit #4 which is in the office structure. During Stage 3, will need to verify if primary power disconnecting means is appropriately marked. In addition, fire alarm panel needs to be opened to verify battery backup power. There was no smoke detector observed above fire alarm panel. There was no visible communicator panel seen near fire alarm panel. Outside the sprinkler room on the building exterior there was a silver Viking sprinkler alarm bell and older pull hook station with AFA sticker installed. Opening the pull hook station there is a manual pull box which appears to be connected to the fire alarm system and is in fair condition. It is unverified whether the sprinkler bell is currently in use. Inside the sprinkler room there is an ASCO break glass pull box which is aged and unverified whether currently operational. There are also several sprinkler switches and signaling devices which appear to be a bit aged but in generally fair condition. There is an AFA fire alarm panel which seems very aged and is showing signs of degradation. There is an electronic device on top of the fire alarm panel with no cover, so wires are exposed. Opening the fire alarm panel, some of the module devices and circuit board are loosely mounted and in general the equipment appears to be aged and possibly obsolete. It is unverified whether this panel is connected to the Fire-Lite panel on top of the office structure.

In Area 2, there were manual pull boxes noted at the exit doorways and horn/strobe devices scattered throughout warehouse area in areas seen during site visit. All areas are sprinklered.

Assumptions

- The base building fire alarm system is operating normally, and the existing sequence of operations provides
 appropriate notification and signaling. This project scope only evaluates required additional or replacement
 signaling as per other discipline recommendations in this report. All new fire alarm related equipment added
 will require testing and verification by AFA and witness testing by QAD.
- Any existing sprinkler system devices not being replaced as per recommendations in this report shall be functionally tested against the requirements of NFPA 72 and transmit supervisory and alarm signals in compliance with NFPA 101. This should be verified with AFA.
- The existing fire alarm system, initiating devices, and notification devices outside the scope of this project meet the design criteria as per NFPA 72.
- The existing lighting system, including emergency, has not been evaluated as this is outside the project scope. Any lighting modifications pertain to Architectural recommendations for ceiling replacement in coordination with replacement of sprinkler piping system.
- The existing electrical distribution equipment in the building is outside the project scope requirements. Only
 condition of electrical equipment directly correlated with fire alarm system has been considered.

Evaluation

Occupancy group classification for building is primarily S-1 with a secondary occupancy of B as per code analysis drawings in Appendix G. As per NFPA 101 section 6.1.14.1.3, where incidental to another occupancy, the storage (S-1) occupancy is permitted as the predominant occupancy and is subject to provisions of the code for said occupancy. Therefore, this building is evaluated under criteria of S-1 occupancy. The area is provided with sprinkler protection as per NFPA 101 section 42.3.4.2(3) with a minimum of one manual fire alarm box. There also appears to be a manual pull box located all exit doorways seen during site visit as per NFPA 17.15.9.4. The adequacy of the existing sprinkler coverage is as per the assessment of the Plumbing and Fire Protection section. Per visual inspection, occupant notification system coverage seems acceptable as per NFPA 101 section 42.3.4.3. During Stage 3, the existing power supply to the fire alarm control panel needs to be verified and evaluated as to whether it meets appropriate criteria as per NFPA 72 section 10.6. A smoke detector must be installed near the existing fire alarm control panel to meet criteria as per NFPA 72 section 10.4.5 and should be installed within 15 feet horizontally as per PANYNJ Electrical Design Guidelines. Confirm supervisory and alarm signal supervision complies with NFPA 101 section 9.7.2 for automatic sprinkler system.

Recommendations

It is recommended to replace all fire alarm I/O in kind that are affected by sprinkler system work as noted in Plumbing and Fire Protection recommendations. Horn/strobe and pull station boxes seem fairly, aged so each should be tested and verified for proper operation during Stage 3. The power feed for fire alarm panel in the sprinkler room needs to be traced and verified. The fire alarm panel in the sprinkler valve room is in poor condition and should be replaced in kind. Pull station and bell outside of sprinkler valve room should be tested and verified, however, it is recommended to replace with new. Although it appears to be operating normally, it is recommended to replace annunciator panel located near column D/E-1 due to observed degradation of panel. During Stage 3, verify with AFA whether existing main fire alarm control panel has sufficient spare I/O points for new devices or if an auxiliary panel needs to be added. Verify functionality of all new and existing initiating and notification devices related to fire protection system and update programming of fire alarm control panels accordingly. A smoke detector needs to be installed near existing fire alarm control panel as per NFPA 72 section 10.4.5 within 15 feet horizontally as per PANYNJ Electrical Design Guidelines. Verify if the primary power disconnecting means for fire alarm panel is marked appropriately as per NFPA 72 section 10.6. Battery backup must be verified as well. According to 1990 as-built drawings the system is connected to the central alarm station, however, the configuration has changed since the original design so would need to verify with AFA during Stage 3 if this is still accurate. If current system does not

communicate with central station, then signals must be sent to approved alarm receiving facility as per NFPA 101 9.7.2.2.1.

Environmental

Existing Conditions

An Environmental survey with sample collection and testing was completed on the sprinkler system and adjacent areas in March 2021. After the 50% submission, an additional survey was completed in November 2021 to include all the areas impacted by the scope of other disciplines. The intent of the survey was to locate and identify all Asbestos Containing Materials (ACM), Lead Paint, Polychlorinated Biphenyls (PCBs), and Universal Wastes that could be impacted by the renovation of the sprinkler system.

The following twelve (12) homogeneous materials were inspected and sampled for ACM:

Table 41: ACM Testing Matrix

| Suspect Material | Location | | |
|--|--|--|--|
| 1' X 1' Ceiling Tile | 1 st Floor – Office Space | | |
| Gypsum Board | 1st Floor – Office Space & Kitchen | | |
| CMU Wall Mortar | 1st Floor – Office Space Women's Bathroom | | |
| Aircel Pipe Insulation (3" OD) | 1st Floor – Office Space & Kitchen | | |
| Elbow Insulation associated with Aircel Pipe Insulation | 1st Floor – Office Space Kitchen | | |
| Wrapped Cardboard Pipe Insulation (3" OD) | 1st Floor - Bathroom in Warehouse Area (Open | | |
| Wrapped Cardboard Fipe Insulation (S. OD) | Building Space) | | |
| Mudded Joint Fitting Insulation associated with Wrapped | 1st Floor - Bathroom in Warehouse Area (Open | | |
| Cardboard Pipe Insulation | Building Space) | | |
| CMU Wall Mortar | 1st Floor Sprinkler Room East Side | | |
| Packing Insulation at Ceiling Penetration around 8" OD Pipes | 1st Floor East Side Sprinkler Room Ceiling | | |
| Packing Insulation at Ceiling Penetration around 8" OD Pipes | 1st Floor West Side Sprinkler Room Ceiling | | |
| Tectum Ceiling Board | 1 st Floor - Warehouse Bathroom | | |
| Wall Blanket Insulation | 1st Floor - Warehouse Dividing Wall | | |

Based upon visual inspection and analytical results of bulk samples collected, the following materials are asbestos-containing (> 1%):

Table 42: ACM Schedule

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------------|
| 10-12 | air cell Pipe Insulation (3" OD) | 33% Chrysotile | 20 LF | ACM001 |
| 13-15 | Elbow Insulation associated with air cell Pipe Insulation | 50% Chrysotile | 10 LF | ACM001 |
| 16-18 | Wrapped Cardboard Pipe Insulation (3" OD) | 12% Chrysotile | 12 LF | ACM001 |
| 19-21 | Mudded Joint Fitting Insulation associated with Wrapped Cardboard Pipe Insulation * | * | 6 LF | ACM001 |

| 25-27 | Packing Insulation at Ceiling Penetration around 8" OD Pipes | 67% Chrysotile | 3 SF | ACM001 |
|-------|---|---------------------|-------|--------|
| 28-30 | Packing Insulation at Ceiling Penetration around 8" OD Pipes | 67% Chrysotile | 3 SF | ACM002 |
| 37-39 | Interior Door Caulking – East Side Sprinkler Room Door | 3.6% Chrysotile | 18 lf | N/A |
| 40-42 | Caulking on Interior Wall Perimeter- East Side Sprinkler Room Exterior Wall Interior Side | 4.5% Chrysotile | 60lf | N/A |
| 43-45 | Packing Insulation at Wall Pipe Penetration – East Side Sprinkler Room Interior Wall | 80.0% Chrysotile | 2sf | N/A |
| 49-51 | Interior Door Caulking – West Side Sprinkler Room Door | 3.0% Chrysotile | 18lf | N/A |
| 52-54 | Caulking on Interior Wall Perimeter West Side Sprinkler Room Exterior Wall Interior Side | 2.1% Chrysotile | 60lf | N/A |
| 55-57 | Packing Insulation at Wall Pipe Penetration around 4" OD and Floor Pipe Penetration around 8" OD – West Side Sprinkler Room Interior Wall and Floor | 67.0% Chrysotile | 6sf | N/A |
| 58-60 | Exterior Door Caulking Remnants – West Side Sprinkler Room Door | 4.0% Chrysotile | 12lf | N/A |

Assumptions

- Gaskets inside the sprinkler pipes could not be tested but are assumed to be asbestos containing. A total
 of 50 gaskets are assumed to be asbestos containing.
- The existing sprinkler system pipes are painted. The paint was not tested but is assumed to be leadcontaining.

Recommendations

The confirmed asbestos materials shall be abated as part of the sprinkler system renovation.

Pipe insulation materials that are found to be asbestos would require abatement/ removal due to their proximity to the sprinkler pipe system during renovation.

The assumed 50 asbestos gaskets will require abatement/removal with the sprinkler system renovation.

The assumed lead paint on the sprinkler system does not have to be completely abated/removed, but an estimated 10% of the paint on the sprinkler system will be impacted, and thus will require incidental abatement/removal. The 10% of the existing sprinkler system to be impacted is estimated to be 1150 linear feet.

Mechanical

Existing Conditions

Building 263 spaces are consist of 2 areas:

• Area-1 includes an office suite, toilet room, trailer office room, lounge room and man's bathroom. There are two (2) rooftop AC units (RTU) serving the Area-1. The supply air distribution is provided through two

- separate ductworks connecting to each RTU. There is one (1) makeup air unit heater (MAU) serving the open warehouse space, and one (1) indirect gas-fired unit heater.
- Area-2 is used as a vehicle repair space. There is one (1) unit heater and one (1) wall mounted MAU serving the space for heating needs.

There are 2 fire sprinkler riser rooms. Each valve room has a 5.0 kW electric space unit heater.

Assumptions

As confirmed with the design team, fire sprinkler piping replacement work will be performed from the
accessible roof above the office suite. Existing ceiling supply air diffusers and return registers in the office
suite area do not need to be removed since they do not impede the fire sprinkler replacement work on the
office suite roof.

Evaluation

The fire valve room is provided with adequate heating. Existing 5.0 kW electric unit heaters EUH-1 and EUH-2 provide adequate heating to the valve room and maintain the space temperature above the 40°F as per NFPA 13 Chapter 16.4.1.3 requirement. This heating output is sufficient given that the heating load for this space is 13,691 BTU/hr. or approximately 4.0 kW. The fire sprinkler in the building is a dry pipe system and does not require heating as per NFPA 13 Chapter 16.4.1.1.

There is no HVAC equipment obstruction in the garage and warehouse spaces for the replacement of fire sprinkler work.

Recommendations

There is no HVAC recommendation.

Plumbing and Fire Protection

Existing Conditions

Building 263 was built approximately in late 1950's and has roughly an area of 51,200 sq. ft. The incoming 8" fire service, has four (4) 6" dry valves and 4" OS&Y valve for the fire draft curtain appear to be original to the building. There are two (2) existing air compressors serving the dry sprinkler system with a manufacture date of 1/26/2010. The existing sprinkler heads and piping also appear to be original to the building. In the break room it was observed that one sprinkler heads had "1967" stamped on link, the rest of the sprinklers were the same style as the one observed.

Assumptions

Based on the current condition of the building, the sprinkler system is very old and is beyond its useful life.

Evaluation

The incoming 8" fire service, two 6" dry valves and 4" OS&Y valve for the fire draft curtain is original to the building with signs of corrosion and near the end of useful life. The underground fire service should be inspected and test in the Stage II effort to confirm if it needs to be replaced. The existing sprinkler heads and piping are also original to the building and it's near the end of useful life. There are signs the sprinkler system is having trouble with leaks, it was observed, in the south end of the building, there is a branch line that has been disconnected and has not been reconnected for some reason that could not be determined during the survey. This is an considered an immediate action item.

Recommendations

The entire sprinkler system has reached the end of its useful life and requires replacement. This includes, check valves, shut off valves, dry pipe valves, tamper switches, air compressor systems, sprinkler piping and sprinkler heads. Install two new 8" backflow preventers.

Structural

Existing Conditions

For Building 263, the structural task lead performed a review over the as-built drawings, the latest Port Authority Quality Assurance Division condition inspection report (P05-925.103, March 2012), field photos of other disciplines and a visual inspection from ground level to determine the condition of the fire sprinkler system vertical hangers, seismic braces, and roof framing that the sprinkler pipes are attached to. A hands-on inspection of the vertical hangers, seismic braces and roof framing with a scissor lift would not have been possible to perform given the volume of space occupied by tenant products within the facility and the volume of tenant forklift activities. Building 263 is a single-story, gable roof warehouse, with five rows of steel columns supporting steel girders spaced at 20ft on center, which support steel roof purlins, which support the corrugated metal roof decking. The fire sprinkler system spans between the steel roof purlins and is supported off each roof purlin (spaced 5'-6" O.C.) with c-clamps, threaded rods, and swivel rings. The main line is not supported by seismic braces.

Assumptions

The following are the assumptions used to develop the structural cost estimate:

- The linear feet of main and branch fire sprinkler pipe installation provided in the cost estimate by the Plumbing and Fire Protection group will be used in the structural estimate to quantity the vertical hangers and seismic bracing removal and installation.
- The Plumbing and Fire Protection group linear feet of main and branch fire sprinkler pipe removal and installation assumes that all sprinkler pipes in each building need to be replaced. This means that the quantity of vertical hangers and seismic bracing provided by the Structural group are based on worst case conditions.
- The structural estimate assumes a production rate of 6 vertical hanger or seismic brace removal or
 installation per hour. The estimate also assumes that the tenant will assist in relocation of their merchandise
 to accommodate contractors' access to roof section where vertical hangers and seismic braces need to be
 removed or installed.

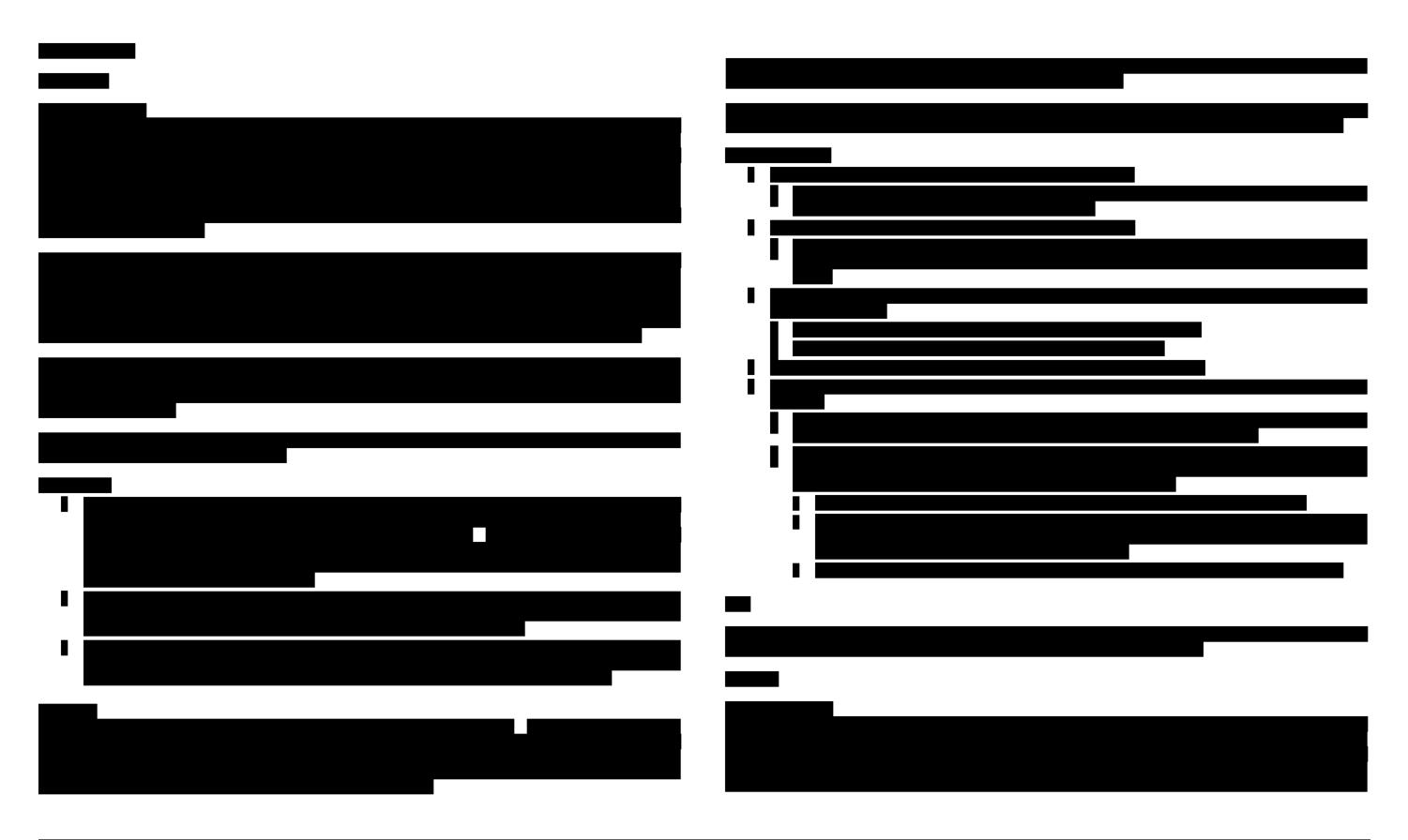
Evaluation

- Structural task leader reviewed available field photos of the existing vertical hanger and seismic braces to
 evaluate their conditions and reviewed the Quality Assurance Division condition survey reports for any
 structural roof priority repairs that might affect the sprinkler pipes attachment to the roof structure.
- Available field photos and Quality Assurance Division condition survey reports review showed no significant structural issues that would compromise the feasibility of the sprinkler system attachment to the roof member.
- Scope of the structural evaluation was limited to the existing roof members, and their availability of supporting the additional load from the proposed sprinkler system.

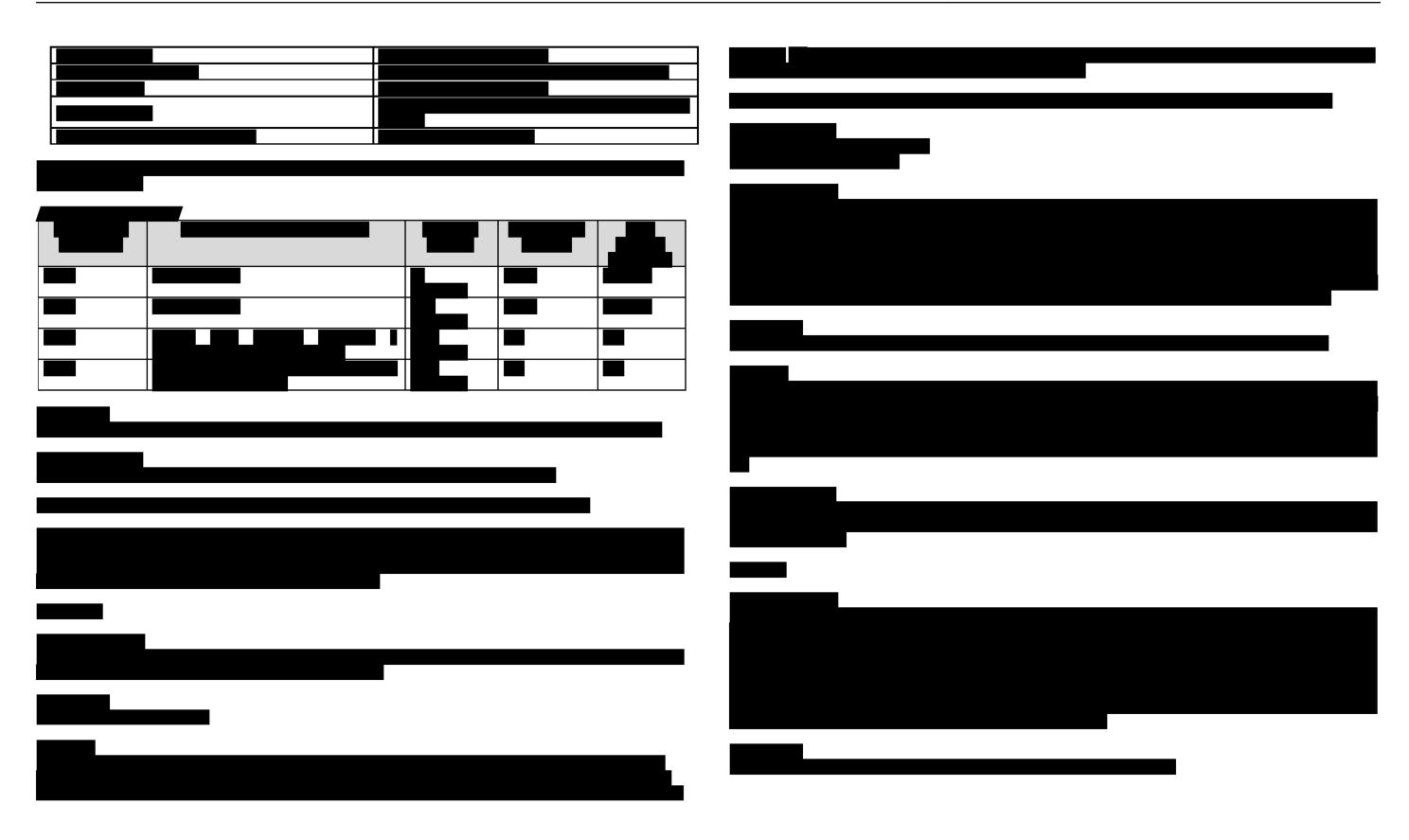
Recommendations

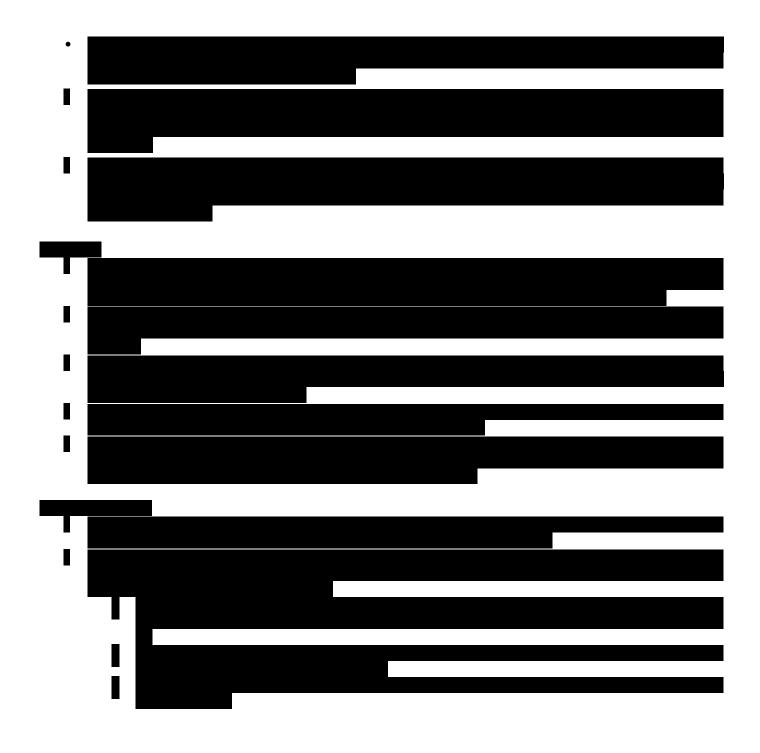
- Replace all vertical hangers in kind, as directed by the Plumbing and Fire Protection group. Install seismic braces for main pipe (diameters equal to or greater than 3 inches in diameter).
- No structural as-built drawings were found in stage 1 review; additional Stage 3 research of available data and / or site survey will be required to determine existing structural member sizes and layout. This will require a scissor lift.

Site specific structural analysis will be required on Stage 3 design, based on the final sprinkler layout.









BUILDING 301

Architecture

Existing Conditions

Building 301 is located on the west side of Craneway Street, approximately 400 feet south of Port Street. The building is utilized primarily as a warehouse. For Building 301, the architectural team conducted a walkthrough visual field survey of the building interior to verify the layout of existing building spaces. Subsequently, a review of the latest provided Port Authority Quality Assurance Building Condition Inspection Report was also undertaken. Building 301 is in the northeast area of the Port Newark Marine Terminal and is accessible via Navy Street. The building is a onestory steel framed warehouse structure, measuring 255 ft by 528 ft in plan with two office annexes at the south side. There is a total of approximately 151,500 SF of floor area across the facility. The building height varies from 38'-7" at the eave to 40'-9" at the ridge. The steel framing consists of cross beams and roof purlins which in turn support the gypsum roof panel covered with rubber roofing in a single gable shape. The exterior wall consists of concrete grade beam supported brick walls with corrugated metal siding or Plexiglas window panels above. The east end of the warehouse roll-up doors for truck loading. The ground floor is bituminous concrete pavement on grade.

At the east side of the warehouse, adjacent to the loading docks, an enclosed structure contains a small suite of rooms used as a breakroom and storage. The partial height walls appear to be wood framed with plywood exterior sheathing and gypsum board interior sheathing. We presume from earlier information if this is a wood framed structure which may be permitted in certain circumstances in Type IIB buildings and will remain. One of the breakroom spaces has suspended acoustical ceilings with 2' x 4' panels and the other gypsum board ceiling. The storage space attached to this suite has exposed wood framed walls and ceiling/roof and plywood sheathing. At the north side of the warehouse, an office trailer located outside of the building perimeter is accessed from within the warehouse space at the northeast corner. The north side of the open warehouse space has fenced areas which run parallel to the length of the building. At the south side of the warehouse space, roll up doors provide access to the yard and provide access to the annexes discussed below.

At the south side of the structure two wings, the southeast and southwest annexes extend from the footprint of the main warehouse space. The southeast annex is currently occupied as an office suite on two levels. The space includes an entrance vestibule and central stair with open office areas, restrooms, enclosed offices, and support spaces on both levels. These spaces have gypsum board partitions, suspended acoustical ceilings and gypsum wallboard soffits. The floors are primarily a vinyl tile finish. The southwest annex is partially occupied and appears to be undergoing renovation. The second level of the southwest annex was not accessible at the time of the field survey. The first level is partially occupied and contains a locker room space, breakrooms, and storage areas. The partitions in the accessible areas are primarily CMU. However, the breakroom areas include partitions with plywood sheathing. The ceilings are exposed to the structure and the floors are concrete.

Outside of the primary building footprint on the south side are two sheds which house the sprinkler valves. These structures include steel frames with corrugated metal sheathing on the walls and roof. A foil faced acoustical batt is attached to the upper half of the walls and the underside of the roof. Both sheds are in a deteriorated condition and have impact damage, penetrations in the walls and rusting at their base. Doors to both sheds are also in a deteriorated condition.

Reference the code analysis drawings in Appendix G for information related to the building occupancy classification, construction type and fire resistance ratings.

<u>Assumptions</u>

- Although a comprehensive condition survey was not performed, existing conditions visually identified from the building interior which appeared to compromise the ability of the exterior envelope to maintain a habitable interior environment are noted in the evaluation section. The building envelope should be maintained, repaired, or upgraded as required to maintain an interior environment which sustains the longterm operational state of fire protection equipment. This includes prevention from premature corrosion or damage to systems from flooding events.
- In accordance with the flood protection elevation determinations by the Port Authority and the designation of the fire protection valves as critical infrastructure one or a combination of the options indicated in the current Port Authority Climate Resilience Design Guidelines are recommended.
- We presume that wood framed structures, where they exist in non-bearing partition walls, are permitted by the current codes in buildings of Type IIB construction when materials are fire retardant treated. A review of these interior constructions should be undertaken in future stages to verify their continued use.
- Due to the access afforded by the arrangement of stored merchandise during the field survey, it is assumed the layout of fencing and openings are as indicated in provided information.

Evaluation

No significant visible deterioration to the warehouse building and southeast annex envelope was noted during the interior walkthrough. However, several of the Plexiglass panels installed at the upper wall show signs of bowing or displacement from frames. In addition, exterior doors also show signs of deterioration. The southwest annex building is in a deteriorated condition that will require rehabilitation. There is ongoing construction whose scope is undetermined. The sprinkler sheds' exterior wall envelopes and doors are in an advanced state of deterioration with impact damage and rusting. The slabs in these sheds also showed signs of spalling and deterioration. The current state of deterioration at the sheds' exterior envelopes could compromise the life expectancies of new and existing equipment and utilities.

It should be noted that wood constructions such as storage lofts or partition walls should be of fire retardant treated materials in accordance with designated non-combustible construction type. The small storage shed at the east side the building has exposed wood which does not appear to be constructed of fire retardant treated wood and should be replaced with non-combustible construction.

Replacement of the sprinkler system is indicated by the Plumbing and Fire Protection design and will require replacement of suspended ceiling systems as indicated in recommendations.

Recommendations

- Rehabilitation of two sprinkler valve sheds in accordance with NJ Rehabilitation Subcode:
 - Remove two existing shed structures to include corrugated metal exterior wall with steel framing, corrugated metal roof construction with steel framing, existing concrete slab on grade.
 - o Provide new 12" thick concrete pad.
 - o Provide 8" CMU walls with core insulation; painted and in accordance with energy code minimums.
 - o Provide 3'-0" by 7'-0" insulated hollow metal exterior door and frame with associated hardware and labeling and in accordance with energy code minimums.
 - o Provide 2" insulated metal panel roof (R10) over cold formed galvanized metal framed roof/ceiling assembly.
- To accommodate fire protection system upgrade, remove and replace suspended ceiling systems throughout both floors of southeast annex.
 - Remove suspended ceiling systems (4,585 SF)

- o Provide suspended ceiling system and 2' x 4' acoustical ceiling tiles (4,585 SF)
- To accommodate fire protection system removals, remove and replace suspended ceiling systems and drywall ceilings in breakroom at east side.
 - Remove suspended ceiling systems (375 SF) and gypsum wall board ceiling (175 SF).
 - Replace suspended ceiling systems and 2' x 4' acoustical ceiling tiles (375 SF) and glass mat gypsum wall board ceiling (175 SF).
- Rebuild attached storage shed in non-combustible construction.
 - Provide storage shed constructed with 8" CMU walls, painted. (43 linear feet @ 10'-0"); 3'-0" by 7'-0" hollow metal interior door and frame with associated hardware. Cold formed galvanized metal framed ceiling 5/8" gypsum wall board ceiling; painted. (110 SF)
- Recommended repair work not under the scope of the Fire Sprinkler Rehabilitation Project includes the following:
 - Provide complete exterior envelope survey and repair penetrations and impact damage to existing metal siding above brick base wall which could compromise envelope integrity around building perimeter.
 Survey should include inspections of doors and Plexiglass panels.
 - Completion of ongoing construction at southwest annex.
 - The existing arrangement of fenced partitions in the warehouse creates exit access travel distances and exit separations which exceed code required maximums. Verification of fencing and openings was not possible due to stockpiles. If arrangement is as indicated on provided documentation, then additional openings are required in the fencing to meet required maximum distances for exit access travel distance and minimum separations. In addition, designated egress paths should be established with exit signage indicating egress paths. Refer to code analysis in Appendix G for additional information.
 - In accordance with the flood protection elevation determinations and the designation of the fire protection valves as critical infrastructure one or a combination of the following options as indicated in the current Climate Resilience Design Guidelines are recommended:
 - Elevation of fire protection valves and other relevant critical infrastructure above the DFE
 - Dry floodproofing the sprinkler valve room perimeter by placing permanent, deployable, or temporary mitigation measures (e.g., flood walls, sealing openings and or deployable protection measures like stop logs to prevent floodwater intrusion).
 - Installing pumps to prevent build-up of incidental leakage in a dry floodproofed sprinkler room.

Civil

No Civil related scope of work identified on Building 301 that is required by the sprinkler system at this point. The cost associated with the 8" backflow preventers is included in the fire protection work.

Electrical

Existing Conditions

Building 301 is primarily a warehouse area with (2) office annexes affixed to the building and (2) sprinkler sheds and electric room outside the main building footprint. There is a 1966 electrical as-built drawing PN-710.013 which shows the fire alarm system is fed via 30A (10A fuse) disconnect switch which is tapped downstream of PA Meter. The meter is fed directly from a 1600A/1200A, 120/208V main circuit breaker in the distribution board in the Electrical Service Room. The distribution board is fed from the Public Service transformer.

The office areas could not be surveyed at the time of the site visit. The sprinkler shed near the southeast side of the building has a Grinnell automatic sprinkler fire alarm bell affixed to its exterior. This bell is showing significant signs of corrosion. Inside this shed, there is a Radionics fire alarm control/communicator panel and annunciator panel that appear to be relatively new and connected to the active system. This is maintained by AFA Protective Systems. There was no visible communicator panel seen near fire alarm panel, but there was a degraded red enclosure stating "Central Station Signals Inc. - New York Model No. DT3" with an AFA label on the front cover. It is believed this is no longer in use, but this would need to be verified with AFA during Stage 3. There were also (2) unidentified red enclosures and (1) red disconnect switch which also appear to be inactive, but this would need to be verified. There was a disconnect switch shown in the 1966 as-built drawings so this could be from the original installation. There were sprinkler switches and signaling devices which appeared to be connected to the fire alarm system. The devices look slightly aged, but the condition is fair. The red conduit covers were observed to be worn and some were loose hanging/not secured. Inside this room, there is also an unnamed electrical panel which is connected to an outlet which has a plug stating, "fire alarm does not unplug". The panel schedule does not specifically list anything regarding fire alarm but does show circuit #2 for red fire lights. This panel is 208/120V, 3-phase, 100A. There was no visible marking on fire panel indicating primary power feed location. During Stage 3, will need to verify whether power is fed from this panel, the electrical room on the opposite side of the building, or a different location. The fire alarm control panel should be marked along with its primary disconnecting means as per code. In addition, fire alarm panel needs to be opened to verify battery backup power. There was no smoke detector observed above fire alarm panel.

On the exterior of warehouse near column M-21 and inside the warehouse near column A-6 there are pull hook station enclosures installed. Inside the warehouse near column A-19 there is a manual pull box installed. All these manual stations are in poor condition. No other fire alarm devices were observed in the warehouse.

Inside the sprinkler shed outside the southwest side of the building there is a fire alarm panel maintained by AFA Protective Systems. The panel seems aged and is showing signs of corrosion. There are only individual modules inside the enclosure, so it is assumed the primary fire alarm control panel is in the SE Annex sprinkler valve room. The cabling and modules inside the enclosure appear to be in generally fair condition. There are also sprinkler switches and signaling devices which appear to be connected to the fire alarm system. These appear to be in generally fair condition. There is an unnamed electrical panel with the text "Heat #3" written in black marker on the front cover inside this room which appears to feed the fire alarm panel. The panel schedule shows circuit #2 supplying fire lights, like what was seen in the southeast sprinkler shed. This panel is 208/120V, 3-phase, 100A.

All the areas are sprinklered.

<u>Assumptions</u>

- The base building fire alarm system is operating normally, and the existing sequence of operations provides
 appropriate notification and signaling. This project scope only evaluates required additional or replacement
 signaling as per other discipline recommendations in this report. All new fire alarm related equipment added
 will require testing and verification by AFA and witness testing by QAD.
- Any existing sprinkler system devices not being replaced as per recommendations in this report shall be functionally tested against the requirements of NFPA 72 and transmit supervisory and alarm signals in compliance with NFPA 101. This should be verified with AFA.
- The existing fire alarm system, initiating devices, and notification devices outside the scope of this project meet the design criteria as per NFPA 72.
- The existing lighting system, including emergency, has not been evaluated as this is outside the project scope. Any lighting modifications pertain to Architectural recommendations for ceiling replacement in coordination with replacement of sprinkler piping system.

• The existing electrical distribution equipment in the building is outside the project scope requirements. Only condition of electrical equipment directly correlated with fire alarm system has been considered.

Evaluation

Occupancy group classification for building is primarily S-1 with accessory occupancies of B and U as per code analysis drawings in Appendix G. As per NFPA 101 section 6.1.14.1.3, where incidental to another occupancy, the storage (S-1) occupancy is permitted as the predominant occupancy and is subject to provisions of the code for said occupancy. Therefore, this building is evaluated under criteria of S-1 occupancy. The area is provided with sprinkler protection as per NFPA 101 section 42.3.4.2(3) with a minimum of one manual fire alarm box. However, there is not a manual pull box located at each exit doorway seen during site visit as per NFPA 72 section 17.15.9.4. In addition, the existing pull stations were noted to be in poor condition. The adequacy of the existing sprinkler coverage is as per the assessment of the Plumbing and Fire Protection section. No horn/strobe devices installed throughout warehouse area. New horn/strobe devices should be installed to meet audible and visible coverage requirements as per NFPA 72. The existing power supply to the fire alarm control panel needs to be verified and evaluated as to whether it meets appropriate criteria as per NFPA 72 section 10.6. A smoke detector must be installed near the existing fire alarm control panel to meet criteria as per NFPA 72 section 10.4.5 and should be installed within 15 feet horizontally as per PANYNJ Electrical Design Guidelines. Confirm supervisory and alarm signal supervision complies with NFPA 101 section 9.7.2 for automatic sprinkler system.

Recommendations

It is recommended to replace all fire alarm I/O in kind that are affected by sprinkler system work as noted in Plumbing and Fire Protection recommendations. In addition, missing/loose conduit covers for sprinkler devices should be replaced with new. Pull station boxes are in poor condition so it is recommended to replace all devices with new. Install pull stations which are missing at exit doorways as per NFPA 72 requirements. Install new horn/strobe devices and test notification system to verify proper audible and visible coverage as per NFPA 72 section 18 requirements. The fire alarm panel in the southwest sprinkler shed should be cleaned and tested. Test functionality of equipment and verify whether replacement is required. During Stage 3, verify with AFA whether existing main fire alarm control panel has sufficient spare I/O points for new devices or if an auxiliary panel needs to be added. Verify functionality of all new and existing initiating and notification devices related to fire protection system and update programming of fire alarm control panels accordingly. A smoke detector needs to be installed near existing fire alarm control panel as per NFPA 72 section 10.4.5 within 15 feet horizontally as per PANYNJ Electrical Design Guidelines. Verify primary power disconnecting means and battery backup power for fire alarm panels complies with code. If current system does not communicate with central station, then signals must be sent to approved alarm receiving facility as per NFPA 101 9.7.2.2.1. As per Architecture recommendations to renovate the sprinkler valve rooms, the electrical and fire alarm equipment will need to be removed. Due to age of equipment, although not directly related to fire protection systems work, electrical panels and accessories may require replacement. In coordination with Architecture recommendations for renovations of ceiling areas, lighting in all associated areas will need to be replaced with new. In coordination with Mechanical-HVAC recommendations to install new 3kW electrical unit heaters in each sprinkler valve room, a new 208V, 30A, 1ph disconnect switch will need to be installed with new conduit and cable to existing panel. As per site visit, the heater for the SE Annex valve room appears to be supplied from unnamed panel inside the room via circuit #11 labeled "heater". The heater for the SW Annex valve room appears to be supplied from unnamed panel in the room via circuit #11 labeled "ILG heater". The power feed for the HVAC equipment and lighting should be traced and verified during Stage 3.

Environmental

Existing Conditions

An Environmental survey with sample collection and testing was completed on the sprinkler system and adjacent areas in March 2021. After the 50% submission, an additional survey was completed in November 2021 to include all the areas impacted by the scope of other disciplines. The intent of the survey was to locate and identify all

Asbestos Containing Materials (ACM), Lead Paint, Polychlorinated Biphenyls (PCBs), and Universal Wastes that could be impacted by the renovation of the sprinkler system.

The following twenty-two (22) homogeneous materials were inspected and sampled for ACM:

Table 45: ACM Testing Matrix

| Suspect Material | Location | | |
|---|---|--|--|
| 2'X4' Ceiling Tile Type I | 1 st Floor – Warehouse Area, Lunchroom 1 | | |
| Paper Backing on Ceiling Fiberglass Insulation | 1st Floor – Warehouse Area, Lunchroom 1 | | |
| Textured Plaster (One Coat) on Plywood Ceiling | 1 st Floor – Warehouse Area, Lunchroom 1, Gym Room | | |
| Brick Wall Mortar | 1 st Floor – Warehouse Area Northeast Corner | | |
| 2' X 2' & 2' X 4' Ceiling Tile - Fissured | 1 st Floor – Office space | | |
| Gypsum Board Paper - Wall | 1 st Floor – Office space | | |
| Gypsum Board - Wall | 1 st Floor – Office space | | |
| Joint Compound – Wall | 1 st Floor – Office space | | |
| HVAC Duct Insulation Cover | 1 st Floor – Office space | | |
| Fiberglass Pipe Insulation Cover 3" OD | 1 st Floor – Office space | | |
| CMU Mortar Wall | 1 st Floor – Office space Electric Room | | |
| 2' X 4' Ceiling Tile Type I - Fissured | 2 nd Floor – Office space | | |
| Gypsum Board Paper - Wall | 2 nd Floor – Office space | | |
| Gypsum Board - Wall | 2 nd Floor – Office space | | |
| Joint Compound – Wall | 2 nd Floor – Office space | | |
| HVAC Duct Insulation Cover | 2 nd Floor – Office space | | |
| 2' X 4' Ceiling Tile Type II | 2 nd Floor – By Entrance to Office space | | |
| CMU Wall Mortar | 1 st Floor – (Abandoned Building) – Locker Room & Lunchroom | | |
| Gypsum Board Paper - Wall | 1 st Floor – (Abandoned Building) – Lobby | | |
| Gypsum Board - Wall | 1 st Floor – (Abandoned Building) – Lobby | | |
| Joint Compound - Wall | 1 st Floor - (Abandoned Building) - Lobby | | |
| Fiberglass Pipe Insulation Cover 3" OD | 1 st Floor – (Abandoned Building) – Men's & Women's Bathrooms | | |
| Pipe Fitting Insulation associated with F/G Pipe Insulation | 1 st Floor – (Abandoned Building) – Men's & Women's Bathrooms | | |

Based upon visual inspection and analytical results of bulk samples collected, the following materials are asbestos-containing (> 1%):

Table 46: ACM Schedule

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------------|
| 67-69 | Pipe Fitting Insulation associated with F/G | 10% | 25 LF | ACM001 |
| | Pipe Insulation | Chrysotile | | |

<u>Assumptions</u>

The following materials are presumed to be asbestos-containing material (PACM):

The Southeast & West sprinkler shed entrance doors are assumed to contain asbestos fireproofing material inside.

Table 47: ACM Assumptions

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|--|---------------------|-------------------------|-----------------------------|
| N/A | Pipe and Pipe Fitting Insulation - Warehouse Area | PACM | 2,200 L.F. | ACM001 |
| N/A | Flange & Valve Gaskets - 2 Sprinkler Rooms | PACM | 50 Units | ACM001 |

The existing sprinkler system pipes are painted. The paint was not tested but is assumed to be lead-containing.

Recommendations

The confirmed asbestos materials shall be abated as part of the sprinkler system renovation.

The presumed asbestos pipe and pipe fitting insulation and gaskets will require abatement/removal with the sprinkler system renovation.

The assumed lead paint on the sprinkler system does not have to be completely abated/removed, but an estimated 10% of the paint on the sprinkler system will be impacted, and thus will require incidental abatement/removal. The 10% of the existing sprinkler system to be impacted is estimated to be 1197 linear feet.

Mechanical

Existing Conditions

Building 301 consist of warehouse area, locker, break room, kitchen, men and women bathrooms and occupied office spaces. The warehouse provides a management of freight services for equipment and materials such as wires, conduits, plastics, or emergency power generators, etc. There are two (2) valve rooms on the Southwest and Southeast end of the building. Each valve room has a 5.0 kW electric unit heater.

Southeast Annex has two (2) rooftop AC units (RTU-1 and RTU-2) serving the first and second floor office areas and breakrooms. Southwest Annex 1st floor is used a locker room and the 2nd floor is an unoccupied space.

Assumptions

 RTU-1 and RTU-2 (Manufacturers: York) and supply distribution ductwork serving the first and second floor areas do not require modifications or upgrade.

Evaluation

Valve rooms' metal corrugated walls are partly deteriorated allowing for air infiltration during winter. To account for infiltration, 4 air changes per hour (ACH) is incorporated into the heating load calculation. The 4 ACH results in additional 4,557 BTU/hr. heating load resulting in total required heating load to be 18,543 BTU/hr. or approximately 5.5 kW. Existing 5.0 kW electric unit heaters are not sufficient since the required heating load is a minimum of 5.5 kW. Existing valve rooms shall be provided with adequate heating and maintained at the required indoor space temperature above 40°F as per NFPA 13 Chapter 16.4.1.3. As per the Architectural recommendation for the

rehabilitation of two sprinkler valve rooms with new insulated shed envelope and roof, the required heating load reduces to 5,026 BTU/hr. or approximately 1.5 kW.

The Southwest Annex is comprised of lockers, break room, kitchen space, storage, and corridor. The second floor is not occupied. There is no HVAC equipment obstruction in the Southeast Annex for the replacement of fire sprinkler piping work.

The Southeast Annex is comprised of ten (10) offices including:

- 1st floor: 4 offices, 1 break room, 2 men's bathroom, 1 women's bathroom.
- 2nd floor: 6 offices, 2 bathrooms, 1 conference room.

The two (2) existing rooftop AC units (RTU-1 and RTU-2) serve the Southeast Annex for the cooling and heating loads, and the required outdoor ventilation airflow rates through the existing air distribution ductwork. There are supply air diffusers and return air registers on the existing suspended ceilings. Existing supply air diffusers and return registers in the Southeast Annex offices impede the rehabilitation of fire protection work and require removal and replacement. The fire sprinkler in the building and warehouse area is a dry pipe system and does not require heating as per NFPA 13 Chapter 16.4.1.1.

Recommendations

Replace existing supply air diffusers and return air registers in the Southwest Annex first and second floor office spaces. Replace existing electric valve room unit heaters in Valve Room-1 and Valve Room-2.

- It will be required to perform air quantity readings from the existing supply air distribution, return air ductwork and air inlets and outlets prior to removal and after installation.
- Testing, adjusting, and balancing of new air inlets and outlets will be required.

Table 48: Unit Heater Schedule

| BLDG No. | Unit Location | Unit Type | Quantity | Location | Model | kW |
|----------|----------------------|----------------------|----------|----------|----------------------|-----|
| 301 | Valve & Riser Shed-1 | Electric Unit Heater | 1 | Ceiling | QMARK MUH0381-PRO | 3.0 |
| 301 | Valve & Riser Shed-2 | Electric Unit Heater | 1 | Ceiling | QMARK MUH0381-PRO | 3.0 |

Plumbing and Fire Protection

Existing Conditions

Building 301 is approximately 255' by 528' in plan with an area of 151,500 sq. ft. The building is used as warehouse for cargo. There are two valve rooms on the southwest and southeast end of the building and are sheds attached to the main building. The southeast valve room 8" incoming fire service is original to the building, as well as the three (3) 6" dry valves which have their shut off control valves shut. The air compressors are in the southeast valve room and serve the dry valves in the southeast and southwest valve rooms appear to have been replaced at some point. The southwest valve room has an 8" incoming fire service, with two (2) 6" dry valves. The two (2) dry valves appear to have been replaced at some point. The dry sprinkler system is a tree type configuration, and the piping seems to be in decent condition however, there are locations throughout the system that show signs of corrosion. The sprinkler heads appear to be original to the installation.

Assumptions

The existing sprinkler system has reached the end of its useful life and requires complete replacement.

Evaluation

The valve room southeast 8" incoming fire service is original to the building, as well as the three (3) 6" dry valves and have reached the end of useful life. At the time of survey all three (3) 6" dry valves control valves were shut off. This could be a sign of air leaks within the sprinkler system. The air compressors that serve the dry valves appear to have been replaced at some point. The southwest valve room piping is original to the building and show signs of corrosion. The two (2) dry valves have been replaced at some point in time and during the survey were active. The dry sprinkler piping seems to be in good condition however, there are locations throughout the system that show signs of corrosion, considering the age it has reached close to end of life and will require replacing. The sprinkler heads appear to be original to the installation and due to age have reached their end of useful life.

Recommendations

The sprinkler system will be replaced in kind with new sprinkler heads, piping, dry pipe valves, check valves, OS&Y valves, tamper switches, and two air compressor systems for the dry valves. Install two new 8" backflow preventers.

Structural

Existing Conditions

For Building 301, the structural task lead performed a review over the as-built drawings, the latest Port Authority Quality Assurance Division condition inspection report (P05-925.650, January 2018), field photos of other disciplines and a visual inspection from ground level to determine the condition of the fire sprinkler system vertical hangers, seismic braces, and roof framing that the sprinkler pipes are attached to. Building 301 is a single-story, flat roof warehouse with two annex structures along the south side of the building. The building framing is structural steel consisting of wide flange columns and roof girders, which support steel roof purlins, which supports a rubber membrane over gypsum panels roof system. The fire sprinkler system spans between the steel roof purlins and is supported off each roof purlin (spaced 7'-7" O.C.) with c-clamps, threaded rods, and swivel rings. The main line is not supported by seismic braces.

<u>Assumptions</u>

The following are the assumptions used to develop the structural cost estimate:

- The linear feet of main and branch fire sprinkler pipe installation provided in the cost estimate by the Plumbing and Fire Protection group will be used in the structural estimate to quantity the vertical hangers and seismic bracing removal and installation.
- The Plumbing and Fire Protection group linear feet of main and branch fire sprinkler pipe removal and
 installation assumes that all sprinkler pipes in each building need to be replaced. This means that the
 quantity of vertical hangers and seismic bracing provided by the Structural group are based on worst case
 conditions.
- The structural estimate assumes a production rate of 6 vertical hanger or seismic brace removal or
 installation per hour. The estimate also assumes that the tenant will assist in relocation of their merchandise
 to accommodate contractors' access to roof section where vertical hangers and seismic braces need to be
 removed or installed.

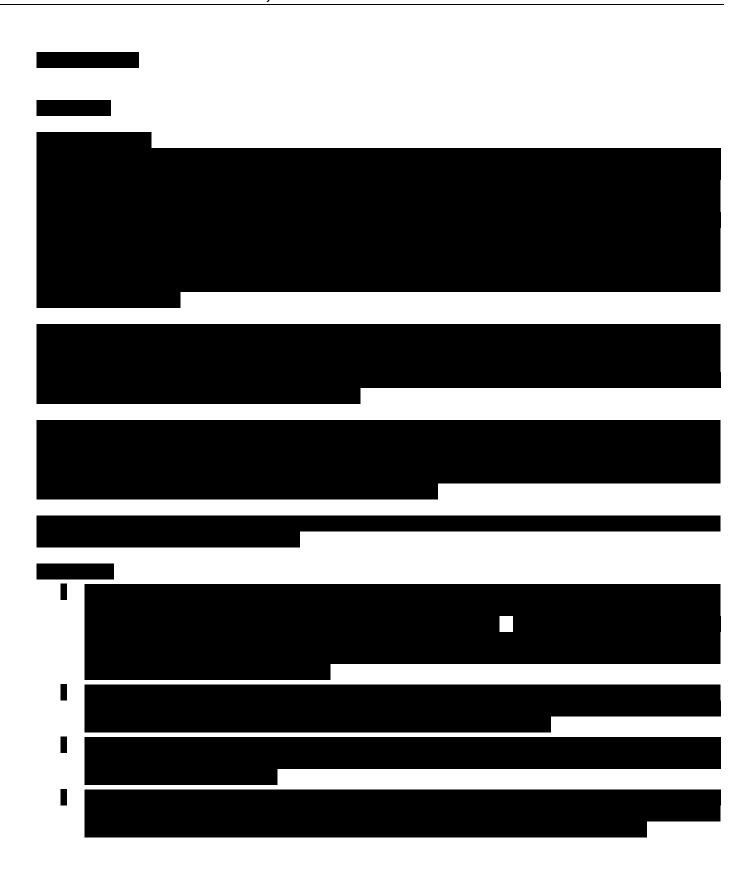
Evaluation

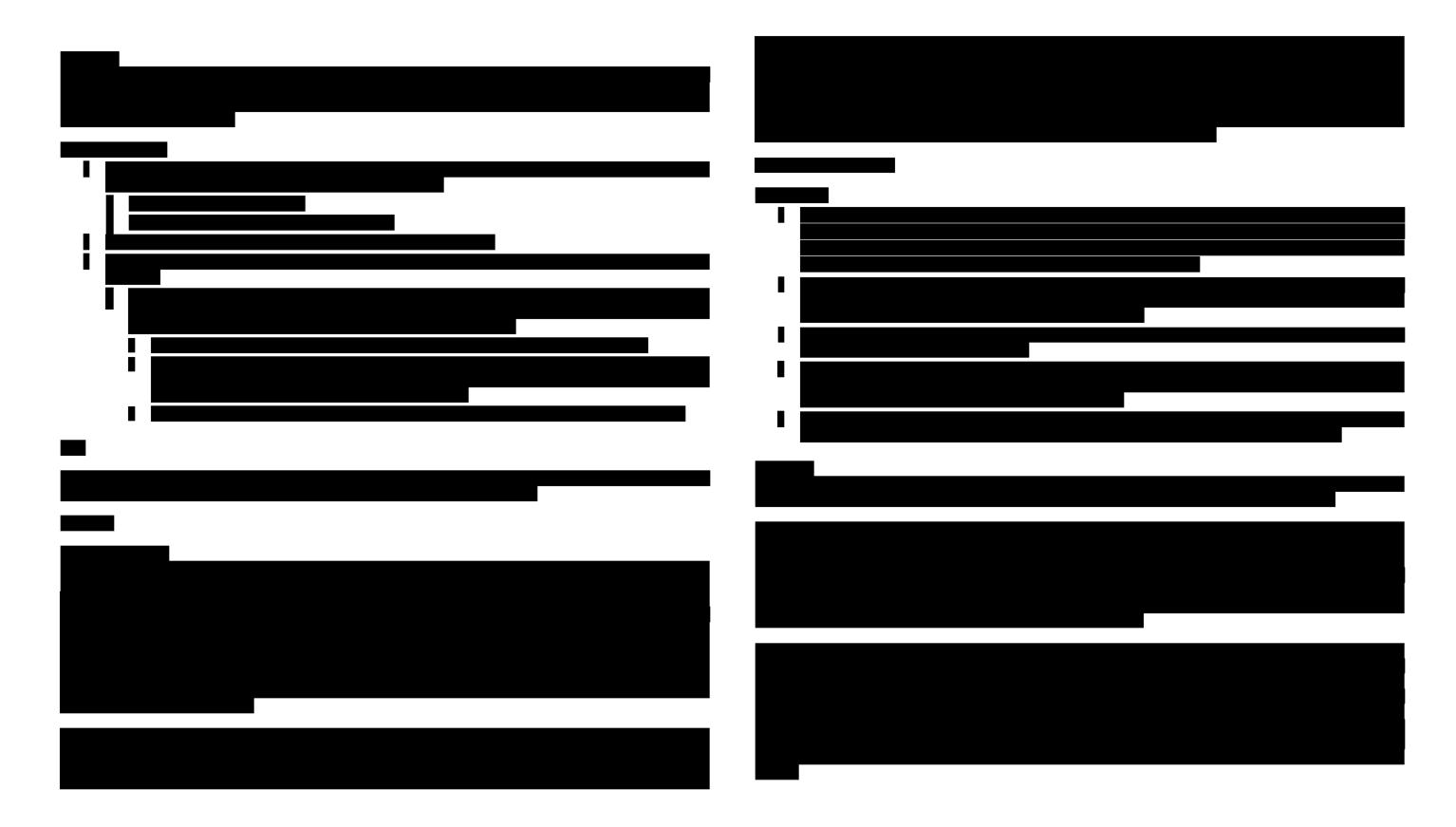
Structural task leader reviewed available field photos of the existing vertical hanger and seismic braces to
evaluate their conditions and reviewed the Quality Assurance Division condition survey reports for any
structural roof priority repairs that might affect the sprinkler pipes attachment to the roof structure.

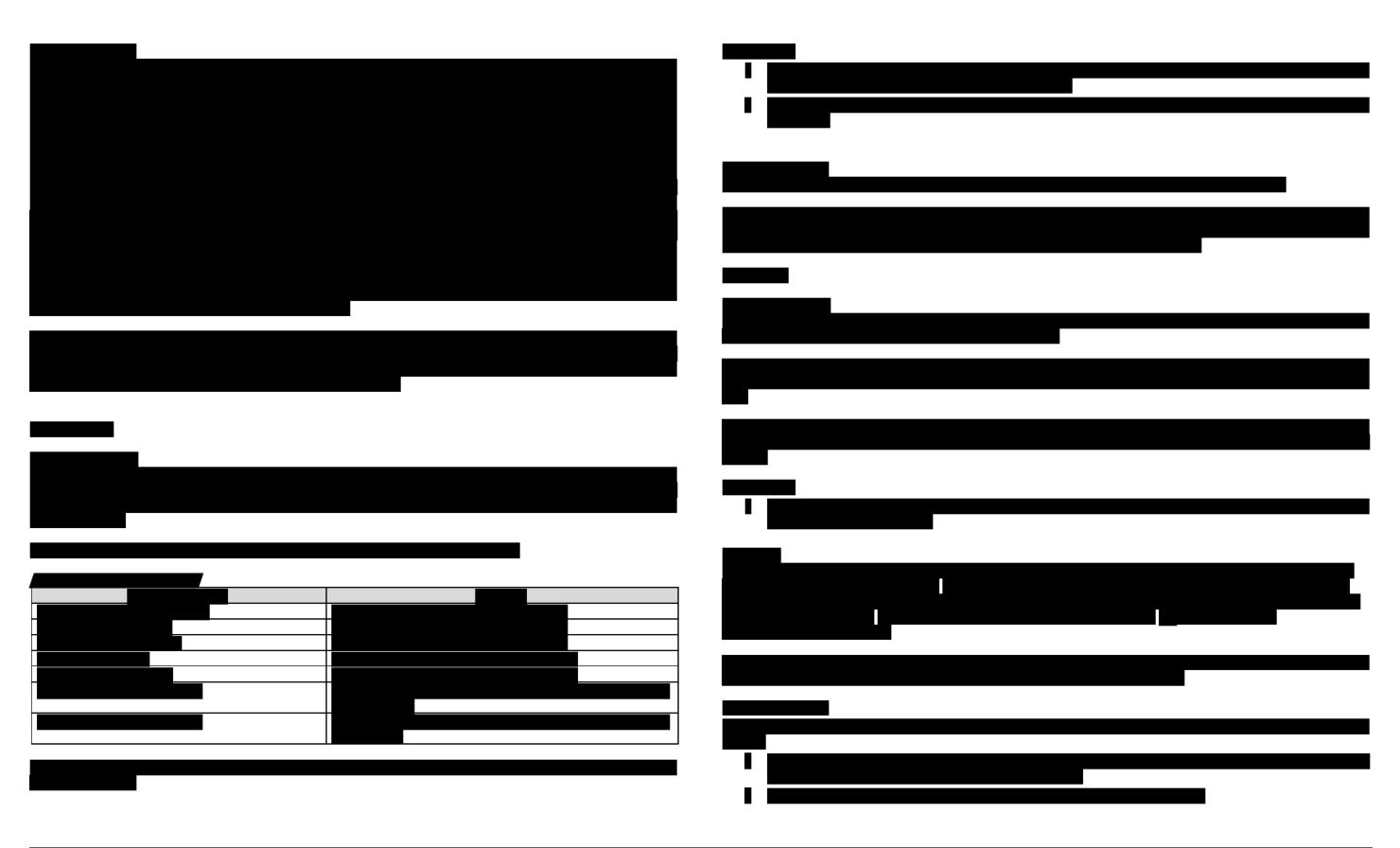
- Available field photos and Quality Assurance Division condition survey reports review showed no significant structural issues that would compromise the feasibility of the sprinkler system attachment to the roof member.
- A hands-on inspection of the vertical hangers, seismic braces and roof framing with a scissor lift would not
 have been possible to perform given the volume of space occupied by tenant products within the facility and
 the volume of tenant forklift activities.
- Scope of the structural evaluation was limited to the existing roof members, and their availability of supporting the additional load from the proposed sprinkler system.

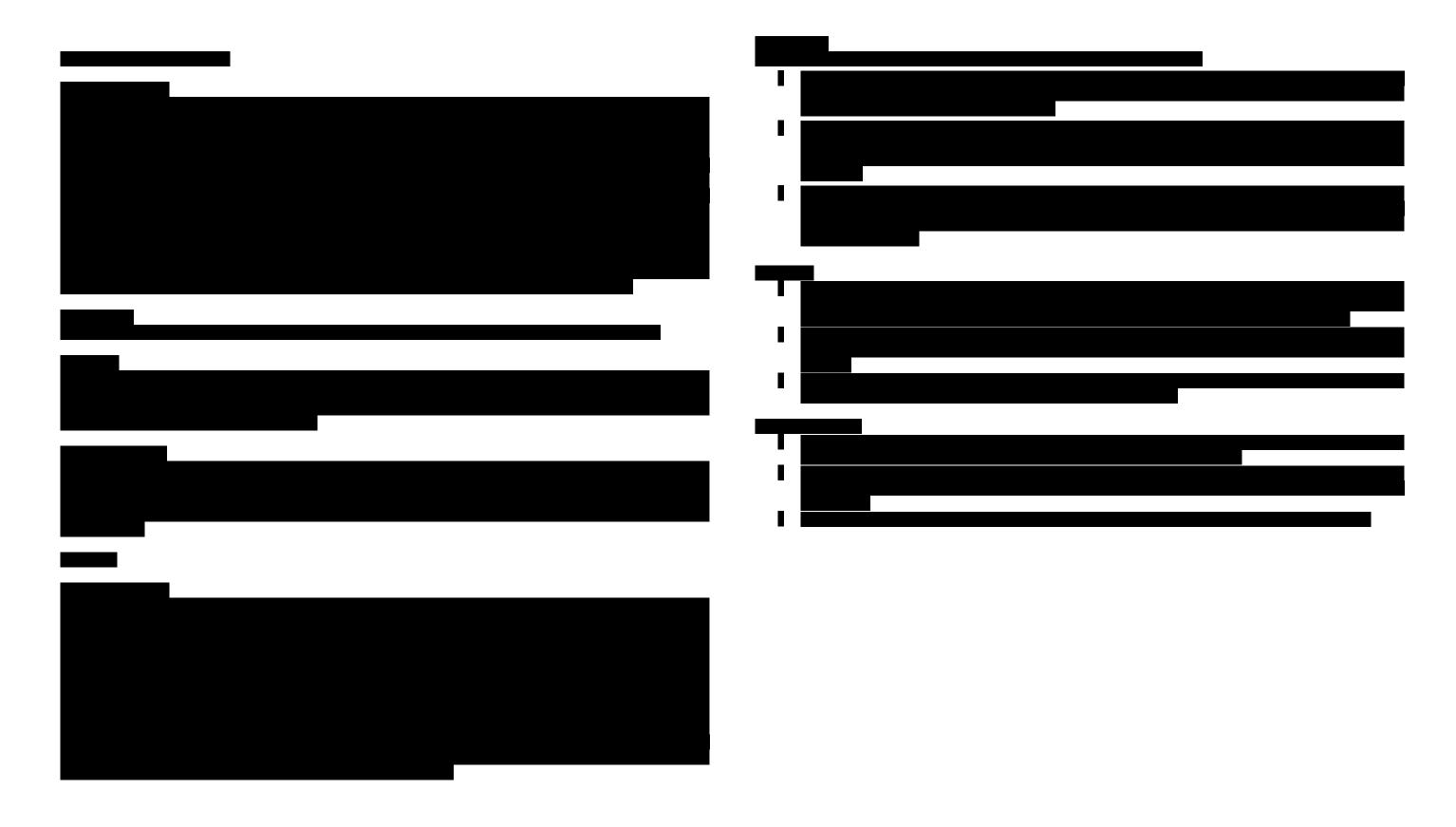
Recommendations

- Replace all vertical hangers in kind, as directed by the Plumbing and Fire Protection group. Install seismic braces for main pipe (diameters equal to or greater than 3 inches in diameter).
- No structural as-built drawings were found in stage 1 review; additional Stage 3 research of available data and / or site survey will be required to determine existing structural member sizes and layout. This will require a scissor lift.
- Site specific structural analysis will be required on Stage 3 design, based on the final sprinkler layout.









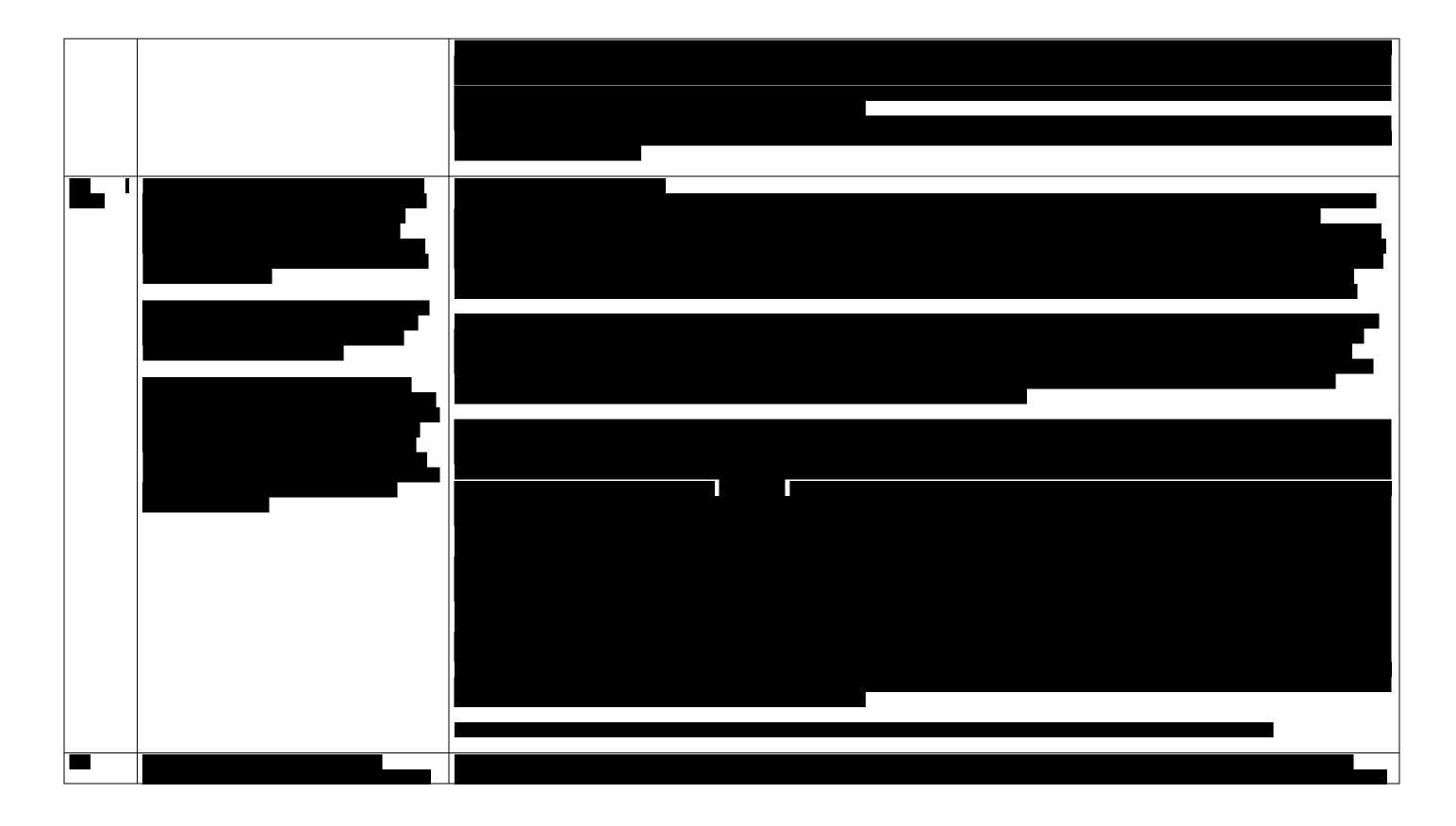
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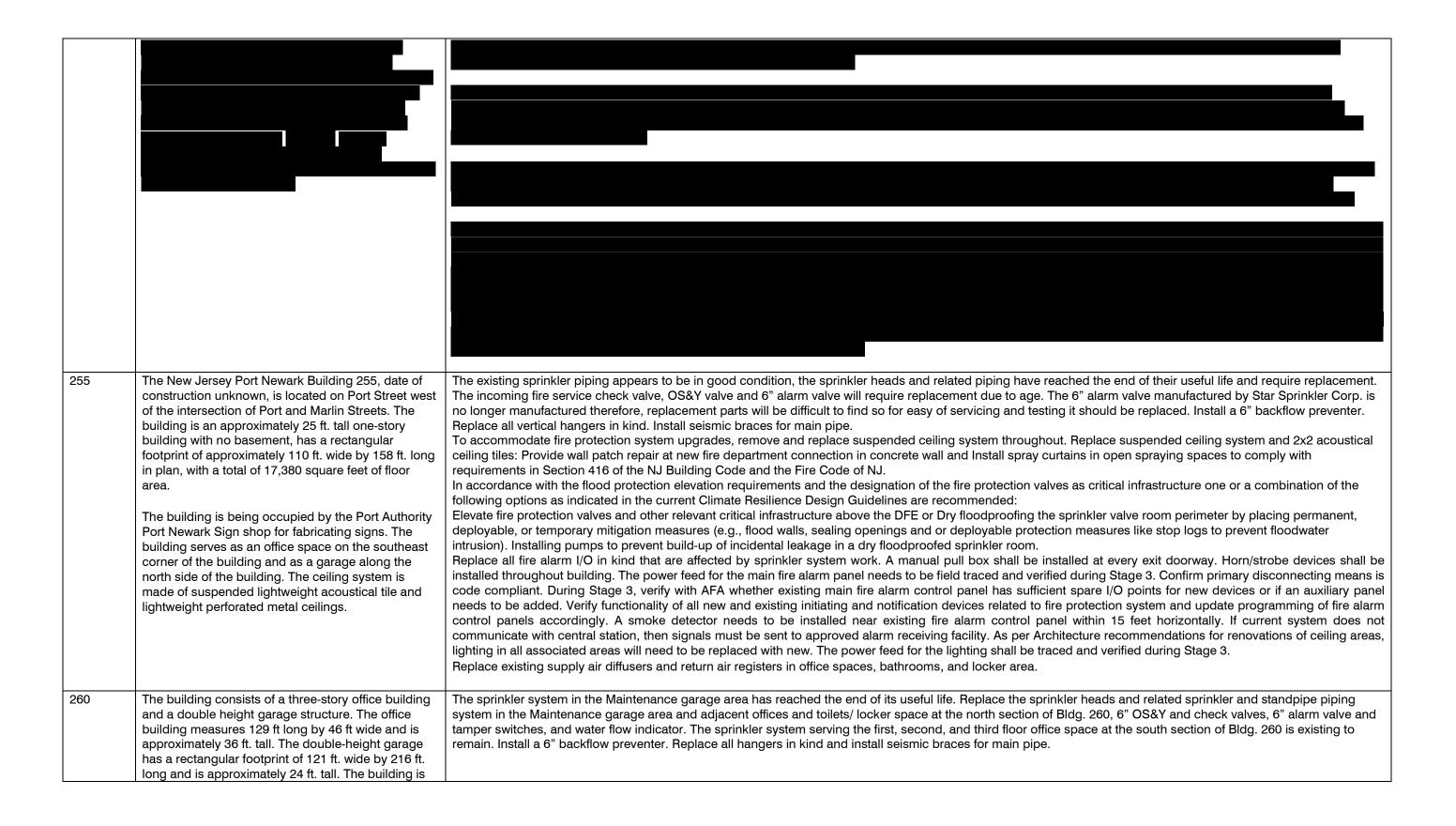
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SUMMARY OF RECOMMENDATIONS

Table 61: Summary of Recommendations Matrix

| | Table 61: Summary of Recommendations Matrix | | | | | | | | |
|-----------------|--|---|--|--|--|--|--|--|--|
| Building No. | Building Description | Recommendations | | | | | | | |
| Port Newar | rk | | | | | | | | |
| 111 | Building 111 is occupied by Port Authority personnel and serves as a pump station for the Port Newark domestic and fire protection water systems. Most of the space consists of a large, open, and full height mechanical space. There are isolated areas of office space along the interiors northeast portion of the building. | The sprinkler heads have reached the end of its useful life and require replacement. Replace the existing sprinkler heads, branch piping, and all associated hangers and seismic braces. Replace all fire alarm I/O in kind that are affected by sprinkler system work. Verify smoke detector near existing fire alarm panels is within 15 feet horizontally. Primary power disconnecting means for fire alarm panels must be marked appropriately. Communicator panel must be configured so that signals are sent to approved alarm receiving facility if it does not currently do so. During Stage 3, work with AFA to verify functionality of all new and existing initiating and notification devices related to fire protection system and update programming of existing fire alarm control panels accordingly. There is no mechanical recommendation since there is no HVAC system or equipment changes required. Provide for wall patch repairs. The asbestos gaskets will require abatement/removal with the sprinkler system renovation. The assumed lead paint on the sprinkler system does not have to be completely abated/removed, but an estimated 10% of the paint on the sprinkler system will be impacted, and thus will require incidental abatement/removal. The 10% of the existing sprinkler system to be impacted is estimated to be 1024 linear feet. | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |





being used as the Administrative Building for the Port Authority's New Jersey Marine Terminals, office for the Port Authority police and a service garage for Port Authority vehicles. The overall area is a total of 32,890 sf, 6,670sf at the office building and 26,200 sf for the garage.

Replace suspended ceiling systems at first floor toilet rooms, locker rooms, low roof offices constructed in the garage area, two rooms beneath storage mezzanine, and locker/breakroom adjacent to auto repair space. Provide 2x2 ceiling tile replacement due to sprinkler heads replacement in office areas on first, second and third floor.

In accordance with the flood protection elevation determinations and the designation of the fire protection valves as critical infrastructure one or a combination of the following options as indicated in the current Climate Resilience Design Guidelines are recommended: Elevation of fire protection valves and other relevant critical infrastructure above the DFE or Dry floodproofing the sprinkler valve room perimeter by placing permanent, deployable or temporary mitigation measures (e.g., flood walls, sealing openings and or deployable protection measures like stop logs to prevent floodwater intrusion). Installing pumps to prevent build-up of incidental leakage in a dry floodproofed sprinkler room.

Replace all fire alarm I/O in kind that are affected by sprinkler system work. A manual pull box shall be installed at exit doorway near column D-3 and any other exit doorways missing a manual pull station. Verify with AFA whether a positive alarm sequence, pre-signal system, or voice communication/public address system is installed. The primary power source shall be labeled on fire alarm control panel in sprinkler valve room. During Stage 3, the power feed for the clean agent system installed on the 2nd floor shall be field traced and verified, however, it is believed this is connected to panel LPLX circuit #1 based on the panel schedule. During Stage 3, verify with AFA whether existing main fire alarm control panel has sufficient spare I/O points for new devices or if an auxiliary panel needs to be added. Verify functionality of all new and existing initiating and notification devices related to fire protection system and update programming of fire alarm control panels accordingly. As per Architecture recommendations for renovations of ceiling areas, lighting in all associated areas will need to be replaced with new. The power feed for the lighting should be traced and verified during Stage 3.

Replace existing supply air diffusers and return air registers in office spaces, bathrooms, and locker room areas on the first floor.

Building 263 is a single-story steel frame warehouse which measures approximately 161 ft by 634 ft. Most of the building is being used as a general cargo warehouse and sustain heavy forklift traffic. A portion of the building is used as a factory for light manufacturing. The floor in the warehouse is bituminous concrete and in the factory area the floor is plywood. The building's height varies from approximately a minimum of 26 ft at the north and south sides to 40 ft at the ridge. A concrete masonry fire wall divides the building into east and west portions. Several modular office structures exist in the building and are occupied by various tenants.

The entire sprinkler system has reached the end of its useful life and requires replacement; This includes, check valves, shut off valves, dry valves, sprinkler piping and sprinkler heads. The air compressors should be replaced. Install two 8" backflow preventers. Replace all vertical hangers in kind and install seismic braces for the main piping system.

Provide replacement exterior doors and frame at sprinkler rooms and insulation at exterior wall of sprinkler rooms:

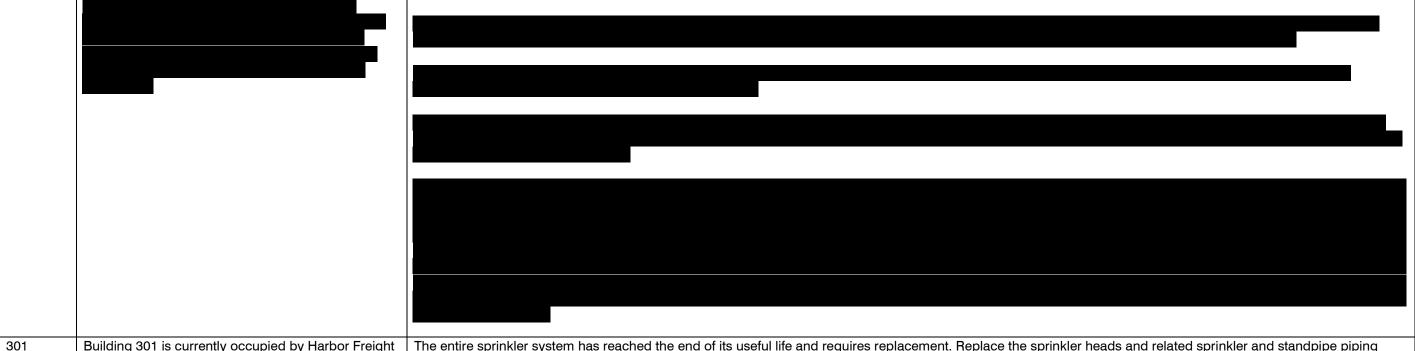
Repair Fire rated wall construction at the connection to adjacent building. Provide 1x1 ceiling tile replacement due to sprinkler heads replacement in office areas and patch wall near fire department connection. Recommended repair work complete exterior envelope survey and repair penetrations and impact damage to existing metal siding and roofing which compromise envelope integrity around building perimeter.

Climate Resilience Design Guidelines recommends Elevation of fire protection valves and other relevant critical infrastructure above the DFE or Dry floodproofing by the sprinkler valve room perimeter by placing permanent, deployable, or temporary mitigation measures and Installing pumps to prevent build-up of incidental leakage in a dry floodproofed sprinkler room.

Replace all fire alarm I/O in kind that are affected by sprinkler system work as noted in Plumbing and Fire Protection recommendations. Horn/strobe and pull station boxes seem aged so each should be tested and verified for proper operation during Stage 3. The power feed for fire alarm panel in the sprinkler room needs to be traced and verified. The fire alarm panel in the sprinkler valve room is in poor condition and shall be replaced in kind. Pull station and bell outside of sprinkler valve room shall be tested and verified, however, it is recommended to replace with new. Although it appears to be operating normally, it is recommended to replace annunciator panel located near column D/E-1 since it seems to have exceeded its useful life. During Stage 3, verify with AFA whether existing main fire alarm control panel has sufficient spare I/O points for new devices or if an auxiliary panel needs to be added. Verify functionality of all new and existing initiating and notification devices related to fire protection system and update programming of fire alarm control panels accordingly. A smoke detector needs to be installed near existing fire alarm control panel within 15 feet horizontally. Verify if the primary power disconnecting means for fire alarm panel is marked appropriately as per code. Battery backup inside fire alarm panel must be verified as well. Verify with AFA during Stage 3 if system is still in communication with central station as originally indicated in 1990 as-built drawings.

268

263



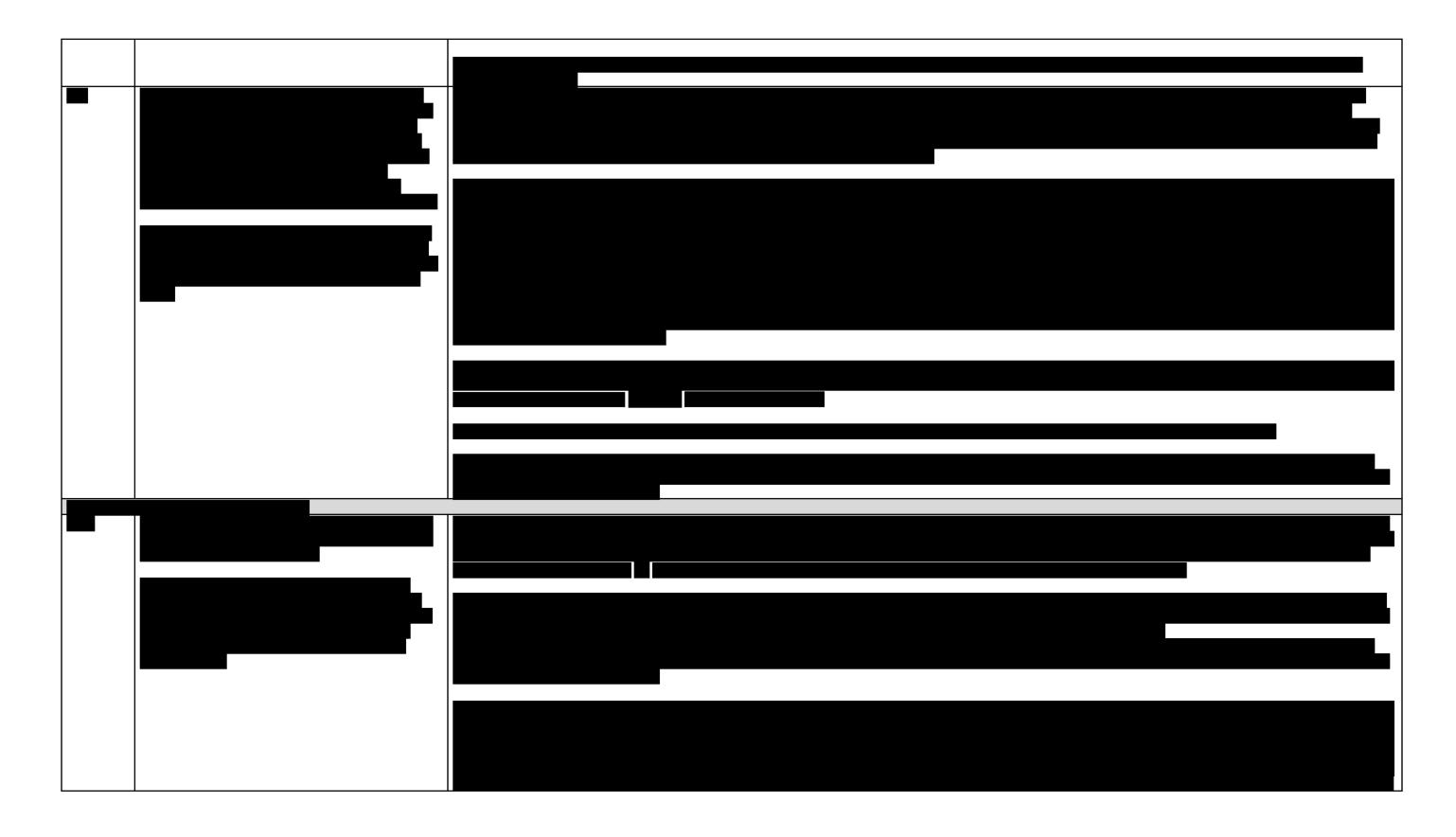
Building 301 is currently occupied by Harbor Freight Transport and used for storage of general cargo. The building is a one-story steel framed structure, measuring 255 ft by 528 ft, (135,000square feet). The building height varies from 38'-7" at the eave to 40'-9" at the ridge. The exterior wall consists of concrete grade beam supported CMU wall brick wall with corrugated metal siding or Plexiglas window panels on top. There is an office located in the middle of the east side of the building and two office annexes along south side of building. The suspended acoustical ceilings are present at both office annexes.

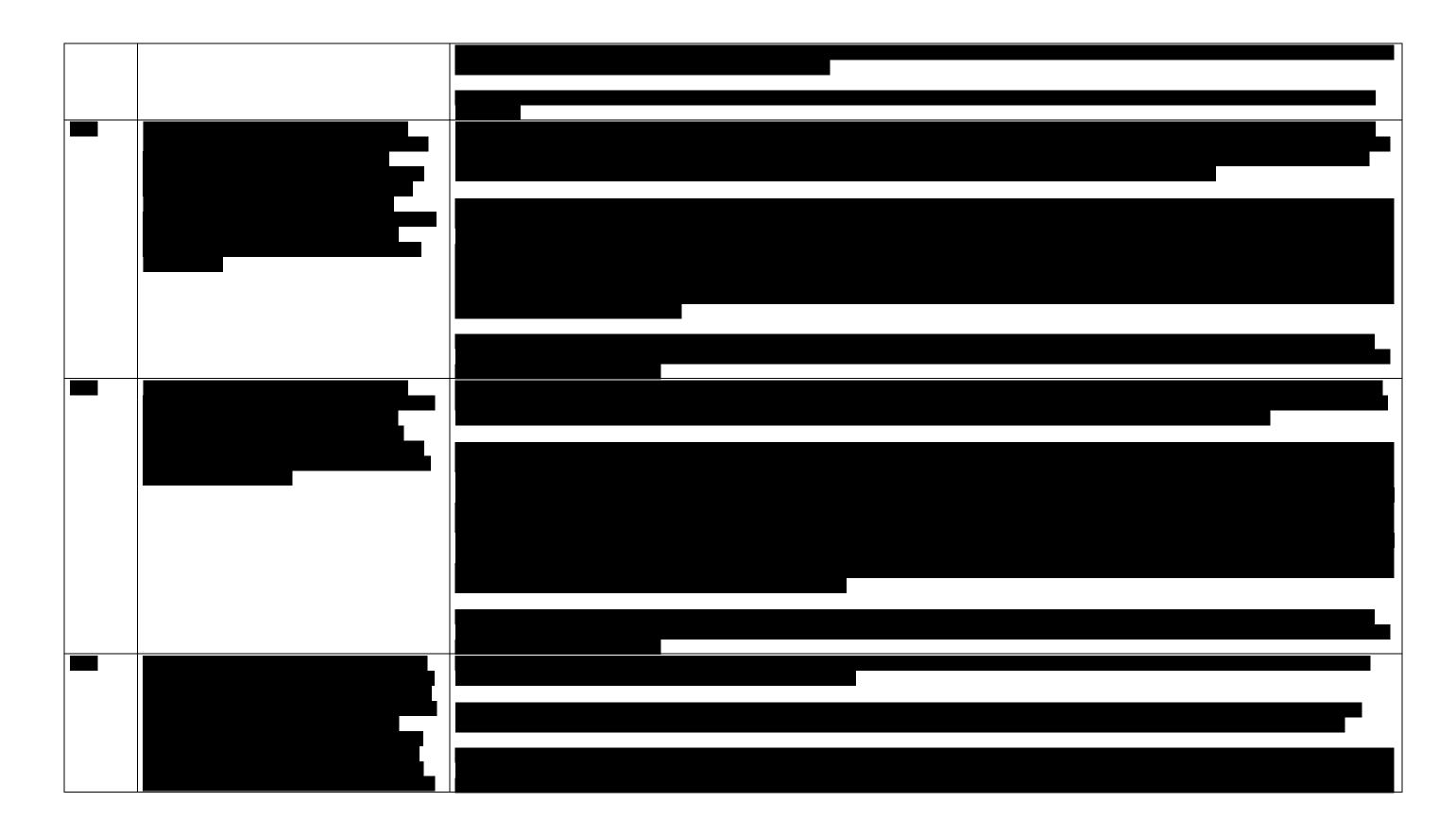
The entire sprinkler system has reached the end of its useful life and requires replacement. Replace the sprinkler heads and related sprinkler and standpipe piping system. Replace valves and pipe in two fire sprinkler riser rooms serving the east and west area of Bldg. 301. Replace five - 6" OS&Y / Dry pipe valves and related apparatus, two air compressor motors and one tank, seven tamper switches, two 8" check and 8" OS&Y valves. Install two 8" backflow preventers. Replace hangers and install seismic braces for main pipe.

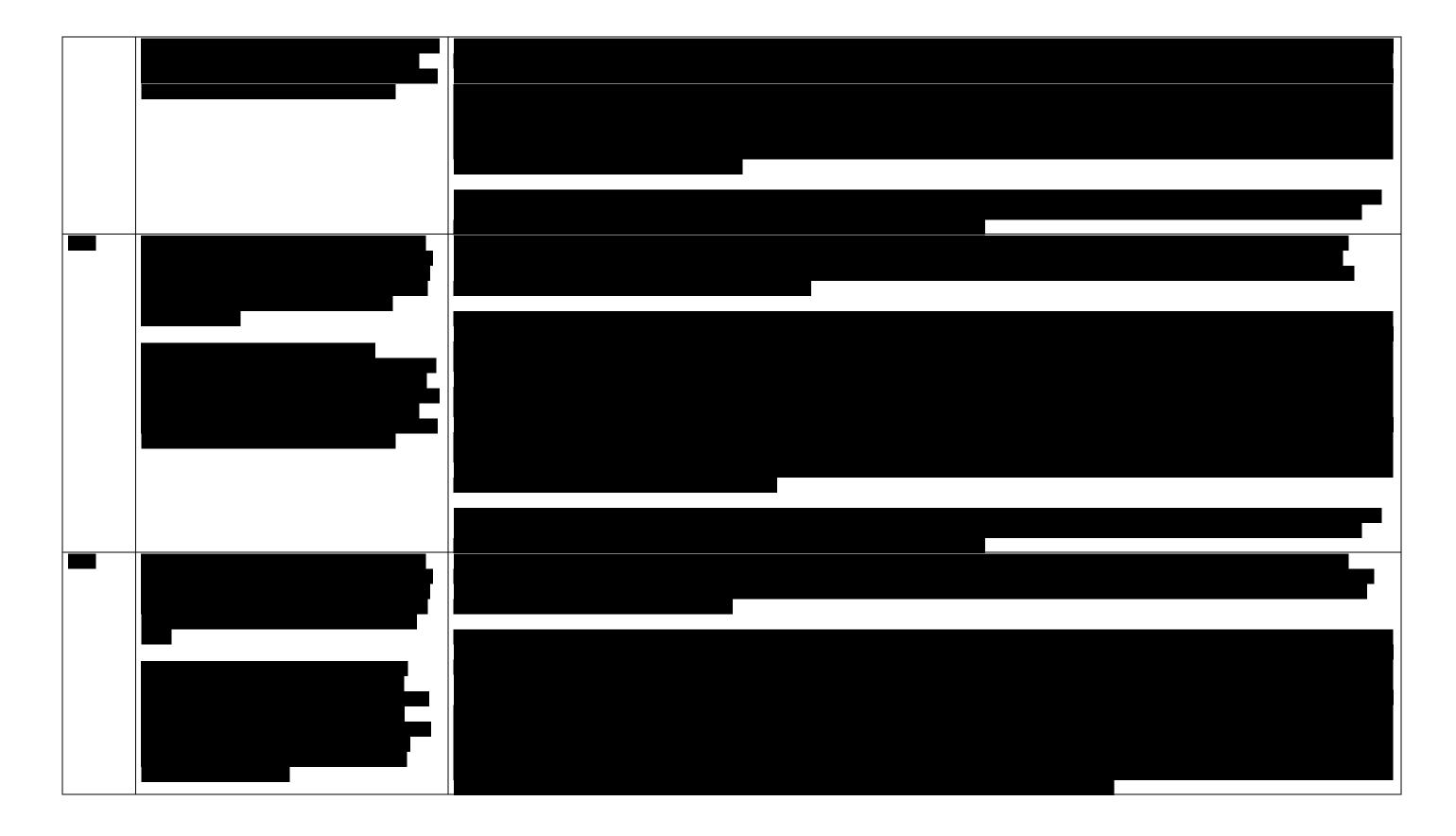
Rehabilitation of two sprinkler valve sheds in accordance with NJ Rehabilitation Subcode. Also, remove and replace suspended ceiling systems throughout both floors of southeast annex. Also, remove and replace suspended ceiling systems and drywall ceilings in breakroom at the east side. Rebuild attached storage shed in non-combustible construction. Recommended repair work includes complete exterior envelope survey and repair penetrations and impact damage to existing metal siding above brick base wall which compromise envelope integrity around building perimeter. Survey should include inspections of doors and Plexiglass panels.

Climate Resilience Design Guidelines recommends Elevation of fire protection valves and other relevant critical infrastructure above the DFE or Dry floodproofing by the sprinkler valve room perimeter by placing permanent, deployable, or temporary mitigation measures and Installing pumps to prevent build-up of incidental leakage in a dry floodproofed sprinkler room.

Replace all fire alarm I/O in kind that are affected by sprinkler system work. In addition, missing/loose conduit covers for sprinkler devices shall be replaced with new. Pull station boxes are in poor condition so it is recommended to replace all devices with new. Install pull stations which are missing at exit doorways. Install new horn/strobe devices and test notification system to verify proper audible and visible coverage as per code. The fire alarm panel in the southwest sprinkler shed should be cleaned and tested. Test functionality of equipment and verify whether replacement is required. During Stage 3, verify with AFA whether existing main fire alarm control panel has sufficient spare I/O points for new devices or if an auxiliary panel needs to be added. Verify functionality of all new and existing initiating and notification devices related to fire protection system and update programming of fire alarm control panels accordingly. A smoke detector needs to be installed near existing fire alarm control panel within 15 feet horizontally. Verify primary power disconnecting means and battery backup power for fire alarm panels complies with code. If current system does not communicate with central station, then signals must be sent to approved alarm receiving facility. The electrical and fire alarm equipment will need to be removed and reinstalled in coordination with sprinkler valve rooms renovations. Due to age of equipment, although not directly related to fire protection systems work, electrical panels and accessories may require replacement. In coordination with Architecture recommendations for renovations of ceiling areas, lighting in all associated areas will need to be replaced with new. Each new 3kW electrical unit heater in each sprinkler valve room will require a new 208V, 30A, 1ph disconnect switch will need to be installed with new conduit and cable to existing panel. As per site visit, the heater for the SE Annex valve room appears to be supplied from unnamed panel in the room via circuit #11









REHABILITATION OF FIRE PROTECTION SYSTEMS AT PORT NEWARK, ELIZABETH PORT AUTHORITY MARINE TERMINAL, AND PORT JERSEY – STAGE I REPORT

APPENDIX

Port Newark

Building 111

Architecture Fig 01 – Aerial View



Architecture Fig 02 - Street View



Architecture Figs 03 –05 Pump Room, Fuel Storage, Office Block-Control Room







Architecture Fig-06 Control Room Interior

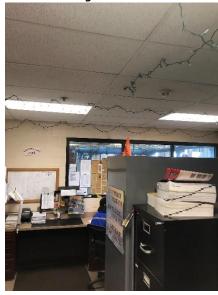


Photo 1 – Mechanical HVAC – Ceiling Mounted Unit Heaters



Photo 1 – Mechanical Fire Protection

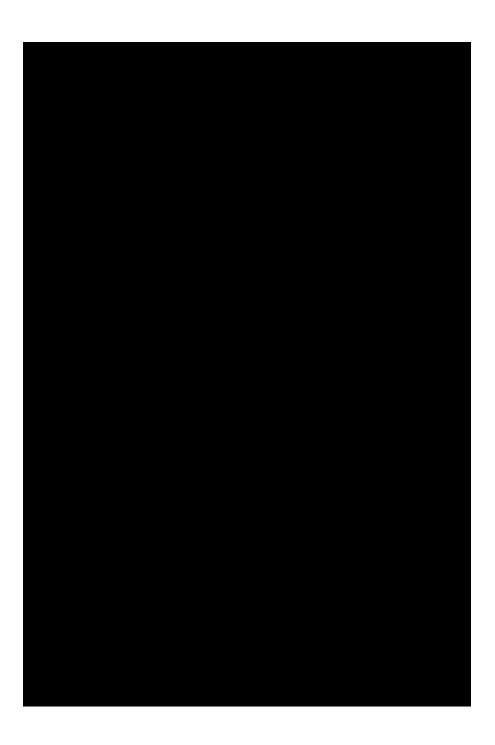


Photo 2 – Mechanical Fire Protection



Photo3 – Mechanical Fire Protection – Alarm Check Valve Serving Sprinkler System





Building 255

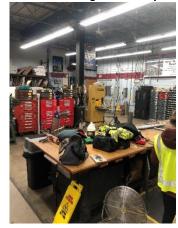
Architecture Fig 01 – Aerial View



Architecture Fig 02 – Street View



Architecture Figs 03 –04 Open Work Area, Office/Work Room





Architecture Figs 05 –07 Open Spray Room 1, Open Spray Room 2, Garage/Loading

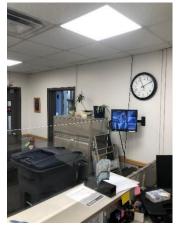






Architecture Figs 08 –09 Open Work Area, Office





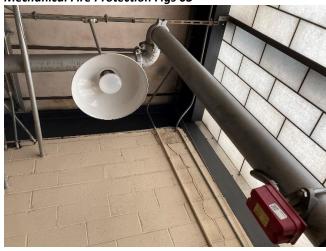
Mechanical Fire Protection Figs 01



Mechanical Fire Protection Figs 02



Mechanical Fire Protection Figs 03



Mechanical Fire Protection Figs 04



Mechanical Fire Protection Figs 05



Building 260

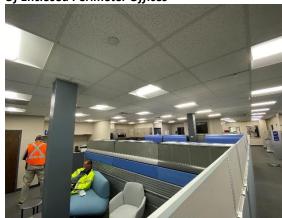
Architecture Fig 01 – Aerial View



Architecture Fig 02 – Street View



View Of Garage, Typical View Of Upper Floor Open Office Area, Typical View Of Enclosed Perimeter Offices





Architecture Fig 03 – View Of Garage, View Of Auto Repair Shop





View Of Renovated Open Area, View Of Mezzanine From Garage





Mechanical Fire Protection Fig 01



Mechanical Fire Protection Fig 02



Mechanical Fire Protection Fig 03



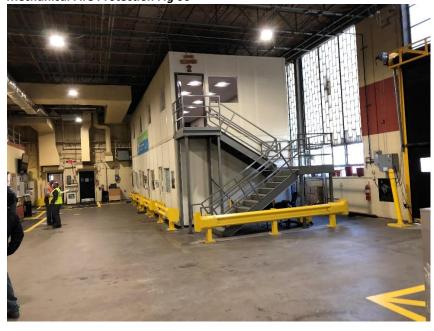
Mechanical Fire Protection Fig 04



Mechanical Fire Protection Fig 05



Mechanical Fire Protection Fig 06



Mechanical Fire Protection Fig 07



Mechanical Fire Protection Fig 08



Building 263

Architecture Fig 01 – Aerial View



Architecture Fig 02 – Street View



Architecture Fig 03-04 Nw Warehouse Area With Office Block, Interior View Of Offices





Architecture Fig 05-07 – Views In East Side Warehouse







Architecture Fig 05-07 –West Side Warehouse, Partial Mezzanine, West Side Warehouse







Architecture Fig 08-10 –West Side Warehouse Bathroom, Exterior Wall, East Side Warehouse Bathroom Block







Mechanical Fire Protection Fig 01



Mechanical Fire Protection Fig 02



Mechanical Fire Protection Fig 03



Mechanical Fire Protection Fig 04



Mechanical Fire Protection Fig 05



Mechanical Fire Protection Fig 06



Mechanical Fire Protection Fig 07



Building 301

Architecture Fig 01 – Aerial View



Architecture Fig 02 – Street View



Architecture Fig 03-05 Se Sprinkler Shed, Nw Sprinkler Shed, Sw Office Annex







Architecture Fig 06-07 Warehouse Views





Architecture Fig 08-10 Se Office Annex, Sw Locker Room, Warehouse Beeakroom







Mechanical Fire Protection Fig 01



Mechanical Fire Protection Fig 02



Mechanical Fire Protection Fig 03



Mechanical Fire Protection Fig 04



Mechanical Fire Protection Fig 05



Mechanical Fire Protection Fig 06



Mechanical Fire Protection Fig 07



Mechanical Fire Protection Fig 08



Mechanical Fire Protection Fig 09



Mechanical Fire Protection Fig 10









CATALOG AND EQUIPMENT CUT SHEETS



FLOOD PROOF SECURITY DOORS

Our new range of flood proof security doors are flood proof whenever they are locked and due to their steel frame and construction, they are able to operate simultaneously as security doors. Full height flood depths are achievable, depending on the locking mechanism chosen.

The use of these doors ensures that when a door is locked it is watertight - this removes the need to check if barriers are installed when a flood alert is received.

Available as single or double leaf doors, these systems are ideal for use in unmanned locations, such as utility sites, especially where security measures are required. Double leaf doors incorporate a removable center mullion. The door leafs utilize 0.08" zinc-coated steel and come with a range of locking mechanisms. Doors are supplied insulated and can be 60 minute fire rated if required.

Doors and frames are manufactured as standard using galvanized steel and are powder-coated to client's color specification. Door manufacture using stainless steel is available where requested, for the harshest environments. The doors utilize adjustable gaskets that are adjusted upon installation to ensure the correct level of compression is applied to the gaskets.

Doors can incorporate windows or ventilation grilles.

Permanent Flood Protection and Security – single or double leaf – flood depths up to full height.













USES

- Existing or new building openings up to 8.2 ft wide.
- Emergency access / escape routes.
- Where flood protection required alongside security or fire resistance.
- Secure sites such as utility sites or commercial premises.

BENEFITS

- Flood proof / security / 60 minute door all in one. No need for separate protection measures.
- Single or double leaf flood door.
- Permanent protection.
- No operational difficulties operates just like a normal door.
- Suitable for constant daily use.
- Flood-proof to full height.
- Openings to 8 ft high and 8.2 ft wide as standard.

www.floodcontrolinternational.us



DESIGN

SIZES

- Single flood doors available to 3.6 ft width and 8 ft height as standard.
- Double flood doors are available with demountable center mullion to 8.2 ft width and 8 ft height.
- Removable or liftable overpanels available where increased heights are required.

CONFIGURATIONS

- Low profile threshold for situations where doors and frames are installed in existing accesses.
- · Face mounted frames enable unrestricted accesses.
- · Inward or outward opening doors available.

INSTALLATION

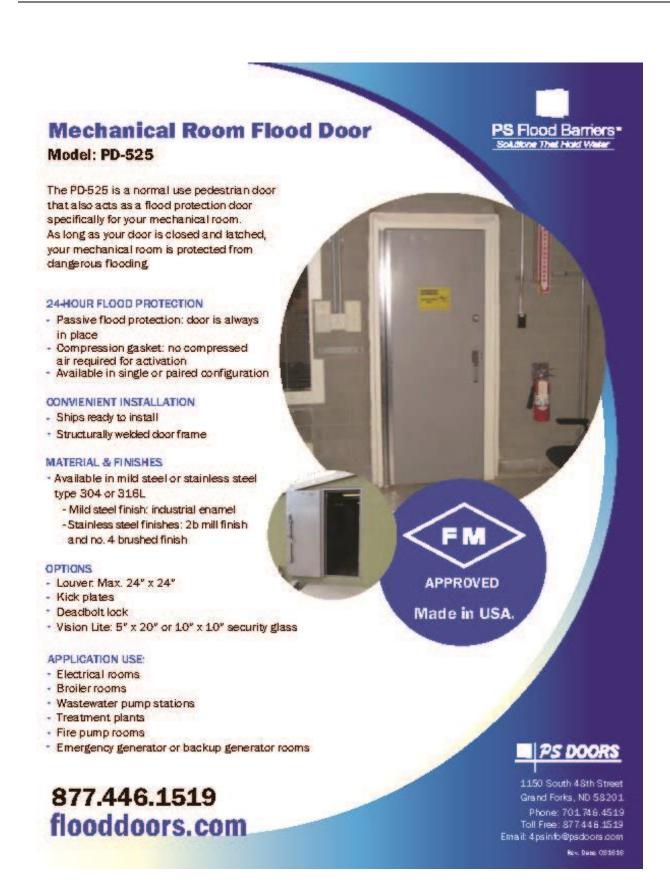
 Doors and frames require adequate walls either side and a flat surface to seal against. Doors and frames provided with all sealants and fixings required.



BESPOKE CAD DRAWINGS



www.floodcontrolinternational.us





New from Reliable are high quality fire protection control Butterfly Valves in both Grooved End and Wafer Style options. These valves are UL, ULC listed and FM approved and are available in sizes from 2½" up to 8".

They are supplied from stock with factory installed UL listed double tamper switch for indoor and outdoor use.

Grooved End 2-1/2" - 8" (65mm up to 200mm)

Working Pressure and Temperature

| Working Pressure | 300 PSI (21.4Bars) |
|--------------------------|--------------------|
| Max. Test Pressure | 600 PSI (42.8Bars) |
| Max. Working Temperature | 250°F (120°C) |

Materials List

| Component | Material |
|---------------------|------------------------------|
| Body | ASTM A-536 Nylon-11 Coated |
| Disc | ASTM A-536 EPOM Encapsulated |
| Upper & Lower Stems | Al5i 420-55 |
| Housing | A5TM A-536 |
| Hand Wheel | A5TM A-536 |
| Flag indicator | A5TM A-536 |
| Shear Pin | ASTM A-510 |
| Segment Gear | ASTM B-148 or B-584 |
| Housing Gasket | EPDM Grade E |
| O-Rings (All) | EPDM Grade E |



THAPCH RESISTANCE
DESTRUCT

O DESC CLARAMOS OF BOX 19 THE CPCH POSITION
THIRD SHE BOY OF BOX 19 THE CPCH POSITION

| SIZE | Ä | В | С | D | E | F | G | H |
|--------|------------|------------|--------------|--------------|------------|------------|------------|-------------|
| 2-1/2" | 4.13 (105) | 3.30 (85) | 3.80 (96.4) | 2.87 (73.0) | 5.31 (135) | 5.04 (128) | 5.04 (128) | i. |
| 3" | 4.41 (112) | 3.60 (92) | 3.80 (96.4) | 3.50 (88.9) | 5.59 (142) | 5.04 (128) | 5.04 (128) | |
| 4" | 5.71 (145) | 4.90 (108) | 4.54 (115.4) | 4.50 (114.3) | 6.89 (175) | 5.04 (128) | 5.04 (128) | Acres and |
| 6" | 7.05 (179) | 5.71 (145) | 5.21 (132.4) | 6.63 (166.3) | 8.23 (209) | 8.66 (220) | 8.66 (220) | 0.28 (7.10) |
| 8" | 8.03 (204) | 8.70 (170) | 5.80 (147.4) | 8.63 (219.1) | 9.21 (234) | 8.66 (220) | 8.66 (220) | 0.95 (24.2) |





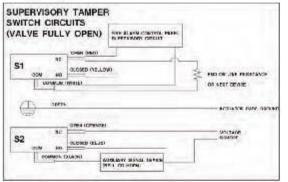


RELIABLE AUTOMATIC SPRINKLER CO INC

1470 Smith Grove Road, Liberty, South Carolina 29857 USA www.reliablesprinkler.com

CO INC TECHNOLOGY - QUALITY - SERVICE

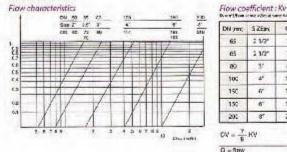




Test Data

Butterfly Valve

GROOVED END



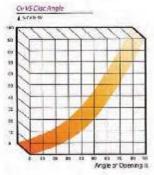
| woff - E | 13 | O. | = present | - | | P1=0 | | 1 | |
|-------------------|--------|-----|-------------|------|------|------|-------|----------|------|
| $N = \frac{7}{6}$ | KV | K | /= <u>Q</u> | √ AP | | 2-3 | SKI J | AP P1 | |
| 200 | 8" | 219 | 165 | 339 | 677 | 1230 | 2002 | 2850 | 3120 |
| 150 | 6 | 155 | 84 | 184 | 369 | 634 | 964 | 1196 | 1200 |
| 150 | 67 | 165 | M. | 134 | 6.0 | n.14 | 964 | 1196 | 1286 |
| 100 | 4" | 114 | ж | €5.1 | 129 | 226 | 277 | 480 | 514 |
| 80 | 3' | 89 | 15.2 | 39.4 | 75.9 | 144 | 210 | 243 | 249 |
| 65 | 2.1/2" | 76 | 12 | 27,4 | 53.1 | 95 | 138 | 156 | 103 |
| 65 | 2 1/2" | 73 | 13 | 37.4 | 53.1 | 95 | 138 | 156 | 163 |
| DN (mm) | S ZEm | 00 | 30" | 45 | 50" | 60" | 78" | 10" | 40" |

WAFER TYPE Flow characteristics

| EN. | 65 | 33 | 100 | 150 | 220 |
|-----|--------|-----|-----|------|------|
| Ske | 2-1/2" | 30 | 4" | 0 | 4, |
| Ye. | 210 | 330 | 610 | 1530 | 2700 |
| CV | 240 | 385 | 712 | 1750 | 3150 |

The flow coefficient KV is the follow in trish of trains, at an average temperature of 2015, crossing the value with creating a headless of 1 bar. The

En - M



RELIABLE AUTOMATIC SPRINKLER CO INC TECHNOLOGY - QUALITY - SERVICE

1470 Smith Grove Road, Liberty, South Carolina 29657 USA www.reliablesprinkler.com



Concealed Sprinkler With 11/2" (38mm) Adjustment Model G4A, K4.2 and K5.6

sprinklers refer to Bulletin 034 for Technical

1. Cover plate attachment (Plain or Perforated) with 1/2" (13mm) assembly adjustment.

4. Available in brass, chrome or black plated

For non adjustable K5.6 and K4.2 type

The Concealer®

UL Quick Response

Sprinkler types

Features

FM Standard Response

Specification and Approvals

Smooth aesthetic ceiling profile. 3. Factory installed protective cap.

and white painted finishes.

1. Underwriters Labortories, Inc. (UL) -

3. Factory Mutual Research Corp. (FM) -

4. NYC MEA 258-93-E - Quick Response

Multiple orifices for design flexibility.

2. Underwriters Laboratories of Canada (ULC) -

Light Hazard Occupanicies-

Ordinary Hazard Occupancies

Groups 1 & 2 Wet Systems Only

The Reliable Model G4A Adjustable Concealer® is the most

versatile quick response concealed sprinkler available. It provides the best form of fire protection while offering an attractive

11/2" inlet Adjustable for ease of installation. The small diameter

cover plate assembly is easily attached and blends into the ceil-

ing, concealing the most dependable fire protection available,

Ordinary temperature rating.

Approvals & Listings

Quick Response

Quick Response

Standard Response

No Limitations

U.S. Patent number 4,880,063.

Application

an automatic sprinkler system.

Model G4A Quick Response Adjustable Concealed **Automatic Sprinkler**

Bulletin 154 Rev. I



The Model G4A Adjustable Concealer® is designed for use where aesthetic appearance is important. Offices, hospitals, motels and restaurants are but a few of the applications where it can be used. It is available in different orifice sizes allowing the designer to optimize system performance, thereby achieving a very efficient installation.

The Model G4A Adjustable Concealer® is a UL Listed Quick Response Concealed sprinkler intended for use in accordance with NFPA 13. FM Approves this sprinkler as a standard response concealed sprinkler intended for use in accordance with FM Loss Prevention Data Sheet 2.0.

Product Description

The Reliable Model G4A Adjustable Concealer® uses a proven quick response fusible element in a standard style sprinkler frame with a drop-down deflector. This assembly is recessed into the ceiling and concealed by a flat cover plate assembly. The threaded engagement provides 1/2" (13mm) of cover adjustment. The flat cover plate is attached to the skirt using either 135°F (57°C) or 165°F (74°C) ordinary temperature classifica-

When the ceiling temperature rises, the solder holding the appearance and 1/2" (13mm) of cover adjustment in addition to flat cover plate melts, the flat cover plate released thus exposing the sprinkler inside to the rising ambient temperature.

> The subsequent fusing of the element opens the waterway and causes the deflector to distribute the water. Any secure engagement between the cover plate and cup will assure that the drop-down deflector is properly located below the ceiling.

The Reliable Automatic Sprinkler Co., Inc., 103 Fairview Park Drive, Elmsford, New York 10523

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Bulletin 131 Rev. K

Model GFR Model GFR Recessed Quick Response Sprinklers

Model GFR Sprinkler Types

Standard Upright Standard Pendent Horizontal Sidewall

HSW1 Deflector Intermediate Level Upright Intermediate Level Pendent Conventional

Model GFR Recessed Sprinkler Types

Recessed Pendent Recessed Horizontal Sidewall HSW1 Deflector

Approvals

- 1. Underwriters Laboratories, Inc. (UL)
- 2. Underwriters' Laboratories of Canada (ULC)
- 3. NYC BS&A No. 587-75-SA

4. 5.

- 6. MIL-S-901C and MIL-STD-167-1
- 7. NYC MEA 258-93-E

UL Listing Category

Sprinklers, Automatic & Open Quick Response Sprinkler

UL Guide Number

Product Description

Reliable Models GFR and GFR Recessed Sprinklers are Quick Response fusible solder type automatic sprinklers.

These sprinklers have demonstrated response times in laboratory tests which are five times faster than standard response sprinklers.

This quick response enables the Models GFR and GFR Recessed Sprinklers to apply water to a fire much faster than standard response sprinklers of the same temperature rating.

Application

Quick response sprinklers are used in fixed fire protection systems: Wet, Dry, Deluge or Preaction. Care must be exercised that the orifice size, temperature rating, deflector style and sprinkler spacing are in accordance with the latest published standards of the National Fire Protection Association or the approving Authority Having Jurisdiction. Quick response sprinklers are intended for standard area coverage and standard water densities as specified in NFPA 13. Quick response sprinklers and standard response sprinklers should not be intermixed.











Small Orifice











Hecessed Hecess
Horizontal Sidewall Pende
HSW-1 Deflector

The Reliable Automatic Sprinkler Co., Inc., 103 Fairview Park Drive, Elmsford, New York 10523



Model DDX-LP

Bulletin 338

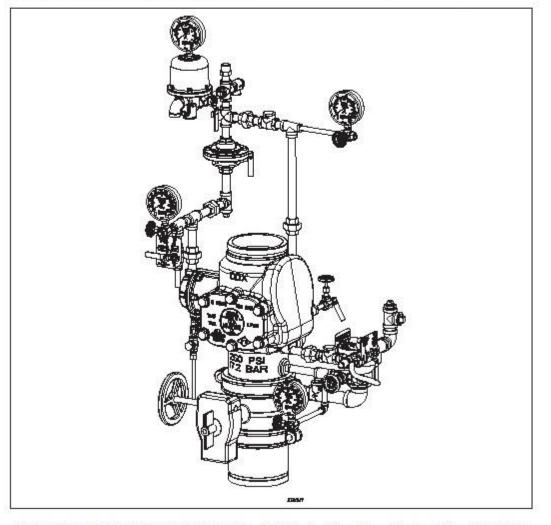
Dry Pipe Valve System 2" (50 mm), 21/2" (65 mm),

3" (80 mm), 76 mm, 4" (100 mm),

6" (150 mm), 165 mm & 8" (200mm)

Instructions for Installation, Operation, Care and Maintenance

- 8 to 28 PSI (0,6 to 1,9 bar) Pneumatic Pressure
- · Externally Resettable Clapper
- One Main Drain
- · No Priming Water Requirement



The Reliable Automatic Sprinkler Co., Inc., 103 Fairview Park Drive, Elmsford, New York 10523

General

The Reliable Model DDX-LP Dry Pipe Valve is a hydraulically operated, differential latching clapper-type valve (see Fig 1.) designed for use as a primary control valve in a low pressure dry pipe valve system. The trim set used with the Model DDX-LP Dry Pipe Valve contains the Reliable Model LP Dry Valve Actuator releasing device. This Actuator allows the system's air or nitrogen pressure requirement to be considerably less than the available water supply pressure (see Table A). The following benefits are a direct result of lower air pressure:

- In refrigerated area systems, lower air pressure decreases the possibility of ice plugs, which could impede or prevent the flow of water to sprinkler heads in the event of fire.
- Lower air pressure (volume) will enable smaller capacity, lower cost dehydration equipment when it is required
- Lower air or nitrogen pressure can reduce water delivery time when the system actuates, and in some cases, may eliminate the need for an accelerator.
- Low pressure requirements make the use of dry nitrogen gas, instead of air, practical even on larger systems. Resulting benefits include a lower-than-air dew point, which minimizes ice plugging of system lines, and enhances "user friendliness" during installation and operation.
- System maintenance is simplified since priming water is not required and the Dry Pipe Valve can be reset externally without cover removal. This is accomplished by pushing in and turning the external reset knob at the rear of the Dry Pipe Valve (see Fig.1). This feature provides a significant systemrestoration time advantage.

The Model DDX-LP Dry Pipe Valve's trim set (see Fig. 2 and Fig. 3) provides all of the necessary equipment for connections to the pushrod chamber's inlet and outlet ports, the 1½" (30mm) or 2" (50mm) main drain, alarm devices, air supply, water supply, and required pressure gauges. This trim set is available in individual parts, in time-saving, segmentally assembled kit forms, or fully assembled to the Model DDX-LP Dry Pipe Valve (with or without a control valve).

All the sizes of the Model DDX-LP Dry Pipe Valve trim sets may be equipped with the optional Reliable Model B1 Accelerator, trim kit P/N 6516000003, (see Figs. 2, 3 & 4). This device acts as an exhauster which will hasten the operation of the Model LDX Dry Valve Actuator and minimize the water delivery time for the entire system.

Listings & Approvals

Reliable Model DDX-LP Dry Pipe Valves, complete with trim that includes a Model LP Dry Valve Actuator, and only when used as the valve manufacturer's complete system are:

- Listed by Underwriters Laboratories, Inc. and UL certified for Canada (cULus).
- 2. Certified by Factory Mutual Approvals (FM).
- NYC MEA 258-93-E
- LPCB (4" (100mm), 165mm, 6" (150mm) & 8" (200mm) only)
- 5. CI
- 6. VdS Schadenverhütung GmbH

System Operation

The Reliable Model DDX-LP Dry Pipe Valve is shown in both closed and open positions in Fig. 1. In the closed position, the supply pressure acts on the underside of the clapper and also on the pushrod through the pushrod chamber's inlet restriction. The resultant force due to the supply pressure acting on the push rod is multiplied by the mechanical advantage of the lever and is more than sufficient to hold the clapper closed against normal supply pressure surges.

When a sprinkler operates, there will be a loss of air or nitrogen pressure in the sprinkler system's piping which will cause the Model LP Dry Valve Actuator to open. The opening of this device allows a releasing discharge of water from the pushrod chamber's outlet connection. Since the pressure cannot be replenished through the inlet restriction as rapidly as it is vented, the pushrod chamber pressure falls instantaneously. When the push rod chamber pressure approaches approximately onethird of the supply pressure, the upward force of the supply pressure acting beneath the clapper overcomes the lever applied force thereby opening the clapper.

Once the clapper has opened, the lever acts as a latch, preventing the clapper from returning to the closed position. Water from the supply flows through the Dry Pipe Valve into the system piping. Water also flows through the Dry Pipe Valve's alarm outlet to the alarm devices.

After system shutdown, resetting the Model DDX-LP Dry Pipe Valve is quite simple. Doing so only requires pushing in and turning the reset knob at the rear of the valve (see Fig. 1). The external reset feature of the Model DDX-LP Dry Pipe Valve provides a means for simple, economical system testing, which is one essential facet of a good maintenance program. The external reset feature does not, however, eliminate another important facet of good maintenance, namely, periodic cleaning and inspection of the internal valve parts.

In the event that water builds up inside the valve due to condensate from the air supply system or water left inside from valve system testing, a drain is available for venting. After closing the main supply valve, a small valve over the drain cup can be opened slightly until the water inside the valve body and the main pipe column has drained. See the section titled "Draining Excess/Condensate Water From System" in this bulletin for the detailed procedure.

The Model B Hydraulic Manual Emergency Station (see Fig. 5) is also included in the Model DDX-LP Dry Pipe Valve trim set. It consists of an aluminum nameplate mechanically attached to a ball valve. The valve handle in its OFF position is guarded against accidental turning to the ON position (and system discharge) by a nylon cable tie provided with each trim kit. The cable tie is inserted, as shown in Fig. 5, after the system has been restored for operation. The nylon cable tie is designed to allow, in case of an emergency, forceful turning of the valve handle to the ON position. As an alternative to the Model B Hydraulic Manual Emergency Station, the Model A Hydraulic Manual Emergency Pull Box (see Reliable Bulletin 506) is also available and can be provided as an option.

Whenever ambient temperature conditions are high, the water temperature in the Model DDX-LP Dry Pipe Valve's pushrod chamber could possibly increase, thereby increasing the pressure in the chamber to values exceeding the rated pressure of the system. In an indoor installation where standard room temperatures are exceeded, a pressure relief kit may be needed. Pressure relief kit, P/N 6503050001, can be installed into the pushrod chamber's releasing line to limit the pressure to 250 psi (17.2 bar).

Hydrostatic Testing of DDX Valves and DDX Systems

As required by NFPA 13, fire sprinkler systems with working pressures up to and including 150 psi are to be hydrostatically tested at a water pressure of 200 psi and maintain that pressure without loss for two hours. Fire sprinkler systems with working pressures above 150 psi are required to be hydrostatically tested at 50 psi above the system working pressure and maintain that pressure without loss for two hours. In addition to the hydrostatic tests described above, dry pipe and double interlock

preaction systems require an additional low pressure air test.

In some cases, hydrostatic testing (in accordance with the NPPA 13 requirements noted above) will result in pressures that exceed the working pressure of the valve and trim kit for the two-hour test period. The valve and applicable trim kit have been tested, approved and listed under these conditions and as such, hydrostatic testing in accordance with NPPA 13 is acceptable. In addition, the clapper can remain in the closed position and the trim kit need not be isolated, as each has been designed to withstand hydrostatic testing as required by NPPA 13.

Hydrostatically testing the valve and trim to pressures higher than their rating is limited to the hydrostatic test as referenced by NFPA 13. It does not address the occurrence(s) of a "water hammer" effect, which can indeed damage the valve. A "water hammer" in the water supply piping of the valve can create pressures in excess of the rated pressure and should be avoided by all necessary means. This condition may be created from improper fire pump settings underground construction work, or an improper venting of trapped air in the water supply piping.

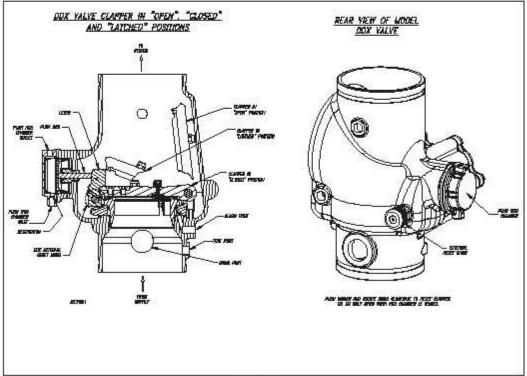


Fig. 1

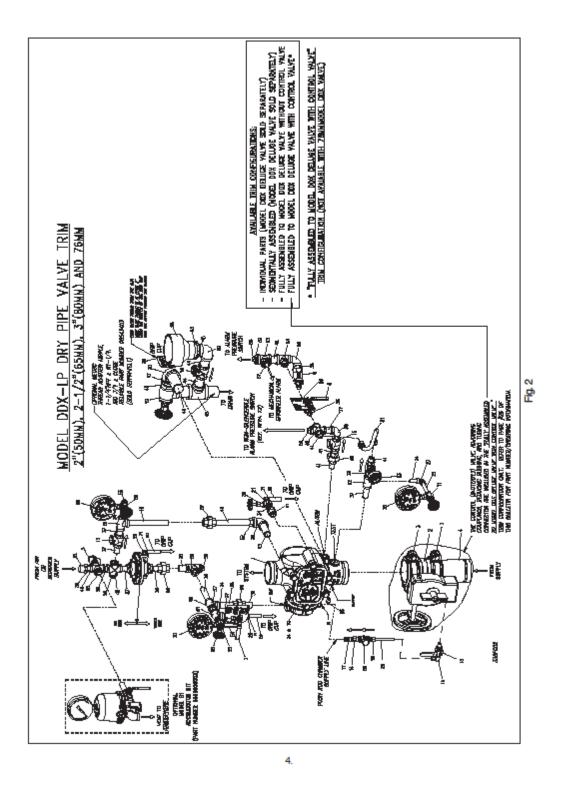
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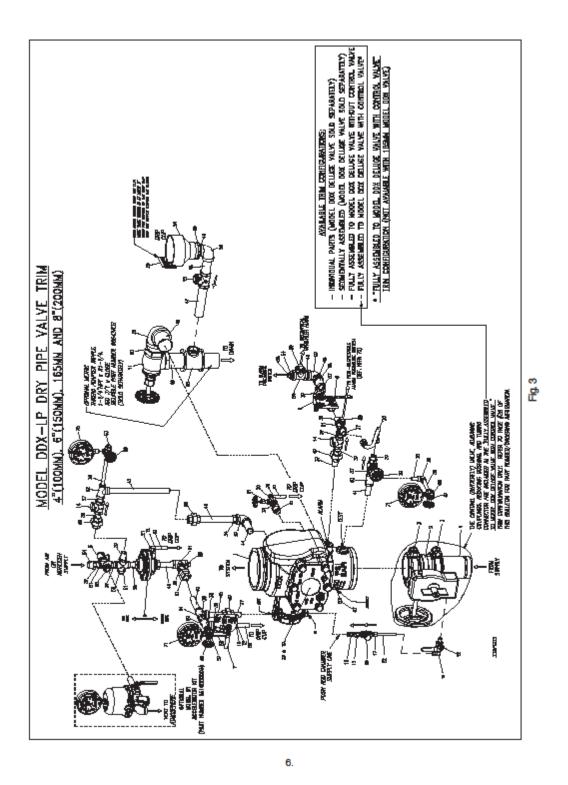
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Small DDX-LP Dry Pipe Valve System Parts List (Refer to Fig. 2)

| Item | Part | No. | 2 02/20 | ~ | |
|------|---------------------------------|-------------|---|-----|--|
| No. | Galvanized | | Description | QTY | |
| | 6103022000 | 6103022000 | Valve Assembly, 2" (50mm) - For 2" Assembly Only | | |
| 1 | 6103022500 | 6103022500 | Valve Assembly, 21/2" (65mm) - For 21/2" Assembly Only | 1 | |
| 25 | 6103027600 | 6103027600 | Valve Assembly, 78mm - For 78mm Assembly Only | | |
| | 6103030000 | 6103030000 | Valve Assembly, 3" (80mm) - For 3" Assembly Only | | |
| | 6990003549 | 6990003549 | Butterfly Valve, 2" - For 2" Assembly Only | D | |
| 2 | 6215051000 | 6215051000 | Butterfly Valve, 21/2" - For 21/2" Assembly Only | 4 | |
| | 6215051200 | 6215051200 | Butterfly Valve, 3" - For 3" Assembly Only | | |
| | 7(905080800) | 7(305080800 | Rigid Coupling, 2" - For 2" Assembly Only | | |
| 3 | 7G05101000 | 7G05101000 | Rigid Coupling, 21/4" - For 21/4" Assembly Only | 2 | |
| | 7905121200 | 7G05121200 | Rigid Coupling, 3" - For 3" Assembly Only | | |
| | 91004002 | 91004002 | Outlet Spool, 2" - For 2" Assembly Only | | |
| 4 | 91004001 | 91004001 | Outlet Spool, 21/2" - For 21/4" Assembly Only | 1 | |
| | 91004003 - For 3' Assembly Only | | Outlet Spool, 3" - For 3" Assembly Only | | |
| 5 | 98840195 | 98840195 | Pressure Relief Valve (33 psi) | 1 | |
| 8 | 71030010 | 71030010 | Model LP Pilot Line Actuator | 1 | |
| 7 | 78653000 | 78853000 | Manual Emergency Station Assembly | | |
| 8 | 78653004 | 78853004 | Valve Caution Station Assembly | | |
| 9 | 78853100 | 78853100 | Ball Drip Valve, 1/2" | 1 | |
| 10 | 99080002 | 99080002 | Adhesive Pad | 1 | |
| 11 | 98840101 | 98840101 | Angle Valve, 1/4" | 1 | |
| 12 | 98840108 | 96840106 | Angle Valve, 11/2" | 1 | |
| 13 | 98840117 | 98840117 | Ball Valve, 16" NPTF x 16" NPTM | 1 | |
| 14 | 98840188 | 98840188 | Check Valve, 14" NPTM x 14" NPTF | 1 | |
| 15 | 98840181 | 98840181 | Check Valve, Horizontal Swing, 1/2" NPT | 2 | |
| 18 | 98840145 | 98840145 | Check Valve, Horizontal Swing, 1" NPT | 1 | |
| 17 | 98840147 | 98840147 | Check Valve, Inline Poppet, 1/2" | 1 | |
| 18 | 92058702 | 92056702 | Compression Connector, ³ / ₄ " ID Tube x 1/ ₄ " NPT | 1 | |
| 19 | 92056703 | 92056703 | Compression Connector, Elbow 1/4" ID Tube x 1/4" NPT | 1 | |
| 20 | 92056810 | 92056810 | Connector, */," ID Tube x 1/4" NPT | 1 | |
| 21 | 92058705 | 92058705 | Connector, Elbow, ⁸ / ₄ " ID Tube x ½" NPT | 4 | |
| 22 | 92058704 | 92056704 | Connector, Elbow, */i* ID Tube x 1/2* NPT | 1 | |
| 23 | 96686722 | 96686722 | Copper Tubing, 3/4" OD x 2 ft. | 1 | |
| 24 | 94616916 | 94616916 | Model LP Dry Pipe Valve Nameplate | 4 | |

| Item | Part | No. | Described. | | |
|------|------------|----------|--|-----|--|
| No. | Galvanized | | Description | QTY | |
| 25 | 98050004 | 98050004 | Drain Cup, PVC | .1 | |
| 26 | 96306270 | 95308270 | Drain Hose Clip | 1 | |
| 27 | 98174404 | 98164402 | Elbow, 1/4" | .1 | |
| 28 | 98174401 | 98614401 | Elbow, 1/2" | 1 | |
| 29 | 98174402 | 98164400 | Elbow, ¾* | 1 | |
| 30 | 98174403 | 98164404 | Ebow, 1° | 1 | |
| 31 | 98174414 | 98164407 | Elbow, 11/4" | 1 | |
| 32 | 96920912 | 96920912 | Flex Line, 1/4" | 1 | |
| 33 | 98840172 | 98840172 | Globe Valve, 14" | 1 | |
| 34 | 98840171 | 98840171 | Globe Valve, 1/2" | 1 | |
| 35 | 98543226 | 98523213 | Nipple 1/4" x 11/4" | 4 | |
| 36 | 98543243 | 98526522 | Nipple 1/2" x 4" | 1 | |
| 37 | 98543223 | 98523210 | Nipple 1/3" x 11/3" | 9 | |
| 38 | 98543209 | 98523209 | Nipple 1/2" x 2" | 7 | |
| 39 | 98543230 | 98523230 | Nipple ½" x 3" | 1 | |
| 40 | 98543228 | 98523234 | Nipple 1/s" x 41/s" | 1 | |
| 41 | 98543211 | 98523239 | Nipple 1/5" x 61/5" | 2 | |
| 42 | 98543212 | 98523221 | Nipple 1/2" x Close | 4 | |
| 43 | 98543232 | 98523242 | Nipple ¾" x 2" | 1 | |
| 44 | 98543231 | 98523240 | Nipple %* x 3* | 1 | |
| 45 | 98543283 | 98523261 | Nipple 1" x 3" | 2 | |
| 46 | 98543213 | 98523222 | Nipple 1" x Close | 1 | |
| 47 | 98543239 | 98523258 | Nipple 11/4" x 3" | 1 | |
| 48 | 98543250 | 98523264 | Nipple 1½" x 4" | 1 | |
| 49 | 98543285 | 98523274 | Nipple 11/4" x Close | 1 | |
| 50 | 98750003 | 98750013 | Pipe Cross, 1/4" | 3 | |
| 51 | 96686756 | 96688758 | PVC Tubing, 1/2 ID x 6 ft. | 1 | |
| 52 | 98048025 | 98048011 | Reducer Bushing, %" x 1/4" | .1 | |
| 53 | 98048022 | 98048012 | Reducer Bushing, %" x 1/2" | 3 | |
| 54 | 98048015 | 98048015 | Reducer Bushing, 2" Spigot x 1" NPTF, PVC | 1 | |
| 55 | 89141112 | 89141112 | Retaining Tie | 9 | |
| 58 | 98614403 | 98604403 | Square Head Plug, 1/4" | 3 | |
| 57 | 98804406 | 98604402 | Square Head Plug, 1/4" | 5 | |
| 58 | 98814401 | 98804401 | Square Head Plug, %" | 1 | |
| 59 | 98727607 | 98727607 | Strainer, 1/2* | 1 | |
| 60 | 98174400 | 98164409 | Street Elbow, 1/4" | 2 | |
| 61 | 98761651 | 98761603 | Tee, 1/4" | 2 | |
| 62 | 98761649 | 98761604 | Tee, 1/3" x 1/3" x 1/3" | 2 | |
| 63 | 96806807 | 98761605 | Tee, 1/4" x 1/4" x 1/4" | 1 | |
| 64 | 96606601 | 98768521 | Tee, %" | 1 | |
| 65 | 96806812 | 98761614 | Tee, %" x 1/3" x 1/3" | 1 | |
| 66 | 96806803 | 98761621 | Tee, 11/2" x 11/2" x 1" | 1 | |
| 67 | 98815200 | 96805200 | Union, 16° | 3 | |
| 68 | 98815204 | 98845204 | Union, 1/3", O-ring Seal | 1 | |
| 69 | 98840160 | 98840160 | Valve, 3-way, 1/2" | 2 | |
| 70 | 96248000 | 98248000 | Air Pressure Gauge (0-80 psi) | 1 | |
| 71 | 98248001 | 98248001 | Water Pressure Gauge (0-300 psi) | 2 | |
| 72 | 96306255 | 96306255 | Hose Clamp | 3 | |



Large DDX-LP Dry Pipe System Parts List (Refer to Fig 3.)

| n | Part Galvanized | | Description | QTY. | |
|------------|---|-------------------|--|------|--|
| т | 6103060024 | 3253333 | Valve Assembly, 4" (100mm) - For 4" Assembly Only | | |
| I | 6103040026 | 6103040026 | Valve Assembly, 6" (150mm) - For 6" Assembly Only | | |
| | 6103060028 | 6103060028 | Valve Assembly, 185mm - For 165mm Assembly Only | 1 ' | |
| I | 6103080001 | 6103080001 | Valve Assembly, 8" (200mm) - For 8" Assembly Only | | |
| 1 | 6215051600 | 6215051600 | Butterfly Valve, 4" - For 4" Assembly Only | | |
| Ī | 6215052400 | 6215052400 | Butterfly Valve, 6" - For 6" Assembly Only | :1 | |
| Ì | 6215053200 | 6215053200 | Butterfly Valve, 8" - For 8" Assembly Only | 1 | |
| Ī | 7005161600 | 7(305161600 | Figid Coupling, 4" - For 4" Assembly Only | | |
| I | 7005242400 | 7G05242400 | Figid Coupling, 6" - For 6" Assembly Only | 2 | |
| 1 | 7G05323200 7G05323200 Rigid Coupling, 8° - For 8° Assembly Only | | 1 | | |
| 1 | 91004004 | 91004004 | Outlet Spool, 4" - For 4" Assembly Only | 1 | |
| İ | | | Outlet Spool, 6" - For 6" Assembly Only | 1 | |
| 91004008 9 | | 91004008 | Outlet Spool, 8" - For 8" Assembly Only | | |
| 1 | 98840195 | 98840195 | Pressure Relief Valve (33 psi) | 1 | |
| + | 71030010 | 71030010 | Model LP Pilot Line Actuator | 1 | |
| 1 | 78853000 | 78853000 | Manual Emergency Station Assembly | 1 | |
| 1 | 78653004 | 78653004 | Valve Caution Station | 1 | |
| + | 78653100 | 78653100 | Assembly Ball Drip Valve, 1/5" | 1 | |
| + | 99080002 | 99080002 | and the state of t | | |
| + | 98840100 | 98840100 | Adhesive Pad | 1 | |
| 1 | Marine Transvers | STEEL STEEL STEEL | Angle Valve, 2* Ball Valve. | 1503 | |
| 1 | 98840117 | 98840117 | 1/2" NPTF x 1/2" NPTM | 1 | |
| 1 | 98840188 | 98840188 | Check Valve, 1/2" NPTM x 1/4" NPTF | 1 | |
| 1 | 98840181 | 98840181 | Check Valve, Horizontal Swing, 1/2" NPT | 2 | |
| | 98840145 | 98840145 | Check Valve, Horizontal Swing, 1" NPT | 1 | |
| | 98840147 | 98840147 | Check Valve, Inline Poppet, 1/4" | 1 | |
| | 92056702 | 92058702 | Compression Connector, %" ID Tube x 1/4" NPT | 1 | |
| | 92056703 | 92058703 | Compression Connector, Elbow ¾" ID Tube x %" NPT | 1 | |
| | 92056810 | 92056810 | Connector, %" ID Tube x 1/2" NPT | 1 | |
| | 92056705 | 92056705 | Connector, Elbow, %" ID Tube x 1/4" NPT | 1 | |
| | 92056704 | 92058704 | Connector, Elbow, %" ID Tube x 1/2" NPT | 1 | |
| | 96686722 | 96686722 | Copper Tubing, 3/4" OD x 2 ft. | 1 | |
| | 94616916 | 94616916 | Model LP Dry Pipe Valve Nameplate | 1 | |
| İ | 98050004 | 98050004 | Drain Cup, PVC | 1 | |
| 1 | 95306270 | 95306270 | Drain Hose Clip | 1 | |
| 1 | 98174404 | 98184402 | Elbow, 1/4" | 1 | |
| 1 | 98174402 | 98164400 | Elbow, 44° | 2 | |

| ttem | Part | No. | Description | | |
|--|--|--|--|---|--|
| No. | Galvanized | | Description | | |
| 28 | 98174403 | 98164404 | Elbow, 1° | 1 | |
| 29 | 98174405 | 98164405 | Elbow, 2" | 1 | |
| | | | Annual Contract of the Contrac | - | |
| 30 | 98920912 | 98920912 | Flex Line, 16" | 1 | |
| 31 | 98840172 | 98840172 | Globe Valve, 1/4" | 1 | |
| 32 | 98840171 | 98840171 | Globe Valve, 1/2" | 1 | |
| 33 | 98543228 | 98523213 | Nipple 1/2" x 11/2" | 1 | |
| 34 | 98543225 | 98573220 | Nipple 14" x 21/4" | 1 | |
| 35 | 98543220 | 98523219 | Nipple 16" x 3" | 1 | |
| 36 | 98543217 | 98523217 | Nipple 14" x 6" | 2 | |
| 37 | 98543223 | 98523210 | Nipple 1/4" x 11/4" | 13 | |
| 38 | 98543223 98523210 | | Nipple 1/5" x 11/5" (For 4" and 6" Valve Sizes Only) | 1 | |
| | 98543209 | 98523209 | Nipple 1/4" x 2" (For 8" Valve Size Only) | | |
| 39 | 98543209 | 98523209 | Nipple 16" x 2" | 5 | |
| 40 | 98543230 | 98523230 | Nipple 1/4" x 3" | 3 | |
| 41 | 98543216 | 98523218 | Nipple 1/2" x 31/2" | 1 | |
| 42 | 98543228 | 98523234 | 15 20 Long Addition Only | 1 | |
| 42 | V. | 10 | Nipple 1/2" x 41/2" | 1 | |
| | 98543228 | 98523234 | Nipple 1/2" x 41/2" (For 8" Valve Size Only) | | |
| 43 | 98543252 | 98523232 | Nipple 1/2" x 101/2" (For 4" and 6" Valve Sizes Only) | 1 | |
| 44 | 98543234 | 98523247 | Nipple 34" x 31/2" (For 6" and 8" Valve Sizes Only) | 1 | |
| 6000 | 98543282 | 98523253 | Nipple %" x 4" (For 4" Valve Size Only) | | |
| 45 | 98543279 | 98523241 | Nipple %" x Close | 2 | |
| 46 | 98543222 | 98523224 | Nipple 1" x 31/4" | 1 | |
| 47 | 98543266 | 98523228 | Nipple 1" x 6" | 1 | |
| 48 | 98543213 | 98523222 | Nipple 1" x Close | 1 | |
| 49 | 98543262 | 98523262 | Nipple 2" x 31/4" | 2 | |
| - | 98543238 | 101 To 10 | 00040000000000 | - | |
| 50 | THE RESERVE OF THE PERSON NAMED IN | 98523254 | Nipple 2" x Close | 3 | |
| DI | 98750003 | 98750013 | Pipe Cross, 1/2" | . 2 | |
| 5-14-51 | | | PVC Tubing, % ID x 6 ft. | | |
| 52 | 96686756 | 96686756 | | 1 | |
| 53 | 98048025 | 98048011 | Reducer Bushing, %" x 1/2" | 1 | |
| | | Warning to the contract of the | Reducer Bushing, %" x 1/2" Reducer Bushing, %" x 1/2" | 1 | |
| 53 | 98048025 | 98048011 | Reducer Bushing, %" x 1/2" | 1 | |
| 53 54 | 98048025 98048022 | 98048011 98048012 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, | 3 | |
| 53 54 55 58 | 98048025 98048022 98048015 89141112 | 98048011 98048012 98048015 89141112 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, 2" Spigot x 1" NPTF, PVC Retaining Tie | 1 3 | |
| 53 54 55 56 57 | 98048025 98048022 98048015 89141112 98614403 | 98048011 98048012 98048015 89141112 98804403 | Reducer Bushing, 14" x 1/4" Reducer Bushing, 14" x 1/4" Reducer Bushing, 2" Spigot x 1" NPTF, PVC Retaining Tie Square Head Plug, 1/4" | 1 3 1 9 | |
| 53 54 55 56 57 58 | 98048025 98048022 98048015 89141112 98614403 98604406 | 98048011 98048012 98048015 89141112 98804403 98804402 | Reducer Bushing, 14" x 1/4" Reducer Bushing, 14" x 1/4" Reducer Bushing, 2" Spigot x 1" NPTF, PVC Retaining Tie Square Head Plug, 1/4" Square Head Plug, 1/4" | 1 3 1 9 4 5 | |
| 53 54 55 56 57 58 59 | 98048025 98048022 98048015 89141112 98614403 98604406 98614401 | 98048011 98048012 98048015 89141112 98604403 98604402 98604401 | Reducer Bushing, %' x 1/4' Reducer Bushing, 1/4' x 1/4' Reducer Bushing, 2' Spigot x 1' NPTF, PVC Retaining Tie Square Head Plug, 1/4' Square Head Plug, 1/4' Square Head Plug, 3'4' | 1 3 1 9 4 5 | |
| 53 54 55 56 57 58 59 60 | 98048025 98048022 98048015 89141112 98614403 98604406 98614401 98727607 | 98048011 98048012 98048015 89141112 98804403 98804402 98804401 98727807 | Reducer Bushing, %' x '%' Reducer Bushing, %' x '%' Reducer Bushing, 2' Spigot x 1' NPTF, PVC Retaining Tie Square Head Plug, '%' Square Head Plug, '%' Square Head Plug, %' Strainer, '%' | 1 3 1 9 4 5 | |
| 53 54 55 56 57 58 59 60 61 | 98048025 98048022 98048015 89141112 98814403 98804406 98614401 98727807 98761851 | 98048011 98048012 98048015 89141112 98604403 98604401 98727807 98761603 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, 2" Spigot x 1" NPTF, PVC Retaining Tie Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Strainer, %" Tee, %" | 1 3 1 9 4 5 1 1 1 | |
| 53 54 55 56 57 58 59 60 61 62 | 98048025 98048022 98048015 89141112 98814403 98604406 98614401 98727607 98761651 98761649 | 98048011 98048012 98048015 89141112 98604403 98604401 98727607 98761603 98761604 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, 2" Spligot x 1" NPTF, PVC Retaining Tie Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Strainer, %" Tee, %" x %" x %" Tee, %" | 1 3 1 9 4 5 1 1 2 2 | |
| 53 54 55 56 57 58 59 60 61 62 63 | 98048025 98048022 98048015 89141112 98614403 98614406 98614401 98727607 98761651 98761649 96606807 | 98048011 98048012 98048015 89141112 98604403 98604402 98804402 98761803 98761804 98761804 | Reducer Bushing, %" x 1/4" Reducer Bushing, %" x 1/4" Reducer Bushing, 2" Spigot x 1" NPTE, PVC Retaining Tie Square Head Plug, 1/4" Square Head Plug, 1/4" Square Head Plug, 1/4" Strainer, 1/4" Tee, 1/4" Tee, 1/4" Tee, 1/4" x 1/4" Tee, 1/4" x 1/4" Tee, 1/4" x 1/4" Tee, 1/4" x 1/4" Tee, 1/4" x 1/4" | 1 3 1 9 4 5 1 1 2 2 | |
| 53 54 55 56 57 58 59 60 61 62 63 64 | 98048025 98048022 98048015 89141112 98614403 98604406 98614401 98727607 98761851 98761849 96806807 96806801 | 98048011 98048012 98048015 89141112 98604403 98604401 98727607 98727607 98761604 98761605 98766521 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, 2" Spigot x 1" NPTF, PVC Retaining Tie Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Strainer, %" Tree, %" | 1 3 1 9 4 5 1 1 1 2 2 | |
| 53 54 55 56 57 58 59 60 61 62 63 | 98048025 98048022 98048015 89141112 98614403 98614406 98614401 98727607 98761651 98761649 96606807 | 98048011 98048012 98048015 89141112 98604403 98604402 98804402 98761803 98761804 98761804 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, 2" Spigot x 1" NPTF, PVC Retaining Tie Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Strainer, %" Tee, %" x %" x %" Tee, %" x %" x %" Tee, %" x %" x %" Tee, %" x %" x %" | 1 3 1 9 4 5 1 1 2 2 | |
| 53 54 55 56 57 58 59 60 61 62 63 64 | 98048025 98048022 98048015 89141112 98614403 98604406 98614401 98727607 98761851 98761849 96806807 96806801 | 98048011 98048012 98048015 89141112 98604403 98604401 98727607 98727607 98761604 98761605 98766521 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, 2" Spigot x 1" NPTF, PVC Retaining Tie Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Strainer, %" Tree, %" | 1 3 1 9 4 5 1 1 1 2 2 | |
| 53 54 55 56 57 58 59 60 61 62 63 64 65 | 98048025 98048022 98048015 89141112 98814403 98804406 98814401 98727807 98761851 98761849 98806807 98806801 | 98048011 98048012 98048015 89141112 98604403 98604401 98727607 98761604 98761604 98761605 98766521 98761614 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" Spigot x 1" NPTE, PVC Retaining Tie Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Tee, %" Tee, %" Tee, %" Tee, %" x %" x %" Tee, | 1 3 1 9 4 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | |
| 53 54 55 56 57 58 59 60 61 62 63 64 65 66 | 98048025 98048022 98048015 89141112 98814403 98804406 98614401 98727807 98761851 98761849 98806807 98806801 98806812 | 98048011 98048012 98048015 89141112 9804403 98804402 98804401 98727807 98761603 98761605 98768521 98761614 98761618 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" Spigot x 1" NPTE, PVC Retaining Tie Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Tee, %" Tee, %" Tee, %" Tee, %" x %" x %" Tee, | 1 3 1 9 4 5 1 1 1 2 2 1 1 | |
| 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 | 98048025 98048022 98048015 89141112 98814403 98804406 98814401 98727807 98761851 98761849 98806807 98806801 98806827 98815200 98815204 | 98048011 98048012 98048015 89141112 9804403 98804401 98727807 98761603 98761604 98761604 9876160521 98761614 98761618 98805200 98845204 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" Spigot x 11 NPTF, PVC Retaining Tie Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Strainer, %" Tee, %" Tee, %" x %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" Tee, %" x %" Tee, %" Tee | 1 3 1 9 4 5 1 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | |
| 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 | 98048025 98048022 98048015 89141112 98814403 98804406 98814401 98727807 98761851 98761849 98606807 96806801 98806827 98815204 98815204 | 98048011 98048012 98048015 89141112 98604403 98604401 98761603 98761604 98761605 98761604 98761605 98761614 98761614 98761614 98761605 98761614 98761614 98761614 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" Spigot x 1" NPTE, PVC Retaining Tie Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Strainer, %" Tee, %" Tee, %" Tee, %" x %" x %" Tee, %" Tee, %" x %" x %" Tee, %" x %" x %" Tee, %" Tee, %" x %" x %" Tee, %" x %" x %" Tee, %" x %" x %" Tee, %" x %" x %" Union, %", O-ring Seel Valve, 3-way, %" | 1 3 1 9 4 5 1 1 1 1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 | |
| 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 | 98048025 98048022 98048015 89141112 98814403 98804406 98814401 98727807 98761851 98761849 98806807 98806801 98806827 98815200 98815204 | 98048011 98048012 98048015 89141112 9804403 98804401 98727807 98761603 98761604 98761604 9876160521 98761614 98761618 98805200 98845204 | Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" x %" Reducer Bushing, %" Spigot x 11 NPTF, PVC Retaining Tie Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Square Head Plug, %" Strainer, %" Tee, %" Tee, %" x %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" x %" Tee, %" Tee, %" x %" Tee, %" Tee | 1 3 1 9 4 5 5 1 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 | |

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STAGE I REPORT

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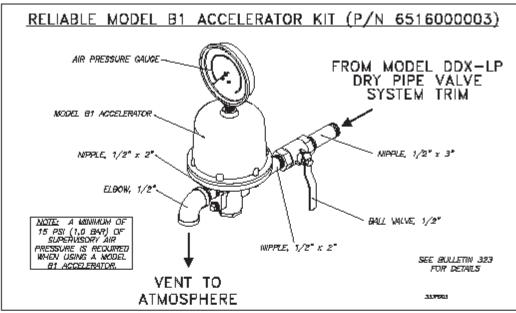


Fig. 4

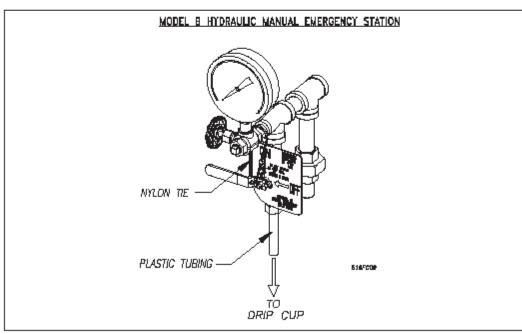


Fig. 5

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Pressurizing Line Connection

The water supply for the push-rod chamber must be provided by connection of its inlet pressurizing line to the water supply piping. Pressurizing lines for multiple Model DDX-LP Dry Pipe. Valve push-rod chambers must never be manifolded together, having only a single tap on the water supply piping.

Each Model DDX-LP Dry Pipe Valve must have its own pushrod chamber pressurizing line connection. This connection must be made on the supply side of the main water supply control valve. This can be accomplished by:

- Using a tapped connection directly below or next to the main water supply control valve using a welded outlet or the appropriate mechanical fittings. A grooved-end outlet coupling is one way to achieve this (see Fig. 2 OR Fig. 3); or
- b. Using a water supply control valve that has an available threaded (NPT) supply-side tap design to allow for a direct water supply connection to the Model DDX-LP Dry Pipe Valve's push-rod chamber. Caution: Reliable's DDX valve is designed with an inlet restriction built into the pushrod chamber. It is important not to introduce additional restrictions into the direct water supply connection or the discharge from the pushrod chamber by installing additional valves or improperly installing the copper lines used in the trim of the valve.

Model DDX-LP Dry Pipe Valve System Engineering Specifications

General Description

Dry pipe sprinkler system shall be a [cULus Listed] [FM Approved] low-pressure dry pipe valve system capable of providing a 14:1 water-to-air force differential. Dry pipe valve shall consist of a lightweight, ductile-iron construction with either a "screw in" stainless steel seat and clapper assembly or drop in bronze seat and clapper assembly, both utilizing an intermediate chamber design. Clapper facing shall be pressure-actuated, providing a limited compression seat for the sealing force between the clapper rubber facing and the valve seat. Push-rod chamber shall be of a piston/push-rod design with diaphragm seal and have a 1/4" vent hole for air/water leakage indication. Valve end connections shall be grooved outlets per ANSI/AWWA C806 or flanged per ASME B16.5 or ISO 7005. Pneumatic actuation trim shall consist of either all galvanized and brass trim or black pipe and brass trim, including associated pressure gauges, main drain valve, emergency release valve, and a low-pressure pneumatic actuator valve. The pneumatic actuator shall be cU-Lus Listed/FM Approved for use with the dry pipe valve system. Dry pipe valve system air pressure shall only require between 8 and 28 psi (0,6 to 1,9 bar) for proper setting of the pneumatic actuator in accordance with the manufacturer's instructions. Dry pipe valve shall be of the straight-through design to minimize friction loss, and be capable of being reset without having to remove the valve cover plate through the use of an external reset knob. Dry pipe valve shall actuate through the operation of the pneumatic actuator valve as a result of the loss of system air pressure caused by sprinkler activation. The low-pressure. pneumatic actuator shall be of cast iron construction utilizing a diaphragm and compression spring design to separate the push-rod chamber water pressure from the system piping's

pneumatic supervisory pressure. The low-pressure actuator shall only require between 8 and 28 psi (0,6 to 1,9 bar) supervisory pressure for proper setting in accordance with the manufacturer's instructions. Low-pressure actuator shall be Reliable Model LP Dry Valve Actuator.

Dry pipe valve system shall have a rated working pressure of 250 psi (17,2 bar) for 2" (50mm) 2½" (65mm), 3" (80mm), 76mm and 8" (200mm) valve sizes and 300 psi (20,7 bar) for 4" (100mm), 6" (150mm) and 165mm valve sizes. Low-pressure dry pipe valve system shall be Reliable [2" (50 mm)][2½" (65 mm)][76 mm] [3" (80 mm)][4" (100 mm)][165 mm][6" (150 mm)] 8" (200 mm)] Bulletin 338.

Pneumatic Pressure Supply Options

Owner's Air supply

Dry pipe valve system air pressure shall only require between 8 and 28 psi (0,6 to 1,9 bar) for proper setting of the pneumatic actuator in accordance with the manufacturer's instructions. Air supply shall be provided by an owner supplied air system in conjunction with a [cULus Listed] [FM Approved] automatic pressure maintenance device, capable of maintaining a constant system pressure regardless of pressure fluctuations in the compressed air source. The pressure maintenance device shall consist of galvanized trim and brass parts, including a strainer and a field adjustable air pressure regulator, and have a working pressure rating of 175 psi (12,1 bar). The pressure regulator shall have an adjustable outlet pressure range of 5 to 100 psi (0,34 to 6,8 bar). Pressure maintenance device shall be Reliable Model A-2.

Compressed Air Supply

Air supply shall be provided by an automatic tank-mounted air compressor sized for the capacity (volume) of the dry pipe system piping, and be capable of restoring normal air pressure in the system within 30 minutes.

Dry pipe valve system air pressure shall only require between 8 and 28 psi (0,6 to 1,9 bar) for proper setting of the pneumatic actuator in accordance with the manufacturer's instructions. Air supply shall be equipped with an automatic pressure maintenance device capable of maintaining a constant system pressure regardless of pressure fluctuations in the compressed air (or nitrogen) source. The pressure maintenance device shall consist of galvanized trim and brass parts, including a strainer and a field adjustable air pressure regulator, and have a working pressure rating of 175 psi (12,1 bar). The pressure regulator shall have an adjustable outlet pressure range of 5 to 100 psi (0,34 to 6,8 bar). Pressure maintenance device shall be Reliable Model A-2.

Nitroge

Nitrogen cylinders provided by an approved source shall provide the nitrogen supply. The nitrogen cylinder pressure shall be regulated and supervised through the use of a nitrogen regulating device and low-pressure trim kit. This device shall consist of a brass, single stage pressure regulator, equipped with high pressure and low pressure outlet gauges, and ¼" copper connection tubing with galvanized ¾" x ¼" reducer bushing. Optional:

Low-pressure trim kit shall be included to monitor the regulated nitrogen supply pressure to provide a low-pressure supervisory alarm. This kit shall include a low-pressure switch with

associated galvanized connection trim. Assembly shall be a Technical Data Reliable Nitrogen Regulating Device This device is to be used in conjunction with the Reliable Model A-2 pressure maintenance device.

Optional System Accessories System Control Valve

Accelerator

System control valve shall be a slow close, [cULus Listed] [FM Approved] indicating butterfly type valve with a pre-wired supervisory tamper switch assembly. The valve shall be rated for a working pressure of [300 psi (20,7 bar)]. System control valve shall be a [2" (50 mm)] Star AN7722-3A Butterfly Valve or [21/2" (65 mm)][76 mm] [3" (80 mm)][4" (100 mm)][165 mm] [6" (150 mm)[8" (200 mm)] Nibco GD-4765-8N Butterfly Valve.

For system capacities greater than 500 gallons, an accelerator with associated galvanized trim kit shall be provided to exhaust air pressure from the pneumatic actuator trim piping in order to hasten operation of the dry pipe valve system. Minimum normal air pressure shall be 15 psi (1,0 bar) to ensure proper accelerator operation. Accelerator shall be [cULus Listed] [FM Approved] for use with the specific dry pipe valve system. Accelerator shall be capable of adjusting for small fluctuations in system air pressure without causing operation. The accelerator shall contain an integral Accelo-Check (anti-flooding) assembly to prevent entry of water and debris into critical internal areas during operation. Accelerator body and dome to be of cast aluminum and epoxy coated inside and out. Diaphragm construction to consist of Dupont Fairprene BN 5049 with stainless steel filter assembly. Trim kit shall consist of all galvanized and brass parts, including an isolating ball valve. Accelerator and trim kit shall be Reliable Model B1 Accelerator Trim Kit.

Waterflow Alarm Pressure Switch

Alarm pressure switch shall be provided to indicate water flow and provide a water flow alarm. Pressure switch shall be [cULus Listed] [FM Approved] and of the belows activated type enclosed in a weatherproof, 4x, NEMA 4-rated enclosure incorporating tamper-resistant screws. There shall be two sets 3. End and trim connections: of SPDT (Form C) contacts rated at 10.0 A @ 125/250 VAC and 2.5 A @ 6/12/24 VDC. The pressure switch shall have a maximum service pressure rating of 250 psi (17,2bar) and shall be factory adjusted to operate at a pressure of 4 to 8 psi (0,27 to 0,55 bar) with adjustment up to 20 psi (1,3 bar). Switch shall be provided with a 1/2" NPT male pressure connection. Waterflow alarm pressure switch shall be System Sensor EPS10-2.

High / Low Air Pressure Switch

A pressure supervisory alarm switch to monitor the reliability of the compressed air supply shall provide both a high and low-pressure supervisory alarm. Pressure switch shall be [cU-Lus Listed] [FM Approved] and of the bellows- activated type enclosed in a weatherproof, 4x, NEMA 4-rated enclosure incorporating tamper-resistant screws. There shall be two sets of SPDT (Form C) contacts rated at 10.0 A @ 125/250 VAC and 2.5 A @ 6/12/24 VDC. The pressure switch shall have a maximum service pressure rating of 250 psi (17,2 bar) and an adjustable range of 10 to 100 psi (0,7 to 6,9 bar), factory set to respond at 50 psi (3,5 bar) rising pressure and 30 psi (2,1 bar) at decreasing pressure. Switch shall be provided with a 1/2" NPT male pressure connection. High/Low pressure switch shall be System Sensor EPS40-2.

Reliable Model DDX-LP Dry Pipe Valves, with associated trim, sizes 2" (50mm), 21/2" (65mm), 76mm, 3" (80mm), 4" (100mm), 165mm, 6" (150mm) and 8" (200mm) are rated for use at a minimum water supply pressure of 20 psi (1,4 bar) and a maximum water supply pressure of 250 psi (17,2 bar) for 2" (50mm), 21/2" (65mm), 3" (80mm), 76mm and 8" (200mm) valve sizes and 300 psi (20,7 bar) for 4" (100mm), 6" (150mm) and 165mm valve sizes. Water supplied to the inlet of the valve and to the pushrod chamber must be maintained between 40°F (4°C) and 140°F (60°C).

The following list of technical bulletins pertains to valves and devices that may be used in this Dry Pipe Valve system:

| Deluge/Dry Pipe Valve | Reliable 518/519 |
|---------------------------------------|---------------------------|
| Mechanical Sprinkler Alarm | Reliable 612/613 |
| Pressure Maintenance Device | Reliable 254 |
| Nitrogen Regulating Device | Reliable 254 |
| Model B1 Accelerator Trim Kit | Reliable 323 |
| Hydraulic Emergency Station (Model A) | Reliable 506 |
| Low Air Pressure Alarm Switch | System Sensor A05-0177 |
| Waterflow Pressure Alarm Switch | System Sensor A05-0176 |

Model DDX-LP Dry Pipe Valve Description

- Rated working pressure:
- Valve & System 250 psi (17.2 bar) for 2" (50mm), 21/2" (65mm), 3" (80mm), 76mm and 8" (200mm) valve sizes and 300 psi (20,7 bar) for 4" (100mm), 6" (150mm) and 165mm valve sizes.
- 2. Factory tested to a hydrostatic pressure of 500 psi (34,5 bar) for 2" (50mm), 21/2" (65mm), 3" (80mm), 76mm and 8" (200mm) valve sizes and 600 psi (41.4 bar) for 4" (100mm), 6" (150mm) and 165mm valve sizes. (Valve only)
- ANSI/AWWA C606 grooved inlet and outlet

| Nominal Pipe Size | Outlet Diameter | Groove Diameter | Groove Width | Outlet Face to Groove |
|----------------------|--------------------|--------------------|-----------------|-----------------------------|
| 2" (50 mm) | 2.375" | 2.250° | 11/32" | 5/8° |
| | (60mm) | (57mm) | (9.0mm) | (16mm) |
| 2%" (65 mm) | 2.875° | 2.720° | 11/32" | 5/8° |
| | (73mm) | (69mm) | (9.0mm) | (16mm) |
| 78 mm | 3.000° | 2.845" | 11/32" | 5(8° |
| | (76mm) | (72mm) | (9.0mm) | (16mm) |
| 3" (80 mm) | 3.500° | 3.344" | 11/32" | 5/8" |
| | (89mm) | (85mm) | (9.0mm) | (18mm) |
| 4" (100 mm) | 4.500° | 4.334" | 3/8" | 5/8° |
| | (114mm) | (110mm) | (9.5mm) | (16mm) |
| 165 mm | 6.500° | 6.330" | 3/8" | 5/8° |
| | (165mm) | (161mm) | (9.5mm) | (16mm) |
| 6" (150 mm) | 6.625" | 6.455" | 3/8" | 5/8° |
| | (168mm) | (164mm) | (9.5mm) | (16mm) |
| 8" (200 mm) | 8.625° | 8.441° | 7/16" | 3/4" |
| | (219mm) | (214mm) | (11mm) | (19mm) |

Flange Dimensions

| Plange Type: | Nominal Pipe Stae | Bolt Circle Diameter | Bolt Hole Diameter | Flange Outside Diameter | Flange Thickness | Number of Bolts |
|-----------------------|---------------------------|--------------------------------|-----------------------------|-------------------------------|-----------------------------|-----------------------|
| AMSEB165 Class 150 | 100 | 7½" (191mm) | 3/" (19mm) | gr (229mm) | *½" (24mm) | 8 |
| ISO 7005-2 PN16 | 4 ^r (100mm) | 73/ ₃₂ * (180mm) | %" (19mm) | gr (229mm) | (24mm) | 8 |
| AMSEB165 Class 150 | 1250 | 9%" (241mm) | 7/ (22mm) | 11" (279mm) | *½" (24mm) | 8 |
| SO 7005-2 PN16 | 6" (150mm) | 97/ ₆ " (340mm) | 23mm) | 11" (279mm) | */ ₄ " (24mm) | 8 |
| AMGEB165 Class 150 | | 11%" (296mm) | 7/2 (22mm) | 13½" (343mm) | 1° (25.4mm) | 8 |
| ISO 7005-2 PN16 | 8" (200mm) | 11%(* (296mm) | %/ ₂ - (23mm) | 13½" (343mm) | 1° (25.4mm) | 12 |

Threaded openings Per ANSI B 2.1

4. Valve Exterior Color:

| Valve Size | Color |
|--|--|
| 2" (50 mm) | Black or Red |
| 2½" (65 mm) | Black or Red |
| 76 mm | Red |
| 3" (80 mm) | Black or Red |
| 4" (100 mm) | Black or Red |
| 165 mm | Red |
| 6" (150 mm) | Black or Red |
| 8" (200 mm) | Black or Red |
| The state of the s | The state of the s |

5. Face to face dimensions:

| Valve Size: | End Connection: | End to End: |
|--|--------------------|--|
| 2" (50mm), 2½" (65mm), 76mm & 3" (80mm) | Groove/ Groove | 121/4" (318mm) |
| ALLES ME | Groove/ Groove | 14" (358mm) |
| 4" (100mm) | Flange/ Groove | 16" (408mm) |
| | Flange/Flange | 16" (406mm) |
| | Groove/ Groove | 16* (408mm) |
| 6° (150mm) & 165mm | Flange/Groove | 19" (483mm) |
| | Flange/Flange | 19" (483mm) |
| B1 (200 | Groove/ Groove | 19 ⁹ / _* " (492mm) |
| 8" (200mm) | Flange/Flange | 211/4" (540mm) |

6 Valve Shipping Weight:

| Valve Size: | End Connection: | Weight: |
|--|-----------------|-----------------|
| 2" (50mm), 2½" (65mm), 76mm & 3" (80mm) | Groove/Groove | 34 lbs (15 kg) |
| | Groove/ Groove | 64 lbs (29 kg |
| 4" (100mm) | Flange/ Groove | 79 lbs (36 kg) |
| 81 52 6 | Flange/Flange | 92 lbs (42 kg) |
| | Groove/ Groove | 95 lbs (43 kg) |
| 6" (150mm) & 165mm | Flange/ Groove | 122 lbs (56 kg) |
| 38 301 | Flange/Flange | 138 (bs (69 kg) |
| 8° (200mm) | Groove/ Groove | 148 lbs (67 kg) |
| o (zuumm) | Flange/Flange | 197 lbs (90 kg) |

7. Trim Shipping Weight:

| Trim Configuration | 2" (50 mm), 2½" (65 mm), 3" (80 mm) & 78 mm | 4" (100 mm). 6" (150 mm). 8" (200 mm) & 165 mm |
|--|--|---|
| Model DDX LP Low Pressure Dry Pipe Valve | 46 lbs (20.9 kg) | 53 lbs (24 kg) |

8. Friction loss (Expressed in equivalent length of Schedule 40 pipe, based on Hazen & Williams for-

| Value Cina | Equivalen | t Length: | C |
|--------------|------------------|------------------|------|
| Valve Size: | C = 120 | C = 100 | Cv |
| 2" (50mm) | 4.4ft (1,3 m) | 3.1 ft (1,0 m) | 101 |
| 21/4" (65mm) | 6.0 ft (1,8 m) | 4.3 ft (1,3 m) | 236 |
| 76mm | 7.7 ft (2,3 m) | 5.5 ft (1,7 m) | 241 |
| 34 (80mm) | 12.6 ft (3,8 m) | 9.0 ft (2,7 m) | 254 |
| 4º (100mm) | 14 ft (4,3 m) | 10 ft (3,0 m) | 469 |
| 165mm | 29.4 ft (9,0 m) | 20.9 ft (6,4 m) | 886 |
| 6" (150mm) | 29.4 ft (9,0 m) | 20.9 ft (6,4 m) | 886 |
| 8" (200mm) | 53.5 ft (16,3 m) | 38.1 ft (11,6 m) | 1516 |

9. Installation position: Vertical

System Air / Nitrogen Pressure Requirements

The system trim includes gauges to read the pneumatic and water pressures of Model LP Dry Valve Actuator. Table A specifies the air or nitrogen pressure level to be applied to the Actuator. Optional Reliable Model A-2 Pressure Maintenance Device (see Reliable Bulletin 254) automatically provides a safeguard against pressure leaks in the sprinkler piping, and properly restricts the flow of makeup air.

When the optional Model B1 Accelerator is used, a Model A-2 Pressure Maintenance Device and a tank-mounted air compressor are required (see Fig. 11). Also, when a Model B1 Accelerator is used, to expedite water- delivery time, the pneumatic pressure must be not less than 15 psi (1.0 bar).

Whenever multiple dry systems are installed at the same location, each dry system is to have its own Model A-2 Pressure Maintenance Device installed for individual maintenance of air pressure (Refer to the 2007 Edition of NFPA 13, section 7.2.6.5.3).

Table A

| Water Pressure psi (bar) | | ure to be Pumped System psi (bar) |
|-----------------------------|---------------|--------------------------------------|
| Maximum | Not Less Than | Not More Than |
| 20 (1.4) | 8 (0.6) | 10 (0.7) |
| 30 (2.1) | 10 (0.7) | 14 (1.0) |
| 50 (3.4) | 12 (0.8) | 18 (1.1) |
| 75 (5.2) | 13 (0.9) | 17 (1.2) |
| 100 (6.9) | 15 (1.0) | 19 (1.3) |
| 125 (8.6) | 18 (1.1) | 20 (1.4) |
| 150 (10.3) | 17 (1.2) | 21 (1.4) |
| 175 (12.1) | 18 (1.2) | 22 (1.5) |
| 200 (13.8) | 19 (1.3) | 23 (1.6) |
| 225 (15.5) | 21 (1.4) | 25 (1.7) |
| 250 (17.2) | 22 (1.5) | 28 (1.8) |
| 275 (19.0) | 23 (1.6) | 27 (1.9) |
| 300 (20.7) | 24 (1.7) | 28 (1.9) |

Note: During system set-up, a higher pneumatic pressure may be required in order to properly set the Model LP Dry Valve Actuator. The dew point of the air supply must be maintained below the lowest ambient temperature to which the dry pipe system will be exposed. Otherwise, accumulation of water (condensate) on the air side of the Actuator can lower the air pressure at which the Actuator opens, and possibly prevent proper system operation. Also, introduction of moisture into the system piping exposed to freezing temperatures can create ice blockage, which could prevent proper system operation. As a minimum, the supply of air should be taken from the area of lowest temperature within the protected area. The air supply system must be carefully designed to prevent plugging by frost deposits. Special reguirements, such as those in FME&R's "Installation Guidelines for Refrigerated Storage" may need to be incorporated.

Nitrogen used in refrigerated area systems minimizes a possibility of ice build-up and blockage inside the system piping that could inhibit proper system operation. The dew point of nitrogen compressed to 20psig (1,4bar) pressure is 46°F (43.3°C), and -52°F (46.7°C) when compressed to 10 psig (0,7 bar). High-pressure nitrogen cylinders can typically be rented from a local source, with rental fees varying by supplier and cylinder sizes. Typical cylinders are described in Table B. The calculated nitrogen supply in lbs (kg) to pressurize various system capacities to 10 psi (0,7 bar) at different freezer temperatures is shown in Table C.

Table B

| Cylinder Size | "Q" | "S" | "K" | "T" |
|-----------------------------------|---------|---------|---------|---------|
| Nitrogen Weight | 5.50 | 10.28 | 16.51 | 22.01 |
| lbs (kg) | (2.49) | (4.86) | (7.49) | (9.98) |
| Nitrogen Volume | 76 | 142 | 228 | 304 |
| ft ^s (m ^s) | (2.2) | (4.0) | (6.5) | (8.6) |
| Pressurized at | 2200 | 2200 | 2200 | 2460 |
| psi (bar)* | (151.7) | (151.7) | (151.7) | (169.6) |

Note: Initial pressure and thus nitrogen weight and volume can vary slightly. Check with your local supplier.

Table C

| System | Fre | ezer Te | mpera | ture, F | (°C) | Approx |
|----------------------|----------------|----------------|----------------|--------------|----------------|---------------------|
| Capacity Gal. (L) | (-6.7) | 0 (-18) | -20 (-29) | -40 (-40) | -60 (-51) | Fill Time (min*) |
| 250 (946) | 1.90 (0.86) | 1.90 (0.88) | 2.00 (0.91) | 2.10 (0.95) | 2.20 (1.00) | 1 |
| 500 (1893) | 3.84 (1.85) | 2.80 (1.27) | 4.00 (1.81) | 4.20 (1.91) | 4.40 (2.00) | 2 |
| 750 (2839) | 5.50 (2.49) | 5.70 (2.59) | 6.00 (2.72) | 6.30 (2.88) | 6.60 (2.99) | 3 |
| 1000 (3785) | 7.30 (3.31) | 7.60 (3.45) | 8.00 (3.63) | 8.33 (3.78) | 8.80 (3.99) | 4 |

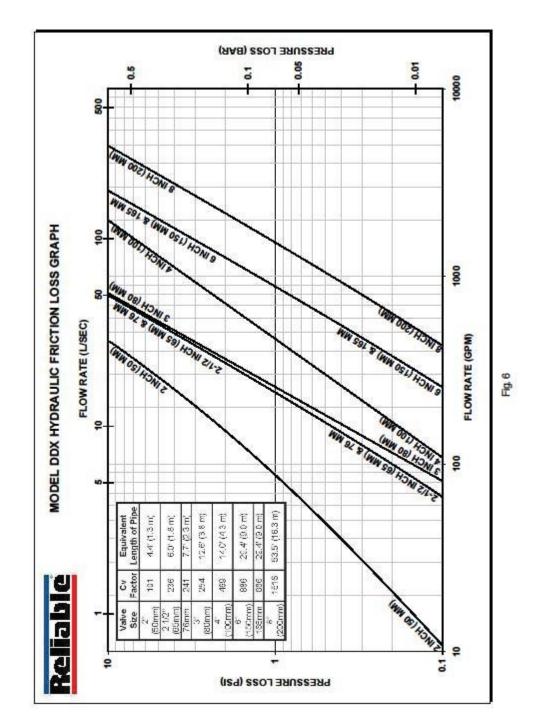
Note: To obtain required nitrogen supply (lbs.) for 15 psi (1,0 bar) or 22 psi (1,5 bar), multiply the tabulated values by a factor of 1.5 or 2.2 respectively

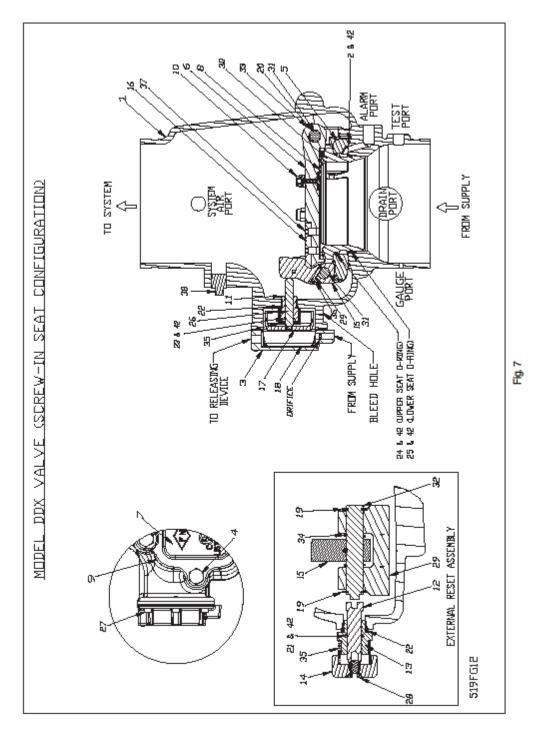
(1 bar = 100 kPa)

* When filed with the Reliable Model A-2 Pressure Maintenance Device having the bypass valve open

Maintenance

Reliable Model DDX-LP Dry Pipe Valve and associated equipment shall periodically be given a thorough inspection and test. NFPA 25, Inspection, Testing and Maintenance of Water Based Fire Protection Systems, provides minimum maintenance requirements. System components shall be tested, operated, cleaned, and inspected at least annually, and parts replaced as required. Particular attention should be given to the rubber components in the Model B1 Accelerator, Model LP Dry Valve Actuator, and the Model DDX-LP Dry Pipe Valve.





| - Marie | | | | | 1180 | | | | The Later Section 2 is not a later of the la | 10001000 | - |
|---------------|----------|---------------|----------|----------------------------|----------------------|----------|-------------------|---------------|--|----------|--|
| No | Z (50mm) | 2½" (65mm) | 76mm | 3" (80mm) | 3" 4" (80mm) (100mm) | 165mm | (150mm) | (www002) | Part Description | OTY. | M other task |
| | 91008011 | 91000012 | 91008023 | 91008023 91008013 91008005 | _ | 91008027 | 91008007 | 91009028 | Valve Body Groove/Groove | | THE PERSON NAMED OF THE PE |
| | N/A | NA | NA | NA | 91008045 | NA | 79090016 | WN | Valve Body Flanga/Groove | | Ductle Iron 65-45-12 |
| _ | N/A | N/A | NA | NA | 91008035 | NA | 91008037 | 60000016 | | - 7 | |
| | N/A | N/A | NA | NA | N/A | Z | NA. | 95408414 | 95408414 O-ring (Mounting Ring) | * | Buns-N |
| _ | | 255 | 55 | 710 | 71040418 | | | | Pushrod Cover Assembly | | Ductle Iron 85-45-12 & Brass C380000 |
| _ | | 91106123 | 8123 | | N/A | Z | NA, | WN | Hex Bolt 14-113 x 114" | 9 | Zinc Plated Steel |
| | wis | 2 | NA | | 56608107 | Z | NA | MA | Hex Bolt ½ 13 x 1½" | 9 | Znc Plated Steel |
| _ | 500 | NA | A) | | NIA | 90080116 | 9009 | WN | Hex Bolt 0"-11 x 194" | 9 | Znc Pated Steel |
| _ | | Ž | W | | N/A | Z | NA | 01180896 | _ | co | Zno Plated Steel |
| _ | | 91308013 | 8013 | | 91308014 | 9130 | 91308016 | 91308018 | Mounting Ring | | Stairless Seel CF8 or CF8M |
| _ | 122.4 | 91919013 | 6013 | 800 | 91916014 | 9191 | 91919016 | 80091616 | Capper | | Staniess Seel CF8 or CF8M |
| _ | | 92116083 | 6083 | | 92116064 | 92116085 | 92116085 92116086 | 92116088 | 92116088 Access Cover | * | Ductile Iron 65-45-12 |
| _ | ur La | 93416003 | 8003 | | 93416014 | 9341 | 93416016 | 93416008 | 93416008 Seal Assembly | + | Starriess Seel 304 & EPDM |
| _ | 5400 | 93709003 | 8003 | | 93708004 | 0,250 | 93709006 | 80090/26 | 93709008 Access Cover Carborn | 1 | Buna-Nor Neopene |
| $\overline{}$ | | 98722000 | 3000 | | 93722000 | Z | NA | WN | | | |
| _ | | NA | A | 353 | N/A | 93722000 | 3000 | WN | Bumpelop Assembly | 2 | Starries: Seel UNS S31600 & EHDM |
| _ | | NW | A/ | | N/A | Z | NA | 93722000 | | 60 | |
| _ | | | | 605 | 90916008 | 26 | 200 | Torse ecopore | Pushrod Guide | + | Acetal |
| _ | 1,000 | | | 608 | 93916096 | | | | Reset Shaft | * | Brass UNS C38000 |
| - | | | | 9410 | 94109098 | | | | Reset Housing | | Brass UNS C38000 |
| _ | | | | 943 | 94356008 | | | | Pleset Knob | 1 | Aluminum 8061 |
| _ | | 94500 | 50090 | - 1 | 94508004 | 9450 | 94509016 | 800605% | Lever | * | Starriess Seel UNS S17400 |
| - | | 3000 | 06414 | | 94006412 | 95008410 | 0410 | 96006410 | Striver | 1 | Aluminum Bronze C95400 |
| _ | 150 | | | 951 | 95108008 | | | | Peten | + | Stainless Seel CFBM |
| _ | | | 10000 | 236 | 96276008 | | | | Daphragm | + | ERDM & Royaster |
| _ | 6014 | 96306267 | 7929 | | N/A | NA | W | WN | Retaining Ring, U"Shaff, Lever Pin | 8963 | - TOOLS () () () () () () () () () (|
| _ | - 5 | 2 | WA. | - 0 | 785308387 | Z | NA | MA | Retaining Ring, 1/2" Shaff, Lever Pin | | 200000000000000000000000000000000000000 |
| _ | | NA | A) | | N/A | 95306269 | 6566 | NA | Retaining Fing, B"Shaft, Lever Rin | N. | CHEMICAS GROWTO / OF 1/1-1 |
| - | USA. | 2 | WA | 1976 | N/A | Z | NA | 96316408 | Retaining Ring, 14" Sheft, Lever Pin | 586 | |
| _ | | 96306267 | 6267 | | N/A | NA | A | NA | Retaining Fling, 0"Shaff, Hinge Pin | | The second of the second |
| _ | 10% | 2 | W. | | 26306267 | 96306267 | 7952 | NW | Retaining Ring, 1/2" Shaft, Hinge Rin | 0 | Statriess Seel 15-7 or 17-7 |

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Model DDX 2" (50mm), 2½" (65mm), 76mm, 3" (80mm), 8" (200mm) and 4" (100mm), 6" (150mm) & 165mm Deluge Valve Parts List (Ref. to Fig. 7) (Continued)

| 1 | | | | 4 | PERMO | | | | | | SCOUNTERS. |
|-----|----------|---------------|----------|--------------|---------------|-------------------|---------------|--------------|--|------|-----------------------------|
| 6.0 | 2 (S0mm) | 2½" (65mm) | 76mm | 3" (80mm) | 4" (100mm) | 165mm | 6" (150mm) | (200mm) | Part Description | OTY. | Meet codesi |
| | | | | 984 | 95409007 | | | | O-Ring, Reset Housing ID | - | Brna-N |
| N | | | | 964 | 95408024 | | | | O-Ring, Reset Housing & Pushod Guide OD | 5 | Suna-N |
| 23 | | | | 954 | 95406407 | | | | O-Ring, Rishrod Guide ID | - | Neural Neural |
| | | 0840 | 95406410 | | 95406409 | 92196996 | 8126 | 61480438 | 96406413 O-Ring, Upper Seat | 1 | Buna-N |
| 38 | | 95408411 | 8411 | | 95408420 | 95446228 | 8228 | 95408412 | 95408412 O-Ring, Lower Seat | - | BunsN |
| 8 | | | | 996 | 96508008 | | | | Pustrod | 1 | Starriess Shed UNS \$30300 |
| 27 | | | | 996 | 95606114 | | | | Societ Head Strew, W-20 x II* | 0 | See |
| 38 | | | | 999 | 95808127 | | | 22.0 | Pat Head Socket Cap Screw [1*16 x¾* | 1 | Steel |
| | | 95606133 | 6133 | | NW | WW | A | N/A | Socket Head Screw #8:32 x 16" | | Stainless Steel 18-8 |
| 0 | | NA | 10 | | 96906130 | 00190996 | 6130 | 06180998 | 99906130 Socket Head Screw #10-32 x 1* | | Sames Steel UNS 331600 |
| 30 | | 96016003 | 8003 | | 96016014 | 96016014 96016016 | 4000 | Sec 80091088 | Seat | | Starriess Shorl CFBM |
| | | 96206033 | 6003 | | NA | NA | A | NIA | | | Stainless Steel UNS 530400 |
| 5 | | NA | 14 | | 96216096 | 89091296 | 8068 | 80080296 | Hnge Ph | | Sames Shell UNS 221800 |
| - 9 | | 96216003 | 9003 | | NIA | WN | A | WW | | * | Sarriess Steel UNS S17400 |
| Ŋ. | | NA | A) | | 96216044 | 790216047 | 5047 | 98216008 | Linear Tri | | Stainless Steel UNS 521800 |
| 33 | | 9631 | 96310003 | | 96906904 | 10690696 | 9004 | 98310008 | 98310008 Clapper Spacer | 63 | Tefon or Acetal |
| - | | 9640 | 96409003 | | NA | MA | A | N/A | | 1 | Stainless Steel UNS S30400 |
| \$ | | NA | 14 | | 96406004 | 90090996 | 9009 | 96409008 | Lever spring | 1 | Stainless Shell UNS \$31600 |
| 38 | | | | 984 | 96406906 | | | (2) | Platon/ Pased Spring | 2 | Starriess Steel UNS 331600 |
| | | 96908112 | 6112 | 0.000 | NA | WW | A | N/A | Spring Lock Washer, #6 | 1 | Starriess Steel 18-8 |
| 8 | | NA | N. | | 11180696 | 11190696 | 6111 | 98908111 | 98908111 Spring Lock Washer, #10 | 1 | Sames Steel UNS \$31600 |
| | | 95608140 | 8140 | | NW | WN | A | WN | Flat Ha ad Socket Cap Screw W - 20 x W* | | Sarriess Steel 18-8 |
| 37 | | NA | IA A | | 95908139 | WW | A | W/W | Plat He ad Socket Cap Screw W "-20 x 19" | cı | Stainless Steel UNS S31600 |
| | | NA | A | | NA | NV | A | 95608135 | 96606135 Part Head Socket Cap Screw 15: 13 x %" | | Starriess Steel UNS S31600 |
| 88 | | | | 986 | 99904402 | | | | Rug 15' NPT | F | Sleet |
| 8 | | | | 946 | 94616921 | | | | Knob Caution Label (Not Shown) | - | Polystyrane |
| 8 | | | | 916 | 91566922 | | | | Ball Chain, 1/8" (Not Shown) (Langth Sin hiches) | 9 | Nobel Rated Brass |
| - | | | | 916 | 91558923 | | | | Camping Link, Ball Chain (Not Shown) | | Notes Rated Brass |
| - | | | | 9000 | 90900009 | | | | O.Bro Genera D. continuo (odos 69 - 206 | AG | AG Known® |

MODEL DDX DELUGE VALVE [4"(100MM), 6"(150MM) & 165 MM]
(DROP-IN SEAT CONFIGURATION) TO SYSTEM Fig. 8

17.

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Drop In DDX Valve Parts List: 4" (100mm), 165mm, 6" (150mm) with Drop-In Seat Configuration Only

| 10000 | | Part No. | 0.0 | | - 1 | |
|-------|---|----------|---------------|--|------|---|
| No. | 4" (100mm) | 165mm | 6* (150mm) | Part Description | QTY. | Material |
| 10 | 91008005 91008027 91008007 98018004 98018008 | | 91006007 | Valve Body | 18 | Ductile Iron 65-45-12 |
| 2 | 96016004 96016006 91916004 91916006 | | 6006 | Seat | 1 | Brass UNS C86300 |
| 3 | 91916004 | 9191 | 6008 | Clapper | 1 | Brass UNS C86300 |
| 4 | 92116064 | 92116065 | 92116066 | Access Cover | 1 | Ductile Iron 65-45-12 |
| 5 | 93416004 | 9341 | 6006 | Seal Assembly | 1 | Stainless Steel 304 & EPDM |
| 6 | 93708004 | 9370 | 6006 | Access Cover Gasket | 1 | Buna-N or Neoprene |
| 7 | 94508004 | 9450 | 6006 | Lever | 1 | Stainless Steel UNS S17400 |
| 8 | | 71040416 | | Pushrod Cover Assembly | 1 | Ductile Iron 65-45-12 & Brass UNS C36000 |
| 9 | | 95406407 | | O-Ring, Pushrod Guide ID | 1 | Bune-N |
| 10 | | 96406007 | | O-Ring, Reset Housing ID | 1 | Buna-N |
| | | | | O-Ring, Upper Seat | | Buna-N |
| 11 | 95408008 | 9640 | 6016 | O-Fling, Lower Seat | 2 | Buna-N |
| 12 | | 95406024 | | O-Ring, Reset Housing OD | 2 | Buna-N |
| 13 | 93708001 | 9370 | 6002 | Clapper Gasket | 1 | Buna-N or Neoprene |
| 14 | SEASTAND SOUTH | 96216086 | Flores- | Hinge Pin | 1 | Stainless Steel UNS S21800 |
| 15 | | 96216046 | | Lever Pin | 1 | Stainless Steel UNS S44000 |
| 18 | | 95606131 | | Threaded Stud, #10-32 x %* | 1 | Stainless Steel 18-8 |
| 17 | | 96216066 | | Locking Fin (not shown) | 2 | Stainless Steel UNS S44000 |
| 18 | | 95106006 | | Piston | 1 | Stainless Steel CF8M |
| 19 | 96200038 96506006 | | | Socket Plug 3/4" - 18 NPT (not shown) | 2 | Steel |
| 20 | | | | Pushrod | 1 | Stainless Steel UNS S30300 |
| 21 | | | | Pushrod Guide | 1 | Acetal |
| 22 | | 95306267 | | Retaining Ring, 1/2" Shaft | 3 | Turk production succession |
| 23 | | 95606128 | | Button Head Screw #10-32 x 1/4" | 1 | Stainless Steel 15-7 or 17-7 |
| 24 | | 95808129 | | Hex Washer Head Screw #10-32 x 3/4" | 4 | Stainless Steel 18-8 |
| | 95808107 | N | /A | Hex Cap Screw 14*-13 x 11/4* | - 1 | 400 |
| 25 | N/A | 9110 | 6008 | Hex Cap Screw 1/4"-11 x 1%" | 6 | Zinc Plated Steel |
| 26 | 2013001 | 96906111 | A18581.1 | Spring Lock Washer, #10 | 1 | Stainless Steel UNS S31600 |
| 27 | | 95808127 | | Flat Head Socket Cap Screw %"-16 x %" | 1 | Steel |
| 28 | | 96806130 | | Socket Head Screw #10-32 x 1* | 1 | Stainless Steel UNS S31600 |
| 29 | 95806138 | | | Socket Head Screw, 16"-20 x 5/6" | 6 | Steel |
| 30 | | 93916066 | | Reset Shaft | 1 | Brass UNS C36000 |
| 31 | | 96406004 | | Lever Spring | 1 | Stainless Steel UNS S30400 |
| 32 | | 96406906 | | Piston/ Reset Spring | 2 | Stainless Steel UNS S31600 |
| 33 | | 96906904 | | Clapper Spacer | 3 | Teflon |
| 34 | | 96278008 | | Diaphragm | 1 | EPDM & Polyester |
| 35 | | 92306006 | | Bumper Disc | 1 | SBR Rubber |
| 38 | | 94106066 | | Reset Housing | 1 | Brass UNS C38000 |
| 37 | | 94358006 | | Reset Knob | 1 | Aluminum 6061 |
| 38 | | 85000050 | | O-Ring Grease, Dupont** Krytox** GPL-201 | AR | Krytox* |
| 39 | | 94616921 | | Knob Caution Label (Not Shown) | 1 | Polystyrene |
| 40 | | 91558922 | | Ball Chain, 1/8" (Not Shown) (Length is in Inches) | 6 | control of Viscos |
| 41 | | 91556923 | | Clamping Link, Ball Chain (Not Shown) | 1 | Nickel Plated Brass |

Resetting the Model DDX-LP Dry Pipe Valve System

Refer to Figs. 2, 3, 7, 8 and 9.

- 1. Close the main valve controlling water supply (Fig. 9) to the Dry Pipe Valve and close off the air/nitrogen supply to the sprinkler system.
- 2. Close the pushrod chamber supply valve; valve A (Fig.
- 3. Open the main drain valve, valve B (Fig. 9), and drain
- Open all drain valves and vents at low points throughout the system, closing them when flow of water has
 - Note: The above steps accomplish the relieving of pressure in the pushrod chamber of the Dry Pipe Valve.
- 5. With valve F (Fig. 9) open, push in the plunger of ball drip valve, valve G (Fig. 9), to force the ball from its seat, and drain any water in the alarm line.
- 6. With the Model B Manual Emergency Station, Valve D (Fig. 9), open, push in and rotate the Model DDX-LP's reset knob (#14, Fig. 7 OR #38 Fig. 8) clockwise until you hear a distinct clicking noise, indicating that the clapper has closed. Note: The reset knob can be rotated only while the pushrod chamber is vented to atmospheric conditions (0 psig).
- 7. Inspect and replace any portion of the sprinkler system subjected to fire conditions.
- 8. Open valve A (Fig. 9) and allow water to fill the Dry Pipe 4. Valve's pushrod chamber.
- 9. Bleed all air from the actuation piping by allowing a steady stream of water to flow through the Model B Manual Emergency Station, valve D (Fig. 9). After all trapped air is released; close valve D. Water should still be coming out of the Model LP Dry Valve Actuator (Fig. 9).
- 10. Close valve F (Fig. 9). Rapidly apply compressed air or nitrogen into the Model LP Dry Valve Actuator and the system until the pressure conforms to Table A levels, as indicated on the system air pressure gauge (Fig. 9). Note: It may be necessary to temporarily close the main drain valve B (Fig. 9) in order to build sufficient air pressure to "set up" the Model LP Actuator. Once the Model LP Actuator is "set up", the main drain valve B (Fig. 6) should be reopened and the remaining pro- 7. Testing alarms — make sure valve F (Fig. 9) is cedure followed, The Model LP Dry Valve Actuator will close during this pressurizing process and the water will stop flowing into the drip cup. At this point, the pressure gauge which indicates push-rod chamber pressure (Fig. 9) will equalize to the available water supply pressure. Note: It may be necessary to isolate the system pressure gauge (Fig. 9) in the supply line to the 8. Operational test — Open the Model B Manual Emer-Model LP Dry Valve Actuator during system set-up by closing the 1/4" 3-way valve (#69. Fig. 2 or #69 Fig. 3). During set-up, pressure fluctuations can occur that are potentially damaging to the gauge. Once the Model LP Dry Valve Actuator is reset accordingly, the air pressure gauge's 3-way valve (#69, Fig.2 or #69 Fig. 3) may be re-opened.

- 11. If it is being used, reset the Model B1 Accelerator per Reliable Bulletin 323. Note: The Model B1 Accelerator requires a minimum of 15 psi (1.0 bar) for proper operation.
- 12. Open Valve F (Fig. 9). Open slightly the main valve controlling water supply (Fig. 9) to the Model DDX-LP Dry Pipe Valve, closing main drain valve B (Fig. 9) when water flows. Observe if water leaks through the ball drip valve, valve G (Fig. 9), into the drip cup, H (Fig. 9). If no leak occurs, the Dry Pipe Valve's clapper is sealed. Open slowly, and verify that the main valve controlling water supply is fully open and properly monitored.
- 13. Verify that valve A (Fig. 9) and valve F (Fig. 9) are open.
- 14. Secure the handle of the Model B Manual Emergency Station, valve D (Fig. 9), in the OFF position with a nylon tie (#55, Fig. 2 or #56 Fig. 3).

Inspection and Testing

Refer to Figs. 2.3.7.8 and 9

- 1. Water supply be sure the valves controlling water supply to the Dry Pipe Valve are open fully and properly monitored.
- Alarm line be sure that valve F (Fig. 9) is opened and remains in this position.
- Other trimming valves check that valve A (Fig. 9) is open as well as all of the pressure gauge's 1/4" 3-way valves. Valves D, E, and J (Fig. 9) should be closed.
- Ball drip valve G (Fig. 9) make sure valve F (Fig. 9) is open. Push in on the plunger to be sure the ball check is off its seat. If no water appears, the Dry Pipe Valve's water seat is tight. Inspect the bleed hole (see Fig. 7 or Fig. 8) on the underside of the push rod chamber for leakage.
- 5. System pneumatic pressure check air pressure gauge (Fig. 9) and water supply pressure gauge (Fig. 9) for conformance to Table A.
- Model LP Dry Valve Actuator (Fig. 9) Verify that the outlet is not leaking water. Check the air pressure gauge (Fig. 9) for proper pressure setting. Verify that the tubing line from the Actuator is not pinched or crushed, which could prevent proper operation of the Dry Pipe Valve.
- open. Open valve J (Fig. 9) permitting water from the supply to flow to the electric sprinkler alarm switch and to the mechanical sprinkler alarm (water motor). After testing, close this valve securely. Push in on the plunger of ball drip valve G (Fig. 9) until all of the water has drained from the alarm line.
- gency Station, valve D (Fig. 9). Note: An operational test will cause the Dry Pipe Valve to open and flow water into the sprinkler system.
- Secure Model B Manual Emergency Station, valve D (Fig. 9), in the OFF position with a nylon tie (#55, Fig. 2 or #56, Fig. 3) after the Dry Pipe Valve is reset.

19.

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Testing Model DDX-LP Dry Pipe Valve Without Flowing Water

Refer to Fig. 9

- Close the main valve controlling water supply to the Dry Pipe Valve.
- Verify that valve A is open, allowing water to enter the push rod chamber.
- Close off the air/nitrogen supply to the sprinkler system.
- 4. Decrease pneumatic pressure in the system by opening the ¼* globe valve, valve E, until the Model LP Dry Valve Actuator operates. This will be indicated by a sudden drop of water pressure on the Dry Pipe Valve's gauges. The operation of the Actuator will vent the push-rod chamber of the Dry Pipe Valve and cause the Valve's clapper to open.
- To reset the system, close the ¼" globe valve, valve E, and proceed according to the directions listed in the "Resetting Model DDX-LP Dry Pipe Valve System" section of this bulletin.

Draining Excess/Condensate Water From System Refer to Fig. 9

- Close the main valve controlling water supply to Dry Pipe Valve. Also close valve A and open main drain valve, valve B.
- 2. Open condensate drain valve E until all water has drained. Close valve E when the flow of water (if any) has stopped. Note: Be sure not to keep valve E open for an extended period of time because that will cause enough system air to bleed off thereby actuating the Model LP Dry Valve Actuator (see Table A for pneumatic pressure values required to maintain the Model LP Dry Valve Actuator closed for a given supply pressure). If the Actuator does happen to actuate, proceed according to the directions listed in the "Resetting Model DDX-LP Dry Pipe Valve System" section of this bulletin.
- Close the main drain valve, valve B. If system contains pressurized air or nitrogen, allow pneumatic pressure to come back up to specification according to Table A. Open valve A first, and then open the main valve controlling water supply to the Dry Pipe Valve.

Maintenance Procedures – Model DDX-LP Dry Pipe Valve

Refer to Figs. 2, 3, 7, 8, & 9.

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 Mechanical sprinkler alarm (water motor-not shown) not operating:

This is most likely caused by a clogged screen in the strainer of the water motor. Proceed as follows: Remove plug from the strainer. Remove and clean the screen. Replace the screen and the plug, and then tighten securely (Ref. Bulletin 613).

- 2. Leakage out of the ball drip valve G (Fig. 9).
- Water leakage due to a water column above the Dry Pipe Valve's clapper:

This condition can be caused by leakage past the system side of the Model DDX-LP Dry Pipe Valve's seal assembly (#8, Fig. 7 or #5, Fig. 8). Be sure that this surface is free of any type of debris. To eliminate leakage due to a water column, refer to the section in this bulletin marked "Draining Excess/Condensate Water From System". If the problem continues proceed to the following section.

 b. Leakage, air or water from the ball drip valve, E (Fig. 9):

If system air is leaking out the ball drip valve, the problem is either damage to the airside of the Model DDX-LP Dry Pipe Valve's seal assembly (#8, Fig. 7 or #5, Fig. 8), seat (#29, Fig. 7 or #2, Fig. 8), the upper seat o-ring(#23, Fig. 7 or #11, Fig. 8) or, on the 8" (200 mm) valve size only, the mounting ring o-ring (#2, Fig. 7). If supply water is leaking out the ball drip valve, the problem could be caused by damage to the Model DDX-LP Dry Pipe Valve's seal assembly (#8, Fig. 7 or #5, Fig. 8), seat (#29, Fig. 7 or #2, Fig. 8). The following section provides instructions to correct both conditions:

- A. Shut down the valve controlling the water supply to the Deluge Valve and open the 1½" main drain valve on the 2" (50mm), 2½" (65mm), 76mm and 3" (80mm) valve sizes or the 2" main drain valve on the 4" (100mm), 165mm, 6" (150mm) and 8" (200mm) valve sizes, valve B (Fig. 9). Open the water column drain valve E (Fig. 9). Close the pushrod chamber supply valve A (Fig. 9) and open the Model B Manual Emergency Station, valve D (Fig. 9).
- B. Remove the Deluge Valve's front (handhold) cover (#7, Fig. 7 or #4, Fig. 8) and inspect the seat (#29, Fig. 7 or #2, Fig. 8), clapper (#6, Fig. 7 or #3, Fig. 8), and seal assembly (#8, Fig. 7 or #5, Fig. 8) for damage. If inspection indicates damage to the seal assembly (#8, Fig. 7 or #5, Fig. 8), replace as follows:

For Valve Sizes: 2" (50mm), 2%" (65mm), 76mm, 3" (80mm), 8" (200mm) and 4" (100mm), 6" (150mm) & 165mm with Screw-In Seat only, Refer to Fig. 2, Fig. 3 & Fig. 7:

Remove the bumpstop nuts (#10, Fig. 7) and remove the seal assembly (#8, Fig. 7). Install a new seal assembly (#8, Fig. 7) and thread the bumpstop nuts (#10, Fig. 7) onto the threaded studs of the seal assembly (#8, Fig. 7) and tighten finger tight plus ½ to ½ turn. It inspection indicates damage to the clapper (#8, Fig. 7) only, then the clapper subassembly can be removed as follows:

At the rear of the valve, disconnect the water column drain trim section starting with the elbow connector (#21, Fig. 2 or #20, Fig.

3). Then remove the 1/4" globe valve (#33, Fig. 2 or #31, Fig. 3), followed by the \u00e4"x\u00e4" reducing bushing (#52, Fig. 2 or #53, Fig. 3). Remove the retaining ring (condensate drain side for 2" (50mm), 21/2" (65mm), 3" (80mm), 76mm and 8" (200mm) valve sizes or hand hole cover side for 4" (100mm), 6" (150mm) and 165mm valve sizes) from the clapper hinge pin (#19, Fig. 7) and push this pin through the hand hole opening for 2" (50mm), 21/2" (65mm), 3" (80mm), 76mm and 8" (200mm) valve sizes or condensate drain side for 4" (100mm), 6" (150mm) and 165mm valve sizes) and remove the clapper subassembly. Replace the seal assembly as described previously. Inspect the clapper (#6, Fig. 7) visually before reinstalling. Reinstall in the reverse order making sure the clapper spacers are in their proper position. If the seat (#29, Fig. 7) is damaged or it is suspected that the leakage is through the lower O-ring (#24, Fig. 7), the seat-clapper subassembly is easily removed as a unit as

Using Reliable P/N 6881603000 Seat Wrench for 2" (50mm), 21/2" (65mm), 76mm and 3" (80mm) valve sizes, Reliable P/N 6881604000 for 4" (100mm) valve size, Reliable P/N 6881606000 for the 6" (150mm) and 165mm valve sizes or Reliable P/N 6881608000 Seat Wrench for 8" (200mm) valve size, remove the seat by unscrewing. This will loosen the seat-clapper-mounting ring subassembly. Reach into the valve and grasp the seat and remove it from the valve. Then remove the clapper-mounting ring subassembly from the valve. Visually examine all components of the seat-clapper-mounting ring subassembly replacing any component that appears damaged. New O-rings (#23 & #24, Fig. 7 and #2, Fig. 7 (for 8" valve size only)) should always be used for reassembly. For Valve Sizes: 4" (100mm), 165mm, 6" (150mm) with Drop-In Seat Configuration only, Refer to Fig. 3 and Fig. 8:

At the rear of the valve, disconnect the water column drain trim section starting with the elbow connector (#20, Fig. 3). Then remove the ½" globe valve (#31, Fig. 3), followed by the ¾"x½" reducing bushing (#53, Fig. 3). Remove the retaining ring (hand hole cover side) from the clapper hinge pin (#14, Fig. 8) and push this pin through the condensate drain trim port and remove the clapper subassembly. Remove the four retaining screws (#24, Fig. 8) holding the seal faceplate assembly (#5, Fig. 8). Inspect the clapper (#3, Fig. 8) visually before installing. Apply a small amount of silicone based lubricant

to the four retaining screws. Install a new seal faceplate assembly. Torque the retaining screws to approximately 40 inch-pounds and reassemble. If the seat (#2, Fig. 8) is damaged or it is suspected that the leakage is through the lower o-ring (#11, Fig. 8), the seat-clapper subassembly is easily removed as a unit as follows:

Using a 5/16" Allen wrench, remove the two 3/8" NPT pipe plugs (#19, (not shown) Fig. 8) located on the side chamber side of the Model DDX deluge valve. The seat-clapper subassembly is retained by two locking pins (#17, (not shown) Fig. 8). The centers of these pins have a 1/4"-20 threaded hole. Remove the two locking pins by engaging them with a 1/4"-20 screw and pulling them out (the two locking pins are not externally threaded. so turning them with the attached 1/4"-20 screw or threaded rod is not recommended. A proven method is to use 1/4"-20 threaded rod with a locknut on the unassembled end. Grab hold of the locknut with a pliers or visegrips and tap the pliers or vise-grips in the direction away from the Deluge Valve. Doing so should pull the locking pins out of the Deluge Valve. With the clapper (#3, Fig. 8) in the closed position (not latched), dislodge the clapper-seat subassembly from the valve body by inserting two slotted screwdrivers under the lever and clapper mounting ears and pry up until the clapper-seat subassembly is free from its bore. Reach into the valve and grasp the clapper-seat subassembly from the sides. Making sure the clapper is in the closed position (see Fig. 1), lift up and rotate the clapper-seat sub assembly clockwise 90 degrees so that the lever side of the assembly is facing up towards the outlet of the deluge valve. Next, rotate the clapperseat sub assembly 90 degrees about the centerline of the valve so that the clapper is facing the hand hole opening and the lever is still facing the outlet of the deluge valve.. Then rotate the clapper-seat sub assembly 90 degrees, so that the clapper is now facing the outlet of the deluge valve and the lever is now facing the back of the valve. Pull the clapper-seat sub assembly out through the hand hole opening by the hinge pin side. Rotating the seat-clapper subassembly up as it is being removed will help it slide out more easily since the lever will prohibit it from sliding straight out. Visually examine all components of the clapper-seat subassembly replacing any component that appears damaged. New o-rings (#11, Fig. 8) should always be used for reassembly.

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Reassembly:

For Valve Sizes: 2" (50mm), 21/2" (65mm), 76mm, 3" (80mm), 8" (200mm) and 4" (100mm), 6" (150mm) & 165mm with Screw-In Seat Configuration only, Refer to Fig. 12: Clean the bore of the valve body. Lubricate the bore with O-ring grease. Lubricate and install the O-rings (#23 & #24, Fig. 7) onto the seat. Lubricate and install the mounting ring o-ring (#2, Fig. 7) into the body (8" (200mm) valve size only). Insert the clapper-mounting ring subassembly into the handhold opening of the Deluge Valve using caution to not damage or dislodge the mounting ring oring (#2, Fig. 7)(8" (200mm) valve size only). Align the mounting ring so that the Lever (#15, Fig. 7) is near the pushrod (#25, Fig. 7) and the mounting ring (#5, Fig. 7) "ears" are between the tabs of the valve body (#1, Fig. 7). Insert the seat (#29, Fig. 7) into the valve body (#1, Fig. 7) and through the clappermounting ring subassembly. Start to tread the seat (#29, Fig. 7) into the body by hand, then tighten the seat (#29, Fig. 7) with Reliable P/N 6881603000 Seat Wrench for 2" (50mm), 21/2" (65mm), 76mm and 3" (80mm) valve sizes, Reliable P/N 6881604000 Seat Wrench for 4" (100mm) valve size, Reliable P/N 688106000 Seat Wrench for 6" (150mm and 165mm valve sizes or Reliable P/N 6881608000 Seat Wrench for 8" (200mm) valve size until it bottoms out on the mounting ring (#5, Fig. 7). Verity that the seat-clapper-mounting ring subassembly is in the fully down position between the tabs of the body, and check to see that the lever (#15, Fig. 7) lines up with the push rod (#25, Fig. 7). Loosen and reassemble if necessary. Reassemble the handhold cover (#7, Fig. 7) and set up the Model DDX-LP Dry PipeValve as per the section "Resetting Model DDX-LP Dry Pipe Valve Systems."

For Valve Sizes: 4" (100mm), 165mm, 6" (150mm) with Drop-In Seat Configuration only, Refer to Fig. 8:

It is likely that the lower seat o-ring (#11, Fig. 8) has remained at the bottom of the Deluge Valve body's bore. Discard this o-ring and clean the bore. Lubricate the bore with o-ring grease and place the lower o-ring on the step at the bottom of the bore, verifying that it is in full contact with the bore. Lubricate the bottom step and upper o-ring (#11, Fig. 8) of the returbished clapper-seat subassembly. Insert the clapper-seat sub assembly into the hand hole opening, lever (#7, Fig. 8) first and rotating the clapper-seat subassembly until the lever faces the outlet of the deluge valve. Next rotate the clapper-seat subassembly.

sembly 90 degrees about the center axis of the valve until the bottom of the clapper-seat sub assembly faces the pushrod (#20, Fig. 8). Then rotate the clapper-seat subassembly 90 degrees counterclockwise so that the clapper (#3, Fig. 8) is facing the outlet of the deluge valve and the lever (#7, Fig. 8) is facing the pushrod (#20, Fig. 8). Once the clapper seat subassembly is in this position simply slide the assembly into the bore of the valve, making sure it is straight to avoid binding of the seat in the bore. Slightly twisting the assembly will assist in getting the clapper-seat subassembly properly seated. Once it is verified that the clapper-seat sub assembly is in the fully down position and the lever (#7, Fig. 8) is aligned with the pushrod (#20, Fig. 8), clean and lubricate the two locking pins (#17, (not shown) Fig. 8) with o-ring lubricant. Slide the two locking pins into the deluge valve body to lock the seat in place. Slightly twisting and pressing down on the clapper-seat subassembly will help the pins to slide in more easily. Then reinstall the 3/8" NPT pipe plugs (#19, (not shown) Fig. 8). Reassemble the hand hole cover (#4, Fig. 8) and set up the Model DDX-LP Dry Pipe Valve as per the section "Resetting Model DDX-LP Dry Pipe Valve Systems".

Leakage out of the push rod chamber vent hole: A small bleed hole is located on the underside of the push rod chamber (see Fig. 7 or Fig. 8). If there is air or water leakage coming out of this hole, do the following:

- a) Shut down the valve controlling water supply to the Deluge Valve. Relieve the inlet pressure by opening the 1½" main drain valve on the 2" (50mm), 2½" (65mm), 76mm and 3" (80mm) valve sizes or the 2" main drain valve on the 4" (100mm), 165mm, 6" (150mm) and 8" (200mm) valve sizes, valve B (Fig. 9). Close the valve A (Fig. 9) that supplies water to the push rod chamber, and open the Model B Manual Emergency Station, valve D (Fig. 9).
- Remove the trim at the unions nearest to the push rod chamber cover (#3, Fig. 9).
- Take the push rod chamber cover (#3, Fig. 7 or #8, Fig. 8) off by removing the six retaining screws (#26, Fig. 7 or #29, Fig. 8).

CONDITION ONE (Water coming out of the bleed hole):

Water coming out of the bleed hole is caused by a leaking diaphragm (#18, Fig. 7 or #34, Fig. 8). Visually inspect the push rod chamber cover (#3, Fig. 7 or #8, Fig. 8), piston (#17, Fig. 7 or #18, Fig. 8) and bore of the body (#1, Fig. 7 or #1, Fig. 8) to determine what could have damaged the diaphragm and correct. Install a new diaphragm. NOTE: The diaphragm has two different surfaces: it is not bi-directional. It will fail it installed backwards! Roll the diaphragm so that

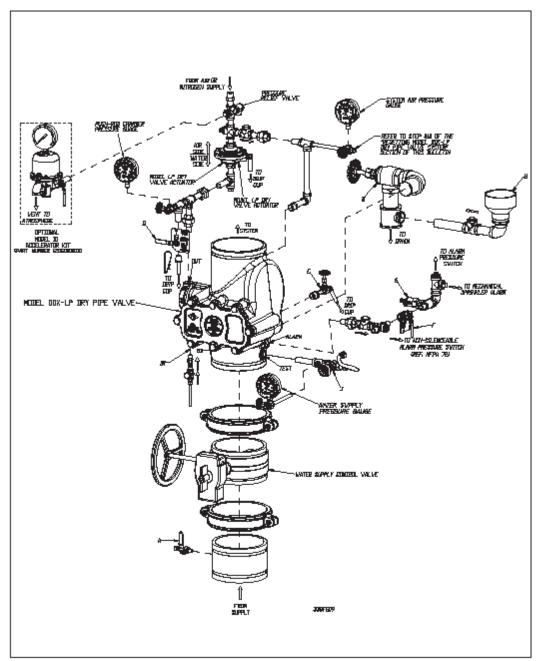


Fig. 9

23.

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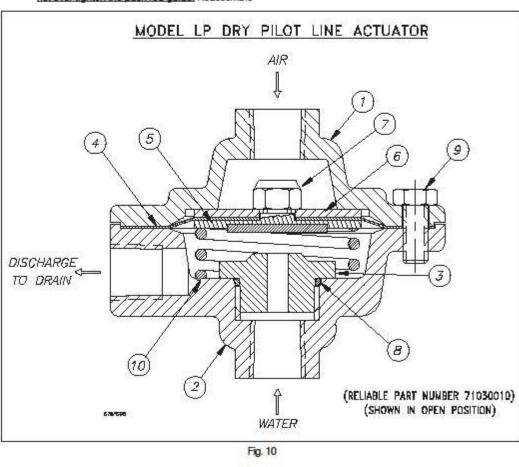
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the smooth surface (the pressure side) conforms to the inside of the push rod chamber cover and reassemble the six retaining screws (#26, Fig. 7 or #29, Fig. 8) with an installation torque of 15 foot-pounds. Set up the Model DDX-LP Dry Pipe Valve as per the section "Resetting Model DDX-LP Dry Pipe Valve Systems."

CONDITION TWO (System Air coming out of the bleed hole):

System air coming out of the bleed hole is caused by a defective O-ring assembled to the push rod guide (#11, Fig. 7 or #21, Fig. 8). Remove the piston-push rod subassembly, push rod spring (#34, Fig. 7 or #32, Fig. 8), and push rod guide (#11, Fig. 7 or #21, Fig. 8). Verify by hand turning, that the push rod cannot be unscrewed from the piston. Replace all O-rings and the push rod guide (#21, #22 and #11, Fig. 7 or #9, #12 and #21, Fig. 8). The correct installation torque for the pushrod guide is 35 inch-pounds. CAUTION: Do not over tighten the push rod guide. Reassemble

the components that were initially removed. Reinstall the diaphragm (#18, Fig. 7 or #34, Fig. 8) if it appears to be in good shape, otherwise, replace it also. NOTE: The diaphragm has two different surfaces: it is not bi-directional. It will fail if installed backwards! Roll the diaphragm so that the smooth surface (the pressure side) conforms to the inside of the push rod chamber cover and reassemble the six retaining screws (#26, Fig. 7 or #29, Fig. 8) with an installation torque of 15 foot-pounds. Set up the Model DDX-LP Dry Pipe Valve as per the section "Resetting Model DDX-LP Dry Pipe Valve Systems."



24.

Model LP Actuator Valve Parts List P/N 71030010

| Item No. | Part No. | Description | Oty. Required |
|-------------|-------------|-----------------------|------------------|
| 1 | 94106936 | Lower Housing | 1 |
| 2 | 94106935 | Upper Housing | 1 |
| 3 | 98006905 | Seat | 1 |
| 4 | 92206311 | Diaphragm | 1 |
| 5 | 95106911 | Facing Plate Assembly | 1 |
| 6 | 98906311 | Diaphragm Washer | - 1 |
| 7 | 94906406 | Facing Plate Nut | 1 |
| 8 | 95406901 | Seat O-Ring | 1 |
| 9 | 95806305 | Bolt | 6 |
| 10 | 98408902 | Compression Spring | 1 |

Ordering Information Specify:

Valve Model & Size

Maintenance – Model LP Dry Valve Actuator Refer to Figs. 9 and 10

If water constantly flows through the Model LP Dry Valve Actuator and into the drain, there is a leak in the seal of the Actuator's seat.

- Close the main valve controlling water supply (Fig. 9) to the Dry Pipe Valve and close off the air/nitrogen supply to the sprinkler system. Close valve A (Fig. 9).
- Drop pressure in the system by opening the ¼" globe valve, valve E (Fig. 9), and remove the Actuator from the system.
- Remove all six botts (#9, Fig. 10) holding the Actuator together. Clean or replace the facing plate assembly (#5, Fig. 10), seat (#3, Fig. 10) and o-ring (#8, Fig. 10).
- 4. Reassemble the Actuator, using a torque of 8 ft-lbs on the facing plate nut (#7, Fig. 10) and 12 ft-lbs on the six bolts (#9, Fig. 10). Use a cross-tightening pattern. Reinstall the Actuator. Set up the Model DDX-LP Dry Pipe Valve as per the section "Resetting Model DDX-LP Dry Pipe Valve System."

| | /aive Part Numbers | | |
|--------------------------------------|--------------------|-------|---------------------|
| Valve Size & End Connection | Flange Type | Color | Reliable Part Numbe |
| 2* (50mm) Grv/Grv | N/A | Black | 6103022000 |
| 2 (Soffin) Grv/Grv | N/A | Red | 6103022001 |
| 21/7/85> C/C | A1/A | Black | 6103022500 |
| 2½" (65mm) Grv/Grv | N/A | Red | 6103022501 |
| 2. (20) C/C | AUA | Black | 6103030000 |
| 3" (80mm) Grv/Grv | N/A | Red | 6103030001 |
| 76mm Grv/Grv | N/A | Red | 6103027600 |
| 4" (100) C(C | ALZA | Black | 6103040026 |
| 4" (100mm) Grv/Grv | N/A | Red | 6103040030 |
| | ASME Class 150 | Black | 6103040044 |
| 4" (100mm) Flg/Grv | ASME Class 150 | Red | 6103040046 |
| (S) (S)(C)(C) | ISO PN16 | Red | 6103040048 |
| | ASME Class 150 | Black | 6103040045 |
| 4" (100mm) Flg/Flg | ASME Class 150 | Red | 6103040047 |
| Service and Construction of the Pro- | ISO PN16 | Red | 6103040049 |
| 57 4400 1 1 5 15 | | Black | 6103060024 |
| 6" (168mm) Grv/Grv | N/A | Red | 6103060030 |
| | ASME Class 150 | Black | 6103060045 |
| 6" (168mm) Flg/Grv | ASME Class 150 | Red | 6103060047 |
| Germanne att des yant tim tra | ISO PN16 | Red | 6103060049 |
| | ASME Class 150 | Black | 6103060046 |
| 6" (168mm) Flg/Flg | ASME Class 150 | Red | 6103060048 |
| | ISO PN16 | Red | 6103060050 |
| 165mm Grv/Grv | N/A | Red | 6103060028 |
| 105 - 5 - 15 - | ASME Class 150 | Red | 6103060051 |
| 165mm Flg/Grv | ISO PN16 | Red | 6103060052 |
| 01 (000) 0 (0 | ALVA | Black | 6103080001 |
| 8" (200mm) Grv/Grv | N/A | Red | 6103080003 |
| | ASME Class 150 | Black | 6103080016 |
| 8" (200mm) Flg/Flg | ASME Class 150 | Red | 6103080018 |
| | ISO PN16 | Red | 6103080020 |

25.

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Trim — The trim set is available in individual parts, in time-saving segmentally assembled kit forms, or fully assembled to the Model DDX-LP Dry Pipe Valve (with or without a control valve).

| | 1 | | Trim | Configurations | | | |
|---|----------------|----------------------|---|---|---|--|--|
| | 9 9 | - | Inn | - | T | | |
| Valve Size & End Connection | Flange Type | Color | Individual Parts (Model DDX Valve Sold Seperately) | Segmentally Assembled (Model DDX Valve Sold Seperately) | Fully Assembled to Model DDX Valve w/o Control Valve | to Model DDX Valve w/ Contro Valve | |
| | | Black | | | 6505020021 | 6505020020 | |
| 2" (50mm) Grv/Grv | N/A | Red |] [| | 6505A20021 | 6505A20020 | |
| | | Black |] | | 6505022521 | 6505022520 | |
| 21/4" (85mm) Grv/Grv | N/A | Red | 6505040503 | 6505040504 | 6505A22521 | 6505A22520 | |
| n: nn 10 n | | Black | | | 6505030021 | 6505030020 | |
| 3" (80mm) Grv/Grv | N/A | Red |] | | 6505A30021 | 6505A30020 | |
| 76mm Grv/Grv | N/A | Red | | | 6505A27621 | N/A | |
| | 1 | Black | 1 1 | | 6505040221 | 6505040220 | |
| 4" (100mm) Gry/Grv | N/A | Red |] | | 6505A40221 | 6505A40220 | |
| | ASME Class 150 | Black | | | 6505043221 | | |
| 4" (100mm) Flg/Grv | ASME Class 150 | Red |] | | 6505A43221 | N/A | |
| | ISO PN16 | Red |] [| | 6505A44221 | | |
| 4" (100mm) Fig/Fig | ASME Class 150 | Black |] [| | 6505047221 | | |
| | ASME Class 150 | Red |] | | 6505A47221 | N/A | |
| | ISO PN16 | Red |] | | 6505A48221 | | |
| 01 (100) 0 | N/A | Black |] | | 6505060221 | 6505060220 | |
| 6" (168mm) Grv/Grv | | Red |] | | 6505A60221 | 6505A60220 | |
| | ASME Class 150 | Black |] | 30000000000 | 6505063221 | | |
| 6" (168mm) Flg/Grv | ASME Class 150 | Red | 0000044000 | | 6505A63221 | N/A | |
| WELL-OWLDS IN THE CONTROL | ISO PN16 | Red | 6505041002 65050410 | 6505041003 | 6505A64221 | 1. 1000 | |
| | ASME Class 150 | ASME Class 150 Black | | | 6505067221 | | |
| 6" (168mm) Flg/Flg | ASME Class 150 | Red | | | 6505A67221 | N/A | |
| 550 F. S. | ISO PN16 | Red |] | | 6505A68221 | 1. 10000 | |
| 165mm Grv/Grv | N/A | Red |] | 650 | 6505A65221 | N/A | |
| 10E El-10- | ASME Class 150 | Red |] [| | 6505A66221 | AUCA | |
| 165mm Flg/Grv | ISO PN16 | Red |] | | 6505A69221 | N/A | |
| 07/200 10-10 | AUA | Black |] | | 6505080221 | 6505080220 | |
| 8" (200mm) Grv/Grv | N/A | Red |] [| | 6505A80221 | 6505A80220 | |
| | ASME Class 150 | Black |] [| | 6505087221 | 723000000000000000000000000000000000000 | |
| 8" (200mm) Flg/Flg | ASME Class 150 | Red |] | | 6505A87221 | N/A | |
| | ISO PN16 | Red | 1 I | | 6505A88221 | 918 | |

Note: For metric installations, a 2" NPT x R2. ISO 7/1 x Close Nipple (Reliable P/N 98543401) is sold separately as an adapter for the single drain outlet of the trims.

26.

| | Component Part | Mfgr. | Description | Technical Bulletin | |
|----|---|--------|--|-----------------------------------|--|
| | | | OS&Y | 2 | |
| | Water Supply Control Valve | Select | Butterfly | 8 | |
| 1 | Tamper Switch (Optional) for OS&Y Valve | В | Model OS&Y2 | System Sensor A05-0196 | |
| | Tamper Switch (Optional) for Butterfly Valve | | Model P1BV2 | System Sensor A05-0197 | |
| 2 | Deluge/Dry Valve | Α | Model DDX-LP | Reliable 518/519 | |
| 3 | Dry Pipe Valve System | Α | Refer to Parts in this Bulletin | Reliable 337/338 | |
| | 4 Waterflow Alarm Pressure Switch | В | Model EPS10-2 (DPDT UL, FM) | System Sensor | |
| 4 | | ь | Model EPSA10-2 (DPDT ULC) | A05-0176 | |
| _ | 5 Low Air Alarm Pressure Switch | В | Model EPS40-2 (DPDT UL, FM) | System Sensor | |
| 0 | | ь | Model EPSA40-2 (DPDT ULC) | A05-0177 | |
| 6 | Mechanical Alarm (Optional) | Α | Model C | Reliable 612/613 | |
| 7 | Manual Emergency Station | Α | Model A Hydraulic (Pilot Line) Type | Reliable 506 | |
| 8 | Sprinklers | А | Closed Type | Reliable 110, 117, 131, 136, etc. | |
| 9 | Air Compressor | С | Tank Mounted | Gast H-10-0801 | |
| 10 | Pressure Maintenance Device | Α | Model A-2 | Reliable 254 | |
| 11 | Accelerator Kit* | Α | Model B1 | Reliable 323 | |
| 12 | Nitrogen Regulating Device | Α | Regulator with Optional Low Air Pressure Switch | Reliable 254 | |

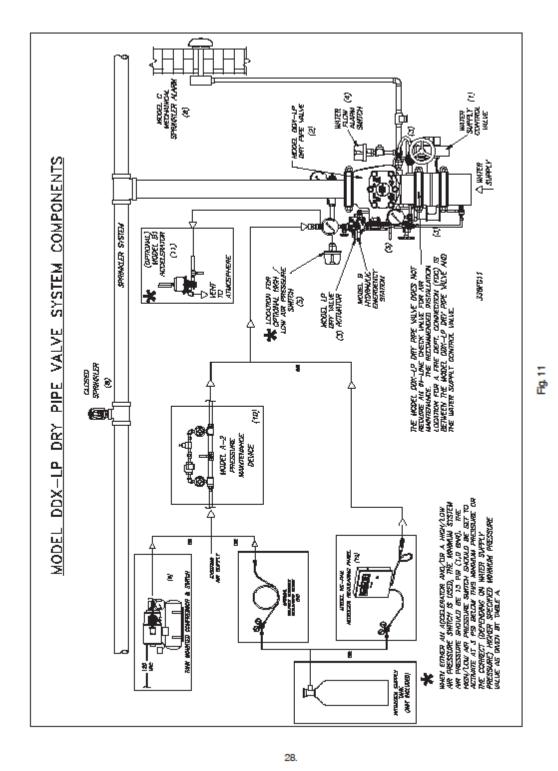
[&]quot;If the optional Model B1 Accelerator is used, a tank-mounted air compressor and an A-2 pressure maintenance device must be provided. Additionally the use of a tank-mounted air compressor helps to eliminate on/off compressor cycling that may occur as a result of small leakage in the system piping, as well as due to ambient temperature changes in the system piping.

System Equipment Manufacturers

- (A) The Reliable Automatic Sprinkler Co., Inc. (B) System Sensor
- (C) Gast Manufacturing Corp.

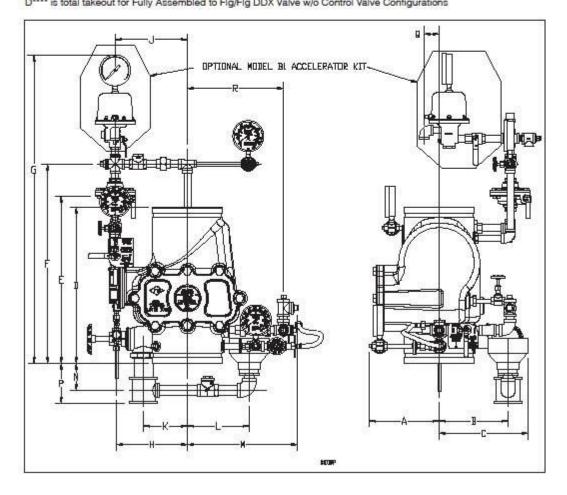
27.

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| Nominal | î., | 100 | | | | Insta | lation | Dime | nsion | s in In | ches (| mm) | | | | | | | |
|---------------------------------------|-------------|---------------|----------------|---|----------------|-------------|--------------|--------------|----------------|---------------|---------------|---------------|---------------|---------------|----------------|--------------|---------------|---------------|---------------|
| Pipe Size | A | В | C | D* | D** | D*** | D**** | E | F | G | Н | J | K | L | M | N | P | Q | R |
| 2" (50 mm) | 8 (203) | 7 (178) | 91/4 (241) | 12½ (318) | 211/4 (540) | N/A | N/A | 21½ (548) | 25 (635) | 38¼ (972) | 6 (152) | 61/4 (159) | 414 (108) | 51/2 (140) | 11 (279) | 3 (76) | 4½ (114) | 6 (152) | 9¼ (235) |
| 2½" (85 mm), 3" (80 mm) & 78 mm | 8 (203) | 7 (178) | 9% (241) | 12% (318) | 22 (559) | N/A | N/A | 21½ (548) | 25 (635) | 38¼ (972) | 8 (152) | 6½ (159) | 414 (108) | 51/4 (140) | 11 (279) | 3 (76) | 4½ (114) | 6 (152) | 91/4 (235) |
| 4" (100 mm) | 7½ (184) | 7½ (191) | 10 (254) | 14 (356) | 24½ (816) | 16 (406) | 16 (406) | 21½ (548) | 25 (635) | 38½ (972) | 71/4 (191) | 7% (197) | 51/2 (140) | 8½ (210) | 131/2 (343) | 5 (127) | 634 (171) | 41/4 (108) | 113 (298) |
| 6" (150 mm) & 165 mm | 7¼ (184) | 81/4 (215) | 11 (280) | 16 (406) | 271/2 (899) | 19 (483) | 19 (483) | 23 (584) | 271/± (699) | 40% (1035) | 8 (203) | 8¼ (210) | 51/4 (140) | 8¼ (210) | 13% (349) | 4¾ (121) | 61/4 (165) | 414 (108) | 12 (305 |
| 8" (200 mm) | 7¼ (184) | 9½ (235) | 111/2 (292) | 19 ⁸ / ₄ (492) | 30% (768) | N/A | 21¼ (540) | 23¼ (591) | 2794 (705) | 41 (1041) | 9 (229) | 91/4 (235) | 51/4 (140) | 81/4 (210) | 141/± (368) | 31/4 (89) | 5¼ (133) | 41/4 (108) | 129 (324 |

D* is total takeout for Fully Assembled to Grv/Grv DDX Valve w/o Control Valve Configurations
D** is total takeout for Fully Assembled to Grv/Grv DDX Valve w/o Control Valve Configurations
D*** is total takeout for Fully Assembled to Fig/Fig DDX Valve w/o Control Valve Configurations
D**** is total takeout for Fully Assembled to Fig/Fig DDX Valve w/o Control Valve Configurations



Reliable...For Complete Protection

Reliable offers a wide selection of sprinkler components. Following are some of the many precision-made Reliable products that guard life and property from fire around the clock.

- · Automatic sprinklers
- · Flush automatic sprinklers
- Recessed automatic sprinklers
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- Dry automatic sprinklers
- Intermediate level sprinklers
- Open sprinklers
- Spray nozzles
- Alarm valves
- Retarding chambers
- Dry pipe valves
- · Accelerators for dry pipe valves
- Mechanical sprinkler alarms
- · Electrical sprinkler alarm switches
- · Water flow detectors

- Deluge valves
- · Detector check valves
- Check valves
- Electrical system
- Sprinkler emergency cabinets
- Sprinkler wrenches
- · Sprinkler escutcheons and guards
- Inspectors test connections
- Sight drains
- Ball drips and drum drips
- · Control valve seals
- · Air maintenance devices
- Air compressors
- Pressure gauges
- Identification signs
- · Fire department connection

The equipment presented in this bulletin is to be installed in accordance with the latest published Standards of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable. Products manufactured and distributed by Reliable have been protecting life and property for over 90 years, and are installed and serviced by the most highly qualified and reputable sprinkler contractors located throughout the United States, Canada and foreign countries.

Manufactured by



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PANYNJ · ENGINEERING DEPARTMENT · DESIGN DIVISION • PORTS

STAGE I REPORT

July 31, 2013



BULLETIN

SPRINKLER CORROSION RESISTANT FINISHES

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

Corrosion resistant sprinklers are designed to resist exterior elements that attack a standard brass sprinkler. Corrosion resistant sprinklers may have a coating or may be constructed of a corrosion resistant material. The level of corrosion resistance required is determined by the conditions that a sprinkler would experience during its installed lifetime in a corrosive environment.

| SPRINKLER IMAGE | DESCRIPTION | CORROSION RESISTANT COATED PARTS | CORROSION RESIS |
|--------------------|--|---|---|
| | Brass Finish – Provides the least corrosion resistance of any sprinkler finish. Subject to oxidation, (turning green), when exposed to moisture. | No Coated Parts | <u>s</u> |
| 5000 | Chrome Finish – An ornamental finish that provides minimally more corrosion resistance than brass only. | Frame Deflector | Environment* coatings or materials |
| | White/Black Polyester Finish – A ornamental finish that provides higher corrosion resistance than chrome or brass. The waterway is not coated. | շ(Մ) սո Frame Deflector | Corrosive Environment* irsus other coatings or n |
| | Black PTFE** Finish – A finish is applied to sprinkler and pip cap. PTFE has a higher corrosion resistance than a polyester finish. Waterway is only coated in open sprinklers. | ເயிு₅ Frame Deflector Pip Cap | Corrosive E |
| | Wax Coated Finish – A brass sprinkler is dipped in wax. The entire sprinkler is coated with the protective covering (except for glass bulb). Waterway is not coated. | whole Assembly | Bras |
| | Wax over Polyester Coated Finish – A polyester finished sprinkler is dipped in wax. The entire sprinkler is coated with the protective covering (except for glass bulb). The waterway is not coated. | շ ^(Մ) սs Whole Assembly | |
| | Electroless Nickel PTFE** (ENT) – Coating is applied using a non-electric, auto-catalytic process that maximizes the coating's durability and antiadhe-sion properties. The sprinkler is thoroughly coated including the water way, screw, and pip cap. The spring is PTFE** coated on both sides. | Whole Assembly Belleville Spring PTFE Coated | |
| | Stainless Steel – Designed for corrosive environments that cause brass sprinklers to deteriorate. The frame, deflector, screw, and pip cap are made from solid stainless steel. The spring is made from Nickel Alloy, and PTFE** on both sides. | Whole Assembly constructed from Stainless Steel | |

** PTFE is often better known by the common brand name Teflon®, which is a registered trademark of DuPont Refer inquiries about corrosion resistance of a sprinkler to Viking Technical Services.

Form No. F_012513

Replaces sprinkler bulletin dated January 25, 2013. (Added FM Corrosion-Resistant Approval to ENT)



AGF Manufacturing Inc.

COLLECTANDRAIN

Model 5100A, 5200A,

Owner's Manual

and 5100ALBV



Model 5100A, 5200A and 5100ALBV Owner's Manual

COLLECTANDRAIN™ Anti-Trip Auxiliary Drains for Dry Pipe and Pre-Action Fire Sprinkler Systems

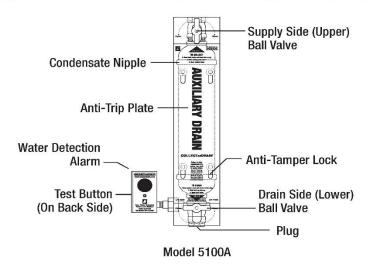


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Installation Instructions

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| Model 5100ALBV | 3-4 |
| Operation Instructions | |
| Model 5100A/5200A | ∠ |
| Model 5100ALBV | 5-7 |

WARNING: The COLLECTANDRAIN™ Anti-Trip Plate is designed to make sure that the auxiliary drain is operated in the proper manner and correct sequence as per NPFA guidelines to avoid accidental tripping, improper maintenance, and acts of vandalism. The M5100ALBV Water Detection Alarm detects the presence of water in the COLLECTANDRAIN™ and alerts personnel when maintenance is needed. COLLECTANDRAIN™ Model 5100A and 5200A are not designed to prevent freezing or automatically drain condensation from the system. Failure to drain condensation from system may result in catastrophic system failure due to freezing. System must be maintained per NFPA 25 4.6, 4.6A and 4.1.

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Model 5100A/5200A Installation Instructions

Retro-fitting into an Existing System

- 1. Isolate branch line or zone where the COLLECTANDRAIN™ is to be installed.
- 2. Relieve air pressure from the branch line.
- 3. Remove existing auxiliary drain/condensation collection assembly.
- 4. Install the COLLECTANDRAIN™ by attaching the supply valve (upper) to the sprinkler system pipe in accordance with NFPA 13 (2013 edition) 8.16.2.5 and 8.16.2.5.3 with regards to low-point drains (auxiliary drains).
- 5. Confirm that the supply valve (upper) is in the open position and ready to collect condensation, the drain valve (lower) is closed, and the plug is tight.
- 6. Return system back to normal operating conditions.

Installation into a New System

- 1. Install the COLLECTANDRAIN™ by attaching the supply valve (upper) to the sprinkler system pipe in accordance with NFPA 13 (2013 edition) 8.16.2.5 and 8.16.2.5.3 with regards to low-point drains (auxiliary drains).
- 2. Confirm that the supply valve (upper) is in the open position and ready to collect condensation, the drain valve (lower) is closed, and the plug is tight.
- 3. Activate system for normal operating conditions.

Note: The presence of even a <u>small amount</u> of water in the COLLECTANDRAIN[™] Model 5100A will activate the Model 5100ALBV Alarm's visual and audible alerts signaling the need for attention. The COLLECTANDRAIN[™] must be drained completely to silence the alarm. Please call 610-240-4900 for instructions on how to locally silence the audible alert if directly wired to a Fire Control Panel or BMS.

Model 5100A/5200A Operating Instructions

To Collect Condensate per NFPA 25 (2011 edition) A.13.4.4.3.2, 13.4.4.3.2*

- Close the drain valve (lower) by making sure the valve handle is perpendicular to the collection assembly.
- 2. Apply Teflon® tape to the plug and make sure the plug is tightly threaded into the bottom of the drain valve.
- 3. Slide the Anti-Trip Plate to its lowest position.
- 4. Open the supply valve (upper) by making sure the valve handle is in line with the collection assembly.
- 5. If equipped, install the anti-tamper lock.

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Model 5100A, 5200A and 5100ALBV Owner's Manual

To Drain Condensate per NFPA 25 (2011 edition) A.13.4.4.3.2, 13.4.4.3.2*

- 1. Close the supply valve (upper) and remove plug.
- 2. Slide the Anti-Trip Plate to its highest position and open the drain valve (lower) to drain the accumulated water.
- 3. Once the water has been drained, close the drain valve (lower) and slide the Anti-Trip Plate to its lowest position.
- 4. Open the supply valve (upper) and allow time for any remaining water in the system to accumulate. Repeat steps 1-3 until all of the water has been drained from the system.
- 5. Once all water has been drained apply new Teflon® tape to the plug and make sure it is tightly threaded into the bottom of the drain valve.
- 6. Close the drain valve (lower) and slide the Anti-Trip plate down into its lowest possible position.
- 7. Open the supply valve (upper).
- 8. If equipped, install the anti-tamper lock.

Model 5100ALBV Installation Instructions

The alarm module operates on the principle of conductivity. The alarm contains a probe that is attached to the piping system. When condensate collects in the piping and reaches the probe, the electrical circuit is completed and the unit sounds an audible alarm, flashes a visual red LED, and changes the state of the output relay. The module will reset itself when the condensate is completely drained.

Retro-fitting onto an Existing Auxiliary Drain

- Isolate the auxiliary drain that the COLLECTANDRAIN™ Model 5100ALBV is to be installed on.
- 2. Remove the plug and open the drain valve (lower) to empty the condensate from the auxiliary drain and relieve the air pressure.
- 3. Remove the existing drain valve (lower) from the auxiliary drain.
- 4. Apply PTFE tape or appropriate sealant to the Model 5100ALBV.
- 5. Install the Model 5100ALBV by threading the valve into the appropriate fitting.
- 6. Confirm that the drain valve (lower) is closed and the plug is tight. Open the supply valve (upper) and the auxiliary drain is ready to collect condensate.
- 7. Return system back to normal operating conditions.
- 8. See Page 5-7 for Wiring Instructions.

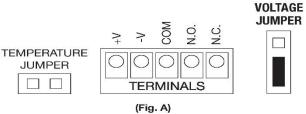
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Model 5100ALBV Operating Instructions

Power is supplied to the Model 5100ALBV by a 9V Battery (default) or by installing a 12-24VDC external hardwire (See Page 6).

Battery Operation:

- Remove four screws on the alarm box and take off the cover.
- 2. For battery operation, check to make sure the **Voltage Jumper** is on the front two pins as shown in Image 1 (Fig. A).



- 3. Install a 9V battery as shown in Image 2.

 Note: When the battery begins to run low the alarm will chirp and flash a yellow LED.
- 4. Place 9V battery under the circuitboard as shown in Image 3.
- 5. Install cover with the four screws.

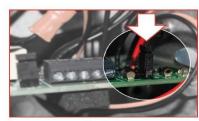


Image 1



Image 2



image 3

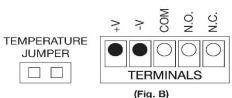
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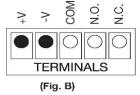
Model 5100A, 5200A and 5100ALBV Owner's Manual

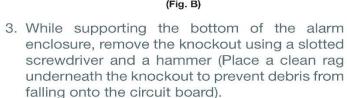
JUMPER

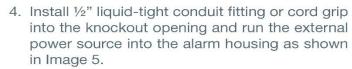
External Hardwire Operation:

- 1. Remove four screws on the alarm box and take off the cover.
- 2. For external power operation, place the Voltage Jumper on the rear two pins as shown in Image 4 (Fig. B). **VOLTAGE**









- 5. Connect external power source to V+ and Vterminals ash shown in Image 6 (Fig. B). Ensure DC is from a clean power supply and not fullwave rectified without a capacitor.
- 6. Install cover with the four screws.





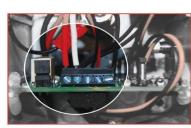


Image 6

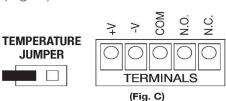
Temperature Sensing Function

When the Temperature Sensing Function is enabled and water is present in the auxiliary drain the Model 5100ALBV will not activate the audible and visual alerts if the ambient temperature is above 45° F. When water is present and the ambient temperature falls below 45° F, the Model 5100ALBV will activate the audible and visual alerts. The Temperature Sensing Function helps extend battery life and eliminates unwanted alarm conditions when the threat of freezing is not present. By default the Temperature Sensing Funtion is not enabled when shipped, meaning the alarm senses water regardless of ambient temperature. See page 7 for Setup Instructions.

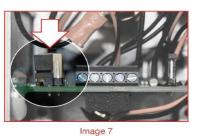
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Temperature Sensing Function Setup:

- 1. Remove four screws on the alarm box and take off the cover.
- 2. Remove Temperature Jumper from both pins and reinstall on one pin only as shown in Image 7 (Fig. C).







- Both pins covered: Alarm functions at all times
- One pin covered: Alarm functions at < 45° F

3. Install cover with the four screws.

Remote Operation Function

The Model 5100ALBV Water Detection Alarm also features a Remote Operation Function. This function allows you to connect the unit directly to the Fire Control Panel or BSM so when water is detected in the auxiliary drain you will be notified remotely.

Remote Operation Setup:

- 1. Remove four screws on the alarm box and take off the cover.
- 2. Connect wiring to the Common Terminal and either the N.O. or N.C. terminal as shown in Image 8 (Fig. D). Contact is rated for 2.0A @ 30VDC. **VOLTAGE JUMPER**

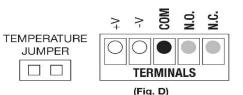




Image 8

3. Install cover with the four screws.

Note: Please call 610-240-4900 for instructions on how to locally silence the audible alert if directly wired to a Fire Control Panel or BMS.

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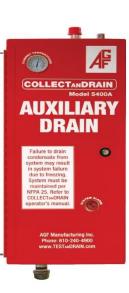
Thank You For Using Our Products!

For our complete family of products, visit us online at www.testandrain.com

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Freeze Protection

The Model 5400A goes beyond the prevention features of the Model 5100A and 5200A by providing a temperature controlled environment to deter system failures due to freezing condensation. The heated and insulated cabinet contains an auxilairy drain with a float switch to monitor condensation levels. When condensation reaches a level where maintenance is needed the float switch activates an audible alarm and an LED warning light. The Model 5400A also features Fire Control Panel notification capabilities. Visit www.testandrain.com for more information.





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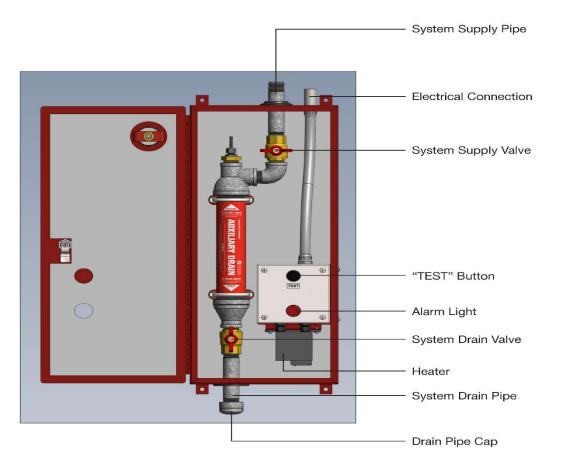
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Model 5400 COLLECTANDRAIN® Owner's Manual

Model 5400 COLLECTANDRAIN®

The COLLECTANDRAIN® Model 5400 is a heated and insulated auxiliary drain (condensate collector/drum drip) with float switch and alarm for dry pipe sprinkler systems. The M5400 is designed for installation in climates where freezing or below freezing temperatures are present and result in the failure of typical collectors. The M5400 maintains a comfortable temperature above freezing while minimizing power consumption.



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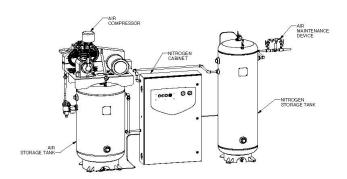
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Nitrogen Generator

Features

- 7.5 HP lubricated air compressor needed for NFPA 13 required 30 minutes fill for 2200 gallon system at 40 PSI
- · Handles up to 3000 gallons of total sprinkler system capacity (based on NFPA 13 allowable leak rates for a new sprinkler system)
- · Premium nitrogen membrane
- UL 508A listed industrial control panel
- Built-in Programmable Logic Controller for leak detection and air bypass alarm systems
- Form C dry contacts for Building Management System (BMS) notification
- 80 gallon air tank and 30 gallon nitrogen tank
- · Includes all filters, relief valves, automatic drains and gauges



Description

The Potter Nitrogen Generator, NGP-2200D-M2, is specifically designed to provide on-site, high purity nitrogen for use in fire protection sprinkler systems. When used as a supervisory gas in fire sprinkler systems, nitrogen slows corrosion, improves the life of your system, and lowers maintenance costs. The NGP-2200D-M2 includes a tank mounted air compressor, nitrogen cabinet, and a nitrogen storage tank. These systems include all air filtration equipment, an air compressor, nitrogen membrane, as well as tanks required to keep the generator operating at peak efficiency. Potter Nitrogen Generator Systems provide a low cost, reliable, and efficient method of producing a minimum of 98% nitrogen at the point of usage.

The NGP-2200D-M2 utilizes nitrogen membrane technology for gas separation. Nitrogen membranes are highly effective and a cost conscious way of producing on-site nitrogen. Acting as a filter, the smaller oxygen and water vapor molecules can pass through the membrane quickly. The larger nitrogen molecules are less likely to diffuse through the separator tubes; therefore, they continue downstream to the separator outlet, through the air maintenance device and into the fire protection system. As the system fills with nitrogen, the remaining oxygen molecules in the fire protection system are exhausted by using the Potter IntelliPurge® Nitrogen Purge Valve. The Potter IntelliPurge® Nitrogen Purge Valve will periodically monitor the fire protection system to ensure high purity nitrogen is consistent throughout the sprinkler system.

Installation

The Potter NGP-2200D-M2 should be installed in a dry, clean, and well-ventilated room with ambient temperatures above 50°F at all times. Allow access to the front of the nitrogen cabinet for service and place the unit in a location that is conveniently located near fire sprinkler system connections and a drain.

The Potter Nitrogen Generator should always be installed in an adequately ventilated room. Nitrogen is nontoxic and largely inert. Rapid release of nitrogen gas into an enclosed space displaces the oxygen and can cause an asphyxiation hazard. Inhalation of nitrogen in excessive concentrations can result in unconsciousness without any

For detailed installation and operation instructions please refer to the Potter Nitrogen Generator Manual #5401550.

Technical Specifications

| Compressor Package Size (HxWxD) | 75" x 34" x 29" |
|------------------------------------|--|
| Nitrogen Cabinet Size (HxWxD) | 48" x 30" x 11" |
| Nitrogen Tank Size (HxØ) | 45" x 16" |
| Compressor Package Weight | 500 lbs |
| Nitrogen Cabinet Weight | 200 lbs |
| Nitrogen Tank Weight | 125 lbs |
| Power Supply | Available in 208V (13.3A), 230V (12.4A), 460V (6.2A) three phase |
| Max Operating Pressure | 175 PSI |
| Temperature Range | 50°F (10°C) to 110°F (43°C) |
| Air Purity | ISO Class 1.4.1 or better: Free of water 38°F (3°C) Dew Point, compressor oil (0.008 PPM or .01 mg/m3), hydrocarbons, and particles (<0.01 µm microns) |

Potter Electric Signal Company, LLC Phone: 800-325-3936 St. Louis, MO www.pottersignal.com

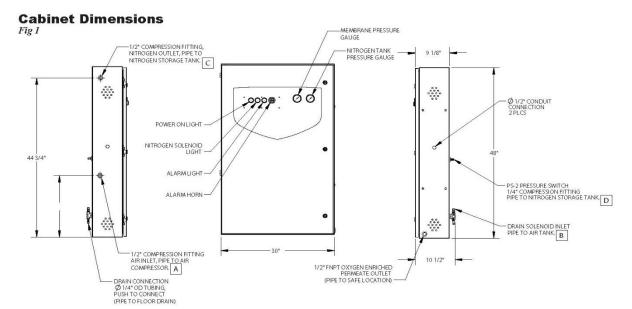
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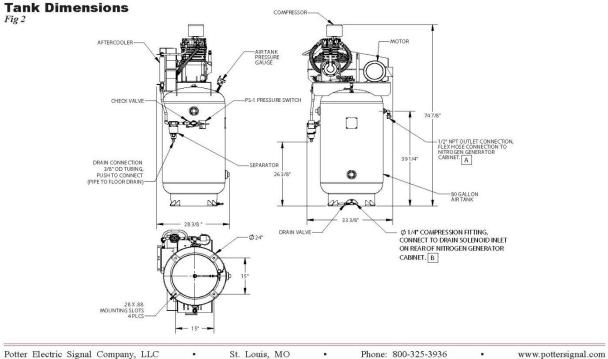


Fig 2

NGP-2200D-M2

Nitrogen Generator



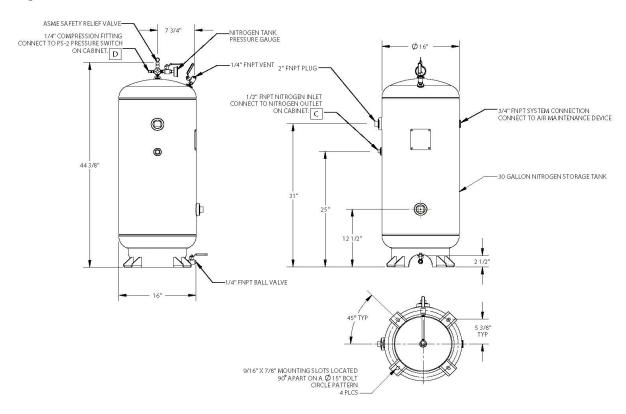


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Nitrogen Generator

Storage Tank Dimensions



Ordering Information

| Model | Description | Stock No. |
|-----------------|------------------|-----------|
| NGP 2200D-M2-2B | THREE PHASE 208V | 1119531 |
| NGP 2200D-M2-3B | THREE PHASE 230V | 1119532 |
| NGP 2200D-M2-4B | THREE PHASE 460V | 1119533 |

| Model | Description | Stock No. |
|-----------|--|-----------|
| NGP-MK | Maintenance Kit NGP-M2-M5 | 1119785 |
| INS-PV | Potter IntelliPurge® Nitrogen Purge Valve | 1119478 |
| NGP-SPV | Potter Purge Valve | 1119784 |
| NGP-AMD-1 | Potter Air Maintenance Device | 1119787 |

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Installation

throughout the sprinkler system.

The Potter NGP-2200D-M3 should be installed in a dry, clean, and well-ventilated room with ambient temperatures above 50°F at all times. Allow access to the front of the nitrogen cabinet for service and place the unit in a location that is conveniently located near fire sprinkler system

The Potter Nitrogen Generator should always be installed in an adequately ventilated room. Nitrogen is nontoxic and largely inert. Rapid release of nitrogen gas into an enclosed space displaces the oxygen and can cause an asphyxiation hazard. Inhalation of nitrogen in excessive concentrations can result in unconsciousness without any warning symptoms.

For detailed installation and operation instructions please refer to the Potter Nitrogen Generator Manual #5401550.

Technical Specifications

| Compressor Package Size (HxWxD) | 75" x 34" x 29" |
|----------------------------------|--|
| Nitrogen Cabinet Size (HxWxD) | 48" x 30" x 11" |
| Nitrogen Tank Size (HxØ) | 45" x 16" |
| Compressor Package Weight | 500 lbs |
| Nitrogen Cabinet Weight | 200 lbs |
| Nitrogen Tank Weight | 125 lbs |
| Power Supply | Available in 208V (13.3A), 230V (12.4A), 460V (6.2A) three phase |
| Max Operating Pressure | 175 PSI |
| Temperature Range | 50°F (10°C) to 110°F (43°C) |
| Air Purity | ISO Class 1.4.1 or better: Free of water 38°F (3°C) Dew Point, compressor oil (0.008 PPM or .01 mg/m3), hydrocarbons, and particles (<0.01 µm microns) |

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NGP-2200D-M3

Nitrogen Generator

Features

Description

- 7.5 HP lubricated air compressor needed for NFPA 13 required 30 minutes fill for 2200 gallon system at 40 PSI
- Handles up to 5000 gallons of total sprinkler system capacity (based on NFPA 13 allowable leak rates for a new sprinkler system)
- · Premium nitrogen membrane
- · UL 508A listed industrial control panel
- Built-in Programmable Logic Controller for leak detection and air bypass alarm systems
- Form C dry contacts for Building Management System (BMS)
- 80 gallon air tank and 30 gallon nitrogen tank
- · Includes all filters, relief valves, automatic drains and gauges

The Potter Nitrogen Generator, NGP-2200D-M3, is specifically

designed to provide on-site, high purity nitrogen for use in fire

protection sprinkler systems. When used as a supervisory gas in fire

sprinkler systems, nitrogen slows corrosion, improves the life of your

system, and lowers maintenance costs. The NGP-2200D-M3 includes

a tank mounted air compressor, nitrogen cabinet, and a nitrogen

storage tank. These systems include all air filtration equipment, an

air compressor, nitrogen membrane, as well as tanks required to keep

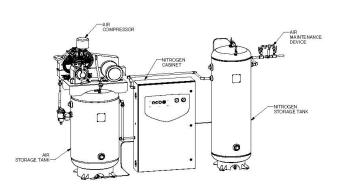
the generator operating at peak efficiency. Potter Nitrogen Generator

Systems provide a low cost, reliable, and efficient method of producing

The NGP-2200D-M3 utilizes nitrogen membrane technology for gas separation. Nitrogen membranes are highly effective and a cost conscious way of producing on-site nitrogen. Acting as a filter, the

smaller oxygen and water vapor molecules can pass through the membrane quickly. The larger nitrogen molecules are less likely to diffuse through the separator tubes; therefore, they continue downstream to the separator outlet, through the air maintenance device and into the fire protection system. As the system fills with nitrogen, the remaining oxygen molecules in the fire protection system are exhausted by using the Potter IntelliPurge® Nitrogen Purge Valve. The Potter IntelliPurge® Nitrogen Purge Valve will periodically monitor the fire protection system to ensure high purity nitrogen is consistent

a minimum of 98% nitrogen at the point of usage.



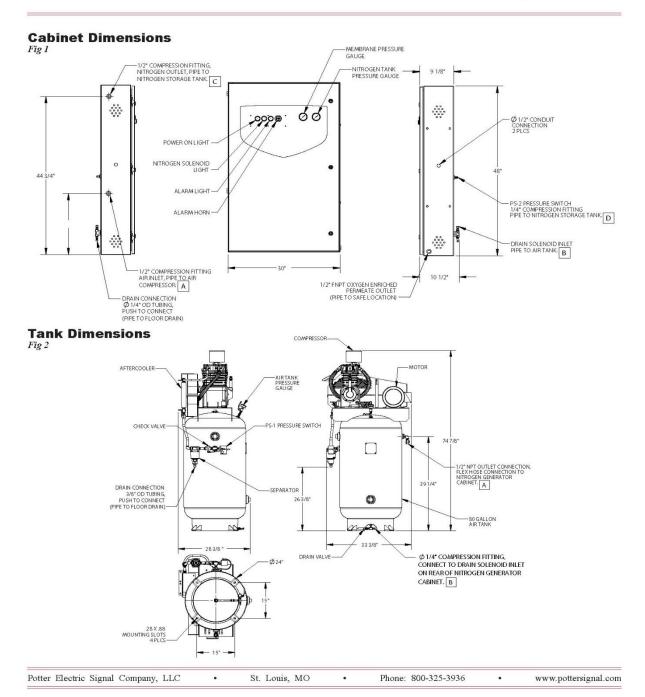
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Nitrogen Generator



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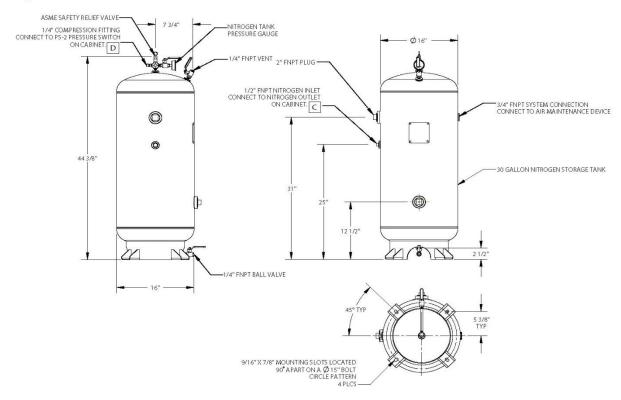


NGP-2200D-M3

Nitrogen Generator

Storage Tank Dimensions

Fig 3



Ordering Information

| Model | Description | Stock No. |
|-----------------|------------------|-----------|
| NGP-2200D-M3-2B | THREE PHASE 208V | 1119534 |
| NGP-2200D-M3-3B | THREE PHASE 230V | 1119535 |
| NGP-2200D-M3-4B | THREE PHASE 460V | 1119536 |

| Model | Description | Stock No. | |
|-----------|--|-----------|--|
| NGP-MK | Maintenance Kit NGP-M2-M5 | 1119785 | |
| INS-PV | Potter IntelliPurge® Nitrogen Purge Valve | 1119478 | |
| NGP-SPV | Potter Purge Valve | 1119784 | |
| NGP-AMD-1 | Potter Air Maintenance Device | 1119787 | |

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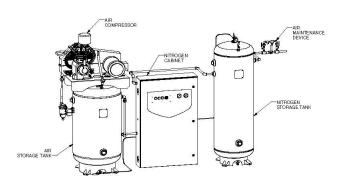
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Nitrogen Generator

Features

- 7.5 HP lubricated air compressor needed for NFPA 13 required 30 minutes fill for 2200 gallon system at 40 PSI
- Handles up to 9500 gallons of total sprinkler system capacity (based on NFPA 13 allowable leak rates for a new sprinkler system)
- · Premium nitrogen membrane
- UL 508A listed industrial control panel
- Built-in Programmable Logic Controller for leak detection and air bypass alarm systems
- Form C dry contacts for Building Management System (BMS) notification
- 80 gallon air tank and 80 gallon nitrogen tank
- · Includes all filters, relief valves, automatic drains and gauges



Description

The Potter Nitrogen Generator, NGP-2200D-M4, is specifically designed to provide on-site, high purity nitrogen for use in fire protection sprinkler systems. When used as a supervisory gas in fire sprinkler systems, nitrogen slows corrosion, improves the life of your system, and lowers maintenance costs. The NGP-2200D-M4 includes a tank mounted air compressor, nitrogen cabinet, and a nitrogen storage tank. These systems include all air filtration equipment, an air compressor, nitrogen membrane, as well as tanks required to keep the generator operating at peak efficiency. Potter Nitrogen Generator Systems provide a low cost, reliable, and efficient method of producing a minimum of 98% nitrogen at the point of usage.

The NGP-2200D-M4 utilizes nitrogen membrane technology for gas separation. Nitrogen membranes are highly effective and a cost conscious way of producing on-site nitrogen. Acting as a filter, the smaller oxygen and water vapor molecules can pass through the membrane quickly. The larger nitrogen molecules are less likely to diffuse through the separator tubes; therefore, they continue downstream to the separator outlet, through the air maintenance device and into the fire protection system. As the system fills with nitrogen, the remaining oxygen molecules in the fire protection system are exhausted by using the Potter IntelliPurge® Nitrogen Purge Valve. The Potter IntelliPurge® Nitrogen Purge Valve will periodically monitor the fire protection system to ensure high purity nitrogen is consistent throughout the sprinkler system.

Installation

The Potter NGP-2200D-M4 should be installed in a dry, clean, and well-ventilated room with ambient temperatures above 50°F at all times. Allow access to the front of the nitrogen cabinet for service and place the

unit in a location that is conveniently located near fire sprinkler system connections and a drain.

The Potter Nitrogen Generator should always be installed in an adequately ventilated room. Nitrogen is nontoxic and largely inert. Rapid release of nitrogen gas into an enclosed space displaces the oxygen and can cause an asphyxiation hazard. Inhalation of nitrogen in excessive concentrations can result in unconsciousness without any warning symptoms.

For detailed installation and operation instructions please refer to the Potter Nitrogen Generator Manual #5401550.

Technical Specifications

| Compressor Package Size (HxWxD) | 75" x 34" x 29" |
|----------------------------------|---|
| Nitrogen Cabinet Size (HxWxD) | 48" x 30" x 11" |
| Nitrogen Tank Size (HxØ) | 70" x 20" |
| Compressor Package Weight | 500 lbs |
| Nitrogen Cabinet Weight | 200 lbs |
| Nitrogen Tank Weight | 200 lbs |
| Power Supply | Available in 208V (13.3A), 230V (12.4A), 460V (6.2A) three phase |
| Max Operating Pressure | 175 PSI |
| Temperature Range | 50°F (10°C) to 110°F (43°C) |
| Air Purity | ISO Class 1.4.1 or better: Free of water 38°F (3°C) Dew Point, compressor oil (0.008 PPM or .01 mg/m3), hydrocarbons, and particles (<0.01 μ m microns) |

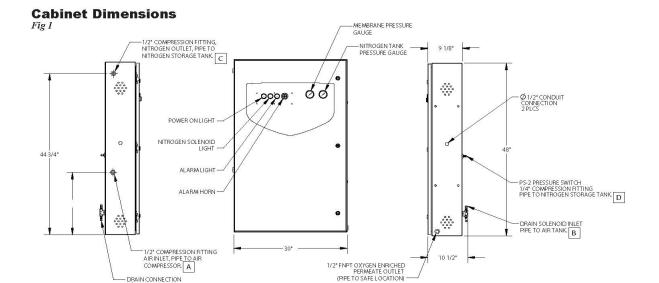
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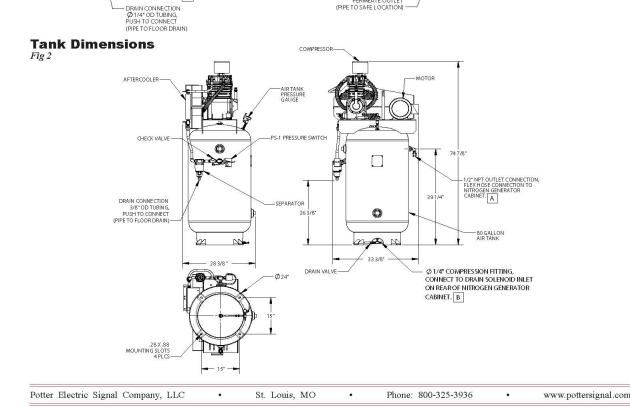
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NGP-2200D-M4

Nitrogen Generator



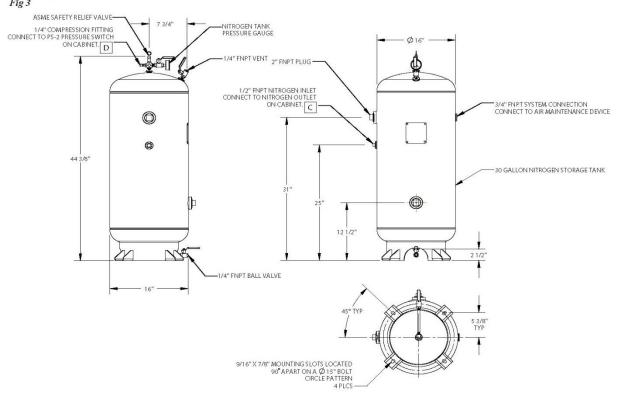


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Nitrogen Generator

Storage Tank Dimensions



Ordering Information

| Model | Description | |
|-----------------|------------------|---------|
| NGP-2200D-M4-2B | THREE PHASE 208V | 1119537 |
| NGP-2200D-M4-3B | THREE PHASE 230V | 1119538 |
| NGP-2200D-M4-4B | THREE PHASE 460V | 1119539 |

| Model | Description | Stock No. |
|-----------|--|-----------|
| NGP-MK | Maintenance Kit NGP-M2-M5 | 1119785 |
| INS-PV | Potter IntelliPurge® Nitrogen Purge Valve | 1119478 |
| NGP-SPV | Potter Purge Valve | 1119784 |
| NGP-AMD-1 | Potter Air Maintenance Device | 1119787 |

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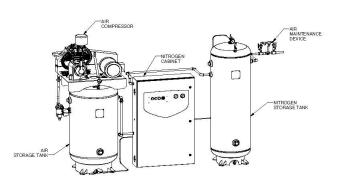


NGP-2200D-M5

Nitrogen Generator

Features

- 7.5 HP lubricated air compressor needed for NFPA 13 required 30 minutes fill for 2200 gallon system at 40 PSI
- Handles up to 16,000 gallons of total sprinkler system capacity (based on NFPA 13 allowable leak rates for a new sprinkler system)
- Premium nitrogen membrane
- UL 508A listed industrial control panel
- Built-in Programmable Logic Controller for leak detection and air bypass alarm systems
- Form C dry contacts for Building Management System (BMS) notification
- 80 gallon air tank and 80 gallon nitrogen tank
- · Includes all filters, relief valves, automatic drains and gauges



Description

The Potter Nitrogen Generator, NGP-2200D-M5, is specifically designed to provide on-site, high purity nitrogen for use in fire protection sprinkler systems. When used as a supervisory gas in fire sprinkler systems, nitrogen slows corrosion, improves the life of your system, and lowers maintenance costs. The NGP-2200D-M5 includes a tank mounted air compressor, nitrogen cabinet, and a nitrogen storage tank. These systems include all air filtration equipment, an air compressor, nitrogen membrane, as well as tanks required to keep the generator operating at peak efficiency. Potter Nitrogen Generator Systems provide a low cost, reliable, and efficient method of producing a minimum of 98% nitrogen at the point of usage.

The NGP-2200D-M5 utilizes nitrogen membrane technology for gas separation. Nitrogen membranes are highly effective and a cost conscious way of producing on-site nitrogen. Acting as a filter, the smaller oxygen and water vapor molecules can pass through the membrane quickly. The larger nitrogen molecules are less likely to diffuse through the separator tubes; therefore, they continue downstream to the separator outlet, through the air maintenance device and into the fire protection system. As the system fills with nitrogen, the remaining oxygen molecules in the fire protection system are exhausted by using the Potter IntelliPurge® Nitrogen Purge Valve. The Potter IntelliPurge® Nitrogen Purge Valve will periodically monitor the fire protection system to ensure high purity nitrogen is consistent throughout the sprinkler system.

Installation

The Potter NGP-2200D-M5 should be installed in a dry, clean, and well-ventilated room with ambient temperatures above 50°F at all times. Allow access to the front of the nitrogen cabinet for service and place the

unit in a location that is conveniently located near fire sprinkler system connections and a drain.

The Potter Nitrogen Generator should always be installed in an adequately ventilated room. Nitrogen is nontoxic and largely inert. Rapid release of nitrogen gas into an enclosed space displaces the oxygen and can cause an asphyxiation hazard. Inhalation of nitrogen in excessive concentrations can result in unconsciousness without any warning symptoms.

For detailed installation and operation instructions please refer to the Potter Nitrogen Generator Manual #5401550.

Technical Specifications

| Compressor Package Size (HxWxD) | 75" x 34" x 29" |
|------------------------------------|--|
| Nitrogen Cabinet Size (HxWxD) | 72" x 30" x 15" |
| Nitrogen Tank Size (HxØ) | 70" x 20" |
| Compressor Package Weight | 500 lbs |
| Nitrogen Cabinet Weight | 250 lbs |
| Nitrogen Tank Weight | 200 lbs |
| Power Supply | Available in 208V (13.3A), 230V (12.4A), 460V (6.2A) three phase |
| Max Operating Pressure | 175 PSI |
| Temperature Range | 50°F (10°C) to 110°F (43°C) |
| Air Purity | ISO Class 1.4.1 or better: Free of water 38°F (3°C) Dew Point, compressor oil (0.008 PPM or .01 mg/m3), hydrocarbons, and particles (<0.01 µm microns) |

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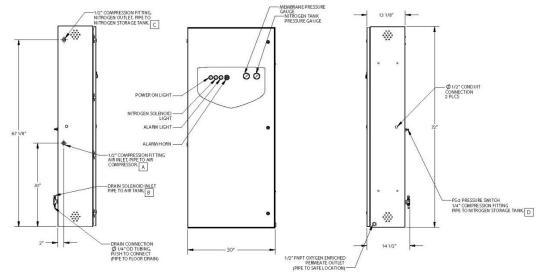
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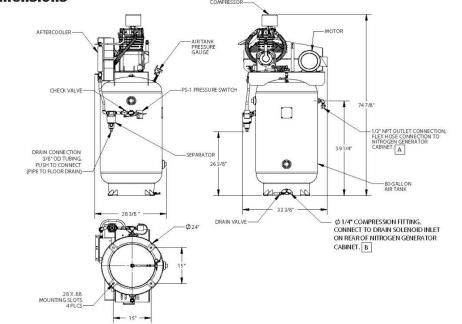
Nitrogen Generator

Cabinet Dimensions

Fig 1



Tank Dimensions



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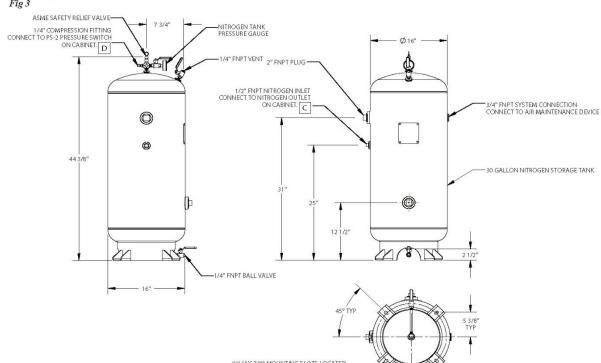
Phone: 800-325-3936



NGP-2200D-M5

Nitrogen Generator

Storage Tank Dimensions



Ordering Information

| Model | Description | Stock No. |
|-----------------|------------------|-----------|
| NGP-2200D-M5-2B | THREE PHASE 208V | 1119540 |
| NGP-2200D-M5-3B | THREE PHASE 230V | 1119541 |
| NGP-2200D-M5-4B | THREE PHASE 460V | 1119542 |

| Model | Description | Stock No. | |
|-----------|---|-----------|--|
| NGP-MK | Maintenance Kit NGP-M2-M5 | 1119785 | |
| INS-PV | Potter IntelliPurge® Nitrogen Purge Valve | 1119478 | |
| NGP-SPV | Potter Purge Valve | 1119784 | |
| NGP-AMD-1 | Potter Air Maintenance Device | 1119787 | |

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Potter Electric Signal Company, LLC









DUPONT™ FM-200® CLEAN AGENT

FM-200 is also known by its ASHRAE designation HFC-227ea

APPLICATION/DESCRIPTION

FM-200 provides superior fire protection in a wide range of applications from sensitive electrical equipment to industrial applications using flammable liquids. FM-200 is ideal for applications where clean-up of other media presents a problem, where weight versus suppression potential is a factor, where an electrically non-conductive medium is needed and where people compatibility is an overriding factor. When environmental impact is a consideration, FM-200 is particularly useful. It has zero ozone-depleting potential, low global warming potential and a short atmospheric lifetime. These characteristics make it suitable not only for new installations using Fike's total flooding systems, but also for Halon 1301 replacement

FM-200 is an odorless, colorless, liquefied compressed gas. (See Physical Properties) Table for additional information). It is stored as a liquid and dispensed into the hazard as a colorless, electrically non-conductive vapor that is clear and does not obscure vision. It leaves no residue and has acceptable toxicity for use in occupied spaces at design concentration. FM-200 extinguishes a fire by a combination of chemical and physical mechanisms. FM-200 does not displace oxygen and therefore is safe for use in occupied spaces without fear of oxygen deprivation.

PERFORMANCE

FM-200 is an effective fire extinguishing agent that can be used on many types of fires. It is effective for many surface fires, such as flammable liquids, and most solid combustible materials.

On a weight-of-agent basis, FM-200 is a very effective gaseous extinguishing agent. The FM-200 extinguishing concentration for normal Class A combustibles is 6.25 by volume. The minimum design concentration for total flood applications should be in accordance with NFPA 2001.

SPECIFICATIONS

FM-200 is manufactured to these specifications:

- Mole%: 99.0 Minimum
- Acidity, ppm by weight 3.0 Maximum
- Water content, % by weight: 0.001 Maximum
- Non-volatile residues, gram/100mL: 0.05 Maximum

TOXICITY

The toxicology of FM-200 compares favorably with other suppression agents. The LC50 of FM-200 is greater than 800,000 ppm. FM-200 has been evaluated for cardiac sensitization via test protocols approved by the United States Environmental Protection Agency. Test results show that cardiac tolerance to FM-200 is higher than that of other suppression agents and is acceptable for safe use in occupied spaces. FM-200 will decompose to form halogen acids when exposed to open flames. The formation of these acids is minimized by using Fike early warning detection systems and proper system installation. When properly applied and installed, the generation of these by-products of FM-200 should be minimal.

APPROVALS

FM-200 complies with NFPA Standard 2001.

- UL Listed - Ex4623

- FM Approved 3014476
- USCG 162.161/2/0

Form No. IV.1.02.01

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PHYSICAL PROPERTIES

| Chemical Name | Heptafluoropropane (CF ₃ CHFCF ₃) |
|---|--|
| Molecular Weight | 170.03 |
| Boiling Point @ 760 mm Hg | 3.9°F (-15.6°C) |
| Freezing Point | -204°F (-131.1°C) |
| Critical Temperature | 215°F (101.7°C) |
| Critical Pressure (psia) | 422 psia (2912 kPa) |
| Critical Volume (ft³/lbm) (cc/mole) | 0.0258 (274) |
| Critical Density (lbm/ft³) | 38.8 (621 kg/m³) |
| Specific Heat, Liquid (BTU/lb-F°) @ 77°F (25°C) | 0.283 (1.184 kj/kg/°C) |
| Specific Heat, Vapor (BTU/lb-°F) @ constant pressure of 1 ATM @ 77°F (25°C) | 0.1932 (0.808 kj/kg/°C) |
| Heat of Vaporization (BTU/lb) at Boiling Point | 57.0 (132.6 kj/kg) |
| Thermal Conductivity (BTU/h ft°F) of Liquid @ 77°F (25°C) | 0.040 (0.069 w/m°C) |
| Viscosity, Liquid (lb/ft hr) @ 77°F (25°C) | 0.443 (0.184 centipoise) |
| Vapor Pressure (psia) @ 77°F (25°C) | 66.4 (457.7 kPa) |
| Ozone Depletion Potential | 0 |
| Estimated Atmospheric Lifetime (years) | 31-42 |
| LC50 (Rats; 4hrs - ppm) | >788,000 |



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Form No. IV.1.02.01 April, 2010 Specifications are subject to change without notice.

U.S. and Foreign Patents Pending











DUPONT™ FM-200® AGENT STORAGE CONTAINERS

FM-200 is also known by its ASHRAE designation HFC-227ea

DESCRIPTION

Fike Clean Agent Containers are used in fire extinguishing systems to store the Clean Agent until a fire develops and the agent must be released. The Clean Agent is retained in the container by a impulse valve assembly which contains a fast-acting rupture disc. The disc will be ruptured, and the Clean Agent released, through the operation of an actuator by an electric signal that is automatically or manually controlled.

Fike Clean Agent Containers have passed extensive testing by Factory Mutual and Underwriters Laboratory and are used in installations where 12 to 1045 pounds (5.5 to 474 kg) of FM-200 agent is required. Clean Agent containers can be filled in 1 pound (0.5 kg) increments to their maximum capacity.

Each container for FM-200 Clean Agent Systems is super pressurized with dry nitrogen to 360 psig (25 bar), at 70°F (21°C), to provide a quick and effective discharge in 10 seconds

Fike Clean Agent Containers are supplied with a mounting bracket and pressure gauge that permits a quick visual inspection of container pressure. Containers with a 3" (80mm) discharge valve, 150-lb (61 L) and up, are equipped with a Liquid Level Indicator that allows a convenient method for determining the container agent weight without removing it from the installed location. An optional Low Pressure Supervisory Switch is available to provide constant monitoring of the internal pressure of the container. In the event of a decrease in container pressure below 288 psi (18.8 bar), the Supervisory Switch will change states, causing a supervisory trouble at the control

Fike Clean Agent Containers are available for installation in the upright, inverted or horizontal positions, depending upon the user's particular needs and the type and size container specified. The mounting location of the container is flexible. It can be mounted at the point of discharge or at a remote location by adding distribution piping.

1" Impulse Container

3" Impulse Container

RELIABILITY

Fike Clean Agent Containers are manufactured in strict accordance with Department of Transportation (D.O.T.) regulations. The Fike Clean Agent Containers have successfully passed testing by Factory Mutual and Underwriters Laboratories, Inc. Before leaving the factory, each container must pass extensive leakage testing, and pressure testing to 1000 psig (69 bar). The containers are constructed from carbon steel alloys and painted with a durable, baked enamel finish.

Inverted 150 lb. Impulse Container

APPROVALS

- UL Listed Ex 4623
- FM Approved 3014476

Form No. IV.1.01.01

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CONTAINER DATA/SPECIFICATIONS

| Container | | Fill range | | Valve Size Tare | Dimensions | (approximate) | | |
|--|--------|----------------|--|-----------------|-------------------|----------------|-------------------|-------------------------|
| Size | P/N | Minimum | Maximum | valve Size | Weight | Diameter | Height | Mounting Position |
| Lb. (L) | .) P/N | lbs. (kg) | in. (mm) | in. (mm) | lbs. (kg) | in. (mm) | in. (mm) | 1 0310011 |
| 20* (8) | 70.263 | 12 (5.5) | 21 (9.5) | 1 (25) | 21 (9.5) | 7.0 (178) | 22.375 (568.3) | Upright - Horizontal |
| 35" (15) | 70-264 | 22 (10.0) | 38 (17.0) | 1 (25) | 31 (14.5) | 7.0 (178) | 32.5 (825.5) | Upright - Horizontal |
| 60 (27) | 70-265 | 39 (18.0) | 68 (30.5) | 1 (25) | 52 (23.6) | 10.75 (273) | 28 (711.2) | Upright - Horizontal |
| 100 (44) | 70-266 | 63 (28.5) | 108 (49.0) | 1 (25) | 77 (34.9) | 10.75 (273) | 38.75 (984.3) | Upright (Valve Up) |
| 150/150i (61) | 70-267 | 87 (39.5) | 150 (68.0) | 3 (80) | 150 (68.0) | 20.0 (508) | 23.63 (600.1) | Upright/Inverted |
| 215 (88) | 70-268 | 124 (56.5) | 216 (98.0) | 3 (80) | 155 (70.3) | 20.0 (508) | 28.87 (733.3) | Upright (Valve Up) |
| 375 (153) | 70-269 | 217 (98.5) | 378 (171.5) | 3 (80) | 225 (102.1) | 20.0 (508) | 42.5 (1079.5) | Upright (Valve Up) |
| 650 (267) | 70-270 | 378 (171.5) | 660 (299.0) | 3 (80) | 385 (174.6) | 24.0 (610) | 50.625 (1286) | Upright (Valve Up) |
| 1000 (423) | 70-271 | 598 (271.5) | 1045 (474.0) | 3 (80) | 550 (249.5) | 24.0 (610) | 70 (1778) | Upright (Valve Up) |
| Fill Range | | | 40 to 70 lbs/ft ^a | | 630 to 1121 kg/m³ | | | |
| Fill Increments | | | 1.0 lbs 0.5 kg | | | | | |
| Container Super - Pressurization Level | | | 360 psig at 70°F (24.8 bar at 21°C) after filling with dry nitroge | | n dry nitrogen | | | |
| Container Storage Temperature Limitation | | | 32°F (0°C) - minimum 130°F (54.4°C) - max | | °C) - maximum | | | |
| Container Rating | | | DOT 4BW500 TC 4BWM534 | | BWM534 | | | |

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^{*} The 20 lb. (8 L) containers and 35 lb. (15 L) containers filled to less than 25 lb. (11.5 kg) are only approved by FM Approvals.

ITEMS SUPPLIED WITH CONTAINER

Along with a name plate and siphon tube, all Fike clean agent containers are supplied with the following:

Impulse Valve

This valve is a rupture disc (metal diaphragm), pressure operated device that allows the agent to be released from the container and into the protected via the associated piping network and discharge nozzle(s).

The discharge valve also fulfills the pressure relief valve requirements in accordance with DOT regulations.

Victaulic Nipple and Coupling

Used to connect container to the discharge piping network

For shipping purposes, a baffle plate is inserted into the Grooved Coupling as a safety device.

| | Discharge Valve Size | Replacement P/N | Description |
|---|-------------------------|--------------------|---|
| | 1" Discharge Valve | 02-9964 | 1" diameter (25 mm) Victaulic Coupling |
| | | 02-10042 | 1" diameter (25 mm) x 3" (76 mm) long Nipple |
| | 3" Discharge | 02-1987 | 3" diameter (80 mm) Victaulic Coupling |
| - | Valve | | 3" diameter (80 mm) x 4.5" (114 mm) long Nipple |



Impulse Valve

Victaulic Nipple and Coupling

ARCHITECT AND ENGINEERING SPECIFICATIONS

The Clean Agent shall be stored in Fike Clean Agent Storage Containers. The containers shall be capable of being filled, in one-pound (0.5kg) increments, to their listed maximum capacity. The Clean Agent container shall be activated by a signal from the control panel which is processed by the Agent Release Module. This module shall store the power required to operate the actuator. The valve shall contain a scored, non-fragmenting, rupture disc to provide an immediate, total discharge of all the agent. FM-200 Clean Agent is stored in the container as a liquid, having a natural vapor pressure of 200 psig at 77°F (13 barg at 25°C). To aid in discharge, the container shall be super-pressurized to 360 psig at 70°F (25 bar at 21°C) with dry nitrogen. Agent discharge shall be completed in 10 seconds or less.

Clean Agent Storage Containers shall be actuated by an electrical signal that is automatically or manually controlled. Normal operating temperature shall be +32° to +130°F (0° to 54°C) in any installation.

Clean Agent Storage Containers shall be equipped with a pressure gauge to display internal pressure. This gauge shall be an integral part of the container and color coded for fast referencing of pressure readings. A Low Pressure Supervisory Switch shall be made available, as an option. A decrease in internal container pressure from 360 to 288 psig (24.8 to 18.8 bar) shall cause the normally opened/closed Supervisory Switch contacts to close/open, indicating a trouble or supervisory condition, at the control panel.

Clean Agent Storage Containers shall be fastened to a wall, or other secure surface, using an optional mounting bracket that is designed for the most effective and versatile installation of each container.



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Form No. IV.1.01.01 April, 2010 Specifications are subject to change without notice.

U.S. and Foreign Patents Pending

Page 3





CONTROL ACCESSORIES

MANUAL RELEASE SWITCH - 10-1638

DESCRIPTION

The Manual Release Switch is a dual actuation device which provides a means of manually discharging the automatic fire extinguishing system when used in conjunction with the Fike

To operate the Manual Release Switch pull the spring clip safety pin (breaking the seal) and depress the button. The switch will remain engaged until released by unlocking the button with a key. A single normally open contact block is provided. The front housing of the Release Switch is constructed of stainless steel with the keyed red plastic release button centered and bordered in black trim. The dimensions of this component are $4 - 1/2^{\circ}$ wide, 4-9/16" high and 2-3/8" deep, and it may be mounted to a standard 4" electrical box or others. (Reference Data Sheet P.1.71.01).



SYSTEM ABORT SWITCH - 10-1639

DESCRIPTION

The System Abort Switch is designed to be used in conjunction with other system equipment. It provides a temporary manual means by which the system actuation circuit may be interrupted, when operated prior to the circuit actuation. The unit employs a momentary contact push button switch. While depressed, the switch causes the agent release circuit to be manually delayed. Upon release of the Abort Switch, the release circuit will follow the specific configuration of the system control panel.

The Abort Switch may be mounted to a standard 4" electrical box or others (Reference Data Sheet P.1.71.01).



MAIN-RESERVE SWITCH - 10-1640

The "Main" to "Reserve" switch is used with systems that incorporate main and reserve (back-up) agent storage. The switch may utilize 1 or 2 Form "C" Contact blocks which will provide an electrical path to either the "Main" or "Reserve" releasing modules.

Following a system discharge, reset any field devices. Once all devices are in a stand-by status the Main-Reserve Switch may be moved to the "Reserve" position. The Control Panel may then be reset to ta normal mode for uninterrupted Fike protection. The empty "main" containers can be removed for recharge. After the containers in the "Main" system have been recharged, the switch may be returned to the "Main" position.



The switch may be mounted to a standard 4" electrical box or others (Reference Data Sheet P.1.71.01).

APPROVALS

- UL Listed
- FM Approved CSFM Approved
- BSA

Form No. P.1.72.01-1

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DESCRIPTION

Fike's Cheetah Xi 50 (P/N 10-071) is a state-of-the-art true intelligent digital peer-to-peer modular suppression control system. It is ideal for all life safety and property protection applications, and is intended for both commercial and industrial use. It is designed with extensive programmability that allows the almost-instantaneous relay of information and the ability to perform process management tasks with ease including HVAC shutdowns, Emergency Voice Evacuation Systems, damper control, door closure, elevator recall, security, and CCTV/Building Management Awareness.

This cost-effective panel comes standard with one Signaling Line Circuit (SLC) that support 50 devices, with any mix and match of sensors and modules. The Cheetah Xi 50 utilizes extreme intelligence via its Eclipse based sensors including photoelectric, photoelectric with heat, ionization, photoelectric duct, and heat detectors. It also utilizes Eclipse based modules such as the monitor, mini-monitor relay, intelligent pull station, releasing and control modules. With Cheetah Xi 50, every device communicates as a peer on the signaling line circuit. These peers not only communicate up-to-the-second information to the control panel, but also communicate with each other. Each device is capable of generating accurate and highly detailed information. Conventional suppression alarm systems give a general idea of the fire's location, while the Cheetah Xi 50's intelligent sensors indicate precisely which device is in an alarm state. This intelligence provides incredible speed with response times as little as one-quarter second between manual pull station and notification appliance. It's flexibility allows you to attach the intelligent devices that are required for your specific application.

The System is programmed with either the Windows based field configuration software C-LINX $^{\text{TM}}$ or through a comprehensive password protected front-panel keypad programming option. This option allows you to quickly update and adapt to any future requirements or changes in the system such as changes in occupancy or remodeling. The sophisticated control panel circuitry coupled with the software allows you to read specific information and sensitivity levels of the different eclipse devices. The sensors also compensate for any changes due to age, contamination, or other environmental factors.



Fike Cheetah Xi 50

APPROVALS

- UL S2203
- FM 3029134
- CSFM 7165-0900:149
- MEA 307-05-E Vol. 2
- City of Denver

SYSTEM OPERATION

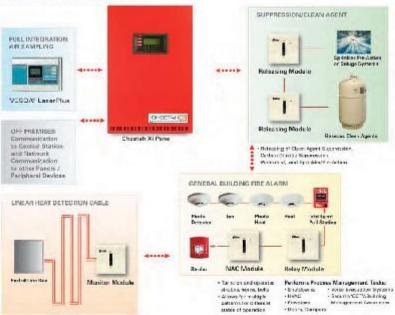
The Cheetah Xi 50 Control system operates on a "Zone and State" relationship. In this design, all input and output devices must be assigned to at least one zone or to all zones (254 are available), each one defining an area to be protected. Input devices can be assigned up to 253 zones (one zone is typical) and output devices may be configured for up to 254 zones.

These devices use the SLC signaling line circuit to exchange status information with other devices as well as with the control panel. When an input is activated, it is configured to cause its associated zone to enter into an operational state. Any detection device will cause the associated zone to enter into an alarm state. The output devices are configured to activate to protect and evaluate the endangered zone. This system is completely modular, allowing you the flexibility to design a system that is just right for your application. A typical configuration is shown on page 2 that illustrates the communications of a Cheetah Xi 50 system.

Form No. D.1.20.01-1

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TYPICAL CONFIGURATION



STANDARD FEATURES

The Cheetah Xi 50 features are designed to save lives and protect your valuable capital investments through unprecedented speed, intelligence and flexibility. These features include:

General

- All Cheetah Xi 50 panels come standard with a controller, transformer and enclosure (see ordering information for details)
- 254 user defined zones
- 80 character, backlit LCD display
- Real time clock
- 3200 event history buffer
- Critical process monitoring
- One-person Walktest capability Disable by zone, device or circuit
- Drill function at panel and remote
- Provides solenoid releasing operation
- Alarm verification capability
- Easy to add/remove devices Diagnostic menus
- Local piezo with distinct event tones
- 10 Status LEDs to easily identify system status
- Optional point ID DACT Module available
- Supports up to 31 peripheral devices such as Remote Display, LED Graphic and Zone Annunciators,
- Ethernet Module and Multi-Interface Module

USB Port for programming

Page 2

CHEETAH XI 50 CONTROLLER SPECIFICATIONS

The Controller contains the power supply, microprocessor, hardware interface, display and keypad. Enclosure

- Steel Enclosure 22.5" H x 14.5" W x 3.25" D (Back-box dimensions)
- · Flush or surface mounting
- Removable door for ease of installation
- Available in red or grey
- . Dead Front option available to isolate panel's internal electronics and wiring

- 5.25 amps useable alarm power, (2 A standby)
 Operation from 120VAC/60 Hz or 240 VAC/50 Hz transformer
- Two 24V DC, 1.75A continuous auxiliary power outputs
- Supports up to 75AH of batteries
- Controller consumes 0.116A @ 24VDC in normal standby mode and 0.176 @ 24 VDC in alarm

Signaling Line Circuit

- · Address devices with Infrared (IR) tool, similar to remote control device
- One SLC loop, NFPA style 4, 6 or 7
- 50 devices on loop
- True peer-to-peer digital protocol for extremely fast and reliable communications
- Auto-learn function
- Automatic day/night sensitivity adjustment
- · Automatic holiday sensitivity adjustment
- Acclimate operation for sensors
- IR Tool provides ability to read sensitivity levels or perform remote test of device
- Devices contain multi-color LED for quick reference of device status
- Sensors provide early warning pre-alarm detection and can also provide a summing feature. (up to eight sensors)
- Maximum Resistance: 70 ohm:
- Maximum Capacitance: .60 uf
- 12,000 ft. maximum distance total from panel to last device.

NAC Circuit

- · Two NAC circuits standard
- Rated at 24VDC, 1.75 Amps maximum Class A or B
- Built-in synch protocol for both System Sensor® and Gentex® devices

Operating Environment

- 32-120°F (0-49°C)
- 93% relative humidity, non-condensing

Page 3

OPTIONAL MODULES AND PERIPHERAL DEVICES

Point ID Dact (Digital Alarm Communicator Transmitter) Module (P/N 10-2528)*

The DACT provides interface with Central Station monitoring systems. It is available with 5 contact zones of connection OR the intelligent serial interface which provides point ID information. The Contact ID form is the preferred reporting format. It provides a four digit account code followed by a three digit event code, a two-digit group number, and a three digit contact number, all of which are used to provide specific point identification. This DACT can also provide an SIA or 4/2 Pulse reporting format. Note: 10-2476 is the same as 10-2528 with enclosure for external mounting.

14 Button Remote Display Unit (P/N 10-2646)*

14 Button Remote Display Unit (P/N 10-2646)*

The Fike fourteen button remote display (FRD), provides remote annunciation of Fike's intelligent control panels. The FRD is provided with a 80 character, backlit display which performs two display functions. First, it duplicates information provided by the control panel. Additionally the FRD has the capability of viewing system conditions such as alarm, trouble, supervisory, etc. The FRD also includes six buttons (Enter, Escape, +/-, left/right arrow) that are used for navigation through events as well as configuration of the device. Additionally it has eight programmable buttons that can be configured for things such as reset, silence, acknowledge, drill, or process. A key lock is included for additional security

10 Button Remote Display Unit (P/N 10-2631)*

The Fike ten button remote display (FRD), provides remote annunciation of Fike's intelligent control panels. 'The FRD is The rise ten outfoil remove display (FRD), provides remove annunciation of rise's intelligent control panels. The FRD is provided with a 80 character, backlit display which performs two display functions. First, it duplicates information provide d by the control panel. Additionally the FRD has the capability of viewing system conditions such as alarm, trouble, supervisory, etc. The FRD also includes six buttons (Enter, Escape, +/-, left/right arrow) that are used for navigation through events as well as configuration of the device. Additionally it has four dedicated buttons that perform the following functions: drill, silence, acknowledge, and reset. A key lock is included for additional security access.

2 Button Remote Display Unit (P/N 10-2630)*

The Fike two button remote display (FRD), provides remote annunciation of Fike's intelligent control panels. The FRD is provided with an 80 character, backlit display which performs two display functions. First, it duplicates information provided on the main control panel. Additionally, the FRD has the capability of viewing system conditions such as alarm,

Fike Zone Annunciator (P/N 10-2667)*

The Fike twenty zone remote annunciator is used with Fike's intelligent control systems to provide remote annunciation for up to twenty zones at a location remote from the control panel. The module provides a tabular display that incorporates 20 red alarm and 20 yellow trouble/supervisory LEDs. Each LED is programmable and can provide visual indication of alarm, trouble/supervisory conditions for zones or individual points. Communication between the intelligent control panels and remote annunciator is via the RS485 peripheral bus. When an event from the control panel is received the appropriate LED will illuminate based on the annunciator's configuration.

Fike Ethernet Module (P/N 10-2627)*

This Module provides the ability to remote monitoring of multiple Cheetah Xi 50 panels via Ethernet/IP. This module is connected to the Cheetah Xi 50 via the peripheral connections at P6 and will be configured as a peripheral device. In order to utilize the remote monitoring capability, a network ID must be assigned to each panel for identification purposes. This module connects to the Panel at P6 per ± and also requires 24 volts DC from the panel to P6 24A ±. See the 06-388 Ethernet Module manual for more details

Pike Multi-Interface (P/N 10-2583)*

The primary function of the multi-interface module is that it is used as a printer interface for the Cheetah Xi 50 control panels. It provides specific event and point information to be communicated from the panel to the printer. It is compatible with either a Epson FX-890 or equivalent IEEE 1284 standard printer or for UL required applications, the Keltron 90 series UL listed fire alarm printer.

^{*} See ordering information for individual data sheet that gives additional specifications

PROGRAMMING CONFIGURATION

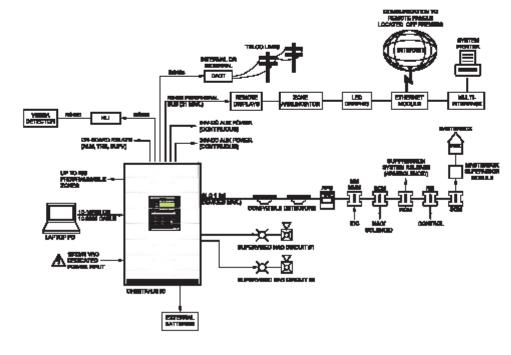
All configuration variables can be assigned using C-LINX software. This software provides the designer the capability to provide a pre-engineered design. The user can review the construction plans to assign the zones. The configuration can also be set to identify the exact device circuit operation desired along with the custom message information.

IR Configuration Tool (P/N 55-051)*

This optional hand-held infrared remote control is available on the Cheetah Xi 50 system. This small device can be used in the field to simplify installation, testing and service. It operates with 2 AA batteries and can read device information such as loop, address, branch and service dates and initiate device test. This tool:

- Communicates bi-directionally with any Cheetah Xi 50 device
- Easily addresses devices by setting the loop and address
 Quickly reads sensitivity levels, date serviced, device type, loop and address, manufacture date
- · Immediately records the date serviced
- · Instantly initiates walk test of any sensor or module
- Accesses and tests hard-to-reach sensor or module (such as duct detector) through any other device on loop

FIELD WIRING DIAGRAM



* See ordering information for individual data sheet that gives additional specifications

ORDERING INFORMATION

| FIKE P/N | Description | Individual Datasheet # |
|-------------------|---|---------------------------|
| | Cheetah XI 50 System, Includes Controller, Enclosure, and Transformer | |
| or | c: (R=Red, G=Grey) p: (1=120V, 2= 240V) | D.1.20.01 |
| 10-071-c-p-d | d=Deadfront | |
| 10-2622 | Cheetah XI 50 System Controller | D.1.20.01 |
| | (included with 10-071-c-p and -L) | |
| 10-2628-c | Dead Front Option c: (R=Red, G=Grey) Peripheral Devices | |
| 10-2630 | 2 Button Expanded Protocol Remote Display | P.1.103.01 |
| 10-2631 | 10 Button Expanded Protocol Remote Display | P.1.103.01 |
| 10-2631 | 14 Button Expanded Protocol Remote Display | P.1.107.01 |
| 10-2667 | Zone Annunclator | P.1.118.01 |
| 10-2627 | Ethernet Module | D.1.22.01 |
| 10-2583 | Multi-Interface Module | P.1.85.01 |
| 10-2528 | Point ID DACT (Internal Mounting) | D.1.18.01 |
| 10-2320 | Intelligent Sensors | D.1.10.01 |
| 63-1052 | Photoelectric Smoke Sensor Non-Isolator Version | P.1.88.01 |
| 63-1058 | Photoelectric Smoke Sensor Isolator Version | P.1.88.01 |
| 63-1053 | Photo/Heat Combination Sensor Non-Isolator Version | P.1.89.01 |
| 63-1059 | Photo/Heat Combination Sensor Isolator Version | P.1.89.01 |
| 60-1039 | Thermal Sensor Non-Isolator Version | P.1.90.01 |
| | Thermal Sensor Isolator Version | P.1.90.01 |
| 67-033 | Ion Sensor Non-Isolator Version | P.1.91.01 |
| 67-034 | ion Sensor Isolator Version | P.1.91.01 |
| 63-1057 | Duct Sensor Non-Isolator Version | P.106.01 |
| 63-1062 | Duct Sensor Isolator Version | P.106.01 |
| 63-1056 | Duct Housing | P.106.01 |
| | Intelligent Sensor Bases | |
| 63-1054 | 6" Sensor Base Non-Isolator Version | P.1.98.01 |
| 63-1060 | 6" Sensor Base Isolator Version | P.1.98.01 |
| 63-1055 | 4" Sensor Base Non-Isolator Version | P.1.99.01 |
| 63-1061 | 4" Sensor Base Isolator Version | P.1.99.01 |
| 63-1064 | Sounder Base | P.101.01 |
| 63-1063 | Relay Base | P.101.01 |
| | Intelligent Modules | |
| 55-045 | Mini-Monitor Module Non-Isolator Version | P.1.93.01 |
| 55-050 | Mini-Monitor Module Isolator Version | P.1.93.01 |
| 55-041 | 4" Monitor Module Non-Isolator Version | P.1.92.01 |
| 55-046 | 4" Monitor Module Isolator Version | P.1.92.01 |
| 20-1063 | Intelligent Pull Station Non-Isolator Version (Fire) | P.1.65.01 |
| 20-1064 | Intelligent Pull Station Isolator Version (Fire) | P.1.65.01 |
| 20-1343 | Intelligent Pull Station Non-Isolator Version (Agent) | P.1.104.01 |
| 55-042 | Supervised Control Module Non-Isolator Version | P.1.94.01 |
| 55-047 | Supervised Control Module Isolator Version | P.1.94.01 |
| 10-2360 | Series Solenold Diode/Resisfor (Needed for solenoids) | |
| 10-2413 | Masterbox Interface | |
| 55-043 | Relay Module Non-Isolator Version | P.1.95.01 |
| 55-048 | Relay Module Isolator Version | P.1.95.01 |
| 55-052 | Releasing Control Module Non-Isolator Version | P.1.96.01 |
| 55-053 | Releasing Control Module Isolator Version | P.1.96.01 |
| 10-1832 | ARM III Agent Release Module | C.1.04.01 |
| ee ned | Programming Parts | 0.407.04 |
| 55-051 | Infrared (IR) Remote Control Tool | P.1.97.01 |
| 06-327 10-2629 | C-LINX Software | |
| | Interface cable, USB/A Male to USB/B Male | |
| 10-2477 | DACT Programmer | |



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Form No. D.1.20.01-1 June, 2009 Specifications are subject to change without notice.

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PANYNJ · ENGINEERING DEPARTMENT · DESIGN DIVISION ● PORTS STAGE I REPORT 389





INTELLIGENT PHOTOELECTRIC SENSOR

DESCRIPTION

The Fike Intelligent Photoelectric, spot-type smoke sensors (P/N 63-1052 & 63-1058) have sensing chambers that utilize the light scattering principle to detect smoke. The sensing chamber employs features that minimize the effect of settled dust on performance The sensor is designed with tri-color LEDs to indicate detector status. The detector can be programmed to make the LEDs blink or be steady green, amber or red. A remote LED annunciator (P/N 02-3868) is available as an accessory. It can be configured to follow the sensor LED operation or be independently controlled. The isolator version (P/N 63-1058) provides complete short circuit isolation for NFPA 72, Style 7 wiring if used with an isolator base.



The detector is compatible with Fike's CyberCat and Cheetah Xi intelligent control panels. Its operating parameters are configured using the panel's programming software and are stored within non-volatile RAM in the detector. This on-board intelligence allows each detector to communicate its status directly to other devices connected to the panel. This peerto-peer digital protocol results in less information that needs to be sent between the detector and the host control panel, resulting in faster, more reliable communication.

SPECIFICATIONS

15 to 30 VDC Normal Operating Voltage:

481μA max. @ 24 VDC (continuous broadcasts) Standby Current:

2 mA max. @ 24 VDC (LEDs on) Alarm Current:

Humidity Range:

10% to 93% Relative Humidity, non-condensing 32°F to 120°F (0°C to 49°C); 63-1052/63-1058 32°F to 100°F (0°C to 38°C) Temperature Range:

Height: 2.1 inches (51 mm) installed in 63-1054 Base 6.1 inches (155 mm) installed in 63-1054 Base Diameter: 4.1 inches (104 mm) installed in 63-1055 Base

5.2 oz. (147 g) Weight

30 ft. (9.1 m) maximum Detector Spacing:

APPROVALS

- UL S911
- FM 3021590 (isolator) 3023166 (non-isolator)
- MEA 7-05-E
- CSFM 7272-0900:139

Form No. P.1.88.01-2

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ORDERING INFORMATION

| Fike P/N | Manf. Model No. | Description |
|----------|-----------------|---|
| 63-1052 | | Photoelectric Smoke Detector - Non-Isolator |
| 63-1058 | | Photoelectric Smoke Detector - Isolator |
| | | Mounting Bases |
| 63-1054 | | 6" Flanged Mounting Base - Non-Isolator |
| 63-1060 | | 6" Flanged Mounting Base - Isolator |
| 63-1055 | | 4" Flangeless Mounting Base - Non-Isolator |
| 63-1061 | | 4" Flangeless Mounting Base -Isolator |
| 02-10373 | RMK400 | Recessed Mounting Kit |
| 20-1083 | SMK400E | 4" Flangeless Surface Mounting Kit |
| 20-1084 | A10-29-400 | 6" Flanged Surface Mounting Kit |
| 63-1063 | | Relay Base |
| 63-1064 | | Sounder Base |
| | | Accessories |
| 20-1085 | F110 | Retrofit Flange |
| 20-1405 | RA100Z | Remote LED Annunciator |
| 20-1087 | XR2B | Detector Removal Tool (20-1089 included) |
| 02-4986 | XP-4 | Extension for 02-4985 (5-15 ft) |
| 20-1089 | T55-127-000 | Detector Removal Head |
| 20-1090 | BCK-200B | Black Detector Kit |
| 55-051 | | Configuration IR Tool |



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INTELLIGENT ION SENSOR

DESCRIPTION

The Fike Intelligent Ionization, spot-type smoke sensors (P/N 67-033 & 67-034) utilize a state-of-the-art sensing chamber that is designed to respond rapidly to a broad range of fires. The sensing chamber employs features that minimize the effect of settled dust on performance. The sensor is designed with tri-color LEDs to indicate detector status. The detector can be programmed to make the LEDs blink or be steady green, amber or red. A remote LED annunciator (P/N 02-3868) is available as an accessory. It can be configured to follow the sensor LED operation or be independently controlled. The isolator version (P/N 67-034) provides complete short circuit isolation for NFPA 72, Style 7 wiring if used with an isolator base.



The detector is compatible with Fike's CyberCat and Cheetah Xi intelligent control panels. Its operating parameters are configured using the panel's programming software and are stored within non-volatile RAM in the detector. This on-board intelligence allows each detector to communicate its status directly to other devices connected to the panel. This peerto-peer digital protocol results in less information that needs to be sent between the detector and the host control panel, resulting in faster, more reliable communication.

SPECIFICATIONS

Operating Voltage Range: 15 to 30 VDC

Max. Avg. Standby Current: 481 µA @ 24 VDC (continuous broadcasts)

Max. Alarm Current (LED on): 2 mA @ 24 VDC (LEDs On) 10% to 93% Relative Humidity, non condensing Operating Humidity Range:

0° to 49°C (32° to 120°F) Operating Temperature Range:

Height: 2.1 inches (51 mm) installed in EBF Base 6.1 inches (155 mm) installed in EBF Base Diameter:

4.1 inches (104 mm) installed in EB Base Weight: 5.2 oz. (147 g)

30 ft. (9.1 m) maximum Detector Spacing:

APPROVALS

- UL S4021
- FM 3022679

Form No. P.1.91.01-2

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ORDERING INFORMATION

| Fike P/N | Manf. Model No. | Description |
|----------|-----------------|--|
| 67-033 | | Ion Sensor - Non-isolator |
| 67-034 | | Ion Sensor - Isolator |
| | | Mounting Bases |
| 63-1054 | | 6" Flanged Mounting Base - Non-isolator |
| 63-1060 | | 6" Flanged Mounting Base - Isolator |
| 63-1055 | | 4" Flangeless Mounting Base - Non-isolator |
| 63-1061 | | 4" Flangeless Mounting Base - Isolator |
| 02-10373 | RMK400 | Recessed Mounting Kit |
| 20-1083 | SMK400E | 4" Flangeless Surface Mounting Kit |
| 20-1084 | A10-29-400 | 6" Flanged Surface Mounting Kit |
| 63-1063 | | Relay Base |
| 63-1064 | | Sounder Base |
| | | Accessories |
| 20-1085 | F110 | Retrofit Flange |
| 20-1405 | RA100Z | Remote LED Annunciator |
| 20-1087 | XR2B | Detector Removal Tool (20-1089 included) |
| 02-4986 | XP-4 | Extension for 02-4985 (5-15 ft) |
| 20-1089 | T55-127-000 | Detector Removal Head |
| 20-1090 | BCK-200B | Black Detector Kit |
| 55-051 | | Configuration IR Tool |



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INTELLIGENT MANUAL PULL STATION

DESCRIPTION

The Fike Intelligent Manual Pull Station (P/N 20-1063/20-1064) is a state-of-the-art, dual-action (i.e., requires two motions to activate the station) pull station that includes an addressable interface (mounted inside) for Fike's intelligent CyberCat and Cheetah Xi fire alarm control panels. Because the pull station is addressable, the control panel can display the exact location of the activated device. This leads fire service personnel quickly to the location of the alarm. The isolator version (P/N 20-1064) provides complete short circuit isolation for NFPA 72, Style 7 wiring.

FEATURES

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- · Aesthetically pleasing, highly visible, dual-action design.
- · Meets ADA 5 lb. maximum pull force.
- · Easily operated (dual-action)
- · Attractive shape and textured finish.
- Mounts, semi-flush, to a standard single-gang (2.125" [5.398 cm] minimum depth), double-gang, or 4.0" (10.16 cm) square electrical box.
- When the handle latches in down position, the word "ACTIVATED" appears
 at the top of the handle in bright yellow to clearly indicate the station has been
 operated.
- · Key/lock reset; needs only a 1/4-turn to lock/unlock.
- Includes Braille text on station handle.
- Captive screw terminals wire-ready for easy connection to SLC loop (accepts up to 12 AWG/3.1 mm² wire).
- · Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Maintenance personnel can open station (for inspection and testing) without causing an alarm condition.
- Built-in multi color LED, which is visible through the handle of the station, flashes green in normal operation and latches on steady red when in alarm.

FIRE PUSH IN 1 PULL DOWN 1 Fike

APPROVALS

- UL S2203
- FM 3020297
- CSFM 7150-0900:144

ENGINEERING SPECIFICATIONS

Manual Fire Alarm Stations shall be non-coded, with a keyoperated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red-colored LEXAN® (or polycarbonate equivalent) with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger. Stations shall be suitable for surface mounting or semi-flush mounting on a standard single-gang, double-gang, or 4.0" (10.16 cm) square electrical box, and shall be installed within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements.

Manual Stations shall be Underwriters Laboratories listed. Manual stations shall connect with two wires to one of the control panel SLC loops. The manual station shall, on command from the control panel, send data to the panel representing the state of the manual switch. Manual stations shall provide address setting by use of IR Tool.

Form No. P.1.65.01-4

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Jata Shee

ELECTRICAL SPECIFICATIONS

Normal Operating Voltage: 24VDC.

Standby Current: 370 µA. max. Average (continuous broadcasts)

Maximum Alarm Current: 2 mA (red Led on)

Temperature Range: 32°F - 120°F (0°C - 49°C).
Relative Humidity Range: 10% - 93% non-condensing.

Maximum SLC loop voltage: 28.0 VDC.

INSTALLATION

The 20-1063/20-1064 can be semi-flush mounted into a single-gang, double-gang, or standard 4.0" (10.16 cm) square electrical outlet box, or surface mounted.

CONSTRUCTION

Shell, door, and handle are molded of durable LEXAN® (or polycarbonate equivalent) with a textured finish.

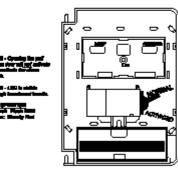
OPERATION

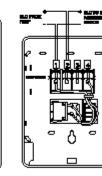
Pushing in, then pulling down on the handle causes it to latch in the down/activated position. Once latched, the word "ACTIVATED" (in bright yellow) appears at the top of the handle, while a portion of the handle protrudes from the bottom of the station. To reset the station, simply unlock the station with the key and pull the door open. This action resets the handle; closing the door automatically resets the switch.

Manual stations connect with two wires to one of the control panel SLC loops. Each manual station, on command from the control panel, sends data to the panel representing the state of the pull station switch. IR tool allows address setting (01-254).

PRODUCT LINE INFORMATION

20-1063/20-1064 Dual-action addressable pull station. Includes key lock/reset feature.









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FIKE ENGINEERED NOZZLES FOR FM-200® CLEAN AGENT SYSTEMS

FM-200 is also known by its ASHRAE designation HFC-227ea

DESCRIPTION

The function of the Fike Engineered Discharge Nozzle in a fire extinguishing system is to distribute the Clean Agent in a uniform, predetermined pattern and concentration. The nozzles are designed to complete the discharge of Clean Agent in 10 seconds or less when installed within the design limitations of the Fike Design, Installation and Maintenance Manual, P/N 06-202 or 06-215 and the Fike Flow Calculation computer program.

Fike Engineered Discharge Nozzles are available in sizes of 3/8" (10mm) through 2" (50mm). Each nozzle is available in 180 and 360 degree discharge patterns.

The Discharge Nozzle size refers to the size of Schedule 40 or 80 steel pipe to which it can be connected. The nozzle discharge orifices are drilled perpendicular to the center line of the threads. The nozzles are mounted to allow the agent to be discharged on a

Nozzle orifices are available in a wide range of sizes to provide accurate Clean Agent flow results. All nozzles have been tested for their ability to discharge the Clean Agent under extreme conditions.



APPROVALS

- UL Listed Ex4623
- ULC Listed CEx1136
- FM Approved 0Y4A8.AF

Nozzle orifice drilling must be done at the Fike factory, or other UL listed nozzle drill station, only after "As-Built" calculations of the installed piping system(s) have been performed, using the Fike Flow Calculation computer program.

The Fike Discharge Nozzle used shall be Factory Mutual (FM) approved and Underwriters Laboratories (UL) listed.

ARCHITECT AND ENGINEERING SPECIFICATIONS

The nozzle used to disperse Clean Agent shall be a Fike Series 80. The nozzle shall be available in 3/8° (10mm) thru 2" (50mm) sizes. Each size shall be available in both 180 and 360 degree dispersion patterns. The nozzle used shall have pipe threads that correspond to the nozzle size. All nozzles shall have an orifice size determined by a UL listed and FM approved flow calculation program. All nozzle orifice drilling shall be performed by the manufacturer or a UL listed nozzle drilling facility.

Form No. C.1.08.01-4

704 S. 10th Street · P.O. Box 610 · Blue Springs, Missouri 64013-0610 U.S.A. · (816) 229-3405 · (816) 229-4615 · www.flke.com

TABLES

| | | Has | Existing Fires Sprinkler Vertical | manger and seismic | Has | mapection rindings | Specing of | | |
|---------------|--|--------------------|--|--|------------------|---|-------------------|------------------------------------|--|
| Facility Bidg | Reef Framing Type & Spacing | Vertical Hanger | Type of Vertical Hanger | Spacing of Vertical Hangers | Seismic Brace | Type of Selamic Brace | Seismic Braces | Fire Protection on Roof Framing | Inspection Typ |
| PN 814g 111 | Transverse sizes jout have 4th Yor, 4th 10m, 4th 10m, 5th One, 5th Am and 5th din on-contrar specific parable per colored GAD in wings and dimension call custs on au-bould drawing. State design by manifecture per design drawing loading specifications. | Yes | Man B. Branch Lines Heng from steel jobs by an adjustable swites ring and o-type clemp. | Cristing vertical hangers located at every other joint. | Yes | Held photos show later d sway brack actuahed to joint. | Unknown | None | Said Photo and A Soilt Orawing Spriew |
| PB B14g: 122 | Name business Associated and the second sec | Yes | Main bushing Privage from stars of priving by an adjustable water from and chipse clamp. | Existing vertical hangers located at every other joint. | None | None | Nan e | None | Sield Photo and A built Drawing Review |
| PN Bidg 142 | suges at revolution force. Transverse 2 1990 E. Service of the 200 co-inster passing gar as vion forces ga, and the 200 co-inster passing gar as vion forces ga, and a service of the 200 co-inster passing gar are the 200 co-inster gaining gar are feel of forces gaining gar are feel of forces gaining gar are feel of forces gaining gar are feel of forces of gaining and gar are feel of forces gaining gar are feel of passing gar are feel on politicis. Outside contents as a feel of forces gaining gar are not on politicis. Outside contents | Yes | Origina Warehouse Area. Instituted advisorit diversity gaint most assistant Instituted advisorit diversity gaint most assistant generally assistant plant institute fragg generally as adjustables assisted ring and origina factority. Additional Warehouse Area. Tentricity of assistant plant generally assistant plant by an adjustable gaint good assistant generally as adjustable gaint grant good assistant generally as adjustable gainty grant good assistant generally as adjustable gainty grant good gainty generally as adjustable gainty grant good gainty generally as adjustable gainty grant good gainty generally gainty gainty gainty gainty generally gainty gainty gainty generally gainty gainty generally gainty g | Original Wearhouse Area existing vertical hanger household as every puritin. Add discharge Warehouse Area existing vertical hanger housed at every puritin. | Mone | Notes | Non e | None | Field Photo and A built Drawing Review |
| PN Bidg 173 | Name between State of the State Wes | Name buildings The speaking pages are being from thresher Those for light, see a might and not with. The speaking page and with other The speaking page and with other sheeper page and being page and with other sheeper page and being page and with other sheeper page as being from the page and with other sheeper page as being speaking sheeper sheeper The speaking page and with other sheeper The speaking page and the speaking sheeper Assertable sheeper and particular sheeper Assertable sheeper Assertable sheeper The speaking page and and and and and and The speaking page and and and and The speaking page and and and The speaking page and and and The speaking page and and The speaking page and and The speaking page and The speaking | More horizong Thomstorial also list if thereign services and solid in the services are not existable. Details inchis some. Task Soom Tas | None | New York | Mon e | None | Ratio Photos and Joseph Drawing Review |
| PN Didg 142 | Reinforced concrete floor with reinforced concrete beams. | Yes | Details all over in an Gold drawing that hard to read. Said photos show fire sprinkler pipes hung by an adjustable sweet ring with anchor. | Structural as built drawings are not available. Details under pain | Nose | Note | Mon e | None | Field Photo and built Drawing Seview |
| PN Didg 255 | terector of an built framings are not available. Details unknown. Field photos show an effice, bathrooms and cafeteria areas with low hong celling panels and steel picts in the main work shop area. | Yes | teructural ac-bott drawings are not available. Defails with nown. Main Wearhouse: field photos show Fire opinister gipes hing from top flange of joint by an adjustable pervisit ring and o-type clamp. | Structural as-boilt drawings are not available. Outails sold core. Main Workshop: existing vertical hanger located at every other joist per field solds. | None | None | Non s | None | Field Photo and built Drawing Seview |
| PN 5/dg 260 | These time (files building, like through concess flour date in metal site inspects of solar just that spec- bances shall kave get (file) flowing. It is to retard in both diversity and not available. Default shallows. Whethere: Whethere: Whethere: | Yes | here been office beinfag, a child forward down for spinishing years his of their most just of receivers or the spinish product got of receivers of the spinish product or place who a life for some product control being and or type clave. When the spinish of the spinish of the spinish of the spinish of spinish or the spinish of spinish or the spinish or spinish of the spinish of spinish of the spinish of spinish | Three Stone Office Building from the fall as he fit if a samps are not available. Details with own. Warehouse: Structural so build triving also not consider. Details worknown. Existing vertical hangers located at every other jobs per field photos. | None | Note | Note | None | Right Photo and built Drawing Raview |
| PN Bidg 263 | Non-Worstween. Transverse 12935 and ordines per as locil direntings, tongstudinal 12055 date basens as 5% din on center abouting an a visit of rememb, free plants a few times promptioned beams with holes on sub-and few ranges; remaining a pits to a seal bottom fleets. Other Area, took here growing a first has per bottom fleets. Other Area, took here growing is first him, and capposald. Sectional as footh drawings are not available. Details withdraway. | Yes | Man Washinson Man Danisha and the spreaking papas hing from historic flagge of beam or for misling from historic flagge of beam or for misling from historic flagge of beam or for misling paper and place paper from part of person paper and an ick-box (5 this missing and or see papering partners may be beam with 2-1/2% C clumps associated to be Office Area Introduced also both from his pare not available. Details and now. | Main Warehouse, establing restricts in angue focated at severy other team per field photos. Office Area throughest so-belt of avelings are not everlable. Details in the piece. | None | Rene | None | Hone | On-sta Visual, F Photos and Au-to Chawing Raview |

F:

| | | | Existing Fires Sprinkler Vertical | Hanger and Seismic | | Inspection Findings | | | |
|---------------|---|---------------------------|--|--|-------------------------|--|---------------------------------|------------------------------------|--|
| Facility Bidg | Roof Framing Type & Spacing | Has Vertical Hanger | Type of Vertical Hanger | Spacing of Vertical Hangers | Has Seismic Brace | Type of Seismic Brace | Spacing of Seismic Braces | Fire Protection on Roof Framing | inspection Type |
| PN Bldg 258 | Transverse 120/F27 & SWF/D steel rafter 20ft on-center spacing per a-built drawings. Longtoninal EBB 5 and 8800 purins 5th kin, 5th-kin, 5th- lin, 5th-kin and 5th 7in justop of gold join-center upacing per scaled CAD drawings and airbuilts. | Yes | Fall pictures at our fire spiritular pipes having, them poetin by an adjustable swives ring and co type clamp. | Existing vertical hangers located at every other purific. | None | None | None | Non s | On-ste Visual, Field Photes and As-best Orawing Review |
| PN 81dg 101 | Main Warnhouse: Long-timinal aced beam (IP-1.5 m, IP-1.1 m, IP-0.n, IP- 1.5 m, IP-5.7 hn on-center sponing per scaled GMD interviews. Distall, unknowned for to no interview of an intelligence of the control of the c | Yes | Main Worshooze: falled plates a show fire sprinkler pipes hing from bottom filenge of beam by an adjustable prevent in gain of citype clamp. Details without five to me as built drawings. Office Area low hung ceilings with sprinkler yeaters. Details withnown due to no as built drawings. | Main Warsh ouse: Existing vertical hangers located at each beam. | None | None | None | tion e | On-ste Visual, Field Photos and As-bolt Drawing Review |
| PN Didg 318 | The Stary Office. First platform was low foring panels with fire control platform was low foring panels with fire control platform was low for the control platform with long-thrift all purities. For control platform platform or available. Details instead with long-thrift platform, and was long-thrift platform. Additional platform platform platform was long-thrift platform. For control platform platform platform was long-thrift platform. For control platform platform platform was long-thrift platform. For control platform platform platform was long-thrift platform. | Yes | The days of the process of the proce | Two Stary Office: Unknown but to low bring calling panels. Main Norshouse Lasting vertical holippers sociated at each bearn As official Building Management of the stary of the stary As official Building Management of the stary of the stary field photos. | None | Nana | None | None | Field Photo and Au- built Drawing Review |
| EP Bidg 1100 | War should: The Transverse stated just 19th on exister spaking per souled GDA reaving. GAD resport tost stated just as 3ft to life reap. Details unknown fire to no structural as-hellt finalments. Office Area: Office Area: The photosis down low forming panels with fire panels in reaps. | Yes | Washloose Field photos show the spinkler gipes hing from bottom flange of pictured beams by an adjustable service ring and c-type clamp. Details unknown due to not bottle framings. Office Area. Field photos show low hone bottle framings. Which is a possible of the company of the compan | Warehouse: Drasting vertical hangers located at each beam. Office Area: Unknown due to low hung ce ling panels. | None | None | None | Non e | Field Photo and As- built Drawing Raviaw |
| EP 31dg 1140 | Objections: Transverse \$100,000,000,000 and \$5,000 area joint at Transverse \$100,000,000,000 and \$5,000 area joint at Shift into creater stacking and \$100 area joint at \$10 dits ac- senter spacing per scaled GAD drawings. Checklis scheme of at the activities about drawings. Order seas. Finally finished show love being calling passed with fire quantities heads. Details scheme fire to no strends rail activities drawings. Details scheme fire to no strends rail activities drawings. | Yes | Overshoos: Above trovely, show a selecting with behalf to the selection of | Existing vertical hangers located at each joint. | Yes | As but of sewings show lateral and traverses only travers, but of each are not sewed, but of each are not sewed, and the sewings of the sewings of the published of not show any seromic braces. | Unknown | None | Field Photo and Ac- boilt Orasing Review |
| EP Bldg 1150 | War shouse. Transvers 270 framing at difficient, 484 5 in and 58 0 in an extent papering stated from IND report. Structural and solid drawings are not available. Details orisination. Office Area: Field paties alone for hong calling panels with fire pompinisher heads. Structural and will frawings are not available. Details. | Yes | Warehouse. First pelastic how fire spiralist pipes lung. First pelastic di examity se adjustable selecti and pelastic pelastic pelastic selecti and object the selection pelastic concrete dabity anchor that is not shown. Brouter all activité travelings are not available. Control anchor. Structural ac-boilt fravelings are not available. Control anchor. | Existing vertical hangers located at each other beam or in concrete slab. | None | None | None | Non e | Field Photo and As- bellit Drawing Review |
| EP Bidg 1150 | Water harms and the first of th | Yes | Morahama Her steads show for spenktor pipes hing than tool happed digid by an afjortable palmed to flag of digid by an affortable palmed the gain of the spenktor pipes in storage count ang than bottom of wood thought count ang than bottom of wood thought count and the sound of the bottom of the storage of the thought count as obtained for octard as obtained. Office Area: Office Area: Tottom of the storage are not available. Contain seriouse. | Stating vertical hangers located at each jout. Examing vertical hanger spacing for wood bearns are examing to wood bearns are considered to the space of the spa | None | Nane | None | None | Field Photo and Ar- built Drawing Review |

| | | | Existing Fires Sprinkler Vertical | Hanger and Seismid | Brace | Inspection Findings | | | |
|---------------|--|---------------------------|---|--|-------------------------|--|---------------------------------|------------------------------------|---|
| Facility Bidg | Roof Framing Type & Spacing | Has Vertical Hanger | Type of Vertical Hanger | Spacing of Vertical Hangers | Has Seismic Brace | Type of Selsmic Brace | Spacing of Seismic Braces | Fire Protection on Roof Framing | Inspection Type |
| EP Bidg 1170 | Warehouse: Transverse 128 steel joist at 6ft-3in on-center spacing per scaled OAD drawings. Structural as-built drawings are not available. Details unknown. Office Area: Field photos show low hung ceiling panels with fire sprinkler heads. Structural as-built drawings are not available. Details unknown. | Yes | Warehouse: Fire sprinkler pipes attached with band hanger with rod to top or bottom flange of beam with ctype damp or attached to trapeze bar with band hanger per as-built drawings and field photos Office Area: Structural as-built drawings are not available. Details unknown. | Existing vertical hangers located at each joist. | None | None | None | None | Field Photo and As- built Drawing Review |
| EP Bidg 1180 | warehouse: Transverse 128 steel joist at 6ft-3in on-center spacing per scaled QAD drawings. 28in to 16in deep bar joist per as-built drawings. Office Space: Structural as-built drawings are not available. Details unknown. | Yes | Warehouse: As-built drawing vertical hanger design criteria called for clevis hanger, rod and clevis clamps hung from top or bottom chord of baryonists. Hangers spanding specified as 12th on-center for 1 in 8. 1.25 in diameter pipe or 15th on-center for 15 in or larger diameter pipe. Hangers sized to support twice the weight of water filled pipe plus 2501bs. Field photos show fire sprinkler pipes hung from top flange of joist an adjustable swivel ring and c-type clamp. Office Area: Structural as-built drawings are not available, betails unknown. | Existing vertical hangers located at each joint. | Yes | Warehouse: As-built drawings seismic hanger design criteria called for all pipes requiring seismic restraint hangers to be supported with a seismic approved devis hanger. Hanger shall be suspended from structural seel imembers with a threaded rod. The threaded rod shall be reinforced with a 1/2 max/2 m angle iron. The threaded rod all be attached to the steel members by an approved spring isolator. Each devis hanger shall be an chorden on both dide with a 1/4 m diameter wire rope. Rope shall have loopstop prevent bending across sharp seges. Attach wire ropes at 45 degree angles to steel beam, with a bracket welded to teh wie bof the beam. Field photos do not show any seismic braces. Office Area: Structural acabuilt drawings are not available. Details unknown. | Uaknown | None | Field Photo and As- built Drawing Review |
| PJ Bidg 51 | Ground floor and second floor are made of Sin concrete plank. Roof floor is made of 2inxisin wood joists at 24 in on-center with steel bridging at 6ft-5in intervals and 5. Sin gypum board. The gable roof is made of 2inxisin wood rafters speed at 21 in on-center supported on prefabricated roof truss. Fleid photos show low hung ceiling panels with fire sprinkler heads. | Yes | Field photos show low hung celling panels with fire sprinkler heads in lobby, first floor corridor and section floor corridor. Field photos show concrete planks in guest rooms with no fire sprinkler heads. | Unknown. Structural as-built drawings are not available. Details unknown. | None | None | None | None | Field Photo and As- built Drawing Review |
| PJBidg 100 | Third Floor Warehouse: Reinforced concrete slab spaning on reinforced concrete beams spaced fish in, 8th-6in and 8th-8in on-center spacing scaled per QAD drawings. Roof Warehouse: Office Area: Field photos show low hung ceiling panels with fire sprinkler heads. Structural as-built drawings are not available. Details unknown. | Yes and No | Third Floor Warehouse: None. Roof Warehouse: None. Office Area: Fire sprinkler pipes are hung from concrete slab with Hitt DI Anchor or steel beam bottom flange with c-type clamp. Both have a rod and an adjustable swivel ring. Field photos show low hung ceiling panels with fire sprinkler heads hung by an adjustable swivel ring and an chor to concrete floor slab. | Third Floor Warehouse: Structural as-built drawings: are not available. Details unknown. Roof Warehouse: Structural as-built drawings: are not available. Details unknown. Office Area: Structural as-built drawings: are not available. Details unknown. | None | None | None | None: | Omsite Visual, Field Photos and As-built Drawing Review |

1) PA Structural performed a field visit to Port Newark buildings 263, 268 and 301 and Port Jersey building 100 and performed a visual inspection from the ground floor. A fork lift for hands on inspection was not provided and would not have been practicle

given the tenant volume of products in the wearhouses and fork lift traffic.

2) All other buildings hangers and braces were inspected through field photos.

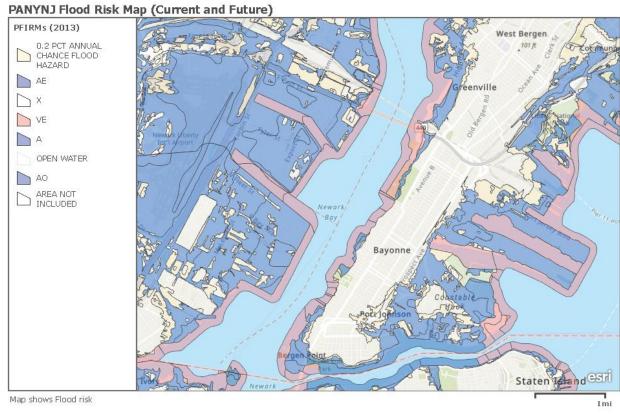
3) Spacing of vertical hangers and seismic braces are based on as-built drawings of roof joist spacing.

F:

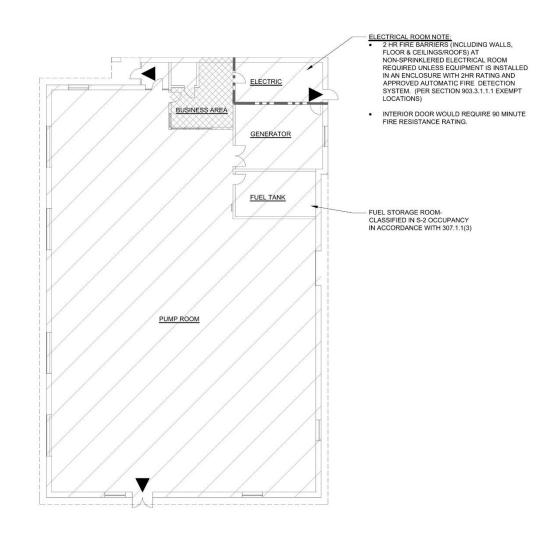
SEISMIC

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FIGURES



Esri, NASA, NGA, USGS, FEMA | NYC OpenData, New Jersey Office of GIS, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA



| BUILDING 111: 111 CORBIN ST. NEWARK, NJ 074 | 110 |
|---|--------|
| BUILDING AREA PER STORY (SF) | 10,089 |
| NUMBER OF STORIES | 1 |
| BUILDING HEIGHT (FT) | 17"-0" |
| TOTAL BUILDING AREA (SF) | 10,089 |

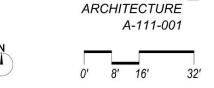
| APPLICABLE CODES (FOR ANALYSIS) INTERNATIONAL BUILDING CODE/2018 NJ ED | ITION |
|--|---------------------|
| CONSTRUCTION TYPE | IIB -NONCOMBUSTIBLE |
| SPRINKLERED | YES |
| BUILDING OCCUPANCY GROUP | S-2 - STORAGE |
| PRIMARY OCCUPANCY | S-2 - STORAGE |
| ACCESSORY OCCUPANCY(S) | B - BUSINESS |
| ALLOWABLE AREA PER STORY (SF) | 104,000 |
| ALLOWABLE HEIGHT ABOVE GRADE (FT) | 55' |
| ALLOWABLE STORIES ABOVE GRADE | 4 |

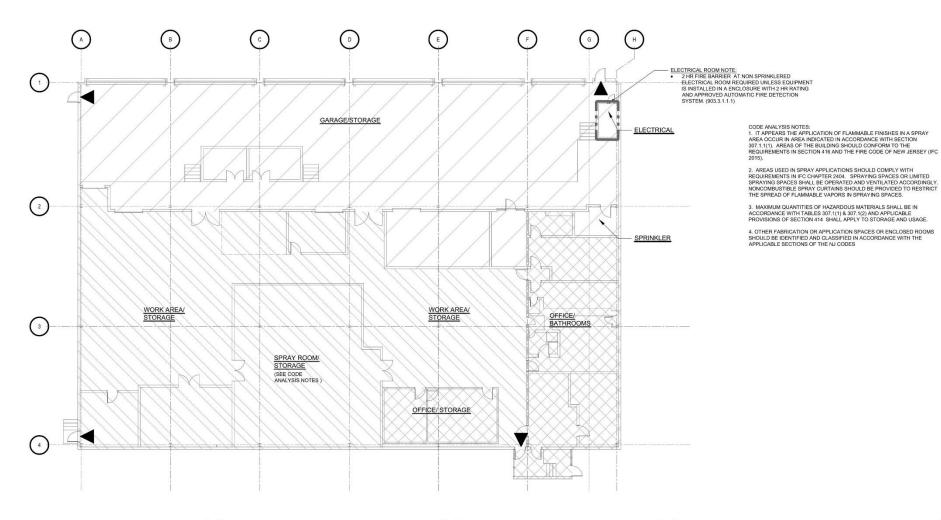
| BUILDING ELEMENT | REQ'D. (HRS) | PROV. (HRS |
|---|--------------|------------|
| PRIMARY STRUCTURAL FRAME | 0 | 0 |
| BEARING WALLS & PARTITIONS (EXTERIOR) | 0 | ĺ |
| NON BEARING WALLS & PARTITIONS (EXTERIOR) | 0 | 0 |
| BEARING WALLS & PARTITIONS (INTERIOR) | 0 | 0 |
| NON BEARING WALLS & PARTITIONS (INTERIOR) | 0 | 0 |
| FLOOR CONSTRUCTION | 0 | 0 |
| ROOF CONSTRUCTION | 0 | 0 |

| BUILDING AREA | AREA | SF/OCCUP. | OCCUP. LOAD |
|------------------------|-------|-----------|-------------|
| STORAGE (S2) | 9,762 | 300 | 33 |
| BUSINESS (B) | 327 | 100 | 4 |
| TOTAL # OF EXITS REQ'D | | 2 | |

| 2 HR SEPARATION | B OCCUPANCY |
|-----------------|---------------|
| EXIT DOOR | S-2 OCCUPANCY |
| | |

Building 111 - Code Analysis





| EXISTING BUILDING INFORM | MATION |
|--|-----------|
| BUILDING 255: 255 E. PORT ST. NEWARK, NJ 07114 | |
| BUILDING AREA PER STORY (SF) | 17,075 SF |
| NUMBER OF STORIES | 1 |
| BUILDING HEIGHT (FT) | 25' ± |
| TOTAL BUILDING AREA (SF) | 17,075 SF |
| BUILDING AREA (B OCCUPANCY) | 2,585 SF |
| BUILDING AREA 1 (F-1 OCCUPANCY) | 7,998 SF |
| BUILDING AREA 1 (S-1 OCCUPANCY) | 6,542 SF |

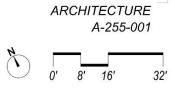
| APPLICABLE CODES (FOR ANALYSIS) INTERNATIONAL BUILDING CODE/2018 NJ EDIT | TION |
|--|--|
| CONSTRUCTION TYPE | IIB -NONCOMBUSTIBLE |
| SPRINKLERED | YES |
| BUILDING OCCUPANCY GROUPS | * |
| UNSEPARATED MIXED OCCUPANCIES | B BUSINESS F-1 MODERATE HAZARD S-1 STORAGE |
| ALLOWABLE AREA PER STORY (SF) | UNLIMITED |
| ALLOWABLE HEIGHT ABOVE GRADE (FT) | 75 |
| ALLOWABLE STORIES ABOVE GRADE | 2 |

| BUILDING ELEMENT | REQ'D. (HRS) | PROV. (HRS |
|---|--------------|------------|
| PRIMARY STRUCTURAL FRAME | 0 | 0 |
| BEARING WALLS & PARTITIONS (EXTERIOR) | 0 | |
| NON BEARING WALLS & PARTITIONS (EXTERIOR) | 0 | 0 |
| BEARING WALLS & PARTITIONS (INTERIOR) | 0 | 0 |
| NON BEARING WALLS & PARTITIONS (INTERIOR) | 0 | 0 |
| FLOOR CONSTRUCTION | 0 | 0 |
| ROOF CONSTRUCTION | 0 | 0 |

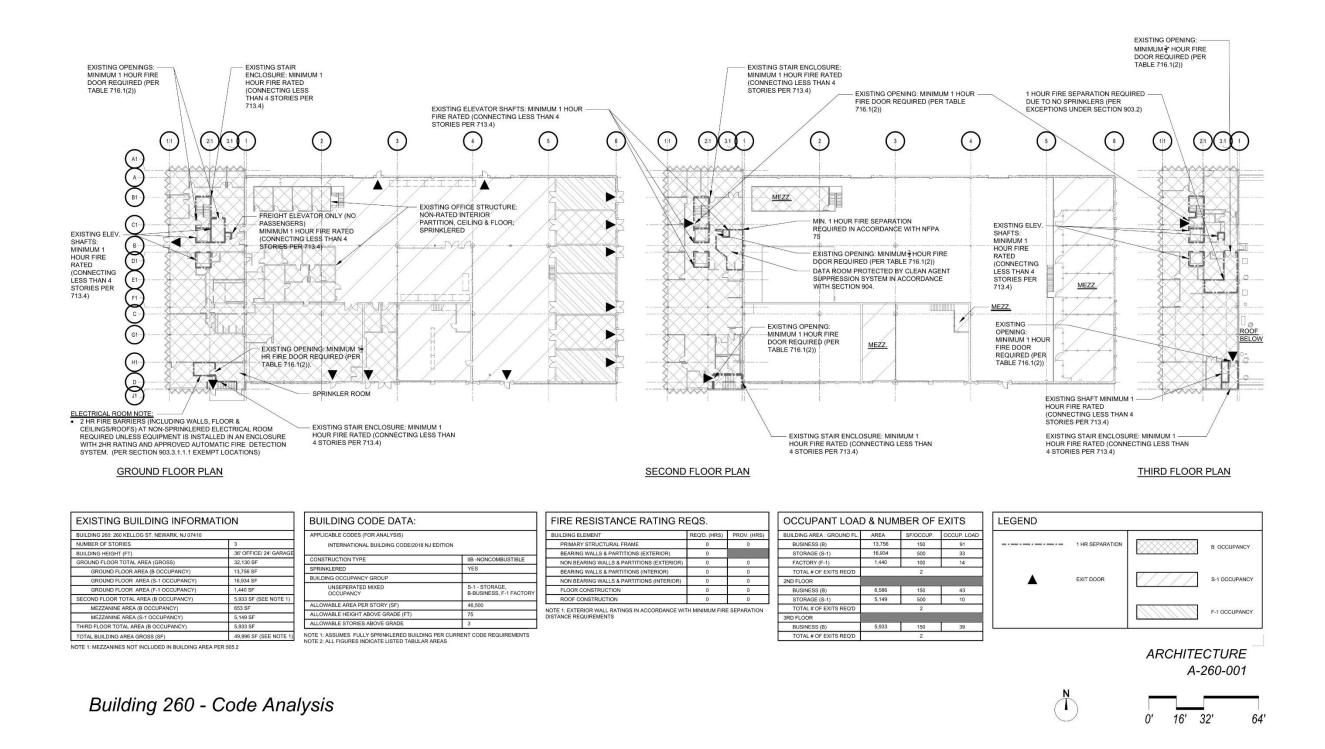
| BUILDING AREA 1 | AREA | SF/OCCUP. | OCCUP. LOAD | |
|-----------------------------|-------|-----------|-------------|--|
| BUSINESS (B OCCUPANCY) | 2,585 | 150 | 18 | |
| BUSINESS (F-1 OCCUPANCY) | 7,998 | 300 | 27 | |
| BUSINESS (S-1 OCCUPANCY) | 6,542 | 300 | 22 | |
| TOTAL OCCUPANTS | | 67 | • | |
| TOTAL NUMBER OF EXITS REQ'D | | 2 | | |

| S-1 OCCUPANCY |
|-----------------|
| F-1 - OCCUPANCY |
| B OCCUPANCY |
| В |

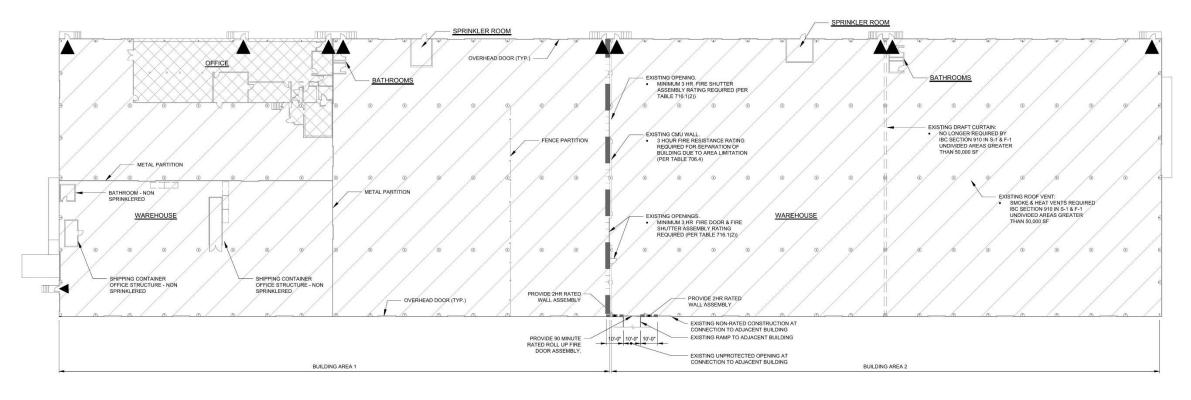
Building 255 - Code Analysis



STAGE I REPORT PANYNJ · ENGINEERING DEPARTMENT · DESIGN DIVISION ● PORTS



405



| EXISTING BUILDING INFORMATION | | |
|--|-----------------------------|--|
| BUILDING 263: 263 MARLIN ST. NEWARK, NJ 07114 | | |
| BUILDING AREA PER STORY (SF) | 103,977 | |
| NUMBER OF STORIES | 1 | |
| BUILDING HEIGHT (FT) | 37' | |
| TOTAL AREA (SF) | 103,977 SF | |
| BUILDING AREA 1 (S-1 OCCUPANCY) | 47,006 SF | |
| BUILDING AREA 1 (B OCCUPANCY) | 4,926 SF | |
| BUILDING AREA 2 (S-1 OCCUPANCY) | 51,976 SF | |
| NOTE 1: AREAS IN EXCESS OF 50,000 SF REQUIRE FIR | E WALL SEPARATING STRUCTURE | |

| | 2.10.00 |
|---|----------------------|
| NOTE 1: AREAS IN EXCESS OF 50,000 SF REQUIRE FIRE WALL INTO TWO SEPARATE BUILDINGS. | SEPARATING STRUCTURE |

| BUILDING CODE DATA | |
|--|---------------------|
| APPLICABLE CODES (FOR ANALYSIS) | |
| INTERNATIONAL BUILDING CODE/2018 NJ ED | ITION |
| CONSTRUCTION TYPE | IIB -NONCOMBUSTIBLE |
| SPRINKLERED | YES |
| BUILDING OCCUPANCY GROUP | |
| PRIMARY OCCUPANCY | S-1 - STORAGE |
| ACCESSORY OCCUPANCY(S) | B - BUSINESS |
| ALLOWABLE AREA PER STORY (SF) | 70,000 |
| ALLOWABLE HEIGHT ABOVE GRADE (FT) | 75 |
| ALLOWABLE STORIES ABOVE GRADE | 3 |

NOTE 1: ASSUMES FULLY SPRINKLERED BUILDING PER CURRENT CODE REQUIREMENTS NOTE 2: ALLOWABLE AREA, HEIGHT AND STORIES LISTED ABOVE INDICATE TABULAR VALUES FOR FULLY SPRINKLERED BUILDINGS. INCREASES FOR FRONTAGE ALLOWANCES ARE NOT CONSIDERED NOTE 3: ALL OND BEARING WOOD INTERIOR PARTITIONS OR OTHER CONSTRUCTION ARE REQUIRED TO BE OF FIRE RETARDANT TREATED WOOD.

FIRE RESISTANCE RATING REQS. BEARING WALLS & PARTITIONS (INTERIOR)

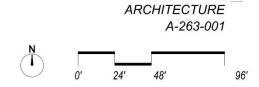
NON BEARING WALLS & PARTITIONS (INTERIOR
FLOOR CONSTRUCTION ROOF CONSTRUCTION

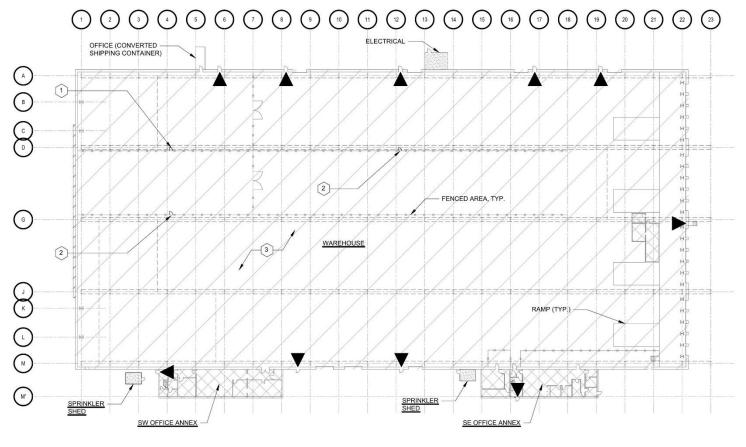
NOTE 1: EXTERIOR WALL RATINGS IN ACCORDANCE WITH MINIMUM FIRE SEPARATION DISTANCE REQUIREMENTS

| OCCUPANT LOAD | NUN & C | IBER OF | EXITS | LEGEND |
|------------------------|---------|-----------|-------------|--------|
| BUILDING AREA 1 | AREA | SF/OCCUP. | OCCUP, LOAD | |
| STORAGE (S1) | 47,006 | 500 | 95 | |
| BUSINESS (B) | 4,926 | 150 | 33 | |
| TOTAL # OF EXITS REQ'D | | 2 | | |
| BUILDING AREA 2 | | | | |
| STORAGE (S1) | 51,976 | 500 | 104 | |
| TOTAL # OF EVITE DEOID | | 2 | | |

B OCCUPANCY

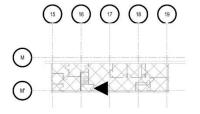
Building 263 - Code Analysis



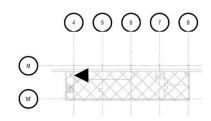


KEYNOTE

- PROVIDE SECOND MEANS OF EGRESS THRU ADJACENT AREA LOCATED A MINIMUM DISTANCE OF 1/3 OVERALL SPACE LENGTH FROM EXISTING EGRESS ELEMENTS. (PER 1007.1.1(2). CURRENT EXITS DO NOT MEET 1/3RD SEPARATION REQUIREMENTS.
- 2 PROVIDE SECOND MEANS OF EGRESS THRU ADJACENT SPACES.
 SECOND MEANS OF EGRESS REQUIRED FOR REMOTE LOCATION B/C EXIT ACCESS
 TRAVEL DISTANCE EXCEEDS TABULAR VALUES IN 1017.2(250')
- (3) IN ALL FENCED AREAS MAINTAIN CLEAR PATH OF EGRESS TRAVEL AND MARK PATH OF TRAVEL WITH READILY VISIBLE EXIT SIGNS TO CLEARLY INDICATE THE DIRECTION OF EGRESS TRAVEL IN CASES WHERE THE EXIT OR THE PATH OF EGRESS TRAVEL IS NOT IMMEDIATELY VISIBLE TO THE OCCUPANTS.



SE SECOND FLOOR OFFICE ANNEX PLAN



SW SECOND FLOOR OFFICE ANNEX PLAN

FIRST FLOOR PLAN

| EXISTING BUILDING INFORMATION | | | | |
|--|---------|---|--|--|
| BUILDING 301: 301 CRANEWAY ST. NEWARK, NJ 07 | 114 | _ | | |
| NUMBER OF STORIES | 2 | _ | | |
| BUILDING HEIGHT (FT) | 40'-0" | | | |
| TOTAL BUILDING AREA (SF) | 151,518 | _ | | |
| FIRST FLOOR TOTAL AREA (SF) | 146,040 | _ | | |
| FIRST FLOOR S-1 OCCUPANCY | 139,382 | | | |
| FIRST FLOOR B OCCUPANCY | 5,478 | _ | | |
| FIRST FLOOR U OCCUPANCY | 280 | _ | | |
| SECOND FLOOR TOTAL AREA (SF) | 5,478 | _ | | |
| SECOND FLOOR AREA (SF) | 5,478 | _ | | |

| | | FIR |
|--|--------------------------|-----------|
| APPLICABLE CODES (FOR ANALYSIS) | | BUILDI |
| INTERNATIONAL BUILDING CODE/2018 NJ ED | ITION | PRI |
| | | BEA |
| CONSTRUCTION TYPE | IIB -NONCOMBUSTIBLE | NOI |
| PRINKLERED | YES | BE/ |
| BUILDING OCCUPANCY GROUP | | NON |
| PRIMARY OCCUPANCY | S-1 - STORAGE | FLC |
| ACCESSORY OCCUPANCY(S) | B - BUSINESS; U -UTILITY | ROO |
| ALLOWABLE AREA PER STORY (SF) | UNLIMITED | NOTE 1: E |
| ALLOWABLE HEIGHT ABOVE GRADE (FT) | 75 | DISTANCE |
| ALLOWABLE STORIES ABOVE GRADE | 2 | |

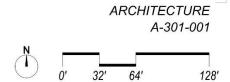
| BUILDING ELEMENT | REQ'D. (HRS) | PROV. (HRS |
|---|--------------|------------|
| PRIMARY STRUCTURAL FRAME | 0 | 0 |
| BEARING WALLS & PARTITIONS (EXTERIOR) | 0 | |
| NON BEARING WALLS & PARTITIONS (EXTERIOR) | 0 | 0 |
| BEARING WALLS & PARTITIONS (INTERIOR) | 0 | 0 |
| NON BEARING WALLS & PARTITIONS (INTERIOR) | 0 | 0 |
| FLOOR CONSTRUCTION | 0 | 0 |
| ROOF CONSTRUCTION | 0 | 0 |

| ARING WALLS & PARTITIONS (EXTERIOR) | 0 | 0 | SE 1ST FLOOR BUSINESS (B) | 2,661 | 150 |
|--------------------------------------|-------------|--------------|---------------------------|-------|-----|
| IG WALLS & PARTITIONS (INTERIOR) | 0 | 0 | TOTAL # OF EXITS REQ'D | | 1 |
| ARING WALLS & PARTITIONS (INTERIOR) | 0 | 0 | SW 1ST FLOOR BUSINESS (B) | 2,817 | 150 |
| CONSTRUCTION | 0 | 0 | TOTAL # OF EXITS REQ'D | | 1 |
| CONSTRUCTION | 0 | 0 | SE 2ND FLOOR BUSINESS (B) | 2,661 | 150 |
| RIOR WALL RATINGS IN ACCORDANCE WITH | MINIMUM FIR | E SEPARATION | TOTAL # OF EXITS REQ'D | | 1 |
| QUIREMENTS | | | SW 2ND FLOOR BUSINESS (B) | 2,817 | 150 |
| | | | TOTAL # OF EXITS REQ'D | | 1 |
| | | | | | |

OCCUPANT LOAD & NUMBER OF EXITS

| LEGEND | | | |
|----------|-----------|--|---------------|
| | | | B OCCUPANCY |
| A | EXIT DOOR | 1111 | S-1 OCCUPANCY |
| | | | U - OCCUPANCY |
| | | and the second s | |

Building 301 - Code Analysis

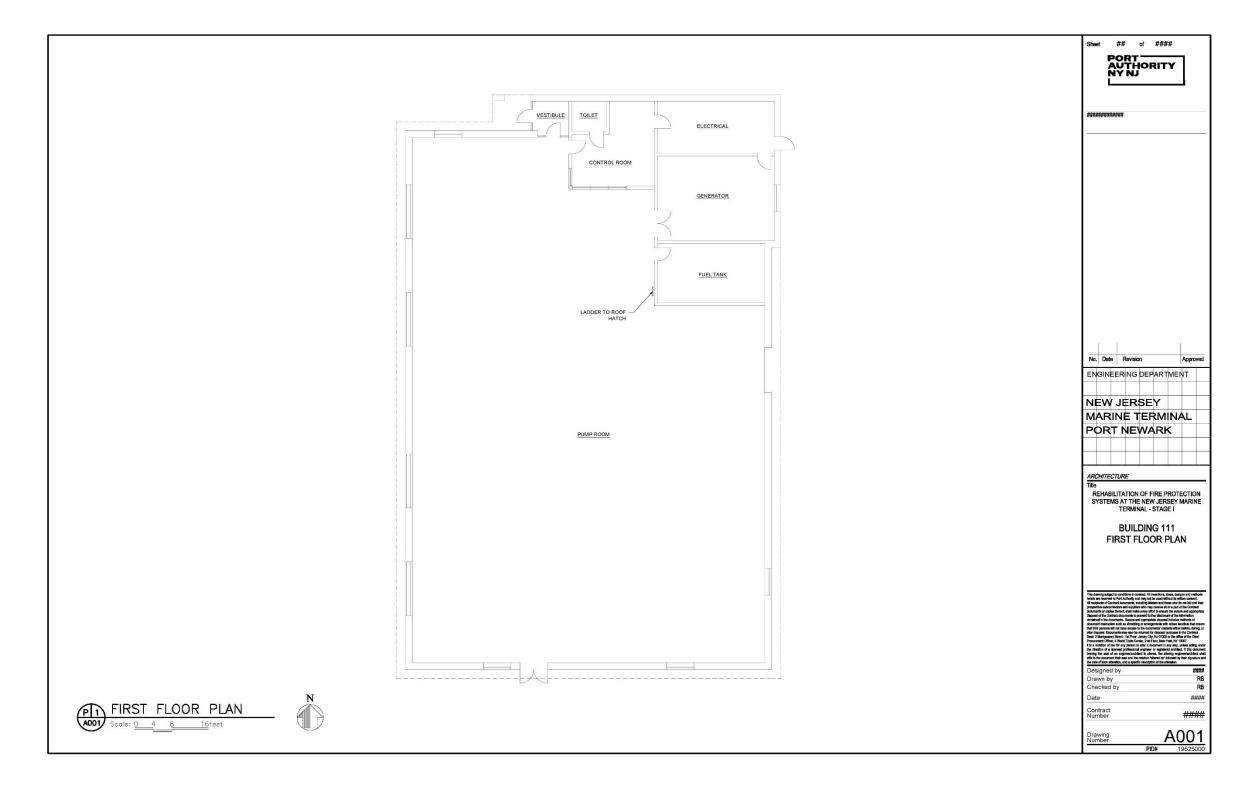


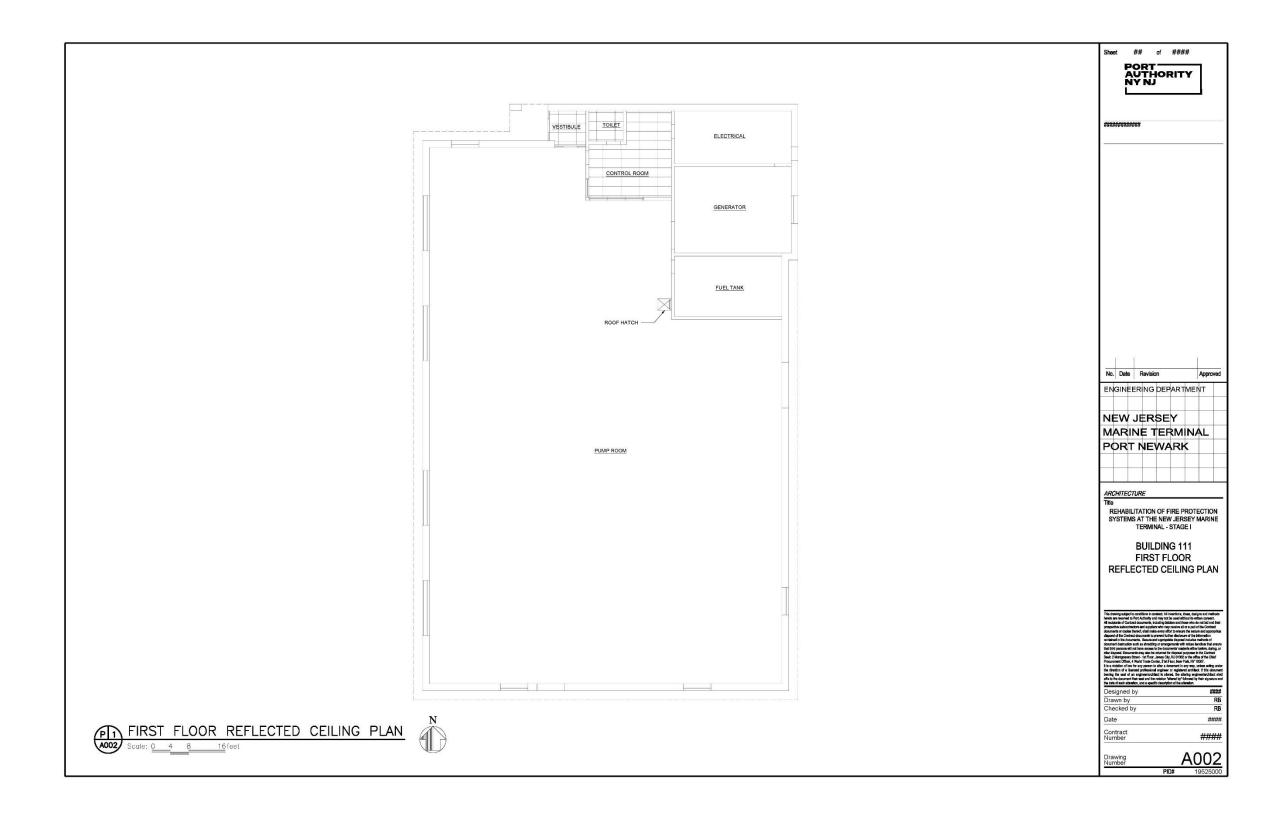
SUPPLEMENTAL REPORTS

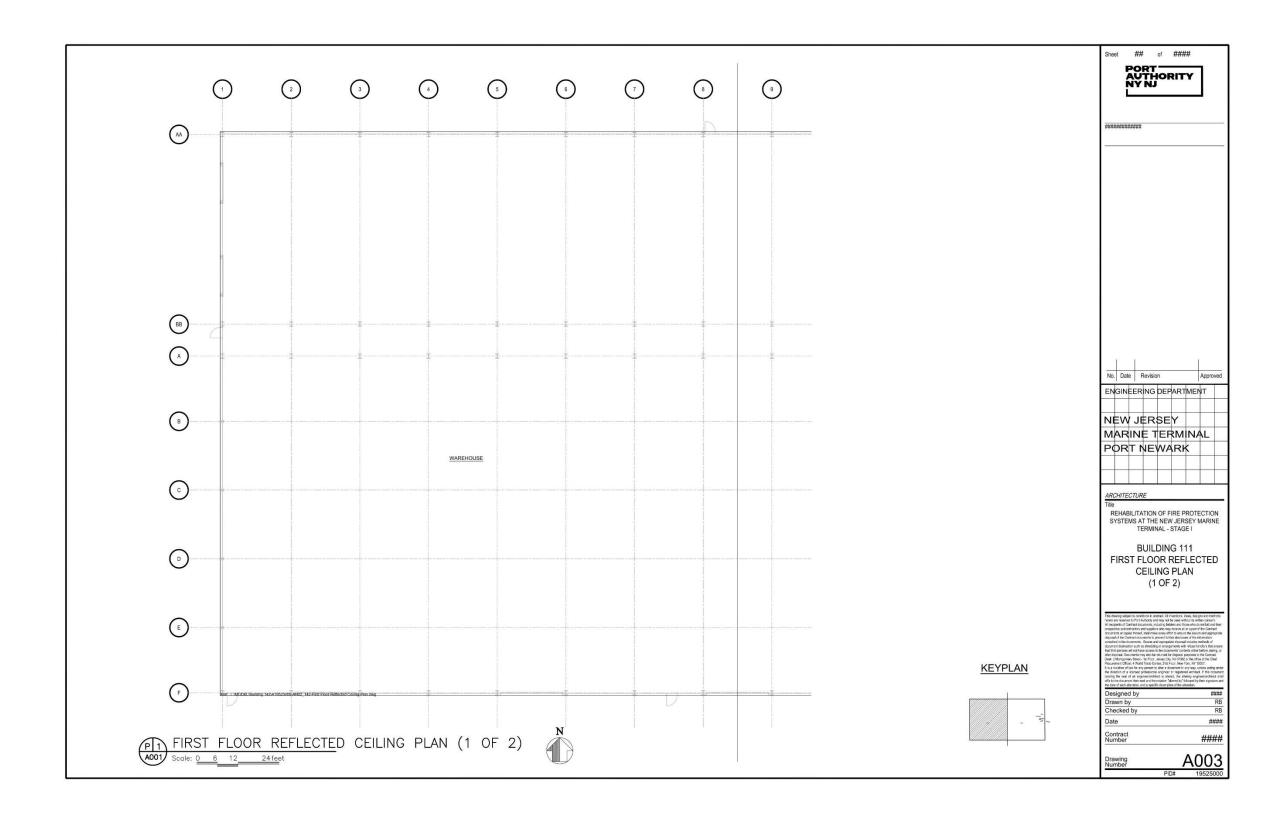
Refer to attached Environmental Survey Reports, Resilience Flood Protection Elevation, and QAD Inspection Reports.

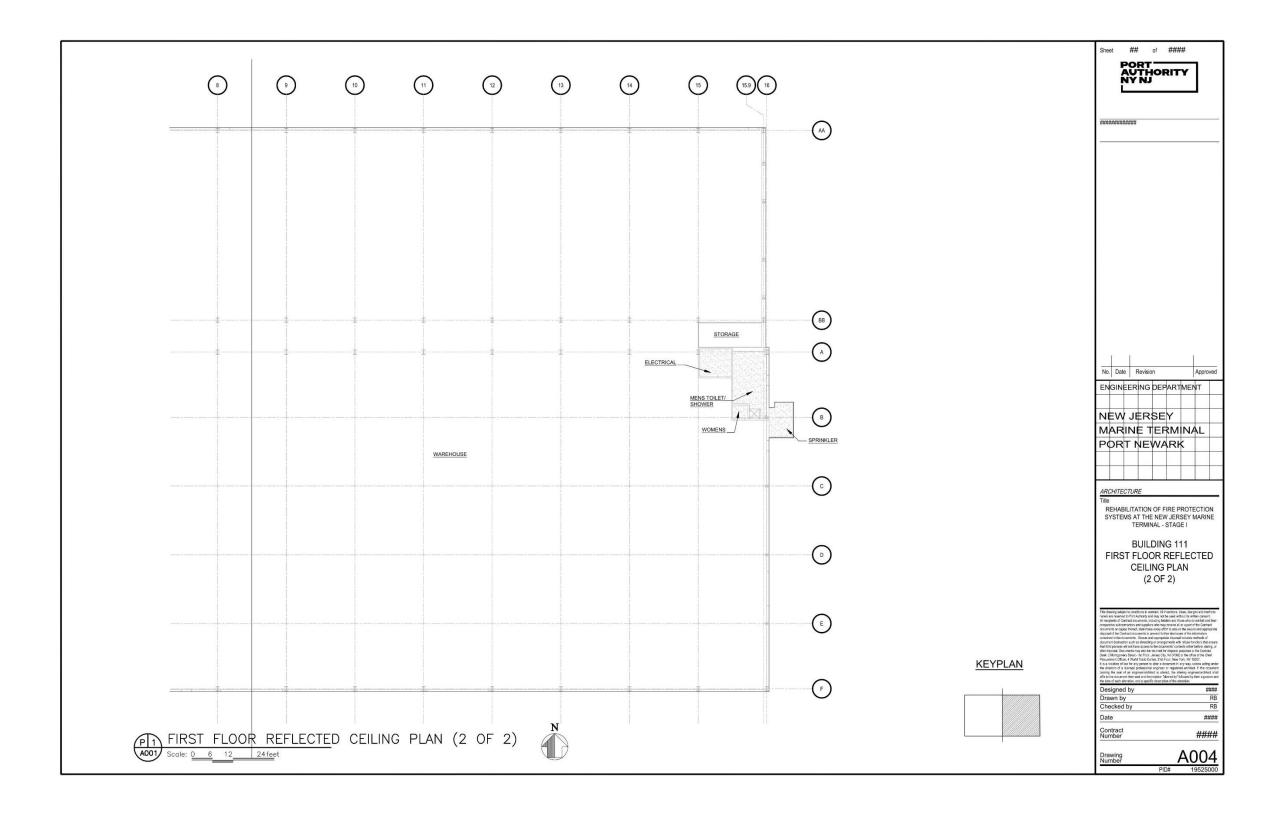
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REFERENCE DRAWINGS



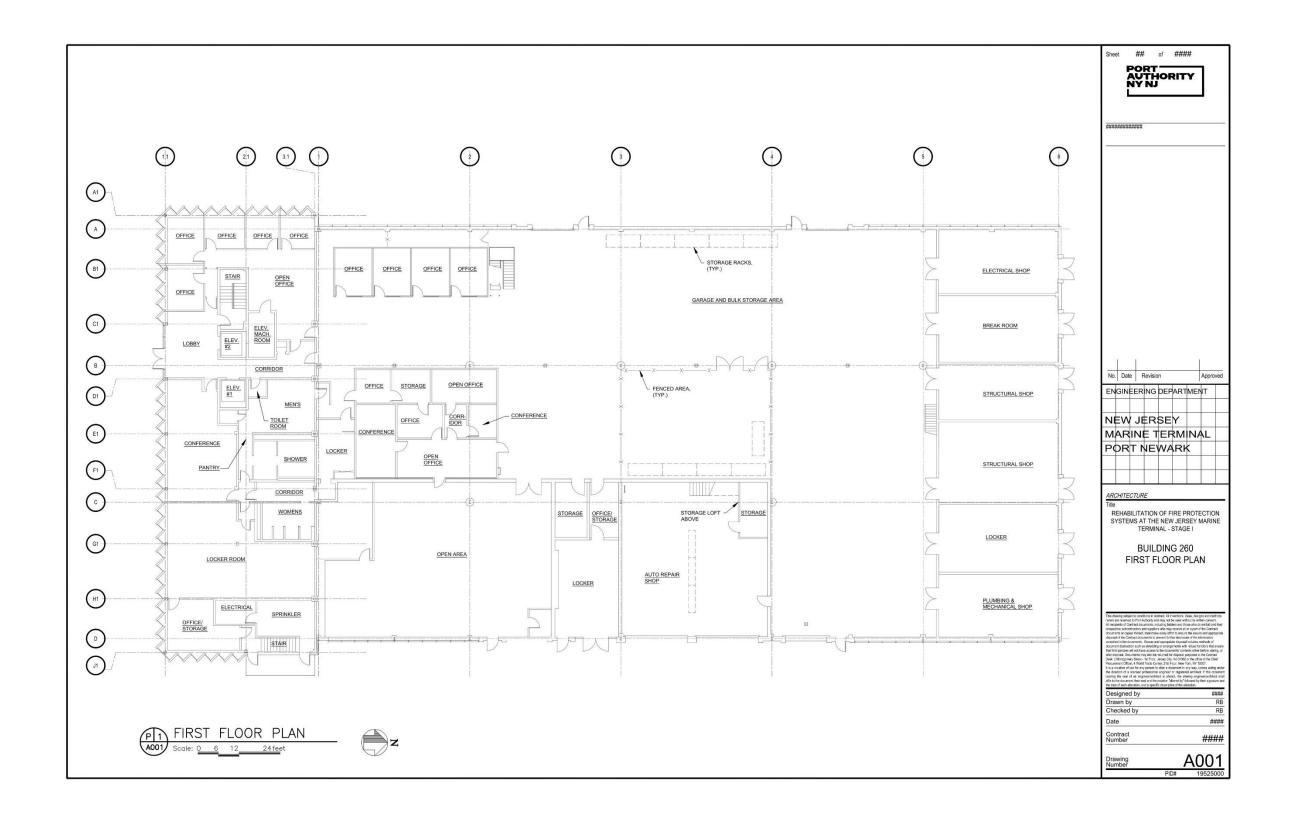


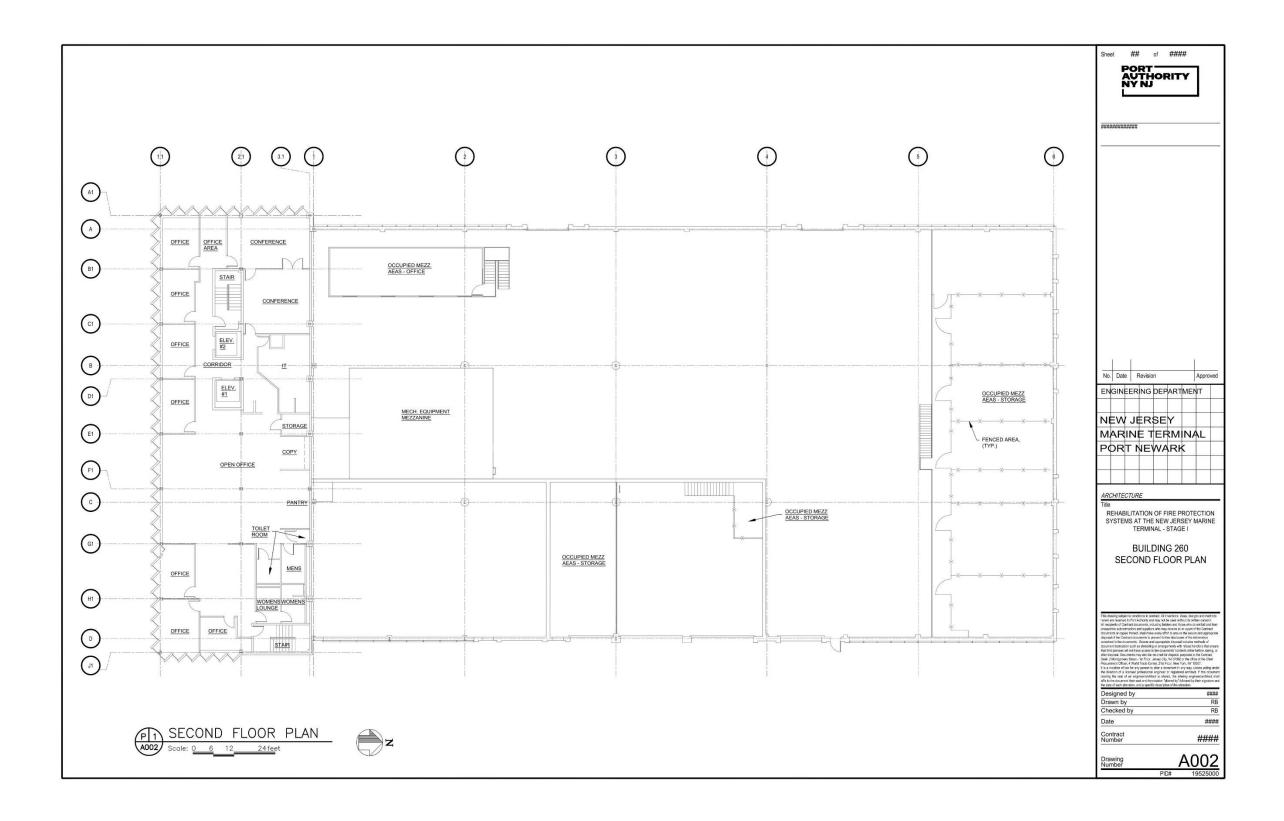


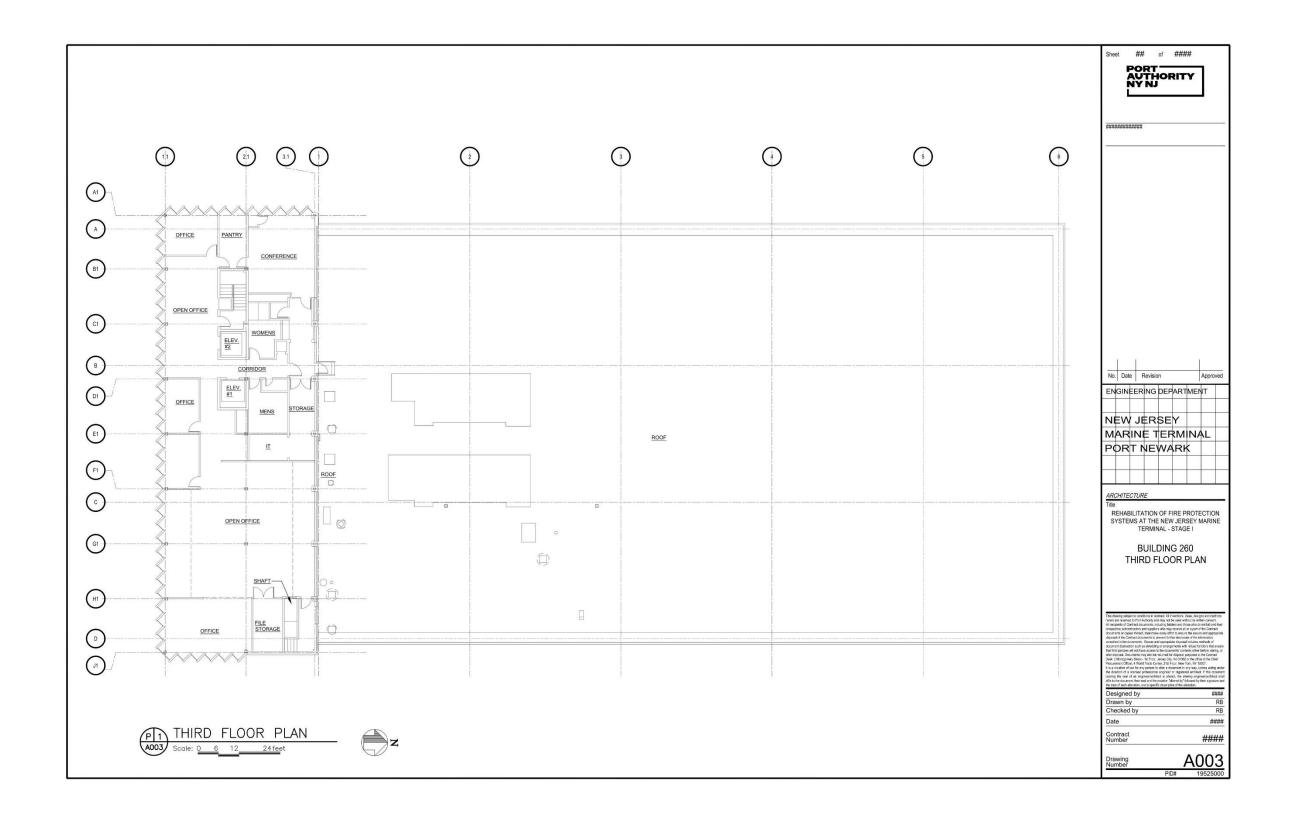


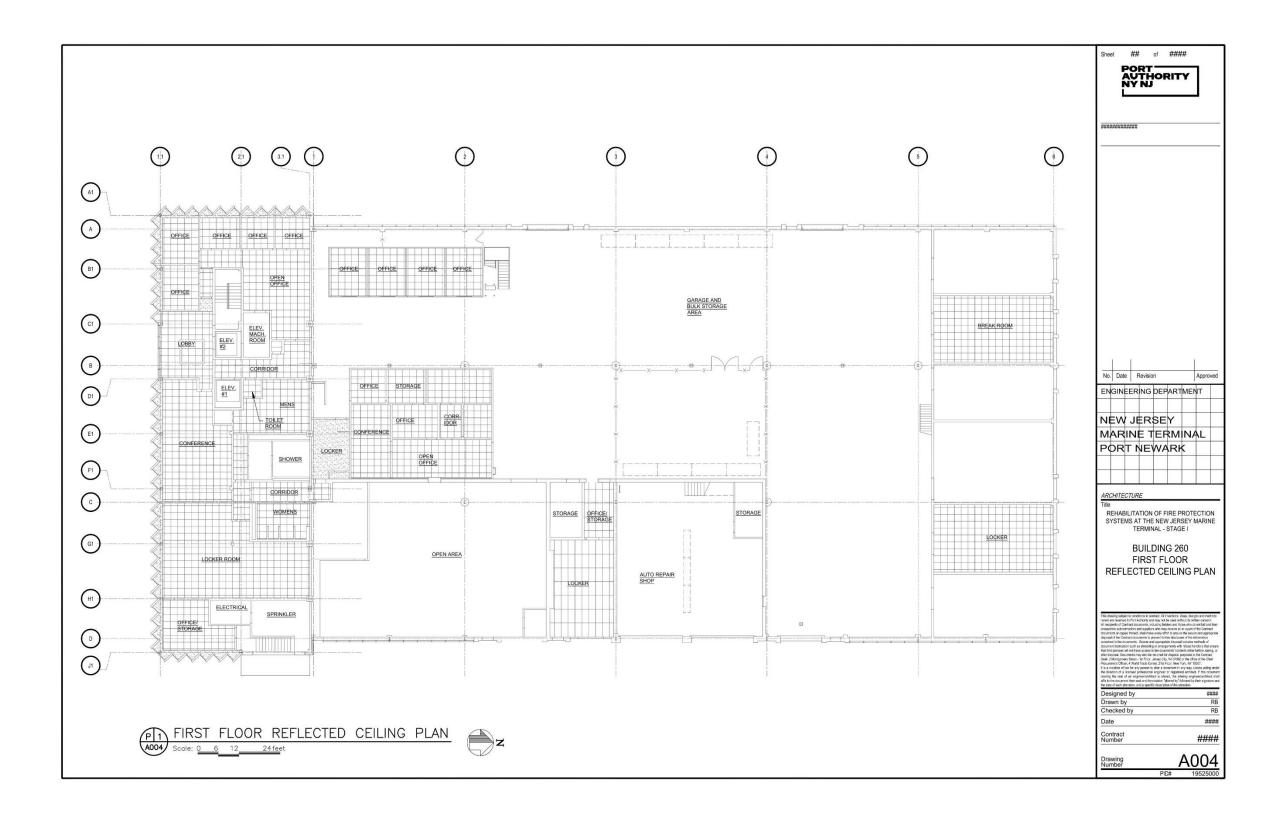


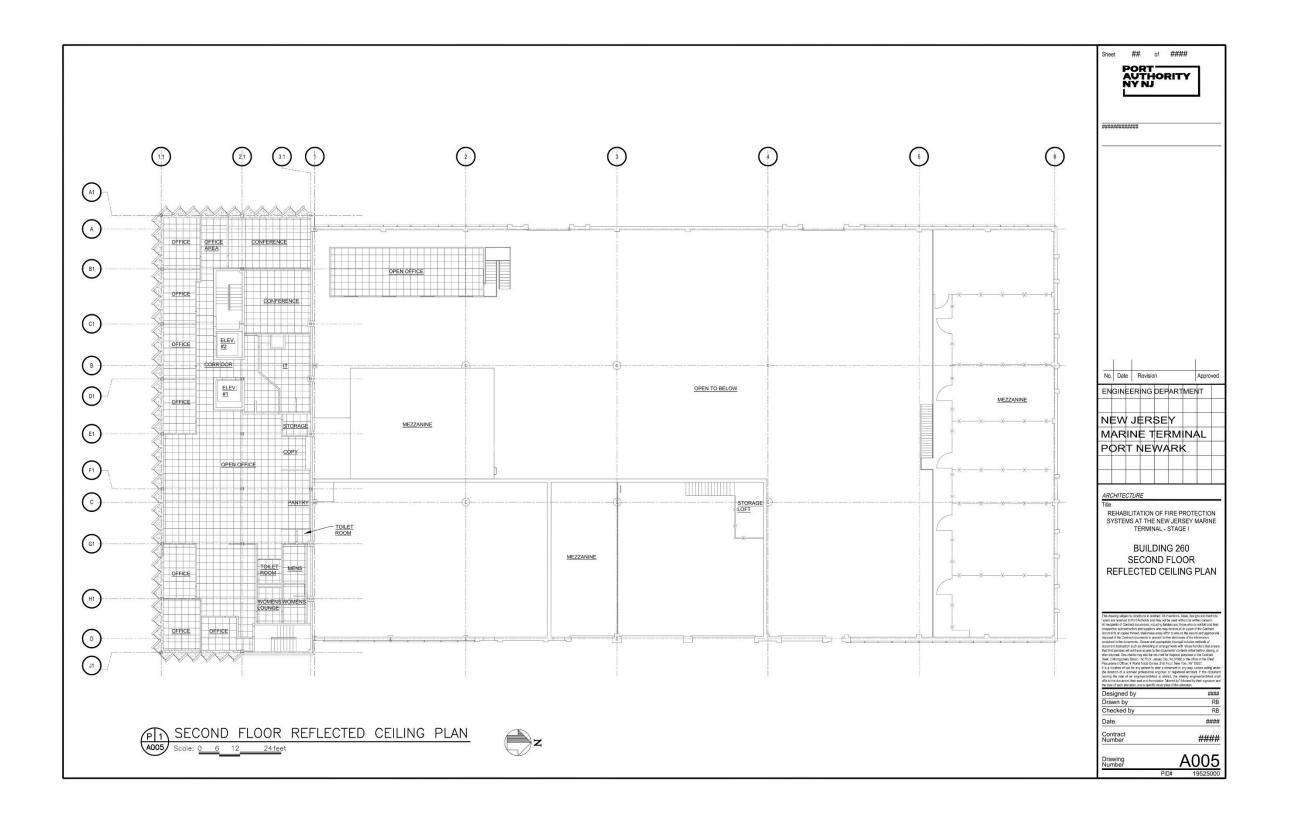


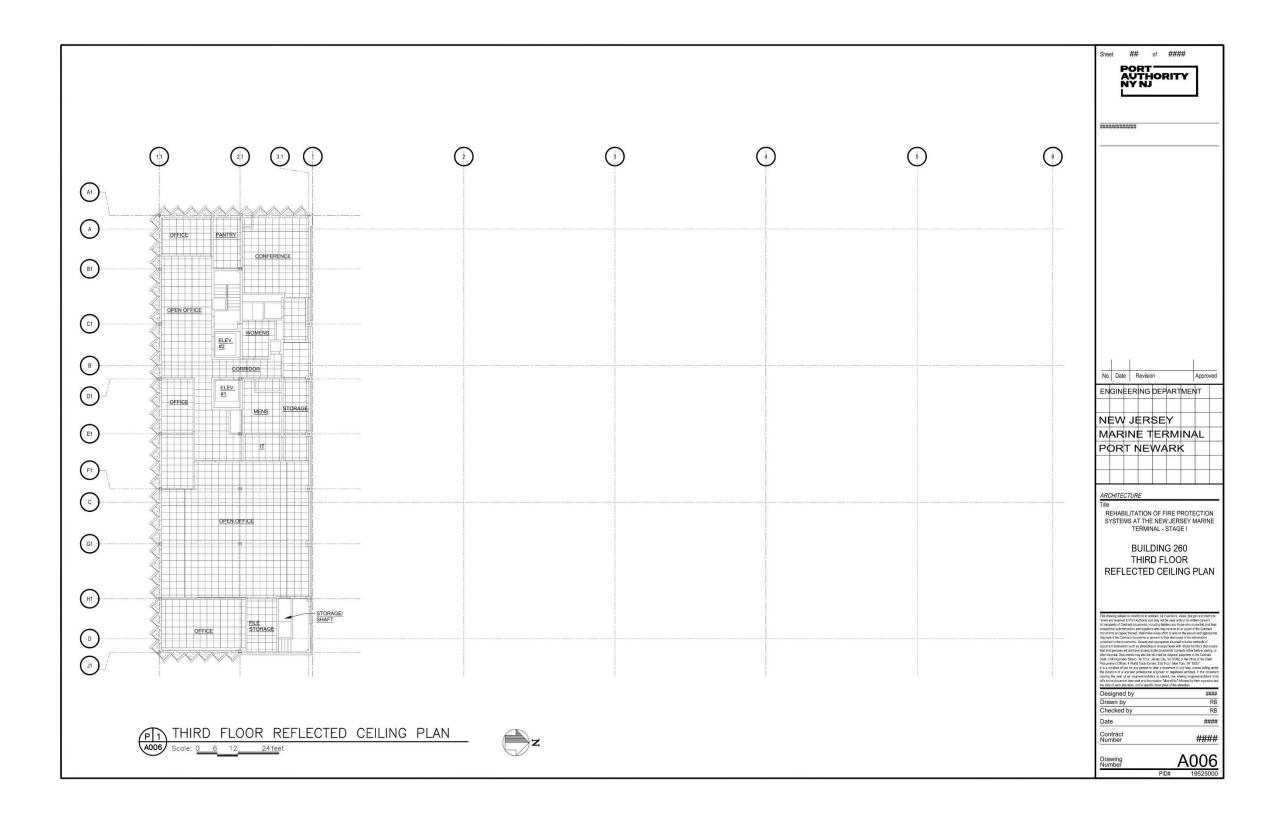


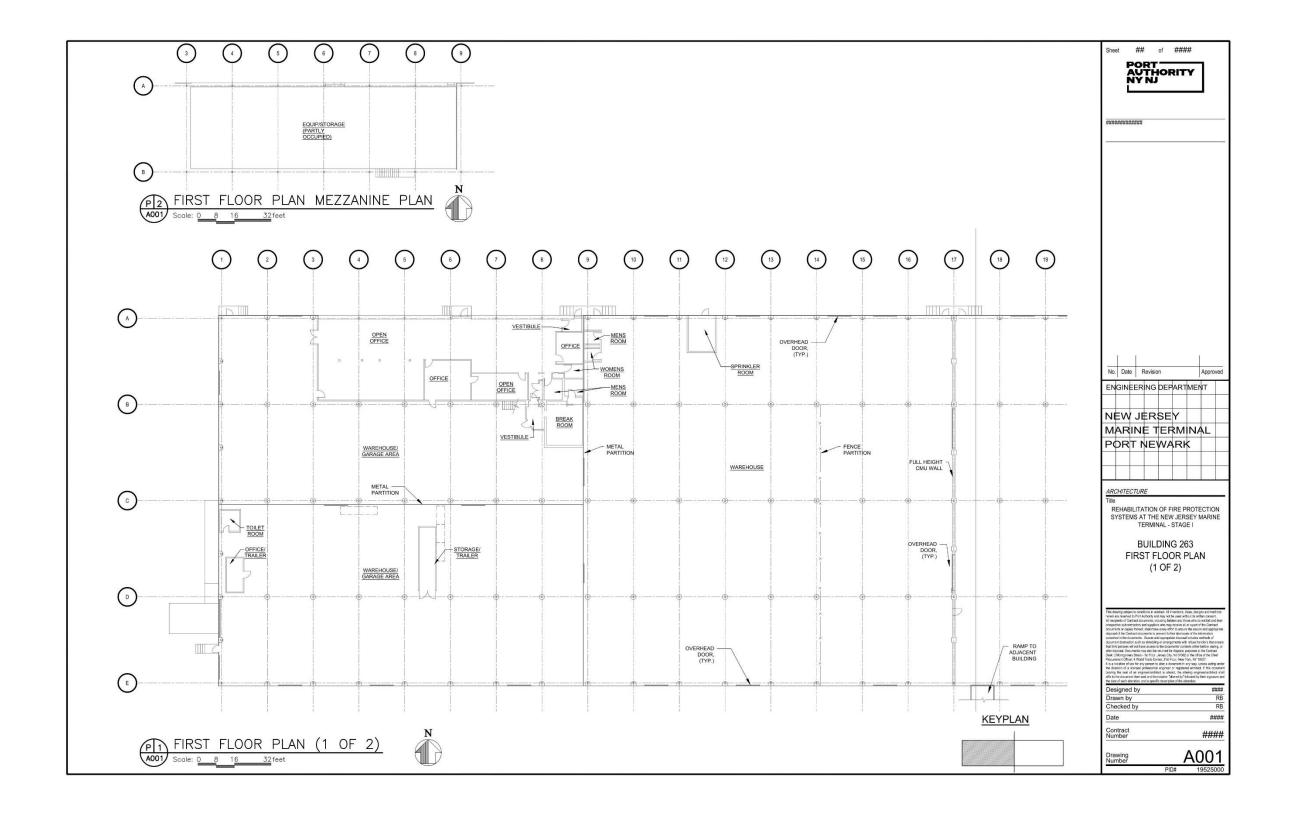


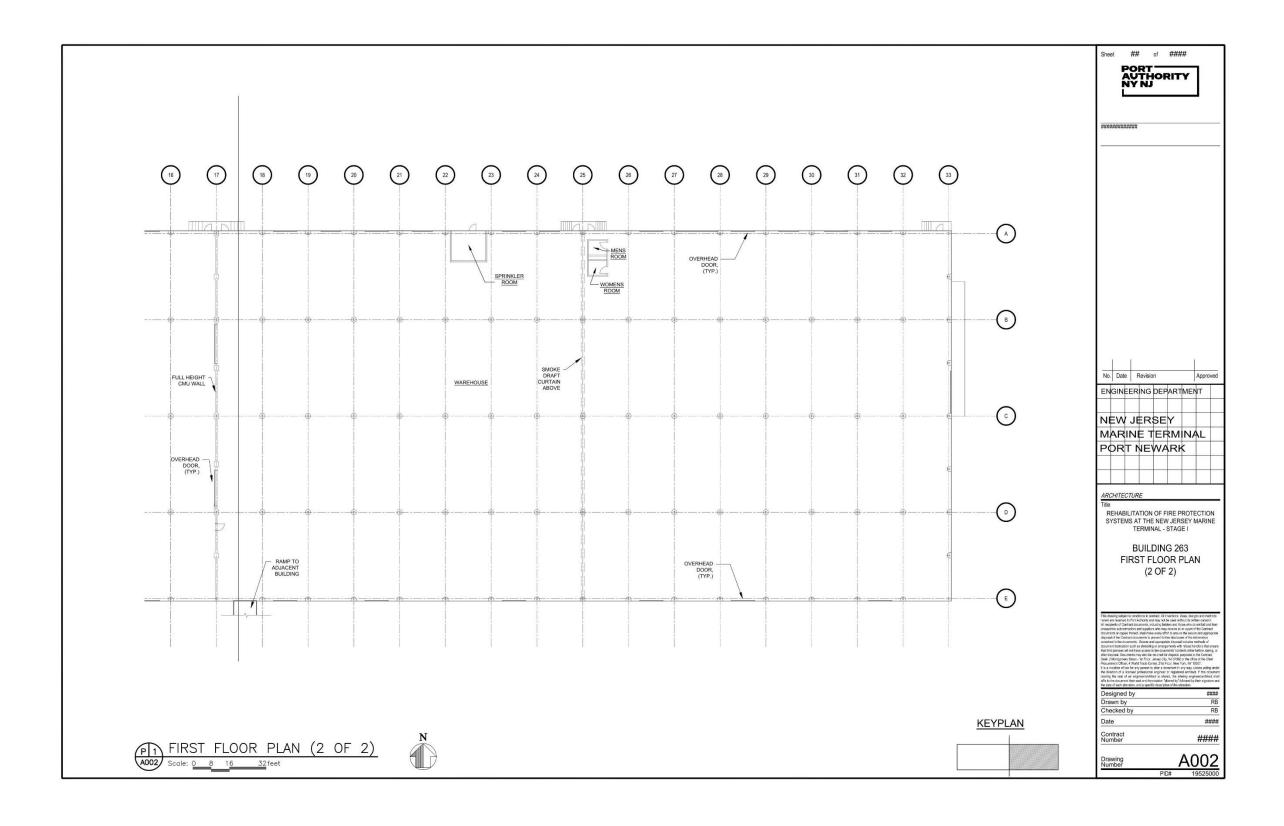


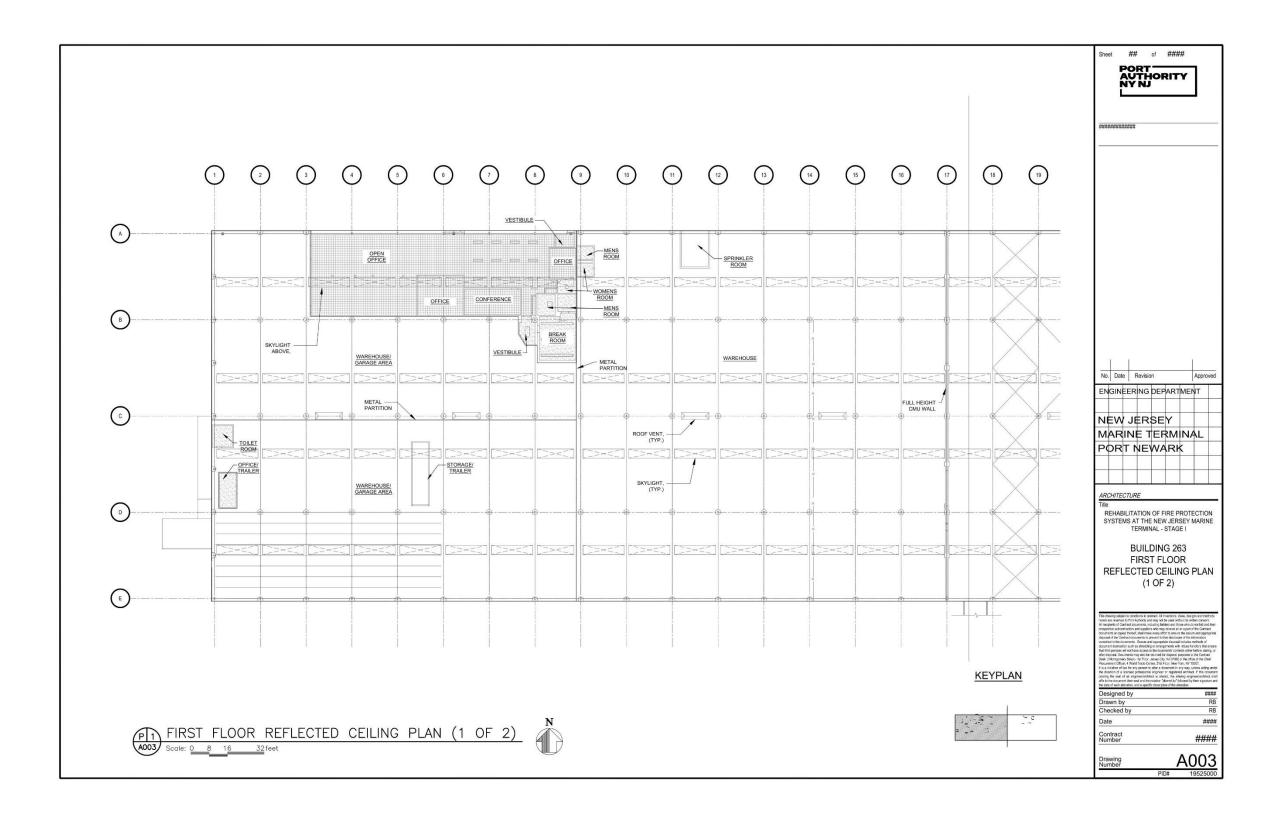


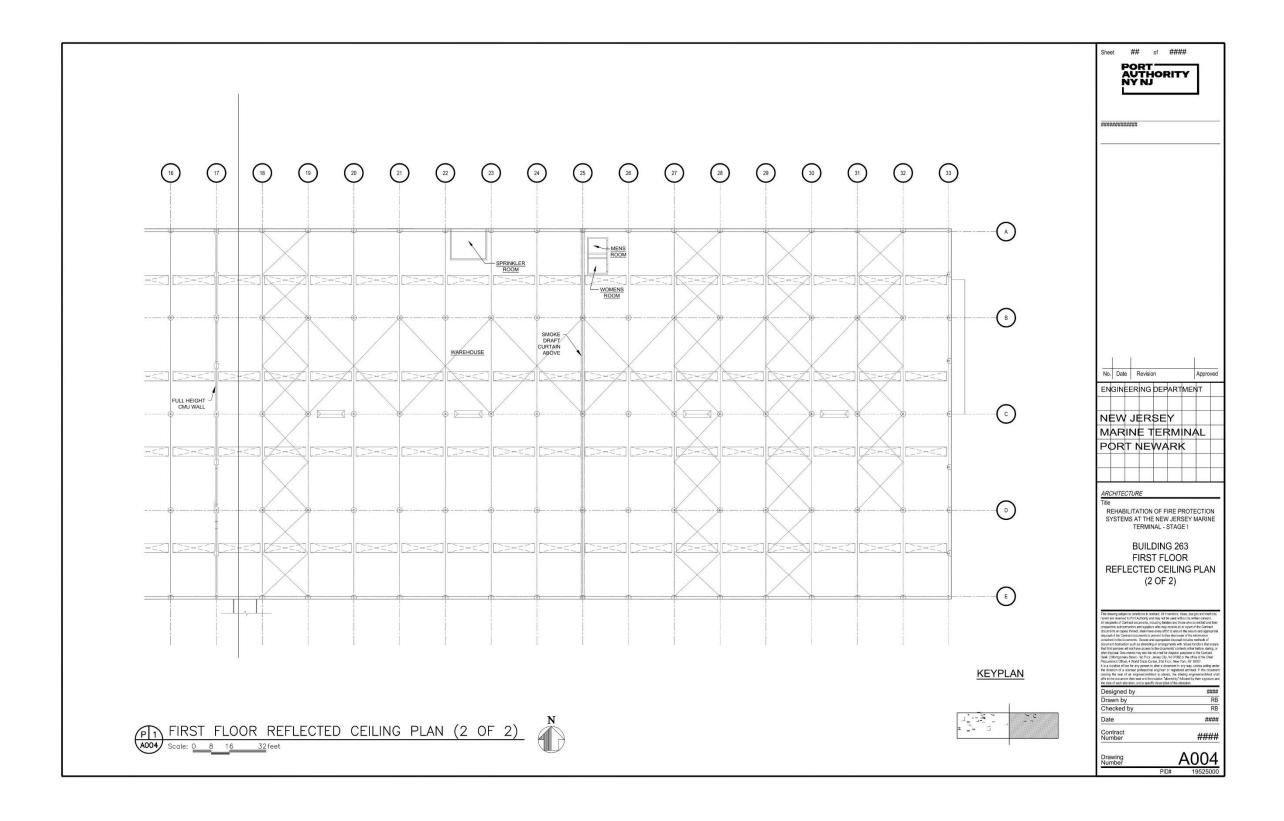


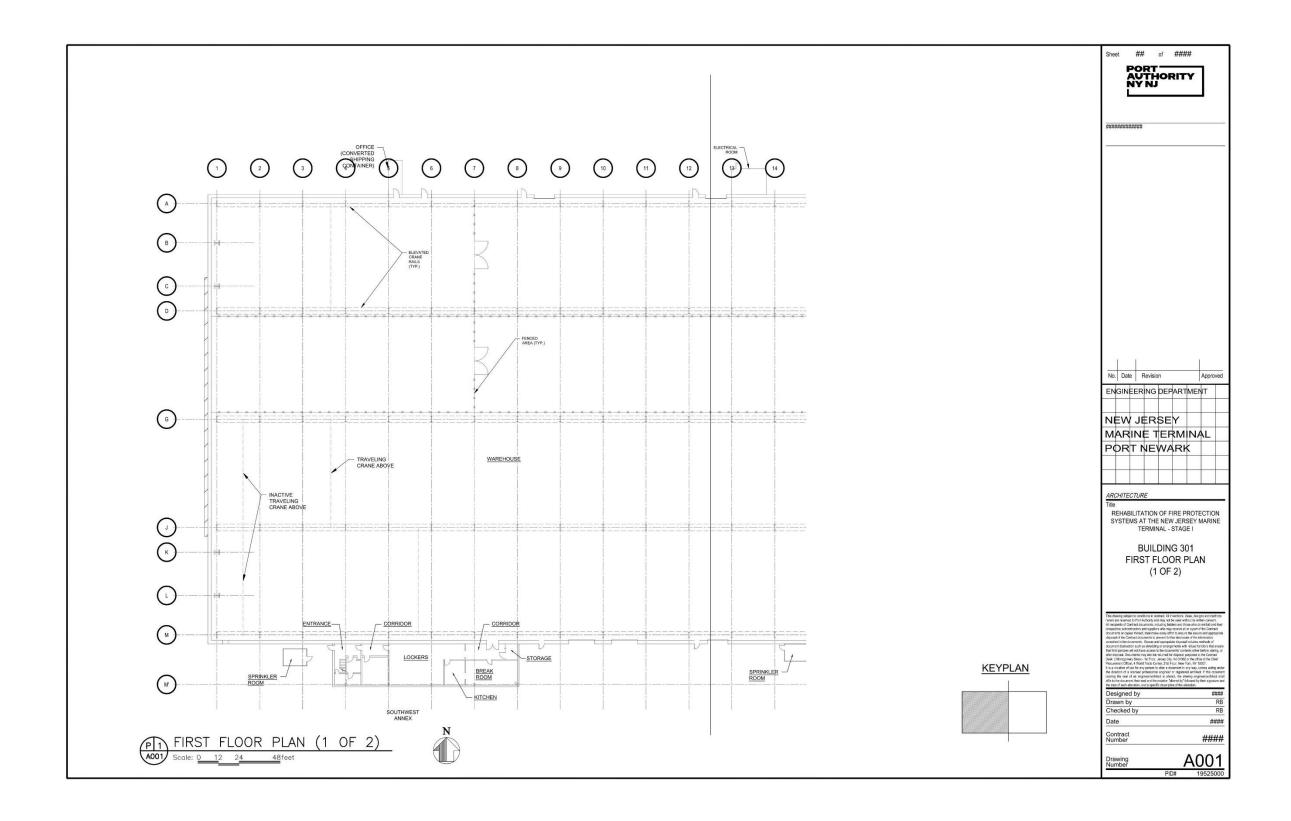


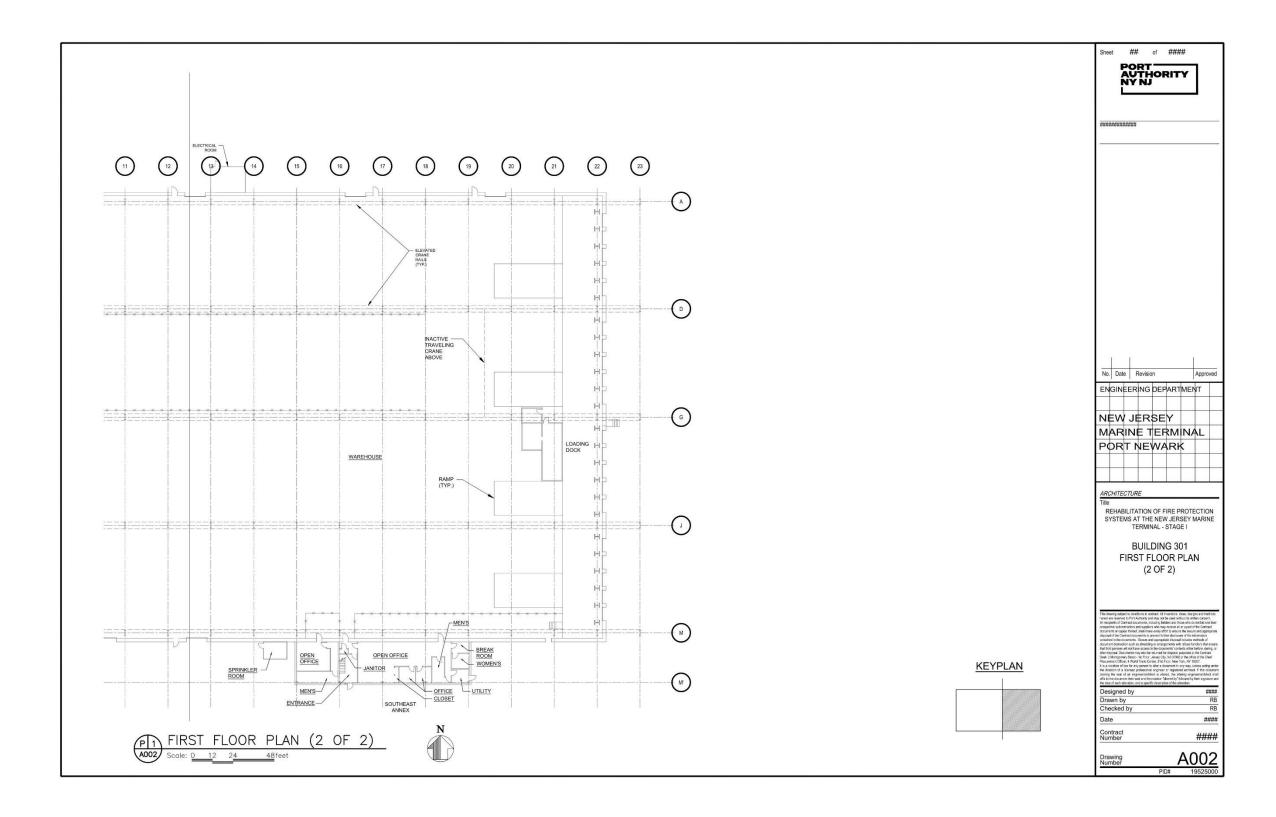


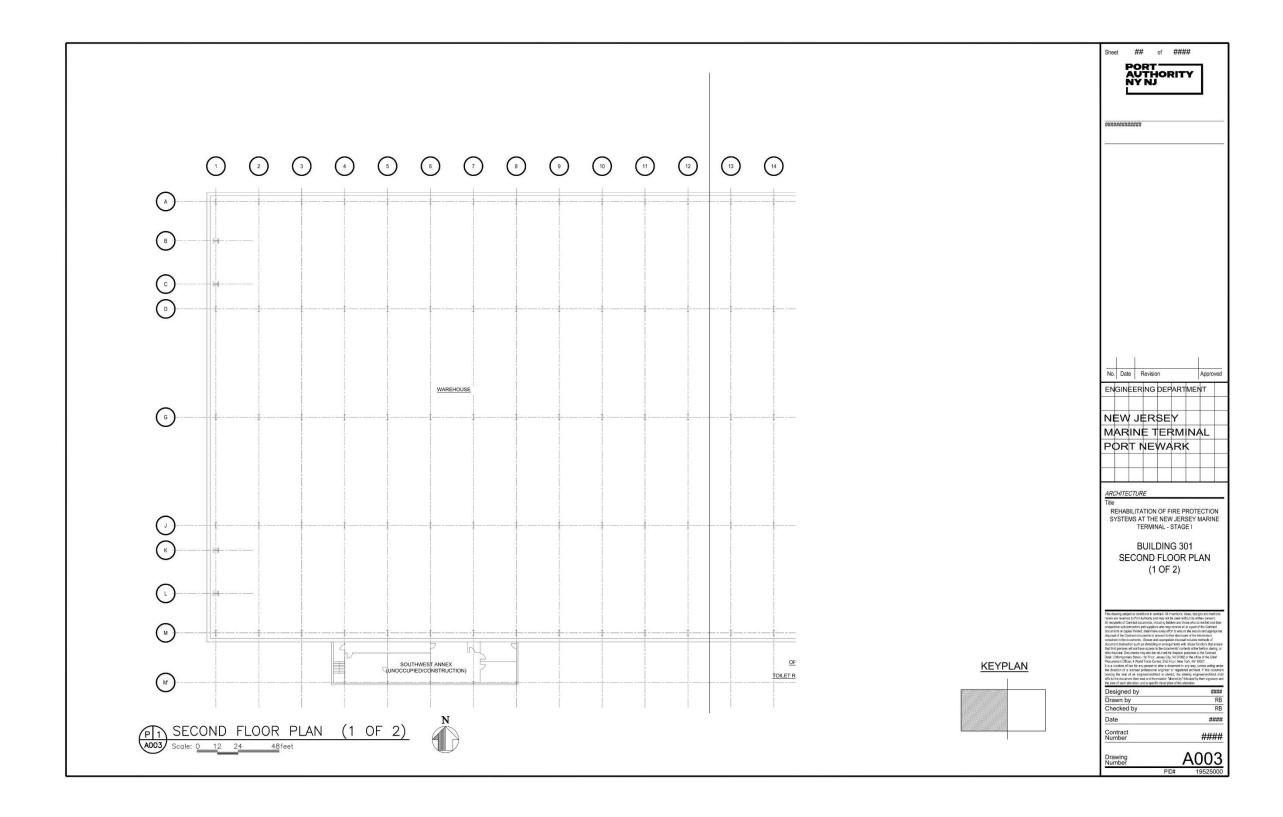


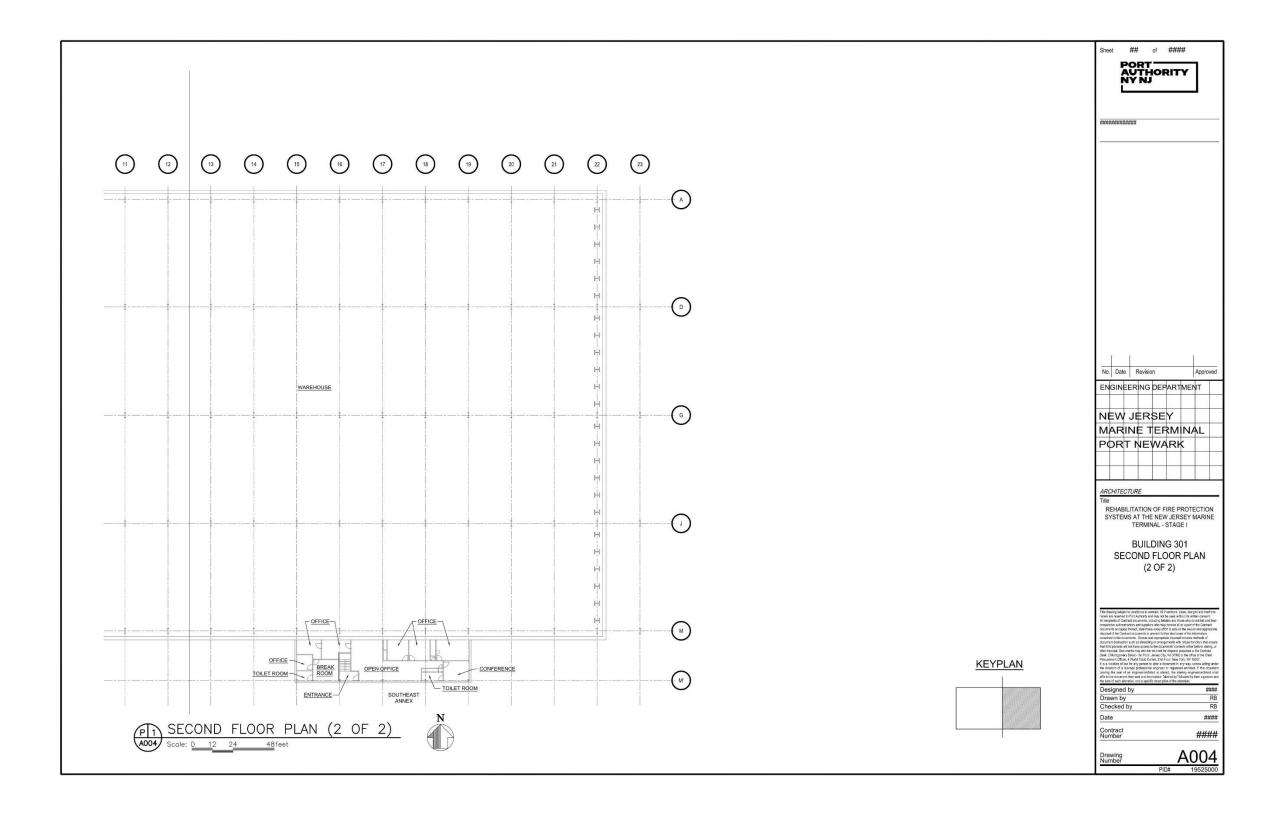


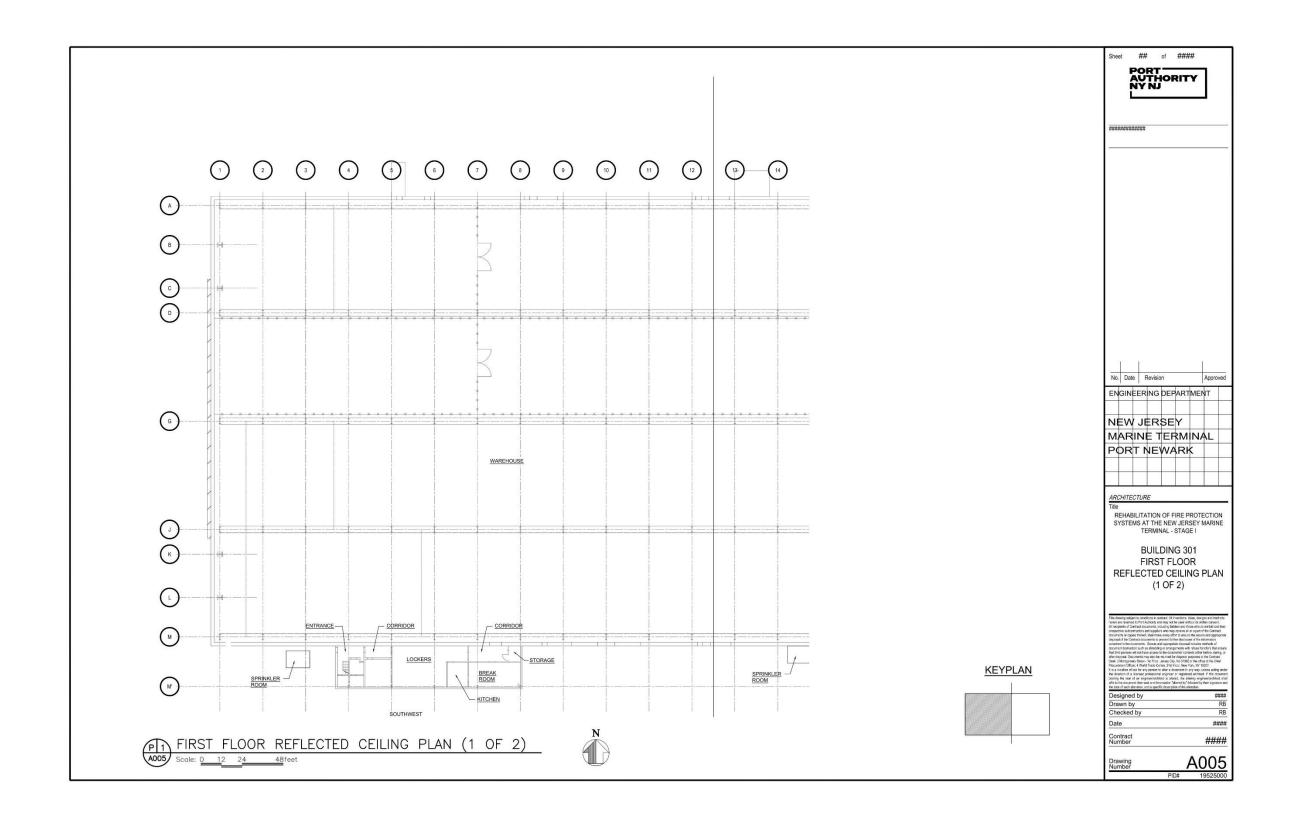


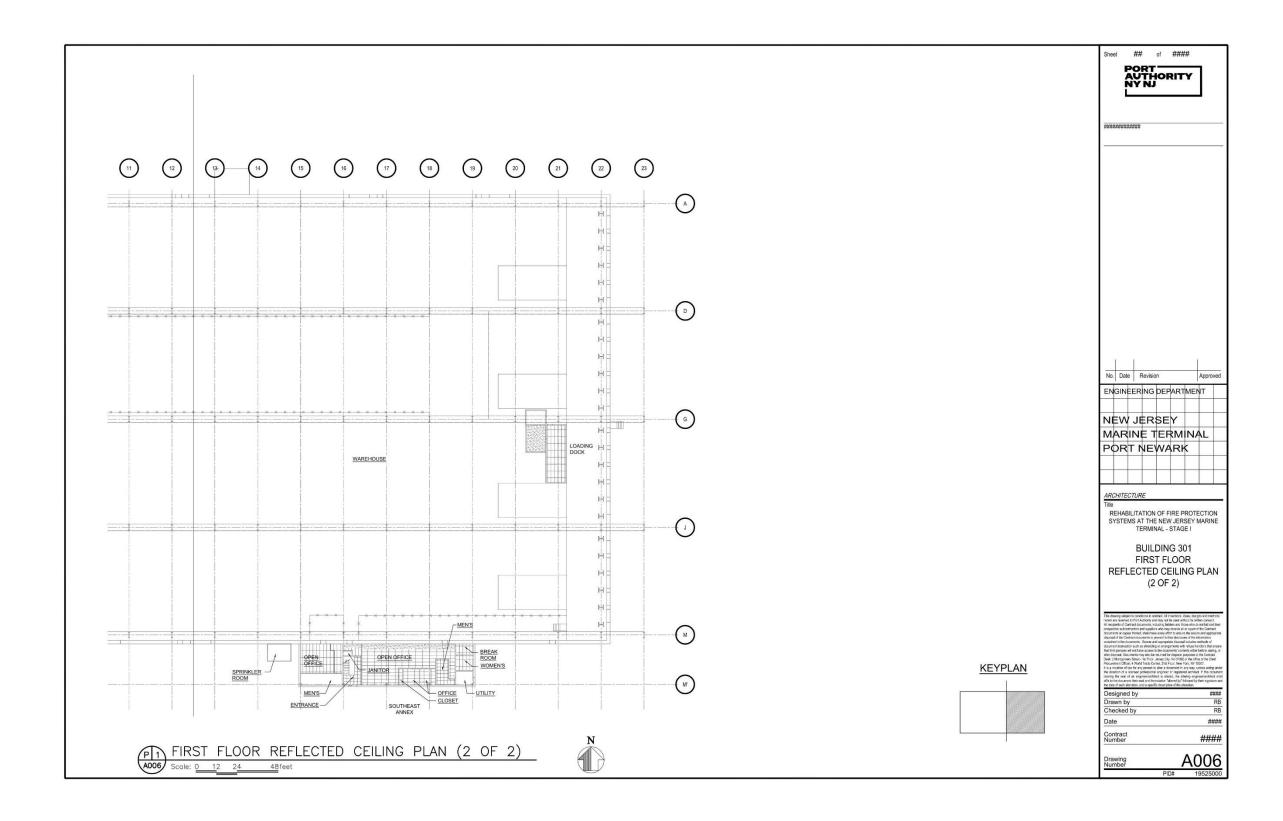


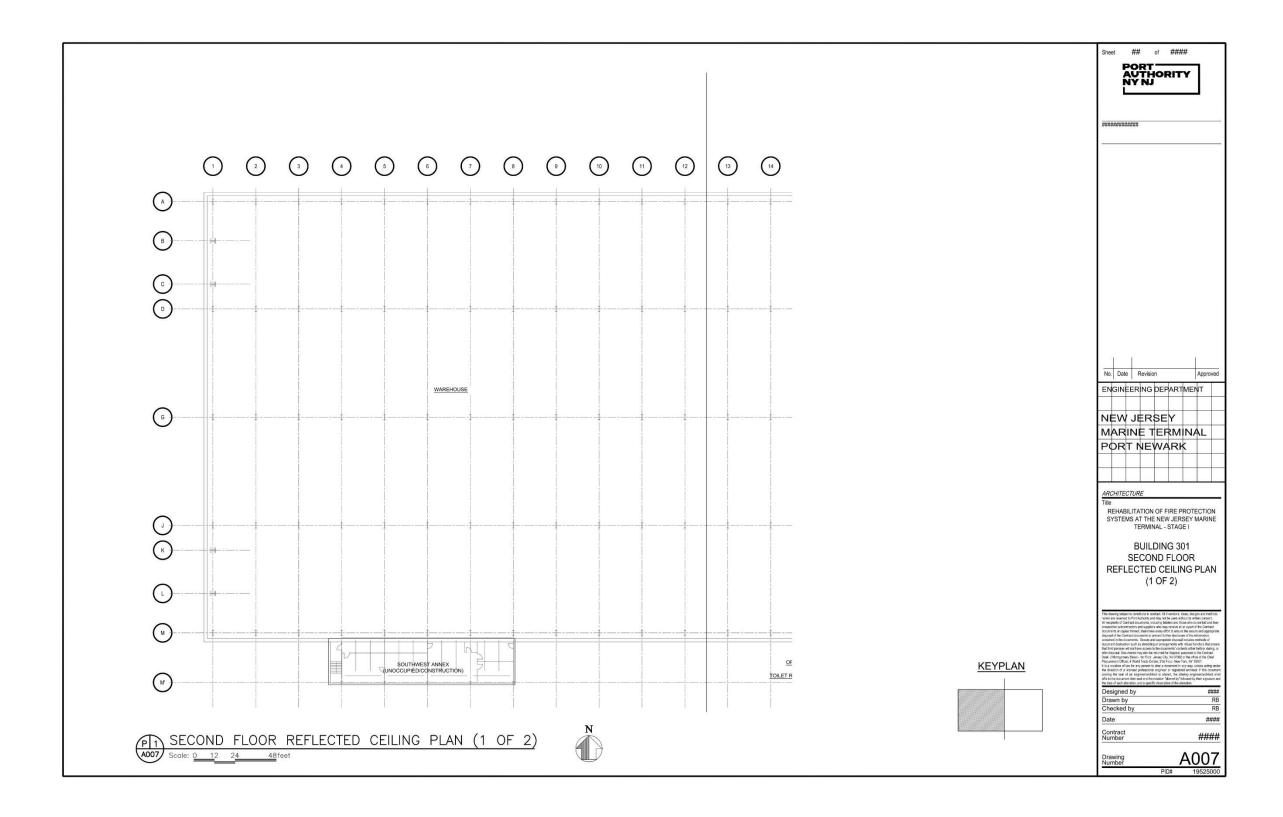


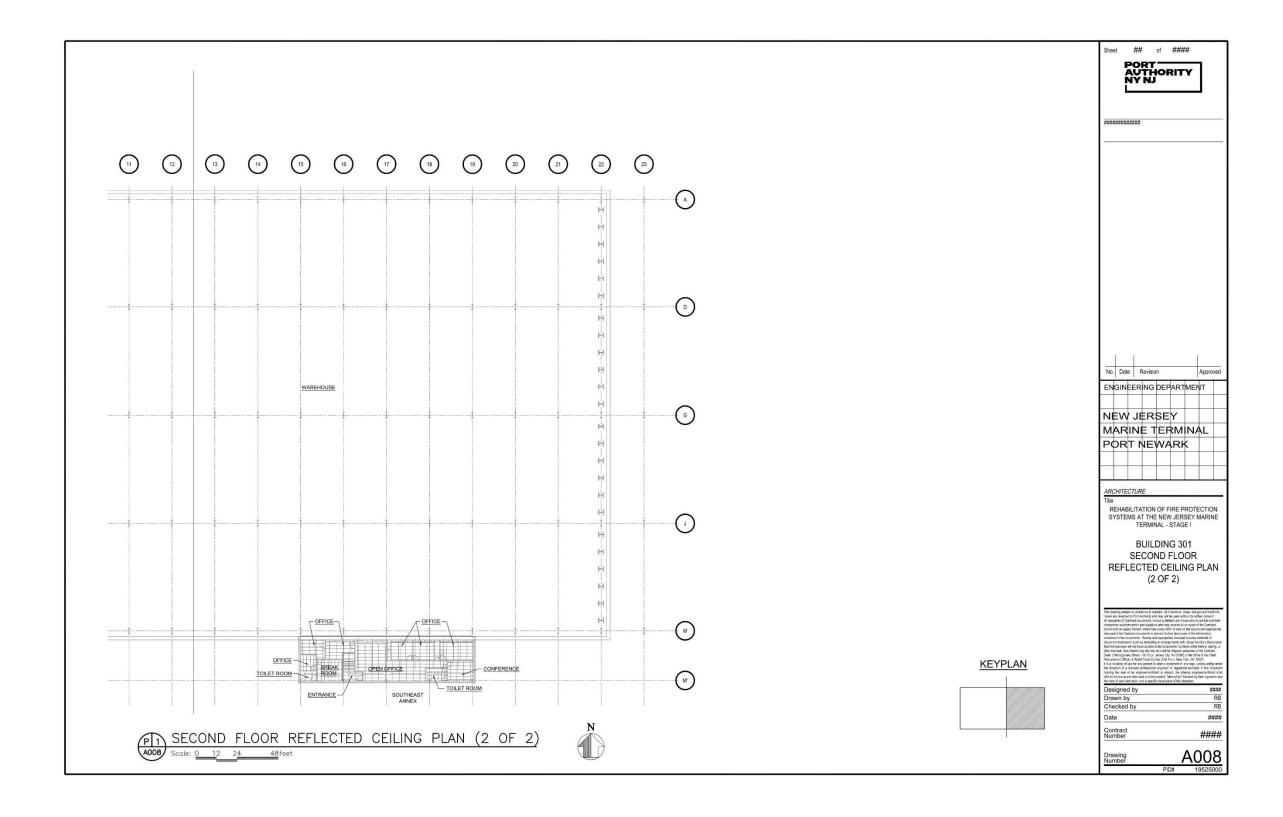


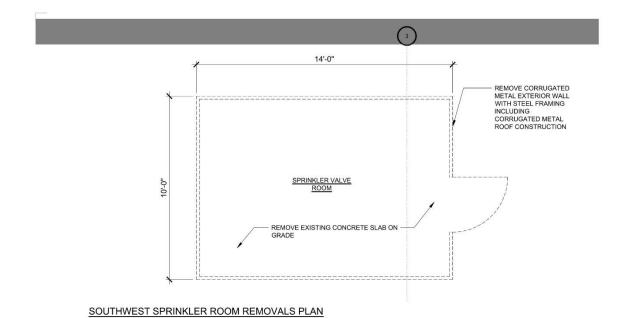


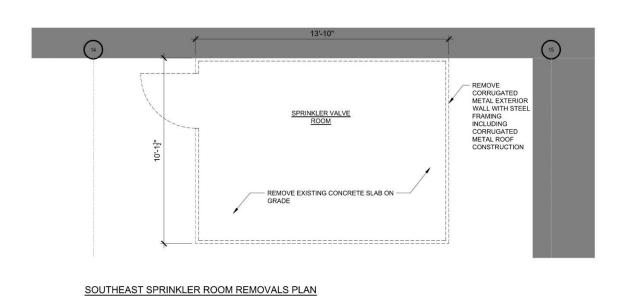




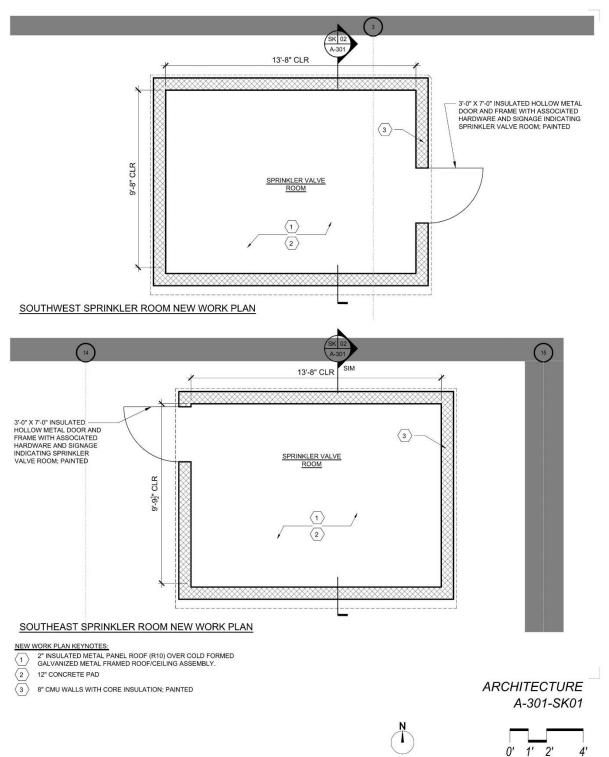


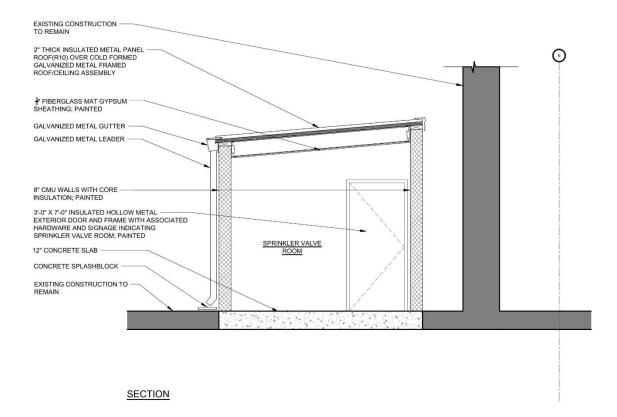






Building 301 - Sprinkler Room Replacements





Building 301 - Sprinkler Room Replacements

ARCHITECTURE A-301-SK02

CODES, STANDARDS AND REFERENCES

- INTERNATIONAL BUILDING CODE (IBC), NEW JERSEY EDITION, 2018.
- AMERICAN CONCRETE INSTITUTE (ACI), MANUAL OF STEEL CONSTRUCTION, ACI 318-14.

 AMERICAN INSTITUTE OF STEEL CONSTRUCTION (ASIC), MANUAL OF STEEL CONSTRUCTION, AISC 360-16.
- AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE), MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-16.
- AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE), FLOOD RESISTANT DESIGN AND CONSTRUCTION, ASCE 24-2014.

 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 13, STANDARD FOR INSTALLATION OF
- SPRINKLER SYSTEMS, 2019.
- THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY, STRUCTURAL DESIGN GUIDELINES, 2018.

GENERAL NOTES

- GEOMETRIC INFORMATION SHOWN ON THE CONTRACT DRAWINGS. INCLUDING DIMENSIONS, ELEVATIONS AND COORDINATES, MAY VARY FROM THE ACTUAL CONDITIONS THAT EXIST AT THE CONSTRUCTION SITE. VERIFY BY GEOMETRIC SURVEY ALL DIMENSIONS, ELEVATIONS, COORDINATES AND CURVATURES OF ALL EXISTING FLEMENTS OF THE SITE INCLUDING EXISTING STRUCTURES STRUCTURAL AND NON-STRUCTURAL ELEMENTS, GRADES, AND CONSTRUCTION FEATURES, AS NEEDED TO LOCATE, ALIGN, DIMENSION, AND DETAIL THE WORK OF THE CONTRACT. VERIFICATION OF GEOMETRIC INFORMATION SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR, LICENSED IN THE STATE WHERE THE WORK IS TO BE PERFORMED, PRIOR TO AND COORDINATED WITH THE PREPARATION OF SHOP DRAWINGS AND PRIOR TO THE MANUFACTURING FABRICATION AND INSTALLATION OF ALL ITEMS OF CONSTRUCTION ALL VARIATIONS OF SUCH INFORMATION FROM THE CONTRACT DRAWINGS AND / OR REFERENCE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER, FOR REVIEW PRIOR TO THE PREPARATION OF SHOP DRAWINGS. DIMENSION BASED ON THE CONTRACTOR'S GEOMETRIC SURVEY SHALL BE CLEARLY MARKED ON THE SHOP DRAWINGS AND ALL OTHER SUBMITTALS.
- PROPERLY DISPOSE OF ALL REMOVED MATERIALS AND LINUSED MATERIAL NOT
- INCORPORATED INTO THE WORK, AWAY FROM AUTHORITY PROPERTY.

 DETAILS SHOWN ON THE CONTRACT DRAWINGS AS TYPICAL ARE APPLICABLE TO ALL SIMILAR LOCATIONS, WORK NOT INDICATED ON ONE PART OF THE CONTRACT DRAWINGS. BUT WHICH MAY BE REASONABLE IMPLIED TO BE SIMILAR TO THAT SHOWN ON A CORRESPONDING LOCATION ON THE CONTRACT DRAWINGS SHALL BE INCLUDED IN THE
- INFORM THE ENGINEER OF ALL DISCREPANCIES BETWEEN CONTRACTOR DRAWINGS OF DIFFERENT TRADES PRIOR TO INITIATION OF ANY WORK, PROCEED AS DIRECTED BY **ENGINEER**
- EXERCISE ALL NECESSARY CARE AND PRECAUTIONS TO PREVENT ANY DAMAGE TO THE EXISTING STRUCTURES AS A RESULT OF CONTRACTOR OPERATIONS. ANY DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE AUTHORITY

REMOVAL AND DISPOSAL NOTES

- REMOVALS SHALL CONFORM TO THE REMOVAL AREAS SHOWN ON THE CONTRACT DRAWINGS AND SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 024114
- 2. EXISTING UTILITIES SHALL BE IDENTIFIED, MARKED, AND REMAIN UNDISTURBED. NOTIFY AND OBTAIN PERMISSION FOR EXCAVATION FROM RELEVANT UTILITY AUTHORITIES.

- ALL STRUCTURAL STEEL SHALL CONFORM TO SPECIFICATION SECTION 051200 ENTITLED STRUCTURAL STEEL."
- *STRUCTURAL STEEL."

 STEEL FABRICATION AND ERECTION SHALL CONFORM TO THE LATEST PROVISIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION.

 STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING, UNLESS OTHERWISE NOTED: ANGLES

 ASTM A572, GRADE 50

 4. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123, INTERCOLOR OF THE PROPERTY OF THE PR
- UNLESS OTHERWISE NOTED. HARDWARE SHALL CONFORM TO THE FOLLOWING STANDARDS, UNLESS OTHERWISE

ASTM A325 THREADED RODS: ASTM F1554, GRADE 55 ASTM A194 GRADE 8 NUTS:

- WASHERS: ASTM F436 HARDWARE SPECIFIED TO BE GALVANIZED SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, UNLESS OTHERWISE NOTED.
- OGEE WASHERS SHALL BE USED WHERE HARDWARE BEARS ON TIMBER, OGEE
- WASHERS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.
 FIELD TREAT DAMAGED GALVANIZED FINISHES BY REPAIRING ALL DAMAGED SURFACES
 FOR PAINTING IN ACCORDANCE WITH SSPC-10 OR SSPC-11 WITH A 1-2 MIL PROFILE. PAINT THE CLEANED DAMAGED AREAS WITH TWO COATS OF COLD GALVANIZING COMPOUND AT 2 MILS DFT EACH COAT IN ACCORDANCE WITH ASTM A780 AND CONTAINING A MINIMUM OF 93% ZINC IN THE DRY FILM. ALL DAMAGED EXPOSED THREADED SURFACES SHALL ALSO BE CLEANED AND PAINTED AFTER INSTALLATION OF
- HILTI DROP IN ANCHORS SHALL BE HDI+ OR HDI-L+ FOR € IN AND € IN DIAMETER RODS AND HDLFOR FIN DIAMETER RODS, GALVANIZED, AS MANUFACTURED BY HILTLING, 7250

DALLAS PARKWAY, SUITE 1000, PLANO, TX 75024 OR APPROVED EQUAL

TIMBER NOTES

- ALL HOLES SHALL BE DRILLED FOR TIGHT FIT. UNLESS OTHERWISE NOTED.
- ALL BOLTS SHALL BE 1" DIAMETER, UNLESS OTHERWISE NOTED, ALL BOLTS SHALL BE FULL SIZE AND HAVE CUT THREADS, ALL BOLTS SHALL HAVE WASHERS (NEW YORK DOCK DEPARTMENT TYPE.) EXPANSION BOLTS SHALL BE "WEJ-IT" AS MANUFACTURED BY WEJ IT, 215 E 13TH PLACE, TULSA, OK (918)-744-7444, OR APPROVED EQUAL. ADHESIVE BONDED ANCHORS SHALL BE "HVA ADHESIVE ANCHORS SYSTEM" AS MANUFACTURED BY HILTI, P.O. BOX 21148, TULSA, OK 74121, TEL. (800)-879-8000; "KELIBOND / KELIBOND ANCHORS" AS MANUFACTURED BY KELKEN-GOLD, INC. 3005 HADLEY ROAD, SOUTH PLAINFIELD, NJ 07080, TEL. (908)-753-0088; "CHEM-STUD ANCHOR SYSTEM" AS MANUFACTURED BY RAWLPUG COMPANY, INC., NEW ROCHELLE, NY 10802, TEL. (914)-253-6300, OR APPROVED EQUAL. TIMBER SIZES SHOWN ON THE CONTRACT DRAWINGS ARE NOMINAL IN INCHES.
- FIELD TREAT CUTS. BEVELS, NOTCHES, DAPS, RE-FACING AND ABRASIONS MADE BY THE CONTRACTOR IN TREATED TIMBERS (FURNISHED AS PART OF THE WORK OR IN EXISTING TIMBERS TO REMAIN) IN ACCORDANCE WITH AWPA M4 (AMERICAN WOOD PROTECTION ASSOCIATION STANDARD M4) STANDARD (FOR THE CARE OF PRESERVATIVE - TREATED WOOD PRODUCTS)), MSDS (MATERIAL SAFETY DATA SHEET) AND CIS (CONSUMER INFORMATION SHEET). WOOD PRESERVATIVES ARE RESTRICTED USE PESTICIDES AND SHALL BE APPLIED ACCORDING TO AWPA STANDARDS. TRIM CUTS AND ABRASIONS BEFORE FIELD TREATMENT, PAINT DEPRESSIONS OR OPENING AROUND BOLT HOLES. JOINTS OR GAPS INCLUDING RECESSES FORMED BY COUNTER BORING, WITH THE SAME PRESERVATIVE TREATMENT USED FOR TIMBER.

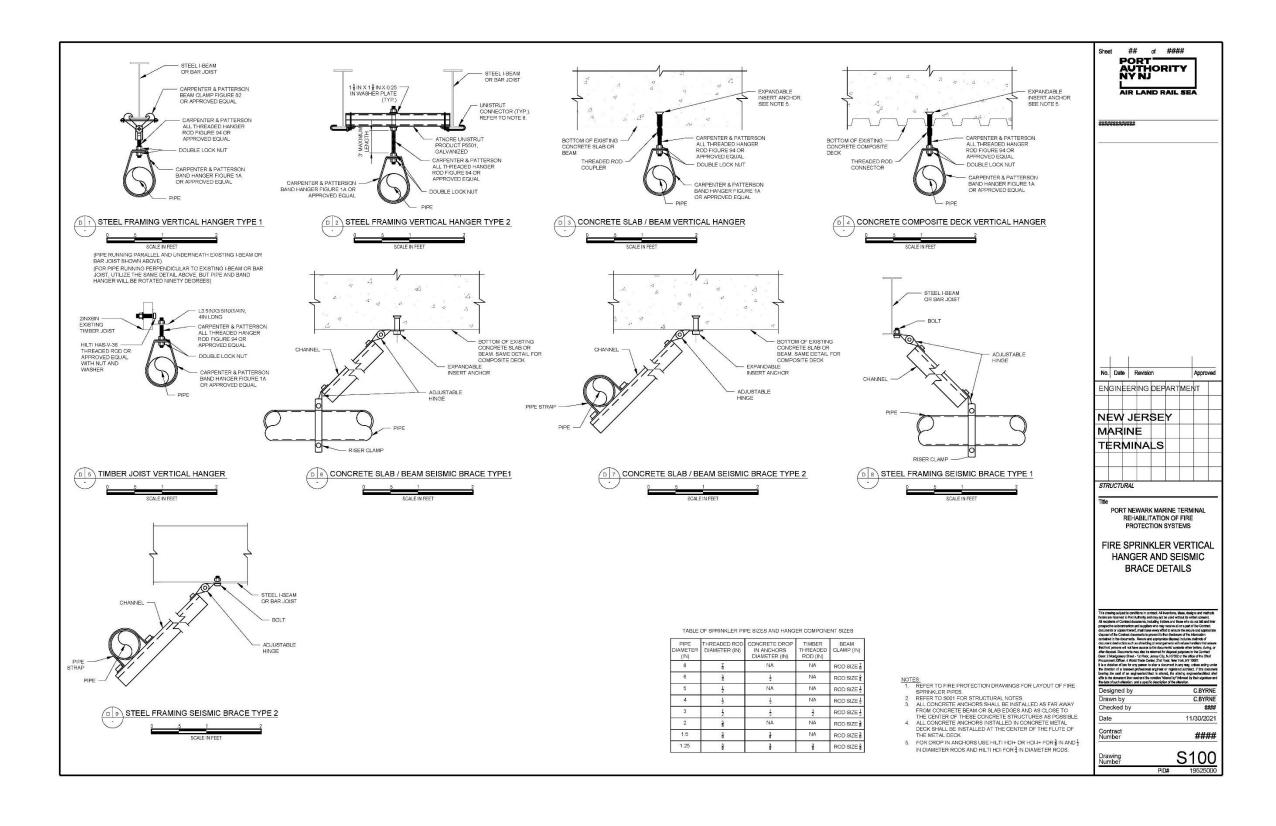
- SEISMIC DESIGN CATEGORY: C MAPPED SPECTRAL ACCELERATION AT SHORT PERIODS: SS = 0.286G
- MAPPED SPECTRAL RESPONSE ACCELERATION AT 1-SECOND PERIODS: S1 = 0.059G SITE CLASS: D
- RESPONSE MODIFICATION FACTOR: R= 4.5
- COMPONENT AMPLIFICATION FACTOR: AP= 2.5 COMPONENT IMPORTANCE FACTOR: 1.5

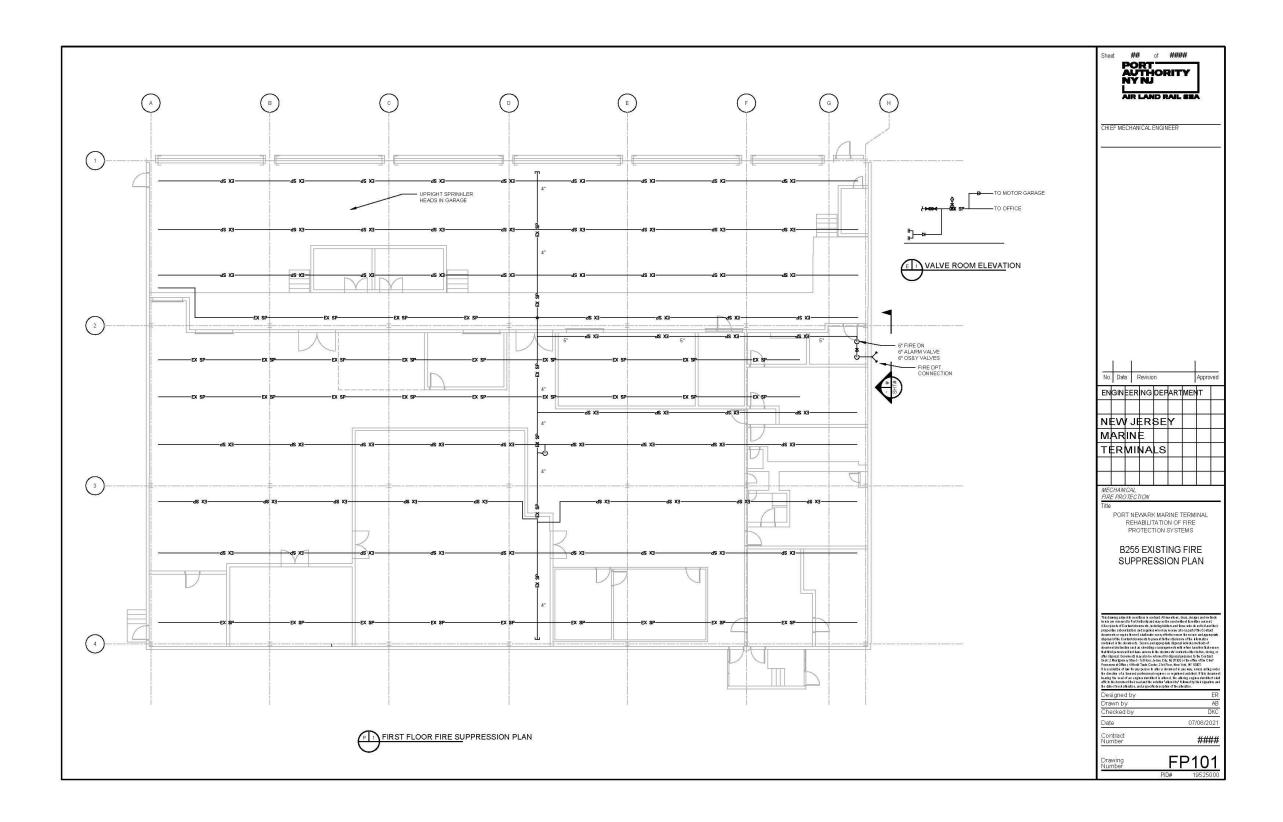
2. RISK CATEGORY: IV

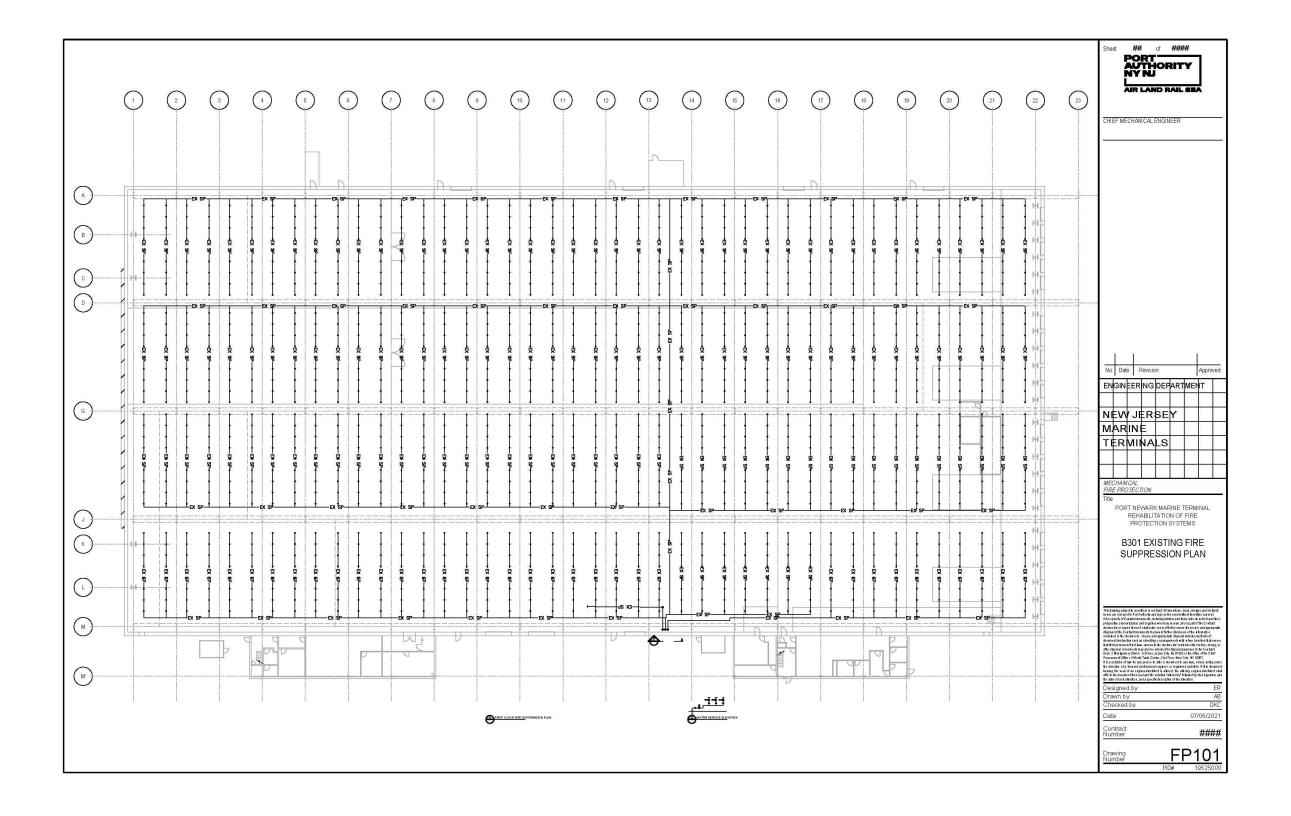
SPRINKLER HANGER AND SEISMIC BRACE NOTES

- 1. FURNISH AND INSTALL VERTICAL HANGERS FOR ALL SPRINKLER PIPING AND THEIR ASSOCIATED COMPONENTS, VERTICAL HANGERS FOR ALL SPRINKLER PIPING AND THEIR ASSOCIATED COMPONENTS, VERTICAL HANGERS FOR ALL SPRINKLER PIPING AND THEIR ASSOCIATED COMPONENTS, PERMANENTLY ATTACHED TO THE STRUCTURES INCLUDING SUPPORTING STRUCTURES AND ATTACHMENTS. SHALL BE IN CONFORMANCE WITH THE 2019 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 13, STANDARD FOR INSTALLATION OF SPRINKLER SYSTEMS.
- 2. FURNISH AND INSTALL SEISMIC PROTECTION FOR ALL SPRINKLER MAIN PIPING AND THEIR ASSOCIATED COMPONENTS. SEISMIC PROTECTION OF SPRINKLER MAIN PIPING SYSTEMS AND THEIR ASSOCIATED COMPONENTS, PERMANENTLY ATTACHED TO STRUCTURES INCLUDING SUPPORTING STRUCTURES AND ATTACHMENTS. SHALL BE IN CONFORMANCE WITH THE 2019 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 13, STANDARD FOR INSTALLATION OF SPRINKLER SYSTEMS. MAIN SPRINKLER PIPING WITH THEIR ASSOCIATED COMPONENTS, AND SEISMIC
- PROTECTION DEVICES SHALL WITHSTAND SEISMIC FORCES AND SEISMIC DEFORMATIONS WITHOUT DISPLACING PERMANENTLY OR OVERTURNING
- ALL SEISMIC PROTECTION DEVICES SHALL BE THE PRODUCT OF ONE MANUFACTURER. THE MANUFACTURER OF SEISMIC PROTECTION OF SPRINKLER PIPING AND THEIR ASSOCIATED COMPONENTS SHALL HAVE A MINIMUM OF FIVE (5) YEARS OF EXPERIENCE ON PROJECTS OF SIMILAR SCOPE AND COMPLEXITY
- ALL VERTICAL HANGER AND SEISMIC PROTECTION DEVICES SHALL BE GALVANIZED PER SPECIFICATION SECTION 211314 TITLED "SPRINKLER FIRE PROTECTION-PIPING AND APPURTENANCES."
- SUBMIT TO THE ENGINEER FOR APPROVAL SEISMIC PROTECTION CALCULATIONS AND SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY.
- SHOP DRAWINGS FOR SEISMIC PROTECTION OF SPRINKLER PIPING AND THEIR
 ASSOCIATED COMPONENTS SHALL INCLUDE, BUT NOT LIMITED TO:
 LOCATIONS PLANS AND ELEVATIONS DIMENSIONALLY INDICATING SPRINKLER PIPING AND THEIR ASSOCIATED COMPONENTS WITH RESPECT TO EXISTING FRAMING, BUILDING COLUMN LINES, WALLS, FINISHED FLOORS AND SUPPORT SPACING.
- COMPUTED LOADING (NON-SEISMIC AND SEISMIC) AT EACH SUPPORT DETAILS OF THE SUPPORT ASSEMBLY IDENTIFYING INDIVIDUAL SUPPORT
- 8. SUBMIT TO THE ENGINEER CATALOG CUTS OF SEISMIC PROTECTION DEVICES AND THEIR COMPONENTS FOR APPROVAL. EACH COMPONENT SUBMITTAL SHALL SPECIFICALLY REFERENCE THE SHOP DRAWING DETAIL(S) SHOWING WHERE THE COMPONENTS ARE TO BE INSTALLED. THE CATALOG CUTS SUBMITTAL SHALL INCLUDE, BUT NOT BE LIMITED TO:
- ITEM, TYPE, MODEL, OR CATALOG NUMBER.
 DIAMETER, THICKNESS, LENGTH, AND WIDTH, ETC.
 MATERIAL (GRADE, TYPE, YIELD STRENGTH, AND ASTM NUMBER, ETC.) AND SURFACE

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REHABILITATION OF FIRE PROTECTION SYSTEMS AT PORT NEWARK, ELIZABETH PORT AUTHORITY MARINE TERMINAL, AND PORT JERSEY – STAGE I REPORT

NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS ENVIRONMENTAL SURVEY REPORTS



NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, PE, & PJ

ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING # 255

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

May 7, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

May 7, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building # 255

255 East Port Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Roney D. Rivero

Senior Project Manager for ATC Group Services LLC Direct Line +1 212 284 0614 Email: roney.rivero@atcgs.com

Attachments

Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

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APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: Asbestos Sample Location Drawings

Appendix C: ACM Location Drawings (N/A for this Project)

Appendix D: Lab Certifications / Accreditations, Company and Personnel Certifications

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Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

EXECUTIVE SUMMARY

On April 9, 2021 ATC completed the inspection for ACM at Port Newark, Building #255 (the Site). The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected fifty-one (51) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, none of the sampled homogeneous areas was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content). These materials are tabulated in Section 4.0.

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the Proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM |
|----------------------|----------------------|-----|
| Philip R. Carrington | AH-88-11798 | ACM |
| Nancy Guevara | AH-14-00412 | ACM |
| Roney D. Rivero | AH-88-06348 | ACM |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 255, date of construction unknown, is located on Port Street west of the intersection of Port and Marlin Streets. The building is an approximately 25 ft. tall one-story building with no basement, has a rectangular footprint of approximately 110 ft. wide by 158 ft. long in plan, with a total of 17,380 square feet of floor area.

The building is being occupied by the Port Authority Port Newark Sign shop for fabricating signs. The building serves as an office space on the southeast corner of the building and as a garage along the north side of the building. The ceiling system is made of suspended lightweight acoustical tile and lightweight perforated metal ceilings.

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

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Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of the building on April 9, 2021 and collected fifty-one (51) bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location. The intent of this survey was to locate and identify all accessible ACM.

The following seventeen (17) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location |
|------------------------------------|------------------------------------|
| 2' X 2' Ceiling Tile Type I | 1st Floor – Office by the Entrance |
| 2' X 2' Ceiling Tile Type II | 1st Floor – Lunch Room |
| 2' X 2' Ceiling Tile Type III | 1st Floor – Locker Room |
| Ceiling Blanket Insulation Backing | 1st Floor – Locker Room |

ATC Project No. 214PNPEPJ1 Page 3

| E'1 1 D' I 14' D | 15t E1 0 CC 1 41 E 4 I 1 D 0 | | |
|---|--|--|--|
| Fiberglass Pipe Insulation Paper on | 1st Floor – Office by the Entrance, Lunch Room & | | |
| Ceiling | Locker Room | | |
| 2' X 2' Ceiling Tile Type IV | 1st Floor – Storage Rooms | | |
| Fiberglass HVAC Duct Insulation Cover | 1st Floor – Office by the Entrance, Lunch Room & Locker Room | | |
| | | | |
| CMU Wall Mortar | 1st Floor – Office by the Entrance, Lunch Room & | | |
| | Locker Room | | |
| Gypsum Board Paper on Wall | 1 st Floor – Office by the Entrance, Lunch Room & | | |
| Gypsum Board Laper on Wan | Locker Room | | |
| C D 1 W 11 | 1 st Floor – Office by the Entrance, Lunch Room & | | |
| Gypsum Board on Wall | Locker Room | | |
| | 1st Floor – Office by the Entrance, Lunch Room & | | |
| Joint Compound on Wall | Locker Room | | |
| Fiberglass HVAC Duct Insulation 2 nd | 1st Floor – Office by the Entrance, Lunch Room & | | |
| Layer | Locker Room | | |
| Layer | Locker Room | | |
| 2' X 2' Ceiling Tile Type V | Printer Room | | |
| | | | |
| Fiberglass Insulation Cover (3" & 4" | Sprinkler Room | | |
| Pipes) | 1 | | |
| Mudded Fitting Insulation 3" Pipe | Sprinkler Room | | |
| Triaded Triang Manadon 5 Tripe | Sprinner resum | | |
| CMU Wall Mortar | Sprinkler Room | | |
| Civio wan moran | Sprinkler Room | | |
| | | | |
| 2' X 2' Ceiling Tile Type VI | Main Lobby | | |

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and review of the analytical results of bulk samples collected, **none of** the materials is asbestos-containing (> 1%).

Laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix B.

The following materials are presumed to be asbestos-containing material (PACM):

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| N/A | Flange & Valve Gaskets - Sprinkler Room | PACM | 15 Units | N/A |

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Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

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6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected fifty-one (51) bulk samples from all suspect asbestos-containing material. Based upon visual inspection and review of the analytical results of bulk samples collected, **none of the materials is asbestos-containing** (> 1%).

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Various types of painted surfaces such as sprinkler pipes and CMU walls, have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 255, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 255, located in Newark, New Jersey.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection. The valve gaskets inside the pipe flanges could not be tested since the sprinkler system is still operational. It is assumed, based on the number of flanges observed, that there are 15 gaskets in the sprinkler room and are presumed to be asbestos containing. This quantity should be verified with destructive sampling if abatement is planned prior to any renovation work.

If questions arise regarding asbestos content in building materials that were not tested by ATC,

ATC Project No. 214PNPEPJ1

Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

additional testing services should be procured to test those areas.

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

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APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES

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Client: ATC - NEW YORK 104 EAST 25TH STREET NEW YORK, NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Sample Date: 4/9/2021

Date Received: 4/9/2021

Date Analyzed: 4/12/2021

ATC Batch # 21-626

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING #255 Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>No</u> | n-Asbestos | NOB_ | Asbestos | |
|-------------|---------------------------------|---|-----------|--------------------------------|--------------------|---|---------------|--|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type | |
| 1 | 1ST FLOOR OFFICE BY ENTRANCE | 2' X 2' CEIUNG TILE TYPE 1 PIN HOLE | NOB-TEM | | 0.0% Vermiculite | 25.3% Organic 46.3% Residue 28.4% Carbonate | NONE DETECTED | |
| 21-626 -1 | | Color: Tan | | | 0.070 Verrillounte | 20.470 Odibonate | NONE BETEOTED | |
| Analyzed By | : Mei Wang | Second Analyst: Roman F | Peysakhov | Comments: NOB PI | LM Inconclusive | | | |
| 2 | 1ST FLOOR OFFICE BY ENTRANCE | 2' X 2' CEILING TILE TYPE 1 PIN HOLE | NOB-TEM | | | 26.1% Organic 51.6% Residue | | |
| 21-626 -2 | | | | | 0.0% Vermiculite | 22.3% Carbonate | NONE DETECTED | |
| Analyzed By | : Mei Wang | Color: Tan Second Analyst: Roman Peysakhov | | Comments: NOB PI | LM Inconclusive | | | |
| 3 | 1ST FLOOR OFFICE BY ENTRANCE | 2' X 2' CEILING TILE TYPE 1 PIN HOLE | NOB-TEM | | 0.00/ Vorminulita | 25.1% Organic 48.9% Residue 26% Carbonate | NONE DETECTED | |
| 21-626 -3 | | | | | 0.0% Vermiculite | 26% Carbonate | NONE DETECTED | |
| Analyzed By | : Mei Wang | Color: Tan Second Analyst: Roman F | Peysakhov | Comments: NOB PI | LM Inconclusive | | | |
| 4 | 1ST FLOOR LUNCH ROOM | 2' X 2' CEIUNG TILE TYPE II | NOB-TEM | | | 13.2% Organic 74.3% Residue | | |
| 21-626 -4 | | | | | 0.0% Vermiculite | 12.5% Carbonate | NONE DETECTED | |
| Analyzed By | : Mei Wang | Color: Tan Second Analyst: Roman Peysakhov | | Comments: NOB PLM Inconclusive | | | | |
| 5 | 1ST FLOOR LUNCH ROOM | 2' X 2' CEILING TILE TYPE II | NOB-TEM | | | 13% Organic 67.7% Residue | | |
| 21-626 -5 | | | | | 0.0% Vermiculite | 19.3% Carbonate | NONE DETECTED | |
| Analyzed By | : Mei Wang | Color: Tan Second Analyst: Roman Peysakhov | | Comments: NOB PLM Inconclusive | | | | |
| 6 | 1ST FLOOR LUNCH ROOM | 2' X 2' CEILING TILE TYPE II | NOB-TEM | | | 13.2% Organic 37.8% Residue | | |
| 21-626 -6 | | | | | 0.0% Vermiculite | 49% Carbonate | NONE DETECTED | |
| Analyzed By | : Mei Wang | Color: Tan Second Analyst: Roman F | Peysakhov | Comments: NOB PI | LM Inconclusive | | | |
| 7 | 1ST FLOOR LOCKER ROOM | 2' X 4' CEILING TILE TYPE III | NOB-TEM | | | 24.5% Organic | | |
| 21-626 -7 | | | | | 0.0% Vermiculite | 42.5% Residue 33% Carbonate | NONE DETECTED | |
| Analyzed By | : Mei Wang | Color: Tan Second Analyst: Roman F | Peysakhov | Comments: NOB PI | LM Inconclusive | | | |

Page 1 of 7 Batch # 21-626 Report Prepared By: Grace Chan



ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | Non-Asbestos | | NOP | Ashestos |
|--------------|---------------------------------|---------------------------------------|----------|-------------------|------------------------------|----------------------------------|---------------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | <u>NOB</u> % Type | <u>Asbestos</u> % Type |
| 8 | 1ST FLOOR LOCKER ROOM | 2' X 4' CEIUNG TILE TYPE III | NOB-TEM | | | 25.3% Organic 52.6% Residue | |
| 21-626 -8 | | Color Ton | | | 0.0% Vermiculite | 22.1% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman P | eysakhov | Comments: NOB PLI | M Inconclusive | | |
| 9 | 1ST FLOOR LOCKER ROOM | 2' X 4' CEILING TILE TYPE III | NOB-TEM | | | 24.8% Organic 56.8% Residue | |
| 21-626 -9 | | | | | 0.0% Vermiculite | 18.4% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman P | eysakhov | Comments: NOB PLI | M Inconclusive | | |
| 10 | 1ST FLOOR LOCKER ROOM | BLANKET INSULATION BACKING CEILING | PLM | 50% Cellulose | 25% Mineral Filler | | |
| 21-626 -10 | | OdbarTara | | 20% FiberGlass | 0.0% Vermiculite 5% Foil | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | | | |
| 11 | 1ST FLOOR LOCKER ROOM | BLANKET INSULATION BACKING CEILING | PLM | 50% Cellulose | 25% Mineral Filler | | |
| 21-626 -11 | | | | 20% FiberGlass | 0.0% Vermiculite 5% Foil | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | 0,0 1 0 | | |
| 12 | 1ST FLOOR LOCKER ROOM | BLANKET INSULATION BACKING CEILING | PLM | 50% Cellulose | 25% Mineral Filler | | |
| 21-626 -12 | | | | 20% FiberGlass | 0.0% Vermiculite 5% Foil | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | 0,0 1 0.1 | | |
| 13 | 1ST FLOOR OFFICE BY ENTRANCE | F/G PIPE INSULATION PAPER CEILING | PLM | 40% Cellulose | 20% Mineral Filler | | |
| 21-626 -13 | | | | 30% FiberGlass | 0.0% Vermiculite 10% Foil | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | 1070 1 011 | | |
| 14 | 1ST FLOOR LUNCH ROOM | F/G PIPE INSULATION PAPER CEILING | PLM | 40% Cellulose | 20% Mineral Filler | | |
| 21-626 -14 | | CLILING | | 30% FiberGlass | 0.0% Vermiculite 10% Foil | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | 10% FOII | | |
| 15 | 1ST FLOOR LOCKER ROOM | F/G PIPE INSULATION PAPER | PLM | 40% Cellulose | 20% Mineral Filler | | |
| 21-626 -15 | | CEILING | | 30% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | 10% Foil | | |
| 16 | 1ST FLOOR STORAGE | 2' X 2' CEILING TILE TYPE IV | NOB-TEM | | | 25.1% Organic | |
| 21-626 -16 | ROOMS | | | | 0.0% Vermiculite | 43.5% Residue 31.4% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman P | evsakhov | Comments: NOB PLI | M Inconclusive | | |
| 17 | 1ST FLOOR STORAGE | 2' X 2' CEILING TILE TYPE IV | NOB-TEM | | | 24.7% Organic | |
| 21-626 -17 | ROOMS | | HOD ILIN | | 0.0% Vermiculite | 42.9% Residue 32.4% Carbonate | NONE DETECTED |
| | Mei Wang | Color: Tan Second Analyst: Roman P | | Comments: NOB PLI | | | |

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| | | | | <u>Non-Asbestos</u> | | | Asbestos |
|---------------|---------------------------------|---------------------------------------|----------|---------------------|---------------------|--------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | <u>NOB</u> % Type | % Type |
| 18 | 1ST FLOOR STORAGE ROOMS | 2' X 2' CEILING TILE TYPE IV | NOB-TEM | | | 24.3% Organic 33.2% Residue | |
| 21-626 -18 | | | | | 0.0% Vermiculite | 42.5% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman P | eysakhov | Comments: NOB PL | M Inconclusive | | |
| 19 | 1ST FLOOR OFFICE BY ENTRANCE | F/G HVAC DUCT INSULATION COVER | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-626 -19 | ENTRANCE | COVER | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Light | Gray | | | | |
| 20 | 1ST FLOOR LUNCH ROOM | F/G HVAC DUCT INSULATION | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-626 -20 | | COVER | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Light | Gray | | | | |
| Analyzed By: | Mei Wang | | | | | | |
| 21 | 1ST FLOOR LOCKER ROOM | F/G HVAC DUCT INSULATION COVER | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-626 -21 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Light | Gray | | | | |
| 22 | 1ST FLOOR OFFICE BY ENTRANCE | CMU MORTAR WALLS | PLM | | 100% Mineral Filler | | |
| 21-626 -22 | LIVITANOL | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Moi Wang | Color: Gray | | | | | |
| 23 | 1ST FLOOR LUNCH ROOM | CMU MORTAR WALLS | PLM | | 100% Mineral Filler | | |
| 21-626 -23 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-020 -23 | | Color: Gray | | | | | |
| Analyzed By: | Mei Wang | · | | | | | |
| 24 | 1ST FLOOR LOCKER ROOM | CMU MORTAR WALLS | PLM | | 100% Mineral Filler | | |
| 21-626 -24 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Gray | | | | | |
| 25 | 1ST FLOOR OFFICE BY | GYPSUM BOARD PAPER - | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-626 -25 | ENTRANCE | WALLS | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | n | | | | |
| Analyzed By: | Mei Wang 1ST FLOOR LUNCH ROOM | GYPSUM BOARD PAPER - | DIM | 050/ 0-11-1 | FO/ Minaral Fills | | |
| 26 | 151 FLOOR LUNCH ROOM | WALLS | PLM | 95% Cellulose | 5% Mineral Filler | | NONE DETECTED |
| 21-626 -26 | | Color: Brow | n | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | 0001. 2101 | | | | | |
| 27 | 1ST FLOOR LOCKER ROOM | GYPSUM BOARD PAPER - WALLS | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-626 -27 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Brow | n | | | | |
| , many200 by. | . mor truing | | | | | | |
| | | | | D 02 000 | | | |

Report Prepared By: Grace Chan Page 3 of 7 Batch # 21-626



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| | | | | Non-Asbestos | | <u>NOB</u> | Asbestos |
|--------------|---------------------------------|-----------------------------------|----------|-------------------|------------------------------|-----------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 28 | 1ST FLOOR OFFICE BY ENTRANCE | GYPSUM BOARD | PLM | 5% Cellulose | 85% Mineral Filler | | |
| 21-626 -28 | ENTRANCE | | | 10% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzad Dy | Mai Wana | Color: Off V | Vhite | | | | |
| Analyzed By: | 1ST FLOOR LUNCH ROOM | GYPSUM BOARD | PLM | 5% Cellulose | 85% Mineral Filler | | |
| | 1011 LOOK LONGITHOOM | OTT OOM BOARD | FLIVI | 10% FiberGlass | | | NONE DETECTED |
| 21-626 -29 | | Color: Off V | Vhite | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | 0001. 011 1 | Time | | | | |
| 30 | 1ST FLOOR LOCKER ROOM | GYPSUM BOARD | PLM | 5% Cellulose | 85% Mineral Filler | | |
| 21-626 -30 | | | | 10% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Moi Wong | Color: Off V | Vhite | | | | |
| 31 | 1ST FLOOR OFFICE BY | JOINT COMPOUND | PLM | | 100% Mineral Filler | | |
| | ENTRANCE | | 7 2111 | | 0.0% Vermiculite | | NONE DETECTED |
| 21-626 -31 | | Color: Whit | e. | | 0.0% vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Oddi. Will | | | | | |
| 32 | 1ST FLOOR LUNCH ROOM | JOINT COMPOUND | PLM | | 100% Mineral Filler | | |
| 21-626 -32 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | Moi Wong | Color: Whit | e | | | | |
| Analyzed By: | 1ST FLOOR LOCKER ROOM | JOINT COM POUND | PLM | | 100% Mineral Filler | | |
| | TOT TEGOR EGGRENT GOM | COUNT COUNT COME | i Livi | | | | NONE DETECTED |
| 21-626 -33 | | Color: Whit | in a | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Oddi. Willi | L. | | | | |
| 34 | 1ST FLOOR OFFICE BY ENTRANCE | HVAC DUCT INSULATION 2NI LAYER | PLM | 60% Cellulose | 20% Mineral Filler | | |
| 21-626 -34 | ENTITUTOE | D.VI.E.V. | | 10% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | Moi Wong | Color: Tan | | | 10% Foil | | |
| Analyzed By: | 1ST FLOOR LUNCH ROOM | HVAC DUCT INSULATION 2NI | D PIM | 60% Cellulose | 20% Mineral Filler | | |
| | 1311 EGGN EGNOTTNOOM | LAYER | - FLIVÍ | 10% FiberGlass | | | NONE DETECTED |
| 21-626 -35 | | Color: Tan | | | 0.0% Vermiculite 10% Foil | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color. Tall | | | | | |
| 36 | 1ST FLOOR LOCKER ROOM | HVAC DUCT INSULATION 2NI LAYER | D PLM | 60% Cellulose | 20% Mineral Filler | | |
| 21-626 -36 | | | | 10% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | 10% Foil | | |
| 37 | 1ST FLOOR PRINTER ROOM | 2 X 2 CEII ING TII F TYPF 5 | NOB-TEM | | | 12.7% Organic | |
| | .511 LOGICI MINIELICINOOM | ZAZ OCILITO HILL THE U | INOD-IEM | | 0.09/ Namia: Ilia | 40.2% Residue | NONE DETECTED |
| 21-626 -37 | | Color: Tan | | | 0.0% Vermiculite | 47.1% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Second Analyst: Roman | | Comments: NOB PLI | // Inconclusive | | |

Report Prepared By: Grace Chan Page 4 of 7 Batch # 21-626



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04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | Non | -Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|---------------|-----------------------------|--|-------------|--------------------------------|-----------------------------|----------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 38 | 1ST FLOOR PRINTER ROOM | 2 X 2 CEILING TILE TYPE 5 | NOB-TEM | | | 13.9% Organic | |
| 21-626 -38 | | | | | 0.0% Vermiculite | 60.7% Residue 25.4% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman Po | eysakhov | Comments: NOB PLI | M Inconclusive | | |
| 39 | 1ST FLOOR PRINTER ROOM | 2 X 2 CEILING TILE TYPE 5 | NOB-TEM | | | 14.5% Organic | |
| 21-626 -39 | | | | | 0.0% Vermiculite | 65.6% Residue 19.9% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman P | eysakhov | Comments: NOB PLI | VI Inconclusive | | |
| 40 | 1ST FLOOR SPRINKLER | F/G INSULATION OVER 3" & 4" | PLM | 60% Cellulose | 15% Mineral Filler | | |
| 21-626 -40 | ROOM | PIPES | | 20% FiberGlass | 0.0% Vermiculite 5% Foil | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | 070 1 011 | | |
| 41 | 1ST FLOOR SPRINKLER | F/G INSULATION OVER 3" & 4" | DI M | 60% Cellulose | 15% Mineral Filler | | |
| 41 | ROOM | PIPES | FLIVI | 20% FiberGlass | | | |
| 21-626 -41 | | | | | 0.0% Vermiculite 5% Foil | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | | | |
| 42 | 1ST FLOOR SPRINKLER ROOM | F/G INSULATION OVER 3" & 4" PIPES | PLM | 60% Cellulose | 15% Mineral Filler | | |
| 21-626 -42 | NO OIII | 1 11 23 | | 20% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan | | | 5% Foil | | |
| Analyzed By: | | | | | | | |
| 43 | 1ST FLOOR SPRINKLER ROOM | MUDDED FITTING INSULATION 3" PIPE | PLM | 5% Cellulose | 70% Mineral Filler | | |
| 21-626 -43 | | | | 25% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analona d Don | MailWann | Color: Light C | Gray | | | | |
| Analyzed By: | · | | | | | | |
| 43 | 1ST FLOOR SPRINKLER ROOM | MUDDED FITTING INSULATION 3" PIPE | PLM | 5% Cellulose 25% FiberGlass | 70% Mineral Filler | | |
| 21-626 -44 | | | | 20/0 TiberOlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Light C | Gray | | | | |
| 45 | 1ST FLOOR SPRINKLER | MUDDED FITTING | PLM | 5% Cellulose | 75% Mineral Filler | | |
| | ROOM | INSULATION 3" PIPE | | 20% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-626 -45 | | Color: Light C | - - - | | 0.070 Vermiculte | | NONE DETECTE |
| Analyzed By: | Mei Wang | Oolor. Eight C | , | | | | |
| 46 | 1ST FLOOR SPRINKLER ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-626 -46 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | | | |
| 47 | 1ST FLOOR SPRINKLER ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-626 -47 | NOOW | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan | | | | | |
| Analyzed By: | Mei Wang | | | | | | |

Report Prepared By: Grace Chan Page 5 of 7 Batch # 21-626



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| 100 | | | | Non-Asbestos | | <u>NOB</u> | Asbestos | |
|-----------------------|-----------------------------|---|-----------|--------------------------------|---------------------|--------------------------------|---------------|--|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type | |
| 48 | 1ST FLOOR SPRINKLER ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | | |
| 21-626 -48 | | | | | 0.0% Vermiculite | | NONE DETECTED | |
| | | Color: Tan | | | | | | |
| Analyzed By | r: Mei Wang | | | | | | | |
| 49 | 1ST FLOOR MAIN LOBBY | 2 X 2 CEILING TILE TYPE 6 SMOOTH | NOB-TEM | | | 14.6% Organic 75.6% Residue | | |
| 21-626 -49 | | | | | 0.0% Vermiculite | 9.8% Carbonate | NONE DETECTED | |
| Analyzed By | r: Mei Wang | Color: Tan Second Analyst: Roman Peysakhov | | Comments: NOB P | LM Inconclusive | | | |
| 50 | 1ST FLOOR MAIN LOBBY | 2 X 2 CEILING TILE TYPE 6 SMOOTH | NOB-TEM | | | 15% Organic 82.7% Residue | | |
| 21-626 -50 | | | | | 0.0% Vermiculite | 2.3% Carbonate | NONE DETECTED | |
| Analyzed By: Mei Wang | | Color: Tan Second Analyst: Roman Peysakhov | | Comments: NOB PLM Inconclusive | | | | |
| 51 | 1ST FLOOR MAIN LOBBY | 2 X 2 CEILING TILE TYPE 6 SMOOTH | NOB-TEM | | | 11.7% Organic 63.5% Residue | | |
| 21-626 -51 | | | | | 0.0% Vermiculite | 24.8% Carbonate | NONE DETECTED | |
| Analyzed By | r: Mei Wang | Color: Tan Second Analyst: Roman | Peysakhov | Comments: NOB P | LM Inconclusive | | | |

Report Prepared By: Grace Chan Page 6 of 7 Batch # 21-626



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Non-Asbestos <u>NOB</u> Asbestos Type of Material Sample # Location Method % Fibrous % Non-Fibrous % Type % Type NOTES 1) The Limit of Detection is the same as the Reporting Limit for these results. 2) The Reporting Limit (RL) is the Limit of Quantitation. For point counts the limit of quantitation of 0.25%; based on one asbestos point counter over 400 non-empty points 3) Asbestos Containing Material (ACM) Definition: > 1% asbestos by weight is considered an ACM 4) Disclaimer: The laboratory is not responsible for sample collection. Please refer to enclosed letter. This report may not be reproduced, except in full, without written approval by ATC Group Services. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This report relates only to the samples reported above as described in the chain of custody. Quality control data is available upon request. 5) Accredited by NVLAP #101187-0 and by NY State ELAP #10879 6) Confidentally Notice: The document(s) contained herein are confidential and privileged information, intended for the exclusive use of the individual or entity named above. 7) Liability Notice: ATC Group Services and its personnel shall not be liable for any misinformation provided to us by the client regarding these samples. This report relates only to samples submitted and analy 8) Asbestos results are reliable to 2 significant figures 9) The condition of all samples was acceptable upon receipt 10) The laboratory certifies that the test results meetall requirements of NELAC. 11) Supplement to test report batch # __ Amendments: ____ Amendment Dates: ___ _. Amended by: __ 12) PLM Letter is attached on this report. 13) TRACE: The result is reported as Trace when No points are counted and asbestos is identified. For ELAP Trace is < 1%. 14) ATC Group Services certifies that this report is an accurate and authentic report of the results obtained from the laboratory analysis 15) The uncertainty for these test results is available upon request. 16) ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite. For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 1986.

| Mei Wang WeiWay | Mei Wang Weike |
|--------------------------|---------------------------------|
| Analyst: | Approved by Quality Manager: |
| Roman Peysakhov Analyst: | |

This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Report Prepared By: Grace Chan Page 7 of 7 Batch # 21-626



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely,

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiley Bousson

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ATC EFFECTIVE DATE 01/18/2021 REVISION #32

Page 1 of 1 DOCUMENT #DB4A

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BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

21-626

| 1. Clien | t | | Proie | ct Name: | | 3a. ATC Project No.: | 4a. Project Manager: |
|----------|----|------------------------------|------------------------------|----------|---------------------------------------|--|---|
| PANYNJ | | FIRE | FIRESPRINKLER REHABILITATION | | 214PNPEPJ1 | R. Rivero | |
| | | | 2a. Proj | | s: <mark>(Circle One)</mark> PE PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: | 21 | BUILDING NU Sampling Are | 20 | | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1 st Positive |

|). | | 12. | 13. | 14. | | 15. | 16. |
|-----------------------|-----------------------|------------------------|-------------------|-------|--------------------|------------------------|----------|
| omogenous Area No. | Bulk Sample ID No. | Material | Thermal System | | Sample Location | Material Total Qty. | Asbestos |
| | | , | - Cyclom | Floor | Sample Coordinates | (LF, SF, PCS) | |
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| 3 | 7 | 2×4' CHUNG put | | | LOCKER TROVY | | |
| 3 | 8 | TYPE ITT | | | (1 | | |
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| 5 | 13 | FIG PAPE INSURDI | 9 | | -OFFICE BY RAMMER | | |
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| 5 | 15 | CALING | | | - LOCKER ROA | | |
| 6 | 16 | CHUNG 2×2 CRIVIC PU | 5 | | 510 PAGE 120045 | | |
| 6 | 13 | TYPEIN | | | 11 | | |
| 6 | ik | 1 | | | 10 | | |

| CHAIN OF CUSTODY | | | | | | |
|---------------------|----------|----------|-----------------|----------|----------|-------------------------|
| 17. Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
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| III. | QC E | Y | 608 | | | Other |

| 24. Name and Signature: | 25. Date | 26 Time | 27. Comments (Lab) |
|-----------------------------------|----------|---------|--------------------|
| 24a. Analyzed By: INTI While Cope | 4/10/21 | (03-71 | 33PLm |
| 24b. Analyzed By: REUSKANON DA | 4/12/18 | 10:00 | |
| 24c. QC By: | 1,4,1 | | |



BATCH NO. Page of

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

21-626 mx

| 1. Client PANYNJ | | Project Name: FIRESPRINKLEI | R REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero | |
|-------------------|-------------------------------|--------------------------------|---------------------------------------|---|---|--|
| | | 2a. Project Address | s: <mark>(Circle One)</mark> PE PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON | |
| 5. Date: 4/9/2/ | 6. BUILDING N 7. Sampling Are | TOTAL | | me: RS o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1st Positive | |

| BULK S | AMPLE L | OCATION | | | | | |
|--------|------------------------------|-----------------|--------------------------|--------------|------------------------------------|--|---|
| | 11. Bulk Sample ID No. | 12. Material | 13. Thermal System | 14. Floor | Sample Location Sample Coordinates | 15. Material Total Qty. (LF, SF, PCS) | 16. Asbestos Content (Type & % |
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| 17. Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
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| II. III. | | | 1119 | | 2.10 | Other |

| 24. Name and Signature: | 25. Date | 26 Time | 27. Comments (Lab) |
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| 24a. Analyzed By: MEL Work -6 | 4110121 | 10 401 | |
| 24b. Analyzed By: Research VIII | 4/12/01 | 10:00 | |
| 24c. QC By: | 4. 4/21 | | |



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| BATCH NO. | Page) of | 1 |
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| | PANYN | NJ | | INKLER REF | | TION | 3a. ATC Project No.: 214PNPEPJ1 | | | Manager: R. Rivero |) |
|---|-----------------------|--|-------------|----------------|----------------|--------|---|---------|--------------------|---|-------------------|
| | | | | Address: (Circ | cle One) PJ | | 3b. Task No.: 0001 | 4 | b. Inspec | | |
| 5. Date: | 6. BI | UILDING NUMB | ER: | | Turnaro | | | | 9. Comm | ent s (Field) | EDARK BYMON |
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| ULKS | AMPLE L | OCATION | | | | | | | | | |
|), omodenous | 11. Bulk Sample ID | 12. | Material | | 13. Thermal | 14. | Sample Location | | 12 | | 16. |
| Area No. | No. | | Waterial | | System | Floor | Sample Coord | | | Material Total Qty. (LF, SF, PCS) | Asbesto Conten |
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ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | | | BULK AS | BESTO | S ANAL | /SIS SH | EET | | | | OLYMPUS BH-2 NIKON OPTIPHO |
|--|--|--|-----------|----------|-------------|---------------------------------------|--------------|--------------|---|---|--|
| | Client / Project PANYNJ/ | P | PA | | | | | Project | Number 214PN | IPEPJ1 | |
| | Analysis Date 4/[0/2 | 021_ Analyst | | U | <u></u> | | | Batch N | lumber 21- | 526 _т | EMPERATURE C |
| 1 Number | Stereoscopic Exam | | ı | PLM Op | tical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction | Rii | RII DS | Calor Color | , Pleo Bire | ef Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗀 | \ / | | | | | | | | Amosite | Fiberglass | Organic Binde |
| ommended 🗆 | Homogeneity Vermiculile | | | | | | | | Other | Other | Vermiculite* |
| gravimetric/ | # of Layers Asbestos | | | | | | | | | | Other |
| alysis sheet for results | Color of Layer Detected Yes No | | | | | | | | | ☐ Cellulose Ondulose | |
| | Baist Carretal Clide 1 Clide 2 5 | lide 2 Clide 4 | Oliza E T | 0:4- n T | 084-7 | 0:0 | A-L 0/ DT | | 0(0-1-0-0/3/ | Extinction ☐ Fiberglass Isotopic | |
| SM-V | | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Synthetic High | * If warminglish is a 400% than |
| Required 🗆 | l | | | | | | | | | Birefringence ☐ Horse Hair: Scales, | If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM 0 VC | / | | | | | 2 | la | V | Low to Moderate | might be underestimated. See Note #1. |
| alysis sheet for results | Comments: | À | | | | | | | | Birefringence | |
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| 2 | Stereoscopic Exam | | | 21 M On | tical Pro | portion | | | Asbestos | Other Fibrous | Non Fibrous |
| Number | Occidospio Exam | Morph Extinction | | | Color Color | | ef Sign Oth | ner Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | ColorTexture | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required 🖵 | Homogeneity Vermiculite | | | | | | | | Amosite | Fiberglass | Organic Binde |
| commended 🗓 | | | | | | | | | Other | Other | Vermiculite* |
| gravimetric 🏳 | # of Layers Asbestos /_ | | | | | | | | | | Other |
| alysis sheet (for results | Color of Layer Detected Yes No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass (sotopic | |
| | PLM | | | | | | | | | ☐ Synthetic High | * If vermiculite is >10% the |
| Required 🗀. | NOB PLM O N | | ļ | | | | 29 | 5 | : 3 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a samp might be underestimated. |
| See SM-V 🗍 nalysis sheet | Comments: | 7 | | | 1 | | 2>* | 2 | · V | Low to Moderate Birefringence | See Note #1. |
| for results | | SCANNING OPTION | ON | | Q.C | • 🗇 | | | | | |
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| 3 Number | Stereoscopic Exam | | i | PLM Op | tical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color C Texture | Morph Extinction | RII | RÍ∥ DS | Color Color | , Pleo Bir | ef Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler |
| Required [] | \ / | | | | | | | | Amosite | Fiberglass | Organic Binde |
| ommended 🗍 | Homogeneity Vermiculite | | | | | | | | Other | Other | Vermiculite* |
| gravimetric 🗖 | # of Layers Asbestos | | | | | | | | | | Other |
| nalysis sheet | Color of Layer Detected Yes No | ļ | | | | | | | | ☐ Cellulose Ondulose | Other |
| for results | | | | | | | | | | Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 8 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fibergiass Isotopic | |
| Required 🗌 | | ······································ | F | | | | | - | | | |
| | PLM | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samo |
| See SM-V □ | HOR RIVE OF NE | | | | | | O | 2m | | Birefringence ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a samp might be underestimated. |
| nalysis sheet | HOR RIVE OF NE | | | | | | U | کہ | J | Birefringence □ Horse Hair: Scales, | level of asbestos in a samp |
| | NOB PLM O \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | SCANNING OPTH | ON | | Q. 0 | . □ | O | کـــ | | Birefringence ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a samp might be underestimated. |
| nalysis sheet for results | NOB PLM O C | 7 | | | | | 6 | کـــ | ري Asbestos | Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | level of asbestos in a samp might be underestimated. |
| nalysis sheet | NOB PLM O \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | SCANNING OPTI | 1 | | tical Pro | perties | | | Asbestos Resuits PLM % | Birefringence ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % |
| nalysis sheet for results | NOB PLM O C | 7 | 1 | | | perties | | her Identity | | Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | level of asbestos in a samp might be underestimated. See Note #1. |
| alysis sheet for results 4 Number | NOB PLM O PLAN Comments: Method: DELAP PA PLAN COLOR Texture | SCANNING OPTI | 1 | | tical Pro | perties | | | Results PLM % | Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % |
| nalysis sheet for results 4 Number Gravimetric | NOB PLM Comments: Method: DELAP DEPA Comments: Stereoscopic Exam | SCANNING OPTI | 1 | | tical Pro | perties | | | Results PLM % Chrysotile | Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| A Number Gravimetric Required | NOB PLM O PLAN Comments: Method: DELAP PA PLAN COLOR Texture | SCANNING OPTI | 1 | | tical Pro | perties | | | Results PLM % Chrysotile Amosite | Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | Non Fibrous PLM % Mineral Filler Organic Binde |
| All Number Gravimetric Required Gravimetric gravimetric Gravimetric gravimetric Gravimetr | NOB PLM O PLAN Comments: Method: ELAP EPA Color Texture Homogeneity Vermiculite | SCANNING OPTI | 1 | | tical Pro | perties | | | Results PLM % Chrysotile Amosite | Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % Mineral Filler Organic Binde Vermiculite* |
| 4 Number Gravimetric Required gravimetric gravimetric prayingtric | NOB PLM O PLA Comments: Method: DELAP DEPA COLOR Texture Floring Plants Asbestos Color of Layer Detected Yes No | SCANNING OPTI | K!T | RI DS | tical Pro | pperties r, Pleo Bir | ef Sign Ott | ber Identity | Results PLM % Chrysotile Amosite Other | Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % Mineral Filler Organic Binde Vermiculite* |
| All Number Gravimetric Required Gravimetric gravimetric Gravimetric gravimetric Gravimetr | NOB PLM Comments: Method: DELAP DEPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 S | SCANNING OPTI | 1 | | tical Pro | perties | | | Results PLM % Chrysotile Amosite | Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % Mineral Filler Organic Binde Vermiculite* Other |
| 4 Number Gravimetric Required gravimetric gravimetric prayingtric | NOB PLM Comments: Method: DELAP DEPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 S | SCANNING OPTI | K!T | RI DS | tical Pro | pperties r, Pleo Bir | ef Sign Ott | ber Identity | Results PLM % Chrysotile Amosite Other | Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % Mineral Filler Organic Binde Vermiculite* |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☑ ELAP □ EPA

SCANNING OPTION

analysis sheet for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:\(\text{LAB_FORMS_DOCUMENTS} \) AND RECORDS\(\text{OPTICALASBESTOS_BULKASBESTOS} \) BULKASBESTOS BULK FORMS 2020\(\text{BULK ASBESTOS} \) ANALYSIS SHEET_FORM #82.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Low to Moderate Birefringence

See Note #1.

Q.C. □

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET

Project Number 214PNPEPJ1 Client / Project PANYNJ/ PA 23 21-626 Analysis Date 4// 2021 Analyst Batch Number Asbestos Other Fibrous Non Fibrous 5 Stereoscopic Exam **PLM Optical Properties** Results PLM % PIM % PIM % RI || DS Color Color, Pleo Biref Mineral Filler Fiberglas Amosite Organic Binde Required [_Vermiculite f of Layers Other analysis sheet Color of Layer Cellulose Ondufose for results Fiberglass Isotopi %Asb. Or %Ver. Slide 2 Slide 4 Asb, Ner, PT Total PT SM-V Point Counts Slide 1 Slide 3 Slide 5 Slide 6 Slide 7 PL! Required [vet of asbestos in a samp Horse Hair: Scale: might be underestimated. ڑے NOB PLM See SM-V Low to Moderate analysis sheet Q.C. Method: DELAP DEPA SCANNING OPTION Asbestos Non Fibrous 6 **PLM Optical Properties** Stereoscopic Exam Results PLM 9 PLM % PLM % Cellulose Mineral Filler Gravimetri And Texture Fiberglas _ Organic Binder Required Other Other Vermiculite* analysis shee for results Slide 5 Slide 6 Slide 7 Slide 8 | Asb,/Ver, PT | Total PT %Asb. Or %Ver. Fiberglass (sotopi SM-V Synthetic High f vermiculite is >10% the PLI Required [Birefringence evel of asbestos in a sample Horse Hair: Scales might be underestimated. NOB PLA See SM-V 🖺 Low to Moderate See Note #1, analysis sheet Method: DELAP DEPA Q.C. 7 SCANNING OPTION Non Fibrous Asbestos Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PIM % PLM % Gravimetri Chrysoti Mineral Filler __Organic Binde Required [Amosite Other Other Vermiculite¹ See gravimetric analysis sheet for results Extinction Fiberglass Isotop Slide 6 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Point Counts Slide 1 Slide 2 Slide 4 Slide 5 Slide 7 SM-V If vermiculite is >10% the PLM Birefringence evel of asbestos in a sample Horse Hair: Scales, night be underestimated NOB PLM Low to Moderate See SM-V Birefringence analysis sheet Comments: Method: DEPA T SCANNING OPTION Q.C. 🗌 Asbestos Other Fibrous Non Fibrous 8 Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Chrysotile Cellulose Mineral Filler Gravimet Fibergla: _Organic Binder Require Homogeneity (/ Other Other Other See gravimetric analysis sheet Color of Laver Cellulose On Extinction for results Fiberglass Isotopi %Ash, Or %Ver Point Counts Slide 1 Slide 2 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Birefringence Required [vel of asbestos in a sampl Horse Hair: Scales. might be underestimated NOB PLM D Y \supset See SM-V Low to Moderate analysis sheet Comments for results

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: DELAP EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% Vermiculite, with the exception of surfacing material that contains Vermiculite (SM-V). For samples containing \$10% Vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

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ATC - New York

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| BULK ASBESTOS ANALYSIS SHEET | BULK | ASBES | TOS | ANAL | YSIS | SHEE | Т |
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|------------------------------|------|-------|-----|------|------|------|---|

| Client / Project | PANYNJ/ | PA | | Project Number | 214PNPEPJ |
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| 22 | Analysis Date 4/(3/12 | OZI Analyst | | | | | | | lumber 21- | | EMPERATURE*C |
|--|---|--|---------|----------------------|-------------------------------------|--------------------------------------|-----------|--|---|---|--|
| 1 9 Field Number | Stereoscopic Exam | | | - | tical Pro | | 5 | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture F | Morph Extinction | RII | RI I DS | Color Colo | r, Pleo Bir | ef Sign | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗐 | Homogeneity Vermiculite | | | | | | : | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Layers Asbestos | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | | | | | | | | | | | Other |
| for results | Color of Layer Detected Yes No | | | | | | : | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM 2 Y | | | | | | 0 | 200 | V | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | | Birefringence | |
| | Method: ☐ ELAP ☐ EPA | SCANNING OPTI | ON | | Q.C | C. 🗆 | 11.70 | | | | |
| 2 10 | Stereoscopic Exam | | | PLM Op | tical Pro | operties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Field Number | | Morph Extinction | RII | RII DS | Color Colo | r, Pleo Bir | ef Sign | Other Identity | Park | PLM % | PLM % |
| Gravimetric Required | Color Lim Texture | | | | | | | | Chrysotile | Cellulose 7 V Fiberglass | Mineral Filler Organic Binders |
| Recommended | Homogeneity Vermiculite | | | | | | | | Other | Other | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | 4 | | | | | | | / | | Other / |
| analysis sheet for results | Color of Layer Detected Yes No | | | | | | | | | Cellulose Ondulose | foil |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | J |
| 2000 | PIM OT NA | | 37K07KR | N. STATE OF STATE OF | 300000 | | 9 | HO 104970501555 | J | Synthetic High | * If vermiculite is >10% the |
| Required | NOB PLM | | | | | | | n | | Birefringence ☐ Horse Hair; Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | Comments: | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | | SCANNING OPTI | ON | | 10.0 | c. 🗆 | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | I W EX |
| 3 11 Field Number | Stereoscopic Exam | | | | otical Pro | - Zhannan | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| 224000000 100 EX | Stereoscopic Exam Color Texture | Morph Extinction | RII | | otical Pro | - Zhannan | ef Sign | Other Identity | | PLM % Cellulose | Committee of the Commit |
| Field Number | - 1 | Morph Extinction | RI1 | | | - Zhannan | ef Sign | Other Identity | Results PLM % | PLM % | PLM % Mineral Filler Organic Binders |
| Field Number Gravimetric | Color Texture | Morph Extinction | RII | | | - Zhannan | ef Sign | Other Identity | Results PLM % Chrysotile | PLM % Cellulose | PLM % Mineral Filler |
| Gravimetric Required Recommended See gravimetric | Color _ Contracture _ C | Morph Extinction | RII | | | - Zhannan | ef Sign | Other Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* Other |
| Gravimetric Required Recommended | Color Texture | | RII | | | - Zhannan | ef Sign | Other Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | Mineral Filler Organic Binders Vermiculite* |
| Gravimetric Required Recommended See gravimetric analysis sheet | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No | | RI1 | | | - Zhannan | ef Sign | | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic | PLM % Mineral Filler Organic Binders Vermiculite* Other |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Color Texture Homogeneity Vermiculite Homogeneity Vermiculite Homogeneity Detected Yes No Point Counts Slide 1 Slide 2 | 0 | | RII DS | Color Colo | or, Pleo Bir | | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction | PLM % Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required Required | Color Texture Homogeneity Vermiculite Homogeneity Vermiculite Homogeneity Detected Yes No Point Counts Slide 1 Slide 2 | 0 | | RII DS | Color Colo | or, Pleo Bir | Asb./Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Color Texture Homogeneity Vermiculite Homogeneity Vermiculite Homogeneity Point Counts Slide 1 Slide 2 PLM | 0 | | RII DS | Color Colo | or, Pleo Bir | Asb./Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the level of asbestos in a sample |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V See SM-V | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | 0 | Slide 5 | RII DS | Slide 7 | or, Pleo Bir | Asb./Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Piberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA | Slide 3 Slide 4 | Slide 5 | RI DS | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Piberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Slide 3 Slide 4 | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Piberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA | Slide 3 Slide 4 | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | PLM % Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required Requi | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No. Point Counts Slide 1 Slide 2 PLM | Slide 3 Slide 4 | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Piberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required Recommended Recommended | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM NOB PLM Comments; Method: DELAP DEPA ELAP ELAP ELAP ELAP ELAP ELAP ELAP ELAP ELAP ELAP | Slide 3 Slide 4 | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile | PLM % Cellulose Piberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Syntheth High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required Requi | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Note | Slide 3 Slide 4 SCANNING OPTI Morph Extinction | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other Other |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required Recommended See gravimetric See gravimetric | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM NOB PLM Comments; Method: DELAP DEPA ELAP ELAP ELAP ELAP ELAP ELAP ELAP ELAP ELAP ELAP | Slide 3 Slide 4 SCANNING OPTI Morph Extinction | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Piberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Other Cellulose Other | PLM % Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No. Point Counts Slide 1 Slide 2 PLM | Slide 3 Slide 4 SCANNING OPTI Morph Extinction | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Other Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other Other |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments; Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 SCANNING OPTI Morph Extinction | Slide 5 | RII DS | Slide 7 Q. Otical Pro Color Colo | Slide 8 C. operties or, Pleo Bir | Asb./Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Cellulose Ondulose Extinction Cellulose Ondulose Extinction Cellulose Ondulose Extinction Cellulose Synthetic High Birefringence Other Fibrous PLM % Cellulose Cellulose Other Cellulose Other Cellulose Other Cellulose Other Cellulose Other Cellulose Other Cellulose Other Cellulose Other Companion Cellulose Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other Other |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No. Point Counts Slide 1 Slide 2 PLM Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No. Point Counts Slide 1 Slide 2 PLM Slide 1 Slide 2 PLM Slide 1 Slide 2 PLM Slide 1 Slide 2 PLM Slide 1 Slide 2 PLM Slide 1 Slide 2 Slide 1 Slide 2 PLM Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 | Slide 3 Slide 4 SCANNING OPTI Morph Extinction | Slide 5 | RII DS | Slide 7 Q. Otical Pro Color Colo | Slide 8 C. operties or, Pleo Bir | Asb./Ver. | Other Identity PT Total PT PT Total PT | Asbestos Results PLM % Asbestos Results PLM % Ash. Or %Ver. Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Plus Fiberglass Other Cellulose Fiberglass isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No. Point Counts Slide 1 Slide 2 PLM Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No. Point Counts Slide 1 Slide 2 PLM Slide 1 Slide 2 PLM Slide 1 Slide 2 PLM Slide 1 Slide 2 PLM Slide 1 Slide 2 PLM Slide 1 Slide 2 Slide 1 Slide 2 PLM Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 Slide 1 Slide 2 | Slide 3 Slide 4 SCANNING OPTI Morph Extinction | Slide 5 | RII DS | Slide 7 Q. Otical Pro Color Colo | Slide 8 C. operties or, Pleo Bir | Asb./Ver. | Other Identity PT Total PT PT Total PT | Asbestos Results PLM % Asbestos Results PLM % Ash. Or %Ver. Chrysotile Amosite Other | PLM % Cellulose Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Cellulose Other Cellulose Other Cellulose Other Horse Hair: Scales, Cother Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing ≥10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET Project Number 214PNPEPJ1 Client / Project PANYNJ/ PA Analysis Date 4/(0/2021 Analyst 21-626 Asbestos Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RIII DS Color Color, Pleo Biref (Texture Cellulose Mineral Filler Gravimetric Fiberglas Organic Binde Required [(0 Other See gravimetric [analysis sheet 10 for results Fiberglass Isotopi Point Counts Slide 1 Slide 2 Asb./Ver. PT Total PT SM-V Synthetic High If vermiculite is >10% the PLM Required [evel of asbestos in a sample Horse Hair: Scales. might be underestimated. NOB PLM See SM-V [Low to Moderate See Note #1. analysis sheet Comments: for results Q.C. Method: □ ELAP □ EPA SCANNING OPTION Ashestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % (U Cellulose (Texture Mineral Filler Gravimetrio ⊋ ∪ Fiberglas lomogeneity 🛴 / Vermiculite Other Vermiculite* (O Othe See gravimetric analysis sheet Cellulose Ondo Fiberglass Isotopia Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb Ner PT Total PT %Asb. Or %Ver. SM-V Synthetic High If vermiculite is >10% the Required [evel of asbestos in a sampl Horse Hair: Scales, NOB PLM See SM-V [See Note #1 analysis sheet Comments: for results Q.C. Method: □ ELAP □ EPA SCANNING OPTION Asbestos Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % Cellulose Carture. Mineral Filler Fiberglass Organic Binder Required (O Other See gravimetric analysis sheet Cellulose Ondulo for results Fiberglass Isotopi Slide 2 SM-V Synthetic High f vermiculite is >10% the U Required [evel of asbestos in a sample Horse Hair: Scales, night be underestimated. NOB PLM See SM-V L Low to Moderate analysis sheet Comments: for results Q.C. Method: ☐ ELAP ☐ EPA ☑ SCANNING OPTION Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Mineral Filler Organic Binde Vermiculite Other Other Vermiculite* # of Layers Asbestos See gravimetri analysis shee for results Fiberglass Isotopic Slide 8 Asb./Ver. PT Total PT Slide 1 Slide 2 Slide 4 Slide 5 Slide 6 Slide 7 %Asb. Or %Ver. SM-V Point Counts f vermiculite is >10% the PLN evel of asbestos in a sample Horse Hair: Scales, might be underestimated. NOB PLM J IN See SM-V Low to Moderate Birefringence

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 FPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Comments:

Method: □ ELAP □ EPA

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analysis sheet

for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite Note #1: ELAP requires membrad ELAP 19.1 To the analysis of samples containing \$10% vermiculite (SM-V). For samples containing \$10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET

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|--|---|---------------------|--------------|---------|-------------------|------------|----------------------------------|--------------|-------------|---|--|---|
| | Analysis Date 4/ | /2021 | _ Analyst | _ ~ | | 6 | | | Batch N | Number 21-6 | 626 | EMPERATURE*C |
| 17 Id Number | Stereoscopic Exam | | | | | otical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required ecommended ge gravimetric analysis sheet for results | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes | | n Extinction | RII | RI DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | ChrysotileAmositeOther | CelluloseFiberglassOther Cellulose Ondulose Extinction | Mineral FillerOrganic BindersOvermiculite*Other |
| SM-V Required See SM-V analysis sheet for results | Point Counts Slide 1 Slide 2 PLM NOB PLM O Y Comments: Method: □ ELAP □ EPA | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1, |
| 18 | Stereoscopic Exam | $\dot{\uparrow}$ | | | PI M Or | otical Pro | nerties | | | Asbestos | Other Fibrous | Non Fibrous |
| Gravimetric Required ecommended er gravimetric analysis sheet | Color Texture Homogeneity Vermiculite # of Layers Asbestos | | Extinction | RI1 | 410 A PART 18-2.5 | Color Colo | | ef Sign Oth | er Identity | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other |
| SM-V Required See SM-V analysis sheet for results | NOB PLM Comments: | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ cellulose Ondulose Extinction ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| | Method: TELAD TEDA | TISCAN | MINIC OPTI | ON | | 0.0 | · [] | | | | 1 | 1 |
| 19 | Method: ELAP EPA Stereoscopic Exam | SCAN | NING OPTI | ON | PLM Or | | c. 🗆 | | | Asbestos | Other Fibrous | Non Fibrous |
| 19 Gravimetric Required ecommended analysis sheet for results | Stereoscopic Exam Color | Morph | Extinction | RII | RII DS | otical Pro | operties | | er Identity | Results PLM % Chrysotile Arnosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction | Non Fibrous PLM % U Mineral Filler Organic Binders U Vermiculite* Other |
| Gravimetric Required ecommended er gravimetric analysis sheet | Stereoscopic Exam Color | Morph No Slide 3 | Slide 4 | RI1 | | Slide 7 | operties Fr., Pleo Bir Slide 8 | ef Sign Oth | Total PT | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other | PLM % U Mineral Filler Organic Binders U Vermiculite* |
| Gravimetric Required ecommended et gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color | Morph No Slide 3 | Extinction | RI1 | RI | Slide 7 | operties or, Pleo Bir Slide 8 | Asb./Ver. PT | | Results PLM % ChrysotilleAmositeOther %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % U Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Gravimetric Required ecommended analysis sheet for results SM-V Required See SM-V analysis sheet | Stereoscopic Exam Color | Morph No Slide 3 | Slide 4 | RI1 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver. PT | | Results PLM % ChrysotilleAmositeOther %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Organic Binders Organic Binders Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| Gravimetric Required ecommended analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color | Morph No Slide 3 | Slide 4 | RI1 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT | Results PLM % ChrysotileOther Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | PLM % Omeganic Binders Organic Binders Other Other If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. |

Methods:
EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Comments:

Method: ELAP EPA

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See SM-V □

analysis sheet

for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC - New York

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BULK ASBESTOS ANALYSIS SHEET

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| | 1 1 | 2021 Analys | st | | | | | Batch N | 24. | 626 ₁ | EMPERATURE°c 2 } |
| 1 25 Field Number | Stereoscopic Exam | | | PLM Op | tical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required ☐ Recommended ☐ | Cotol Texture | Morph Extinction | RII | RI DS | Color Colo | r, Pleo Bin | ef Sign Oth | ner Identity | Chrysotile Amosité | Cellulose Fiberglass Other | Mineral Filler Organic Bine Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos / Color of Layer Detected Yes N | lo | | | | | | | | Celluiose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required ☐ See SM-V ☐ | PLM V NOB PLM | | | | | | | 2~ | <u>ر</u> | Birefringence Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% th tevel of asbestos in a sam might be underestimated. |
| analysis sheet for results | Comments: | SCANNING OP | TION | | Q.C | c. 🗆 | | | | Birefringence | See Note #1. |
| 2 26 Field Number | Stereoscopic Exam | | · | PLM Op | tical Pro | operties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color | Morph Extinction | on RII | Rì (DS | Color Colo | r, Pleo Bin | ef Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | <i></i> | | | | | | | Amosite Other | Fiberglass Other | Organic Bind |
| See gravimetric analysis sheet | # of Layers Asbestos Color of Layer Detected Yes N | | | | | | | | | ٨ | Other |
| for results SM-V | Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Cellulose Ondulose Extinction D Fiberglass Isotopic | |
| Required [| I 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | + | | | | ٦ | 2~ | | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% th level of asbestos in a san |
| See SM-V analysis sheet for results | NOB PLM Comments: | | | | | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| ioi iestiia | Method □ ELAP □ EPA | SCANNING OP | TION | | Q.0 | c. 🗆 | | | | | |
| 3 27 Field Number | Stereoscopic Exam | | | | otical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color | Morph Extinction | on KII | RII DS | Color Colo | r, Pleo Bir | ef Sign Oth | ner Identity | Chrysotile | <u> </u> | S Mineral Fille |
| Required | Homogeneity Vermiculite | /=== | | | | ······································ | | | Amosite | Fiberglass | Organic Bina |
| Recommended See gravimetric analysis sheet | # of Layers Asbestos | | | | | | | | Olher | Other | Vermiculite* |
| for results | Color of Layer Detected Yes N | lo | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% th |
| Required ☐ See SM-V ☐ | NOB PLM | , | | *************************************** | | | | | | Birefringence ☐ Horse Hair: Scates, Low to Moderate | level of asbestos in a san might be underestimated. See Note #1. |
| analysis sheet for results | Commentsy Method: | SCANNING OP | TION | | Q.(| C. 🗆 | | | | Birefringence | See Note #1. |
| 4 28 | | 7 | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morph Extinction | on RII | | Color Colo | operties or, Pleo Bir | ef Sign Oth | her identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required □ | Color Texture | J | | | | | | | Chrysøtile | Cellulose () Fiberglass | Mineral Fille Organic Bine |
| Recommended [| Homogeneity Vermiculite | / | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos / Color of Layer Detected Yes N | / | | | | | | | | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | Extinction Extinction Fiberglass Isotopic | |
| | 1 | | | | | | | | | | |
| Required 🗆 | PLM U | 7 | | | | | 0 | 2~ | V | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a san |
| Required See SM-V analysis sheet for results | PLM U | ✓ ✓ ✓ SCANNING OP | | | | C. 🗆 | (0) | 2~ | J | Birefringence | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ/ Project Number 214PNPEPJ1 Analysis Date 4/ 10 /2021 Analyst 21-626 TEMPERATURE'C 23 Batch Number Non Fibrous Asbestos 21 Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RLII DS Color Color Pleo Biref Sign Other Identi 2 Cellulose Gravimetric Chrysotile Mineral Filler Required [Organic Binde /) Vermiculite* Other analysis sheet Detected Yes Color of Laver for results Extinction Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopic SM-V Synthetic High If vermiculite is >10% the 0 Required [Birefringence evel of asbestos in a sample Horse Hair: Scales. night be underestimated. NOB PLM See SM-V [See Note #1. analysis sheet for results Q.C. 🗆 Method: □ ELAP □ EPA SCANNING OPTION Asbestos Non Fibrous 22 Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Chrysotil Cellulose Mineral Filler Required [Amosite Organic Binde √ Vermiculite* Other Other analysis sheet Cellulose Ondule for results Slide 1 Slide 2 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopic Slide 3 Synthetic High If vermiculite is >10% the Required [Birefringence evel of asbestos in a sample Horse Hair: Scales, NOB PLM night be underes See SM-V Low to Moderate See Note #1. analysis sheet Comments: Q.C. Method: □ ELAP □ EPA SCANNING OPTION Asbestos Other Fibrous Non Fibrous 23 **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % Mineral Filler Color ______Texture_ Gravimetric Cellulos Organic Binde Other __Vermiculite* See gravimetric Other analysis sheet Color of Layer Detected Yes Cellulose Ondulos for results SM-V Point Counts | Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Synthetic High If vermiculite is >10% the () Required [evel of asbestos in a sample NOR PLM might be underestimated. See SM-V Low to Moderate Birefringence analysis sheet for results Q.C. Method: ☐ ELAP ☐ EPA SCANNING OPTION 24 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Cellulose Mineral Filler

Organic Binder d_Vermiculite* Other # of Layers analysis sheet for results Fiberglass Isotopic Point Counts Slide 1 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Synthetic High If vermiculite is >10% the PLM () Required level of asbestos in a sample Horse Hair: Scales, might be underestimated NOB PLM See SM-V [Low to Moderate analysis sheet Comments:/ for results Method: ☐ ELAP ☐ EPA SCANNING OPTION Q.C. 🛛 🔾

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculitie. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET

Client / Project PANYNJ/ Project Number 214PNPEPJ1 22 Analysis Date 4/\ \cup /2021 Analyst 21-626 Batch Number TEMPERATURE*C Asbestos 29 Other Fibrous Non Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI | DS Color Color, Pleo Biref Sign Other Identif Gravimetric Chrysotile Cellulose Mineral Filler (O_Fiberglas Organic Binders Other Vermiculite* See gravimetric Other analysis sheet Detected Yes Color of Laver for results Extinction Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopic SM-V Synthetic High If vermiculite is >10% the Required [Birefringence evel of asbestos in a sample Horse Hair: Scales. might be underestimated. NOB PLM See SM-V [Low to Moderate See Note #1. analysis sheet for results Q.C. Method: 17 FLAP | EPA SCANNING OPTION Ashestos Non Fibrous 30 Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Texture Mineral Filler Cellulose (O Fiberglas Required [Organic Binder Other Other Vermiculite* analysis sheet Cellulose Ondulo for results Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopic Synthetic High If vermiculite is >10% the Required [Birefringence level of asbestos in a sample Horse Hair: Scales, NOB PLM might be under See SM-V Low to Moderate See Note #1 analysis sheet Comments: / Q.C. Method: ☐ ELAP ☐ EPA SCANNING OPTION Asbestos Other Fibrous Non Fibrous 31 Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % Mineral Filler Gravimetric Cellulos Required Fiberglas Organic Binder O__Vermiculite* See gravimetric analysis sheet Color of Layer Cellulose Ondulos for results Fiberglass Isotopi SM-V Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Synthetic High If vermiculite is >10% the Required [evel of asbestos in a sampl NOR PLM might be underestimated. See SM-V Low to Moderate analysis sheet Comments: for results Q.C. Method: ☐ ELAP ☐ EPA SCANNING OPTION 32 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Cellulose Mineral Filler Required Fiberglas Organic Binder U Other Vermiculite* Other # of Layers Other analysis sheet Color of Layer for results Fiberglass Isotopi Point Counts Slide 1 Slide 4 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Synthetic High If vermiculite is >10% the PLM Required [Birefringence level of asbestos in a sample Horse Hair: Scales, might be underestimated. NOB PLM See SM-V [Low to Moderate analysis sheet Comments: for results

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☐ ELAP ☐ EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

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Q.C.

Page _____ of _____

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* If vermiculite is >10% the

level of asbestos in a sampl

might be underestimated.

See Note #1.

Horse Hair: Scales

Low to Moderate Birefringence

| 7.34.37 | | Phone | : (212) 353-8280 | 0, Fax: (212) 35 | 3-3599 or 8306 | | | NVLAP 101187-0 ELAP 10879 |
|---|---|------------------|------------------|---------------------|--------------------------|----------------------------------|---|--|
| | | ſ | BULK ASBEST | OS ANALYSIS S | HEET | | | Microscopes: OLYMPUS BH-2/ |
| | Client / Project PANYNJ/ | Р | 'A | | Proje | ct Number 214PN | NPEPJ1 | NIKON OPTIPHOT |
| | Analysis Date 4 / [0 /2 | 2021 Analyst_ | j į | <u></u> | Batch | Number 21- | 626 | EMPERATURE & 23 |
| 1 33 Field Number | Stereoscopic Exam | | | ptical Propertie | s | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | ColorTexture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction | RII RIII D | S Color Color, Pleo | Biref Sign Other Identit | Chrysotile Amôsite Other | Celiulose Fiberglass Other | Mineral FillerOrganic BindersVermiculite*Other |
| for results SM-V Required □ See SM-V □ analysis sheet for results | Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 Slide | B Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Cellulose Ondulose Extinction D Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. |
| | Method: ELAP | SCANNING OPTIC |)N | Q.C. 🗆 | | | | |
| 2 34 Field Number | Stereoscopic Exam | | PLM O | ptical Propertie | S | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required □ Recommended □ See gravimetric □ | Color A Texture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction | RL RII D | S Color Color, Pleo | Biref Sign Other Identit | Chrysotile Amasite Other | Cellulose U Fiberglass Other | Mineral Filler |
| analysis sheet for results | Color of Layer Detected Yes N | o | | | | | Cellulose Ondulose Extinction | Loil |
| SM-V Required ☐ See SM-V ☐ | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 Slide | Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% the |
| | NOB PLM | - | | | | | Birefringence Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| analysis sheet | NOB PLM Comments: | | | | | | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample |
| | | SCANNING OPTIC |)N | Q.C. | | | Birefringence □ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| analysis sheet | Comments: | | PLM O | ptical Propertie | es s | Asbestos Results PLM % | Birefringence □ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| analysis sheet for results 3 35 Field Number Gravimetric | Comments: Method: ELAP EPA | SCANNING OPTIC | PLM O | | es s | Results PLM % Chrysotile | Birefringence □ Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| analysis sheet for results 3 35 Field Number | Comments: Method: ELAP DEPA Stereoscopic Exam Color Texture Homogeneity Vermiculite | | PLM O | ptical Propertie | es s | Results PLM % | Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Mineral Filler |
| analysis sheet for results 3 35 Field Number Gravimetric Required □ | Comments: Method: ELAP EPA Stereoscopic Exam Color Texture | Morph Extinction | PLM O | ptical Propertie | es s | Results PLM % Chrysotile Amosite | Biretringence □ Horse Hair: Scales, Low to Moderate Biretringence Other Fibrous PLM % Cellulose Fiberglass | Ievel of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filer Organic Birders |

| ioi results | Method: DELAP DEPA | SCANNING OPTION | Q.C. □ | |
|---|--|---------------------------------------|---|--|
| 1 36 | Stereoscopic Exam | PLM Optica | Il Properties Asbestos Results PLM % | Other Fibrous Non Fibrous |
| Gravimetric | | Morph Extinction RI 1 RI DS Color | Color, Plec Bire! Sign Other Identity Chrysotile | (50) |
| Required Recommended | Homogeneity Vermiculite | | Amosite | Other Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes No | | | Cellulose Ondulose Extinction |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide | te 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic |
| Required 🗌 | PLM O JO | | 0 2 0 | (C) Synthetic High Birefringence It vermiculite is > 10% the level of asbestos in a sample |
| See SM-V analysis sheet | NOB PLM | | | Horse Hair: Scales, might be underestimated. Low to Moderate See Note #1. |
| for results | Comments: | A SCANNING OPTION | loc D | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Required [

See SM-V

analysis sheet

for results

NOR PLN

Comments:

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Required [

See gravimetric [analysis sheet for results SM-V Required [See SM-V analysis sheet for results

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| Accreditations NVLAP 1011874 ELAP 10879 |
|---|
| ELAP 1087 |

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ATC - New York

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| |

| | r | A 843/844 | , | | | SBESTO | S ANAL | YSIS SH | IEET | | | | <u>Microscope:</u> OLYMPUS BH-2 MKON OPTIPHO |
|---|--|---|---------|-------------|---------|----------|------------|--------------|---|--------------|---------------------------|--|---|
| | Client / Project | | | h | PA | | | | | Project | Number 214PN | IPEPJ1 | |
| , | Analysis Date <u>4</u> | <u>/ (> /</u> | 2021 | _ Analyst | ····· | <u>~</u> | 0 | | | Batch i | Number 21- | <u>526</u> | EMPERATURE C 2 |
| 1 41 Field Number | Stereoscopic I | xam | | | | PLM Op | | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Textur | e | Morph | Extinction | КII | RII OS | Color Colo | or, Pleo B⊪r | ef Sign Ot | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗀 | | | / | | | | | | | | Amosite_~ | 2/O Fiberglass | Organic Binde |
| Recommended | Homogeneity Vermi | cuite | 1 | | | | | | | | Other | Other | √ Vermiculite* |
| See gravimetric [| # of Layers Asbes | stos | ⊬ | | | | | | | | | | (Other |
| analysis sheet for results | Color of Layer Detec | led Yes | No | | | | | | | | | Cellulose Ondulose Extinction | F-1 |
| SM-V | Point Counts Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ∕ Fiberglass Isotopic | J |
| Required 🗆 | PLM U (| | | 7 | | | | | J | m | . 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | 1. | | | | | | | | | Birefringence | |
| | Method: □ ELAP □ | EPA | SCAN | NING OPTI | ION | | Q. | c. 🗆 | | | | | |
| 2 42 Field Number | Stereoscopic E | xam | | | | PLM Op | tical Pre | operties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| | 7. | 7- | Morph | Extinction | RII | RII DS | Color Colo | r, Pleo Bir | ef Sign Ot | her identity | | / PLM % | 1 |
| Gravimetric | | e | | | | | | · | | | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity \ Vermi | culite | | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | # of Lavers Ashes | itos | / | | | | | | | | Other | Other | / verniculte |
| See gravimetric analysis sheet |] | | f = | | | | | | | | | <i>t</i> | Other |
| for results | Color of Layer Detec | ted Yes | No | | | | | - | | | 1 | Extinction | Jord . |
| SM-V | Point Counts Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Stide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Ø Fiberglass Isotopic (☐ Synthetic High | <i>y</i> |
| Required 🗆 | PLM 0/14 | | | | | | | | Ø | 2 | U | Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | ŗ | | | | | | *************************************** | • | | Birefringence | |
| | Method: ELAP | EPA | ⊅ SCAN | NING OPTI | ION | | Q. | C. 🗆 | | | | | |
| 3 43 | | • ·-· · · · · · · · · · · · · · · · · · | · I | | | D1 11 0 | 41 - 1 5 | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic I | :xam | | - F. W | 61. | | | operties | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Calor Typrextur | e | Morph | Extinction | RII | RIII DS | Color Colo | or, Pleo Bir | et Sign Oti | her identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗀 | Homogeneity <u>i 1</u> Vermi | nulita | / | | | | | | | | Arnosite | Fiberglass | Organic Binde |
| Recommended | | come | 1 = | manament . | | | | | | | Other | Other | Vermiculite* |
| See gravimetric [| # of Layers Asbes | itos | _ | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detec | ted Yes | No | | | | | | | | | Cellulose Onduiose | |
| SM-V | Point Counts Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | Fiberglass Isotopic | |
| Required 🗆 | PLM O/N | ļ | | | 1 | | | | O | 2u | U | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V □ | NOD BLAN | | | <i>(</i> | | | | | | 000 | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a samp might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | l | | I | | | | | I | | I | Birefringence | See Note #1. |
| | Method: □ ELAP □ | EPA | SCAN | NING OPTI | ION | | Q.(| c. 🗵 🔻 | <u></u> | | | | |
| 4 44 | · | | 1 | | | DI M Or | tical Dr | operties | | | Asbestos | Other Fibrous | Non Fibrous |
| 1 | Stereoscopic F | · yam | | | | - | | r, Plea Bir | ef Sign Of | her identity | Results PLM % | PLM % | PLM % |
| Field Number | Stereoscopic E | xam | Morph | Extinction | Rii | RH DS | | | | | | | |
| Field Number Gravimetric | | 7 | Morph | Extinction | Rij | RIII DS | | | | | Chrysotile | Cellulose | Mineral Filler |
| | Color_ + | e | Morph | Extinction | Ri i | RII DS | | | | | Chrysotile Amosite | Cellulose Fiberglass | Organic Binde |
| Gravimetric | Color Textul Homogeneity Vermi | eculite | Morph | Extinction | Rij | RII OS | | | | | | | |
| Gravimetric Required □ Recommended □ See gravimetric □ | Color Texture Homogeneity Vermi | eculite | Morph | Extinction | Rii | RI DS | | | | | Amosite | Fiberglass | Organic Binde |
| Gravimetric Required ☐ Recommended ☐ | Color Textul Homogeneity Vermi # of Layers Asber | eculite | | Extinction | Rii | RI DS | | | | | Amosite | Fiberglass Other | Organic Binde U Vermiculite* |
| Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | Color Textul Homogeneity Vermi # of Layers Asber | e | | Extinction | Rii | Ri DS | Slide 7 | Slide 8 | Asb./Ver. P7 | | Amosite | — Fiberglass — Other | Organic Binde U Vermiculite* |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

NOB PLM

Method: ☐ ELAP ☐ EPA

☐ SCANNING OPTION

See SM-V 🗆

analysis sheet for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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☐ Horse Hair: Scales,

might be underestimated.

See Note #1.

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|------------------|---------------|--------------|-----|
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| | Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 | | | | | | | | | | | | | |
|-----------------|--|---------------|---|------------|---------|---------|-------------|--------------|--|--------------|---------------------------|--|--|--|
| | | | | | BULK A | SBESTO | OS ANAL | YSIS SH | IEET | | | | Microscopes: OLYMPUS BH-2 / | |
| Client / Proje | ect PA | NYNJ, | / | F | PA | | | ···· | ····· | Project | Number 214PI | NPEPJ1 | NIKON OPTIPHOT | |
| Analysis Da | ate <u>4</u> / | , (ŋ \ | 2021 | _ Analyst | | | -67 | | | Batch N | Number 21- | 626 T | EMPERATURE*C 23 | |
| Stereosc | opic Ex | am | | | | | - | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | |
| olor (L | _Texture | (- | Morph | Extinction | RII | RIII D | S Color Col | or, Pleo Bin | ef Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler | |
| omogeneity 📈 | : Vermicu | ilite | / | | | | | | | | Amosite | Fiberglass | Organic Binders | |
| (\ | | | 7 | | | | | | | | Other | Other | Vermiculite⁴ | |
| of Layers | Asbesto | ·s — / | | | | | | | | | | | Other | |
| olor of Layer | Detecte | d Yes | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | | |
| Point Counts SI | ilide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | |
| PLM | , | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample | |
| NOB PLM | m | | *************************************** | | × | | | | 0 | 2~ | 3 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. | |
| omments: | (| | . / | | | | | | ************************************** | | | Birefringence | | |
| lethod: ☐ ELAF | Р 🗆 І | PΑ | SCAN | NING OPTI | ON | | Q. | C. 🗆 | | | | 1 | | |
| | | | , | | | | | | | | | - | • | |

| 2 38 Field Number | Stere | oscopic E | Exam | | | | PLM O | ptical Pr | operties | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|---------------------------------|-----------------|-----------------|---------|----------------|---------------|---------|---------|-------------|--|----------|-------|----------|---------------------------|--|---|
| Gravimetric | Color 7 | <u>~</u> Textur | e | Morph | Extinction | KIT | RIII D | S Calor Col | or, Pleo B | ref Sign | Other | Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🛭 | Homogeneity ` | √ Vermi | iculite | | | | | | | | · | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗓 | 1 | 7 | | 7 == | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 📮 | # of Layers | Asbes | slos | / | . | | | | | | | | | | Other |
| analysis sheet { for results | Color of Layer_ | Detec | ted Yes | No | | | | | | | | | | ☐ Cellulose Ondutose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver | . PT | otal PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [| PLM | 3 | | | | | | | T. T. T. T. T. T. T. T. T. T. T. T. T. T | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | 0/ | | | | | | | | 5 | | m | l) | ☐ Horse Hair: Scates, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | C | | | | | | | | | | | | Birefringence | |
| | Method: 🗖 E | LAP 🗆 | EPA | □/SCAN | NING OPTI | ON | | Q. | c. 🗆 | | | | | | |

| 3 39 Field Number | Stered | oscopic E | xam | | | | PLM O | ptical P | ropertie | 98 | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|-------------------------------------|-----------------|-----------|--|---------|------------|---------|---------|------------|------------|---------|---------|---------------|---------------------------|--|---|
| Gravimetric | | Texture | e | Morph | Extinction | RII | RI (D | S Color Co | olor, Pleo | Biref S | ign Ot | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| Required [] | Homogeneity S | Vermio | culite | / | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗓 | / | | | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🖟 analysis sheet | # of Layers | Asbes | ios — + | | | | | | | | | | | | Other |
| for results | Color of Layer_ | Detect | ed Yes N | io | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide | 8 Asb./ | Ver. P1 | Total PT | %Asb. Or %Ver. | 🖺 Fiberglass Isotopic | |
| Required [| PLM | (,) | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | M | | | | | | - | | þ | | m | U | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments | | MONAGE DE LA COMPANION DE LA C | | | | | - | | | | | | Birefringence | |
| 10.700 | Method: 🛱 E | LAP 🗆 | EPA | SCAN | NING OPTIO | ON | | Q | .C. 🗆 | | | | | | |

| | | | | 1 | | | | | | | | | L | <u> </u> | | | | |
|---|--|-----------|---------|---------|------------|---------|---------|-------------|-----------|---|--|--|--|--|--|--|--|--|
| 4 40 Field Number | Stered | oscopic E | xam | | | | PLM O | ptical P | ropertie | :5 | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | | | | |
| Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Color C Homogeneity # of Layers Color of Layer _ | Asbes | culite | Morph | Extinction | RII | RI D | S Color Co | lor, Pleo | Biref Sign | Other Identity | ChrysotileOther | Cellulose Mineral F Diberglass Organic I Other Other Cellulose Ondulose Extinction | | | | | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide | Asb./Ver. | PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | y y | | | | |
| Required [| PLM | 1/20 | < | |) | | | | | 0 | 200 | U | ☐ Synthetic High Birefringence | If vermiculite is >10% the level of asbestos in a sample | | | | |
| See SM-V □ | NOB PLM | | | · | 1 | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. | | | | |
| analysis sheet for results | Comments: | 4 | | / | | | | | | | | | Birefringence | S | | | | |
| | Method: ☐ E | LAP 🗆 | EPA | ☐ SCAN | NING OPTI | ON | | Q | .c. 🗆 | *************************************** | " | W WOODS AND A STATE OF THE STAT | 1 | | | | | |

wentous.
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116 ELAP Ilems 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Gravimetric

See gravimetric analysis sheet

SM-V

Required [

See SM-V

analysis sheet for results

Point Counts Slide 1

Method: ELAP EPA

NOB PLM

ATC - New York

Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT

SCANNING OPTION

If vermiculite is >10% the

level of asbestos in a sample

might be underestimated.

Fiberglass Isotopic

Horse Hair: Scales,

Low to Moderate

ions: 187-0 10879

| | | eet, 8 th FL, New York, NY 1001 280, Fax: (212) 353-3599 or 83 | | | | Accreditatio NVLAP 10118 ELAP 10 |
|---|-------------------------|--|---------------|--------------------------------|--------------------------------------|--|
| Client / Project PANYNJ/ | BULK ASBE | STOS ANALYSIS SHEET | Project Numb | _{er_} 214PN | IPEPJ1 | Microscop OLYMPUS BH NIKON OPTIPH |
| Analysis Date 4/(3 /20 | 021 Analyst | -6 | Batch Numbe | r21- | 626 | TEMPERATURE*c 2 3 |
| Stereoscopic Exam | PLM | Optical Properties | | sbestos ults PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No | Morph Extinction RI1 RI | DS Color Color, Pleo Biref Sign O | ther Identity | Chrysotile Amosite Other | Cellulose Other Cetlulose Ondulose | Mineral Filler Organic Bino Vermiculite* |

| 2 46 Field Number | Stereoscopi | c Exam | PLM Optical Properties Resu | | | | | | | | | | Other Fibrous PLM % | Non Fibrous PLM % | |
|---|--------------------|-----------|-----------------------------|------------|---------|---------|---------------|--------------|-------------|------------|----------|--------------------------|------------------------------------|---|--|
| Gravimetric Required Recommended See gravimetric analysis sheet for results | Homogeneity Ve | miculite | | Extinction | RII | RIII C | OS Color Colo | or, Pleo Bir | ef Sign (| Other Iden | tity - | Chrysotile Amosite Other | Cellulose Fiberglass Other | Mineral Filler Organic Binder Vermiculite* Other | |
| SM-V | Point Counts Slide | 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. F | T Total F | | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | |
| Required ☐ | NOB PLM | y_ | | | 7 | | | | 9 | Q ic | + | U | Birefringence Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. | |
| analysis sheet for results | Comments: | | | | | | 1 | | | | | | Birefringence | See Note #1. | |
| | Method: D ELAP | ☐ EPA | SCANI | NING OPTIO | ON | | Q. | C. 🗆 | | | | | | | |

Q.C.

| 3 47 Field Number | Stereoscopic Exam | 1 | ***** | | PLM O | ptical Pr | operties | K | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|---|--|-----|---------------|---------|---------|--------------|-------------|-----------|----------|---------|---------------------------|---|---|
| Gravimetric Required □ Recommended □ See gravimetric □ | Homogeneity Vermiculite | Mor | ph Extinction | RII | RI II D | S Color Colo | or, Pleo Bi | ref Sign | Other Id | dentity | Chrysotile Amosite Other | CelluloseFiberglase | Mineral Filler Organic Binde Vermiculite* |
| analysis sheet for results SM-V | Color of Layer Detected Yes Point Counts Slide 1 Slide | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. | PT Tota | al PT | %Asb. Or %Ver. | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | |
| Required 🗆 | L. | | 1 | | | | | 0 | P- | N | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a samp might be underestimated. |
| See SM-V analysis sheet for results | Comments: | | LINE ORT | | | | | | | | | Low to Moderate Birefringence | See Note #1. |

| ield Number | Stereo | scopic E | xam | | | | INTERNOMES! | ptical Pro | *************** | 1 | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |
|--|----------------------------------|--------------|--|------------|------------|---------|-------------|--------------|-----------------|-------------|----------------|---------------------------|--|---|
| Required Recommended | Color | Vermic Asbes | culite | Morph | Extinction | RII | RI II D | S Color Colo | or, Pleo Bi | ref Sign (| Other Identity | Chrysotile | Cellulose Fiberglass Other | |
| analysis sheet | | | | | | | - | | | | | | | - ARABARIA |
| analysis sheet for results | Color of Layer_ | - 05,880.0 | ed Yes | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| analysis sheet | Color of Layer _ Point Counts | - 05.88616 | ed Yes | No Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. I | PT Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| analysis sheet for results | | Slide 1 | The state of the s | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. I | PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| analysis sheet for results SM-V Required See SM-V | Point Counts | Slide 1 | Slide 2 | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | | PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the |
| analysis sheet for results SM-V Required | Point Counts PLM | Slide 1 | Slide 2 | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | | PT Total PT Y | %Asb. Or %Ver. | Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a samp might be underestimated. |

Page _____ of ____

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing s10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

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| t / Project _ | PANYNJ/ | PA | | Project Number 214PNPEPJ1 |
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| Contention | | Analysis Date 4/(3/2021 Analyst Batch Number 21 | | | | | | | lumber 21-6 | 526 _T | EMPERATURE °C 2.3 | | | |
|--|---|---|---------------|----------|---------------|---|---------|------------|-------------|------------------|-------------------|---|--|--|
| Columnic Color C | 1 49 Field Number | Stereoscopic Exa | am | | | | • | | • | · | | | | l . |
| Personance of Control | | Color Tun Texture | F | Morph | Extinction | RLI | RII DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | Chrysotile | Cellulose | 1 Mineral Filler |
| Community Comm | / | | | / | | | | | | | | | | |
| Comment Set Spring Spring Set Spring Spring Set Spring Spring Set Spring Set Spring Spring Set Spring Spring Set Spring Spring Set Spring | | Homogeneity Vermiculii | ite/ | | | | | | | | | | - | 0 |
| Control Labor Control Labo | 1 | # of LayersAsbestos | | | | | | | | | | | | |
| Part Caure Part Caure Side 1 Side 2 Side 3 Side 4 Side 5 Side 6 Side 7 Side 8 Side 8 Side 7 Side 8 Side 8 Side 7 Side 8 Si | analysis sheet | Color of Layer Detected | Yes No | 0 | | | | | | | | | | Other |
| Regulated PLM | | Daile Carrel Clide 4 | Olida O | J | Okas 4 | 01:J- F | 054-0 | 0:4-7 | CI:d+ D | | T-1-I DT | Ar Ash Os Britan | | |
| Required | SM-V | | Silde 2 | Side 3 | Silue 4 | Silde 5 | Shine o | Slide / | Silde 6 | ASD./Ver. P1 | TOTAL | %ASD, Or %Ver. | - | |
| See GM V D Stereoscopic Exam The Michael V D Stereoscopic Exam PLM OPLICAI Properties Results PLM V | Required 🗆 | PLM | | | | | | | | | | | Birefringence | |
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| Method: DELAP DEPA DISCANNING OPTION Q.C. D. Abbestoo Results PLM % PLM | | Comments: | | | | *************************************** | | | | <u> </u> | | erit Paul Aris die Alexandra von der verscher versche Aller von der | Birefringence | See Hote #1. |
| State Stat | for results | | PA I | SCAN | NING OPTION | | | Ta.o | c. 🗆 | | | | | |
| Stemoscopic Exam | L | <u> </u> | | | | | | | | | | | | |
| Gravimente Geograminate Geogram | | Stereoscopic Exa | am | | | | PLM OF | otical Pro | operties | | | | | 1 |
| Recymended Recommended R | | A 7-4 | F | Morph | Extinction | RLI | RII DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | | | |
| Percognential Description of Layers Asbestos Service Description of Layers Asbestos Color of Layer Description and PLM Optical Properties See provincial of a Layers Asbestos Color of Layer Description of Layers Asbestos Color of Layer Description of Layers Asbestos Color of Layer Description of Layers Asbestos Color of Layer Description of Layers Asbestos Color of Layer Description of Layers Asbestos Color of Layer Description of Layers Asbestos Color of Layer Description of Layers Description of Lay | l _/ | COROR lexture _ | <u> </u> | 7 | | | | | | | | | | |
| See gravinetic Description Color of Layer Delected Yes No | 1 | Homogeneity Vermiculii | ite | | | | | | | | | | | l v |
| See gravinets C Color of Layer | l , | # of layers Ashertne | | | | | | | | | | Other | Other | Vermiculite* |
| Second Color of Larger Defection Point Counts Side 1 Side 2 Cide 3 Side 4 Sade 5 Side 6 Side 7 Side 6 Asb Are PT Total PT MAsb, Or Wer. Defection Pub. P | 1 " ; | # CI Layers Nabesios | ' — † | | | | | | | | | | | Other |
| Point Counts Side 1 Side 2 Side 3 Side 4 Side 5 Side 6 Side 7 Side 8 Adb.Ner. PT Total PT %Abb. Or Weer OF Semilars tonoine in any of a dependent of revolution PLM | | Color of Layer Detected | l Yes No | o | | | | | | | | | | |
| Required See SMV NOB PLM NOB P | SMV | Point Counts Slide 1 S | Slide 2 | Slide 3 | Stide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | | |
| Regulated NoB PLM NOB PLM Determinant \$1VI-V | DI M | | | | | | | | | | | | * If vermiculite is >10% the |
| See SMV Somments See SMV See S | Required [] | FLW C | | | | | | | | | | | | level of asbestos in a sample |
| Comments Comments Comments Comments Color Color Ethnicis Color | See SM-V □ | NOB PLM | | | | | | | | 0 | h | ی | Low to Moderate | |
| Method: | | Comments: | | 1 | / | | | | | | | | Birefringence | |
| Stereoscopic Exam PLM Optical Properties Results PLM % | Tor results | Method: DELAP □ El | PA | SCAN | VING OPTI | NC | | Q.0 | c. □ | | | | | |
| Gravimetric Color Texture Morph Extinction RI 1 RI DS Color Color, Pice Biref Sign Other Identity Chrysotile Cellulose Mineral Filler Required D analysis sheet for results PLM / PLM / Scanning Sheet for results PLM / Plm / PLM / Plm / PLM / Plm / PLM / Plm / PLM / Plm / PLM / Plm / | | Stereoscopic Exa | am | | | | PLM Or | otical Pro | operties | | | | • | 1 |
| Required I Recommended See gravimetric Panalysis sheet for results See SMAV Point Counts Side 1 Side 2 Side 3 Side 4 Side 5 Side 6 Side 7 Side 8 Asb./ver. PT Total PT %Asb. Or %Ver. PLM NOB PLM PLM Stereoscopic Exam PLM Optical Properties Gravimetric Required I Amoste Stereoscopic Exam PLM Optical Properties Gravimetric Required I Recommended I Required I R | | | L | Morph | Extinction | RIi | | | | ef Sign Of | ner Identity | | | 1500 |
| Recommended Homogeneity Vermiculitie Vermicul | 1 | Color Con Lexitite - | - | / | | | | | | | | - | | |
| See gravimetric Danalysis sheet for results SM-V Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Detected Yes No Detected Y | 1 ' _ | Homogeneity Vermiculi | lite | | | | | | | | | | _ | |
| See gravimetric analysis sheet for results SM-V Required See SM-V PUM | Recommended L | # of lower Achaetos | | | - | | | | | | | Other | Other | Vermiculite* |
| Color of Layer Detected Yes No | | # Of Edyera Asbestos | ° † | | | | | | | | | | | Other |
| SM-V Required PLM | | Color of Layer Detected | i Yes N | o | - | | | | | | | | | |
| Required PLM NOB PLM | CMV | Point Counts Slide 1 S | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Ash /Ver. PT | Total PT | %Asb. Or %Ver. | | |
| Required NOB PLM NOB PLM Comments; Method: ELAP EPA SCANNING OPTION Q.C. | | DI M | | | | | | | | | | | | * If vermiculite is >10% the |
| See SM-V Analysis sheet for results Comments; Method: ELAP EPA SCANNING OPTION Q.C. | Required | | | | | | ļ | | | | | | _ | level of asbestos in a sample |
| Asbestos Results PLM % P | i | NOB PLM | | | / | | ! | | | 0 | hu | <i>)</i> | Low to Moderate | |
| Method: DEAP DEPA SCANNING OPTION Q.C. D 4 Stereoscopic Exam PLM Optical Properties Results PLM % PLM | | Comments: | | | | | | | | | | | Birefringence | |
| Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % | | Method: DELAP □ El | PA | □/SCANI | VING OPTI | ON | | Q. | C. 🗆 | | | | | |
| Field Number Gravimetric Required Homogeneity Vermiculite Homogeneity Homogeneity Homogeneity Vermiculite Homogeneity Homoge | 4 | Stereoscopic Eva | am | Ή | | | PIMO | otical Pro | onerties | | | | Other Fibrous | i |
| Gravimetric Color Texture Chrysotile Cellulose Mineral Filter Amosite Fiberglass Organic Binders Commended Texture Chrysotile Color of Layers Asbestos Torresults Public Color of Layer Detected Yes No Color of Layer Detected Yes No Side 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT Wasb. Or Wer. Required NOR PIM NO | | | | | | | | | • | | ner Identity | Results PLM % | PLM % | PLM % |
| Recommended Homogeneity Vermiculite | Field Number | | | Moroh | | | | | .,, | o. 0.g 0. | | | • | 1 |
| Recommended See gravimetric # of Layers Asbestos See gravimetric # of Layers Asbestos Asbestos See gravimetric # of Layers Asbestos Asbestos See gravimetric # of Layers Asbestos See gravimetric # of Layers Asbestos See gravimetric See gravimetric # of Layers Detected Yes No See gravimetric See gravimetric See gravimetric See gravimetric See gravimetric # of Layers Detected Yes No See gravimetric See gravimetr | | Color Texture | | Morph | Extinction | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| See gravimetric analysis sheet for results Color of Layer Detected Yes No Cellulose Ondulose Extrinction Fiberglass Isotopic SM-V Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb, Ver. PT Total PT WAsb. Or Wer. Synthetic High Birefringence Horse Hair; Scales, might be underestimated. | Gravimetric | | | Morph | | | | | | | | | | |
| analysis sheet for results Color of Layer Detected Yes No | Gravimetric Required □ | Homogeneity Vermiculi | | Morph | Extinction | | | | | | | Amosite | Fiberglass | Organic Binders |
| SM-V Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Required NOR PIM NOR | Gravimetric Required Recommended | Homogeneity Vermiculi | lite | Morph | EXINCION | | | | | | | Amosite | Fiberglass | Organic Binders Vermiculite* |
| Required PLM Sinde Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | Homogeneity Vermiculi # of Layers Asbestos | lites | | EXTINCTION | | | | | | | Amosite | FiberglassOther | Organic Binders Vermiculite* |
| Required D PLM Birefringence Birefringence United States, as a sample D Horse Hair; Scales, might be underestimated. | Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | Homogeneity Vermiculi # of Layers Asbestos | lites | | Extinction | NIZ | | | | | | Amosite | FiberglassOther Cellulose Ondulose Extinction | Organic Binders Vermiculite* |
| I Horse Hair: Scales, might be underestimated. | Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Homogeneity Vermiculi # of Layers Asbestos Color of Layer Detected | s | | | | | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | Amosite Other | FiberglassOther □ Cellulose Ondulose Extinction □ Fiberglass Isotopic | Organic Binders Vermiculite* |
| See SM-V LI Low to moderate See Note #1. | Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V | # of Layers Asbestos Color of Layer Detected Point Counts Slide 1 S | s | | | | | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | Amosite Other | Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High | Organic Binders Vermiculite* Other * If vermiculite is >10% the |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Comments:

Method: ☐ ELAP ☐ EPA

☐ SCANNING OPTION

for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods EŁAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

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ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Start Date: 04/10/21 | 04/12/21 | |
|----------------------|--------------------------|--|
| Start Date: | Date Completed: 04/12/21 | |
| 122941 | RP | SPOOR TEM |
| TEM Batch # 122941 | NOB TEM Analyst: | W PREP |
| 21-626 | JD | Notes |
| PLM Batch# | NOB TEM PREP: | |
| | MW | 13 % Total Asbestos n Vermiculite |
| | NOB PLM Analyst: | 9 Asbestos Types or Vermiculite |
| PANYNJ RUSH | JYG/MI | Non Asb Residue % NFr Carbonate |
| Client/Project: | NOB PLM PREP: | 5 % Field # Organic |

| sp | | TEM | > | > | > | > | > | > | > | > | > | > |
|---------|------------------|----------------------------|------|------|------|------|------|------|------|----------|------|------|
| Methods | NOB | PLM | > | > | > | > | > | > | > | > | > | > |
| W | 8 1999 9 1921 | PREP | > | > | > | > | > | > | > | > | > | > |
| | | Notes | | | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | | | |
| 6 | Asbestos | Types or Vermiculite | ΩN | ND | QN | QN | QN | ND | ΩN | ON ON | N | QN |
| 12 | | % Carbonate | 28.4 | 22.3 | 26.0 | 12.5 | 19.3 | 49.0 | 33.0 | 22.1 | 18.4 | 31.4 |
| 11 | Non Asb | Residue % NFr | 46.3 | 51.6 | 48.9 | 74.3 | 2.79 | 37.8 | 42.5 | 52.6 | 56.8 | 43.5 |
| 2 | | % Organic | 25.3 | 26.1 | 25.1 | 13.2 | 13.0 | 13.2 | 24.5 | 25.3 | 24.8 | 25.1 |
| | | Field# | 1 | 2 | 3 | 4 | 5 | 9 | 7 | 82 | 6 | 16 |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

Page 1

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| 04/10/21 | 04/12/21 | | | | | | | | | | | | | |
|----------------------|--------------------------|---------|--|-----------|----------------|------|------|------|------|------|------|------|------|--|
| Start Date: 04/10/21 | Date Completed: 04/12/21 | | | | | | | | | | | | | |
| 122941 | RP | spo | m | | EM | > | > | > | > | > | > | > | > | |
| TEM Batch # | NOB TEM Analyst: | Methods | BON | PR PR | LM Ep | > | > | > | > | > | > | > | > | |
| 21-626 | JD | | | | Notes | | | | | | | | | |
| PLM Batch# | NOB TEM PREP: | | | | | | | | | | | | | |
| | MM | 13 | % Total | Asbestos | or Vermiculite | | | | | | | | | |
| | NOB PLM Analyst: | 6 | Asbestos | Types | or Vermiculite | ND | ND | 9 | Q | QN. | ND | ΩN | ON | |
| HSU | JYG/MI | 12 | | % | Carbonate | 32.4 | 42.5 | 47.1 | 25.4 | 19.9 | 9.6 | 2.3 | 24.8 | |
| PANYNJ RUSH | JYC | 11 | Non Asb | Residue % | NFT | 42.9 | 33.2 | 40.2 | 2.09 | 65.6 | 75.6 | 82.7 | 63.5 | |
| Client/Project: | A PREP: | 9 | The state of the s | % | Organic | 24.7 | 24.3 | 12.7 | 13.9 | 14.5 | 14.6 | 15.0 | 11.7 | |
| Client/F | NOB PLM PREP: | | | | Field # | 17 | 18 | 37 | 38 | 39 | 49 | 50 | 51 | |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

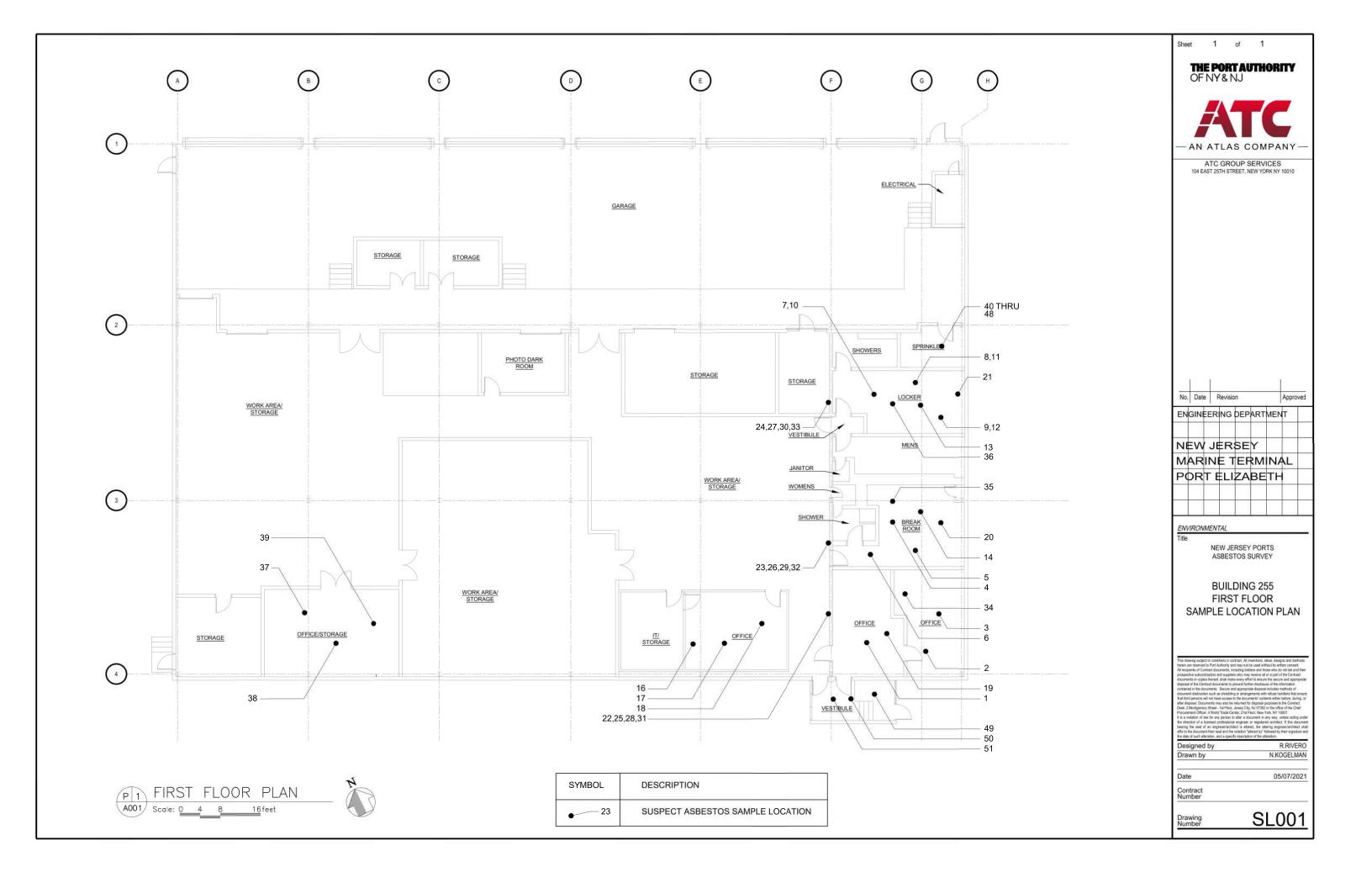
Page 2

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APPENDIX B

ASBESTOS SAMPLE LOCATION DRAWINGS

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APPENDIX C

ASBESTOS LOCATION DRAWINGS

(N/A)

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APPENDIX D

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative – Kevin Hamilton:

This license has been issued in a ccordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the a sbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

> Amy Phillips, Director For the Commissioner of Labor

SH 432 (8/12)

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

Asbestos

EPA 100.2

of Health

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.



NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR

NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual

EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM Item 198.4 of Manual Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III NIOSH 7402

Fibers

NIOSH 7400 A RULES

Serial No.: 61223

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI, COPY ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

> is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER All approved analytes are listed below:

Serial No.: 62824

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

- MS. MILENA BONEZZI 💆 🗸 💝 🗸 ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below: 』

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 62825

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicted by posted, and are printed or secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER

Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Realth Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI ATC GROUP SERVICES LLC

104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

> is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

NIOSH 7400 A RULES

Serial No.: 62826

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to

Technology Commerce and of S Department of Standards Standard States National Institute United



NVLAP LAB CODE: 101187-0

Services Group

New York, NY

accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC This accreditation demonstrates technical competence for a defined scope and the operation of a la management system (refer to joint ISO-ILAC-IAF Communique dated January 2009)

For the National Voluntary

2020-07-01 through 2021-06-30

National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor New York, NY 10010 Ms. Milena Bonezzi Phone: 212-353-8280 x247 Fax: 212-353-8306

Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

18/A01

Code **Description**

EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of

Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code **Description**

18/A02 U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40

CFR Part 763 Subnart F Annendix A

For the National Voluntary Laboratory Accreditation Program

Effective 2020-07-01 through 2021-06-30 Page 1 of 1





AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

Laboratory ID: LAP-100229

104 East 25th St 8th Flr New York, NY 10010

Issue Date: 08/30/2019

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

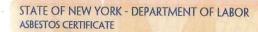
Initial Accreditation Date: 06/12/1995

| IHLA | P Scope Category | Field of Testing (FOT) | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested |
|------|----------------------------------|------------------------------------|----------------------------------|---|---|
| 1 | Asbestos/Fiber icroscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | - |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

Effective: 04/10/2015 Revision: 8

Page 1 of 1







PHILIP R CARRINGTON CLASS(EXPIRES) C ATEC(11/21) D INSP(11/21) E MGPL(11/21) H PM (11/21) I PD (11/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



01213 005585914 40 EYES BRO HAIR BLK HGT 54 09" IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





NANCY B GUEVARA CLASS(EXPIRES) C ATEC(05/21) D INSP(05/21) H PM (05/21) I PD (05/21)

MUST BE CARRIED ON ASBESTOS PROJECTS

01213 005585171 14

EYES BRO HAIR BRO HGT 5' 06"

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





RONEY D RIVERO
CLASS(EXPIRES)
C ATEC(08/21) D INSP(08/21)
E MGPL(08/21) H PM (08/21)
I PD (08/21)

CERT# 88-06348 DMV# 955602641

MUST BE CARRIED ON ASBESTOS PROJECTS

HARRIST COMPANY OF THE

EYES BRO HAIR GRY HGT 5: 11" IF FOUND RETURN TO:
NYSDOL - L&C UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

01213 005581057 61



NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, EP, & PJ

ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING #111

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

May 14, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

May 14, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building #111

111 Corbin Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Roney D. Rivero

Senior Project Manager for ATC Group Services LLC Direct Line +1 212 284 0614 Email: roney.rivero@atcgs.com

Attachments

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

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| EXE | CUTIVE SUMMARY | 1 |
| 1.0 | INTRODUCTION | 2 |
| 2.0 | BUILDING DESCRIPTION | 2 |
| 3.0 | FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS | 2 |
| 4.0 | ACM INSPECTION SCOPE | 3 |
| 5.0 | ACM INSPECTION RESULTS | 4 |
| 6.0 | PCB-IN-CAULKINGING INSPECTION FINDINGS | 4 |
| 7.0 | UNIVERSAL WASTE OBSERVATION | 4 |
| 8.0 | CONCLUSIONS AND RECOMMENDATIONS | 4 |
| 9.0 | ASSUMPTIONS AND LIMITATIONS | 5 |
| | | |

APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: PCB-in-Caulking Laboratory Results and Chain of Custodies

Appendix C: Asbestos, and PCB Bulk Sample Location Drawings

Appendix D: ACM Location Drawings (N/A for this Project)

Appendix E: Lab Certifications / Accreditations, Company and Personnel Certifications

ATC Project No. 214PANEWR1 Page 1

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

EXECUTIVE SUMMARY

On March 10, 2021, ATC completed the inspection for ACM at Port Newark, Building #111 (the Site). The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected fifteen (15) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, none of the sampled homogeneous areas was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content). These materials are tabulated in Section 4.0.

ATC collected and analyzed one (1) sample from suspect PCB-containing Caulking. Based upon review of the analytical results of bulk samples collected, the sample was found to be none detect for total PCBs. A tabulation of the laboratory results are summarized in in Section 6.0.

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM/LCP |
|----------------------|----------------------|---------|
| Philip R. Carrington | AH-88-11798 | ACM |
| Roney D. Rivero | AH-88-06348 | ACM |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 111, constructed in 1997, is located on the eastern side of Corbin Street. The 21 ft. tall, single story building has a near rectangular footprint, approximately 82 ft. wide by 128 ft. long in plan, with a total of 10,500 square feet of floor area. The building is occupied by Port Authority personnel and serves as a pump station for the Port Newark domestic and fire protection water systems. Most of the space consists of a large, open and full height mechanical space. There are isolated areas of office space along the interiors northeast portion.

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

ATC Project No. 214PANEWR1 Page 2

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of Port Newark Building 111 on March 10, 2021 and collected fifteen (15) bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location. The intent of this survey was to locate and identify all accessible ACM.

The following five (5) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location |
|---|---|
| 2' X 4' Suspended Ceiling Tile | 1 st Floor – Office Space, Lobby & Bathroom |
| Cinder Block Wall Mortar | 1 st Floor –Lobby, Bathroom & Generator Room |
| Soft Concrete Decking | 1st Floor – Above Pump Room, Above Generator Room & Above Electric Room |
| Expansion Board (Brown) on Decking Wall Perimeter | 1 st Floor – at Pump Room & , Generator Room Walls |
| Vertical Expansion Caulking on CMU Wall | 1 st Floor – Generator Room, Pump Room & East wall |

ATC Project No. 214PANEWR1 Page 3

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and analytical results of bulk samples collected, none of the materials are asbestos-containing (> 1%).

Laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix C.

6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC collected one (1) sample from suspect PCB-containing Caulking and submitted to a third party laboratory for analysis. The suspect PCB-containing Caulking sample collected was based on building component, application type as well as color and texture. Caulking materials with similar characteristics were assumed to be homogenous materials.

ATC submitted the suspect PCB samples to New York Environmental & Analytical Laboratories Inc., for Gas Chromatography with Electron Capture Detection (GC/ECD) analysis utilizing EPA Method 8082.

Based on laboratory analysis and results, the one (1) sample tested "none detect" for total PCBs.

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection at the site, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected fifteen (15) bulk samples from all suspect asbestos-containing material. Based upon visual inspection and review of the analytical results of bulk samples collected, **none of the materials is asbestos-containing** (> 1%).

ATC collected and analyzed one (1) sample from suspect PCB-containing Caulking. Based on laboratory analysis and results, the one (1) sample tested "none detect" for total PCBs.

ATC Project No. 214PANEWR1 Page 4

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

Various types of painted surfaces such as sprinkler pipes, CMU walls, and roof decking have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 111, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 111 located in Newark, New Jersey.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection.

If questions arise regarding asbestos content in building materials that were not tested by ATC, additional testing services should be procured to test those areas.

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

ATC Project No. 214PANEWR1 Page 5

APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES

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ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280

Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 3/10/2021

104 EAST 25TH STREET NEW YORK , NY 10010

Date Received: 3/10/2021

Fax: (212) 353-3599

Project: PANYNJ/FIRESPRINKLER REHABILITATION

ATC Batch # 21-347

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / Building #111

Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>No</u> | <u>n-Asbestos</u> | NOB | Asbestos |
|--------------|------------------------------|---|---------|-----------------|-------------------------------|-------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 1 | 1ST FLOOR OFFICE SPACE | 2' X 2' SUSPENDED CEILING TILE | NOB-TEM | | | 2.4% Organic 70.6% Residue | |
| 21-347 -1 | | | | | 0.0% Vermiculite | 27% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Gray Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive. Ceiling Tile | | |
| 2 | 1ST FLOOR LOBBY | 2' X 2' SUSPENDED CEILING TILE | NOB-TEM | | | 1.7% Organic 86.1% Residue | |
| 21-347 -2 | | | | | 0.0% Vermiculite | 12.2% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Gray Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive. Ceiling Tile | | |
| 3 | 1ST FLOOR LOBBY | 2' X 2' SUSPENDED CEILING TILE | NOB-TEM | | | 3.2% Organic 83.5% Residue | |
| 21-347 -3 | | | | | 0.0% Vermiculite | 13.3% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Gray Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive. Ceiling Tile | | |
| 4 | 1ST FLOOR LOBBY | CINDER BLOCK / WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-347 -4 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Jian Hua Zhou | Color: Beig | e | | | | |
| 5 | 1ST FLOOR BATHROOM | CINDER BLOCK / WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-347 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Jian Hua Zhou | Color: Gray | | | | | |
| 6 | 1ST FLOOR GENERATOR ROOM | CINDER BLOCK / WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-347 -6 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Beige | e | | | | |
| | Jian Hua Zhou | | | | | | |
| 7 | 1ST FLOOR ABOVE PUMP ROOM | SOFT CONCRETE DECKING | PLM | | 100% Mineral Filler | | |
| 21-347 -7 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzad Der | lian Hua 7 hau | Color: Gray | | | | | |
| Analyzed By: | Jian Hua Zhou | | | | | | |

Report Prepared By: Grace Chan Page 1 of 3 Batch # 21-347



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>No</u> | n-Asbestos | NOB | Asbestos |
|----------------|-----------------------------------|---|---------|-----------------|---------------------|---|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 8 | 1ST FLOOR ABOVE GENERATOR ROOM | SOFT CONCRETE DECKING | PLM | | 100% Mineral Filler | | |
| 21-347 -8 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| A 1 1D | r 11 7 1 | Color: Gray | | | | | |
| Analyzed By: | | | | | | | |
| 9 | 1ST FLOOR ABOVE ELECTRIC ROOM | SOFT CONCRETE DECKING | PLM | | 100% Mineral Filler | | |
| 21-347 -9 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Jian Hua Zhou | Color: Gray | | | | | |
| 10 | 1ST FLOOR @ PUMP ROOM WALL | EXPANSION BOARD ON DECKING WALL PERIMETER (BROWN) | NOB-TEM | | 0.00/ \/ailita | 92.7% Organic 1.3% Residue | NONE DETECTED |
| 21-347 -10 | | , | | | 0.0% Vermiculite | 6% Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Black Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive | | |
| 11 | 1ST FLOOR @ GENERATOR WALL | EXPANSION BOARD ON DECKING WALL PERIMETER | NOB-TEM | | | 90% Organic 1.6% Residue | |
| 21-347 -11 | | (BROWN) | | | 0.0% Vermiculite | 8.4% Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Black Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive | | |
| 12 | 1ST FLOOR @ GENERATOR WALL | EXPANSION BOARD ON DECKING WALL PERIMETER (BROWN) | NOB-TEM | | 0.0% Vermiculite | 96.7% Organic 2.1% Residue 1.2% Carbonate | NONE DETECTED |
| 21-347 -12 | | O allow Plant | | | 0.0 /0 Verrillounte | 1.270 Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Black Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive | | |
| 13 | 1ST FLOOR GENERATOR ROOM | VERTICAL EXPANSION CAULKING ON CMU WALL | NOB-TEM | | | 30.5% Organic 7.9% Residue | |
| 21-347 -13 | | | | | 0.0% Vermiculite | 61.6% Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Light Second Analyst: Feyza Gu | • | Comments: NOB P | LM Inconclusive | | |
| 14 | 1ST FLOOR PUMP ROOM | VERTICAL EXPANSION CAULKING ON CMU WALL | NOB-TEM | | | 31% Organic 3.8% Residue | |
| 21-347 -14 | | | | | 0.0% Vermiculite | 65.2% Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Light Second Analyst: Feyza Gu | • | Comments: NOB P | LM Inconclusive | | |
| 15 | 1ST FLOOR EAST WALL | VERTICAL EXPANSION CAULKING ON CMU WALL | NOB-TEM | | | 32.9% Organic 2.1% Residue | |
| 21-347 -15 | | | | | 0.0% Vermiculite | 65% Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Light Second Analyst: Feyza Gu | • | Comments: NOB P | LM Inconclusive | | |

Report Prepared By: Grace Chan Page 2 of 3 Batch # 21-347



ATC Group Services LLC

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280

Fax: 212-353-8306

| | | | | <u>Noi</u> | n-Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|--------------|----------------------------------|---|------------------------|-----------------------------|---|---------------------------|--------------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| NOTES: | | | | | | | |
| 1) The Lim | it of Detection is the same a | s the Reporting Limit for these results. | | | | | |
| 2) The Rep | porting Limit (RL) is the Limit | of Quantitation. For point counts the lin | mit of quantitation of | 0.25%; based on one as | sbestos point counter over 400 non- | empty points. | |
| 3) Asbesto | s Containing Material (ACM) | Definition: > 1% asbestos by weight is | s considered an ACN | И | | | |
| report may | | sponsible for sample collection. Please t endorsement by NVLAP or any other equest. | | | | | |
| 5) Accredi | ted by NVLAP #101187-0 ar | nd by NY State ELAP #10879 | | | | | |
| 6) Confider | ntiality Notice: The documen | t(s) contained herein are confidential ar | nd privileged informa | ition, intended for the exc | clusive use of the individual or entity | named above. | |
| 7) Liability | Notice: ATC Group Services | and its personnel shall not be liable for | r any misinformation | provided to us by the cli | ent regarding these samples. This r | eport relates only to sam | oles submitted and analy |
| 8) Asbesto | s results are reliable to 2 sig | nificant figures. | | | | | |
| 9) The con | dition of all samples was acc | ceptable upon receipt. | | | | | |
| 10) The lab | oratory certifies that the test | t results meet all requirements of NELA | .C. | | | | |
| 11) Supple | ment to test report batch # _ | Amendments: A | mendment Dates: _ | Amended by: | | | |
| 12) PLM Le | etter is attached on this repo | rt. | | | | | |
| 13) TRACE | E: The result is reported as T | race when No points are counted and a | asbestos is identified | I. For ELAP Trace is < 19 | %. | | |
| 14) ATC G | roup Services certifies that the | his report is an accurate and authentic | report of the results | obtained from the laborat | ory analysis | | |
| 15) The un | certainty for these test result | ts is available upon request. | | | | | |
| | | 1 for the analysis of samples containing lite and may underestimate the level of | | | | ethods ELAP 198.1 follow | ved by ELAP 198.6. |
| | - | <u>.</u> :- | | | | | |
| Jian Hua | Zhou | 0 | | | Mei War | σ 144. | Wang |
| | | | _ | | | · WUL | <u> </u> |
| Analyst: | | | | | Approved | by | |
| | | | | | Quality M | anager: | |
| Michael (| Cittings | 1.11/ | | | | | |
| | Gittings | | | | | | |
| Analyst: | w | | | | | | |
| | • | | | | | | |
| Feyza Gu | ıngor | eyly/ | | | | | |
| Analyst: | | ' | | | | | |

Report Prepared By: Grace Chan Page 3 of 3 Batch # 21-347



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired.

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely,

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Miles Bousson

irector of Laboratory Services

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ATC EFFECTIVE DATE 01/18/2021 REVISION #32
BY MEI WANG

Page 1 of 1 DOCUMENT #DB4A



1. Client

PROJECT INFORMATION

| BATCH NO. | 21-347 |
|-----------|--------|

3a. ATC Project No.:

4a. Project Manager:

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

Project Name:

| | PANYNJ FIRESPRINKLER 2a. Project Address: PN PI | | | | TION | 214PNPEPJ1 3b. Task No.: 0001 | | R. Rivero 4b. Inspector: PHILIP CARRINGTON | | | |
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ATEMS ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | Client / P | roject F | PANYNJ | / FIRES | I PRINKI | | SBESTO HAB | | YSIS SI | łEET | Projec | t Number214PN | NPEPJ1 | Microscopes: OLYMPUS BH-2/ NIKON OPT&PHOT |
|--|--|--|---|---------------------|--------------|-------------|----------------|--|--------------|-----------|-----------------------------|--|--|--|
| | Analysis | Date | 3/10 | /2021 | Analyst | | | D | | | Batch | Number21- | 347 | EMPERATURE C 23 |
| 1 1 Field Number | Stered | scopic I | Exam | | | | PLM O | ptical Pr | operties | \$ | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color GAY | Textu | re F | Morpi | Extinction | R) 1 | RI DS | 6 Color Colo | or, Pleo Bi | ref Sign | Other Identity | Chrysotile | Cellulose | (Mineral Filler |
| Required | Homogeneity | Ų ∨ermi | iculite | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Layers | Asbe | | 1 | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer _ | T | ted Yes | No | | | | | | | | | Ceilulose Ondulose | Other |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | %Asb, Or %Ver, | Extinction ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM | 16- | | | | | | | | 7 | 720 | 0 | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | Ce | 21/201 | Me | L | <u> </u> | | 1 | Birefringence | See Note #1. |
| | Method: ☐ E | LAP 🗆 | EPA | SCAN | NING OPTI | ON | | Q. | c. 🗆 | | | A. A. A. A. A. A. A. A. A. A. A. A. A. A | 1 | |
| 2 2 | Stered | scopic I | Exam | 7 | | | PLM O | ptical Pi | roperties | 3 | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Gar | r | - L | Morpl | Extinction | RII | | S Color Col | - | | Other Identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required | Color | Textu | re — | | | | | | | | | Chrysotile Amosite | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended | Homogeneity | Y Verm | iculite | 4 | | | | ····· | | | | Other | Other | Organic Bridges Vermiculite* |
| See gravimetric | # of Layers | Asbe: | stos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer _ | Detec | ted Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver. | PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
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| See SM-V □ | NOB PLM | 9/2- | | | | | , | | | 0 | 200 | 0 | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
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| analysis sheet | Comments: | | | | | | Win | 11/6 | <u> </u> | | | | Birefringence | 300 11010 111 |
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| 3 3 Field Number Gravimetric Required Recommended See gravimetric | Stered Color Homogeneity # of Layers | Textu | Exam ire iculite: | Morph | | | | Q. ptícal Pi | ropertie | | Other Identity | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % D Mineral Filler Organic Binders |
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| for results 3 3 Field Number Gravimetric Required ☑ Recommended ☐ See gravimetric ☑ analysis sheet for results SM-V Required ☐ See SM-V Required ☐ analysis sheet for results | Stered Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE Stered Color | Textu Yerm Ashe Detect Slide 1 Career Control Career Con | Exam re stos sted Yes Slide 2 J EPA Exam re | Morpi No Slide 3 | Slide 4 | RII Slide 5 | Slide 6 | Q. ptical Prical | Slide 8 | Asb. Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile | Other Fibrous PLM % Cellulose Fiberglass Other Other Fiberglass Sotopic Synthetic High Birefringence Horse Hain Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| for results 3 3 Field Number Gravimetric Required See gravimetric See gravimetric SM-V Required See SM-V analysis sheet for results 4 4 Field Number Gravimetric Required Required See gravimetric Required See gravimetric | Stered Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE Stered Color Homogeneity # of Layers | Textu Yerm Asbe Detect Slide 1 LAP Coscopic I Verm Asbe | Exam re stos stos Slide 2 I EPA Exam re Siculte stos stos | No Slide 3 | Slide 4 | RII Slide 5 | Slide 6 | Q. ptical Prical | Slide 8 | Asb. Ver. | PT Total PT | Asbestos Results PLM % Chrysotile Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Anosite | Other Fibrous PLM % Cellulose Fiberglass Other Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hain: Scales, Low to Moderate Birefringence PLM % Cellulose Fiberglass Other | Non Fibrous PLM % D Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders |
| for results 3 3 Field Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 4 Field Number Gravimetric Required Required Required Recommended | Stered Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE Stered Color | Textu Yerm Asbe Detect Slide 1 LAP Coscopic I Verm Asbe | Exam re stos sted Yes Slide 2 J EPA Exam re | No Slide 3 | Slide 4 | RII Slide 5 | Slide 6 | Q. ptical Prical | Slide 8 | Asb. Ver. | PT Total PT | Asbestos Results PLM % Chrysotile Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Anosite | Other Fibrous PLM % Cellulose Fiberglass Other Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scates, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % D Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % O Mineral Filler Organic Binders Vermiculite* |
| for results 3 3 Field Number Gravimetric Required See gravimetric See gravimetric See SM-V Required See SM-V Analysis sheet for results 4 4 Field Number Gravimetric Required See gravimetric Required See gravimetric Required See gravimetric Required See gravimetric See gravimetric analysis sheet | Stered Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE Stered Color Homogeneity # of Layers | Textu Yerm Asbe Detect Slide 1 LAP Coscopic I Verm Asbe | Exam re stos stos Slide 2 I EPA Exam re Siculte stos stos | No Slide 3 | Slide 4 | RII Slide 5 | Slide 6 | Q. ptical Prical | Slide 8 | Asb. Ver. | Olher Identity PT Total PT | Results PLM % Chrysotile Amosite Other *Asbestos Results PLM % Chrysotile Amosite Other **Asb. Or **Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % D Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % O Mineral Filler Organic Binders Vermiculite* |
| for results 3 3 Field Number Gravimetric Required See gravimetric See gravimetric SM-V Required See SM-V analysis sheet for results 4 4 Field Number Gravimetric Required Recommended See gravimetric Required See gravimetric Required See gravimetric analysis sheet for results | Stered Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: Stered Color Homogeneity # of Layers Color of Layer Point Counts | Textu Verm Asbe Detect Slide 1 Coscopic I Verm Asbe Detect De | Exam re | No Slide 3 | Slide 4 | Slide 5 | Slide 6 PLM O | Q. ptical Pi S Color Col Slide 7 | Slide 8 | Asb. Ver. | PT Total PT Other Identity | Results PLM % Chrysotile Amosite Other Asbestos Results PLM % Chrysotile Anosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence Synthetic High Birefringence | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite Organic Binders Other * If vermiculite is > 10% the level of asbestos in a sample |
| for results 3 3 Field Number Gravimetric Required See gravimetric See SM-V Analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 4 Field Number Gravimetric Required Recommended See gravimetric See gravimetric Required See SM-V SM-V See S | Sterect Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE Sterect Color Homogeneity # of Layers Color of Layer Point Counts PLM | Slide 1 LAP C Texture Detect Slide 1 Verm Asbe Detect Slide 1 Scopic I Scopi | Exam re | No Slide 3 | Slide 4 | Slide 5 | Slide 6 PLM O | Q. ptical Pi S Color Col Slide 7 | Slide 8 | Asb. Ver. | Olher Identity PT Total PT | Results PLM % Chrysotile Amosite Other *Asbestos Results PLM % Chrysotile Amosite Other **Asb. Or **Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Geliulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Sirefringence | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* Other |

Methods:
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116
ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☐ ELAP ☐ EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Page _____ of ____

Q.C. 🗆

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Date 3/ 10 /2021 Analyst 21-347 TEMPERATURE °C Non Fibrous Asbestos 5 Other Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI | DS Calor Color, Plea Biref Sign Other Identii 6-22V 100 Mineral Filler Gravimetrio Cellulose Required Organic Binders O Vermiculite* See gravimetric analysis sheel Extinction Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V 0 Required vel of asbestos in a sample Horse Hair: Scales NOB PL might be underestimated. See SM-V Low to Moderate ee Note #1. analysis sheet for results Q.C. 🗆 GEANNING OPTION Method: ← ELAP □ EPA Asbestos Other Fibrous 6 Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % BUNC **りし** Mineral Filler Gravimetric Cellulos Required Fiberglas Organic Binder __Vermiculite* See gravimetric [Other analysis sheet Celiulose Ondulose for results Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V If vermiculite is >10% the 200 Required [vel of asbestos in a sample NOB PLM might be underestimated, See SM-V (Low to Moderate ee Note #1, analysis sheet for results Q.C. 🗆 Method: □ ELAP □ EPA SCANNING OPTION Asbestos Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % υυ Mineral Filler Gravimetr Cellulose Required Fiberglas Organic Binder O Vermiculite* Color of Layer Detected Yes for results Point Counts Slide 2 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb. Ner. PT Total PT %Asb. Or %Ver. SM-V Zow Ü Required [vel of asbeslos in a sample Horse Hair: Scales NOB PLM might be underestimated. See SM-V [ee Note #1. analysis sheet for results Method: ☐ ELAP ☐ EPA SCANNING OPTION Q.C. Asbestos Other Fibrous Non Fibrous 8 Stereoscopic Exam **PLM Optical Properties** Results PLM 9 PLM % PLM % Color ONLY DO__Mineral Filler Cellulose Required [Organic Binde Vermiculite 17 Vermiculite* See gravimetric Other analysis sheet Cellulose Ondulos for results Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Point Counts Stide 1 Slide 2 Slide 3 %Asb. Or %Ver. Zev If vermiculite is >10% the Required [evel of asbestos in a samp NOB PLM See SM-V E Low to Moderate See Note #1.

| Methods: |
|---|
| EPA Interim Method of the Determination of |
| Asbestos in Bulk Insulation Samples - 40 CF |
| Appendix E to Subpart E of Part 763 |
| EPA 600/R-93/116 |
| FLAP items 198 1 198 4 198 6 198 8 |

Method: ☐ ELAP ☐ EPA

SCANNING OPTION

analysis sheet

for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method
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Q.C. 🗆

| RDS\OPTICAL\ASBESTOS_BUL | | ASBESTOS ANALYSIS SHEET_FORM #B2.6 |
|--------------------------|---------------------------|---------------------------------------|
| of. | ATC EFFECTIVE DATE 01/18/ | /2021 REVISION #33 BY MEI WÄNG FORM # |

ATLAS ATC

ATC - New York

BULK ASBESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | Microscopes: |
|------|----------------|
| | OLYMPUS BH-2/ |
| | NIKON OPTJEHOT |
| EPJ1 | 700 |
| | Cho |

| | Client / Project PAN | YNJ/ FIRES | PRINKL | LER REI | HAB | | | | Project | Number 214PN | NPEPJ1 | NIKON OPTIRH |
|---|--|---|--------------|---------|---------|---|------------------------------|-----------------|----------------------------|---|--|--|
| | Analysis Date 3/ | 0 /2021 | _ Analyst | | | | B | | Batch | Number 21- | 347 | TEMPERATURE*C |
| 1 9 Field Number | Stereoscopic Exam | | | | PLM O | ptical P | ropertie | s | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous |
| Gravimetric | Color Texture | 6 Morph | Extinction | RIT | RII DS | Color Col | or, Pleo B | iref Sign Ot | her identity | Chrysofile | Cellulose | 100 Mineral Filler |
| Required | Homogeneity Y Vermiculite | | | | | | | | | Amosite | Fiberglass | |
| Recommended | | -/- | | | | | | | | | Other | 7 Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected | Yes No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slid | e 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM 0/50 | | | | | -> | | | 200 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM (| | | | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sam might be underestimated. |
| analysis sheet | Comments: | | | | | | | | | | Low to Moderate Birefringence | See Note #1, |
| for results | Method: □ELAP □ EPA | SCAN | NING OPTIC | ON | | Q. | c. 🗆 | | | | | |
| | | | | | | ~. | <u> </u> | | | | | |
| 2 10 Field Number | Stereoscopic Exam | _ | | | PLM O | ptical P | ropertie | s | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Blank Texture | Morph | Extinction | RII | RII DS | Color Col | or, Pleo B | iref Sign Ot | her Identity | Chrysotile | Cellulose | 100 Mineral Filler |
| Required 🗸 | / | | | | | | | | | Amosite | Fiberglass | Organic Bind |
| Recommended | Homogeneity Vermiculite | -/- | _ | | | | | | | Other | Other | O Vermiculite* |
| See gravimetric | # of Layers Asbestos | _ | | | | | | | | | 70000 | Other |
| analysis sheet for results | Color of Layer Detected | Yes No | | | | | | | | | ☐ Cellulose Ondulose | |
| | Point Counts Slide 1 Slid | e 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction | |
| SM-V | DIM | 0.100.0 | Oligo y | Sildo o | Cildo G | Olide 7 | Olido D | 7.00.7 VOI. 1 1 | TOTAL | 70730. 01 7001. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | | | | | | | | | | _ | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sam |
| See SM-V analysis sheet | NOB PLM /S | | | | | | | 0 | 20 | 0 | Low to Moderate | might be underestimated. See Note #1. |
| | | | | | | | | | | | | |
| for results | Comments: | | | | | - 1- | | | | | Birefringence | |
| | Method: ELAP EPA | SCAN | NING OPTION | ON | | Q. | C. 🗆 | | | | pireiringence | |
| for results | | - | NING OPTION | ON | PLM O | Q. | | s | | Asbestos | Other Fibrous | Non Fibrous |
| for results 3 11 Field Number | Method: □ ELAP □ EPA Stereoscopic Exam | | NING OPTION | ON | | | opertie | | her Identity | Asbestos Results PLM % | Other Fibrous PLM % | PLM % |
| for results 3 11 Field Number Gravimetric | Method: ☑ ELAP ☐ EPA | | | | | ptical P | opertie | | her Identity | Results PLM % Chrysotile | Other Fibrous PLM % Cellulose | PLM % OP Mineral Filler |
| for results 3 11 Field Number Gravimetric Required | Method: □ ELAP □ EPA Stereoscopic Exam | | | | | ptical P | opertie | | her Identity | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass | PLM % OP Mineral Filler Organic Bind |
| for results 3 11 Field Number Gravimetric Required Recommended | Method: ELAP DEPA Stereoscopic Exam Color Blade Texture | | | | | ptical P | opertie | | her Identity | Results PLM % Chrysotile | Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Bind Vermiculite* |
| for results 3 11 Field Number Gravimetric Required | Stereoscopic Exam Color Color Texture Homogeneity Vermiculite # of Layers Asbestos | Morph | | | | ptical P | opertie | | her Identity | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass Other | PLM % OP Mineral Filler Organic Bind |
| 3 11 Field Number Gravimetric Required Recommended See gravimetric | Stereoscopic Exam Color Color Texture Homogeneity Vermiculite # of Layers Asbestos | | | | | ptical P | opertie | | her Identity | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Bind Vermiculite* |
| 3 11 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Stereoscopic Exam Color Color Texture Homogeneity Vermiculite # of Layers Asbestos | Yes No | | | | ptical P | ropertie: | | | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic | PLM % Mineral Filler Organic Bind Vermiculite* |
| for results 3 11 Field Number Gravimetric Required Recommended □ See gravimetric analysis sheet for results | Stereoscopic Exam Color Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Point Counts Slide 1 Slide | Yes No | a Extinction | Riı | RI DS | ptical Pi | ropertie: | ref Sign Otl | | Results PLM % Chrysotile Amosite Other | Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Bind Vermiculite* Other If vermiculite is >10% the |
| 3 11 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required Required | Stereoscopic Exam Color Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Point Counts Slide 1 Slide | Yes No | a Extinction | Riı | RI DS | ptical Pi | ropertie: | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Filler Organic Bind Vermiculite* Other If vermiculite is >10% the level of asbestos in a samminght be underestimated. |
| 3 11 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Detected Point Counts Slide 1 Slide PLM | Yes No | a Extinction | Riı | RI DS | ptical Pi | ropertie: | ref Sign Otl | | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Bind Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp |
| 3 11 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V See SM-V | Stereoscopic Exam Color State Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Point Counts Stide 1 Stide PLM NOB PLM | Yes No Slide 3 | a Extinction | RI1 | RI DS | ptical Property of the Scotor Color Color Slide 7 | roperties or, Pleo B | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Bind Vermiculite* Other If vermiculite is >10% the level of asbestos in a samminght be underestimated. |
| 3 11 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color Flat Texture Homogeneity Vermiculite # of Layers Detected Point Counts Slide 1 Slid PLM NOB PLM NOB PLM Comments: Method: □ ELAP □ EPA | Yes No SCAN | s Extinction | RI1 | RIII DS | ptical Property of the Scolor Color Slide 7 | roperties or, Pleo B Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % Mineral Filler Organic Bind Other * If vermiculite is >10% the level of asbestos in a sam might be underestimated. See Note #1. |
| 3 11 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color Stature Homogeneity Vermiculite # of Layer Detected Point Counts Slide 1 Slide PLM NOB PLM Comments: Method: ELAP EPA | Yes No | Slide 4 | RI1 | RII DS | ptical Pi | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Bind Other If vermiculite is >10% the level of asbestos in a sammight be underestimated. See Note #1. |
| for results 3 11 Field Number Gravimetric Required Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Stereoscopic Exam Color Flat Texture Homogeneity Vermiculite # of Layers Detected Point Counts Slide 1 Slid PLM NOB PLM NOB PLM Comments: Method: □ ELAP □ EPA | Yes No | s Extinction | RI1 | RII DS | ptical Property of the Scolor Color Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | PLM % Mineral Filler Organic Bind Overmiculite* Other * If vermiculite is >10% the level of asbestos in a sam might be underestimated. See Note #1. |
| 3 11 Field Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Stereoscopic Exam Color Clayer Detected Point Counts Stide 1 Stide PLM NOB PLM Comments: Method: ELAP PA Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam | Yes No | Slide 4 | RI1 | RII DS | ptical Pi | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Bind Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sam might be underestimated. See Note #1. Non Fibrous PLM % |
| for results 3 11 Field Number Gravimetric Required □ See gravimetric analysis sheet for results SM-V Required □ See SM-V Required □ analysis sheet for results 4 12 Field Number Gravimetric | Stereoscopic Exam Color Stand Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Point Counts Slide 1 Slide PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Stand Texture Homogeneity Vermiculite | Yes No | Slide 4 | RI1 | RII DS | ptical Pi | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Bind Other If vermiculite is >10% the level of asbestos in a sammight be underestimated. See Note #1. Non Fibrous PLM % DO Mineral Filler |
| for results 3 11 Field Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required See gravimetric Required See gravimetric | Stereoscopic Exam Color Clayer Detected Point Counts Stide 1 Stide PLM NOB PLM Comments: Method: ELAP PA Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam | Yes No | Slide 4 | RI1 | RII DS | ptical Pi | Slide 8 | Asb./Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Bind Overmiculite* Other * If vermiculite is >10% the level of asbestos in a sam might be underestimated. See Note #1. Non Fibrous PLM % Down Mineral Filler Organic Bind |
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analysis sheet

for results

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ELAP

☐ EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.*

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Page of ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Q.C.

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

DSCOPES: JS BH-27 PTIPHOT

| BULK ASBESTOS ANALYSIS SHEET | | <u>Micro</u> OLYMPU: |
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Medical Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 800/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: 🗆 ELAP

☐ EPA

SCANNING OPTION

for results

Q.C.

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

03/10/21

122510

21-347

PLM Batch#

PANYNJ RUSH

Client/Project:

03/11/21

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| | | Notes | | | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | | | |
| 9 | Asbestos | Types or Vermiculite | QN QN | N | Q | QN | N | ΩZ | Q.Z | QN | S | : |
| 12 | | % Carbonate | 27.0 | 12.2 | 13.3 | 6.0 | 8.4 | 1.2 | 61.6 | 65.2 | 65.0 | |
| 11 | Non Asb | Residue % NFr | 70.6 | 86.1 | 83.5 | 1.3 | 1.6 | 2.1 | 6.7 | 3.8 | 2.1 | |
| 5 | | % Organic | 2.4 | 1.7 | 3.2 | 92.7 | 90.0 | 96.7 | 30.5 | 31.0 | 32.9 | |
| | | Field # | - | 2 | 3 | 10 | 74 | 12 | 13 | 14 | 15 | |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not detected.

APPENDIX B

PCB-IN-CAULKINGING LABORATORY RESULTS AND CHAIN OF CUSTODIES

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88 Harbor Road Port Washington, NY 11050 (516) 944-9500

Laboratory Report for PCBs in Solid Waste

Report No.:2211030-17154

Customer: ATC Group Services LLC

104 East 25th Street New York, NY 10010 Analytical results pertain only to the samples tested in the condition received by the laboratory. This report must not be reproduced except in its entirety, unless with express written permission from the laboratory.

Project: Fire Sprinkler Rehabilitation, Port Newark, NJ

 Lab Sample ID:
 210311J126
 Collected:
 3/10/2021

 Client ID:
 13
 Received:
 3/11/2021

Description: Bldg 111, Pump Rm, NE, Vertical Expansion Caulk on CMU Wall

Collected: 3/10/2021

Received: 3/11/2021 9:45

| Parameter | Method | Analysis Date | LOQ | Result | Units | Flag(s) |
|------------|-----------|---------------|------|--------|-------|---------|
| PCB 1016 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1221 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1232 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1242 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1248 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1254 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1260 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| Extraction | EPA 3550C | 03/11/21 | | | | |

Comment(s):

LOQ: Limit of Quantitation PCB: Polychlorinated biphenyl

High-level Limit of Quantitation (LOQ) of prep method EPA 3550C is 20 mg/kg; any PCB quantities reported less than 20 mg/kg are estimated. Samples analyzed on a wet-weight, "as-received" basis.

NYSDOH ELAP Lab ID 11510

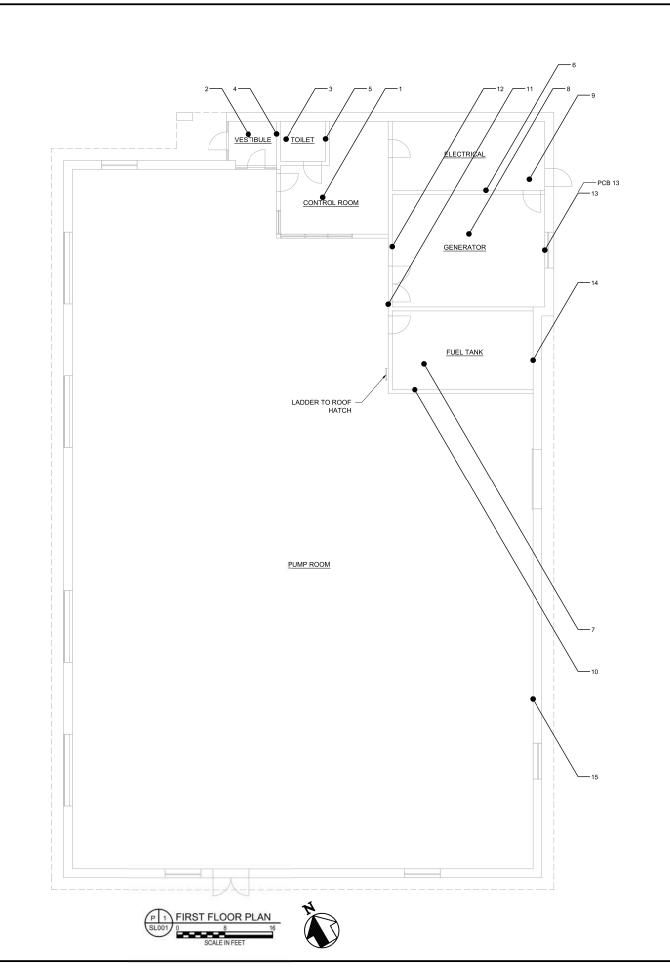
Page 1 of 1 Reported 3/12/2021 4:52 PM Approved:

Li Tsang, Laboratory Director

S. Com 0.550 MDL 3:00 Pm 9 Result/12 Lab Use Only 3/10/21 Time: d Ronau 01 Email Results to: \Box 3/11/21 PCB AZ Date # Date: Date: Building Gulk 2 210311 JO De Parosion Material 2 214PNPEPJ1 VERTICAL I Date: 03 12 2 PN PE 514 00 Signature: Signature: Turnaround Client Proj. 6000 W Address Location and/or Sample Description RM arrington GARRINGTON Jum D NEW YORK ENVIRONMENTAL Blodg !!! PHILL PANYNJ 3 Relinquished: Lab Use Only: Technician Sample # Project | Client 0

APPENDIX C
ASBESTOS AND PCB SAMPLE LOCATION DRAWINGS

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| SYMBOL | DESCRIPTION |
|--------|----------------------------------|
| 10 | SUSPECT ASBESTOS SAMPLE LOCATION |
| PCB 13 | SUSPECT PCB SAMPLE LOCATION |

Sheet 1 of 1 THE PORT AUTHORITY OF NY& NJ ATC GROUP SERVICES 104 EAST 25TH STREET, NEW YORK NY 10010 No. Date Revision Approved ENGINEERING DEPARTMENT NEW JERSEY MARINE TERMINAL PORT NEWARK ENVIRONMENTAL

ENVIRONNENTA

Title

NEW JERSEY PORTS ASBESTOS SURVEY

BUILDING 111 FIRST FLOOR SAMPLE LOCATION PLAN SAMPLES 1 TO 15

This disting subject to conditions in contract. All inventions, does, designs and methods herein are necessful both visibility and may not be used without a written consent. All recipitars of Courtest documents, including bidden and those who do not doll and the countries of contract thorousests. All recipitars of Courtest documents or conjugate and those who do not doll and the focus method or conjugate disposal of the Contract documents to prevent further decisions of the referencies of the Courtest documents. Secure and except oftat the except secure start approach deposal of the Contract documents to prevent further decisions of the referencies of the contract documents. Secure and except sections are started to except the decision of the contract documents and the secure shall be decisioned and the secure of the documents and the labor decision. The started the secure of the documents of the secure and the secure of the documents of the secure and the secure of t

| Designed by | R.RIVERO |
|--------------------|-----------|
| Drawn by | E.MILKI |
| Checked by | |
| Date | 05/14/202 |
| Contract Number | |

Orawing SL001

APPENDIX D

ASBESTOS LOCATION DRAWINGS (N/A FOR THIS PROJECT)

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APPENDIX E

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative – Kevin Hamilton:

This license has been issued in a ccordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the a sbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

> Amy Phillips, Director For the Commissioner of Labor

SH 432 (8/12)



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

Asbestos

EPA 100.2

of Health

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.



NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR

NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual

EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM Item 198.4 of Manual Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.



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MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III NIOSH 7402

Fibers

NIOSH 7400 A RULES

Serial No.: 61223

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI, COPY ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

> is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER All approved analytes are listed below:

Serial No.: 62824

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to



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MS. MILENA BONEZZI

ATC GROUP SERVICES LLC

104 EAST 25TH STREET 8TH FLOOR

NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicted by posted, and are printed or secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1 = 1 > D Y A I C

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI ATC GROUP SERVICES LLC

104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

NIOSH 7400 A RULES

Serial No.: 62826

Property of the New York State Department of Health. Gertificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

Technology Commerce and of S Department of Standards Standard States National Institute United



702 O/IEC ccreditation of Certificate

NVLAP LAB CODE: 101187-0

Services Group

New York, NY

accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC This accreditation demonstrates technical competence for a defined scope and the operation of a la management system (refer to joint ISO-ILAC-IAF Communique dated January 2009)

For the National Voluntary

2020-07-01 through 2021-06-30

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor New York, NY 10010 Ms. Milena Bonezzi Phone: 212-353-8280 x247 Fax: 212-353-8306

Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

18/A01

18/A02

National Voluntary

Laboratory Accreditation Program

Code **Description**

EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of

Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code **Description**

U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40

CFR Part 763 Subnart F Annendix A

For the National Voluntary Laboratory Accreditation Program

Effective 2020-07-01 through 2021-06-30 Page 1 of 1





AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

Laboratory ID: LAP-100229

104 East 25th St 8th Flr New York, NY 10010

Issue Date: 08/30/2019

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 06/12/1995

| IHLAP Scope Category | Field of Testing (FOT) | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested |
|-----------------------------------|------------------------------------|----------------------------------|---|---|
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | - |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

Effective: 04/10/2015 Revision: 8

Page 1 of 1



Department of Health

ANDREW M. CUOMO Governor HOWARD A. ZUCKER, M.D., J.D. Commissioner

LISA J. PINO, M.A., J.D. Executive Deputy Commissioner

LAB ID: 11510

April 01, 2021

MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

Certificate Expiration Date: April 01, 2022

Dear Mr. Tsang,

Enclosed are certificate(s) of approval issued to your environmental laboratory for the current permit year. The certificate(s) supersede(s) any previously issued one(s) and is(are) in effect through the expiration date listed. Please carefully examine the certificate(s) to insure that the categories, subcategories, analytes, and methods for which your laboratory is approved are correct. In addition, verify that your laboratory's name, address, lead technical director, and identification number are accurate.

Pursuant to NYCRR Subpart 55-2.2, original certificates must be posted conspicuously in the laboratory and copies shall be made available to any client of the laboratory upon request.

Pursuant to NYCRR Subpart 55-2.6, any misrepresentation of the fields of accreditation (category - method - analyte) for which your laboratory is approved may result in denial, suspension, or revocation of your certification. Any use of the Environmental Laboratory Approval Program (ELAP) or National Environmental Laboratory Accreditation Program (NELAP) name, reference to the laboratory's approval status, and/or using the NELAP logo in any catalogs, advertising, business solicitations, proposals, quotations, laboratory analytical reports, or other materials must include the laboratory's ELAP identification number and distinguish between testing for which the laboratory is approved and testing for which the laboratory is not approved.

If you have any questions, please contact us at the Environmental Laboratory Approval Program, Wadsworth Center, New York State Department of Health, Empire State Plaza, Albany NY, 12237; by phone at (518) 485-5570; by facsimile at (518) 485-5568; and by email at elap@health.ny.gov.

Sincerely

Victoria Pretti

Director and QA Officer

Environmental Laboratory Approval Program

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 11510

MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2016) for the category

ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below:

| Bacteriology | | Metals III | |
|---|-------------------------------------|----------------------|--|
| Coliform, Total / E. coli (Qualitative) | SM 20, 21-23 9223B (-04) (Colilert) | Sodium, Total | EPA 200.7 Rev. 4.4 |
| Enterococci | SM 23 9230D (Enterolert) | Miscellaneous | |
| Heterotrophic Plate Count | SimPlate | Odor | SM 21-23 2150 B (-97) |
| Metals I | | Turbidity | SM 21-23 2130 B (-01) |
| Barium, Total | EPA 200.7 Rev. 4.4 | Non-Metals | |
| Cadmium, Total | EPA 200.7 Rev. 4.4 | Calcium Hardness | EPA 200.7 Rev. 4.4 |
| Chromium, Total | EPA 200.7 Rev. 4.4 | Calcium Hardness | |
| Copper, Total | EPA 200.7 Rev. 4.4 | Color | SM 18-22 2340B (-97) SM 21-23 2120B (-01) |
| Iron, Total | EPA 200.7 Rev. 4.4 | | SM 21-23 2510B (-97) |
| Lead, Total | EPA 200.9 Rev. 2.2 | Specific Conductance | SIVI 21-23 23 100 (-91) |
| Manganese, Total | EPA 200.7 Rev. 4.4 | | |
| Silver, Total | EPA 200.7 Rev. 4.4 | | |
| Zinc, Total | EPA 200.7 Rev. 4.4 | | |
| Metals II | | | |
| Aluminum, Total | EPA 200.7 Rev. 4.4 | | |
| Beryllium, Total | EPA 200.7 Rev. 4.4 | | |
| Molybdenum, Total | EPA 200.7 Rev. 4.4 | | |
| Nickel, Total | EPA 200.7 Rev. 4.4 | | |
| Vanadium, Total | EPA 200.7 Rev. 4.4 | | |
| Metals III | | | |
| Boron, Total | EPA 200.7 Rev. 4.4 | | |
| Calcium, Total | EPA 200.7 Rev. 4.4 | | |
| Magnesium, Total | EPA 200.7 Rev. 4.4 | | |
| Potassium, Total | EPA 200.7 Rev. 4.4 | | |
| | | | |

Serial No.: 63011

Property of the New York State Department of Health. Cartificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.





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MR. LI TSANG NY ENVIRONMENTAL AND ANALYTICAL LABS INC 88 HARBOR ROAD PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES POTABLE WATER All approved subcategories and/or analytes are listed below:

Bacteriology

ISO 11731:2017(E) Legionella



Serial No.: 63012

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Page 1 of 1

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



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MR. LI TSANG NY ENVIRONMENTAL AND ANALYTICAL LABS INC 88 HARBOR ROAD PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER All approved analytes are listed below:

| Bacteriology | | Metals III | |
|---------------------------|----------------------------|-------------------|----------------------------|
| Enterococci | SM 23 9230D (Enterolert) | Cobalt, Total | EPA 200.7, Rev. 4.4 (1994) |
| Heterotrophic Plate Count | SimPlate | Molybdenum, Total | EPA 200.7, Rev. 4.4 (1994) |
| Metals I | | Thallium, Total | EPA 200.7, Rev. 4.4 (1994) |
| Barium, Total | EPA 200.7, Rev. 4.4 (1994) | Mineral | |
| Cadmium, Total | EPA 200.7, Rev. 4.4 (1994) | Calcium Hardness | EPA 200.7, Rev. 4.4 (1994) |
| Calcium, Total | EPA 200.7, Rev. 4.4 (1994) | of Health | SM 2340B-2011 |
| Chromium, Total | EPA 200.7, Rev. 4.4 (1994) | Hardness, Total | EPA 200.7, Rev. 4.4 (1994) |
| Copper, Total | EPA 200.7, Rev. 4.4 (1994) | | SM 2340B-2011 |
| Iron, Total | EPA 200.7, Rev. 4.4 (1994) | Miscellaneous | |
| Lead, Total | EPA 200.7, Rev. 4.4 (1994) | Turbidity | SM 2130 B-2011 |
| Magnesium, Total | EPA 200.7, Rev. 4.4 (1994) | Tubony | |
| Manganese, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Nickel, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Potassium, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Silver, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Sodium, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Strontium, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Metals II | | | |
| Aluminum, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Antimony, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Arsenic, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Beryllium, Total | EPA 200.7, Rev. 4.4 (1994) | | |

Serial No.: 63013

Selenium, Total

Vanadium, Total Zinc, Total

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EPA 200.7, Rev. 4.4 (1994)

EPA 200.7, Rev. 4.4 (1994)

EPA 200.7, Rev. 4.4 (1994)





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MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER All approved subcategories and/or analytes are listed below:

Bacteriology

Legionella ISO 11731:2017(E)



Serial No.: 63014

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



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88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved analytes are listed below:

Characteristic Testing

| TCLP | EPA 1311 | | |
|---------------------------|-----------|--------|--|
| Polychlorinated Biphenyls | | | |
| Aroclor 1016 (PCB-1016) | EPA 8082A | | |
| Aroclor 1221 (PCB-1221) | EPA 8082A | | |
| Aroclor 1232 (PCB-1232) | EPA 8082A | Mebal | |
| Aroclor 1242 (PCB-1242) | EPA 8082A | of Hea | |
| Aroclor 1248 (PCB-1248) | EPA 8082A | | |
| Aroclor 1254 (PCB-1254) | EPA 8082A | | |
| Aroclor 1260 (PCB-1260) | EPA 8082A | | |
| | | | |

Sample Preparation Methods

EPA 3550C

Serial No.: 63015

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.





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NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Metals I

Lead, Total EPA 6010D

EPA 7000B

Miscellaneous

Asbestos in Friable Material Item 198.1 of Man

Item 198.1 of Manual EPA 600/M4/82/020

Department

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Lead in Dust Wipes

Sample Preparation Methods

EPA 6010D EPA 7000B

Lead in Paint EPA 6010D

EPA 7000B

EPA 3050B

ASTM E-1979-17

Serial No.: 63016

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



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MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

Metals I

Lead, Total

NIOSH 7082

Miscellaneous

Fibers

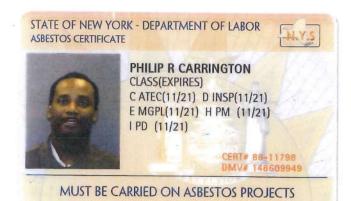
NIOSH 7400 A RULES

NEW YOR

Department of Health

Serial No.: 63017

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01213 005585914 40 EYES BRO HAIR BLK HGT 54 09" IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE RONEY D RIVERO CLASS(EXPIRES) C ATEC(08/21) D INSP(08/21) E MGPL(08/21) H PM (08/21) I PD (08/21) MUST BE CARRIED ON ASBESTOS PROJECTS

01213 00581057 61

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NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, EP, & PJ

ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING #260

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

July 1, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

July 1, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building #260

260 Kellogg Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Roney D. Rivero

Senior Project Manager for ATC Group Services LLC Direct Line +1 212 284 0614 Email: roney.rivero@atcgs.com

Attachments

Inspection Report for ACM Port Newark, Building 260, Newark, NJ

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APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: Asbestos Sample Location Drawings

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Inspection Report for ACM Port Newark, Building 260, Newark, NJ

Page 1

EXECUTIVE SUMMARY

On March 15 & April 15, 2021, ATC completed the inspection for ACM at Port Newark, Building #260 (the Site). The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected one hundred twenty-five asbestos bulk samples from all suspect asbestos-containing material on all accessible areas of Building 260. Based upon review of the analytical results of bulk samples collected, one (1) sampled homogeneous area was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content).

The material that tested positive for asbestos is:

• Mudded Joint Packing Pipe Fitting Insulation associated with Fiberglass Pipe Insulation (3" OD)

These materials are tabulated in Section 4.0.

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Inspection Report for ACM Port Newark, Building 260, Newark, NJ

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM/LCP |
|----------------------|----------------------|---------|
| Philip R. Carrington | AH-88-11798 | ACM |
| Nancy Guevara | AH-14-00412 | ACM |
| Roney D. Rivero | AH-88-06348 | ACM |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 260, construction date unknown, is located on the intersection of Kellogg Street and Corbin Street. The building consists of a three-story office building and a double height garage structure. The office building measures 129 ft. long by 46 ft. wide and is approximately 36 ft. tall. The double-height garage has a rectangular footprint of 121 ft. wide by 216 ft. long and is approximately 24 ft. tall. The overall roofs are a total of 32,890 sf., 6,670 sf. at the office building and 26,200 sf. over the garage.

The building is being used as the Administrative Building for the Port Authority's New Jersey Marin Terminals, office for the Port Authority police and a service garage for Port Authority vehicles. The framing system at both buildings consists of steel girders and open web joists supported by steel columns. The roof deck consists of a flat insulated gypsum panel system. The office building's exterior wall system is brick and concrete and the garage is a reinforced translucent panel system that extends to the roof line with roll-up overhead doors at the east elevation

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous

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Inspection Report for ACM Port Newark, Building 260, Newark, NJ

area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of the building on March 15 & April 15, 2021 and collected one hundred twenty-five bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location. The intent of this survey was to locate and identify all accessible ACM.

The following thirty-nine (39) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location | | |
|----------------------|--|--|--|
| CMU Wall Mortar | 1 st Floor – Sprinkler Room, Hallway, Warehouse | | |
| Cementitious Plaster | 1 st Floor – Sprinkler Room | | |

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| 2' X 2' Ceiling Tile Type I | 1 st Floor – Lobby, Lunch Room, South Offices |
|---|--|
| Spray-on Fire Proofing on Ceiling Deck Metal Beams | 1 st Floor – Lobby, Lunch Room, South Offices, Men's Locker Room |
| 2' X 4' Ceiling Tile Type II | 1 st Floor – Men's Locker Room, Entrance From Lunch Room |
| 2' X 4' Ceiling Tile Type III | 1st Floor – Hallway Men's Room |
| Spray-on Fire Proofing on Ceiling Deck & Metal Beams | 1 st Floor Warehouse – East Offices |
| Gypsum Board Paper - Wall | 1 st Floor Warehouse – East Offices |
| Gypsum Board - Wall | 1 st Floor Warehouse – East Offices |
| Joint Compound on Gypsum Board Wall | 1 st Floor Warehouse – East Offices |
| HVAC Duct Insulation | 1 st Floor Warehouse – East Offices by Main entrance Door, Hallway Restroom |
| Gypsum Board Paper - Ceiling | 1 st Floor - U.S.M. Shop |
| Gypsum Board - Ceiling | 1 st Floor - U.S.M. Shop |
| Joint Compound on Gypsum Board Ceiling | 1st Floor - U.S.M. Shop |
| HVAC Duct Insulation Cover Beige | 1 st Floor - Warehouse East Office Mezzanine |
| Fiberglass Ceiling Insulation Blanket | First Floor - Entry Room by U.S.M. Shop |
| Fiberglass Insulation Metal Jacket Covering | 1st Floor - Locker Room |
| Mudded Joint Packing Pipe Fitting Insulation associated with Fiberglass Pipe Insulation | 1 st Floor - Locker Room |
| 2' X 2' Ceiling Tile Paper | 1 st Floor - Hallway Restroom Ceiling |
| 2' X 2' Ceiling Tile Type I | 1st Floor - Lunch Room |
| HVAC Duct Insulation Cover | 1st Floor - Lunch Room |
| CMU Wall Mortar | 1 st Floor – Electric Shop, Carpenter Shop & Plumbing Shop |
| 2' X 2' Ceiling Tile | 2 nd Floor – Office Space |
| Gypsum Board Paper - Wall | 2 nd Floor – Office Space |
| Gypsum Board - Wall | 2 nd Floor – Office Space |
| Joint Compound on Gypsum Board Wall | 2 nd Floor – Office Space |
| HVAC Duct Insulation Cover | 2 nd Floor – Office Space |
| Spray-on Fire Proofing on Ceiling Deck Metal Beams | 2 nd Floor – Office Space |
| Fire Stop Sealant - Red | 2 nd Floor – Office Space @ Deck Level |

| 2' X 2' Ceiling Tile Type II | 2 nd Floor – Slope Sink |
|---|--|
| 2' X 2' Ceiling Tile Type I | 3 rd Floor – Office Space |
| HVAC Duct Insulation Cover | 3 rd Floor – Office Space |
| Gypsum Board Paper - Wall | 3 rd Floor – Office Space |
| Gypsum Board - Wall | 3 rd Floor – Office Space |
| Joint Compound on Gypsum Board Wall | 3 rd Floor – Office Space |
| Spray-on Fire Proofing on Ceiling Deck Metal Beams | 3 rd Floor – Office Space |
| Gypsum Board Paper - Ceiling | 3 rd Floor –East & West Side Staircases |
| Gypsum Board - Ceiling | 3 rd Floor –East & West Side Staircases |
| Joint Compound on Gypsum Board Ceiling | 3 rd Floor –East & West Side Staircases |

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and analytical results of bulk samples collected, the following materials are asbestos-containing (> 1%):

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| | Mudded Joint Packing Pipe Fitting Insulation associated with Fiberglass Pipe Insulation | 10% Chrysotile | 6 L.F. (See Note 1) | ACM001 |

<u>Note 1</u>: The ACM Mudded Joint Packing Pipe Fitting Insulation is located approximately 4' to 6' from the ground level and may not be impacted by the Sprinkler System Renovation.

The following materials are presumed to be asbestos-containing material (PACM):

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|--|---------------------|----------------------|-----------------------|
| N/A | Flange & Valve Gaskets - Sprinkler Room | PACM | 25 Units | ACM001 |

ACM laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix B. Asbestos Location Plans are included in Appendix C.

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Inspection Report for ACM Port Newark, Building 260, Newark, NJ

6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection at the site, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected one hundred twenty-five asbestos bulk samples from all suspect asbestos-containing material on all accessible areas of Building 260. Based upon review of the analytical results of bulk samples collected, one (1) sampled homogeneous area located in Building 260 was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content).

The material that tested positive for asbestos in Building 260 is:

Mudded Joint Packing Pipe Fitting Insulation associated with Fiberglass Pipe Insulation (3" OD)

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Various types of painted surfaces such as sprinkler pipes, gypsum board ceilings and walls, CMU walls, and roof metal decking have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 260, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 260 located in Newark, New Jersey.

The materials reported in Section 5.0 of this report may not require abatement prior to sprinkler system renovation because they are located approximately 4' to 6' from the ground level and may not be impacted due to the distance to the sprinkle pipe system.

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Inspection Report for ACM Port Newark, Building 260, Newark, NJ

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection. The valve gaskets inside the pipe flanges could not be tested since the sprinkler system is still operational. It is assumed, based on the number of flanges observed, that there are 25 gaskets in the sprinkler room and are presumed to be asbestos containing. This quantity should be verified with destructive sampling if abatement is planned prior to any renovation work.

If questions arise regarding asbestos content in building materials that were not tested by ATC, additional testing services should be procured to test those areas.

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

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APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES



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Client: ATC - NEW YORK

104 EAST 25TH STREET NEW YORK , NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Sample Date: 3/15/2021

Date Received: 3/15/2021

Date Analyzed: 3/17/2021

ATC Batch # 21-427

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING 260 / 1ST FLOOR

Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>No</u> | n-Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|--------------|-----------------------|--|---------|-----------------|---------------------|--------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 1 | SPRINKLER ROOM | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-427 -1 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | 1 | | | | |
| Analyzed By: | Ivan Reyes | · | | | | | |
| 2 | 1ST FLOOR - HALLWAY | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-427 -2 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | _ | Color: Gray | 1 | | | | |
| Analyzed By: | | | | | | | |
| 3 | 1ST FLOOR - WAREHOUSE | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-427 -3 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | 1 | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 4 | SPRINKLER ROOM | CEMENTITIOUS PLASTER | PLM | | 100% Mineral Filler | | |
| 21-427 -4 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| A a b a d Do | han Barra | Color: Brov | vn | | | | |
| Analyzed By: | | | | | | | |
| 5 | SPRINKLER ROOM | CEMENTITIOUS PLASTER | PLM | | 100% Mineral Filler | | |
| 21-427 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brov | vn | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 6 | SPRINKLER ROOM | CEMENTITIOUS PLASTER | PLM | | 100% Mineral Filler | | |
| 21-427 -6 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brov | vn | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 7 | 1ST FLOOR LOBBY | 2' X 2' CEILING TILE TYPE 1 | NOB-TEM | | | 27.2% Organic 39.4% Residue | |
| 21-427 -7 | | | | | 0.0% Vermiculite | 33.4% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Whit Second Analyst: Feyza G | | Comments: NOB P | LM Inconclusive | | |

Report Prepared By: Grace Chan Page 1 of 8 Batch # 21-427



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04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>Nor</u> | ı-Asbestos | <i>NOB</i> | <u>Asbestos</u> |
|--------------|--|--|---------|------------------|--------------------|----------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 8 | 1ST FLOOR - LUNCH ROOM | 2' X 2' CEILING TILE TYPE 1 | NOB-TEM | | | 27.5% Organic 56.1% Residue | |
| 21-427 -8 | | | | | 0.0% Vermiculite | 16.4% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PL | M Inconclusive | | |
| 9 | 1ST FLOOR - S. OFFICES | 2' X 2' CEILING TILE TYPE 1 | NOB-TEM | | 0.00/ \/ailit- | 28.3% Organic 55.8% Residue | NONE DETECTED |
| 21-427 -9 | | Color: Whit | _ | | 0.0% Vermiculite | 15.9% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Second Analyst: Feyza Gu | | Comments: NOB PL | M Inconclusive | | |
| 10 | 1ST FLOOR LOBBY | SPRAY ON FIRE PROOFING | PLM | 12% Cellulose | 86% Mineral Filler | | |
| 21-427 -10 | | ON CEILING DECK METAL BEAMS | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Color: Green Color: Green Color: Green SPRAY ON FIRE PROOFING ON CEILING DECK METAL BEAMS Color: Green | | | | | | |
| 11 | | SPRAY ON FIRE PROOFING | PLM | 15% Cellulose | 83% Mineral Filler | | |
| | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-427 -11 | | Color: Gree | ın | | 0.070 Verrinculie | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | 3001. 3100 | | | | | |
| 12 | | | PLM | 15% Cellulose | 83% Mineral Filler | | |
| 21-427 -12 | LOCKER ROOM | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Gree | n | | | | |
| 13 | 1ST FLOOR - SOUTH | SPRAY ON FIRE PROOFING | PLM | 12% Cellulose | 86% Mineral Filler | | |
| 15 | OFFICES | ON CEILING DECK METAL BEAMS | I LIVI | 2% FiberGlass | | | |
| 21-427 -13 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Gree | ın | | | | |
| 14 | 1ST FLOOR - SOUTH | SPRAY ON FIRE PROOFING | PLM | 18% Cellulose | 80% Mineral Filler | | |
| 21-427 -14 | OFFICES | ON CEILING DECK METAL BEAMS | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-421 -14 | | Color: Gree | n | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 15 | 1ST FLOOR - MEN'S LOCKER ROOM | 2' X 2' CEILING TILE TYPE 2 | NOB-TEM | | | 20.5% Organic 44.2% Residue | |
| 21-427 -15 | | | | | 0.0% Vermiculite | 35.3% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PL | M Inconclusive | | |
| 16 | ENTRANCE FROM LUNCH | 2' X 2' CEILING TILE TYPE 2 | NOB-TEM | | | 21% Organic | |
| 21-427 -16 | ROOM | | | | 0.0% Vermiculite | 37.2% Residue 41.8% Carbonate | NONE DETECTED |
| A 1 1 - 5 | Mile and Own | Color: White | | Comments: NOB PL | M Inconclusive | | |
| | Michael Gittings | Second Analyst: Feyza Gu | | 30 | | 20.00/.5 | |
| 17 | ENTRANCE FROM LUNCH ROOM | 2' X 2' CEILING TILE TYPE 2 | NOB-TEM | | | 23.9% Organic 52.2% Residue | |
| 21-427 -17 | | | | | 0.0% Vermiculite | 23.9% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PL | M Inconclusive | | |

Report Prepared By: Grace Chan Page 2 of 8 Batch # 21-427



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| | | | | <u>Non</u> | -Asbestos | NOB | Asbestos |
|---------------|-----------------------------------|--|---------|-------------------|--------------------|--------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 18 | 1ST FLOOR - HALLWAY MEN'S ROOM | 2' X 2' CEILING TILE TYPE 3 | NOB-TEM | | | 19.1% Organic 63.9% Residue | |
| 21-427 -18 | | | | | 0.0% Vermiculite | 17% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PLN | / Inconclusive | | |
| 19 | 1ST FLOOR - HALLWAY MEN'S ROOM | 2' X 2' CEILING TILE TYPE 3 | NOB-TEM | | | 20.1% Organic 54.6% Residue | |
| 21-427 -19 | | | | | 0.0% Vermiculite | 25.3% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PLN | / Inconclusive | | |
| 20 | 1ST FLOOR - HALLWAY MEN'S ROOM | 2' X 2' CEILING TILE TYPE 3 | NOB-TEM | | | 18.8% Organic 53.5% Residue | |
| 21-427 -20 | | | | | 0.0% Vermiculite | 27.7% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PLN | 1 Inconclusive | | |
| 21 | 1ST FLOOR WAREHOUSE E. | SPRAY ON FIREPROOFING | PLM | Trace% Cellulose | 20% Mineral Filler | | |
| 21-427 -21 | OFFICES | ON CEILING DECK & BEAMS | | 80% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Gray | | | | | |
| 22 | 1ST FLOOR WAREHOUSE E. | SPRAY ON FIREPROOFING | PLM | Trace% Cellulose | 20% Mineral Filler | | |
| | OFFICES | ON CEILING DECK & BEAMS | | 80% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-427 -22 | | Color: Gray | | | 0.0% vermicume | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | odiai. diay | | | | | |
| 23 | 1ST FLOOR WAREHOUSE E. OFFICES | SPRAY ON FIREPROOFING ON CEILING DECK & BEAMS | PLM | Trace% Cellulose | 15% Mineral Filler | | |
| 21-427 -23 | | | | 85% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Gray | | | | | |
| 24 | 1ST FLOOR WAREHOUSE E. | SPRAY ON FIREPROOFING | PLM | Trace% Cellulose | 20% Mineral Filler | | |
| | OFFICES | ON CEILING DECK & BEAMS | | 80% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-427 -24 | | Color: Gray | | | 0.0 % Vermiodile | | NONE BETEGTED |
| Analyzed By: | Ivan Reyes | • | | | | | |
| 25 | 1ST FLOOR WAREHOUSE E. OFFICES | SPRAY ON FIREPROOFING ON CEILING DECK & BEAMS | PLM | Trace% Cellulose | 15% Mineral Filler | | |
| 21-427 -25 | | | | 85% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Gray | | | | | |
| 26 | 1ST FLOOR WAREHOUSE | GYPSUM WALL PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-427 -26 | | Color: Brow | n | | 0.0 % VOITHOUNG | | NONE BETEGTED |
| Analyzed By: | Ivan Reyes | | | | | | |
| 27 | E. OFFICES | GYPSUM WALL PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -27 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Brow | n | | | | |
| Alialyzeu By. | Ivan Neyes | | | | | | |

Report Prepared By: Grace Chan Page 3 of 8 Batch # 21-427



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| Sample | ₹ 7 | | | | Non | -Asbestos | NOP | Achantan |
|--|----------------|-----------------------|-----------------------|-----------|------------------|---------------------|-----|---------------|
| 24-27-38 | Sample # | Location | Type of Material | Method | | | | |
| Analyzed By: Nam Reyes | 28 | E. OFFICES | GYPSUM WALL PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| Analyzed By: Van Reyes | 21-427 -28 | | Color: Prov | m | | 0.0% Vermiculite | | NONE DETECTED |
| 24-97-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7 | Analyzed By: | Ivan Reyes | Color: Brow | /n | | | | |
| 21427-29 | 29 | 1ST FLOOR - WAREHOUSE | GYPSUM WALL BOARD | PLM | 2% Cellulose | 96% Mineral Filler | | |
| Analyzed By: Nam Reyes SPS Mineral Filler 21-427 - 30 Color: Gray Color: | 21-427 -29 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 30 E. OFFICES GYPSUM WALL BOARD PLM 3% Cellulose 2% FiberGlass 20% Mineral Filler 20% Vermiculife NONE DETECTED 21-427 -30 Color Gray Service | Analyzed By: | Ivan Reves | Color: Gray | | | | | |
| 21-427 -30 | | - | GYPSUM WALL BOARD | PI M | 3% Cellulose | 95% Mineral Filler | | |
| Color: White Colo | | 2. 6.11626 | on oom will borne | I LIVI | | | | NONE DETECTED |
| Analyzed By: Ivan Reyes 27427-32 Color: Gray Analyzed By: Ivan Reyes Color: Gray Analyzed By: Ivan Reyes Color: Gray Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Color: White Analyzed By: Ivan Reyes Color: White Color: Wh | 21-427 -30 | | Color: Crov | | | 0.0% vermiculite | | NONE DETECTED |
| 21-427 -31 | Analyzed By: | Ivan Reyes | Color: Gray | | | | | |
| Color Gray Analyzed By: Ivan Reyes Color White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Color: White Analyzed By: Ivan Reyes Color: White Color: | 31 | E. OFFICES | GYPSUM WALL BOARD | PLM | 2% Cellulose | 96% Mineral Filler | | |
| Analyzed By: Ivan Reyes 15T FLOOR WAREHOUSE JOINT COMPOUND ON GWB PLM Trace% Cellulose 100% Mineral Filler 100% Minera | 21-427 -31 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 1ST FLOOR WAREHOUSE | Analyzed Dy | Ivan Payos | Color: Gray | | | | | |
| Analyzed By: Nan Reyes Source Sou | | | JOINT COMPOUND ON GWB | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| Analyzed By: Ivan Reyes Color: White Color: Wh | 21-427 -32 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-427 -33 E. OFFICES JOINT COMPOUND ON GWB PLM Trace% Cellulose 100% Mineral Filler | | | Color: White | е | | | | |
| 21-427 -33 | | | | | | | | |
| Analyzed By: Ivan Reyes Source So | 33 | E. OFFICES | JOINT COMPOUND ON GWB | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| Analyzed By: Ivan Reyes 21-427 -34 Analyzed By: Ivan Reyes Color: White Color: White Analyzed By: Ivan Reyes 35 | 21-427 -33 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 34 E. OFFICES JOINT COMPOUND ON GWB PLM Trace% Cellulose 100% Mineral Filler 21-427 -34 Color: White Analyzed By: Ivan Reyes 35 IST FLOOR WAREHOUSE LEVELING Color: Brown/Silver Analyzed By: Ivan Reyes Color: Brown/Silver Analyzed By: Ivan Reyes 36 E. OFFICES BY MAIN ENTRANCE DOOR LEVELING ENTRANCE DOOR Color: Brown/Silver Analyzed By: Ivan Reyes Color: Brown/Silver Analyzed By: Ivan Reyes Color: Brown/Silver Analyzed By: Ivan Reyes Tolor: Brown/Silver Analyzed By: Ivan Reyes Color: Brown/Silver Analyzed By: Ivan Reyes Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver | Analyzed By: | Ivan Reves | Color: White | е | | | | |
| 21-427 -34 Analyzed By: Ivan Reyes Toolor: White Color: White Analyzed By: Ivan Reyes 1ST FLOOR WAREHOUSE LEVELING PLM LEVELING PLM PLM PLM PLM PLM PLM PLM PLM PLM PLM | | - | JOINT COMPOUND ON GWB | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| Color: White Analyzed By: Ivan Reyes Switch Fiber Glass Switch Fiber Glass Switch Swit | | | | | | | | NONE DETECTED |
| Analyzed By: Ivan Reyes 1ST FLOOR WAREHOUSE | 21-427 -34 | | Color: White | e | | 0.070 Volimounte | | NONE BETEGTED |
| 21-427 -35 LEVELING 5% FiberGlass 0.0% Vermiculite NONE DETECTED Color: Brown/Silver Analyzed By: Ivan Reyes 8 | Analyzed By: | Ivan Reyes | | - | | | | |
| 21-427 -35 Color: Brown/Silver Analyzed By: Ivan Reyes 36 | 35 | 1ST FLOOR WAREHOUSE | | PLM | | 20% Mineral Filler | | |
| Analyzed By: Ivan Reyes 36 E. OFFICES BY MAIN ENTRANCE DOOR 21-427 -36 Color: Brown/Silver Analyzed By: Ivan Reyes Tolor: Brown/Silver Analyzed By: Ivan Reyes 15T FLOOR HALLWAY RESTROOM LEVELING Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver | 21-427 -35 | | LEVELINO | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 36 E. OFFICES BY MAIN ENTRANCE DOOR LEVELING PLM 75% Cellulose 5% FiberGlass 0.0% Vermiculite NONE DETECTED 1.0% Vermiculite | Analyzed By: | Ivan Reves | Color: Brow | n/Silver | | | | |
| ENTRANCE DOOR LEVELING 5% FiberGlass 0.0% Vermiculite NONE DETECTED 1.0% Vermiculite NONE DET | | | HVAC DUCT INSULATION | DI M | 75% Cellulose | 20% Mineral Filler | | |
| Color: Brown/Silver Analyzed By: Ivan Reyes 37 | 30 | | | FLIVI | | | | NONE DETECTED |
| Analyzed By: Ivan Reyes 37 | 21-427 -36 | | Color: Prov | m/Silver | | 0.0% Vermiculite | | NONE DETECTED |
| RESTROOM LEVELING 5% FiberGlass 21-427 -37 Color: Brown/Silver NONE DETECTED NONE DETECTED | Analyzed By: | Ivan Reyes | Color. Brow | ni/Silvei | | | | |
| 21-427 -37 Color: Brown/Silver 0.0% Vermiculite NONE DETECTED Color: Brown/Silver | 37 | | | PLM | 75% Cellulose | 20% Mineral Filler | | |
| Color: Brown/Silver | 21-427 -37 | KESTKUUM | LEVELING | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: Ivan Reyes | | | Color: Brow | n/Silver | | | | |
| | Analyzed By: | Ivan Reyes | | | | | | |

Report Prepared By: Grace Chan Page 4 of 8 Batch # 21-427



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| | | | | Non- | -Asbestos | NOB | Asbestos |
|--------------|-------------------------------|-------------------------------|---------|-------------------------------|---------------------|------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 38 | 1ST FLOOR USM SHOP CEILING | GYPSUM CEILING PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -38 | OLILING | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Payes | Color: Brow | /n | | | | |
| 39 | 1ST FLOOR USM SHOP | GYPSUM CEILING PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 33 | CEILING | OTI SOM CEILING I AI EIX | FLIVI | 33 /0 Cellulose | | | NONE DETECTE |
| 21-427 -39 | | Color: Brow | m. | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color. Brow | // I | | | | |
| 40 | 1ST FLOOR USM SHOP CEILING | GYPSUM CEILING PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -40 | CLILING | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | /n | | | | |
| Analyzed By: | <u> </u> | | | | | | |
| 41 | 1ST FLOOR USM SHOP CEILING | GYPSUM CEILING BOARD | PLM | 2% Cellulose 2% FiberGlass | 96% Mineral Filler | | |
| 21-427 -41 | | | | 2,0 1.20.0.00 | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Gray | , | | | | |
| 42 | 1ST FLOOR USM SHOP | GYPSUM CEILING BOARD | PLM | 2% Cellulose | 96% Mineral Filler | | |
| 21-427 -42 | CEILING | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-421 -42 | | Color: Gray | , | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 43 | 1ST FLOOR USM SHOP CEILING | GYPSUM CEILING BOARD | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-427 -43 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Pavas | Color: Gray | ' | | | | |
| 44 | 1ST FLOOR USM SHOP | CEILING JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | CEILING | ON GWB | I LIVI | Trace /0 Cellulose | | | NONE DETECTED |
| 21-427 -44 | | Color: Whit | ۵ | | 0.0% Vermiculite | | NONE DETECTEL |
| Analyzed By: | Ivan Reyes | Color. Willi | G | | | | |
| 45 | 1ST FLOOR USM SHOP CEILING | CEILING JOINT COMPOUND ON GWB | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-427 -45 | CEILING | ON GWB | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Whit | e | | | | |
| Analyzed By: | <u> </u> | OFILING JOINT COMPOUND | DIM | T 0/ 0 H I | 4000/ 84: 15:11 | | |
| 46 | 1ST FLOOR USM SHOP CEILING | CEILING JOINT COMPOUND ON GWB | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-427 -46 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Whit | e | | | | |
| 47 | 1ST FLOOR WAREHOUSE E. | | NOB-TEM | | | 50.5% Organic | |
| 21-427 -47 | OFFICE MEZZANINE | COVER BEIGE | | | 0.0% Vermiculite | 42.1% Residue 7.4% Carbonate | NONE DETECTED |
| , | | Color: Beig | e | Command NOD 5144 | (based at a | | |
| Analyzed By: | Michael Gittings | Second Analyst: Feyza Gu | ıngor | Comments: NOB PLN | Inconclusive | | |

Report Prepared By: Grace Chan Page 5 of 8 Batch # 21-427



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| Location | Type of Material | Method | | | | |
|--|---|---|---|--|--|--|
| | | Meinoa | % Fibrous | % Non-Fibrous | % Type | % Type |
| 1ST FLOOR WAREHOUSE E. OFFICE MEZZANINE | HVAC DUCT INSULATION COVER BEIGE | NOB-TEM | | | 53% Organic 41.1% Residue | |
| | | | | 0.0% Vermiculite | 5.9% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR WAREHOUSE E. OFFICE MEZZANINE | HVAC DUCT INSULATION COVER BEIGE | NOB-TEM | | | 56.7% Organic 39.7% Residue | |
| | | | | 0.0% Vermiculite | 3.6% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR ENTRY ROOM BY USM SHOP | FIBERGLASS CEILING INSULATION BLANKET | NOB-TEM | | | 66.4% Organic 20.3% Residue | |
| | | | | 0.0% Vermiculite | 13.3% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR ENTRY ROOM BY USM SHOP | FIBERGLASS CEILING | NOB-TEM | | | 74.3% Organic | |
| BT COM CITO | THOSE WITCH SERVICE | | | 0.0% Vermiculite | 5.2% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR ENTRY ROOM BY USM SHOP | FIBERGLASS CEILING INSULATION BLANKET | NOB-TEM | | | 64.2% Organic 7.9% Residue | |
| | | | | 0.0% Vermiculite | 27.9% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR - LOCKER EOOM | | NOB-TEM | | | 42.3% Organic | |
| | COVERNING | | | 0.0% Vermiculite | 26.2% Residue 31.5% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR - LOCKER EOOM | INSULATION METAL JACKET | NOB-TEM | | | 75.5% Organic 8.9% Residue | |
| | | | | 0.0% Vermiculite | 15.6% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR - LOCKER EOOM | | NOB-TEM | | | 69.7% Organic | |
| | COVERNING | | | 0.0% Vermiculite | 17.2% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR - LOCKER EOOM | | PLM | Trace% Cellulose | 35% Mineral Filler | | 10% Chrysotile |
| | FIBERGLASS | | 55% FiberGlass | 0.0% Vermiculite | | |
| van Reyes | Color: Off W | /hite | | | 7 | otal Asbestos: 10 % |
| 1ST FLOOR - LOCKER EOOM | | | | | ' | |
| | ASSOCIATED WITH FIBERGLASS | | | | | NOT ANALYZED |
| | | | Comments: Positive s | top, see #56 | | |
| | 1ST FLOOR ENTRY ROOM BY USM SHOP Michael Gittings 1ST FLOOR ENTRY ROOM BY USM SHOP Michael Gittings 1ST FLOOR ENTRY ROOM BY USM SHOP Michael Gittings 1ST FLOOR ENTRY ROOM BY USM SHOP Michael Gittings 1ST FLOOR ENTRY ROOM BY USM SHOP Michael Gittings 1ST FLOOR - LOCKER EOOM Michael Gittings 1ST FLOOR - LOCKER EOOM Michael Gittings 1ST FLOOR - LOCKER EOOM Michael Gittings 1ST FLOOR - LOCKER EOOM Michael Gittings 1ST FLOOR - LOCKER EOOM | Michael Gittings Second Analyst: Feyza Gu 1ST FLOOR WAREHOUSE E. OVER BEIGE Color: Beige Michael Gittings Second Analyst: Feyza Gu 1ST FLOOR ENTRY ROOM BY USM SHOP IST FLOOR ENTRY ROOM BY USM SHOP Second Analyst: Feyza Gu 1ST FLOOR ENTRY ROOM BY USM SHOP IST FLOOR ENTRY ROOM FIBERGLASS CEILING INSULATION BLANKET Color: Black Second Analyst: Feyza Gu IST FLOOR - LOCKER EOOM FIBERGLASS PIPE INSULATION METAL JACKET COVERNING Color: White Second Analyst: Feyza Gu IST FLOOR - LOCKER EOOM FIBERGLASS PIPE INSULATION METAL JACKET COVERNING Color: White Second Analyst: Feyza Gu IST FLOOR - LOCKER EOOM FIBERGLASS PIPE INSULATION METAL JACKET COVERNING Color: White Second Analyst: Feyza Gu IST FLOOR - LOCKER EOOM FIBERGLASS PIPE INSULATION METAL JACKET COVERNING Color: White Second Analyst: Feyza Gu IST FLOOR - LOCKER EOOM FIBERGLASS PIPE INSULATION METAL JACKET COVERNING Color: White Second Analyst: Feyza Gu IST FLOOR - LOCKER EOOM MUDDED JOINT PACKING ASSOCIATED WITH FIBERGLASS Color: Off W Van Reyes IST FLOOR - LOCKER EOOM MUDDED JOINT PACKING ASSOCIATED WITH FIBERGLASS | Alichael Gittings Second Analyst: Feyza Gungor | Michael Gittings Second Analyst: Feyza Gungor Comments: NOB PLN COFFICE MEZZANINE COFFICE MEZZANINE COOR Beige Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor IST FLOOR ENTRY ROOM BY USM SHOP Michael Gittings Second Analyst: Feyza Gungor Color: Black/Brown Second Analyst: Feyza Gungor Color: Black/Brown Second Analyst: Feyza Gungor Color: Black/Brown Second Analyst: Feyza Gungor Color: Black/Brown Second Analyst: Feyza Gungor Color: Black/Brown Second Analyst: Feyza Gungor Color: Black/Brown Second Analyst: Feyza Gungor IST FLOOR ENTRY ROOM BY USM SHOP IST FLOOR ENTRY ROOM FIBERGLASS CEILING INSULATION BLANKET Color: Black/Brown Second Analyst: Feyza Gungor Color: White/Black Color: White/Black Color: White/Black Second Analyst: Feyza Gungor Color: White/Black Second Analyst: Feyza Gungor IST FLOOR - LOCKER EOOM FIBERGLASS PIPE INSULATION METAL JACKET COVERNING Color: White/Black Second Analyst: Feyza Gungor Color: White/Black Second Analyst: Feyza Gungor Color: White/Black Second Analyst: Feyza Gungor IST FLOOR - LOCKER EOOM FIBERGLASS PIPE INSULATION METAL JACKET COVERNING Color: White/Black Second Analyst: Feyza Gungor Color: White/Black Second Analyst: Feyza Gungor IST FLOOR - LOCKER EOOM FIBERGLASS PIPE INSULATION METAL JACKET COVERNING Color: White/Black Second Analyst: Feyza Gungor Trace% Cellulose ASSOCIATED WITH FIBERGLASS Color: Off White Van Reyes IST FLOOR - LOCKER EOOM MUDDED JOINT PACKING ASSOCIATED WITH FIBERGLASS SCOIO: Off White Van Reyes | Alichael Gittings Second Analyst: Feyza Gungor COVER BEIGE OFFICE MEZZANINE COVER BEIGE OFFICE MEZZANINE COVER BEIGE COOR BEIGE OLOW Vermiculite Color: Beige OLOW Vermiculite Color: Beige OLOW Vermiculite Color: Beige OLOW Vermiculite Color: Black/Brown BY USM SHOP Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: Black/Brown Second Analyst: Feyza Gungor IST FLOOR ENTRY ROOM BY USM SHOP FIBERGLASS CEILING NSULATION BLANKET OLOW Vermiculite Color: Black/Brown Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: Black/Brown Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: White/Black Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: White/Black Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: White/Black Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: White/Black Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: White/Black Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: White/Black Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: White/Black Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: White/Black Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Color: White/Black Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive Second Analyst: Feyza Gungor Comments: NOB PLM Inconc | SECOND ANAlyst Feyza Gungor Comments: NOB PLM Inconclusive 56.7% Organic 39.7% Residue 3.6% Carbonate Cofor: Beige Second Analyst: Feyza Gungor Comments: NOB PLM Inconclusive 3.6% Carbonate 3.6% C |

Report Prepared By: Grace Chan Page 6 of 8 Batch # 21-427



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| | | | | Non | n-Asbestos | NOB | Asbestos |
|--------------|---------------------------------------|----------------------------|--------|--------------------|-------------------|--------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 58 | 1ST FLOOR - LOCKER EOOM | ASSOCIATED WITH | | | | | |
| 21-427 -58 | | FIBERGLASS | | | | | NOT ANALYZED |
| | | | | Comments: Positive | stop, see #56 | | |
| 59 | 1ST FLOOR HALLWAY RESTROOM CEILING | 2' X 2' CEILING TILE PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -59 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | /n | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 60 | 1ST FLOOR HALLWAY RESTROOM CEILING | 2' X 2' CEILING TILE PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -60 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | /n | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 61 | 1ST FLOOR HALLWAY RESTROOM CEILING | 2' X 2' CEILING TILE PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -61 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | /n | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |

Report Prepared By: Grace Chan
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Batch # 21-427



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| | | | | <u>No.</u> | <u>n-Asbestos</u> | NOB | <u>Asbestos</u> |
|----------------|--------------------------------|---|-------------------------|----------------------------|---|---------------------------|-------------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| OTES: | | | | | | | |
| 1) The Limit | t of Detection is the same a | as the Reporting Limit for these results. | | | | | |
| 2) The Repo | orting Limit (RL) is the Limit | t of Quantitation. For point counts the lim | nit of quantitation of | 0.25%; based on one a | sbestos point counter over 400 non- | empty points. | |
| 3) Asbestos | Containing Material (ACM |) Definition: > 1% asbestos by weight is | considered an ACM | 1 | | | |
| report may i | | sponsible for sample collection. Please rect endorsement by NVLAP or any other a request. | | | | | |
| 5) Accredite | ed by NVLAP #101187-0 a | nd by NY State ELAP #10879 | | | | | |
| 6) Confiden | tiality Notice: The documer | nt(s) contained herein are confidential and | d privileged informa | tion, intended for the exc | clusive use of the individual or entity | named above. | |
| 7) Liability N | Notice: ATC Group Services | s and its personnel shall not be liable for | any misinformation | provided to us by the cli | ient regarding these samples. This r | eport relates only to sam | ples submitted and anal |
| 8) Asbestos | results are reliable to 2 sig | gnificant figures. | | | | | |
| 9) The cond | lition of all samples was ac | ceptable upon receipt. | | | | | |
| 10) The lab | oratory certifies that the tes | st results meet all requirements of NELAC | . | | | | |
| 11) Supplen | nent to test report batch # _ | Amendments: Am | nendment Dates: _ | Amended by: | | | |
| 12) PLM Le | tter is attached on this repo | ort. | | | | | |
| 13) TRACE | : The result is reported as 1 | Trace when No points are counted and as | sbestos is identified | . For ELAP Trace is < 1 | %. | | |
| 14) ATC Gr | oup Services certifies that t | this report is an accurate and authentic re | eport of the results of | btained from the labora | tory analysis | | |
| 15) The und | ertainty for these test resul | Its is available upon request. | | | | | |
| | | .1 for the analysis of samples containing ulite and may underestimate the level of a | | | | ethods ELAP 198.1 follo | wed by ELAP 198.6. |
| van Reye | es J | van Regu | | | Mei War | ıg | |
| Analyst: | | · | | | Approved | by | |
| | | | | | Quality M | 3 | |
| Michael (| Gittings // | | | | Quanty 11 | gerr | |
| analyst: | W | | | | | | |
| Feyza Gu | ngor | Feyly | | | | | |
| Analyst: | | | | | | | |
| | | | | | | | |

Report Prepared By: Grace Chan Page 8 of 8 Batch # 21-427



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired.

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely.

Milena Bonezzi

ATC Group Services LLC
Director of Laboratory Services

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ATC EFFECTIVE DATE 01/18/2021 REVISION #32

Page 1 of 1

BY MEI W. DOCUMENT #D ATC AN ATLAS COMPANY- BATCH NO. 21-427

Page ____of ____6

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| 24b. Analyzed By: H-chil Coll | Y | 3/17/2021 | 06:45 | 709-9 3/17/21 |
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BATCH NO. 21-427

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BATCH NO. 21-427

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ATLAS

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ | | | | | | | | 200200 | Number 214PN | IDEDI1 | NIKON OPTIPHOT |
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| Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric | Stereoscopic Exam Coldr Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Page PA Stereoscopic Exam Color Page PA Stereoscopic Exam | Morph Slide 3 | Extinction Slide 4 | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysottle Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filter |
| Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravitation SM-V Gravimetric Gravitation SM-V Gravimetric Gravitation SM-V Gravimetric Gravitation Gra | Stereoscopic Exam Coldr Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA | Morph Slide 3 | Extinction Slide 4 | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filter Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % |
| 3 3 3 3 3 3 3 3 3 3 | Stereoscopic Exam Coldr Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Page PA Stereoscopic Exam Color Page PA Stereoscopic Exam | Morph Slide 3 | Extinction Slide 4 | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotlle Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders |
| Gravimetric Required analysis sheet for results SM-V Required See SM-V analysis sheet for results SM-V Gravimetric See SM-V analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Vexture Homogeneity Vermiculite | Morph Slide 3 Morph Morph | Extinction Slide 4 | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotlle Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* |
| Gravimetric analysis sheet for results See SM-V See SM-V analysis sheet for results Add Number Gravimetric See SM-V Analysis sheet for results Gravimetric Required Recommended A | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Of Layer Asbestos Color of Layer Detected Yes No Comments: Detected Yes No Stereoscopic Exam Color Of Layer Asbestos Color of Layer Detected Yes No | Morph Slide 3 Morph Morph | Extinction Slide 4 | Slide 5 | RII DS | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotlle Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* |
| See SM-V See SM-V Gravimetric See SM-V SM-V SM-V SM-V SM-V See SM-V SM-V SM-V See SM-V SM | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 | Morph Slide 3 Morph Morph | Extinction Slide 4 Extinction | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotlle Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Signature Fiberglass Signature Signature Fiberglass Signature Signature Fiberglass Signature | PLM % Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* |
| See SM-V Ald Number Gravimetric See SM-V See SM-V Gravimetric See SM-V Analysis sheet for results See SM-V Required Gravimetric Required Gravimetric Required See Gravimetric Required Recommended See Gravimetric | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP PA Stereoscopic Exam Color Vexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Stereoscopic Exam Color Stereoscopic Exam Co | Morph Slide 3 Morph Morph | Extinction Slide 4 Extinction | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotlle Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filter Organic Binders Vermiculite* Other |
| See SM-V See SM-V Gravimetric See SM-V SM-V SM-V SM-V SM-V See SM-V SM-V SM-V See SM-V SM | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 | Morph Slide 3 Morph Morph | Extinction Slide 4 Extinction | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotlle Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence | PLM % Mineral Filter Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |

Methods; EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ Project Number 214PNPEPJ1 TEMPERATURE*c Analysis Date 3/10 /2021 Analyst SM 21-427 Batch Number 5 Asbestos Other Fibrous Non Fibrous **PLM Optical Properties** ∧ Stereoscopic Exam Results PLM % PLM % PLM % RIII DS Color Color, Pleo Biref Sign Other Iden Mineral Filler Gravimetric Cellulose Fiberglass Organic Binder Required √ Vermiculite* Other See gravimetric [analysis sheet Cellulose Ondulos for results Fiberglass Isotopie Slide 2 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V PIM Required [vel of asbestos in a sampl Horse Hair: Scales NOB PLM might be underestimated. See SM-V [Low to Moderate See Note #1. analysis sheet Q.C. Method: ELAP EPA SCANNING OPTION Other Fibrous 6 **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % PIM% Texture Gravimetri Cellulose Mineral Filler Fiberglas Organic Binder Required [Vermiculite* Other Other analysis sheet Color of Layer Cellulose Ondulos for results Fiberglass Isotopic Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Synthetic High If vermiculite is >10% the evel of asbestos in a sample night be underestimated NOB PLM See SM-V Low to Moderate See Note #1. analysis sheet for results Method: ELAP EPA SCANNING OPTION Q.C. Asbestos **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % PLM % Mineral Filler Texture Gravimetric Cellulose Required [Amosite Fiberglas Organic Binder O_Vermiculite* Other Other See gravimetric analysis sheet Detected Yes Slide 7 Slide 8 Asb.Ner. PT Total PT Fiberglass Isotopic Slide 2 SM-V Synthetic High PLM Required [vel of asbestos in a sampl Horse Hair: Scales. NOB PLM night be underestimated 200 See SM-V Low to Moderate See Note #1. analysis sheet Q.C. Method: ☑ ELAP ☐ EPA SCANNING OPTION Asbestos Other Fibrous Non Fibrous 8 **PLM Optical Properties** Stereoscopic Exam Results PLM 9 PLM % PLM % DS Color Color Plea Biref Sign Other Irlen Mineral Filler Gravimetric Chrysoti Cellulose Fiberglass Organic Binder Vermiculite* Other See gravimetric Other analysis sheet Color of Laver Detected Yes Cellulose Ondulose for results Slide 8 Asb./Ver. PT Total PT Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 %Asb. Or %Ver. SM-V Synthetic High If vermiculite is >10% the Required [evel of asbestos in a sample Horse Hair: Scales night be underestimated D NOB PLM 9/2 200 See SM-V [Low to Moderate See Note #1. analysis sheet for results Method: DELAP DEPA SCANNING OPTION Methods: EPA Interim Method of the Determination of

Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.*

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC - New York

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BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANY | IJ | | | | | | | Project | Number 214PN | PEPJ1 | MINON OF THE HOL |
|--------------------------------------|--|-----------|----------------|------------|----------------|------------|------------|--------------|----------------|---------------------------|--|--|
| | Analysis Date 3/16 | | 1 Analyst | | < | M | | | Batch N | 24 | 127 | EMPERATURE °C 2 |
| 9 | Stereoscopic Exam | | | | PLM Op | tical Pr | operties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Danies de P | Color United Texture | More | h Extinction | RII | RI DS | Color Colo | r, Pleo Bi | ref Sign Ot | her Identity | Chrysotile | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended See gravimetric | Homogeneity Vermiculite Asbestos Asbestos Color of Layer Detected Ye | s No | | | | | | | | Other | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | Vermiculite* |
| SM-V | Point Counts Slide 1 Slide | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P1 | Total PT | %Asb. Or %Ver. | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| Required See SM-V analysis sheet | NOB PLM | _ | _ | | | | | 0 | 200 | ٧ | ☐ Horse Hair: Scales, Low to Moderate Birefringence | level of asbestos in a sampl might be underestimated. See Note #1, |
| for results | Method: DELAP DEPA | □ SCA | NNING OPT | ION | | Q. | c. 🗆 | | | | | |
| 2 10 | Stereoscopic Exam | | | | INVESTIGATIONS | ptical Pr | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Cold New Texture F | Mor | ph Extinction | | RII DS | Color Colo | or, Pleo B | iref Sign C | ther Identity | Chrysotile Apposite | Cellulose 2 Fiberglass | Mineral Filler Organic Binde |
| Recommended | Homogeneity Vermiculite # of Layers Asbestos | | | = | | | | _== | == | Other | Other | Vermiculite* |
| See gravimetric L | | s No | == | | | | | | | 1 | Cellulose Ondulose Extinction | |
| SM-V Required □ | Point Counts Side 1 Slide | 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sam might be underestimated. |
| See SM-V analysis sheet for results | NOB PLM Comments: Method: ELAP □ EPA | Herri | ANNING OP | TION | | I Q | .c. 🗆 | | | | Low to Moderate Birefringence | See Note #1. |
| 3 11 | | 1 | antinto or | | DI M O | ptical P | | ie . | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Mo | rph Extinction | n RII | | S Color Co | | | Other Identity | Results PLM % Chrysotile | PLM % | PLM % Mineral Filler |
| Gravimetric Required | Homogeneity Vermiculite | - | | _ | | | | | | Amosite | Fiberglas | Organic Bind |
| Recommended See gravimetric | # of Layers Asbestos | 7 | | | | | | == | | Other | Other | Other |
| analysis sheet for results | | es No | 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | %Asb. Or %Ver. | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide | 2 Slide | 3 Slide 4 | Side 5 | Side o | Olide 7 | Olide c | 0 | 200 | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% th level of asbestos in a san |
| See SM-V analysis sheet | NOB PLM Comments: | | | | | | | | 0 | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Method: ☐ ELAP ☐ EPA | ₽ sc | ANNING OF | TION | | C | .C. 🗆 | | | | | |
| 4 12 Field Number | Stereoscopic Exam | | orph Extincti | on RII | | Optical F | | | Other Identit | Asbestos Results PLM % | Other Fibrous PLM % | PLM % |
| Gravimetric Required □ | Color Texture Homogeneity Vermiculite | | O(p) Californ | | | | | == | == | Chrysotile Amosite | Fibergla | |
| Recommended See gravimetric | # of LayersAsbestos | / | | | _ | | | | | Other | Other | Other |
| analysis sheet for results | Color of Layer Detected | | 0 004 | 4 004- 5 | Clido C | Quide 7 | Slide | 8 Asb./Ver. | PT Total PT | %Asb. Or %Ver. | Cellulose Ondulose Extinction Fiberglass Isotopic | |
| SM-V Required □ | | e 2 Slide | 3 Slide | 4 Slide 5 | Slide 6 | Slide 7 | Silde | O Asolivel. | 200 | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | ingin be underestimated |
| See SM-V analysis sheet for results | Comments: | T so | CANNING O | PTION | _ | | 2.C. 🗆 | | | | Birefringence | See Note #1. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 FPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculities (SM-V). For samples containing \$10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculitie. This method does not remove vermiculite and may underestimate the level of abbestos present in a sample containing greater than 10% vermiculitie."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculitie (SM-V) and it utilizes a 400 point count method.

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculitie (SM-V) and it utilizes a 400 point count method.

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13

Gravimetric

See gravimetric analysis sheet for results

SM-V

Required [

See SM-V for results

analysis sheet for results

Client / Project PANYNJ

Stereoscopic Exam

Method: ELAP EPA

Analysis Date 3/ [/2021 Analyst

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BULK ASBESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

PLM Optical Properties

Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT

Organic Binder Vermiculite*

Non Fibrous

PLM %

Mineral Filler

If vermiculite is >10% the

level of asbestos in a sample

Non Fibrous

might be underestimated.

Project Number 214PNPEPJ1

Asbestos

Results PLM %

21-427

Other Fibrous

Cellulose

ATLAS_

ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| NVLAP 101187-0 |
|----------------|
| ELAP 10879 |
| |

| | | | В | ULK AS | BESTOS | ANALY | 'SIS SH | EET | | Number 214PN | DED11 | OLYMPUS BH-2 / NIKON OPTIPHOT |
|--------------------------------|------------------------------|---------|--------------|-----------|---------|-------------|-------------|----------------|----------------|---|--|--|
| | Client / Project PANYNJ | 12024 | | | | V | M | | | 24 / | 127 | 25 |
| | Analysis Date 3/ 1 6 | /2021 | Analyst _ | | | | ' | | Batch N | Asbestos | Other Fibrous | Non Fibrous |
| 1 17 Field Number | Stereoscopic Exam | | | | PLM Op | | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Mark Texture | Morph | Extinction | RII | RIII DS | Color Color | , Pleo Bin | ef Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler Organic Binders |
| Required 🖸 | Homogeneity 4 Vermiculite | | | | | | | | | Amosite Other | Fiberglass Other | Organic Binders Vermiculite* |
| Recommended | # of Layers Asbestos | / | | | | | | | | Other | Outer | Other |
| See gravimetric analysis sheet | Color of Layer Detected Yes | No. | | | | | | | | | ☐ Cellulose Ondulose | |
| for results | | | CEda 4 | Clida E T | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Sinde o | Silde / | Olide o | 7,50,7 701.1 7 | 7.500.7 | (140,000,000,000,000,000,000,000,000,000, | Synthetic High Birefringence | If vermiculite is >10% the |
| Required 🗆 | PLM 4/ | | | | | | | 0 | 200 | 0 | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | NOB PLM /8 | | | | | | | | 105 | | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: | DECANIN | ING OPTIC | NN. | | 0.0 | 2. □ | | | | | |
| | Method: GELAP EPA | SCANN | ING OF TIC | /N | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| 2 18 Field Number | Stereoscopic Exam | | | | PLM OF | | 000 | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Mic CTexture | Morph | Extinction | RII | RII DS | Color Colo | r, Pleo Bi | ref Sign Of | ther Identity | Chrysotile | Cellulose | (Mineral Filler |
| Required 🗹 | | / | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | /_ | =: | | | | | | | | ☐ Cellulose Ondulose | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% the |
| Required | PLM | | | | | | | | | | Birefringence | level of asbestos in a sample might be underestimated. |
| See SM-V □ | NOB PLM | | | - | | | | 0 | NO | 0 | Low to Moderate Birefringence | See Note #1. |
| analysis sheet for results | Comments: | | | | | 10 | c. 🗆 | | | | | |
| | Method: ∅ ELAP □ EPA | SCAN | NING OPTION | ON | | Įų. | С. 🗆 | | | Asbestos | Other Fibrous | Non Fibrous |
| 3 19 Field Number | Stereoscopic Exam | / | | | PLM O | ptical P | ropertie | s | | Results PLM % | PLM % | PLM % |
| Gravimetric | Cole The Texture | Morph | Extinction | RII | RII DS | Color Col | or, Pleo B | iref Sign O | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 2 | 1 | / | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | Homogeneity Vermiculite | 1/ | _ | : | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | 1 | _ | | | | | | | - | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [| PLM | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V | HOD DIM //p | _ | _ | | | | | 0 | 200 | 0 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet | Comments: / | | | J | | | | | | | Birefringence | |
| for results | Method: ELAP EPA | SCAN | NING OPT | ION | | Q | .c. 🗆 | | | | | |
| 4 20 Field Number | Stereoscopic Exam | | | | PLM C | ptical P | ropertie | es | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color A La La Texture | Morph | h Extinction | n RII | RI II D | S Color Co | lor, Pleo | Biref Sign (| Other Identit | Chrysotil | eCellulose | Mineral Filler |
| Required | 0000 | _ | _ | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended [| Homogeneity | 1= | _ | = | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | 1 | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. F | PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required [| D PLM | | | | | | | | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sam |
| See SM-V | WORD DI WO / O | | - | + | | | | 0 | 20 | 9 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet | Comments: | | | | -1 | | | A. Je | | | Birefringence | |
| for results | Methods PIELAD FRA | DECAL | UNING OPT | TION | | l C |).C. 🗆 | | | | | 1 |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☐ ELAP ☐ EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite." Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/FORMS_2021/BULK ASBESTOS_ANALYSIS_SHEET_FORM #B2.doc_ATC_EFFECTIVE_DATE_011/8/2021_REVISION #33_BY_MEI_WANG_FORM #B2.

Page _____ of _____

Slide 5 Slide 6

SCANNING OPTION

SCANNING OPTION

Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Slide 7 Slide 5 Slide 6 Slide 2 Point Counts Slide 1 0 Horse Hair: Scales, Low to Moderate NOB PLM Q.C. Z SCANNING OPTION Method: ELAP EPA Other Fibrous Asbestos **PLM Optical Properties** PLM %

PLM % Results PLM % 14 Stereoscopic Exam RII DS Color Color, Plea Biref Mineral Filler Cellulose NeevFexture_ Gravimetric 7_Fiberglass Organic Binde Required [○ Vermiculite* Other Other See gravimetric Cellulose Ondulose analysis sheet for results Fiberglass Isotopic Asb./Ver. PT Total PT %Asb. Or %Ver. Slide 8 Slide 7 Slide 2 SM-V Synthetic High If vermiculite is >10% the vel of ashestos in a sample Horse Hair: Scales, might be underestimated. See Note #1. Low to Moderate NOB PLM See SM-V □

| 3 15 | Stereo | scopic E | xam | | | | PLM C | ptical | Proper | ties | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|--|-----------------|---------------|----------|---------|------------|---------|---------|---------|-------------|------|-----------|-------|----------|---------------------------|---|--|
| Required Recommended | Homogeneity _ | Textur Vermi | culite | Morph | Extinction | RII | RI D | S Color | Color, Pleo | Bire | ef Sign | Other | Identity | Chrysotile Amosite Other | CelluloseFiberglassOther | Mineral Filler Organic Binder Vermiculite* Other |
| See gravimetric analysis sheet for results | Color of Layer_ | Detec | cted Yes | No | | | | _ | | | | | | %Asb, Or %Ver. | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | 7 Slic | le 8 | Asb./Ver. | PIII | otal P1 | %ASB. OF %Ver. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required 🗆 | PLM | | | | | | | | | | | | | | Birefringence | level of asbestos in a sample |
| See SM-V 🗆 | NOD DI M | %- | | | | | | | | | 0 | | 200 | 0 | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | EDA | T/SCAN | NING OPTI | ION | | | Q.C. |] | | | | | | |

Q.C.

| ioi results | Method: Z El | AP 🗆 | EPA | SCAN | IING OPTIO | ON | | Q. | υ. ⊔ | | | | | |
|--------------------------------------|-------------------|----------|---------|---------|------------|---------|---------------|--------------|------------|-------------|----------------|---------------------------|---|--|
| 4 16 | Stereo | scopic E | xam | 1 | | | PLM O | ptical Pr | opertie | s | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Required Recommended | Color Homogeneity | Vermi | culite | Morph | Extinction | RII | RI II DS | S Color Colo | or, Pleo B | iref Sign O | ither Identity | Chrysotile Amosite Other | CelluloseFiberglassOther | Mineral Filler Organic Binder Vermiculite* Other |
| analysis sheet for results | Color of Layer_ | Detec | ted Yes | No | _ | | | | | | T Total PT | %Asb. Or %Ver. | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | 1 Total P1 | 76ASD. OF 76VEL. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required 🗆 | | OD - | | | | | | | | 0 | 200 | 0 | Birefringence Horse Hair: Scales, Low to Moderate | level of asbestos in a sampl might be underestimated. See Note #1. |
| See SM-V analysis sheet for results | Comments: | / | FPΔ | | | | Birefringence | | | | | | | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ELAP EPA

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification (SM-V). For samples containing y=10% vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

Note #2: ELAP requires method 198.8 for the analysis of samples containing vermiculite (SM-V) and it utilizes a 400 point count method.

Note #2: ELAP requires method 198.8 for the analysis of samples containing vermiculite. This method has limitations for identification and quantification of vermiculite. This method has limitations for identification and quantification and quanti

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Microscopes:

| | | BULK | ASBESTOS ANALY | /SIS SHEET | | | Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT |
|--------------------------------------|-------------------------------|-----------------------|----------------------|--|---------------------------|--|---|
| | Client / Project PANYNJ | | | Proj | ect Number 214PI | NPEPJ1 | NIKON OPTIPHOT |
| | Analysis Date 3/ / | /2021 Analyst | M | Bate | ch Number 21 | -427 | EMPERATURE C |
| 1 21 Field Number | Stereoscopic Exam | | PLM Optical Pro | pperties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction RI1 | RI DS Color Color | , Pleo Biref Sign Other Iden | Chrysotile | | 20 Mineral Filler |
| Required Recommended | HomogeneityVermiculite | 4=== | | | Other | | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes N | lo | | | _ / | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total P | | Synthetic High | * If vermiculite is >10% the |
| Required □ | 1 10000 | | | 0 200 | 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | | | | | Low to Moderate Birefringence | See Note #1. |
| | Method: ☐ ELAP ☐ EPA | SCANNING OPTION | Q.0 | . . □ | | 1 | |
| 2 22 Field Number | Stereoscopic Exam | | PLM Optical Pro | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colo Texture P | Morph Extinction RI1 | RI DS Color Color | ; Pleo Biref Sign Other Ident | Chrysotile | Cellulose | 20 Mineral Filler |
| Required Recommended | Homogeneity——Vermiculite | /=== | | | Amosite | Diberglass Other | Organic Binders Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | | | | _ / | | Other |
| for results | Color of Layer Detected Yes N | | | | _ / | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total P | 400 | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% the |
| Required □ See SM-V □ | 1 | | | O he | 2 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | | | | | Low to Moderate Birefringence | See Note #1. |
| | Method: ELAP EPA | SCANNING OPTION | [Q.0 | :. [_] | | | l |
| 3 23 Field Number | Stereoscopic Exam | | PLM Optical Pro | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction RI 1 | RI DS Color Color | ; Pleo Biref Sign Other Ident | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | 4=== | | | Amosite | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | 4=== | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes N | lo | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total P | | Fiberglass Isotopic Synthetic High | |
| Required □ See SM-V □ | LION DILLI | | | O ha | 90 | Birefringence | If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | / | | | | Low to Moderate Birefringence | See Note #1. |
| TOT TESURS | Method: □ ELAP □ EPA | ☐ SCANNING OPTION | Q.C | :. □ | | | |
| 4 24 Field Number | Stereoscopic Exam | | PLM Optical Pro | Carrier Control of the Control of th | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction RI 1 | RI DS Color Color | , Pleo Biref Sign Other Ident | Chrysotile | Cellulose | 20 Mineral Filler |
| Required Recommended | Homogeneity | /=== | | | Other | Fiberglass | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | Other | Other |
| analysis sheet for results | Color of Layer Detected Yes N | lo | | | _ / | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total P | | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required | PLM O | | | O Vor | 0 6 | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| | NOR PLM | | | | | ☐ Horse Hair: Scales, | might be underestimated |
| See SM-V analysis sheet for results | NOB PLM Comments: | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L1AB_FORMS,DOCUMENTS AND RECORDSIOPTICAL\(\text{ASBESTOS}\) BULK\(\text{ASBESTOS}\) BULK\(\text{A

-ATLAS ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Microscopes:

| BULK ASBESTOS ANALYSIS SHEET | BULK | ASBESTOS | ANALYSIS | SHEET |
|------------------------------|------|-----------------|-----------------|-------|
|------------------------------|------|-----------------|-----------------|-------|

| | DANVNI | | | | 21404 | IDED14 | NIKON OPTIPHOT |
|---|--|--|--------------------|---|---|--|---|
| | Client / Project PANYNJ | | | Project | - American | NPEPJ1 | 2 |
| | Analysis Date 3/ 1 | 2021 Analyst | TY. | Batch | Number 21- | 427 | EMPERATURE*C |
| 1 25 Field Number | Stereoscopic Exam | | PLM Optical P | roperties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Dyne Jexture | Morph Extinction RI1 | RI DS Color Col | or, Pleo Biref Sign Other Identity | Chrysotile | Cellulose | Mineral Filter |
| Required 🗆 | Homogeneity Vermiculite/ | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | | / | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | | | | | | Other |
| for results | Color of Layer Detected Yes No |) | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | fiberglass Isotopic | |
| Required | PLMO N | | | 0 200 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | / | | | | Birefringence | See Note #1. |
| | Method: □ ELAP □ EPA □ | SCANNING OPTION | Q. | C. □ | | | |
| 2 26 | Stereoscopic Exam | T | PLM Optical P | ronarties | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Otereoscopic Exam | Morph Extinction RI1 | RI DS Color Col | | Results PLM % | PLM % | PLM % |
| Gravimetric | Colo Texture | | | | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | (=== | | | Amosite | Fiberglass | Organic Binders |
| See gravimetric | # of Layers Asbestos | <u>/</u> | | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes No | | | | | Cellulose Ondulose | Other |
| | Point Counts Slide 1 Slide 2 3 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| SM-V | PLM O | Side 5 Olide 4 Olide 5 | Side o Side / | | AASD. OF AVEL. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | NOB PLM | | | 0 200 | 0 | Birefringence Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | Comments: | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | | SCANNING OPTION | lo. | C. 🗆 | | | |
| 3 27 | | 1 | | | Ashastas | L Other Files | Non Fibraria |
| 3 27 Field Number | Stereoscopic Exam | | PLM Optical P | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color 200 V Texture | Morph Extinction R11 | RI DS Color Col | or, Pleo Biref Sign Other Identity | Chrysotile | 25 Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity 4 Vermiculite | <u>/</u> | | | Amosite | Fiberglass | Organic Binders |
| Recommended | | 7 | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | | | | | | Other |
| for results | Color of Layer Detected Yes No | <u> </u> | | | / | E Cellulose Ondulose Extinction | |
| | | | | | | | 1 |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb.Ner. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| SM-V Required □ | PIM O | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| | PIM O | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | - 0 - | %Asb. Or %Ver. | ☐ Synthetic High | level of asbestos in a sample might be underestimated. |
| Required See SM-V analysis sheet | PLM J | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | | %Asb. Or %Ver. | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample |
| Required □ | PLM NOB PLM Comments: | Slide 3 Slide 4 Slide 5 | | | *%Asb. Or %Ver. | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| Required See SM-V analysis sheet for results | NOB PLM Comments: Method: ZELAP □ EPA | | Q. | C. □ | Asbestos | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | level of asbestos in a sample might be underestimated. See Note #1. |
| Required See SM-V analysis sheet for results 4 28 Field Number | PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam | | | C. 🗆 | Asbestos Results PLM % | □ Synthetic High Birefringence □ Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | level of asbestos in a sample might be underestimated. See Note #1. |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric | NOB PLM Comments: Method: ZELAP □ EPA | SCANNING OPTION | Q. PLM Optical P | C. roperties | Asbestos Results PLM % | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required | PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam | SCANNING OPTION | Q. PLM Optical P | C. roperties | Asbestos Results PLM % Chrysotle Apriosite | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended | PLM NOB PLM Comments: Method: ZELAP PA Stereoscopic Exam Color Description | SCANNING OPTION | Q. PLM Optical P | C. roperties | Asbestos Results PLM %Chrysoffe | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | NOB PLM Comments: Method: ZELAP | SCANNING OPTION Morph Extinction RI 1 | Q. PLM Optical P | C. roperties | Asbestos Results PLM % Chrysotle Apriosite | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | PLM NOB PLM Comments: Method: ELAP | SCANNING OPTION Morph Extinction RI 1 | PLM Optical P | C. roperties or, Pleo Biref Sign Other Identity | Asbestos Results PLM % Chrysotle Apriosite Other | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V | NOB PLM Comments: Method: ELAP | SCANNING OPTION Morph Extinction RI 1 | PLM Optical P | C, roperties or, Pieo Biref Sign Other Identity Slide 8 Asb./Ver. PT Total PT | Asbestos Results PLM % Chrysotle Apriosite | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required | PLM NOB PLM Comments: Method: ELAP | SCANNING OPTION Morph Extinction RI 1 | PLM Optical P | C. roperties or, Pleo Biref Sign Other Identity | Asbestos Results PLM % Chrysotle Apriosite Other | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V | NOB PLM Comments: Method: ELAP | SCANNING OPTION Morph Extinction RI 1 | PLM Optical P | C, roperties or, Pieo Biref Sign Other Identity Slide 8 Asb./Ver. PT Total PT | Asbestos Results PLM % Chrysotle Apriosite Other | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.5. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET OLYMPUS BH-2/ Client / Project PANYNJ Project Number 214PNPEPJ1 Analysis Date 3/ /2021 Analyst 21-427 Batch Number 29 Asbestos Other Fibrous Non Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI DS Color Color, Pleo Biref Sign Other Ident Gravimetric Mineral Filler 2 Fiberglass Organic Binder Vermiculite* analysis sheet Cellulose Ondule SM-V Total PT Fiberglass Isotopic PLM Synthetic High Required [If vermiculite is >10% the Birefringence evel of asbestos in a sample NOB PLA See SM-V Horse Hair: Scales, night be underestimated. Low to Moderate analysis sheet Comments: Birefringence for results Method: DELAP DEPA SCANNING OPTION Q.C. 30 Asbestos Other Fibrous Stereoscopic Exam Non Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI || DS Color Color, Pleo Biref Sign Other Gravimetric Cellulose Mineral Filler Organic Binder Vermiculite* Other See gravimetric [Other analysis sheet for results Cellulose Ondulos SM-V Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopi PLM Synthetic High 0 Required [Birefringence vel of asbestos in a sample NOB PLM See SM-V Horse Hair: Scales night be underestimated. Low to Moderate analysis sheet for results Method: ELAP EPA SCANNING OPTION Q.C. 31 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RI || DS Color Color, Pleo Biref Gravimetr Cellulose Mineral Filler Required [Organic Binders Other See gravimetric [Other analysis sheet Color of Layer for results Cellulose Ondulose Point Counts SM-V Slide 2 Slide 6 Slide 7 Slide 8 Asb, Ver. PT Total PT Slide 4 Slide 5 %Asb. Or %Ver. Fiberglass Isotopi PLM Required [If vermiculite is >10% the 0 vel of asbestos in a sampl NOB PLM Horse Hair: Scales, See SM-V [might be underestimated. Low to Moderate analysis sheet for results Method: □ ELAP □ EPA SCANNING OPTION Q.C. 32 Asbestos Other Fibrous Stereoscopic Exam Non Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI II DS Color Color, Pleo Biref Sign Other Iden 0 Cellulose Mineral Filler Required [Organic Binde Vermiculite* See gravimetric [Other analysis sheet color of Layer for results Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Point Counts Slide 1 Slide 2 %Asb. Or %Ver. Fiberglass Isotop f vermiculite is >10% the Birefring vel of asbestos in a sample NOB PLM Horse Hair: Scale See SM-V night be underestimated. Low to Moderate analysis sheet See Note #1. for results Method: ELAP EPA SCANNING OPTION Q.C. 🗆 Methods:

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.*

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET

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| Microscop |
| OLYMPUS BE |
| NIKON OPTIDE |

| | Client / Project PANYNJ | t Number 214F | NIDED 11 | OLYMPUS BH-: NIKON OPTIPHO |
|-------------------------------------|--|--------------------------------|--|---|
| | Analysis Date 3/ / 2021 Applied | - | -427 | 20 |
| 1 33 Field Number | Stereoscopic Exam PLM Optical Properties | Asbestos | Other Fibrous | Non Fibrous |
| Gravimetri | Mornh Extinction DI - DI - DI - DI - DI - DI - DI - DI | Results PLM % | PLM % | PLM % |
| Required | | Chrysott | A Comment | Mineral Filler |
| Recommended | # of Laure | Amosite | Fiberglass | |
| See gravimetric [analysis sheet | | | Other | Vermiculite* |
| for results | Color of Layer Detected Yes No | | Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Extinction □ Fiberglass Isotopic | |
| Required [| (2) | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V [analysis sheet | J NOBPEMI V | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| for results | Comments: Method: □ ELAP □ EPA □ SCANNING OPTION □ Q.C. □ | | Birefringence | See Note #1. |
| 2 34 | Q.C. | | | |
| Field Number | Stereoscopic Exam PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous |
| Gravimetric | Color Texture Morph Extinction RI I RI DS Color Color, Plea Biref Sign Other Identity | Chrysotile | Cellulose | FLM % |
| Required Recommended | HomogeneityVermiculite | Amosite | Fiberglass | Mineral Filler Organic Binders |
| See gravimetric | # of LayersAsbestos | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes No | | | Other |
| SM-V | Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | | Cellulose Ondulose Extinction | |
| Required | PLM PLM Sinde 5 Slide 6 Slide 7 Slide 8 Asb, Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| See SM-V | NOB PLM | D | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| analysis sheet for results | Comments: | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| | Method: ☐ EPA ☐ SCANNING OPTION Q.C. ☐ | | | |
| 3 35 Field Number | Stereoscopic Exam PLM Optical Properties | Asbestos | Other Fibrous | Non Fibrous |
| Gravimetric | Color Pexture Morph Extinction RI RI RI DS Color Color, Pleo Biref Sign Other Identity | Results PLM % | PLM % | PLM % |
| Required | Homogeneity Vermiculite | Chrysøtile Aprosite | Cellulose | Mineral Filler |
| Recommended | # of Layers Asbestos | Other | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric analysis sheet | | | | Other |
| for results | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb.Ner. PT Total PT | %Asb. Or %Ver. | Fiberglass Isotopic | |
| Required | NOB PLM | 0 | | If vermiculite is >10% the |
| See SM-V analysis sheet | Comments: | | Low to Moderate | evel of asbestos in a sample night be underestimated. See Note #1. |
| for results | Method: □ ELAP □ EPA □ SCANNING OPTION Q.C. □ | | Birefringence | see Note #1. |
| 4 36 | A | | | |
| Field Number | P Lin Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required | Color Discharge Morph Extinction RI RI DS Color Color, Pleo Biref Sign Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Recommended | Homogeneity Vermiculite | Amosite | Fiberglass | Organic Binders |
| See gravimetric [| # of Layers | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes No | | Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ver. PT Total PT | | Extinction Fiberglass Isotopic | |
| Required | PLM | | Synthetic High | f vermiculite is >10% the |
| See SM-V □ | NOB PLM O (a) | 0 | Horse Hair: Scales, | r vermiculite is >10% the vel of asbestos in a sample ight be underestimated. |
| for results | Comments: | | | ee Note #1. |
| Methods: | Method: ∠ ELAP □ EPA ☑ SCANNING OPTION Q.C. □ | | | |
| EPA Interim Met | nod of the Determination of Note #1: ELAP requires method FLAP 198 1 for the application of | William Control of the Control | Control of the Contro | |

Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ Project Number 214PNPEPJ1 Analysis Date 3/16 /2021 Analyst 21-427 37 Asbestos Non Fibrous Other Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI || DS Color Color, Pleo Biref Cellulose Mineral Filler Required Fiberglas Organic Binde Vermiculite! Other analysis sheet Detected Yes for results Cellulose Ondu Point Counts Slide 1 Slide 2 SM-V Slide 6 Fiberglass Isotop Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. If vermiculite is >10% the Required | Birefringence evel of asbestos in a sample NOB PLM Horse Hair: Scales, night be underestimated. See SM-V [Low to Moderate See Note #1. analysis sheet Birefringence for results Method: □ ELAP □ EPA SCANNING OPTION Q.C. 38 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM 9 PLM % PLM % RI || DS Color Color, Pleo Biref Sign Other Identif Gravimetric Color Music Texture Cellulose Mineral Filler Organic Binde Vermiculite* Other See gravimetric Other analysis sheet Cellulose Ondulos Extinction Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V %Asb. Or %Ver. Fiberglass Isotopi Required [Birefringence evel of asbestos in a sample NOB PLM Horse Hair: Scales See SM-V might be underestimated. Low to Moderate See Note #1. analysis sheet for results Method: ELAP EPA SCANNING OPTION Q.C. 39 Asbestos Non Fibrous Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Cellulose Mineral Filler Organic Binder See gravimetric [Other analysis sheet Color of Laver Detected Yes Cellulose Ondulose for results Point Counts Slide 1 SM-V Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Synthetic High If vermiculite is >10% the Required [Birefringence 100 evel of asbestos in a sample Horse Hair: Scales NOB PLM See SM-V [might be underestimated. Low to Moderate ee Note #1. analysis sheet Birefringence for results Method: ELAP EPA Q.C. SCANNING OPTION 40 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM 9 PLM % PLM % Gravimetri Mineral Filler Required Organic Binde Other Vermiculite* See gravimetric Other analysis sheet Extinction SM-V Point Counts Stide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT Fiberglass Isotopi %Asb. Or %Ver. If vermiculite is > 10% the Required [Birefringence vel of asbestos in a sample Horse Hair Scales See SM-V NOB PLM ight be underestimated. Low to Moderate See Note #1. analysis sheet Comments: for results Method: ☐ ELAP ☐ EPA SCANNING OPTION Q.C.

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite

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BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ | | | | 100 | | | _ , , , , , , , , | Number 214 | | |
|--|--|--------------------------------|---------|----------|------------|-------------------------------|--------------|-------------------|--|---|--|
| | Analysis Date 3/ 16 | 2021 Analyst | | | B | | | _ Batch N | Number | 21-427 | TEMPERATURE O |
| 41 ield Number | Stereoscopic Exam | | | PLM Op | otical Pr | operties | | | Asbestos Results PLM | Other Fibrous | Non Fibrous PLM % |
| Gravimetric Required □ Recommended □ | Color Texture Vermiculite | Morph Extinction | RII | RI II DS | Color Colo | r, Pleo Bir | ef Sign Othe | er Identity | Chrys | otile 2 Cellulose | 96 Mineral Fille |
| See gravimetric L | # of Layer Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 Slide 2 Slide 3 Sl | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ve | ☐ Cellulose Ondulose Extinction C. ☐ Fiberglass Isotopic | Other |
| Required See SM-V analysis sheet for results | PLM NOB PLM Comments: | | - | | | | 0 | Cel | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is >10% t level of asbestos in a sa might be underestimated See Note #1. |
| | Method: ☐ ELAP ☐ EPA [| SCANNING OPTI | ON | | Q.0 | C. 🗆 | | | | | |
| Required Recommended | Color Texture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction | RII | PLM Op | | operties | | er Identity | Asbestos Results PLM Chrys Arios Other | otile Cellulose | Non Fibrous PLM % Mineral Fill Organic Bir Vermiculite Other |
| analysis shoot | Point Counts Side 1 Slide 2 PLM NOB PLM Comments: | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ve | Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair, Scales, Low to Moderate Birefringence | * If vermiculite is >10% level of asbestos in a si might be underestimate See Note #1. |
| (149)(1340)(140) | Method: ELAP EPA | SCANNING OPTI | ON | | 0.0 | C. 🗆 | | | | | I. |
| 43 eld Number | Stereoscopic Exam | | | PLM Op | otical Pr | operties | | | Asbestos Results PLM | Other Fibrous % PLM % | Non Fibrous PLM % |
| Gravimetric Required Recommended | Stereoscopic Exam Coor Texture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction | RII | | | operties | | er Identity | | % PLM % otile Cellulose The Fiberglass | PLM % Mineral Fill Organic Bi Vermiculite |
| Gravimetric Required Recommended See gravimetric analysis sheet | Color of Layer Detected Yes No | | RI1 | | otical Pr | operties | | | Results PLM Chrys | % PLM % Otile Cellulose Tiberglass Other Cellulose Ondulose Extinction Cellulose Undulose Extinction Synthetic High Biretringence Horse Hair: Scales, | Mineral Fill Organic Bi Vermiculite Other If vermiculite is >10% level of asbestos in a sa |
| Gravimetric Required Recommended analysis sheet for results SM-V Required Required | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | | Slide 5 | RI DS | otical Pr | operties | ef Sign Othe | Total PT | Chrys Amou Other %Asb. Or %Ve | % PLM % Cellulose Tiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Fil Organic Bi Vermiculite Other * If vermiculite is >10% level of asbestos in a si |
| Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Slide 3 Slide 4 | Slide 5 | RIII DS | Slide 7 | operties | Asb./Ver. PT | Total PT | Chrys Amou Other %Asb. Or %Ve | % PLM % Otile Cellulose Tiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | PLM % 9 Mineral Fill Organic Bi Vermiculite Other If vermiculite is >10% level of asbestos in a samight be underestimate |
| Gravimetric Required Recommended Recommended Recommended Recommended Recommended Recommended Required Required Required Required Recommended Recommen | Coor Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: □ELAP □ EPA | Slide 3 Slide 4 SCANNING OPTI | Slide 5 | RIII DS | Slide 7 | operties or, Pieo Bir Slide 8 | Asb./Ver. PT | Total PT | Results PLM Chrys Amos Øther | % PLM % Otile Cellulose Tiberglass Other Cellulose Ondulose Extinction T. Fiberglass Isotopic Synthetic High Birefringence Herse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Otile Cellulose Fiberglass Other | PLM % Mineral File Organic B Vermiculit Other If vermiculite is >10% level of asbestos in a smight be underestimate See Note #1. Non Fibrous PLM % Mineral File Organic B |
| Gravimetric Required Recommended Gravimetric Required Recommended Gravimetric Analysis sheet for results SM-V Required See SM-V Analysis sheet for results A4 analysis sheet Gravimetric Required Recommended Recommended Gravimetric Analysis sheet Gravimetric Analysis sheet Gravimetric Analysis sheet Gravimetric Analysis sheet | Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: DELAP DEPA Stereoscopic Exam Color Detected Yes Nobel Detected | Slide 3 Slide 4 SCANNING OPTI | Slide 5 | RIII DS | Slide 7 | operties | Asb./Ver. PT | Total PT | Asbestos Results PLM Chrys Amos Asbestos Results PLM Chrys Amos | % PLM % Cellulose Cellulose Ondulose Extinction Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Otile Cellulose Fiberglass Other | PLM % Mineral Fil Organic Bi Vermiculite Other If vermiculite is >10% level of asbestos in a simight be underestimate See Note #1. Non Fibrous PLM % Organic Bi Vermiculite Vermiculite |

EPA Interim Method of the Determination of

ELAP Items 198.1, 198.4, 198.6, 198.8

Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ELAP Items 198.1, 198.4, 198.6, 198.8

BULK ASBESTOS ANALYSIS SHEET

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Accreditations: NVLAP 101187-0 ELAP 10879

Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT

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| BULK ASBESTOS | ANALYSIS | SHEET |
|---------------|----------|-------|
| | | |

| Microscopes: |
|----------------|
| OLYMPUS BH-2/ |
| NIKON OPTIPHOT |
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| | Client / Project PANYNJ | | Project Number 214F | NPEPJ1 | NIKON OPTIPHOT | | Client / Project PANYNJ | | _ Project Number _ 214P | NPEPJ1 | NIKON OPTIP |
|--|---|---|--|--|--|---|--|--|---|--|--|
| | Analysis Date 3/ 6 | /2021 Analyst | Batch Number 21 | -427 | TEMPERATURE C | | Analysis Date 3/ | /2021 Analyst | Batch Number 21 | -427 | TEMPERATURE C |
| 45 Id Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % | 1 49 Field Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colon Texture | Morph Extinction RI1 RI DS Color Color, Pleo Biref | Sign Other Identity Chrysoti | Cellulose | Mineral Filler | Gravimetric | opporer Texture NR | Morph Extinction RI⊥ RI∥ DS Color Color, Pleo Biref Sign Oth | er Identity Chrysotile | Cellulose | 100 Mineral Fille |
| Required | | | Amosite | Fiberglas | L The state of the | Required 💆 | Homogeneity Vermiculite | | Amosite | Fiberglass | |
| tecommended | Homogeneity Vermiculite | | | Other | Vermiculite* | Recommended | | | Other | Other | |
| ee gravimetric 🗆 | # of Layers Asbestos | | / | | Other | See gravimetric | # of Layers Asbestos | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | · | / | Decilulose Ondulose Extinction | | analysis sheet for results | Color of Layer Detected Yes N | | | ☐ Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 5 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ | Ver. PT Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. | Extinction □ Fiberglass Isotopic | |
| | PLM O | | 0)222 | ☐ Synthetic High | * If vermiculite is >10% the | 37555500 | PLM | | | ☐ Synthetic High | * If vermiculite is >10% t |
| Required | NOB PLM | | 0 500 0 | Birefringence Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | Required | NOB PLM-26 | | 200 0 | Birefringence Horse Hair: Scales, | level of asbestos in a sa might be underestimated |
| See SM-V analysis sheet | Comments: | | | Low to Moderate Birefringence | See Note #1. | See SM-V analysis sheet | Comments: | | 100 0 | Low to Moderate Birefringence | See Note #1. |
| for results | | SCANNING OPTION Q.C. | | - | 1 11 | for results | 1 - 22/07/2007/07/200 | SCANNING OPTION Q.C. | | | |
| | | | Asbestos | Other Fibrous | J | D 50 | | | Asbestos | I | l N-Fi |
| 46 Id Number | Stereoscopic Exam | PLM Optical Properties | Results PLM % | PLM % | Non Fibrous PLM % | 2 50 Field Number | Stereoscopic Exam | PLM Optical Properties | Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction RI RI DS Color Color, Pleo Biref | Sign Other Identity Chrysoti | e Cellulose | Mineral Filler | Gravimetric | deplace Fexture N | Morph Extinction RI1 RI DS Color Color, Pleo Biref Sign Oth | er Identity Chrysotile | Cellulose | Mineral Fille |
| Required | Homogeneity Vermiculite | | Aprosite | Fiberglas | s Organic Binders | Required 🗹 | | | Amosite | Fiberglass | Organic Bin |
| tecommended | | 7======= | Other | Other | Vermiculite* | Recommended | | ~ | Other | Other | |
| ee gravimetric 🗆 | # of Layers Asbestos | | / | 7 | Other | See gravimetric 📮 | # of Layers Asbestos | 1 | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | 0 | / | Cellulose Ondulose | | analysis sheet for results | Color of Layer Detected Yes N | o | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ | Ver. PT Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM O | | 0 200 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the | Required | PLM | | | ☐ Synthetic High Birefringence | • If vermiculite is >10% t |
| See SM-V | NOB PLM | | | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | See SM-V □ | NOB PLM 2/2 | 0 | 10 0 | ☐ Horse Hair: Scales, | level of asbestos in a sai might be underestimated |
| analysis sheet | Comments: | | | Low to Moderate Birefringence | See Note #1. | analysis sheet | Comments: | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: ☐ ELAP ☐ EPA [| SCANNING OPTION Q.C. | | | | for results | Method: ☑ ELAP □ EPA | SCANNING OPTION Q.C. | | 1 | |
| 47 | Stereoscopic Exam | PLM Optical Properties | Asbestos | Other Fibrous | Non Fibrous | 3 51 | Stereoscopic Exam | PLM Optical Properties | Asbestos | Other Fibrous | Non Fibrous |
| id Number | | Morph Extinction RII RI DS Color Color, Pleo Biref | | PLM % | PLM % | Field Number | Ball Ball All | | Results PLM % | PLM % | PLM % |
| Gravimetric | Colon Design Texture MC | | Chrysoti | | T WINGS THE | Gravimetric | Color | | Chrysotile | Part of the same o | Mineral Fille |
| Required [2 | Homogeneity Vermiculite | | Amosite | Fiberglas | | Required Recommended | Homogeneity Vermiculite | 4======== | Amosite | Fiberglass | |
| Recommended | # of LayersAsbestos | | Other | Other | | See gravimetric | # of Layers Asbestos | | Other | Other | Vermiculite |
| ee gravimetric panalysis sheet | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | Other | analysis sheet | Color of Layer Detected Yes N | | | ☐ Cellulose Ondulose | Other |
| for results | | l | | Extinction | | for results | | | | Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb. | Wer. PT Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | Lancacca de la companya de la compan |
| Required | PLM | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample | Required □ | PLM | | | Birefringence | If vermiculite is >10% to level of asbestos in a sa |
| See SM-V □ | NOB PLM /8 | | 7 70 0 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1, | See SM-V □ | NOB PLM | | 200 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated See Note #1. |
| analysis sheet for results | Comments: | / | | Birefringence | | analysis sheet for results | Comments: | | | Birefringence | a seaso in contractor or |
| | Method: C ELAP EPA | SCANNING OPTION Q.C. | | | | | Method: ☐ ELAP ☐ EPA | ☐ SCANNING OPTION Q.C. □ | | | |
| 48 Id Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | 4 52 | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Del (Texture NP | Morph Extinction RI1 RI DS Color Color, Pleo Biref | Sign Other Identity | | 120 | Gravimetric | Color Carle Stevenson N | Morph Extinction RI | er Identity | | 100 Mineral Fills |
| Required 2 | 0. | | Chrysoti | e Cellulose Fiberglas | T IMPORTANCE | Required | Control of the country of the countr | | Chrysotile Amosite | Cellulose Fiberglass | Organic Bir |
| Recommended | Homogeneity Vermiculite | 7 | Other | Other | Vermiculite* | Recommended | Homogeneity Vermiculite | 7 | Other | Other | Vermiculite' |
| ee gravimetric 🗆 | # of Layers Asbestos | | | | Other | See gravimetric | # of Layers Asbestos | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | | analysis sheet for results | Color of Layer Detected Yes N | | | ☐ Cellulose Ondulose | |
| O COLUMN STATES | Point Counts Clide 4 Clide 6 | Slide 2 Slide 4 Slide E Slide E State S S State S S State S S State S S S S S S S S S S S S S S S S S S S | Nor DT Total DT MA-1- C-M** | Extinction ☐ Fiberglass Isotopic | | | Point Counts Stide 4 Stide 5 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ver.PT | Total DT WASH OS WY | Extinction ☐ Fiberglass Isotopic | |
| SM-V | | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb. | Ner. PT Total PT %Asb. Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the | SM-V | | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. | ☐ Synthetic High | * If vegetables is a second |
| | PLM | | | Birefringence | level of asbestos in a sample | Required □ | PLM PLM | | | Birefringence | * If vermiculite is >10% t level of asbestos in a sa |
| Required | 16 | | | rmm, sreates, | might be underestimated. | See SM-V □ | NOB PLM | | 200 | Low to Moderate | might be underestimated See Note #1. |
| See SM-V | NOB PLM | | 0 200 0 | Low to Moderate Birefringence | See Note #1. | analysis should | 10 | | | | See Note #1, |
| | NOB PLM Comments: | COMMUNIC ONTON | 0 20 0 | Low to Moderate Birefringence | See Note #1. | analysis sheet for results | Comments: | FACCAMMINIC ONTION 10.0 C | | Birefringence | See Note #1, |
| See SM-V analysis sheet for results | NOB PLM S Comments: Method: □ELAP □ EPA | SCANNING OPTION Q.C. | | Birefringence | | for results | Method: ☐ ELAP ☐ EPA | SCANNING OPTION Q.C. | | Birefringence | |
| See SM-V analysis sheet for results Methods: EPA Interim N | NOB PLM S Comments: Method: □ ELAP □ EPA S Method of the Determination of S (S) | SCANNING OPTION Q.C. ote #1: ELAP requires method ELAP 198.1 for the analysis of samples con MrV). For samples containing > 10% vermiculite ELAP requires methods El vermiculite. "This method does not remove vermiculite and may underesting vermiculite." | taining ≤10% vermiculite, with the exception LAP 198,1 followed by ELAP 198,6. This me | Birefringence of surfacing material the | at contains vermiculite | for results Methods: EPA Interim N Asbestos in B | Method: DELAP DEPA | ote #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤1 SM-V). For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 (vermiculite. "This method does not remove vermiculite and may underestimate the letter the property of the samples of the sampl | 0% vermiculite, with the exception followed by ELAP 198.6. This met | Birefringence of surfacing material that had has limitations for id- | t contains vermiculite |

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L\(\text{LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_

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BULK ASBESTOS ANALYSIS SHEET

NIKON OPTIPHO Client / Project PANYNJ Project Number 214PNPEPJ1 Analysis Date 3/ 1(2021 Analyst 21-427 53 Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RI || DS Color Color, Pleo Biref Desture Mineral Filler Gravimetri Fiberglas Amosite Organic Binder Vermiculite* See gravimetric analysis shee Cellulose Ondulo for results Fiberglass Isotop Point Counts Slide 1 Slide 2 Slide 5 Slide 6 %Asb. Or %Ver. Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Synthetic High PLM If vermiculite is >10% the Required [evel of asbestos in a sample NOB PLM 700 night be underestimated. 0 See SM-V [Low to Moderate See Note #1. analysis sheet Birefringence Comments for results Method: ☑ ELAP ☐ EPA SCANNING OPTION Q.C. 54 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PI M 9 PLM % PLM % Mineral Filler Cellulose Required Amosite Fiberglas Organic Binder Other Other Vermiculite* See gravimetric analysis shee Color of Layer Cellulose Ondul for results Slide 4 Slide 6 Slide 7 Point Counts Slide 2 Slide 5 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V Synthetic High PLN If vermiculite is >10% the Birefringence evel of asbestos in a sample Horse Hair: Scales NOB PLM night be underestimated. 20 See SM-V Low to Moderate See Note #1. analysis sheet Comments for results Method: ELAP EPA SCANNING OPTION Q.C. 55 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Mineral Filler Cellulose Required . Amosite Fiberglas Organic Binde O Vermiculite* Other Other Other analysis sheet for results Cellulose Ondulose Extinction Slide 6 Fiberglass Isotoni Slide 5 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V PLM If vermiculite is >10% the Required [evel of asbestos in a sample Horse Hair Scales NOB PLM might be underestimated. 200 See SM-V Low to Moderate See Note #1. analysis sheet for results Q.C. Method: ELAP EPA SCANNING OPTION 56 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM 9 PLM % PLM % Gravimetri Chrysot Cellulos Mineral Filler S Fiberglas Organic Binder Vermiculite* See gravimetric _ Other analysis sheet Cellulose Ondulo Detected Yes for results Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT Fiberglass Isotopi Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 %Asb. Or %Ver. SM-V Synthetic High Required [0 Birefringence evel of asbestos in a sample Horse Hair: Scales. NOB PLA night be underestimated. See SM-V [Low to Moderate analysis sheet Comments: for results Method: □ ELAP □ EPA ☐ SCANNING OPTION Q.C.

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2.

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ATC - New York

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| | Client / Project PANYNJ | BULK A | ASBESTOS ANALYSIS SHE | | 14PNPEPJ1 | OLYMPUS BH-2 NIKON OPTIPHO |
|---|-------------------------------|--------------------------|----------------------------------|--|--|---|
| | Analysis Date 3/ | /2021 Analyst | M | Batch Number | 21-427 | TEMPERATURE °C |
| 1 57 Field Number | Stereoscopic Exam | | PLM Optical Properties | Asbesto Results PL | os Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction RI1 | RI DS Color Color, Pleo Birel | | rysotile Cellulose | Mineral Filler |
| Required | Hammer No No In Fig. | | | | nosite Fiberglass | |
| Recommended | Homogeneity Vermiculite | | | Ot | | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | extension and the second of th | Other |
| analysis sheet for results | Color of Layer Detected Yes I | No | | | ☐ Cellulose Ondulose | |
| 100000000000000000000000000000000000000 | Delet Const. City 4 City 5 | | Taylor Taylor Taylor | | Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 A | ssb./Ver. PT Total PT %Asb. Or % | Synthetic High | |
| Required | PLM | | | | Birefringence | If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM - | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: See H | 56 | | | Birefringence | |
| | Method: □ ELAP □ EPA | ☐ SCANNING OPTION | Q.C. 🗆 | | | |
| 2 58 | Stereoscopic Exam | T | PLM Optical Properties | Asbesto | os Other Fibrous | Non Fibrous |
| Field Number | | Morph Extinction RI1 | RI DS Color Color, Pleo Biref | Results PL Sign Other Identity | M% PLM% | PLM % |
| Gravimetric | Color Texture | | | A CONTROL OF THE PROPERTY OF T | rysotile Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | | | An | nosite Fiberglass | Organic Binde |
| Recommended | # of Layers Asbestos | | | ot | nerOther | Vermiculite* |
| See gravimetric analysis sheet | | | | | | Other |
| for results | Color of Layer Detected Yes I | No | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 A | sb./Ver. PT Total PT %Asb. Or % | | |
| Required | PLM | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V 🗆 | NOB PLM | | | | ☐ Horse Hair: Scales, | level of asbestos in a samp might be underestimated. |
| analysis sheet | Comments: See #5 | 7 | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: □ ELAP □ EPA | ☐ SCANNING OPTION | Q.C. □ | | | |
| 3 59 | | 1 | | Asbesto | os Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | | PLM Optical Properties | Results PL | Oliver and the second s | PLM % |
| Gravimetric | Color Cexture | Morph Extinction RI 1 | RI DS Color Color, Pleo Biref | Transfer of the second | rysotije 7 Cellulose | Mineral Filler |
| Required [| Homogeneity Vermiculite | X | | An | nositeFiberglass | Organic Binde |
| Recommended | | 1=== | | | nerOther | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | / | | Other |
| analysis sheet for results | Color of Layer Detected Yes I | No | | | Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 A | Asb. Ner. PT Total PT %Asb. Or % | Extinction Uer □ Fiberglass Isotopic | |
| 12000000 | nu la | Olide 5 Olide 4 Olide 5 | Side 6 Side 7 Side 6 P | 200 | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | 124 | | | 0 500 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a samp |
| See SM-V analysis sheet | NOB PLM | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Comments: | The season was a serious | Тос П | | | |
| | Method: T ELAP L EPA | SCANNING OPTION | Q.C. 🗆 | | | 1 |
| 4 60 Field Number | Stereoscopic Exam | | PLM Optical Properties | Asbesto Results PL | | Non Fibrous PLM % |
| | Catalog Aur F | Morph Extinction RL1 | RI DS Color Color, Pleo Biref | Sign Other Identity | ac | |
| Gravimetric Required | Color Autexture | | | | rysottle Cellulose | Mineral Filler |
| Recommended | Homogeneity Vermiculite | / | | / | Fiberglass | _ |
| | # of Layers Asbestos | | | | ner Other | Vermiculite* |
| See gravimetric analysis sheet | Color of Layer Detected Yes 1 | 1 | | / | | Other |
| for results | Color of Layer Detected Yes 1 | <u> </u> | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 A | sb./Ver. PT Total PT %Asb. Or % | | |
| Required | PLM | | | 0 200 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V □ | NOB PLM | | | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a samp might be underestimated. |
| analysis sheet | Comments: | | | | Birefringence | See Note #1. |
| for results | Mathod: DELAB DEBA | E SCANNING OPTION | loc 🗆 | | | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite." Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing year miculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

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Accreditations: NVLAP 101187-0 ELAP 10879

level of asbestos in a sample

might be underestimated.

Horse Hair: Scales,

| | | | BULK A | SBESTO | OS ANAL | YSIS S | HEET | | | | OLYMPUS BH- |
|---------------------------------|--|--------------|-----------------|---------|-------------|------------|-------------|----------------|---------------------------|--|--|
| | Client / Project PANYN. | J | | | | | | Project | Number 214PN | IPEPJ1 | WIKON OF IIPH |
| | Analysis Date 3/ | /2021 An | alyst | | 7 | M | | Batch I | Number 21- | 427 | EMPERATURE C |
| 1 61 Field Number | Stereoscopic Exam | | | PLM O | ptical P | ropertie | s · | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Transferture | Morph Exti | nction RI1 | RI II D | S Color Col | or, Pleo B | iref Sign C | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | / | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended See gravimetric | # of Layers Ashestos | | | | | | | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | === | | | Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slid | le 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM O | | | | | | 0 | 200 | 7) | ☐ Synthetic High Birefringence | If vermiculite is >10% the level of asbestos in a same |
| See SM-V □ | NOB PLM | | | | | | | - | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | - | | Birefringence | Total Hote W1. |
| | Method: □ELAP □ EPA | SCANNING | OPTION | | Q. | c. □ | | | | | |
| 2 62 Field Nughber | Stereoscopic Exam | | | PLM O | ptical P | ropertie | s | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Gravimetric | Color Texture | Morph Exti | nction RI1 | RI II D | S Color Col | or, Pleo B | iref Sign C | Other Identity | | PLM % | PLM % |
| Required | | | | | = | | | == | Chrysotile Amosite | Cellulose Fiberglass | Mineral Filler Organic Binde |
| Recommended | PERCENTION OF THE PERCENT OF THE PER | - = - | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slid | le 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a same |
| See SM-V 🗆 | NOB PLM | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | Carlott Marries | | 1- | | | | | Birefringence | The state of the s |
| | Method: □ ELAP □ EPA | SCANNING | OPTION | | Q. | c. 🗆 | | | | | |
| 3 63 Field Number | Stereoscopic Exam | | | PLM O | ptical P | ropertie | s | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Exti | nction RI1 | RI II D | S Color Col | or, Pleo B | iref Sign C | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | | | : | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | - | | | | | | | | | Other |
| for results | Color of Layer Detected Yes | No | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slid | le 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a same |
| See SM-V □ | NOB PLM | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: □ ELAP □ EPA | SCANNING | ORTION | | 10 | <u>с</u> П | | | | Birefringence | |
| | Method: □ ELAP □ EPA | SCANNING | OPTION | | ĮĠ. | c. 🗆 | | | | | |
| 4 64 Field Number | Stereoscopic Exam | Morph Extir | notion DI I | | ptical P | | | Mb 1 | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | - Morph Exti | nction RI1 | RI II D | S Color Col | w, FINO B | | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | # of Lavers Ashestos | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | Color of Layer Detected Yes | No — | | | | | | | | ☐ Cellulose Ondulose | Other |
| for results | | | le 4 Sude 5 | CHAPE | 064-7 | 011-0 | IAnh Area 5 | T Tabel DT | WA-b C WW | Extinction Fiberglass Isotopic | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slid | le 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | TOTALET | %Asb. Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the |

Metridos.
EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

See SM-V analysis sheet for results

NOB PLM

Method: ☐ ELAP ☐ EPA

☐ SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.0. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Q.C.

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET



| 2 ◀ | |
|------------------|-------|
| SH | |
| NOB TEM PREP: | |
| MJG | 13 |
| NOB PLM Analyst: | 6 |
| SA/EV | 11 12 |
| NOB PLM PREP: | 2 |

03/17/21

Date (

Ę

03/16/21

Start Date:

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21-427

| şp | | TEM | > | > | > | > | > | > | > | > |
|---------|---------|----------------------------|------|------|------|------|------|------|------|---|
| Methods | NOB | PLM | > | > | > | > | > | > | > | > |
| 2 | | PREP | > | > | > | > | > | > | > | > |
| | | Notes | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | |
| 9 | | Types or Vermiculite | | QN | QN | QN | QN | ΩZ | QN | |
| 12 | | % Carbonate | 33.4 | 16.4 | 15.9 | 35.3 | 41.8 | 23.9 | 17.0 | |
| 11 | Non Asb | Residue % NFr | 39.4 | 56.1 | 55.8 | 44.2 | 37.2 | 52.2 | 63.9 | |
| 5 | | % Organic | 27.2 | 27.5 | 28.3 | 20.5 | 21.0 | 23.9 | 19.1 | |
| | | Field# | 7 | 8 | 6 | 15 | 16 | 17 | 18 | |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not detected.

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2

27.7

53.

18.8

20

25.3

54.6

20.1

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42.

50.

47

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

Batch #

03/16/21

03/17/21

Client/Project:

| | - 2 | - 11 | 12 | 6 | 13 | | Met | Methods | |
|---------|--------------|------------------|----------------|-------------------------|----------------------------|-------|-----|---------|--|
| | , ro | Non Asb | | Asbestos | % Total | | ř | NOB | |
| Field # | % Organic | Kesique % NFr | % Carbonate | lypes or Vermiculite | Asbestos or Vermiculite | Notes | PLM | TEM | |
| 48 | 53.0 | 41.1 | 5.9 | ND | | | 1 | 1 | |
| 49 | 56.7 | 39.7 | 9. 9. | Q | | | > | > | |
| 50 | 66.4 | 20.3 | 13.3 | QN | | | > | 3 | |
| 51 | 74.3 | 20.5 | 5.2 | QN | | | > | > | |
| 52 | 64.2 | 6.7 | 27.9 | QN | | | > | > | |
| 53 | 42.3 | 26.2 | 31.5 | QN | | | > | > | |
| 54 | 75.5 | 8.9 | 15.6 | QN | | | > | > | |
| 55 | 69.7 | 13.1 | 17.2 | ON | | | > | > | |
| | | | | | | | | | |
| | | | | | | | | | |

ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 4/15/2021

104 EAST 25TH STREET

Date Received : 4/15/2021

NEW YORK, NY 10010 **Fax:** (212) 353-3599

Phone: (212) 353-8280

Date Analyzed: 4/16/2021

Project: PANYNJ / FIRESPRINKLER REHABILITATION

ATC Batch # 21-668

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING #260 Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>Noi</u> | ı-Asbestos | NOB | Asbestos |
|----------------|-----------------------------------|--|---------|--------------------------------|---------------------|--------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | ₩ Type | % Type |
| 62 | 1ST FLOOR WAREHOUSE LUNCH ROOM | 2' X 2' CEILING TILES TYPE 1 | NOB-TEM | | 0.00()(| 29.1% Organic 60.4% Residue | NONE DETECTED |
| 21-668 -1 | | | | | 0.0% Vermiculite | 10.5% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Whit Second Analyst: Roman F | - | Comments: NOB PL | M Inconclusive | | |
| 63 | 1ST FLOOR WAREHOUSE LUNCH ROOM | 2' X 2' CEILING TILES TYPE 1 | NOB-TEM | | | 28.6% Organic 59.2% Residue | |
| 21-668 -2 | | | | | 0.0% Vermiculite | 12.2% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Whit Second Analyst: Roman F | - | Comments: NOB PL | M Inconclusive | | |
| 64 | 1ST FLOOR WAREHOUSE LUNCH ROOM | 2' X 2' CEILING TILES TYPE 1 | NOB-TEM | | | 26.5% Organic 61.7% Residue | |
| 21-668 -3 | | | | | 0.0% Vermiculite | 11.8% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Whit Second Analyst: Roman F | | Comments: NOB PL | M Inconclusive | | |
| 65 | 1ST FLOOR LUNCH ROOM | HVAC DUCT INSULATION | PLM | 75% Cellulose | 20% Mineral Filler | | |
| 21-668 -4 | | COVER | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan/ | Silver | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 66 | 1ST FLOOR LUNCH ROOM | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose 5% FiberGlass | 20% Mineral Filler | | |
| 21-668 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Tan/ | Silver | | | | |
| 67 | 1ST FLOOR LUNCH ROOM | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose 5% FiberGlass | 20% Mineral Filler | | |
| 21-668 -6 | | | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan/ | Silver | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 68 | 1ST FLOOR ELECTRIC SHOP | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-668 -7 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyse of Div | luan Davian | Color: Gray | 1 | | | | |
| Analyzed By: | ivan keyes | | | | | | |

Page 1 of 8 Batch # 21-668 Report Prepared By: Grace Chan



New York, NY 10010 Tel. 212-353-8280

Fax: 212-353-8306

| | | | | No | n-Asbestos | <i>NOB</i> | Asbestos |
|----------------|-----------------------------------|------------------------------------|---------|------------------|---------------------|----------------------------------|--------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 69 | 1ST FLOOR CARPETERS SHOP | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-668 -8 | | | | | 0.0% Vermiculite | | NONE DETECTE |
| Analyzed By: I | van Reves | Color: Gr | ay | | | | |
| 70 | 1ST FLOOR PLUMBING | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| | SHOP | | | | 0.0% Vermiculite | | NONE DETECTE |
| 21-668 -9 | | Color: Gr | av. | | 0.0% vermiculite | | NONE DETECTE |
| Analyzed By: I | van Reyes | 0001. 011 | -y | | | | |
| 71 | 2ND FLOOR OFFICE SPACE | 2' X 2' CEILING TILE | NOB-TEM | | | 30.5% Organic | |
| 21-668 -10 | | | | | 0.0% Vermiculite | 48.6% Residue 20.9% Carbonate | NONE DETECTE |
| | _ | Color: Wh | | Comments: NOB PL | M Inconclusive | | |
| Analyzed By: I | | Second Analyst: Roman | | Comments: NOBTE | IN INCONCIONAL | | |
| 72 | 2ND FLOOR OFFICE SPACE | 2' X 2' CEILING TILE | NOB-TEM | | | 28.7% Organic 62.5% Residue | |
| 21-668 -11 | | | | | 0.0% Vermiculite | 8.8% Carbonate | NONE DETECTE |
| Analyzed By: I | van Reves | Color: Wh Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 73 | 2ND FLOOR OFFICE SPACE | <u> </u> | NOB-TEM | | | 29.4% Organic | |
| | | | | | 0.0% Vermiculite | 55.8% Residue 14.8% Carbonate | NONE DETECTE |
| 21-668 -12 | | Color: Wh | nite | | 0.0% verificulte | 14.0% Carbonate | NONE DETECTE |
| Analyzed By: I | van Reyes | Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 74 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD PAPER WA BOARD | LL PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -13 | | BOAND | | | 0.0% Vermiculite | | NONE DETECTE |
| | _ | Color: Bro | own | | | | |
| Analyzed By: I | - | | | | | | |
| 75 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD PAPER WA BOARD | LL PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -14 | | | | | 0.0% Vermiculite | | NONE DETECTE |
| Analyzed By: I | van Reves | Color: Bro | own | | | | |
| 76 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD PAPER WA | LL PLM | 90% Cellulose | 10% Mineral Filler | | |
| | 21.13 / 20 01.1 01.1 102 01.1 102 | BOARD | 1 | 0070 Ochalosc | | | NONE DETECTE |
| 21-668 -15 | | Color: Bro | 214/12 | | 0.0% Vermiculite | | NONE DETECTE |
| Analyzed By: I | van Reyes | COIOI. BIC | JWII | | | | |
| 77 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD WALL WAL | L PLM | 8% Cellulose | 90% Mineral Filler | | |
| 21-668 -16 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTE |
| | | Color: Gr | ay | | | | |
| Analyzed By: I | van Reyes | | | | | | |
| 78 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD WALL WAL | L PLM | 10% Cellulose | 88% Mineral Filler | | |
| 21-668 -17 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTE |
| A1- 15 : | D | Color: Gr | ay | | | | |
| Analyzed By: I | van Reyes | | | | | | |

Page 2 of 8 Batch # 21-668 Report Prepared By: Grace Chan



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| | | | | <u>Non-</u> | - <u>Asbestos</u> | <u>NOB</u> | Asbestos |
|--------------|-------------------------|----------------------------|--------|--------------------------------|---------------------|------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 79 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD WALL WALL | PLM | 10% Cellulose | 88% Mineral Filler | | |
| 21-668 -18 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzad Pyr | Ivan Payos | Color: Gray | , | | | | |
| Analyzed By: | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Tracel/ Cellulace | 100% Mineral Filler | | |
| 80 | ZIND FLOOR OFFICE SPACE | JOINT COMPOUND | PLIVI | Trace% Cellulose | | | |
| 21-668 -19 | | Color: White | • | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color. Willia | e | | | | |
| 81 | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -20 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analysis Dev | har Davis | Color: White | е | | | | |
| Analyzed By: | • | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 02 | ZND FLOOR OFFICE SPACE | JOINT COMPOUND | PLIVI | Trace% Cellulose | | | |
| 21-668 -21 | | Color: White | • | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: White | e | | | | |
| 83 | 2ND FLOOR OFFICE SPACE | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose | 20% Mineral Filler | | |
| 21-668 -22 | | COVER | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | . 5 | Color: Tan/s | Silver | | | | |
| Analyzed By: | - | LIVAC DUCT NICH ATION | DIM | 750/ 0-11 1 | 400/ Marcal Eller | | |
| 84 | 2ND FLOOR OFFICE SPACE | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose 7% FiberGlass | 18% Mineral Filler | | |
| 21-668 -23 | | 0.1. 7. / | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Tan/s | silver | | | | |
| 85 | 2ND FLOOR OFFICE SPACE | HVAC DUCT INSULATION | PLM | 75% Cellulose | 17% Mineral Filler | | |
| 21-668 -24 | | COVER | | 8% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan/s | silver | | | | |
| Analyzed By: | • | | | | | | |
| 86 | 2ND FLOOR OFFICE SPACE | SPRAYED ON FIRE PROOFIN | G PLM | 12% Cellulose 3% FiberGlass | 85% Mineral Filler | | |
| 21-668 -25 | | | _ | 0,0 1,120, 0,400 | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Light | Green | | | | |
| 87 | 2ND FLOOR OFFICE SPACE | SPRAYED ON FIRE PROOFIN | G PLM | 15% Cellulose | 82% Mineral Filler | | |
| 21-668 -26 | | | | 3% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Light | Green | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 88 | 2ND FLOOR OFFICE SPACE | SPRAYED ON FIRE PROOFIN | G PLM | 12% Cellulose 3% FiberGlass | 85% Mineral Filler | | |
| 21-668 -27 | | | | O /V INGIGIDES | 0.0% Vermiculite | | NONE DETECTED |
| | Ivan Reyes | Color: Light | Green | | | | |

Batch # 21-668 Page 3 of 8 Report Prepared By: Grace Chan



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| | | | | 2-353-8280 2-353-8306 | | | |
|--------------|--------------------------------------|-------------------------------------|------------|--------------------------------|--------------------|----------------------------------|---------------|
| i. | | | | Noi | n-Asbestos | NOB | Asbestos |
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 89 | 2ND FLOOR OFFICE SPACE | SPRAYED ON FIRE PROOFI | NG PLM | 10% Cellulose | 87% Mineral Filler | | |
| 21-668 -28 | | | | 3% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Ligl | ht Green | | | | |
| Analyzed By: | <u> </u> | | | | | | |
| 90 | 2ND FLOOR OFFICE SPACE | SPRAYED ON FIRE PROOFII | NG PLM | 12% Cellulose 3% FiberGlass | 85% Mineral Filler | | |
| 21-668 -29 | | | | 070 Tiberolass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Ligi | ht Green | | | | |
| 91 | 2ND FLOOR OFFICE @ | FIRE STOP SEALANT RED | NOB-TEM | | | 46.7% Organic | |
| | DECK LEVEL | | | | 0.0% Vermiculite | 27.5% Residue 25.8% Carbonate | NONE DETECTED |
| 21-668 -30 | | Color: Rec | d | | | 20.070 Carbonato | NONE BETEGTED |
| Analyzed By: | Ivan Reyes | Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 92 | 2ND FLOOR OFFICE @ DECK LEVEL | FIRE STOP SEALANT RED | NOB-TEM | | | 46.8% Organic 25.2% Residue | |
| 21-668 -31 | DEOREEVEE | | | | 0.0% Vermiculite | 28% Carbonate | NONE DETECTED |
| | | Color: Red | | Comments: NOB PL | M Inconclusive | | |
| Analyzed By: | • | Second Analyst: Roman | - | Confinents. NOB 1 L | IN Inconclusive | | |
| 93 | 2ND FLOOR OFFICE @ DECK LEVEL | FIRE STOP SEALANT RED | NOB-TEM | | | 49.5% Organic 22.8% Residue | |
| 21-668 -32 | | | | | 0.0% Vermiculite | 27.7% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Red Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 94 | 2ND FLOOR OFFICE SPACE | 2' X 2' CEILING TILES TYPE I | I NOB-TEM | | | 26.3% Organic | |
| 04 000 00 | SLOPE SINK | | | | 0.0% Vermiculite | 33.7% Residue 40% Carbonate | NONE DETECTED |
| 21-668 -33 | | Color: Wh | ite | | 0.070 Verifficance | 40 /0 Carbonate | NONE BETEGTED |
| Analyzed By: | Ivan Reyes | Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 95 | 2ND FLOOR OFFICE SPACE SLOPE SINK | 2' X 2' CEILING TILES TYPE I | II NOB-TEM | | | 26.9% Organic | |
| 21-668 -34 | SEOFE SHAK | | | | 0.0% Vermiculite | 52.4% Residue 20.7% Carbonate | NONE DETECTED |
| | | Color: Wh | | Comments: NOB PL | M Inconclusivo | | |
| Analyzed By: | Ivan Reyes | Second Analyst: Roman | Peysakhov | Confinents. NOB FL | .w mconclusive | | |
| 96 | 2ND FLOOR OFFICE SPACE SLOPE SINK | 2' X 2' CEILING TILES TYPE I | II NOB-TEM | | | 27.1% Organic 57.5% Residue | |
| 21-668 -35 | | | | | 0.0% Vermiculite | 15.4% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Wh Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 97 | 3RD FLOOR OFFICE SPACE | | NOB-TEM | | | 30.2% Organic | |
| | | _ ,,_ | NOD TEM | | 0.00/ \/amaiolita | 58.2% Residue 11.6% Carbonate | NONE DETECTED |
| 21-668 -36 | | Color: Wh | ito | | 0.0% Vermiculite | 11.0% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 98 | 3RD FLOOR OFFICE SPACE | 2' X 2' CEILING TILE TYPE I | NOB-TEM | | | 22.9% Organic | |
| 21-668 -37 | | | | | 0.0% Vermiculite | 62.3% Residue 14.8% Carbonate | NONE DETECTED |
| | | Color: Wh | | Comments: NOB PL | M Inconclusive | | |
| Analyzed By: | Ivan Reyes | Second Analyst: Roman | Peysakhov | Odminients, NOD PL | .w moonousive | | |

Report Prepared By: Grace Chan Page 4 of 8 Batch # 21-668



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| Ver | | | | <u>Non</u> | ı-Asbestos | NOB | Asbestos |
|----------------|------------------------|------------------------------------|-----------|--|--------------------|--------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | ₩ Type | % Type |
| 99 | 3RD FLOOR OFFICE SPACE | 2' X 2' CEILING TILE TYPE I | NOB-TEM | | | 24.8% Organic 65.4% Residue | |
| 21-668 -38 | | | | | 0.0% Vermiculite | 9.8% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Wi Second Analyst: Roman | | Comments: NOB PL | M Inconclusive | | |
| 100 | 3RD FLOOR OFFICE SPACE | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose | 18% Mineral Filler | | |
| 21-668 -39 | | 331211 | | 7% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Ta | ın/Silver | | | | |
| 101 | 3RD FLOOR OFFICE SPACE | HVAC DUCT INSULATION | PLM | 75% Cellulose | 19% Mineral Filler | | |
| 21-668 -40 | | COVER | | 6% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-000 -40 | | Color: Ta | ın/Silver | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 102 | 3RD FLOOR OFFICE SPACE | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose | 18% Mineral Filler | | |
| 21-668 -41 | | | | 7% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Ta | ın/Silver | | | | |
| 103 | 3RD FLOOR OFFICE SPACE | GYPSUM BOARD PAPER W | ALL PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -42 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Br | own | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 104 | 3RD FLOOR OFFICE SPACE | GYPSUM BOARD PAPER W | ALL PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -43 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Br | own | | | | |
| 105 | <u> </u> | GYPSUM BOARD PAPER W | ALL PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -44 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Br | own | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 106 | 3RD FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 3% Cellulose2% FiberGlass | 95% Mineral Filler | | |
| 21-668 -45 | | | | 2% FIDEIGIASS | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Of | f white | | | | |
| 107 | 3RD FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 4% Cellulose | 94% Mineral Filler | | |
| | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-668 -46 | | Color: Of | f white | | 0.070 VOITHIOUMO | | HONE BETEGTED |
| Analyzed By: | Ivan Reyes | | | | | | |
| 108 | 3RD FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 7% Cellulose | 91% Mineral Filler | | |
| 21-668 -47 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Of | f white | | | | |
| - analyzed by. | Train Noyoo | | | | | | |

Report Prepared By: Grace Chan Page 5 of 8 Batch # 21-668



04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>Non-</u> | -Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|--------------|------------------------------------|-------------------------------|----------|--------------------------------|---------------------|------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 109 | 3RD FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -48 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Payas | Color: Wh | iite | | | | |
| | 3RD FLOOR OFFICE SPACE | JOINT COMPOUND | DIM | T0/ O-11 I | 4000/ Mi I Fill | | |
| 110 | SRD FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -49 | | Oalam Wh | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Wh | lite | | | | |
| 111 | 3RD FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -50 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Wh | iite | | | | |
| Analyzed By: | <u> </u> | | | | | | |
| 112 | 3RD FLOOR OFFICE SPACE ON BEAMS | SPRAYED ON FIRE PROOFINGS | PLM | 18% Cellulose 2% FiberGlass | 80% Mineral Filler | | |
| 21-668 -51 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Ligi | ht Green | | | | |
| 113 | 3RD FLOOR OFFICE SPACE | SPRAYED ON FIRE | PLM | 15% Cellulose | 83% Mineral Filler | | |
| | ON BEAMS | PROOFINGS | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-668 -52 | | Color: Ligi | ht Green | | 0.070 Verrindand | | NONE BETEOTES |
| Analyzed By: | Ivan Reyes | 2010.1. <u>Lig</u> i | 5.55 | | | | |
| 114 | 3RD FLOOR OFFICE SPACE ON BEAMS | SPRAYED ON FIRE PROOFINGS | PLM | 18% Cellulose | 80% Mineral Filler | | |
| 21-668 -53 | ON BEAWO | 110011100 | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Lig | ht Green | | | | |
| Analyzed By: | <u> </u> | | | | | | |
| 115 | 3RD FLOOR OFFICE SPACE ON BEAMS | SPRAYED ON FIRE PROOFINGS | PLM | 20% Cellulose 2% FiberGlass | 78% Mineral Filler | | |
| 21-668 -54 | | | | 270 1 1501 31403 | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Ligi | ht Green | | | | |
| 116 | 3RD FLOOR OFFICE SPACE | SPRAYED ON FIRE | PLM | 15% Cellulose | 83% Mineral Filler | | |
| 21-668 -55 | | PROOFINGS | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-000 -55 | | Color: Ligi | ht Green | | | | |
| Analyzed By: | Ivan Reyes | _ | | | | | |
| 117 | 3RD FLOOR STAIRCASE EAST | GYPSUM BOARD PAPER CEILING | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -56 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Povos | Color: Bro | own | | | | |
| | 3RD FLOOR STAIRCASE | GYPSUM BOARD PAPER | DIM | 000/ Callulana | 10% Mineral Filler | | |
| 118 | EAST EAST | CEILING | PLM | 90% Cellulose | | | |
| 21-668 -57 | | - Andrews | | | 0.0% Vermiculite | | NONE DETECTED |
| A | Ivan Reyes | Color: Bro | OWN | | | | |

Report Prepared By: Grace Chan Page 6 of 8 Batch # 21-668



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>Non-</u> | - <u>Asbestos</u> | <u>NOB</u> | <u>Asbestos</u> |
|--------------|---|-------------------------------|--------|-------------------------------|---------------------|------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 119 | 3RD FLOOR STAIRCASE WEST | GYPSUM BOARD PAPER CEILING | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -58 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Bro | wn | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 120 | 3RD FLOOR STAIRCASE EAST | GYPSUM BOARD CEILING | PLM | 4% Cellulose 2% FiberGlass | 94% Mineral Filler | | |
| 21-668 -59 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Off | White | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 121 | 3RD FLOOR STAIRCASE EAST | GYPSUM BOARD CEILING | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-668 -60 | LAGI | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Off | White | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 122 | 3RD FLOOR STAIRCASE WEST | GYPSUM BOARD CEILING | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-668 -61 | *************************************** | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Off | White | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 123 | 3RD FLOOR STAIRCASE EAST | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -62 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Whi | te | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 124 | 3RD FLOOR STAIRCASE EAST | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -63 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Whi | te | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 125 | 3RD FLOOR STAIRCASE WEST | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -64 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Whi | te | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |

Report Prepared By: Grace Chan Page 7 of 8 Batch # 21-668



Roman Peysakhov

Analyst:

ATC Group Services LLC

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Non-Asbestos NOB Asbestos

| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
|----------------|--------------------------------|---|--------------------------|---------------------------|-------------------------------------|----------------------------|-----------------------|
| IOTES: | | | | | | | |
| 1) The Limit | of Detection is the same | as the Reporting Limit for these results. | | | | | |
| 2) The Repo | orting Limit (RL) is the Limi | t of Quantitation. For point counts the li | mit of quantitation of | 0.25%; based on one as | sbestos point counter over 400 non- | empty points. | |
| 3) Asbestos | Containing Material (ACM |) Definition: > 1% asbestos by weight is | s considered an ACM | 1 | | | |
| report may | | sponsible for sample collection. Please ct endorsement by NVLAP or any other request. | | | | | |
| 5) Accredite | ed by NVLAP #101187-0 a | nd by NY State ELAP #10879 | | | | | |
| 1 ' | • | nt(s) contained herein are confidential ar | | | • | | |
| 7) Liability N | Notice: ATC Group Service | s and its personnel shall not be liable fo | r any misinformation | provided to us by the cli | ent regarding these samples. This r | eport relates only to samp | les submitted and ana |
| 8) Asbestos | results are reliable to 2 sig | gnificant figures. | | | | | |
| 9) The cond | lition of all samples was ac | ceptable upon receipt. | | | | | |
| 10) The lab | oratory certifies that the tes | st results meet all requirements of NELA | C. | | | | |
| 11) Suppler | nent to test report batch # _ | Amendments: A | mendment Dates: _ | Amended by: | | | |
| 12) PLM Le | tter is attached on this repo | ort. | | | | | |
| 13) TRACE | : The result is reported as | Trace when No points are counted and a | asbestos is identified | . For ELAP Trace is < 19 | %. | | |
| 14) ATC Gr | oup Services certifies that | this report is an accurate and authentic | report of the results of | obtained from the laborat | ory analysis | | |
| 15) The unc | ertainty for these test resul | lts is available upon request. | | | | | |
| | | .1 for the analysis of samples containing ulite and may underestimate the level of | | | | nethods ELAP 198.1 follow | ed by ELAP 198.6. |
| van Reye | · | | | | Mei War | ng Meih | |
| | | in lique | _ | | | 5 VV | <u> </u> |
| Analyst: | 3 | \fi ' | | | Approved | . by | |

Quality Manager:

Page 8 of 8 Batch # 21-668 Report Prepared By: Grace Chan



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP1 using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained Trace or No PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any guestions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiley Bourson

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS_BULK DOCUMENTS 2021\BULK_LETTER_DOC_#DB4A.DOC ATC EFFECTIVE DATE 01/18/2021 REVISION #32

Page 1 of 1



| 1 16 | | |
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| Page | _of | |
| | Page_ | Page of 4 |

| 1. Clien | PAN | VИJ | Project Na FIRESPRII 2a. Project A | NKLER REF Odress: (Circ | Partie Print Partie 2 | TION | 3a. ATC Project No. 214PNPI 3b. Task No.: 0001 | | 4b. Inspec | t Manager: R. Rivero tor: LIP CARRIN | S - 5 - |
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ATC -AN ALLAS CONSANY

BATCH NO. 21-668 Page 2

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Client PAN | LINY | Project Name: FIRESPRINKLE | R REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
|---------------|---|-------------------------------|--------------------------|--|--|
| | | 2a. Project Address | s: (Circle One) PE PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 11.0121 | BUILDING N Sampling Ar | 261 | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1" Positive |

| Homogenous | Bulk Sample ID | 12. Material | 13, Thermal | 14. | | Sample | Location | Material Total | |
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|---|---------------------------------|--------------|------------|----------|--------------------|
| 1 | 24a. Analyzed By: Juan Keurch | alder. | 14/15/2021 | 2:37 W | |
| 24c, QC By: | 24b. Analyzed By: Lin NOB Trank | eucs Durally | - dichinz | 7:42 aux | |
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24c. QC By:

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| ATCH NO. | 01-10/08 | Page 5 of 4 |
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| | 1 JAMES I IN | | 2a. Project A | | le One) PJ | | 3b. Task | No.: 0001 | | 4b. Inspe | ctor: IILIP CARRIN | IGTON |
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| 22. Project Address (Circle One) 23. Project Address (Circle One) 24. Project Address (Circle One) 25. Date: 27. Sempling Areas: 27. Sempling Areas: 28. Turnaround Time: 29. Start 24 HIS 3 72 HIRS 0 OTHER 0 | 1. Client | PAN | YNJ | | | RINKLEF | | | TION | 3a. ATC Project No 214PNPE | | 4a. Proje | ct Manager: R. Rivero |) |
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| ABORATORY INFORMATION | | ORY II | NFORM | MATION | | ^ | | | | - | | | | |

104 East 25th Street, 8th FL, Naw Yask, №Y 1001B Phone: (212) 353-8280, Pax: (212) 353-3599 or 8306

<u> Marcanoness</u>

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| | Analysis Date 4 / 1/20 | ZI Analysi | | | | Batch N | | 66 <u>8</u> | EMPERATURE - K-3 |
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| enalysis sheet for results | Comments; L | - | | | | | *** | Binelongence | |
| for results | | SCANNING OPTION | | Q.C. 🗀 | | | | | |
| | | | | tical Propertie | | no- Idoola. | Asbestos Results PLM % | Other Fibrous PLM: 1/4 | Non Fibrous PLM % |
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Metrods: E1'A Inserim Method of the Determination of Astesios in Bulk Insolution Samples: 46 CSR Appendix E is Subpart E of Part 783 EAA \$00X-59116 ELAP herris 190.1 196.4, 198.6, 198.6

Note #1: ELAP requires method PLAP 195 1 for the analysis of swingles corresing 230% vermouting, with the exception of surfacing material that correlates vermiositie (SM V). For samples containing >10% vermiositin PLAP requires methods ELAP 156.1 (blowed by ELAP 189.6. This method has similations for scientification and quaryfix-glim of vermiositin. This treated does not remove vermiositis and may unnerselliptely (by level of salestos present in a sample containing greater than 10% vermiositin. Note 6%: ELAP requires method 198.5 for the arrayes of surfacing material containing verminating (SM-V), and if offices a 400 point count method.

LEVAD, PORMS, DOCUMENTS AND RECORDS/OPTICAL/ASRESTIVE_RULK/ASRESTIVE_COUNT OVER 200 PLOSCOST REVISION #33 BY MET WANG FORM #80

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| BULK ASBESTOS A | MAI VSIS SHEET |
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| DATE LAGRED LAG L | ment of the |

| *************************************** | Client / Project PANYNJ Analysis Date 4 / 5 / 2 | | NKLER RE | НАВ | M | | | Project Batch N | Number 214PN Jumber 21- | 668 | NIKON OPTIPH |
|---|--|---------------|--------------|-----------|-------------|--------------------|--------------|--------------------|----------------------------|---|--|
| 1 66 Field Number | Stereoscopic Exam | | | PLM O | ptical Pr | operties | 3 | - 8 | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required ☐ Recommended ☐ | # mill awars J. Ashesins | Morph Extin | clion FU1 | RII D | S Colur Cui | ov.Pleo Bi | ref Sign Oi | her Identity | Crinyotile | Cellulose Fiberglass Other | 2-O Mineral Filler Organic Birid Vermiculte* |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | ☐ Cellulose Ondulose Extinction | Oiher |
| SM-V | Point Counts Stide 1 Stide 2 | Side 3 Slid | e 4 Slide 5 | Side 6 | Slide 7 | Slide 8 | Asb, Ner. PT | Total PT | %Asb. Or %Ver. | D'fiberglass lectopic | |
| Required □ | NOB PLM NOB PLM | | - | | | | 0 | 200 | 0 | Synthetic High Buretringence LI Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% to level of asbestos in a sam might be underestimated. |
| analysis sheet for results | Comments; | | | | <u> </u> | | | | | Birefringence | See Nove #1 |
| - 2550002400 - | Method; ☐ ELAP ☐ EPA | SCANNING | OPTION | | Q. | c . 🗆 | | | | | |
| 2 67 Field Number | Stereoscopic Exam | | | | ptical Pr | | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | COO REA SI YELLINE | Morph Extin | nction RLL | BIT D | S Color Col | ur, Pleo Bi | rel Sign Of | her identity | Chrysotto | 71 Cellulose | 20 Mineral Filter |
| Required Recommended | Notice and the second of the s | 4== | == | | | | | | Apricate Other | Fiberglass | Organic Bind Vermiculite* |
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| Required 🗆 | 100 | | | | | | 0 | 200 | 0 | ☐ Synthetic High Biretringence ☐ Horse Hair: Sculus | * if vermiculite is >10% to level of asbestos in a sam |
| Sec SM-V [] analysis sheet | NOB PLM Comments: | | | - | | | | | 4 | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Method: DELAP L EPA | SCANNING | OPTION | | lo. | c. 🗆 | | | | , constructives | |
| 3 68 | T En the | 1 | 70. 10000 | 10//6/12 | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Marph Extin | odion Ril | | ptical Pr | | | her Identity | Results PLM % | PLM % | PLM % |
| Gravinsetric | CONTONNEY TEXTURE G | - ADIDA EXIIO | KININ RUI | 1911) 314 | a Guist Cui | ia , 1 Sesti - Eti | rei sign of | net identity | Chrysoph | Cellutose | Mineral Filter |
| Required 🗆 | HomogeneityVermiculte | 1 | | | | | | | Amgelle | Fiberglass | Organic Bind |
| Recommended See gravimetric | # of Layers Asbestos | Z== | | | | | | | gither | Other | Vermicuite* |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | / | ☐ Celluluse Ondulose Extinction | Olher |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slid | le 4 Slide 5 | Slide 6 | Slide 7 | Side 8 | Asb,/Ver. PT | Total PT | %Asb. Or %Ver. | Li Fiburghess lactopie | |
| Required [| 1 | | - | | | | 0 | 201 | Ō | ☐ Synthetic High Birethingence ☐ Horse Hair: Scales, | " If vermiculitie is >50%, the level of asbestos in a sam might be underestimated. |
| See SM-V [] analysis sheet | NOB PLM Comments; | | | 1 | | | | | | Low to Moderate Birefringence | See Note #1. |
| tor results | Method: GELAP () EPA | SCANNING | OPTION | | Q. | c, 🗆 | | | | | |
| 4 69 Field Number | Stereoscopic Exam | I | | PLM O | ptical Pr | | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Gravimetric | cold Meny rexours U | Morph Extin | otion RII | Rill D | S Celor Cal | or, Pico Bi | iref Sign Df | har Identity | Chrysplie | Cellulose | LOO Mineral Filter |
| Required (| Homogeneity Vermiculte | /- | | | | | | | Amesita | Fiberglass | Organic Bind |
| Recommended 🗆 | | 1- | | | | | | | Inor | Other | O vermicuite |
| Sec gravimetric [] | # of Layers Asteslos | /== | | | | | | | / | | Other |
| analysis siveet for results | Color of Layer Delected Yes | No | | | | | | | / | Li Cellulose Ondulose Extraction | |
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| Kegured 🗆 | 1 | | _ | | | | 0 | 200 | 0 | ☐ Synthetic High Birchingence ☐ Home Hair: Scales, | * if vermicultie is >10% tv level of asbestos in a sam might be underestimated |
| Scc SM-V □ | NOB PLM | 1 | | 1 | | | | | | Low to Moderate | See Note #1. |

PACTION Method of the Determination of Asbestos in Bulk Institution Samples - 40 CFR Appendix E to Subpert E of Part 763 EPA 600/R-93/115 ELAP items 198.1, 198.4, 198.6, 198.8

Method: | ELAP | EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermicultie, with the exception of surfacing material that contains vermicultie (SM-V). For samples containing \$10% vermicultie ELAP requires methods ELAP 188.1 followed by ELAP 198.6. This method has britations for identification or varieties. This method does not renove vernicultie and may underestimate the level of associates present in a sample containing greater than 10% vermicultie."

Note #2: ELAP requires method 198.8 for the enalysis of surfacing methods containing vermicultie (SM-V) and it utilizes a 400 point count method.

LIVAS FORMS DOCUMENTS AND RECORDS/OPTICAL/MSUESTOS BULK/VSBESTOS BULK/FORMS 2007/BULK ASBESTOS ANALYSIS SHEET, FORM #82 due ATC EPFECTIVE DATE 01/18/00/18/EPISCON #33 BY MET WANG FORM #82.

Q.C.

MeMod: ØELAP □ EPA

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BULK ASBESTOS ANALYSIS SHEET

<u>Acizeškatkons:</u> NVLAP 101187-u

| | Client / Project PANYN!/ | FIRESPRINKLER REF | 1AB | | Project | Number 214PN | IPEPJ1 | MKON OPTIPHOT |
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| | Analysis Dale <u>4 / \$5/20</u> | 021 Analysl | | | Batch N | kember21- | 6 68 , | EMPERATURE 2 |
| 1 74 Figh Number | Stereoscopic Exam | | PLM Optical Pr | operties | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Ceravimetro | euratus V (Joo) | Moran Extraction R: 1 | RII DS Cotter Cold | or, Pleo Eliret Sign Gl | iher idanisy | Chrysophe | 70 Cellulare | / Wrieral Filler |
| D berixpeΩ | } } Homogenery '⊷'n Vermodikte | <u> </u> | | | — — | Arrephie | Fiberglass | Crigaric Aindre |
| Resignmended I _s | # of Layers Asbestos | | | | | 9ther . | Olher | 🔾 Verniculitar |
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| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Sixle 5 | Sade 6 State 7 | Sado 8 Astr./Proj. P.I | i !이라 (2) | %Ash, Or %Ver. | ≟ Fiherglassisotopk | |
| 🖸 terupes | PLW O N | <u></u> | | | 200 | 0 | G Synthetic High Bireffiligence | * If verrocutic is >10% the flevel of asbestos in a samek |
| See SM-V ⊞ | KORPIJU L | | | | | -1- | F. Horse Heir: Scales, Low to Mederate | might be underestimated. See Note 8!. |
| ereryska plaser Socresolls | Cumments: | <u> </u> | | • | | | Blickingence | |
| | Method: YIELAP : EPA | I ^V I SCANNING OPTION | Q. | Ç. 🗆 | | | | |
| 2 75 | Stereoscopic Exam | Ī | PLM Optical Pr | operties | : | Asbestos | Other Fibrous | Non Fibrous |
| Field thanhar | } _ [> | Morph Duncasn RIS | RIE DS Calor Sels | - | lter Ineológ | Results PLM % / | PLM:% | PLM % |
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| See gravimatric | ≠of Layers | <u> </u> | · · · · · · · · · · · · · · · · · · · | | | Cither | (IIthrs: | Vərmiculle' Orars |
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| Regused 🖸 | 1.1. 1.1 | | | | 250 | 0 | Birefringeree F-Horse Bair: Scates, | leve: of astesios in a sampl |
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| for raisels | Comments: Method:,,€TÉLAP □ EPA | / E) SCANNING OPTION | | C. [] | | | | <u> </u> |
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| 3 76 Fred Number | Stereoscopic Exam | 1, + | PLM Optical Pr | | | Asbeelos Results PLM % , | Other Fibrous PLM % | Non Filmous PLM % |
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| See gravimatric () (analysis sheet | Mortusyons (J. Aubestos | 1=== | | | | | | Olive |
| (0) 705022 | Color of Layer Detected Yes No | <u></u> _ | | ······ ··· <u></u> - | — | | Ó Cellulose Onduloso Extención | |
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| Sen SMFV () | KODPLM () | | | | | | ∴ Herse Hair: Seales, Lime in MoSep ile | might be underest-mated See Note #1. |
| analysis sheet for results | Comments: | | ····· | | · · · · | | - Borringspor | 1 |
| | MelBood: ☑ ELAP □ EPA | | Q. | c . [:] | | | <u> </u> | <u> </u> |
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| Regulated [] | <u> </u> | | · · · · · · · · · · · · · · · · | ···· | · <u> </u> | Arcosite | Therglass | Organic Binder |
| - Весопрене⁄на Ш | Homogenetly 1. Vermiculle | 4 | | | <u> </u> | Other | Other | O Verniculle* |
| : See gravmentis □ | # of Layers Asbestos | <u> </u> | | | | | | Diler |
| arvatyais anest for results | Coxyrof Layer Codected Yes No | of | | ······································ | | | 24 Gelluluse Undalass | |
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| See SM V □ | 'ţ\ <u>\-</u> | | <u>:</u> | <u>i i i i i i i i i i i i i i i i i i i </u> | | | Lue to Moderate Birefringence | God Note V1. |
| eralysis shasi | (Comments; | / | | | | | ì | |

Mellinos. EPA Interim Mexical of the Determination of Asbestos in Bulk insitation Samples - 40 CAR Appearity E to Subpart E of Pan 703 FPA R02/8-03/115 FLAF 96ms 196 1, 198 4, 198 6, 199 8

Method: ⟨Z ELAP | □ ≤PA

FSCANNING OPTION

Note #1: HLAP requires mathed ELAP 198.1 for the analysis of selected containing \$10% verificable, with the execution of surfacing material that contains information (SM V). For samples containing #10% verificable and may underestimate the level of asthesios besent in a samule containing greater than 10% verificable. This method less for sense commodific and may underestimate level of asthesios besent in a samule containing greater than 10% verificable."

Pode #2: ELAP requires method 166 8 for the analysis of surfacing material containing normations (WHAM) and bullions of 400 point (such effect).

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BULK ASBESTOS ANALYSIS SHEET Cilent / Project PANYNJ/ FIRESPRINKLER REHAB Project Number ___214PNPEP.I1 Analysis Date 4 / \(\sum / 2021 21-668

70 Asbestos Other Fibrous Non Elbrous Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % Ri JS Calor Celar, Flea Moster Filter Gaviatetri Geltulase Required Organic Sinder kecemmended. Other Versioning Sec gravimetric anaysis sheet for poodle T Cellulose Onda Extinction Slice 7 | Slide B | Astr./Ver. [1] | Total PT Slide 6 SM-V 58de 2 Side 3 Slide 5 %Asb. Or %Ver. Synthetic High m 1200 If verra cubte is > 10% the Hequired (ние" of asbesida in a sample l lawe thin Scales, See SM-V I Low to Moderate Biretringence Sec Nels #1. andyss sheet for results

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Asbostos Other Filtrous Non Fibrous 71 Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM W. Gravimetrá Required Organic Binders O_Vernicalite* Recoinmended 🗆 ... Other See gravmettic Cliner aralysis abeet 1 Cellulase Caric Porti Counts | Slips 1 | Side 2 | Slide 4 Slice 5 Slide 6 SM-V If venticality is >10% the Required [evel of asbestos in a sampte новациЮ) Plorse Miln: Scales, **⊘** |}∞ might be upderestimated. See Noto≢1, \circ See SM-V I Lue to Moderate Biogloppeope analysis sheet for results Q.C. 🗇 Methon: MELAP 🖸 EPA Ç≻SCANNING OPTION

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| | Icr results | Colono: Layar Datected Yes No | | | -⊒ Colluioso Condo kase Petrochon | |
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| į | analysis sheel for results | Comments: | | | Brottingence | |
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| 4 73 Field Noorfeer | Stereoscopic Exam | PLM Optical Properties | Ashestos Results PLM % | Officer Fibrous PLM % | Non Fibrous PLM % |
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594 interm Method or the Determinaver, of Assestos in Bulk insufation Samples - 40 CFR Aspestos in Bulk insufation Samples - 40 CFR Asperdix E to Subject E of Part 765 EPA 600/R-93/115 ELAP Items 196.1, 196.4, 196.6, 196.6 Note #1: ELAP requires method ELAP 188 1 for the analysis of samples consisting #10% vermiculite, with the exception of surfacing material that contains verniculite (SM-V). For samples containing #10% commodification for production of the material surface and may unconstitute of the five realised does not remove vermiculate and may unconstitute in the five of sathestice present in a sample containing greater than 10% commodifie. The realised does not remove vermiculate and may unconstitute for a sathestic present in a sample containing greater than 10% commodified.

Note #2: REAP requires without 10% for the enalysis of surfacing material containing commodified (SM-V) and it offices a 400 point count method.

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ARC GPECONE DATE OVISSION #23 BY WEI WANG FORM #82

104 East 25th Street, 8th Ft., New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

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104 East 25ⁱⁿ Street, 8th FL, New York, NY 10050 i

| | | Рьоле | et (212) 3 | 353-8280 | , Fax: (21 | 12} 353-3 | 3599 or 830 |)6 | | | FI AV 10 |
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| Kecommended 🖫 | | 1., | | | | ···· — | ·-· | ·· | | Other | Visitanii(9), |
| See gravimatiid) | # of Levers Asbestos | / | | · · · · · · · · · · · · · · · · · · · | | | | | | | Oilva |
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| S⇔ S¥-V 🗀 | NOB PLM | | |] | | | | | - | :.1 Hotse Hein: Scales, Low to Moderate | nright be underestimated. |
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| See SM-V ∐i | NOBL/W | 1 | ! | 1 | | ! | Ι . | <u>i</u> | | Low to Moderate | migni be underestimated. |

53 A Internet Method of the Determination of Arbeida in Bulk Insulation Semples 40 CFR Aspendix Eto Suglan Etol Part 763 EPA 203/R-33/116 ELAP herris 198.1, 198.4, 198.6, 198.8

Method: ÆELAP ☐ EPA

É SCANNING OPTION

analysis sheet far results

Note #1: ELAP requires method ELAP 198. I for the analysis of samples containing 510%, variety the exception of surfacing material first contains vermicultic (SRAP). For samples containing 510% vermicultie ELAP requires methods eLLAP 583 f retriave by FLAP 108 6. This method like finishing is for identification of vermicultie. "This method does not remove verefaultic and may underestimate the circled actics present in a sample containing greater than 10% vermiculte."

Note #2: FLAP requires method 108,8 for the energy is of surfacing method actions greater than 108,8 for the energy is of surfacing method in the circled actions and tradection of a fundamental action method (FLAP, FORMS DIXEMBERS) AND PROBLEMS AN

Q.C. (.)

See Note **∜**1.

BULK ASBESTOS ANALYSIS SHEET

Caent / Project PANYNJ / FIRESPRINKLER REHAB 214PNPEPJ1 Project Number Analysis Date 4/15/2021 Analysi 21-668

Other Fibrous 78 Non Fibrous Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % PC) DS Color Color, Plea Biret Cravimetra Célulose Mineral Filtre (Arganic , Vectorialie' See gravimetrici analysis sheet Patingson Point Counts Slide 2 Slide 6 ⊈¥ibemiass isotoule SM V J Synthetic High тецьк SvermichHe is >10% dbe *`*}\\\ Required Bireffindence evel of asbestas in a sample 1 Books Hair: States, might be undereshmaled NOB FLM See SM V D Low to Moderate Bitelfängehee فحجاء ونساحه for results Methods () ELAP | [] EPA LI SCANNING OPYION Q.C. []

Other Fibrous 79 Asimetra Non Fibrous PLM Optical Properties Results PLM 5 PLM % grammanananan Ansur Talandina Crevimein Maneral Fitter. Organic Binae O Vermiculite analysis sheet đ Čelfuluse Ondi for results Slide 2 Glide 3 Slide 4 Sixto 5 Saide 6 Shoor Sude 8 | Ast Jver, P1 | Total 77 %Asb. Or %Ver. J Fiberglass isotopio Sam@sedic High Myarmiades is v10% due $L \odot t$ Respiced Birelátyjutca evel of astestos in a sample NOB P: M l Home Her; Scales might be underesomated isce S&AV 🗆 See Note #1. Birefringence Andysia stead for mourls. [Q.C. IT] Method: ☑ ELAP □ EPA D SCANNING OPTION

Non Fibrous Asbestos Other Fibrous 80 Stereoscopic Exam PLM Optical Properties Results PLM 9 PEM % PEM % (U) Menerak Filsen Gravimeln Chrys Oreanic Sindar Astaticials, аллуэк кізві Delected Yes Ar pesque Side 4 Silce 5 | Slide 6 | Slide 7 | Slide 8 | Aeb. Ver. PT; Total PT Sinte 2 Sode 3 SMIV Required 🗆 Bereinngense i-sel of edwolosio a sample might be underosterated i Helse Heir! Beaks, NOB PLM Sec SMAN Low to Moderate teelle siegen Direffingence Comments Su гези**к**а [Q.C. ?] Method: 선 ELAP 🗆 EPA ☑ SCANNING OPTION

| 4 81 Fysk∮Number | Stereoscopic Exam | PLM Optical Properties Asbestos Results PLB | | Non Fibrous |
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| Reconnectation [.] See gravimetro ⊡ | # of Layers | | s Diller | Vermisuite* |
| enelysis shool for results | Cristal Cayer Deletion Yes N | | Extinction (i) Fiburgless lautopic | |
| SM V Received 🖺 | Print Counts Stirle 1 Socie 2 | do 2 Side 4 Sipe 6 Side 7 Side 6 Ast. Mer. PT Total PT %Ast. Or %5 | i i Synthesic High Einelringence | " If escapicalitais %10% has level of esbesins & a semple |
| See SM-V 🗔 enelysis shool | NOE PLM | | Low to Moderate Circlingtongence | might be underestimated See Note #1 |

Methods: EPA Interior Mellipsi of the Determination of Assesses in Bulk Insulation Complete - 40 CFR Appendix E to Suspan E of Pag 753 FPA (SIGN-3341)6 Ft AP homs 198 1, 198 4, 198 0, 198 8

Note #t: ELAP requires methon ELAP 198 1 for the analysis of services containing (10% verniculity, with the exception of authoring material that contains verniculte (SM V). For samples containing >10% verniculte ELAP requires mathods ELAP 198 1 followed by ELAP 196 8. This method has timeshore for identification and quantification. The Market Substance and activities to the second control of the s

BULK ASSESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10519 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

<u>Microstopes</u>; OLYMPUS 6H-2 ; NIKON OPTIPHOT

--**/**4₹18%\$---. ATC

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| 212) | 353-8280, | Fax: | (212) | 353-3599 | GГ | 8: |
|------|-----------|------|-------|----------|----|----|
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| | | | CASBESTOS ANAL | YSIS SHEET | | | | Місія жерие слумець ви 27 мком фетірист |
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Methods EPA Interim Method of the Determination of Actorsins to Bulk Institution Samples - 40 CSR Appendix Elia Subpare Elia Hart 7831 EPA 8004-534116 ECAP Items 109,1 309,4, 188 6, 199,8

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SEA Interse Malhos of the Determination of Ascestos in Bulk Insulsion Semples - 40 CPR Aspertix Eth Suppert Elot Part 763 EPA 500R-95/11/8 ELAP Itams 198.1, 198.4, 195.6, 196.6 Note #1: GLAP requires method BLAP 198 1 for the analysis of sangles containing of LCA verminable, with the exception of surfacing material that contains extractible (SM-V). For samples containing > 10% verminable BLAP rapidos mathods ELAP 198.1 (aboved by ELAP 198.8.) This method has imitations by fishellipseins and quartification of verminable. This method does not remove verminable and may understanded that key of substitute present in a sample containing production 10% verminable. Note #2: ELAP requires method 199.8 for the straights of sufficient mathod containing varminable (BLAP) and it blitters a 400 acid count mathod.

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104 Fast 25th Street, 8th Ft. New York, NY 10010

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ATC - New York

104 Fast 25th Street, 8th Ft., New York, NY 10010. Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

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| Бин доморъета: <u>У</u> | ni of Ceyera Asbestos | <u>,</u> | · · · · · — | · — — — | · Olhər | Clines | <u>C</u> Venriouite* |
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EPA Interim Melinod of the Determination of Assestes in Bulk Insulation Samples - 43 CFR Appendix C to Subpart C of Part 763 SPA 300/R-93/116

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enalysis sheet

for results

NOB PLM

Method: □/ÉLAP □ EPA

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Comments:

Note #1: CLAP requires method CLAP 199.1 for the analysis of somples containing £10% remodate, with the exception of Audiacing restricted that containing which the exception of Audiacing restricted that containing and provided (SMAV). For samples containing years for exemption of the restricted that the exception of the professional transformation of the exemption of the professional transformation of the exemption of the professional transformation of the exemption of the exem

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Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

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Clast / Project PANYNI / FIRESPRINKLER REHAB Project Number ___214PNPEPJ1 Analysis Date 4/5/2021 Analyst

Non Fibrous Asbestos 94 PLM Optical Properties Results PLM % PLM % PLM % () Menoral Filter Oraymetri: Chrysotik Cetulasa O Verniculile* Other Other že gravimetrio enelysis sheet Helatiod Yes Titaliulose (Extinction 5lide 5 Slide 6 SiMe 7 J. Benthalle Halt If vegetingste is > 10% the Binefringence Required 🖺 lev≃ ef eshesins in e sænple NOS PLM) Horo (Mjr Skyles, might be underestimated. $\mathbb{O}\left(i
ight)$ Sec SM V 5 Los to Moderate See Note #!. for manife Method: AT GLAP TI EPA F/ SCANNING OPTION Q.C. 🗀

Ashestos Other Fibrous Non Fibrous 95 Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % Cellulase , Organio Sigidei 🖒 Vernikuāle" Other . Other analysis sheet for results Slide 2 Slide 5 Side 6 | Slide 7 Slide 6 | Asb Aver, PT | Total PT %Asb. Or %Ver. Synthetic High lf verojkadije is ≥2056 (he Required E 12 W mgmibe underestimated. Gee SM-V □ Sec Note #1 andysia sissam Q.C. 🗆 Melhod: ØELAP 🗆 EPA ☐ SCANNING OPTION

Non Fibrous 96 **PLM Optical Properties** Stereoscopic Exam Results PLM % Mineral Filer Celluloss , Picergias Organic Bioder: O Verniculter of Lavers Cellutose Ondutose for results. ≓ajnt Goupas¦ (Sixte ≥ Sade 4 State 5 Shish B. Sikle i Bidk 8 [Ash,(Va), PS] [BJAHP] NASH, Or SVer, SMIV Synthetic High l! vermiozite is #10% the Bireiringence - Кершес 🗀 level u[extentora ig a sagrad Huise Heir: Sceles, Q 1200 NCO PLME See SM-V 9 Low to Modurate See Note ≢1. Birefringesce anatysis slieet log zeeglar Q.C. 🗆 Melhoul: [ZELAP | EPA SCANNING OPTION

| Storo | oscopic C | хачт | | | | | • | - | es | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLW % |
|-----------|--|---|---|--|--|--|--|--|--|---|--|--|--|---|
| | ۹. | - | Marzn | Edinesian | | H· : | US Color | Calor, Picc | Eirch | 819n C | other aderatly | | 1 | Maneral Filter |
| | ¨] | | <u> </u> | | | | | | | · · · · · - | | Cdirei | Olher | |
| | punananana | processors and the | | | | | | | | . — - | | | O Sellulose Ondollose Extinction | |
| 151 | | Slide 2 | State 3 | Slide 4 | Stine 5 | Slide | s ? Sija | a / § Shefr | в В | se (Ver H | 1 1mal 41 | %Asb. Or %Ver. | a Synthetic High Elipstringspose | Tif venr∮onēte is > 10%, the low⊴ of eabsoloviole semplo |
| Comments: | 1-[3// | | | i | <u></u> | | - | 1 | | 0 | <u> 200</u> | | □ Harse Hair: Scales, Law to Moderate Demiphygnace | might be underestimered See Note #1. |
| | Colle A Homogenelly For Courts Post Courts 91 M NOD PLM Compromis: | Color of Layer Courts Side 1 Post Courts Side 1 WOD PLAI Companyments: | # of Leyers Addresses Color of Layer DescribedYes & Post Counts Side 1 Side 2 | Color of Layer Plant State 1 State 2 State 3 NO PLAT Compress: | Color A Texture Maron Edinoson Homogenetty Vermiculta # of Leyers Addresses Color of Layer Brearted Ves No Post Counts State 1 State 2 State 3 State 4 91 M NOR PLM Compress: | Color of Layer Distorted Yes No Post Courts Side 1 Side 2 Side 3 Side 4 Side 5 Post Courts Side 1 Side 2 Side 3 Side 4 Side 5 Compress: | College A Texture Maron Edinosin Ri : H : Homegenelly Vermiculta Activers Activers Color of Layer Distorted Ves No Post Courts State 1 State 2 State 3 State 4 State 5 State 6 NSD PLM Compress: | Color of Layer Mercy Lodineson Ri : Ri : US Coor Homogenelly Vermiculia Adiestos Adiestos Editores Adiestos Adiestos Sinda 2 Sinda 3 Sinda 4 Sinda 5 Sinda 6 Sinda 6 Sinda 7 NOD PLM NOD PLM Comments: | Color of Layer Description Sinte 1 Sinte 2 Sinte 3 Sinte 4 Sinte 5 Sinte 6 Sinte 7 Sinte 6 Sinte 7 Sinte 8 Sinte 9 Sinte | Color of Layer Detected Ves No Four Courts State 1 State 2 State 4 State 5 State 6 State 7 State 8 A Maryon Extension Rich State 1 State 2 State 4 State 5 State 6 State 7 State 8 A Maryon Extension Rich Homogenelly Vermiculta Fortitions State 1 State 2 State 3 State 4 State 5 State 6 State 6 State 8 Ase ///or Homogenelly NOD PLM Colongeria: | Homogenelly Vermiculta Fost Courtle State 1 State 2 State 3 State 4 State 6 State 6 State 6 Ass //or F1 3real 41 NOD PLM NOD PLM Colongarius: | Storooscopic Exam PLIN Optical Properties Results PLM % College A 1 Texture Margon Extinesian Ri | Storooscopic Exam PLM Optical Properties Results PLM % PLM % Color of Layer |

Methods. EPA Interim Method of the Determination of Asbasias in Birk insulastin Samples - 40 CFR Apprecix Bire Support Bird Past 783 HPA BODYE-939516 ELAP firms 108,1, 398,4, 498,6, 398,8

Note #1: ECAP requires method ELAP 1991 for the analysis of semples containing \$10% vermicultin, with the exception of surfacing present that contains graying the (SMAV). For samples containing >10% vermicultin SCAP requires methods ELAP 199.1 totowed by ELAP 199.0 first method has trutations for identification and nuanification. of vernitorite. This method does not remove vernitorite and may underestinate the level of asbestos present at a compte containing greater than 10% vernitorite."

Note #2: ELAF requires method 199,6 for the energials of surfacing methods containing vernitorite (SM-V) and it unlices a 400 point count method.

Light Cristian Analysis and Condustry Tropher South Analysis Durk PRESSOUR ASBESTOS ANALYSIS SHEET FORM #B2.dot

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Comments

ATC - New York

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See Note #1

Birdringence

Lue to Moderate Birefringence

litione Hair: Scales,

At C

ATC - New York

184 East 25th Street, 8th Fl., New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353 3599 or 8306

| NVLAT 10 | |
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| CLAP | 10079 |

| NVLA7 101 | |
|-----------|-------|
| CUMP | 10079 |

BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ / FIRESPRINKLER REMAB Project | : Number214PN | JPEPJ1 | MKON CETIPHOT |
|--|--|---------------------------|--|---|
| | 4.1112024 | Number 21 | 668 | EMPERATURE TO Sol |
| 106 | Stereoscopic Exam PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Grevimetác Regured □ Reconicended □ | Margh Extractice Rt.; Rt.1 75 Cake Calor, Piece Sign Other sentity rlomogenety - Verniculte | Chrystole | Cellulose Fiberysass Other | Moeral Filer Organic Binder Vermicuber |
| ice grzymeato [2] epelysik sheet for sesulla SM-V | Copyrof Layer Celebrad Yes No | %Asb. Or %Ver. | ඒ College Ondulose Extraction ඒ f themplaca tentopic | Other |
| Required Cl See SMA/ () analysis sheet for results | PLM CO 200. Societal Comments: Menthod: CEAP LEFPA ESCANNING OFFICE Q.C. | 0 | □ Synthetic High Amfingence □ Horse Huir, Beahas Low to Mederate Birstringesse | " Il verrecuble is >10% foc lavet of asbestos in a sample pright be uncorestimated. See Note #1. |
| | The state of the Dominion of the state of th | | <u>. </u> | |
| 107 ield Number | Styrepacopic Exam PLM Optical Proporties Name Educise Rt 311 05 Cubs Optic Peo Suc 300 Union Sensition | Asbestos Results PLM % | Other Fibrous PEM % | Non Fibrores PLM % |
| Gravimetác | Coly Marph Educion RJ 814 05 Culo, Pier Sign Unior Senting | Cree/scole | Cellulose | Mineral Filter |
| Required [] | Honogenety Verniculte | Amoste | Fiberglass | Crganic Binder Crganic Binder Vermiculater |
| šeo gravimetna 🖸 Spēļyšis aliest | # nd Layers Asbesins | 7.00 | Certolose Ondulose | Cthiai |
| for vosatile (SMI-V) | Point Courtis Steps 1 Sade 2 State 5 State 4 State 5 State 6 State 6 Ass./Ver. P15 Total P1 | %Asb. Or Weer. | | |
| Required [] | PLM 0 7.00 | | (7) Synthetic (Agb Partifingence | :" Il vermicuile is > 10% the Hevel of asbestos in a sample |
| See SM-V 1 I analysis sheet | NOS PLM Currents: | | El Horse Heir: Beeles. Low to Moderate Birefringesce | iright be uncerestmated. See Note 81. |
| for results | Method: ELAP 1: EPA / SCANNING OPTION Q.C. | | | |
| 108 Kil Hariber | Starepscopic Exam / PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrosa PLM % |
| Crewmedc Required □ | Column Co | Chrysnale | Cellilose | Mineral Filter (Argunic Henson |
| Recommended [] Recommended [] | Homogenety Vermonite / | One | | Vernicutte* |
| analysis sheel for results | Calar of: ayer Delected Yes No | | 57 Cemusore Codolose Egiloción | Cihei |
| SM-V Received FT | Foin Counts Side 1 Side 2 Slice 3 Slice 4 Side 5 Side 6 Side 7 Slide 8 Ast /Ver. PT Total PT | %Asb. Or %Ver. | y/Fibergloss Isotopie I.I. Synthesic High Birelringenne [] Horse Hart Scales, | ឺ If vemiculate is ការទេស) » Jevel of asbestos in a sample might be uncerestimated |
| See SM-V [] anzlysis sheet (or results | Doction of the Community of the Communit | <u></u> | Low to Moderate Binefringence | See Hole 61. |
| | Michigan P. Econ 11 Era 1) Schrifting Ortifolis (25. C) | | <u> </u> | |
| 109 24 Nanifez | Stereoscopic Exam PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Grassmosoc Reguland I J | Colyn Al (172 destruer Colon C | Cityspile | Caliulase Fiberglass | <u> </u> |
| Recommended 🗆 | # of Layors Asbestos | Other | | Venniouite |
| is sealts alse aralysis alset for easily aralysis | Color of Layer Colored Yes No | | [[-] OcSulesa Ondialase Extraction | nedPO |
| SM-V | Point Counts State 1 State 2 State 3 State 4 State 5 State 5 State 7 State 8 Asa (Mor. P7) Total PT | %Asb. Or %Ver. | ं Fibergiass is atopic | |
| Required 🗆 | | 0 | 2 Syndactic High Electrifyones | " If vermicable is >10% the level at aspessos in a sampli |
| See SM-V : I | NJ6 PLX | 1 | □ Horse Heet Stales, Low to Moderate | might be underestmaxed |

EPA Interve Mathed at the Determination at Aspectors in Burkersulation Samples - 40 CFR
Appropriate to Subpart E of Part 763 EPA 600/R-93/116 ELA7 Items 198.1, 198.4, 198.6, 198.8

Mathody (; E1AP | L.J. &PA

2) SCANNING OPTION

Note M1: ELAP requires method CLAP 190.1 for the analysis of samples containing show varietinities, with the exception of surfacing materia; that contains communic (SMA). For samples containing v10% verificially ELAP requires methods to Attach by PLAP 1986. This method has initiations for identification of variations of the method date not enrice the analysis may underestimate the level of adaptice protect in a sample containing greater than 10% verificable."

Rote #2: ELAP requires method 1998 for the enalysis of surfacing insteads positively verificable (SMA) and it to true a 400 north court in relinor).

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(Q.C. 🗀

104 Fast 25th Street, 8th £L, New York, №Y 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 **BULK ASBESTOS ANALYSIS SHEET**

Ctent / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Dale 4 / \$\sum_1\sum_1/2021 Analysis 21-668 102 Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % RI | EG Coter Coter, Med, Unet Gravintetrio Cetulosi , Minerel Effer Organic Binden _Verniculie* Other enetysis streas Color of Caver Delected: for results Point Counts Sign 1 Stida 2 | \$ State 3 Slide 6 Side 7 Slide 6 | Ash Mer PT | Treat[PT SARb. Of %Ver. Í FBertalias i Isolupia Synthotic High (ð] 20s.

Method: : FEAP ☐ €PA Q.C. F1 Asbestos 103 Office Fibrops Non Fibrous Stereoscopic Exem PLM Optical Properties Results PLM 1 PLM % PLM % $\mathcal{I}_{\mathtt{Colline}}$ Mineral Eiler Regusted D Organio Biede Cliner ≤ee gravmevio l Other anaysis sheet Color of Laven for results Extraction Slide 2 Slide 4 Stide 5 Slide 6 | Slide 7 | Slide B | Ast /Ver. [7] | Fotal PT %Asb. Or %Ver. Fiberglass kotopi SM-V 5ixte 3 **Byrdhelie High** If vermisulite is > 10% the Required E Avel of Asheatos in a sampte Horse Unit: States. Well the onless phases See SMA/ ice Note #1 aralysis sheet. Biredringence Mcthod: JATELAP | | | EPA **1.** SCANNING OPTION: Q.C. L.:

104 Asbesios Other Fibrous Non Fibrous Stereoscopic Exam PLM Optical Properties Results PLM % PEM W. PLM % Gravmetric ្ត Organia Gindan Recommended [_______Vernicuile* See gravipted in Caber analysis sheet - Cithologo Chelula for results || Fiberg!ass #setopic SM-V - Post Counte! - Clafe : Slide 2 Gizie G Side 5 Stide 6 Stide 7 Stide 6 Ast./Ver. PT Total PY %Asb. Or WVer Synthetic Italia $\mathcal{C}\mathcal{K}$ If verrisculed is >10% lbc. Birefringence Required evel of astesias in a sampli Horse Heix: Scales SOB P: M (vight be understimated) See SM-V (Low to Moderate Birefringence analysis sheet Comments: for results Method: / ELAP | | EPA Q.C. (.) ■ SCANNING OPTION

| 4 105 Flidd Maniber | Stereoscopic Exam | PLM Optical | Properties | Asbastos Results PLM % | Other Fibrous | Non Fibrous |
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| | Contact Action F | Williph Daniston Rill Rill DS Calor | Color, Fisc Bjod Sign Other Identity | Canyante | 120 | / Mineral Fider |
| Rogulma (,l | Homopereity C Verniculto / | r· ····-———— | | AnySsite | Fiberglass | Crganic Ethders |
| Recommendes 🗆 | | | | ðiter | Other | Vernicules" |
| See gravimetric 🗔 | # of Cayors Ashestos | [— — | —————————————————————————————————————— | | | ()#hcr |
| enelysis alteet for seanes | Color of Eayer Detended Yes No. | | ··· ········ ··· ··· ··· ··· ··· ··· · | | 기업에 Infose Ondukse Extinction | |
| SM-V | Point Courts Sale 1 Stice 2 8 | Ride 3 Slide 4 Slide 5 Stree 5 Stree | Y Stde 8 Asb./Ver PT Total PT | %Asb. Or %Ver. | ∏ Füherylese kolope: I | |
| Кединео 🗅 | PLW | | Ø 2-€∂ | C) | T Synthetic High düreknagence | * If vernicuite is >10% the Avel of aspessos in a sample |
| 555 SWV (**) | NOSPIM (. | | | | Li Morse Hair: Beales, Unwite Moderate | might ne underestimated. Sec Nate ≠1 |
| analysis sheet for cesusa | Consinserate: | | ······································ | | Reminingence | |
| | Method: / ELAP DEPA D | SCANNING OPTION | Q.G. [7] | | | |

Methods APA estecim Method or the Oglemmation of Ashestas in Bulk Insufation Samples - 40 CFR Appendix E to Subsert E of Part 763 EPA 600/6-93/116 ELAJ^a Itams 198.1, 198.4, 198.6, 198.8

Note #T: ELAP requires method ELAP 199.0 for the analysis of samples containing \$10% vermicutins, with the exception of surfacing material fast, on leins estimated (SM-V). For is indice containing \$10% vermicutin and requires methods ELAP requires methods ELAP 199.6. The method has tritiations for inarrithmatic and required limited the eval of exhausts present in a sample containing greater from 10% vermicutins."

Note #2: ELAP requires method 10% for the snalesh of surfacing material commands vermicuting (SM-V), and it utilizes a 400 point count method 10% for the snalesh of 10% for the 10% for the snalesh of 10

104 Fast 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8305

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ATC - New York

104 East 25th Street, 8th FL. New York, NY 10010 Phone: (212) 353-

| 10000 | 800 | 40 | 4450 | - 3 |
|-------|-----|----|-------|------|
| NVI | 110 | 39 | 3.300 | 0.59 |
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| deet, o FL, New | TOLK, INT. TOUTU | |
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| | Client / Project PA | NYNI/ FII | RESPRINKI | FR RFF | | S ANAL | ns sis t | EE! | Hondood | Number 214PN | IPFPI1 | OLYMPUS BH-27 NIKON OPTIPHOT |
|--|--|---------------|------------------|---------|--------------|------------|--------------|--------------|--------------|----------------------------|--|--|
| | Analysis Dale 4 / | | | | | M | | | | Number 21- | 568 | EMPERATURE 10 |
| 1 114 | Stereoscopic Exa | | | | PLM OF | otical Pro | operties | | -10000 | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM %. |
| Gravimetric Required D Recommended D | Column T 44 Septement Vernicular Asbesius | ite | Morph Extinction | RII | HII DS | Color Colo | ir, Pleo Bin | ef Sign Olf | ner identify | Chrysotile Amogite | Cellulose | Mineral Filer Organic Binders Vermicular Other |
| analysis sheet for results | Color of Layer Detected | I Yes No _ | == | | | | | | | | La Cellulose Ondulose Extinction | OVIA |
| SM-V | | Side 2 Sid | le 3 Slide 4 | Stide 5 | Slide 6 | Stide 7 | Side 8 | Ash Ner, PT | Total PT | %Asb. Or %Ver. | Synthetic High | - Committee Title of the Committee of |
| Required □ | NOH PLM | | | | | | | 0 | 7.05 | 0 | Birefringence □ Horse Hair: Scales, Low to Moderate | * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | | / | 4 | - | | | | - | - | Birefringence | See Note #1 |
| 131222 | Method: L/ELAP DE | PA ⊡s | CANNING OPT | ION | | Q. | C. □ | | | | | |
| 2 115 Field Number | Stereoscopic Exa | 80 | | | | otical Pr | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color t - g Cottone | F. | Marph Extinction | RII | RIII DS | Color Colo | er Plea Bir | ed Sign Cili | her Identity | Chrysosie Ayloste | 2.0 Cellulose 2_Fiberglass | Mineral Filler Organic Binders |
| Recommended [| # of Layers Asbestos | -7 | _= | === | | === | | === | - | Other | Other | O_Vermicuálie* |
| See gravimetric arralysis sheet for results | All the Market I was a few or | Yes No | == | | | | | | | / | d Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 5 | Slide 2 Slid | 50.3 Side 4 | Slide b | Side 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb, Or %Ver. | Fitnerglass Isotopic | |
| Required [| PLM & S- | | | | | | | 0 | 200 | 9 | ☐ Synthetic High Birefringence ☐ Horse Heir: Scales, | * If vermiculte is >10% the level of asbesios in a sample |
| See SM-V [_] analysis sheet | NOB PLM Comments: | | | | | | P | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Method: FELAP TIE | PA IIIs | CANNING OPT | ION | | Q. | c. [] | | | | | |
| 3 116 Field Number | Stereoscopic Exa | | | | | ptical Pr | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | colos gretadoro | 10 | Morph Extinction | RII | RIT DS | Calor Cal | or, Piec Bir | et Sign Of | ner Identity | Chrysotie | 2 Celulose | 83 Mineral Filler |
| Recommended [7] | Homogeneity Vermicul | ite | | | 3 | | - 725 | | _ | | Fiberglass Other | Organic Binden Vermioulte* |
| See gravimetric analysis sheet for results | If of LayersAsbestos Color of LayerDetected | | | | | | | | | | Callulose Ondulose | Other |
| SM-V | Point Counts Slide 1 | 5lide 2 Slide | de 3 Slice 4 | Slide 5 | Slide 6 | Slide 7 | Side 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Estinction Fibergless (sotopic | |
| Required [] | mus S/A | | | | | | | 0 | 790 | 8 | ∏ Syethetic High Dimfringence | * If wormiculitie is > 10% the level of asbestos in a sample |
| Sen SM-V (| NOB PLM | | | | | | | | | | ☐ Horse Hair, Scales, Low to Modecate Biretringence | might be underestimated. See Note #1. |
| for results | Comments: Method: ☐ ELAP ☐ E | PA T | SCANNING OPT | ION | | Q. | C. 🗆 | | | | The Maria Strategy | |
| 4 117 | Stereoscopic Exa | | | | PLM O | ptical Pr | | | | Asbestos Results PLM %, | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | calar Do to 46 mara | F | Marph Extection | RII | FUII DS | Color Colo | or, Pleo Bir | ref Sign Ot | her identity | Chrysetile | 90 Cellulose | (Mineral Filter |
| Required [] | Homogeneity Vermicul | De / | = | | | | - 10-5 | | | Anydeite | Fiberglass | Organic Binden |
| Recommended [| # of LayersAsbeston | | | | - 20 | | | | | | Other | Vermiculne* |
| See gravimeinc [] analysis sheet for results | | 1 Yes No | | | | | | | | | Cellulose Occiulose Extinction | Other |
| SM-V | Point Counts Slids 1 | Slide 2 Slik | de 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | C) Fiberglass isotopic | |
| Required [| 131 | | | - | | | | 9 | 200 | 9 | ☐ Synthetic High Birefringeres ☐ Home Hair: Scales | * If vernyculte is >10% the level of aspestos in a sample |
| Sec SM-V [1 analysis sheet | NOB PLM / | | , | | | | | | | | Low to Woderate Birefringence | rright be underestimated. See Note #1, |
| Sor results | Comments: | PA I | CANNING OPT | ION | | [0] | c. 🗆 | | | | | |
| Methods: | The second secon | 10.6 | - Indiana of I | | West Colored | I ver | | 5 1 2 | -100 | | | |

EPA interm Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 196.1 for the ensists of samples containing <10% verniculte, with the exception of surfacing material that contains verniculte (SM-V). For samples containing >10% verniculte ELAP requires methods ELAP 198.1 followed by ELAP 198.8. This method has limitations for identification of verniculte. This method does not remove verniculte and may underestimate the level of asbestos present in a sample containing greater than 10% verniculte." Note #2: ELAP requires method 199.9 for the analysis of surfacing material containing vermicults (SMAV) and illutions a 400 point oxinil method
LULAB_FORMS DOCUMENTS AND RECORDS/OPTICAL/ASSESTOS_BULK/ASSESTOS_BUL

BULK ASBESTOS ANALYSIS SHEET

MICHAELER (NEW OPTION OF THE HEAT Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Date 4 / \(\int \section 2021 \) Analysi O_{ℓ} 21-668

110 Other Fibrous Non Fibrous Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PIM W RI 3 DS Colum Coton, Flet Liner Mineral Hiller Gravistehi Cétulose Chrysoliji **Tiberales** Organic Binder Homogenety <u>Sal</u> Q verniculter Recommended 🛭 See gravimetdo l : Ilbar analyzis sheet J-69Îblose Ondokae 1:shorten À Fiberglass isotopie 5lde3 Slide 6 Säde 7 Slice 0 [Asb Mer. 96] Total PT %Åsb. Ør%Vor. SM-V d vermiesāla is vitos iļļie Recured [7] Birefringeneo well of asbestes to a sappole 1 Kome Hair: Scales NOB PLM might be underest/mated Soc SM-V I Low to Moderate ee Note X1. analysis sheet for readits Q.C. [1] Method: ÆELAP □ EPA Z SCANNING OPTION

111 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM Y, RI 1 DS Color Coer, Med Direl Gravinetii -f-~Cedutose Ž Minerat Ettan , Organia Bindei Remogeneily 🛂 Vermiquiit Recommended 🗆 💆 Vennisulite" Ashestos. See gravameths l Other enalyzis street Séde 7 Slide 8 | Asb /Var, Pf | 1 stall?1" Point Counts Siide Z Side 5 Slide 4 Slide 5 Slide 6 %Asb. Or %Ver. ù Fibergiass isotopia 9M-V2 vermisulila la > 1095 (he \odot lon. Required II. Blicklindenco evel of asbesins in a sense Tationne Hair: Sitates night be undercalimated NOB PLM See SM-V I Low to Medicate analysis sheet. Comments: for results Q.C. LJ Method: () FLAP | LJ E.PA Ź SCANNING OPTION

Asbestos 112 Other Fibrous Non Fibrous Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % Clear-T - N. Y. Keniue <mark>∑_()_</mark> Miceal Filer Gravimetri Celtrose Organio Dieders " (teregomaty <u>u.)</u> Vermoultet analysis sheet ට Geliulose Gndulose ුSatinution for results i f isanglata (setopo Sède 2 Sade 6 5lide / Silde 8 Asbover, P1 Total P1 %Asb. Or %Ver. SMA if verniculite is a 1055 the 2১৩ Regulated (direftgggence okloč nakostno je s sagryte Jitlorse Hair: Seases. MOR PLA migm tip undernalischeled See SMA/ Low to Resteptie See Note#1 analysis sheet for results Method: JAELAP I JEPA Q.C. Li ₹ 5CANNING OPTION

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|--|-----------------------------|-------------------------|------------------------------|---------------------------|---------------------------|---|--|
| 4 113 Field Kasabar | Stereoscopic Exam | | PLM Optical Properties | Asbesins Results PLM % | Other Fibrous | Non Fibrous PLM % | |
| Grævenredic Recydest () • Revonimended □ See gravimente (1) | Hornogeneily Verminates / | Mork Exercise 30: | Stij Lis Coler Coler, Plan F | Reaf Sign Other despity | Chrysolile Anycelle Other | Celluince 2-Füerglass Other | Milneral Filler Organic Hierters Verinscukter Other |
| analysis aheat Im neanly | Gold of Layer General Yes N | | | · | | F Callidose Confidence Extraction Le Fébriglass Sectoric | |
| SM V Recured □ | POM Counts Slide 7 | Slide 3 Slise 4 Slide 6 | Sida 6 Sida 7 Silce 8 | Asb.Ner. 27 Total PT | %Asb. Or %Ver. | I.J. Bynthotle High Biodeinnenne | " If vermisalite je >>0% toe level of asbesins in a saggala |
| See SMA/ (*) analysis aheet for results | NOR PLM Comments: | | | | | C Horse Hair: Scales, Luie to Moderale Bradiingense | might be underestmanel See Note #1. |
| | Mothor: LYELAP 🗆 EPA | ⊈ SCANNING OPTION | Q.C. F3 | | | | • |

Meteods. GPA, Interior Mathabilit the Disternization of Aspestos in Bulk Insulation Semples - 40 CFR Appendix E to Suppert E of Part 765 ECA 500/6/45/156 ELAP Irams 198.1, 198.4, 198.5, 198.9

Note \$1: ELAP requires method ELAP 198 1 for the analysis of samples containing viio 8, eveniculae, with the exception of surfacing material that centains varieties (SSA-V). For samples containing >10% vermiculae ELAP requires methods ELAP 188.1 followed by ELAP 188.6 This method has initiations for deriblication of vermiculae, "This method does not remove vermiculae and may undertainante this two for exhibiting present in a sample containing greater than 10% vermiculae."

Note \$2: FLAP requires method 199.6 to the energy sky of scrieding material containing vermiculae (NAV) and II office 4.400 point our shellod.

LicaRE_PORMO DOCUMENTS AND RECORDISOPTICAL/ASSESTEDS BULKWASSESTEDS BULKWA

104 East 25th Street, 8th FL, New York, NY 10010

--A7t: A5--ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| 87. | 1 | 10 | AP | NVL | - 8 | |
|-----|---|----|----|-----|-----|--|
| 197 | 1 | AP | EL | | | |
| | | | | | | |

| | Client / Project PANYNJ / FIR | | ULK ASBES [.] R REHAB | ros anai | LYSIS SH | EET | Project | Number 214PN | JPEPJ1 | DLYMPUS BE NIKON OPTIPE |
|--|--|-------------------|-----------------------------------|--------------|----------------|--------------|--------------|---------------------------|---|--|
| | Analysis Dale 4 / 5/2021 | Analyst | | 9 | 1 | | | | 668 | EMPERATURE 'C |
| 1 122 Fleid Number | Stereoscopic Exam | | | Optical Pr | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravemetric Required [.] | Color Homogene C | orph Extinction | PUL RIL | DS Color Col | lor, Pleo Biro | el Sign Oll | her Identity | Chryylatile | 2 Calluidae | 95 Mineral File Organic Brid |
| Recommended [] See gravimetric [] analysis sheet | # of Leyers Asbestos | | | | | | | Other | Olher | Cither |
| for results SM-V | Color of Layer Selected Yes No Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 9 | Side 5 Side 6 | Sikle 7 | Slide 8 | Ash Ner, PT | Total PT | %Asb. Or %Ver. | Estimation Fillenglass Isotopic | |
| Required [] | PIMO | | | | | 0 | 209 | O . | ☐ Synthatin High Bertingense ☐ Horse Halt: Seaks, | * If vermiculite is >10% the level of asbestos in a sam |
| See SM-V □ analysis sheet for results | NOB PLM Comments: | | | | | | | | Low to Moderate Hirefringence | might be underestimated. See Note #1. |
| | Method: ☐ ELAP ☐ EPA U∫ SC | ANNING OPTION | | Q. | c. 🗆 | | | | S.N. seri | |
| Z 123 Field Number | Stereoscopic Exam | ornh Dynaston | | Optical Pr | | | - U - O | Ashestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required [_] | Color Color Color Plea Birel Sign Other Identity Chrys | | | | | | | Chrysopi6 | Cellulose Fiberglass | Mineral Filler Organic Bind |
| Recommended [] | N of Layers Asbestus | | | | | | | glner | Other | Vermiculite* |
| unalysis sheet for results | Color of Layer Datacled Yes No Foint Counts Slide 1 Slide 2 Slide | 2 Code 4 I | enes e T enes | 1 85 2 | T 201- 0-1 | | | / | 2 Cellulose Ondulose Extinction | -2111 |
| SM-V Required [] | PEM O STATE STATE STATE | 3 Side 4 S | Slide 5 Slide 6 | Slide 7 | Side 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Synthetic High Hirefringence | * If vermiculte is >18%, fiv level of asboslos in a sem |
| See SM-V analysis sheet for results | NOB PLM Comments: | | Version | | | | | | U Horse Hair: Scales, Law to Moderate Biretringence | might be underestimated See Note #1. |
| Sel Fascille | Method: ZELAP □ EPA SC | ANNING OPTION | | Q. | c. 🗆 | | | | | |
| 3 124 Flood Number | Stereoscopic Exam | orph Extinction (| | Optical Pr | operties | | ner identily | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM 1/4 |
| Gravimetric Required [1] | Collect Will Totaxture United | | | | s, 1 to the | - Juliu Oil | in acting | Chrysofile | Cellulose Fiberglass | Mineral Filer Organic Bind |
| Recommended [] | # of Enyers Asbestos | | | | | | | Other | Other | Vormiculde* |
| analysis sheet for results | Color of Layer Delected Yes No | | | | | | - | | C Cellulose Undulose Extinction | Other |
| SM-V | Point Counts Slids 1 Slide 2 Slide | 3 Slide 4 S | Side 5 Side t | Slide 7 | Slide 8 | | - | %Asb. Or %Ver. | Li Fiberglass Isotopic Li Synthetic High | * If warmiculie is > 10% the |
| Required \square | NOB PLM | | | | | 0 | 2G0 | 0 | Birefringence Horse Hair: Scales, Low to Moderate | level of asbesies in a sem might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | ANNING OPTION | | lq. | c. 🗆 | | | | Birefringence | George #1. |
| 4 125 | Stereoscopic Exam | | PLM | Optical Pr | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Grevimetric | COLON MY GENTURE CT ME | orph Extinction f | RIT RIT | DG Color Col | ar, Plea Bre | Sign Of | er Identay | Chorsone | Cellulose | /UD Mineral Filter |
| Required □ | Hamagenety | | | | | | - | /mosite | - Fiberglass | Organic Bind |
| San gravimetric analysis sheet | # of Layers Asbeslos | | | == | | | | Other | Other | O'verniculite* |
| for results | Point Counts Slids 1 Slide 2 Slide | 2 85404 | Mars I out | T Allow | gea, a. I | Ant at | - | / | Extinction Fitterglass isotopic | |
| SM-V | Point Counts Side 1 Slide 2 Slide | 3 Side 4 S | Slide 5 Slide 0 | Slide 7 | Slide 8 | Asb./Ver. FT | 2so | %Asb. Or %Ver. | Synthetic High Birchtingence | * If vermicable is >10% the |
| See SM-V | NOB PLM | | | | | | 200 | _0 | ☐ Horas Heir: Scales, Low to Moderate | level of asbestos in a sam might be underestimated. |

Methods EPA Interim Method of the Determination of Asbestos in Dulk Insulation Samples 40 CFR Appendix E is Subpart E of Part 783 EPA 800/R 93/n16 CLAP Items 198.1, 198.4, 198.6, 198.6

Methog: □ ELAP □ EPA

SCANNING OPTION

analysis sheet for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculde; with the properties of surfacing material that contains vermiculta (SM-V). For samples containing \$10% vermiculte ELAP requires methods ELAP 199.1 followed by ELAP 199.0. This method has finitiations for identification of vermiculte. This method does not remove vermiculte and may underestimate the leave of settless present in a sample containing greater than 10% vermiculte."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermicultie (SM-V), and it utilizes a 400 point count method.

LILAS FORMS DOCUMENTS AND RECORDISOP HOALWASBESTOS BUILD ASBESTOS BUILD CAPTER COLOR 2021 REVISION \$38 BY MET WANG FORM 4612.

Q.C. []

See Note #1.

Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | D RAINIBBL. | | K ASSESTOS ANALYSIS SHEET | | | | <u>Metrospopes;</u> GLYMPUS BH-27 NIKAIN OPTIPITOT |
|---|--|---|--|-----------------|--|--|---|
| | · · · · · · · · · · · · · · · · · · · | FIRESPRINKLER | KEHAB | Project | Number 214PN | IPEPJ1 | 57 |
| | Analysis Date <u>4 / [∖ / 2</u> | <u>021 </u> | | Batch N | umber21- | <u>668 </u> | emperizations vo |
| 1 118 | Stereoscopic Exam | | PLM Optical Properties | | Asbestos Results PI,M % , | Other Fibrous | Non Fibruus PLM % |
| Gravintelne | Cara 2100 composition | Marph Extinction RI | J RI DS Cares Codes, Piece Sires Sign | Other Identity | Carysyllie | | / O Miceral Filler |
| Required () Responseded () | Homogenety Vermicular | | | | Ampsile | Hibarglass | Organic Bioders |
| Sec gravimelác I I | # of Legera | | | | Other | ,Oller | Vertokulitja* |
| элвууса sheet Эн гирийз | Cutor of Layer | vo | | = | / | PT Češuloze Undolose Extinction | |
| SM-V | Port Counts 5 de 1 Side 2 | Side 3 Side 4 Sin | 16 b Silde 6 Säde 7 Slide 8 Asb./Ver. | . P 5 Tatal P 1 | WASD, Or %Vec | i I Fiberglass Isotopic 11 Syndiede High | |
| Foqueod [] | P:MO O | | | 6-6-2 | <u> </u> | Birekiingence ☑ Koose Harr: Scales, | * II vernyoutte is a 10% sho kwel of sebestas in a sample : might be opsignessimated |
| See SM-V L1 and/ysis sheet for results | Comments: | | | | | Luw to Moderate Binefrängence | See Note #5. |
| | Method: Çl'ÉLAP ☐ ⊆PA | 1 : SCANNING OPTION | Q.C. L.J | | TATING LAAL | | |
| 2 119 Field Vascter | Stereoscopic Exam | | PLM Optical Properties | | Asbestos Results PLM %. | Other Fibross | Non Fibrous PLM % |
| Gravimetric | Color Mark Alphables (F | Morph Edinoban RI | Fill DS Color Color (1900 Diret Sign | Other Identity | Chrymisie | 270 Colleges | / O Mineral Filter |
| Required Recommended | Homogeneity Verminate | ===== | | | t/moste | Halorglass | Creanic Griders |
| See grantmento : : | n of Layers Assuestics | J | | | (%ner | , CUner | Vereicule* |
| analysis elieet for reanle | Color of Sayor (Treacted Yes N | 10 | | = | | Cellulus Containse Extinction | |
| SM-V | Point Counts Sigle ? Slide 2 | Slide 3 Sáda 4 Sjó | le 5 Silde 6 Slide 7 Slide 8 Asb Aver | | %A5b. Or %Ver. | i.: Fibergilasa taotupio L.: Synthetic High | |
| Receircó I 1 | NOB PLM | | <u> </u> |) /১০০ | <u> </u> | Birefrispence Diffrispence | f If vernications > 10% the level of asbestos in a sample origin, be underestimated. |
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| | - COMMINICATION: / | | | | - crise illidicues | l . | |
| for resums | Mntbnd; ∠ ELAP □ EPA | ZI SCANNING OPTION | [a.c. [] | | | | |
| | | ZÍ SCANNING OPYION | Q.C. [] | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| for resurs | Mntbnd; ∠ ELAP □ EPA | E SCANNING OPTION Meroli Exection R | PLM Optical Properties | Other Identity | | | Non Fibrous PLM % |
| for resurs 3 120 Field Sunfeer Grevinebic Requires [7] | Mintpod; ZELAP □ EPA Stereoscopic Exam Color National Color | | PLM Optical Properties | Other Identity | Results PLM % Chrysolfe Accode | Other Fibrous PLM W Geltulian Fibritiss | PLM 1/6 Control of History | for resurs 3 120 Field Sunser Grevimetric | Mntbnd: FLAP = EPA Stereoscopic Exam Color Table Fritims 2 | | PLM Optical Properties | Other Identity | Results PLM % | Other Fibrous PLM % | PLM % T.G. Miceral Filler Organic Rianers Vermouble* |
| for resurs 3 120 Field Kumber Grevimetris Required TO Retzennenteri () | Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam Color Stereoscopic Exam | Morali Calection H | PLM Optical Properties | Other Identity | Results PLM % Chrysolfe Accode | Other Fibrous PLM W Geltulian Fibergiass Other | PLM 1/6 Control of History | for resurs 3 120 Field Sumber Grevimetric Required [] Resonantier [] Ose gravimetric [] analysis shoal | Stereoscopic Exam Color Value Frythm 1 Homogenety 1 Vennicolite # of Loyers Asbestos Control Layer Datected Yes N Foint Counts Slige 1 Store 2 | Meroli Existina HI | PLM Optical Properties | | Results PLM % Chrysolfe Accode | Other Fibrous PLM % Fibrous Fibrous Fibrous Other Other Control Extension Extension Fibrous States Other | PLM % T.G. Miceral Filler Organic Rianers Vermouble* |
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5FA Infance Method of the Ceremination of
Asteelos in Bulk Insulation Seniples: 40 CFR
Aspendix E to Subosrt E of Part 763
ETA 3001R 92/115
ELAP Itania 158.1, 195.4, 190.6, 195.0

Note #1: ELAP requires method ELAP 180,1 for the entities of samples containing s104 verificable, with the exception of samples and little containing very verificable (SM-V). For camples concerning >10% verificable (CLAP requires methods bit AP 186.1 forward by ELAP 193.6. This method has antiflication and open diffication of verificable. This method does not remove verificable and may underestimate the feed of activates present in a sample containing greater than 10% verificable."

Note #2: ELAP requires method 180.1 for the analysis of spriscing enterial containing verificable (SM-V), and it objects it 400 point count method.

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ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Start Date: 04/15/21 | 04/16/21 | |
|------------------------|--------------------------|----------|
| Start Date: | Date Completed: 04/16/21 | |
| 122990 | NOB TEM Analyst: RP | hods |
| TEM Batch # 122990 | NOS TEM Analyst: | Per |
| 21-668 | HS | |
| PLM Batch# | NOB TEM PREP: | |
| | 뜨 | 6 - S |
| RUSH | NOB PLW Analyst: | Asheme |
| | SAVEV | 12 |
| Client/Project: PANYNJ | NOB PLM PREP: | 1 |

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| 99 | | TEM | , | > | ^ | > | > | > | * | • | ^ | > |
|---------|----------|----------------------------|------|------|------|------|------|------|------|------|------|------|
| Methods | 90 | PLM | > | > | > | > | > | , | > | > | > | |
| ·重 | | PREP | > | `` | > | > | > | > | > | > | > | > |
| | | Notes | | | | | | | | | | |
| • | % Total | Ashestos or Vermiculita | | | | | | | | | | |
| 6 | Asbestos | Types or Vermicuilts | S | QN | QN | ND | QN | QN | ΩN | QN | S | QN |
| 12 | | % Carthonate | 10.5 | 12.2 | 11.8 | 20.9 | 8.8 | 14.8 | 25.8 | 28.0 | 27.7 | 40.0 |
| | Non Asb | Residue % NPr | 60.4 | 59.2 | 61.7 | 48.6 | 62.5 | 55.8 | 27.6 | 25,2 | 22.8 | 33.7 |
| 10 | | Organic | 29.1 | 28.6 | 26.5 | 30.5 | 7.82 | 29.4 | 46.7 | 46.8 | 49.5 | 26.3 |
| | | # 200 | 62 | 63 | 64 | 78 | 72 | 73 | 91 | 82 | 89 | 94 |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

Client Copy

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ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Start Date: 04/15/21 | 04/16/21 | | | | | | | | | | | |
|----------------------|---------------------------|--|----------|----------------------------|------|------|------|------|----------|------|--------------|------|
| Start Date: | Date Completed: 04/16/21 | | | | | | | | | | | |
| 122990 | ₽. | - 15 - 15 - 15 - 15 - 15 - 15 - 15 - 15 | | TEM | > | > | > | > | > | | | |
| 4 ± | | Methods | NOB | PLM | } | ` | 3 | 3 | <u> </u> | | | ···· |
| | IOB TEM Analyst: | | | PREP | > | > | > | > | > | | | |
| TEM Batch # | NOB TEM Analyst: | | | | | | | | | | | |
| 21-668 | HS | | | Notes | | | | | | | | |
| PLM Batch# | NOB TEM PREP: | | | | | | | | | | | |
| | R | 43 | M Total | Asbestos or Vermituille | | | | | • | | | |
| RUSH | NOB PLIM Anatyst: - | 6 | Asbeetos | Types or Vermiculite | Q. | Ž | Q | QN | QN | | | |
| | SA/EV | 12 | | % Carbonate | 20.7 | 15.4 | 11.6 | 14.8 | 9.8 | | | |
| PANYNJ | 78 | | Non Asb | Residue % | 52.4 | 57.5 | 58.2 | 62.3 | 65.4 | | | |
| Client/Project: | NOB PLM PREP: | 2 | | % Organic | 26.9 | 27.1 | 30.2 | 22.9 | 24.8 | | | |
| Client/ | NOB PL | | | きるよ | 95 | 96 | 26 | 86 | 66 | | | |

+ 31 + 11

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

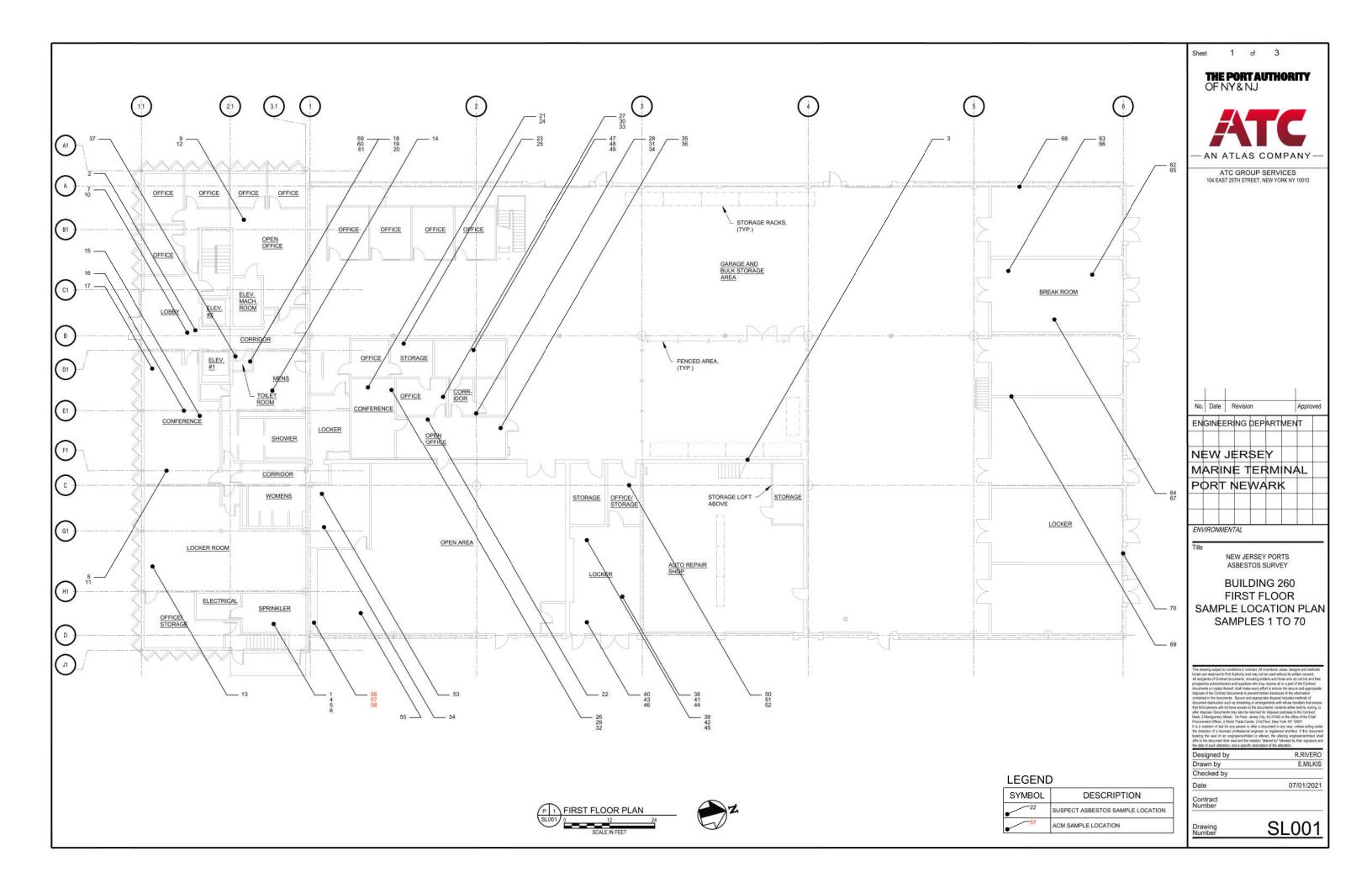
Page 2

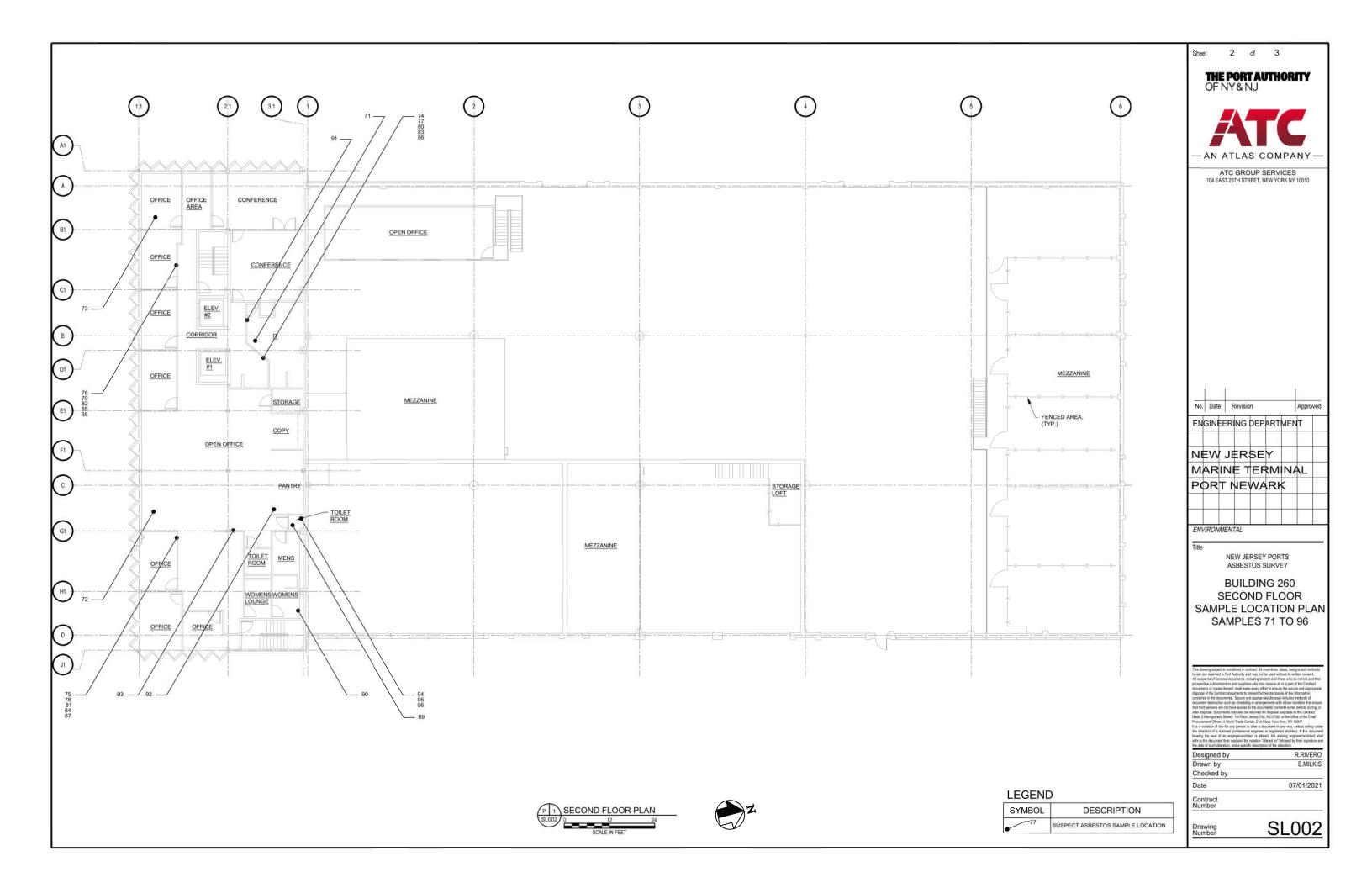
Client Copy

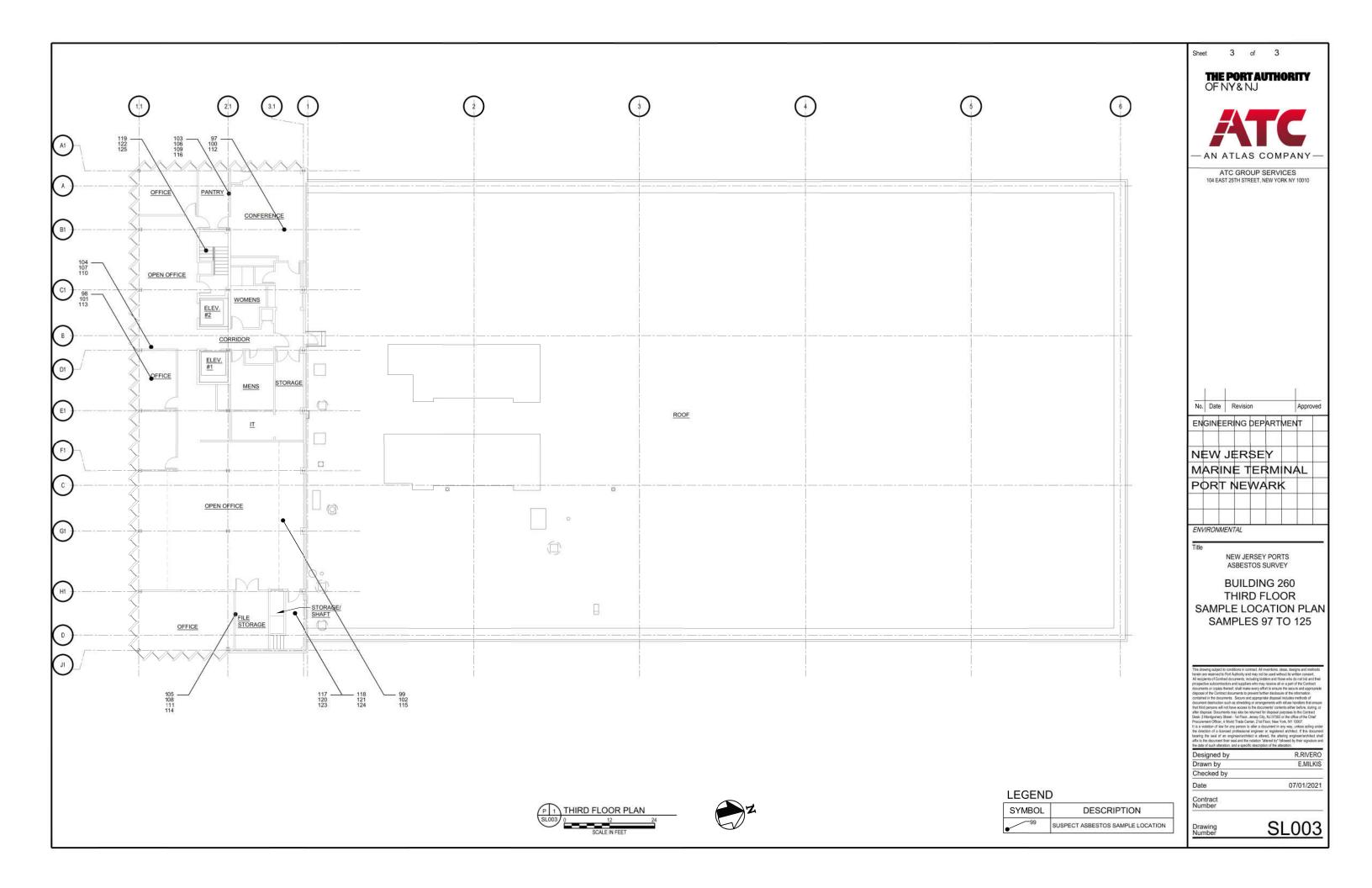
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APPENDIX B

ASBESTOS SAMPLE LOCATION DRAWINGS



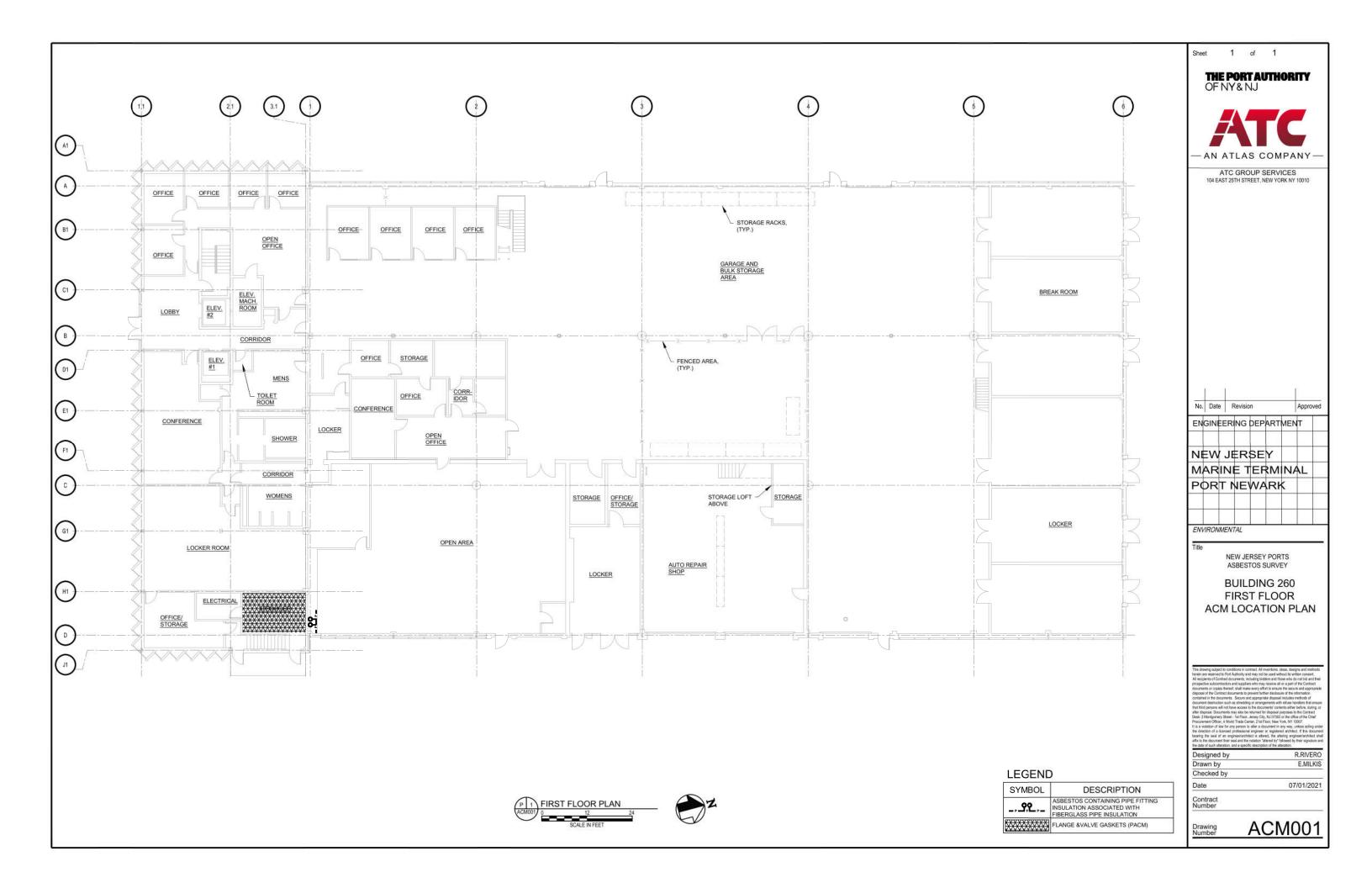




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APPENDIX C

ASBESTOS LOCATION DRAWINGS



APPENDIX D

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

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New York State – Department of Labor Division of Safety and Health

Division of Safety and Health License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative - Kevin Hamilton:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
SH 432 (8/12)
For the Commissioner of Labor

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below:

Miscellaneous

Ashestos

PA 100.2

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

age 1 of 1



NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual

EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



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MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

Fibers

NIOSH 7400 A RULES

Department of Health

Serial No.: 61223

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

MS. MILENA BONEZZI COPY

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2016) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

estos EPA 1

Serial No.: 62824

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Asbestos in Non-Friable Material-TEM

Item 198.6 of Manual (NOB by PLM)

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No : 62825

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspictiously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021 _ -

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Flealth Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

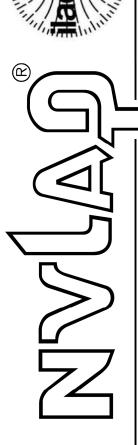
40 CFR 763 APX A No. III NIOSH 7402

Serial No.: 62826

NIOSH 7400 A RULES

Property of the New York State Department of Health. Gertificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to

Technology ommerce and C of Partment o artment $\overline{\Phi}$ of O S National Institute States United



20 7025 O/IE S **2** ccreditation 4 of ertificate

NVLAP LAB CODE: 101187-0

Services Group

New York, NY

for accredited by the National Voluntary Laboratory Accreditation Program listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

I the operation of a laboratory quality dated January 2009). Standard ISO/IEC ance with the recal competence for a r to joint ISO-ILAC This laboratory is accrec This accreditation demonst

2020-07-01 through 2021-06-30

Effective Dates





For the National Voluntary Labor

National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor
New York, NY 10010
Ms. Milena Bonezzi
Phone: 212-353-8280 x247 Fax: 212-353-8306
Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

<u>Code</u> <u>Description</u>

18/A01 EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of

Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code18/A02

Description
U.S. EPA's "Inte

U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR Part 763 Subpart F. Appendix A.

TR TAIL ATT STORY

For the National Voluntary Laboratory Accreditation Program



AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

Effective: 04/10/2015

Revision: 8 Page 1 of 1

104 East 25th St 8th Flr New York, NY 10010

Laboratory ID: LAP-100229

Issue Date: 08/30/2019

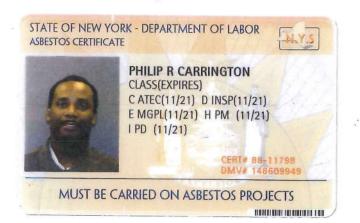
The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 06/12/1995

| IHLAP Scope Categ | ory Field of Testing (FC | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested |
|-----------------------------------|------------------------------------|----------------------------------|---|---|
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | - |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http:// www.aihaaccreditedlabs.org



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HAIR BLK

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





NANCY B GUEVARA CLASS(EXPIRES) C ATEC(05/21) D INSP(05/21) H PM (05/21) I PD (05/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



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IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





RONEY D RIVERO CLASS(EXPIRES) C ATEC(08/21) D INSP(08/21) E MGPL(08/21) H PM (08/21) IPD (08/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



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EYES BRO HAIR GRY IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240



NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, EP, & PJ

ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING #263

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

July 2, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

July 2, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building #263

263 Marlin Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Roney D. Rivero

Senior Project Manager for ATC Group Services LLC Direct Line +1 212 284 0614 Email: roney.rivero@atcgs.com

Attachments

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

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| .0 ACM INSPECTION SCOPE | 3 |
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| .0 PCB-IN-CAULKING INSPECTION FINDINGS | 5 |
| .0 UNIVERSAL WASTE OBSERVATION | 5 |
| .0 CONCLUSIONS AND RECOMMENDATIONS | 5 |
| .0 ASSUMPTIONS AND LIMITATIONS | 5 |
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APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: Asbestos Sample Location Drawings

Appendix C: ACM Location Drawings

Appendix D: Lab Certifications / Accreditations, Company and Personnel Certifications

ATC Project No. 214PANEWR1

ATC Project No. 214PANEWR1

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

Page 1

EXECUTIVE SUMMARY

On February 26, 2021 and April 8, 2021, ATC completed the inspection for ACM at Port Newark, Building #263 (the Site). The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected thirty-six (36) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, five (5) sampled homogeneous areas were found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content). In addition, one (1) non-ACM homogeneous area, marked with an asterisk (*), should be treated as ACM due to its association/proximity with ACM within the same location.

The materials that tested positive for asbestos are:

- Aircell Pipe Insulation (3" OD)
- Elbow Insulation associated with Aircell Pipe Insulation
- Wrapped Cardboard Pipe Insulation (3" OD)
- Mudded Joint Fitting Insulation associated with Wrapped Cardboard Pipe Insulation *
- Packing Insulation at Ceiling Penetration for 8" OD Pipes (East Side)
- Packing Insulation at Ceiling Penetration for 8" OD Pipes (West Side)

These materials are tabulated in Section 4.0.

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM/LCP |
|----------------------|----------------------|---------|
| Philip R. Carrington | AH-88-11798 | ACM |
| Nancy Guevara | AH-14-00412 | ACM |
| Roney D. Rivero | AH-88-06348 | ACM |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 263 is a single-story steel frame warehouse which measures approximately 161 ft. by 634 ft. in plan. Most of the building is being used as a general cargo warehouse and sustain heavy forklift traffic. A portion of the building is used as a factory for light manufacturing. The floor in the warehouse is bituminous concrete and in the factory area the floor is plywood. The girders support steel roof purlins which support the corrugated metal roof decking. The building's height varies from approximately a minimum of 26 ft. at the north and south sides to 40 ft. at the ridge. A concrete masonry firewall divides the building into east and west portions. Several modular office structures exist in the building and are occupied by various tenants.

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

ATC Project No. 214PANEWR1 Page 2

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of Port Newark Building 263 on February 26, 2021 and April 8, 2021 and collected thirty-six (36) bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location. The intent of this survey was to locate and identify all accessible ACM.

The following twelve (12) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location |
|--|--|
| 1' X 1' Ceiling Tile | 1st Floor – Office Space |
| Gypsum Board | 1 st Floor – Office Space & Kitchen |
| CMU Wall Mortar | 1 st Floor – Office Space Women's Bathroom |
| Aircell Pipe Insulation (3" OD) | 1 st Floor – Office Space & Kitchen |
| Elbow Insulation associated with Aircell Pipe Insulation | 1st Floor – Office Space Kitchen |

ATC Project No. 214PANEWR1 Page 3

| Wrapped Cardboard Pipe Insulation (3" OD) | 1 st Floor – Bathroom in Warehouse Area (Open Building Space) |
|---|---|
| Mudded Joint Fitting Insulation associated with Wrapped Cardboard Pipe Insulation | 1 st Floor – Bathroom in Warehouse Area (Open Building Space) |
| CMU Wall Mortar | 1 st Floor Sprinkler Room East Side |
| Packing Insulation at Ceiling Penetration around 8" OD Pipes | 1st Floor East Side Sprinkler Room Ceiling |
| Packing Insulation at Ceiling Penetration around 8" | 1st Floor West Side Sprinkler Room |
| OD Pipes | Ceiling |
| Tectum Ceiling Board | 1 st Floor - Warehouse Bathroom |
| Wall Blanket Insulation | 1 st Floor - Warehouse Dividing Wall |

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and analytical results of bulk samples collected, the following materials are asbestos-containing (> 1%):

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| 10-12 | Aircell Pipe Insulation (3" OD) | 33% Chrysotile | 20 LF | ACM001 |
| 13-15 | Elbow Insulation associated with Aircell Pipe Insulation | 50% Chrysotile | 10 LF | ACM001 |
| 16-18 | Wrapped Cardboard Pipe Insulation (3" OD) | 12% Chrysotile | 12 LF | ACM001 |
| 19-21 | Mudded Joint Fitting Insulation associated with Wrapped Cardboard Pipe Insulation * | * | 6 LF | ACM001 |
| 25-27 | Packing Insulation at Ceiling Penetration around 8" OD Pipes | 67% Chrysotile | 3 SF | ACM001 |
| 28-30 | Packing Insulation at Ceiling Penetration around 8" OD Pipes | 67% Chrysotile | 3 SF | ACM002 |

^{*} This homogeneous area should be treated as ACM due to its association/proximity with ACM within the same location.

ATC Project No. 214PANEWR1 Page 4

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

The following materials are presumed to be asbestos-containing material (PACM)

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| N/A | Flange & Valve Gaskets - 2 Sprinkler Rooms | PACM | 50 Units | ACM001 & ACM02 |

ACM laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix B. Asbestos Location Plans are included in Appendix C.

6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection at the site, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected thirty-six (36) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, five (5) sampled homogeneous areas were found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content). In addition, one (1) homogeneous area, marked with an asterisk (*), should be treated as ACM due to its association/proximity with ACM within the same location.

The materials that tested positive for asbestos at Building 263 include the following:

- Aircell Pipe Insulation (3" OD)
- Elbow Insulation associated with Aircell Pipe Insulation
- Wrapped Cardboard Pipe Insulation (3" OD)
- Mudded Joint Fitting Insulation Associated with Wrapped Cardboard Pipe Insulation *
- Packing Insulation at Ceiling Penetration around 8" OD Pipes (East Side)
- Packing Insulation at Ceiling Penetration around 8" OD Pipes (West Side)

ATC Project No. 214PANEWR1 Page 5

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Various types of painted surfaces such as sprinkler pipes, gypsum board ceilings and walls, CMU walls, and roof decking have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 263, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 263 located in Newark, New Jersey.

The materials reported in Section 5.0 of this report would require abatement, removal and disposal prior to sprinkler system renovation due to the proximity to the sprinkle pipe system.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection. The valve gaskets inside the pipe flanges could not be tested since the sprinkler system is still operational. It is assumed, based on the number of flanges observed, that there are 25 gaskets in each sprinkler room. There are 2 sprinkler rooms in this building, so it is assumed there are 50 gaskets that are presumed to be asbestos containing. This quantity should be verified with destructive sampling if abatement is planned prior to any renovation work.

If questions arise regarding asbestos content in building materials that were not tested by ATC, additional testing services should be procured to test those areas.

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

ATC Project No. 214PANEWR1 Page 6

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|-----------|------------------|--------|--------------|

APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES



ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 2/26/2021

104 EAST 25TH STREET NEW YORK, NY 10010

Date Received: 3/1/2021

Phone: (212) 353-8280

Date Analyzed: 3/2/2021

Fax: (212) 353-3599

ATC Batch # 21-226

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Methods: ELAP 198.1, 198.6, 198.4

Location: PN - BUILDING 263 Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>Non-Asbestos</u> | | NOB | Asbestos |
|--------------|------------------------|-----------------------|----------|---------------------|---------------------|-----------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | ₩ Type | % Type |
| 1 | 1ST FLOOR OFFICE SPACE | 1" X 1" CEILING TILE | NOB-TEM | | | 31% Organic | |
| | | | | | O OO/ Marrai audita | 52.5% Residue | NONE DETECTED |
| 21-226 -1 | | | | | 0.0% Vermiculite | 16.5% Carbonate | NONE DETECTED |
| | | Color: | | Comments: NOB PLM | Inconclusive | | |
| Analyzed By: | Michael Gittings | Second Analyst: Feyza | a Gungor | Commonto: 110B 1 Em | mooneracity . | | |
| 2 | 1ST FLOOR OFFICE SPACE | 1" X 1" CEILING TILE | NOB-TEM | | | 29.3% Organic | |
| | | | | | 0.00/ \/ailita | 48.1% Residue | NONE DETECTED |
| 21-226 -2 | | | | | 0.0% Vermiculite | 22.6% Carbonate | NONE DETECTED |
| | | Color: | | Comments: NOB PLM | Inconclusive | | |
| Analyzed By: | Michael Gittings | Second Analyst: Feyz | a Gungor | Commonio: 110B1 EW | mocholacive | | |
| 3 | 1ST FLOOR OFFICE SPACE | 1" X 1" CEILING TILE | NOB-TEM | | | 30.5% Organic | |
| | | | | | 0.00/ 1/ | 54.8% Residue | NONE BETEOTER |
| 21-226 -3 | | | | | 0.0% Vermiculite | 14.7% Carbonate | NONE DETECTED |
| | | Color: | | Comments: NOB PLM | Inconclusive | | |
| Analyzed By: | Michael Gittings | Second Analyst: Feyz | a Gungor | Commonto: 110B1 EW | mocridativo | | |
| 4 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 5% Cellulose | 95% Mineral Filler | | |
| | | | | Trace% FiberGlass | 0.00/ \/ailita | | NONE DETECTED |
| 21-226 -4 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| A l I D | Mi-l1 0:4: | Color: | White | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 5 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 4% Cellulose | 96% Mineral Filler | | |
| | (KITCHEN) | | | Trace% FiberGlass | 0.00/ \/ | | NONE DETECTED |
| 21-226 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | N. 1 10.00 | Color: | White | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 6 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 5% Cellulose | 95% Mineral Filler | | |
| | | | | Trace% FiberGlass | 0.00/ 1/ | | NONE DETECTED |
| 21-226 -6 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: | White | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 7 | 1ST FLOOR OFFICE | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| | WOMEN'S BATHROOM | | | | 0.00/ \/ | | NONE DETECTED |
| 21-226 -7 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: | Grey | | | | |
| Analyzed By: | Michael Gittings | | | | | | |

Batch # 21-226 Page 1 of 4 Report Prepared By: Grace Chan



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | Non- | <u>Asbestos</u> | <u>NOB</u> | <u>Asbestos</u> |
|--------------|---|--|--------|------------------------------------|------------------------|------------|----------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 8 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-226 -8 | WOWLNO BATTINOOM | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Grey | | | | | |
| | Michael Gittings | | | | | | |
| 9 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-226 -9 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Gray | | | | | |
| | 1ST FLOOR OFFICE | AIR CELL PIPE INSULATION 3" | DLM | 200/ Callulana | 470/ Minaral Filler | | 220/ Chrusatila |
| 10 | WOMEN'S BATHROOM | AIR CELL PIPE INSULATION 3 | PLIVI | 20% Cellulose Trace% FiberGlass | 47% Mineral Filler | | 33% Chrysotile |
| 21-226 -10 | | | | | 0.0% Vermiculite | | |
| Analyzed By: | Michael Gittings | Color: Tan | | | | | Total Ashastas: 33 % |
| 11 | 1ST FLOOR OFFICE | AIR CELL PIPE INSULATION 3" | | | | | Total Asbestos: 33 % |
| | WOMEN'S BATHROOM | | | | | | NOT ANALYZED |
| 21-226 -11 | | | | | | | NOT ANALTZED |
| | | | | Comments: Positive st | op, see #10 | | |
| 12 | 1ST FLOOR OFFICE KITCHEN AREA | AIR CELL PIPE INSULATION 3" | | | | | |
| 21-226 -12 | KITCHEN AREA | | | | | | NOT ANALYZED |
| | | | | Commente: Besitive et | on and #10 | | |
| | | | | Comments: Positive st | | | |
| 13 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | ELBOW INSULATION ASSOCIATED WITH AIRCELL | PLM | | 50% Mineral Filler | | 50% Chrysotile |
| 21-226 -13 | | PIPE INSULATION | | | 0.0% Vermiculite | | |
| Analyzad Dy | Michael Cittings | Color: Gray | | | | | |
| | Michael Gittings | EL DOWNNOL HATION | | | | | Total Asbestos: 50 % |
| 14 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | ELBOW INSULATION ASSOCIATED WITH AIRCELL | | | | | |
| 21-226 -14 | | PIPE INSULATION | | | | | NOT ANALYZED |
| | | | | Comments: Positive st | op, see #13 | | |
| 15 | 1ST FLOOR OFFICE | ELBOW INSULATION | | | | | |
| | KITCHEN AREA | ASSOCIATED WITH AIRCELL PIPE INSULATION | | | | | NOT ANALYZED |
| 21-226 -15 | | | | | | | NOT ANALIZED |
| | | | | Comments: Positive st | op, see #13 | | |
| 16 | 1ST FLOOR BATHROOM IN | WRAPPED CARD BOARD PIPE | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-226 -16 | OPEN BUILDING SPACE | INSULATION | | | 0.0% Vermiculite | | NONE DETECTED |
| 2. 220 .0 | | Color: Tan | | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 17 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | WRAPPED CARD BOARD PIPE INSULATION | PLM | 80% Cellulose | 8% Mineral Filler | | 12% Chrysotile |
| 21-226 -17 | | | | | 0.0% Vermiculite | | |
| | M. 1 . 10 | Color: Tan | | Comments: POSSIRI F | E FIELD CONTAMINATION | | |
| | Michael Gittings | | | Johnnons, 1 Joseph | - I LED CONTINUINATION | | Total Asbestos: 12 % |

Report Prepared By: Grace Chan Page 2 of 4 Batch # 21-226



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>Non-</u> | -Asbestos | NOB | Asbestos |
|--------------|--|------------------------------------|--------|----------------------|--------------------|--------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 18 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | WRAPPED CARD BOARD PIPE INSULATION | | | | | |
| 21-226 -18 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive s | top, see #17 | | |
| 19 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | MUDDED JOINT FITTING INSULATION | PLM | Trace% Cellulose | 30% Mineral Filler | | |
| 21-226 -19 | OPEN BUILDING SPACE | INSULATION | | 70% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 20 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | MUDDED JOINT FITTING INSULATION | PLM | Trace% Cellulose | 25% Mineral Filler | | |
| 21-226 -20 | OF EN BOILDING OF NOE | MODERMON | | 75% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 21 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | MUDDED JOINT FITTING INSULATION | PLM | Trace% Cellulose | 30% Mineral Filler | | |
| 21-226 -21 | OF EN BOILDING OF AGE | INOCENTON | | 70% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | | | | | |
| Analyzed By: | Michael Gittings | · | | | | | |

Report Prepared By: Grace Chan Page 3 of 4 Batch # 21-226



Feyza Gungor

ATC Group Services LLC

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Non-Asbestos *NOB* **Asbestos**

| ample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
|----------------|-------------------------------|---|-------------------------|----------------------------|--|----------------------------|----------------------|
| OTES: | | | | | | | |
| 1) The Limi | t of Detection is the same | e as the Reporting Limit for these results. | | | | | |
| 2) The Rep | orting Limit (RL) is the Lin | nit of Quantitation. For point counts the lin | mit of quantitation of | 0.25%; based on one as | sbestos point counter over 400 non- | empty points. | |
| 3) Asbestos | Containing Material (ACI | M) Definition: > 1% asbestos by weight is | considered an ACM | 1 | | | |
| report may | | responsible for sample collection. Please out endorsement by NVLAP or any other an request. | | | | | |
| 5) Accredit | ed by NVLAP #101187-0 | and by NY State ELAP #10879 | | | | | |
| 6) Confider | tiality Notice: The docume | ent(s) contained herein are confidential an | nd privileged informa | tion, intended for the exc | lusive use of the individual or entity | named above. | |
| 7) Liability I | Notice: ATC Group Servic | es and its personnel shall not be liable for | any misinformation | provided to us by the cli | ent regarding these samples. This re | eport relates only to samp | es submitted and ana |
| 8) Asbestos | s results are reliable to 2 s | ignificant figures. | | | | | |
| 9) The cond | dition of all samples was a | cceptable upon receipt. | | | | | |
| 10) The lab | oratory certifies that the te | est results meet all requirements of NELA | C. | | | | |
| 11) Supplei | ment to test report batch # | . Amendments: Ar | mendment Dates: _ | Amended by: | | | |
| 12) PLM Le | etter is attached on this rep | port. | | | | | |
| 13) TRACE | : The result is reported as | Trace when No points are counted and a | sbestos is identified. | . For ELAP Trace is < 19 | 6. | | |
| 14) ATC Gr | oup Services certifies tha | t this report is an accurate and authentic r | eport of the results of | obtained from the laborat | ory analysis | | |
| 15) The und | certainty for these test res | ults is available upon request. | | | | | |
| | | 8.1 for the analysis of samples containing culite and may underestimate the level of | | | | ethods ELAP 198.1 follow | ed by ELAP 198.6. |
| | | . 1 | | | | | |
| Aichael (| Gittings /// | | | | Mei Wan | g Mei | Wony |
| analyst: | w y | | | | Approved | 3 | |

Page 4 of 4 Batch # 21-226 Report Prepared By: Grace Chan



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP1 using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained Trace or No PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any guestions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiley Bourson

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS_BULK DOCUMENTS 2021\BULK_LETTER_DOC_#DB4A.DOC

Page 1 of 1



BATCH NO. 21-226 Page of 2

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Client PANYNJ | | Project Name: FIRESPRINKLER REHABILITATION | | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero | |
|------------------|-------------------------------------|---|----------|--|--|---|
| 1.7 | N I NO | 2a. Projec | t Addres | ss: <mark>(Circle One)</mark> PE PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: 21 | 6. BUILDING NUME 7. Sampling Areas: | 26 | 3 | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1 st Positive |

| | 11. Bulk Sample ID | 12. Material | 13. Thermal | 14. | Sample Location | 15. Material Total | 16. Asbestos |
|----------|-----------------------|-----------------------|----------------|-------|--------------------|-----------------------|-----------------------|
| Area No. | No. | | System | Floor | Sample Coordinates | Qty. (LF, SF, PCS) | Content (Type & %) |
| 1 | 1 | 1/4 / CEILING TILE | | 1 | OFFICE SPACE | 3,720 | ir. |
| 1 | 2 | | | 1 | 10 | | |
| 1 | 3 | | | | 11 | | |
| 2 | 4 | GYPSUA BOARD | | | // | 37205 | ÷ |
| 2 | 5 | /1 | | | 1. (14 jeta) | | |
| 2 | 6 | 4 | | | /1 | | |
| 3 | 7 | CHU HORTAR | | | 11 WOMEN'S BAPHO | b | |
| 3 | 8 | | | | 11 | | |
| 3 | 9 | | | | 11 | | |
| 4 | 10 | AIR CELL PIPE | | |) (| | |
| 4 | 11 | I'N SUID PUN 311 | | | 11 | SIZ CF | |
| 4 | 12 | | | | 11 KITCHEN ALFA | J- 8LF | |
| 5 | 13 | FLBOW | | | ix / / | POLE | |
| 5 | 14 | INSULATION ASSOCI | | | 11 | 1001 | |
| 5 | 15 | wipt AIR CELL PIPE IN | | | M KITCHEN ANEA |)ZLF | |
| 6 | 16 | WRAPIED CARD BUMI | 2 | | BATHROVY IN |) | |
| 6 | 17 | PIPE IN SULATION | | 1 | OPEN BUILDING | 7120 | F |
| 16 | 18 | J/ | | | SPACE. | | |

| 17. Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
|---------------------|----------|----------|-----------------|----------|----------|-------------------------|
| 00.0 | -11 | | 0.1 | 11 | | Field |
| 1. this (as) | 3/1/21 | 3:4001 | n Eleler En y | 3/1/201 | 16:00 | Walk In |
| | | 1 | 0 | | | US Mail |
| II. | | | | | | Fed-Ex |
| III. | | | | | | Other |

| 24. Name and Signature: | 25. Date | 26 Time | 27. Comments (Lab) |
|-----------------------------------|------------|---------|--------------------|
| 24a. Analyzed By: Mag by 1 Cot 16 | - 3/2/2021 | 07245 | 13/C/7 NOB- NOB- |
| 24b. Analyzed By: Acual Cithy | 3/2/2021 | (3:35 | NOB- LEW |
| 24c. QC By: | | | NOB- TEH |



| | | | - |
|-----------|--------|------|----|
| BATCH NO. | 21-00% | Page | of |
| | V1-770 | | |

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Client PANYNJ | | Project Name: FIRESPRINKLER | REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
|----------------------|-------------------------------|--------------------------------|----------------|--|---|
| | | 2a. Project Address: | | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: 2 2 2 2 2 1 | BUILDING No. Sampling Are | 203 | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1 st Positive |

| | 11. Bulk Sample ID | 12. Material | 13. Thermal | 14. | Sample Location | 15. Material Total | 16. Asbestos |
|----------|-----------------------|----------------------------------|----------------|-------|------------------------------------|-----------------------|-----------------|
| Area No. | No. | Material | System | Floor | Sample Coordinates | Qty. (LF, SF, PCS) | Content |
| 7 | 19 | MUDDED JOINT | | d | BATHROUS IN OPEN | 216 | |
| 7 | 20 | MUDDED JOINT FITTING INSUDPIN | | | BATHROUS IN OPEN BUILDING SPACE | | |
| 7 | 21 | 1, | | | _ 0 | | |
| | | 01 111 1 | A GN | | | | |
| | | Should be treated as | ACN | 1 be | cause pipe is ACM | | |
| | | | | | | * | |
| | | | | | | | |
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| | | | | | | | |
| | | 10° . | | | | | |
| | | | | | | | |
| | | | | | | | |

| 17. Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
|---------------------|----------|----------|-----------------|----------|-------------|-------------------------|
| 06 0-07 | 2110 | | 5 10 9 | 11 | 720-725-555 | Field |
| 1. Phily con | 5/1/2(| 3:40 1 | E Veler 2 V | 3/1/2021 | 16:00 | Walk In |
| | | | / | | | US Mail |
| II. | | | | | | Fed-Ex |
| III | | | | | | Other |

| LABORATORY INFORMATION | | | | |
|----------------------------------|----------|---------|--------------------|--|
| 24. Name and Signature: | 25. Date | 26 Time | 27. Comments (Lab) | |
| 24a. Analyzed By: Mekal Cill Ill | 3/2/2011 | 07:45 | | |
| 24b. Analyzed By: Mchar Cell | 3/2/271 | 13:3+ | | |
| 24c OC By: | | | | |

-ATLAS ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone

Accreditations: NVLAP 101187-0 ELAP 10879

| ie: (| 212) | 353- | 8280, | Fax: | (212) | 353- | 3599 | or | 8306 |
|-------|------|------|-------|------|-------|------|------|----|------|

| | | | SBESTOS ANALY | | | | OLYMPUS BH-2 NIKON OPTIPHOT |
|---|--|--|---|---|--|--|--|
| | Client / Project PANYNJ/ | | . / | Project | t Number 214PN | IPEPJ1 | . وسر |
| | Analysis Date <u>3/2/2</u> | 021 Analyst | <i>y</i> L | Batch | Number 21- | 226 _т | EMPERATURE C |
| 1 5 Field Number | Stereoscopic Exam | | PLM Optical Pro | · | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color White Texture | Morph Extinction RI1 | RI DS Color Color, | Pleo Biref Sign Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity 7 Vermiculite | / - | | | Amostle | Fiberglass | Organic Binder |
| Recommended 🗆 | | 1 | | | Øther | Other | Vermiculite* |
| See gravimetric □ | # of Layers Asbestos | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | | | Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb,/Ver, PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗌 | PLM 1/Q | WITH THE PROPERTY OF THE PROPE | | 0 20 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| analysis sheet for results | Comments: | | <u> </u> | | | Birefringence | See Note #1. |
| tor results | Method; ☐ ELAP ☐ EPA ,I | SCANNING OPTION | Q.C. | . D | | | |
| 2 6 | | T | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morph Extinction RI1 | PLM Optical Pro | • | Results PLM % | PLM % | PLM % |
| Gravimetric | Color White Texture | | | Theo biret sign office (definity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | | | | Amosite | Fiberglass | Organic Binder |
| Recommended | # of Layers Asbestos | 1 | | | Øther | Other | Vermiculite* |
| See gravimetric analysis sheet | - | | | | | | Other |
| for results | Color of Layer Detected Yes No | | | | | Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fîberglass Isotopic | |
| Required 🗀 | PLM /Q | SCOTT AND THE PROPERTY OF THE PROPERTY OF | | 0 70 | 0 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1, |
| 1 | · · · · · · · · · · · · · · · · · · · | | | | | | |
| analysis sheet for results | Comments: | | | | | Birefringence | |
| | | D'SCANNING OPTION | Q.C. | . 🗆 | | Birefringence | |
| for results | | D'SCANNING OPTION | Q.C. | | Asbestos | Other Fibrous | Non Fibrous |
| for results 3 7 Field Number | Method: FELAP EPA Stereoscopic Exam | SCANNING OPTION Morph Extinction R11 | | perties | Results PLM % | Other Fibrous PLM % | PLM % |
| 3 7 Field Number Gravimetric | Method: ØELAP □ EPA | | PLM Optical Pro | perties | Results PLM % Chrysotile | Other Fibrous PLM % Cellulose | PLM % 170 Mineral Filler |
| 3 7 Field Number Gravimetric Required □ | Method: FELAP EPA Stereoscopic Exam | | PLM Optical Pro | perties | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass | PLM % 1700 Mineral Filler Organic Binder |
| for results 3 7 Field Number Gravimetric Required □ Recommended □ | Method: DELAP DEPA Stereoscopic Exam Color Gray Texture C | | PLM Optical Pro | perties | Results PLM % Chrysotile | Other Fibrous PLM % Cellulose | PLM % 100 Mineral Filler Organic Binder Vermiculite* |
| for results 3 | Stereoscopic Exam Color G / J Texture C Homogeneity J Vermiculite J | Morph Extinction R11 | PLM Optical Pro | perties | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass | PLM % 1700 Mineral Filler Organic Binder |
| 3 7 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color 6/9 Texture 6 Homogeneity Vermiculite 4 # of Layers Asbestos Color of Layer Detected Yes No | Morph Extinction RI 1 | PLM Optical Pro | Pleo Biref Sign Other Identity | Results PLM % Chrysotile mosite Other | Other Fibrous PLM % Cellulose Fiberglass Other | PLM % 100 Mineral Filler Organic Binder Vermiculite* |
| for results 3 | Stereoscopic Exam Color G 7 Texture C Homogeneity Vermiculite / # of Layer Asbestos Color of Layer Detected Yes No | Morph Extinction R11 | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb./Ver. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other |
| 3 7 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Method: DELAP DEPA Stereoscopic Exam Color G/J Texture C Homogeneity Vermiculite / Asbestos Color of Layer Detected Yes No. Point Counts Slide 1 Slide 2 PLM C | Morph Extinction RI 1 | PLM Optical Pro | Pleo Biref Sign Other Identity | Results PLM % Chrysotile mosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Synthetic High Birefringence | PLM % / 170 Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| for results 3 | Method: ELAP EPA Stereoscopic Exam Color Gray Texture C Homogeneity Vermiculite / Asbestos Color of Layer Detected Yes Non Point Counts Slide 1 Slide 2 PLM NOB PLM | Morph Extinction RI 1 | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb./Ver. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Synthetic High | PLM % f 50 Mineral Filler Organic Binder Vermiculite* Other |
| 3 7 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required Required | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Non Point Counts Slide 1 Slide 2 PLM NOB PLM Comments; | Morph Extinction RI I | PLM Optical Pro | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Sirberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samplimight be underestimated. |
| for results 3 | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Non Point Counts Slide 1 Slide 2 PLM NOB PLM Comments; | Morph Extinction RI 1 | PLM Optical Pro | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| for results 3 | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Non Point Counts Slide 1 Slide 2 PLM NOB PLM Comments; | Morph Extinction RI I | PLM Optical Pro | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Sirberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samplimight be underestimated. |
| for results 3 7 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Note of the period of the per | Morph Extinction RI I | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb.Ner. PT Total PT Operties | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % / DO Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampli might be underestimated. See Note #1. Non Fibrous PLM % |
| for results 3 | Stereoscopic Exam Color G// Texture C Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Note of Layer | Morph Extinction R11 Side 3 Slide 4 Slide 5 | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb.Ner. PT Total PT Operties | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % / 170 Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % |
| for results 3 | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Note of the period of the per | Morph Extinction R11 Side 3 Slide 4 Slide 5 | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb.Ner. PT Total PT Operties | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysoide | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % / DO Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampli might be understimated. See Note #1. Non Fibrous PLM % / O Mineral Filler |
| for results 3 | Stereoscopic Exam Color G// Texture C Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Note of Layer | Morph Extinction R11 Side 3 Slide 4 Slide 5 | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb.Ner. PT Total PT Operties | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Chrysotile Ampsite | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % / ② Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % / ② Mineral Filler Organic Binder |
| for results 3 | Stereoscopic Exam Color Gray Texture C Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM Stereoscopic Exam Color Gray Texture Homogeneity Vermiculite | Morph Extinction RI I Slide 3 Slide 4 Slide 5 SCANNING OPTION Morph Extinction RI I | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb.Ner. PT Total PT Operties | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Chrysotile Ampsite | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % / ② Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % / ② Mineral Filler Organic Binder Vermiculite* |
| for results 3 | Stereoscopic Exam Color G/G Texture C Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM Stereoscopic Exam Comments: Method: ELAP EPA Stereoscopic Exam Color G Taxture Asbestos Color of Layer Detected Yes N | Morph Extinction RI I Slide 3 Slide 4 Slide 5 SCANNING OPTION Morph Extinction RI I | PLM Optical Pro RI DS Color Color. Slide 6 Slide 7 Q.C. PLM Optical Pro RI DS Color Color. | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT O Perties Pleo Biref Sign Other Identity | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Chrysotile Ampsite | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampli might be underestimated. See Note #1. Non Fibrous PLM % / ② Mineral Filler Organic Binder Vermiculite* |
| for results 3 7 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required analysis sheet for results 4 8 Field Number Gravimetric Required Recommended See gravimetric Required See gravimetric Required See gravimetric SM-V | Stereoscopic Exam Color Gray Texture CHomogeneity Vermiculite Asbestos Color of Layer Detected Yes Non Nobert Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Point Counts Stide 1 Stide 2 | Morph Extinction R11 Slide 3 Slide 4 Slide 5 Slove 5 State 4 Slide 5 | PLM Optical Pro RI DS Color Color. Slide 6 Slide 7 Q.C. PLM Optical Pro RI DS Color Color. | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT Perties Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT Slide 8 Asb.Ner. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysoile Ampsite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampli might be underestimated. See Note #1. Non Fibrous PLM % / ② Mineral Filler Organic Binder Vermiculite* |
| for results 3 | Stereoscopic Exam Color Gray Texture C Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Gray Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM Stereoscopic Exam | Morph Extinction R11 Slide 3 Slide 4 Slide 5 Slove 5 State 4 Slide 5 | PLM Optical Pro RI DS Color Color. Slide 6 Slide 7 Q.C. PLM Optical Pro RI DS Color Color. | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT O Perties Pleo Biref Sign Other Identity | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Chrysotile Asbestos Results PLM % Chrysotile Ampsite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Other Cellulose Fiberglass Other | PLM % / DO Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % / O Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| for results 3 7 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required analysis sheet for results 4 8 Field Number Gravimetric Required Recommended See gravimetric Required See gravimetric Required See gravimetric SM-V | Stereoscopic Exam Color Gray Texture CHomogeneity Vermiculite Asbestos Color of Layer Detected Yes Non Nobert Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Point Counts Stide 1 Stide 2 | Morph Extinction R11 Slide 3 Slide 4 Slide 5 Slove 5 State 4 Slide 5 | PLM Optical Pro RI DS Color Color. Slide 6 Slide 7 Q.C. PLM Optical Pro RI DS Color Color. | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT Perties Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT Slide 8 Asb.Ner. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysoile Ampsite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Harris Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence | PLM % / ② Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampli might be underestimated. See Note #1. Non Fibrous PLM % / ② Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the |

weenous: EPA interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/115

Note #1; ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantificat of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L'LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS_ANALYSIS_SHEET_FORM #82.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

| PLM Optical Properties | | bestos Its PLM ' |
|--|----------------|---------------------|
| Analyst | Batch Number | 2 |
| SPRINKLER REHAB | Project Number | r <u>214</u> |
| BULK ASBESTOS ANALYSIS SHEET | | |
| ATC - New York 104 East 25 th Street, 8 th FL, New York, NY 1001 Phone: (212) 353-8280, Fax: (212) 353-3599 or 83 | | |
| | | |

| ATC | | | 3-8280, Fax: (212) 353-3599 or 830 | 6 | NVLAP 101187-0 ELAP 10879 | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | ESTOS ANALYSIS SHEET | | <u>Microscopes:</u> OLYMPUS BH-2/ NIKON OPTIPHOT | | | | | | | |
| | Client / Project PANYNJ/ F | FIRESPRINKLER REHA | AB | Project Number 214PNPEPJ1 | | | | | | | | |
| | Analysis Date 3/2/20 |)21 Analyst | ML | Batch Number 21-226 | TEMPERATURE °C | | | | | | | |
| 1 1 Field Number | Stereoscopic Exam | 1 | LM Optical Properties | Asbestos Other Fit Results PLM % PLM | | | | | | | | |
| Gravimetric | Color TM Texture | Morph Extinction RI1 R | II DS Color Color, Plea Biref Sign Other | | ellulose / D Mineral Filler | | | | | | | |
| Required (| Homogeneity Vermiculite | | | | bergiass Organic Binders ther Vermiculite* | | | | | | | |
| See gravimetric | # of Layers Asbestos | | | Officer | Other | | | | | | | |
| analysis sheet for results | Color of Layer Detected Yes No | | | Celtulose Or Extinction | ndulose | | | | | | | |
| SM-V | Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 Stide 5 S | Slide 6 Slide 7 Slide 8 Asb./Ver. PT | otal PT %Asb. Or %Ver. D Fiberglass Is | · 1 | | | | | | | |
| Required 🗌 | | | | ☐ Synthetic Hi Birefringenc | level of asbestos in a sample | | | | | | | |
| See SM-V □ | NOB PLM | ATTIVING COLUMN ASSESSMENT ASSESS | | C Horse Hair: S Low to Moder Birefringence | rate See Note #1. | | | | | | | |
| analysis sheet for results | Comments: | | la a m | = Bitestingence | | | | | | | | |
| | Method: □ELAP □ EPA □ SCANNING OPTION Q.C. □ | | | | | | | | | | | |
| 2 Field Number | Stereoscopic Exam | P | LM Optical Properties | Asbestos Other Fit Results PLM % PLM | | | | | | | | |
| Gravimetric | Color Tan Texture T | Morph Extinction RI1 R | RI DS Color Color, Pleo Biref Sign Other | | ellulose 15 Mineral Filler | | | | | | | |
| Required | Homogeneity 7 Vermiculite | | | | berglass Organic Binders | | | | | | | |
| Recommended 🗆 | # of Layers Asbestos | | | Other Of | ther Vermiculite* | | | | | | | |
| See gravimetoe analysis sheet for results | Color of Layer Detected Yes No | | | Cellulose Or Extinction | Other Other | | | | | | | |
| SM-V | Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 Slide 5 S | Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. Fiberglass Is | sotopic | | | | | | | |
| Required 🗌 | PLM | | | ☐ Synthetic Hi Birefringend | | | | | | | | |
| See SM-V | NOD DI W 27 | | 101 | Par Horse Hair: Low to Mode: | Scales, might be underestimated. rate See Note #1. | | | | | | | |
| analysis sheet for results | Comments: | | | Birefringence | e | | | | | | | |
| | Method: ELAP [] EPA [| SCANNING OPTION | Q.C. □ | | | | | | | | | |
| 3 Sield Namber | Stereoscopic Exam | 1 | PLM Optical Properties | Asbestos Other Fit Results PLM % PLM | | | | | | | | |
| Gravimetric | Color T/M Texture | Morph Extinction RI1 R | RI DS Color Color, Pleo Biref Sign Othe | | ellulose 100 Mineral Filler | | | | | | | |
| Required 🗂 | Homogeneity | Amosile Fi | berglass Organic Binder | | | | | | | | | |
| Recommended | # of Layers Asbeslos | | | Other O | ther Vermiculite* | | | | | | | |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes No | Other | | | | | | | | | | |
| SM-V | Point Counts Slide 1 Slide 2 S | Extinction Fotal PT %Asb. Or %Ver. | sotopic | | | | | | | | | |
| Required | PLM | ☐ Synthetic H Birefringeno | " If vermiculite is >10% the | | | | | | | | | |
| C CH V | NOB PLM % | | | 7650 | lievel of aspesios in a sample | | | | | | | |

| See SM-V □ | NOB PLM 6 | | | | | might be underestimated, See Note #1. |
|-------------------------------|--------------------------------------|--|--------------------------------------|---------------------------|---|---|
| analysis sheet for results | Comments: | <i>′</i> | | | and migerioe | |
| 10,750 | Method: ☐ELAP ☐ EPA ☐SCAN | NING OPTION C | ≀.C. □ | | | |
| 4 4 Field Number | Stereoscopic Exam | PLM Optical F | Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color (1 h FC Texture F Morph | Extinction RII RI DS Color Co | olor, Pieo Biref Sign Other Identity | Chrysotile | Cendidae | 9K Mineral Filler |
| Required | Homogeneity Vermiculite / | | | Amosite | Fiberglass | Organic Binders |
| Recommended | 7 - | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | / / | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 Slide 3 | Slide 4 Slide 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM 2 | TO SECONDATE OF THE PROPERTY O | 070 | 7 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | • | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated, See Note #1. |
| analysis sheet for results | Comments: | | | | DREITHIGHTOG | |
| | Method: ☐ ELAP ☐ EPA ☐ SCAN | NING OPTION C |).C. □ | | | |

Page _____ of _____

Methods:

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763

EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY ME! WANG FORM #32

ELAP Items 198.1, 198.4, 198.6, 198.8

Page ____ of ____

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or

Accreditations: NVLAP 101187-0

-ATEAS ATC

ATC - New York

| 104 LUST 20 | Oucci, o | i L., 14C44 | TOIR, INT | 10010 |
|----------------|--------------|-------------|-----------|---------|
| Phone: (212) 3 | 853-8280, Fa | ax: (212) | 353-3599 | or 8306 |

| Microsco |
|-------------|
| OLYMPUS B |
| NIKON OPTIP |
| |

Project Number 214PNPEPJ1

| | 104 Last 25 Street, 6 12, New York, NY 10010 |
|------------------|--|
| | Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 |
| | BULK ASBESTOS ANALYSIS SHEET |
| Client / Project | PANYNJ/ FIRESPRINKLER REHAB |

| | Analysis | Date | 3/2 /2 | 2021 | _ Analyst | | MC- | | | | Batch | Number 21- | 226 | EMPERATURE® |
|--|---|---|--|--------------------------|--|---------------------------|--------------|-------------|--|---|------------------------|--|--|--|
| 13 Id Number | Stere | oscopic I | Exam | | | | | ptical Pi | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Gy | Textu | re <u> </u> | Morph حر) | Extinction | RII (- 546 | | Color Col | or, Pleo B | ref Sign Ot | her Identity | 50 Chrysotile | Cellulose | 5 OMineral Filler |
| Required 🗀 | Homogeneity | 1 verm | iculite | 1+ | | | | +- | 7-1 | - - - - - | | Amosite | Fiberglass | Organic Binde |
| (ecommended 🗌 | nomogeneny | T | | | | | _ | <u> </u> | <i>ナ</i> ノ | | 二二 | Other | Other | Vermiculite* |
| ee gravimetric 🗌 | # of Layers | Asbe | stos 🔼 _ | _ | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer | Detec | cted Yes I | 10 | | | | | | | | | ☐ Celtulose Ondulose | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| | PLM | 1/ | 17 | 17 | 1/ | | Olido d | | Olido o | ļ | 7 | 5 | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | | 1/3 | 110 | 12 | 12 | - | | | | 4 | <u> </u> | <u> </u> | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | *************************************** | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | ~ | | | | Direntingerice | |
| | Method: 🖵 | LAP [| EPA | ☐ SCAN | NING OPTI | ON | | Q. | c . □ | | | | | |
| 14 | Stere | oscopic l | Exam | | ······································ | | PLM O | ptical P | opertie | s | | Asbestos | Other Fibrous | Non Fibrous |
| ld Number | | | | Morph | Exlinction | RII | | S Color Col | - | | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color | Textu | re | | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity _ | Verm | iculite | | | | | | | | | Arnosite | Fiberglass | Organic Binde |
| tecommended 🗔 | # of Layers | Asbe | stos | | | | | | | | | Other | Other | Vermiculite* |
| ee gravimetric 🗆 analysis sheet | | | | | | | | | | | | | | Other |
| for results | Color of Layer_ | Detec | cted Yes I | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | ☐ Fibergiass Isotopic | |
| Required [] | PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM | | | | | | | · · · · | | | | | 🖺 Horse Hair: Scales, | level of asbestos in a samp might be underestimated, |
| analysis sheet | Comments: | | <u> </u> | | | 5-e | P . [] | J | | <u> </u> | <u></u> | <u> </u> | Low to Moderate Bisefringence | See Note #1. |
| for results | Method: ☐ E | LAP [|) EPA | SCAN | NING OPTI | | | lo. | c . □ | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | <u> </u> | | | T Schooles | Cth mil | Man Citaria |
| 15 ld Number | Stere | oscopic l | Exam | | | , | PLM O | ptical P | | s | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| | Stere | | | Morph | n Extinction | SI1 | | | ropertie | | her Identity | Results PLM % | PLM % | PLM % |
| ld Number | Color | Textu | те | Morph | n Extinction | RII | | ptical P | ropertie | | her Identity | l. | 1 | l . |
| d Number Gravimetric | | Textu | те | Morph | Extinction | RIT | | ptical P | ropertie | | her Identity | Results PLM % Chrysotile | PLM % Cellulose | PLM % Mineral Filler Organic Binde |
| Id Number Gravimetric Required tecommended | Color | Textu | rre | Morph | n Extinction | RIT | | ptical P | ropertie | | her Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Required decommended eg gravimetric analysis sheet | Color Homogeneity # of Layers | Textu Verm Asbe | rre | | n Extinction | SIT. | | ptical P | ropertie | | ther Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binde |
| Gravimetric Required Recommended Regravimetric Regravimetric | Color Homogeneity # of Layers Color of Layer _ | Textu Verm Asbe | stos | 10 | | | RIII DE | ptical P | ropertie | ref Sign Ot | | Results PLM % ChrysotileAmositeOther | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction | PLM % Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Required decommended eg gravimetric analysis sheet | Color Homogeneity # of Layers | Textu Verm Asbe | rre | | Extinction | RI1 | | ptical P | ropertie | | | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic | PLM % Mineral Filler Organic Binde Vermiculite* Other |
| Gravimetric Required tecommended analysis sheet for results | Color# of Layers Color of Layer _ Point Counts | Textu Verm Asbe | stos | 10 | | | RIII DE | ptical P | ropertie | ref Sign Ot | | Results PLM % ChrysotileAmositeOther | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Required ctecommended analysis sheet for results SM-V | Color# of Layers Color of Layer _ Point Counts | Textu Verm Asbe | stos | 10 | | | RIII DE | ptical P | ropertie | ref Sign Ot | | Results PLM % ChrysotileAmositeOther | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. |
| Gravimetric Required tecommended analysis sheet for results SM-V Required See SM-V analysis sheet | Color # of Layers Color of Layer _ Point Counts PLIM | Textu Verm Asbe | stos | 10 | | | RIII DS | ptical Pi | ropertie: or, Pleo B | ref Sign Ot | | Results PLM % ChrysotileAmositeOther | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Biretringence | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp |
| Gravimetric Required tecommended analysis sheet for results SM-V Required See SM-V See SM-V | Color # of Layers Color of Layer Point Counts PLM NOB PLM | Verm Asbe Detection | stos | No Slide 3 | | Slide 5 | RIII DS | ptical Pi | ropertie | ref Sign Ot | | Results PLM % ChrysotileAmositeOther | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. |
| Gravimetric Required tecommended analysis sheet for results SM-V Required See SM-V analysis sheet | Color | Textu Verm Asbe Detection 1 | stos cted Yes ! Slide 2 | No Slide 3 | Slide 4 | Slide 5 | RIII DS | ptical Pi | ropertie: or, Pleo B Slide 8 | Asb./Ver. PT | | Results PLM % ChrysotileAmositeOther | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. |
| Gravimetric Required □ tecommended □ ee gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Color | Verm Asbe Detection | stos cted Yes ! Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. |
| Gravimetric Required tecommended analysis sheet for results SM-V Required see SM-V analysis sheet for results | Color | Textu Verm Asbe Detection 1 | stos | Slide 3 | Slide 4 | Slide 5 | RIII DS | ptical Pi | Slide 8 | Asb.Ner. PT | | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scates, Low to Moderate Birefringence Other Fibrous | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. |
| Gravimetric Required tecommended analysis sheet for results SM-V Required analysis sheet for results SM-V Analysis sheet for results analysis sheet for results | Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: □ E | Textu Verm Asbe Detect Slide 1 ELAP oscopic | stos | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Vor. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binde Vermiculite* Other "If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. |
| Gravimetric Required Required Required Required Required Required Required Required Required Required Required Required Analysis sheet for results | Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: Estere Color Method: Homogeneity Homogeneity | Textu Verm Asbe Detect Slide 1 ELAP Textu Textu | stos | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scates, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Binde Vermiculite* Other "If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| Gravimetric Required tecommended see gravimetric analysis sheet for results SM-V Required see SM-V analysis sheet for results for results 16 Gravimetric Required Gravimetric Required cecommended see gravimetric cecommended see gravimetric cecommended see gravimetric cecommended cecommend | Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: □ E | Textu Verm Asbe Detect Slide 1 ELAP oscopic | stos | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scates, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / O Mineral Filler Organic Binde |
| Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimended Gravim | Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: Estere Color Method: Homogeneity Homogeneity | Textu Verm Asbe Detect Slide 1 ELAP Textu Verm Asbe | stos Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 3 Slide | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Gravim | Color | Textu Verm Asbe Detect Slide 1 ELAP Textu Asbe Detect Detect Textu | stos Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 3 Slide | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetigh Birefringence Horse Hair Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Gravimetric analysis sheet for results SM-V Required analysis sheet for results SM-V Required analysis sheet for results 16 Id Number Gravimetric Required analysis sheet for results | Color | Textu Verm Asbe Detect Slide 1 ELAP Textu Asbe Detect Detect Textu | stos EPA Exam stos Cited Yes ! | Slide 3 Slide 3 | Slide 4 | Slide 5 | RIII DS | ptical Pi | C. ropertie- ropertie- propertie- Asb./Ver. PT | her Identity Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Gravimetric Arequired Content of the commended Content of the content of t | Color | Textu Verm Asbe Detect Slide 1 ELAP Textu Asbe Detect Detect Textu | stos EPA Exam stos Cited Yes ! | Slide 3 Slide 3 | Slide 4 | Slide 5 | RIII DS | ptical Pi | C. ropertie- ropertie- propertie- Asb./Ver. PT | Total PT | Asbestos Results PLM % — Chrysotile — Amosite — Other *Asb. Or %Ver. Aspectos Aspectos Results PLM % — Chrysotile — Amosite — Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Other Cellulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binde Vermiculite* Other "If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / O Mineral Filler Organic Binde Vermiculite* Other |
| Gravimetric Canalysis sheet for results See SM-V Canalysis sheet for results 16 Id Number Gravimetric Canalysis sheet for results 16 Id Number Gravimetric Canalysis sheet for results SM-V Required Canalysis sheet for results | Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: □ E Stere Color of Layers Color of Layers Color of Layers Point Counts PLM NOB PLM | Textu Verm Asbe Detect Slide 1 ELAP Textu Asbe Detect Detect Textu | stos EPA Exam stos Cited Yes ! | Slide 3 Slide 3 | Slide 4 | Slide 5 | RIII DS | ptical Pi | C. ropertie- ropertie- propertie- Asb./Ver. PT | her Identity Total PT | Asbestos Results PLM % — Chrysotile — Amosite — Other *Asb. Or %Ver. Aspectos Aspectos Results PLM % — Chrysotile — Amosite — Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / Omineral Filler Organic Binde Vermiculite* Other |
| Gravimetric Gravimetric Arequired Content of the commended Content of the content of t | Color | Textu Verm Asbe Detect Slide 1 Textu Verm Asbe Slide 1 | stos EPA Exam stos Cited Yes ! | Slide 3 SCAN Morph // | Slide 4 | Slide 5 ON Rt1 Slide 5 | RIII DS | ptical Pi | C. ropertie- ropertie- propertie- Asb./Ver. PT | her Identity Total PT | Asbestos Results PLM % — Chrysotile — Amosite — Other *Asb. Or %Ver. Aspectos Aspectos Results PLM % — Chrysotile — Amosite — Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Other Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Fiberglass Low to Moderate Extinction Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binde Vermiculite* Other If vermiculite is >10% the level of asbestos in a samp might be underestimated. Non Fibrous PLM % Mineral Filler Organic Binde Vermiculite* Other If vermiculite is >10% the level of asbestos in a samp might be underestimated. |

Methods:
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1; ELAP requires method ELAP 198.1 for the analysis of samples containing £10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing ±10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantificat of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

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BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ/ FIRESPRINKLER REHAB 126-Analysis Date 3/7 /2021 Analyst

Project Number 214PNPEPJ1 TEMPERATURE °C 21-226

Non Fibrous Asbestos Other Fibrous 9 Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RI || DS Color Color, Pleo Biref Color Coy Texture Cellulose Mineral Filler Gravimetrio __ Organic Binder Required Vermiculite* See gravimetric [analysis sheet for results Extinction %Asb. Or %Ver. Fiberglass Isotopic Point Counts SM-V If vermiculite is >10% the PIM 700 Required [Birefringence evel of asbestos in a samol Horse Hair Scales might be underestimated, NOB PLM See SM-V Low to Moderate analysis sheet Q.C. SCANNING OPTION Method; ☐ ELAP ☐ EPA

| - 1 | 2 10 Field Number | Stereoscopic Exam | Partical Properties | Asbestos sults PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|-----|-------------------------------|--------------------------------|--|-------------------------|----------------------------------|---|
| | Gravimetric | Color Texture T | Morph Extinction RI 1 RI DS Color, Color, Pleo Biref Sign Other Identity 1 1517 155 Mile The Color Sign Other Identity 3 | 3 Chrysotile | | <u>47</u> Mineral Filler |
| | Required 🗌 | Homogeneity | <i>─┼ ─┼ ─┼ ─┼ ─┼</i> ─/ ─/ | Amosite | Fiberglass | Organic Binde |
| | Recommended 🗌 | | | Other | Other | Vermiculite* |
| | See gravimetric 🗆 | # of Layers Asbestos / | | | | Other |
| | analysis sheet for results | Color of Layer Detected Yes No | | 1 | Cellulose Ondulose Extinction | |
| Ì | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %As | sb. Or %Ver. | Fiberglass Isotopic | |
| | Required 🗌 | PLM 1/6 (| 11 4 4 12 3 | 25 | | * If vermiculite is >10% the level of asbestos in a samp |
| | See SM-V | NOB PLM | | | | might be underestimated. See Note #1. |
| | analysis sheet for results | Comments: | | | Birefringence | |
| - | ioi results | Method: PELAP FPA | SCANNING OPTION Q.C. | | | |

| 3 11 | Storo | scopic E | | | | | DIMEO | ntical E | roperti | oe. | | | | Asbestos | Other Fibrous | Non Fibrous |
|-------------------------------|------------------|-----------|---------|---------|------------|---------|---------|-----------|------------|-------|---------|-------------|---------------|----------------------------------|------------------------------|--|
| Field Number | Sterec | scopic s | ZAIII | | | | | • | • | 62 | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color | Textua | re | | Extinction | RI1 | RII D | S Color C | olor, Plec | Biref | Sign | Other I | Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗅 | Homogeneity | Vermi | iculite | | | | - | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | | | | | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers | Asbes | stos | _ | | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer _ | ted Yes I | 10 | | | | | | | | | | | Cellulose Ondulose Extinction | | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide | 8 As | b./Ver. | PT Tot | tal PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [] | PLM | | | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | | | | | | | | | | Low to Moderate | might be underestimated. See Note #1, |
| analysis sheet for results | Comments: | | | | see 10 | | | | | | | | Birefringence | | | |
| | Method: 🗆 E | LAP | EPA | SCAN | NING OPTI | ON | | C |).C. 🗆 | | | | | | | |

| 4 12 Field Number | Stereo | scopic E | Exam | | | | | | Prope | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | |
|---|---------------------------------|----------|---------|---------|------------|---------|-------|----------|-------------|-------|-------------|---------------------------|------------------------|--|---|
| | Color | Textu | re | Morph | Extinction | RI1 | RI [| DS Color | Color, Plec | Biref | Sign C | other Identity | Chrysotile | | Mineral Filler |
| Required Recommended | Homogeneity | Vermi | iculite | | | | | | | | | | Amosite | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Color of Layer _ | | | | | | | | | | | | | ☐ Celiulose Ondulose | Other |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide | 6 Slide | 7 Slid | e 8 | Asb,/Ver, P | T Total PT | %Asb. Or %Ver. | Extinction G Fiberglass Isotopic | |
| Required 🗌 | PLM | | | | | | ļ | | | | | ļ | | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is > 10% the level of asbestos in a sample |
| See SM-V ☐ analysis sheet | NOB PLM | | | | | | | 5 | | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Comments: | LAP [| EPA | ☐ SCAN | NING OPTI | ON | Se | | Q.C. [| | | | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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17

Gravimetric

Required

See gravimetric [analysis sheet for results

SM-V

Required [

See SM-V analysis sheet

18

Required [Recommended [

See gravimetric [analysis sheet for results

SM-V

See SM-V □ analysis sheet

19

Gravimetric

Required I

analysis sheet

for results

SM-V

Required [

See SM-V analysis sheet for results

20

See gravimetric I analysis sheet

for results

Required [

See SM-V

analysis sheet

for results

Method: ☐ ELAP ☐ EPA

Point Counts

NOB PLI

Comments:

Point Counts

Comments:

Color of Layer __

Point Counts Stide 1

Method; ØELAP □ EPA

Color of Layer ____ Detected Yes N

Point Counts Slide 1 Slide 2

Method: ØELAP □ EPA

SCANNING OPTION

Method: ☐ ELAP ☐ EPA

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Accreditations: NVLAP 101187-0 ELAP 10879

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| | 104 East 25th Street, 8th FL, New York, NY 10010 |
| | Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 |
| | BULK ASBESTOS ANALYSIS SHEET |
| :t | PANYNJ/ FIRESPRINKLER REHAB |
| Ī | 217 12021 MIC |

| | Client / Project | PANYN. | I/ FIRES | PRINK | LER REI | HAB | | | | Project | Number 214PI | NPEPJ1 | NIKON OP 11PHO) |
|---------------------------------|--------------------|---|--|--------------|---------|---|--------------|--|------------------------|-------------------|---|--|---|
| | Analysis Date | | | _ Anaiyst | | MC | • | | | | | 226 | EMPERATURE °C Z |
| 1 21 Field Number | Stereoscop | oic Exam | | | | | ptical Pr | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color GIZ T | exture | Morph | n Extinction | RI1 | RIII DS | S Color Colo | or, Pleo Bi | ref Sign Of | ther identity | Chrysotile | Cellulose | 3 Mineral Filler |
| Required | Homogeneity V | /ermiculite | $\mathcal{A} =$ | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Louisia | chactas | <i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i> | | , | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🗆 | # of Layers A | Asbestos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer E | Detected Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM⊹V | Point Counts Slide | e 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb, Or %Ver. | Fiberglass Isotopic | |
| SM-V | .72 | | ****** | *** | | | | | | - | 0 | ☐ Synthetic High | * If vermiculite is >10% the |
| Required [| PLM | 2 | | | | | | | 0 | 200 | | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | | | | | | | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | , | | | | Section Commission Com | 42000040000+0000042000 | ADHROUNDHOUD DOWN | 1234 MANUAL STATE OF THE STATE | Birefringence | |
| | Method: ELAP | ☐ EPA | J⊒ SCAN | NING OPTI | ON | | Q. | c. 🗆 | | | | 1 | |
| 2 | | · · · · · · · · · · · · · · · · · · · | <u> </u> | | | *************************************** | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscop | pic Exam | | | | PLM O | ptical Pr | operties | \$ | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color T | - Aylııca | Morph | Extinction | RII | RIII DS | Color Colo | r, Pleo Bi | ref Sign Of | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| | 1 | exture | | | | | | | | | Amosite | Fiberglass | wirlerar riller Organic Binders |
| Required Recommended | Homogeneity \ | /ermiculite | | | | | | | | | | 1 | |
| | # of Layers A | Asbestos | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | | | | | | | | | | | | | Other |
| for results | Color of Layer D | Detected Yes | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide | e 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, P1 | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Danish of D | PLM | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| Required 🗔 | NOB PLM | | - | | - | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | | | <u></u> | <u> </u> | | <u> </u> | | | <u> </u> | | | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: | | | | | | | | | | | | |
| | Method: 🗆 ELAP | ☐ EPA | ☐ SCAN | NING OPTI | ON | | Q. | C. □ | | | | <u> </u> | |
| 3 | Stereosco | pic Exam | | • | | PLM O | ptical Pr | operties | 3 | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | | | Morph | n Extinction | RLI | | S Color Colo | - | | ther Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color T | exture | | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity V | /ermiculite | | | | | | | | | Arnosite | Fiberglass | Organic Binder: |
| Recommended 🛘 | | *************************************** | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🗆 | # of Layers A | Asbestos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer [| Delected Yes | No | | | | | | | | | ☐ Cellulose Ondulose | |
| | Point Counts Slide | e 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb.Ner. P | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| SM-V | | e i Silde z | Silue 3 | alide 4 | Side 5 | Onde 6 | Slide / | Silde 6 | ASD./Vel. F | TotalFI | 76ASD. OF 76V91. | ☐ Synthetic High | |
| Required 🗌 | PLM | | | | | | | | | <u> </u> | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | 1 | 1 | | | | | | Birefringence | Sec Note #12 |
| 701 YESUIS | Method: 🗆 ELAP | □ ЕРА | ☐ SCAN | NING OPTI | ION | | Q. | C. 🗌 | | | | 1 | |
| 4 | | | | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereosco | pic Exam | | | | | ptical Pi | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color T | exture | Morpi | h Extinction | RII | RII D | S Calor Col | or, Pleo Bi | ref Sign O | ther Identity | Chrysotile | Celiulose | Mineral Filler |
| Required [| | | | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended 🗆 | Homogeneity\ | /ermiculite | | | | | | | | | Other | Other | Vermiculite* |
| | # of Layers A | Asbestos | | | | | | | | | - Oulei | - Cale | |
| See gravimetric analysis sheet | 0-1 | | . | | | | | | | | | | Other |
| for results | Color of Layer E | Detected Yes | L#0 | | | | | | | | | ☐ Ceilulose Ondulose Extinction | |
| SM-V | Point Counts Slide | e 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Peguined [7] | PLM | | | | | | | | | | | Synthetic High | * If vermiculite is >10% the |

ral Filler anic Binders niculite' level of asbestos in a sampl] Horse Hair: Scales, might be underestimated. NOB PLM See SM-V Low to Moderate ee Note #1. analysis sheet Comments: for results Q.C. Method: ☐ ELAP ☐ EPA ☐ SCANNING OPTION

Page ____ of ____

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculitie ET AP requires methods ELAP 198.1 followed by ELAP 198.5. This method has limitations for identification of vermiculitie. This method does not remove vermiculitie and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculitie. This method does not remove vermiculitie and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculitie. Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculitie (SM-V) and it utilizes a 400 point count method.

LilaB_FORMS_DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBE

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2

| | | 12) 353-8280, Fax: (21 | | | | | NVLAP 101187-0 ELAP 10879 |
|---------------------------------------|---------------------|---|----------------------|---|----------------------------|--|---|
| | BUL | K ASBESTOS ANAL | YSIS SHEET | | | | Microscopes: OLYMPUS BH-2 / |
| Client / Project PANYNJ/ FI | RESPRINKLER | REHAB | | Project | Number 214PN | IPEPJ1 | NIKON OPIPHOT |
| Analysis Date 3/ 7/202 | 21 Analyst | wc | | Batch N | Number 21- | 226 _т | EMPERATURE °C |
| Stereoscopic Exam | <u> </u> | PLM Optical Pro | • | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| or Ton Texture F | Morph Extinction RI | | r, Pleo Biref Sign O | ther Identity | Chrysotile | √ V Cellulose | Mineral Filler |
| nogeneity / Vermiculite / | +-+- | +-+-++ | ' | | Amosite | Fiberglass | Organic Binders |
| | エエフ | | | | Other | Other | Vermiculite* |
| Layers Asbestos / | | | | | | _ | Other |
| or of Layer Detected Yes No _ | | | | | / | Cellulose Ondulose Extinction | |
| oint Counts Slide 1 Slide 2 Slid | ie 3 Slide 4 Slid | de 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fibergtass Isotopic | |
| PLM / 7 / 6 | 7 /7 | | 4 | 3.3 | 12 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| NOB PLM | 3 / 6 | *************************************** | | | | ☐ Horse Hair: Scales, Low to Moderate | rnight be underestimated. See Note #1. |
| omments: /JS | ible field | Contarraction | 77 7 | ــــــــــــــــــــــــــــــــــــــ | | Birefringence | See Note #1. |
| ····· | SCANNING OPTION | | ,, 5. □ | | | | |
| Stereoscopic Exam | | DI M Ontina! De | onortica | | Asbestos | Other Fibrous | Non Fibrous |
| · · · · · · · · · · · · · · · · · · · | Morph Extinction RI | PLM Optical Pro | • | ther Identity | Results PLM % | PLM % | PLM % |
| or Texture | pn Sautonon (5) | | But Gigil U | Keriaty | Chrysotile | Cellulose | Mineral Filler |
| nogeneity Vermiculite | | | | | Amosite | Fiberglass | Organic Binders |
| Layers Asbestos | | | | | Other | Other | Vermiculite* |
| | | | | | | | Other |
| or of Layer Detected Yes No _ | | | | <u> </u> | | Cellulose Ondulose Extinction | |
| oint Counts Slide 1 Slide 2 Slide | de 3 Slide 4 Slid | de 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| PLM | | | | | | Synthetic High Birefringence | If vermiculite is >10% the level of asbestos in a sample |
| NOB PLM | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| omments: | - | see 1 | 7 | | | Birefringence | OCC NOCE IT. |
| ethod: 🗆 ELAP 🔲 EPA 🗀 S | SCANNING OPTION | | c.'O | | | | |
| Stereoscopic Exam | | PLM Optical Pro | onerties | | Asbestos | Other Fibrous | Non Fibrous |
| | Morph Extinction RI | <u> </u> | • | ther identity | Results PLM % | PLM % | PLM % |
| or C Texture | | | | | Chrysotile | Cellulose | 39 Mineral Filler |
| mageneity | | | | | Amosite | <u> </u> | Organic Binders |
| Layers Asbestos | | | | | Other | Other | Vermiculite* |
| | | | | | | / | Other |
| or of Layer Detected Yes No _ | | | | = $=$ $=$ | | Extinction | |
| oint Counts Slide 1 Slide 2 Slide | de 3 Slide 4 Slid | de 5 Slide 6 Slide 7 | Slide 8 Asb.Ner. P | <u> </u> | %Asb. Or %Ver. | Fiberglass Isotopic | |
| PLM S | C-1000000 | | | 20 | 0 | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| NOB PLM | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| omments: | | | | | | Birefringence | |
| ethod: DELAP DEPA DS | SCANNING OPTION | Q.0 | C. 🗆 | *************************************** | | | <u></u> |
| Stereoscopic Exam | ······ | PLM Optical Pr | operties | | Asbestos Results PLM %/ | Other Fibrous | Non Fibrous PLM % |
| or C12 Texture | Morph Extinction R | 1 RI DS Color Colo | r, Plea Biref Sign O | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| | | | | | Amosite | 7 Fiberglass | Organic Binders |
| nogeneity Vermiculite | | | | | Other | Other | Vermiculite* |
| Layers Asbestos | | | | | | | Other |
| or of Layer Detected Yes No _ | | | | | | ☐ Cellulose Ondutose Extinction | |
| oint Counts Slide 1 Slide 2 Slide | de 3 Slide 4 Sli | de 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. P | Total PT | %Asb. Or %Ver. | Fiberglass isotopic | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 500/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

NOB PLN

Q.C. 🗆

20

Horse Hair: Scale:

Low to Moderate Birefringence

If vermiculite is >10% the

evel of asbestos in a sample

might be underestimated.

See Note #1.

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

Batch #

RUSH

PANYNJ

Client/Project:

03/02/21

| 1.20,00 | 03/02/21 | | | | | | | | | | |
|---------|--------------------------|---------|----------|----------------------------|----------|------|------|--|--|-----------------------------|--|
| | Date Completed: 03/02/21 | | | | | | | | | | |
| 10077 | <u> </u> | ရှ | | TEN | > | > | > | | | | |
| | St: | Methods | NOB | PLN PREF | | > | > | | | | |
| | NOB TEM Analyst: | | | | | | | | | | |
| > | HS | | | Notes | | | | The state of the s | | Market Market State Company | |
| | NOB TEM PREP: | | | | | | | | | | |
| | MJG | 13 | % Total | Asbestos or Vermiculite | | | | | | | |
| | NOB PLM Analyst: | 6 | Asbestos | Types or Vermiculite | QN | Q.N. | ND | | | | |
| | MG/EV | 12 | | % Carbonate | 16.5 | 22.6 | 14.7 | | | | |
| | MG | L see | Non Asb | Residue % NFr | 52.5 | 48.1 | 54.8 | | | | |
| • | NOB PLM PREP: | 5 | | % Organic | 31.0 | 29.3 | 30.5 | | | | |
| | NOB PL | | | Field # | . | 2 | 3 | | | | |

Client Copy

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not defected.

ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 4/8/2021

104 EAST 25TH STREET

Date Received: 4/8/2021

NEW YORK, NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Date Analyzed: 4/9/2021

ATC Batch # 21-618

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING #263 Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>No</u> | on-Asbestos | NOB | Asbestos |
|-------------|--|--|--------|--------------------|---------------------|--------|----------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 22 | 1ST FLOOR SPRINKLER ROOM EAST | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-618 -1 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | : Ivan Reyes | Color: Bro | wn | | | | |
| 23 | 1ST FLOOR SPRINKLER ROOM EAST | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-618 -2 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Bro | wn | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 24 | 1ST FLOOR SPRINKLER ROOM EAST | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-618 -3 | TOOM LITE! | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Bro | wn | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 25 | 1ST FLOOR SPRINKLER ROOM EAST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | PLM | | 33% Mineral Filler | | 67% Chrysotile |
| 21-618 -4 | | | | | 0.0% Vermiculite | | |
| | | Color: Gra | ny | | | | |
| Analyzed By | : Ivan Reyes | | | | | | Total Asbestos: 67 % |
| 26 | 1ST FLOOR SPRINKLER ROOM EAST @ CEILING | PACKING INSULATION PENETRATION 8" PIPES | | | | | |
| 21-618 -5 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive | e stop, see #25 | | |
| 27 | 1ST FLOOR SPRINKLER ROOM EAST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | | | | | |
| 21-618 -6 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive | e stop, see #25 | | |
| 28 | 1ST FLOOR SPRINKLER ROOM WEST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | PLM | | 33% Mineral Filler | | 67% Chrysotile |
| 21-618 -7 | ····· ··· · · · · · · · · · · · · · | | | | 0.0% Vermiculite | | |
| | | Color: Gra | ny | | | | |
| Analyzed By | : Ivan Reyes | | | | | | Total Asbestos: 67 % |

Page 1 of 3 Batch # 21-618 Report Prepared By: Grace Chan



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Flo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>Non</u> | -Asbestos | NOB | Asbestos |
|--------------|--|--|---------|------------------------------------|-------------------|---|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 29 | 1ST FLOOR SPRINKLER ROOM WEST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | | | | | |
| 21-618 -8 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive s | top, see #28 | | |
| 30 | 1ST FLOOR SPRINKLER ROOM WEST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | | | | | |
| 21-618 -9 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive s | top, see #28 | | |
| 31 | 1ST FLOOR WAREHOUSE SMALL BATHROOM | TECTUM ŒILING BOARD | NOB-TEM | | 0.0% Vermiculite | 31.4% Organic 11.1% Residue 57.5% Carbonate | NONE DETECTED |
| 21-618 -10 | | Color: White | o/Tan | | 0.0% vermiculte | 57.5% Carbonale | NONE DETECTED |
| Analyzed By: | Mei Wang | Second Analyst: Feyza G | | Comments: NOB PLN | / Inconclusive | | |
| 32 | 1ST FLOOR WAREHOUSE SMALL BATHROOM | TECTUM ŒILING BOARD | NOB-TEM | | | 32.4% Organic 16.1% Residue | |
| 21-618 -11 | | | | | 0.0% Vermiculite | 51.5% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: White Second Analyst: Feyza G | | Comments: NOB PLN | / Inconclusive | | |
| 33 | 1ST FLOOR WAREHOUSE SMALL BATHROOM | TECTUM ŒILING BOARD | NOB-TEM | | | 32.9% Organic 14.4% Residue | |
| 21-618 -12 | | 0.1. 144.4 | - | | 0.0% Vermiculite | 52.7% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: White Second Analyst: Feyza G | | Comments: NOB PLN | 1 Inconclusive | | |
| 34 | 1ST FLOOR WAREHOUSE DIVIDING WALL | WALL BLANKET INSULATION | PLM | Trace% Cellulose | 5% Mineral Filler | | |
| 21-618 -13 | | | | 95% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Brov | vn | | | | |
| 35 | 1ST FLOOR WAREHOUSE | WALL BLANKET INSULATION | PLM | Trace% Cellulose | 5% Mineral Filler | | |
| 21-618 -14 | DIVIDING WALL | | | 95% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brov | vn | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 36 | 1ST FLOOR WAREHOUSE DIVIDING WALL | WALL BLANKET INSULATION | PLM | Trace% Cellulose 95% FiberGlass | 5% Mineral Filler | | |
| 21-618 -15 | | | | 00/0 1 IDETOI035 | 0.0% Vermiculite | | NONE DETECTED |
| | Ivan Reyes | Color: Brov | vn | | | | |

Report Prepared By: Grace Chan Page 2 of 3 Batch # 21-618



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Non-Asbestos <u>NOB</u> <u>Asbestos</u> Sample # Location Type of Material Method % Fibrous % Type % Type % Non-Fibrous NOTES: 1) The Limit of Detection is the same as the Reporting Limit for these results. 2) The Reporting Limit (RL) is the Limit of Quantitation. For point counts the limit of quantitation of 0.25%; based on one asbestos point counter over 400 non-empty points. 3) Asbestos Containing Material (ACM) Definition: > 1% asbestos by weight is considered an ACM 4) Disclaimer: The laboratory is not responsible for sample collection. Please refer to enclosed letter. This report may not be reproduced, except in full, without written approval by ATC Group Services. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government This report relates only to the samples reported above as described in the chain of custody. Quality control data is available upon request. 5) Accredited by NVLAP #101187-0 and by NY State ELAP #10879 6) Confidentality Notice: The document(s) contained herein are confidental and privileged information, intended for the exclusive use of the individual or entity named above. 7) Liability Notice: ATC Group Services and its personnel shall not be liable for any misinformation provided to us by the client regarding these samples. This report relates only to samples submitted and analy 8) Asbestos results are reliable to 2 significant figures. 9) The condition of all samples was acceptable upon receipt 10) The laboratory certifies that the test results meetall requirements of NELAC. __. Amendments: ____. Amendment Dates: ___ 11) Supplement to test report batch # ___ 12) PLM Letter is attached on this report. 13) TRACE: The result is reported as Trace when No points are counted and asbestos is identified. For ELAP Trace is < 1%. 14) ATC Group Services certifies that this report is an accurate and authentic report of the results obtained from the laboratory analysis 15) The uncertainty for these test results is available upon request. 16) ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite. For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite." Mei Wang Ivan Reyes Analyst: Approved by Quality Manager: Mei Wang Analyst: Feyza Gungor Analyst:

Report Prepared By: Grace Chan Page 3 of 3 Batch # 21-618



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired.

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely.

Milena Bonezzi

ATC Group Services LLC Director of Laboratory Services

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS BULK DOCUMENTS 2021\BULK_LETTER_DOC #D84A.DOC
ATC EFFECTIVE DATE 01/18/2021 REVISION #32
BY MEI WANG

Page 1 of 1

BY M DOCUMEI



BATCH NO. 21- 618 Page of

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| P | RO. | JE(| CT | IN | FO | RIV | IA | TION | 1 |
|---|-----|-----|----|----|----|-----|----|------|---|
|---|-----|-----|----|----|----|-----|----|------|---|

| 1. Client | NYNJ | Project Name: FIRESPRINKLER I | REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
|------------|-------------------------------|----------------------------------|---|--|---|
| | | 2a. Project Address: (PN PE | CONTRACTOR OF THE PROPERTY OF | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: 3 | BUILDING NU Sampling Area | 465 | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1st Positive |

BULK SAMPLE LOCATION

| | 11. Bulk Sample ID | 12. Material | 13. Thermal | 14. | Sample Location | 5. Material Total | 16. Asbestos |
|----------|-----------------------|--------------------|----------------|-------|---------------------|----------------------|-----------------|
| Area No. | No. | | System | Floor | CI- Cdit | Qty. LF, SF, PCS) | Content |
| 8 | 22 | CHU WAIL | | 1 | SPRINKIER PUNT FAST | | |
| 8 | 23 | MORTAR | | 1 | · | | |
| 8 | 24 | (1) | | | | | |
| q | 25 | PACKING INSULATION | | | e criting | 35.F | |
| 9 | 26 | @ PENETRATIONS | | | | | |
| 9 | 77 | 8" PIDES | | | | | |
| 10 | 28 | packine jasucaja | | | SPAINKLER FOR WEST | 35.F | |
| 10 | 29 | @ PENE MODIONS | | | D CEILING | | |
| 10 | 30 | 8" PINES | | | | | |
| 11 | 31 | TECTUM CHILING | | | WANGINSK' SHAL | | |
| 1 | 32 | BOARD | | | BARROWS | | |
| 1) | 33 | / | | 1 | , , , | | |
| 12 | 34 | WAU BLAKET | | | WATTE HOUSE PHILLIP | | |
| 12 | 35 | just injon | | | DIVIDING WALL | | |
| 12 | 36 | 10 | | 1 | 11 | | |
| 0 | | | | | | | |
| | | | | | | | |
| | | | | | | | 60 |

CHAIN OF CUSTODY

| 17. Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
|---------------------|----------|----------|-----------------|-----------|----------|-------------------------|
| this Can | 4/8/21 | 211900 | Elylor En | 26/2 | 15-1 | Field |
| 1. I vings | 110/-1 | 21101 | Eveler Cy | 11/8/2011 | 15:25 | Walk In |
| / | | | · | | | US Mail |
| II. | | | | | | Fed-Ex |
| III. | | | QCBY | | | Other |

I APODATORY INCORMATION

| 24. Name and Signature: | 25, Date | 26 Time | 27. Comments (Lab) | |
|-------------------------------------|----------|---------|--------------------|--|
| 24a. Analyzed By: Van Keyer Shenker | 4/9/2021 | 8:48 am | , | |
| 24b. Analyzed By: Interchible V | 415(12) | 1235 | | |
| 24c. QC By: | | , | | |
| Tem: Jegra Gunger Joy 8 | 4/9/21 | 14:49 | | |

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | | | | OS ANALYSIS S | HEET | | | Microscopes: OLYMPUS BH-2/ NIKON OPTIPHOT |
|--|---|---|-----------------|---|------------------------|--|--|--|
| | Client / Project PANYNJ/ | | ER REHAB | | Proje | | NPEPJ1 | 2 |
| | Analysis Date 4/4/// | 2021 Analyst | | $ \mathcal{M}$ $-$ | Batc | h Number 21- | ·618 | EMPERATURE °C |
| 1 22 Field Number | Stereoscopic Exam | | | Optical Properties | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Descriptions G | Morph Extinction | RII RII I | OS Color Color, Pleo B | iref Sign Other Identi | ty Chrysovile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | | | | | Amesite | Fiberglass | |
| Recommended See gravimetric | # of Layers Asbestos | | | | | Other | Other | Vermiculite* Other |
| analysis sheet | Color of Layer Detected Yes I | No | | | | - / | □ Cellulose Ondulose | Otrier |
| for results | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 Slide 8 | Asb./Ver. PT Total P | / WAsb, Or %Ver, | Extinction ☐ Fiberglass Isotopic | |
| SM-V | | Side 5 Side 4 | Sade J Silde U | Sade / Sade b | 22 7 | | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | 101 | | | | 1 O LOG | 0 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | Comments: | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: Ø ELAP □ EPA | SCANNING OPTI | ON | Q.C. 🗆 | | , and the second | - | |
| 2 23 | Stereoscopic Exam | | PI M C | Optical Properties | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | l l | Morph Extinction | | OS Color Color, Pleo B | | | PLM % | PLM % |
| Gravimetric | Color DIO Court Exture | | | | | Chrysotile | 1 | Mineral Filler |
| Required Recommended | Homogeneity Yermiculite | | | | | Other | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | 01161 | Other |
| analysis sheet for results | Color of Layer Detected Yes I | No | | | | | ☐ Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 Slide 8 | Asb./Ver. PT Total P | T %Asb. Or %Ver. | Extinction ☐ Fiberglass isotopic | |
| Required [| PLM E | | | *************************************** | 0 2% |) a | Synthetic High Biretringence | * If vermiculite is >10% the |
| See SM-V D | NOD BLIA | | | | | 10 | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| 1 | <u> </u> | <u> </u> | L i | 1 | | 1 | | See Note #1. |
| analysis sheet | Comments: | <i>i</i> | | | | | Birefringence | |
| analysis sheet for results | Comments: Method: C ELAP | SCANNING OPTI | ON | Q.C. 🗆 | | | Birefringence | |
| for results | | SCANNING OPTI | | Q.C. □ | 3 | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| for results | Method: ← ELAP □ EPA | Morph Extinction | PLM (| | | Results PLM % | Other Fibrous PLM % | PLM % |
| for results 3 24 Field Number | Method: GELAP GEPA Stereoscopic Exam Color Di Vi Waxture | | PLM (| Optical Properties | | Results PLM % | Other Fibrous PLM % | PLM % Mineral Filler |
| for results 3 24 Field Number Gravimetric | Stereoscopic Exam Color W Wexture Homogeneity Vermiculite | | PLM (| Optical Properties | | Results PLM % The Chrysptile | Other Fibrous PLM % Cellulose | PLM % Mineral Filler |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ | Method: GELAP GEPA Stereoscopic Exam Color Di Vi Waxture | | PLM (| Optical Properties | | Results PLM % Chrysptile Apposite | Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ | Stereoscopic Exam Color W Wexture Homogeneity Vermiculite | Morph Extinction | PLM (| Optical Properties | | Results PLM % Chrysptile Apposite | Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | Stereoscopic Exam Color 2/1/2 W Nexture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction | PLM (| Optical Properties DS Color Color, Pleo B | iref Sign Other Ident | Results PLM % Chrysptile Agrosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic | PLM % Mineral Filler Organic Binders Vermiculite* |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color Whexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Delected Yes Point Counts Slide 1 Slide 2 | Morph Extinction | PLM (| Optical Properties DS Color Color, Pleo B | iref Sign Other Ident | Results PLM % Chrysptile Amosite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ | Stereoscopic Exam Color 2 W Nexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM | Morph Extinction | PLM (| Optical Properties DS Color Color, Pleo B | Asb./Ver. PT Total P | Results PLM % Chrysptile Amosite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cetlulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ | Stereoscopic Exam Color 2 Wexture Homogeneity Vermiculite # of Layers Defected Yes Point Counts Slids 1 Slide 2 PLM NOB PLM Comments: | Morph Extinction No Slide 3 Slide 4 | PLM C | Optical Properties DS Color Color, Pleo B | Asb./Ver. PT Total P | Results PLM % Chrysptile Amosite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglas Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Stereoscopic Exam Color 2 W Nexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Defected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM | Morph Extinction | PLM C | Optical Properties DS Color Color, Pleo B | Asb./Ver. PT Total P | Results PLM % Chrysptile Apposite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cetlulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet analysis sheet | Stereoscopic Exam Color 2 Wexture Homogeneity Vermiculite # of Layers Defected Yes Point Counts Slids 1 Slide 2 PLM NOB PLM Comments: | Morph Extinction No Slide 3 Slide 4 | PLM C | Optical Properties DS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties | Asb./Ver, PT Total P | Results PLM % Chrysptile Apposite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cetlulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Stereoscopic Exam Color Line Vermiculite Homogeneity Vermiculite # of Layers Asbestos Color of Layer Defected Yes Point Counts Side 1 Stide 2 PLM NOB PLM Comments: Method: ELAP EPA | Morph Extinction No Slide 3 Slide 4 | PLM C | Optical Properties OS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties | Asb. Ver. PT Total P | Results PLM % Chrysptile Agrosite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. |
| for results 3 24 Field Number Gravimetric Required □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Stereoscopic Exam Color 2 | No Slide 3 Slide 4 | PLM C | Optical Properties Slide 7 Slide 8 Q.C. Optical Properties Optical Properties | Asb./Ver. PT Total P | Results PLM % Chrysptile Ambsite Other T %Asb. Or %Ver. Asbestos Results PLM % Chrysptile Amosite | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 333 Mineral Filler Organic Binders |
| for results 3 24 Field Number Gravimetric Required □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 25 Field Number Gravimetric Required □ Recommended □ | Stereoscopic Exam Color D. W. Wiexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: DELAP DEPA Stereoscopic Exam Color Texture | No Slide 3 Slide 4 | PLM C | Optical Properties Slide 7 Slide 8 Q.C. Optical Properties Optical Properties | Asb./Ver. PT Total P | Results PLM % Chrysptile Agrosite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglas Isotopic Synthetic High Birefringence Horse Hain: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Binders Vermiculite* Other *If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 23 Mineral Filler Organic Binders Vermiculite* |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V analysis sheet for results 4 25 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | Stereoscopic Exam Color 2 1 Nexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Colo Texture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction No Slide 3 Slide 4 SCANNING OPTI | PLM C | Optical Properties Slide 7 Slide 8 Q.C. Optical Properties Optical Properties | Asb./Ver. PT Total P | Results PLM % Chrysptile Ambsite Other T %Asb. Or %Ver. Asbestos Results PLM % Chrysptile Amosite | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Onduiose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 333 Mineral Filler Organic Binders |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 25 Field Number Gravimetric Required □ Recommended □ See gravimetric analysis sheet for results | Stereoscopic Exam Color Division Nexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: DELAP DEPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes | Morph Extinction No Slide 3 Slide 4 SCANNING OPTI Morph Extinction | PLM C | Optical Properties DS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties CS Color Color, Pleo B | Asb./Ver, PT Total P | Results PLM % Chrysptile Amosite Other Asbestos Results PLM % Armosite Armosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglas Isotopic Synthetic High Birefringence Horse Hain: Scales, Low to Moderate Birefringence PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other *If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 23 Mineral Filler Organic Binders Vermiculite* |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 25 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color Live Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slids 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slids 1 Slids 2 | Morph Extinction No Slide 3 Slide 4 Morph Extinction Morph Extinction A Slide 3 Slide 4 | PLM C | Optical Properties DS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties CS Color Color, Pleo B | Asb./Ver. PT Total P | Results PLM % Chrysptile Amosite Other Asbestos Results PLM % Armosite Armosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Fiberglass Other Cellulose Fiberglass Other Cellulose Fiberglass Isotopic | PLM % Mineral Filler Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |
| for results 3 24 Field Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 25 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required Recommended See gravimetric analysis sheet for results SM-V Required Required R | Stereoscopic Exam Color 2 | Morph Extinction No Slide 3 Slide 4 SCANNING OPTI Morph Extinction | PLM C | Optical Properties DS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties CS Color Color, Pleo B | Asb./Ver, PT Total P | Results PLM % Chrysptile Amosite Other Asbestos Results PLM % Armosite Armosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 3.3 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 25 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color 2 | Morph Extinction No Slide 3 Slide 4 Morph Extinction Morph Extinction A Slide 3 Slide 4 | PLM C | Optical Properties DS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties CS Color Color, Pleo B | Asb./Ver, PT Total P | Results PLM % Chrysptile Amosite Other Asbestos Results PLM % Armosite Armosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 3.3 Mineral Filler Organic Binders Vermiculite* Other |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.8. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2

ATLAS_ ATC

ATC - New York

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| - | 2.64 | - | | - | - | | - |

| BULK ASBESTOS ANALYSIS SHEET |
|------------------------------|
|------------------------------|

| | Client / Project PANYNJ/ | FIRESP | KINKLE | IN INLI | IAB | | | | Project | Number 214PN | ILCLIT | 5 |
|---|--|-------------------------------|---------------------|---------------------------------|---------------|-------------------------------|-------------|--------------|--------------|--|---|---|
| | Analysis Date 4/1 /20 | 021 | Analyst _ | | 1 | 1 | | | Batch N | lumber 21-6 | 518 _T | EMPERATURE C |
| 1 26 Field Number | Stereoscopic Exam | | | | PLM O | otical Pr | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph 6 | Extinction | RII | RI II DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Texture | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | Homogeneity Vermiculite | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | Outer | Outer | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | | | | | | -= | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM | | | | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet | Comments: See # 2 | | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | | □ SCANNII | NG OPTIO | M | | lo. | C. 🗆 | | | | | |
| | Method: LI ELAP LI EPA L | _ SCANNII | NG OF TIO | N . | | | J. L. | | | | | |
| 2 27 | Stereoscopic Exam | | | | PLM O | ptical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Field Number | | Morph I | Extinction | RII | RIII DS | Color Colo | r, Pleo Bir | ef Sign Oth | ner Identity | | | |
| Gravimetric | Color Texture | | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required [| Homogeneity Vermiculite | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Layers Asbestos | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | | | | | | | | | | | | Other |
| for results | Color of Layer Detected Yes No | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| | PLM | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| Required | NOR DI M | | - | | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | | | | | | | | | | | Low to Moderate Birefringence | See Note #1, |
| | Comments: See #2 | | | | | | | | | | | |
| for results | | _ | | | | lo | 0 [| | | | | |
| | | □ SCANNI | NG OPTIO | N | | Q. | C. □ | | | | | |
| | | | | N | Marie Britain | ptical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| for results | Method: □ ELAP □ EPA □ | | NG OPTIO | Sta 1 | Marie Britain | ptical Pr | | ref Sign Oth | ne Odentity | | | |
| for results 3 28 Field Number | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture □ | | | BH_ | Marie Britain | ptical Pr | operties | ref Sign Ott | | Results PLM % | PLM % | PLM % |
| for results 3 28 Field Number Gravimetric | Stereoscopic Exam Color Performance Texture Homogeneity Vermiculite March M | | | BH_ | Marie Britain | ptical Pr | operties | ref Sign Ott | | Results PLM % | PLM % Cellulose | PLM % 33 Mineral Filler |
| for results 3 28 Field Number Gravimetric Required □ Recommended □ | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Lavers Asbestos | | | BH_ | Marie Britain | ptical Pr | operties | ref Sign Otl | | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM % 33 Mineral Filler Organic Binders |
| 3 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos | Morph | | BH_ | Marie Britain | ptical Pr | operties | ref Sign Otl | | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other | PLM % 33 Mineral Filler Organic Binders Vermiculite* |
| 3 28 Field Number Gravimetric Required Recommended See gravimetric | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Lavers Asbestos | Morph | | BH_ | | ptical Pr | operties | | Chr. | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction | PLM % 33 Mineral Filler Organic Binders Vermiculite* |
| 3 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No | Morgh | | BH_ | Marie Britain | ptical Pr | operties | ref Sign Ott | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic | PLM % 33 Mineral Filler Organic Binders Vermiculite* |
| for results 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color Texture Textu | Morgh | Extinction | ड्रीय । इन्ध्र । इन्ध्र । | | ptical Pr | operties | | Chr. | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No. Point Counts Slide 1 Slide 2 PLM 0 1 | Morgh | Extinction | ड्रीय । इन्ध्र । इन्ध्र । | | ptical Pr | operties | | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| 3 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture Homogeneity Vermiculite | Morgh | Extinction | ड्रीय । इन्ध्र । इन्ध्र । | | ptical Pr | operties | | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| 3 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Morgh | Extinction | Slide 5 | | ptical Pr | operties | | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Morph Slide 3 | Extinction | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./Ver. PT | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| 3 28 Field Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam | Morph Slide 3 | Extinction | Slide 5 | Slide 6 | ptical Pr Scolor Colo W | Slide 8 | Asb./ver. PT | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CT/Chv Asbestos Results PLM % | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V Required □ analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Texture | Morph Slide 3 | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CT/JChv Asbestos Results PLM % Chrysotile | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| for results 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 29 Field Number Gravimetric Required □ | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide, 1 Slide 2 PLM Vermiculite 2 PLM Vermiculite 3 NOB PLM Vermiculite 4 Stereoscopic Exam Color Texture 4 Homogeneity Vermiculite 4 Homogeneity Vermiculite 4 | Morph Slide 3 | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filter Organic Binders |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V Required □ analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite | Morph Slide 3 | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CT/JChv Asbestos Results PLM % Chrysotile | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 28 | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM 1 2 NOB PLM 2 2 PLM 2 2 PLM 2 2 PLM 2 2 PLM 3 3 Rethod: ELAP EPA 1 Stereoscopic Exam Color Texture Homogeneity Vermiculite 4 # of Layers Asbestos | Morph Slide 3 | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filter Organic Binders |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 29 Field Number Gravimetric Required □ Recommended □ | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM 1 2 NOB PLM 2 2 PLM 2 2 PLM 2 2 PLM 2 2 PLM 3 3 Rethod: ELAP EPA 1 Stereoscopic Exam Color Texture Homogeneity Vermiculite 4 # of Layers Asbestos | Morph Slide 3 SCANNI Morph | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 29 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layer Detected Yes No Point Counts Slide,1 Slide 2 PLM Vermiculite NOB PLM PLM PLAN Comments: Method: ELAP PLAN Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No | Morph Slide 3 SCANNI Morph | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 29 Field Number Gravimetric Required □ Recommended □ See gravimetric analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color Detected Yes No Point Counts Slide 1 Slide 2 | Morph Slide 3 SCANNI Morph | Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./Ver, PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Fiberglass Southeringence Synthetic High | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 29 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM Point Counts Slide 1 Slide 2 PLM NOB P | Morph Slide 3 SCANNI Morph | Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./Ver, PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Comments:

Method: ☐ ELAP ☐ EPA

See #28

☐ SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L*LLAB_FORMS.DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS ANALYSIS SHEET_FORM #82.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82.

Q.C.

ATC - New York

BULK ASBESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 Accreditations: NVLAP 101187-0

Microscopes: OLYMPUS BH-2 /

ATLAS

ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Non Fibrous

PLM %

If vermiculite is >10% the

See Note #1.

evel of asbestos in a sample

Non Fibrous

PLM %

Other

If vermiculite is >10% the evel of asbestos in a sample

Non Fibrous

PLM %

Mineral Filler Organic Binden Vermiculite* Other

If vermiculite is >10% the vel of asbestos in a sample

Non Fibrous

PLM %

Other

If vermiculite is >10% the evel of asbestos in a sample

ee Note #1.

Mineral Filler

Organic Binder

See Note #1.

might be underestimated.

See Note #1.

Mineral Filler _Organic Binder O Vermiculite*

. Mineral Filler

_ Organic Binde _____ Vermiculite*

Other Fibrous

PLM %

Cellulose

_____Fiberglas

Extinction

Synthetic High

Birefringence

] Horse Hair: Scales, Low to Moderate

Other Fibrous

PLM %

Celluiose Ondulos

Horse Hair: Scales,

Other Fibrous

PLM %

Cellulose

Horse Hair: Scales Low to Moderate

Other Fibrous

🗆 Cellulose Ondulos

Synthetic High

Low to Moderate Birefringence

Cellulose

Low to Moderate

BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ/ | FIRESPRINKLER REHAB | Project Number 214PN | IPEPJ1 | NIKON OF TIPHOT | := . | | Client / Project PANYNJ/ | FIRESPRINKLER F | REHAB | Projec | t Number 214PN | NPEPJ1 |
|--------------------------------|----------------------------------|--|---|--|--|------|---------------------------------|-------------------------------|------------------------|---------------------------------|---------------------------|--|----------------------------|
| | Analysis Date 4/9 /20 | D21 Analyst | Batch Number 21- | 618 | EMPERATURE 2 | | | Analysis Date 4 / 2 | 021 Analyst | DI | Batch | Number 21- | -618 |
| 1 30 Field Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | | 1 34 Field Number | Stereoscopic Exam | | PLM Optical Propert | ies | Asbestos Results PLM % | Other I |
| Gravimetric | Color Texture | Morph Extinction RI⊥ RI∥ DS Color Color, Pleo Biref Sign Othe | | Cellulose | Mineral Filler | | Gravimetric | Cold Mo Wexture | Morph Extinction RII | RI DS Cofor Color, Pleo | Biref Sign Other Identify | | * |
| Required | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders | | Required [| | | | | Amosite | 95 |
| Recommended | | | Other | Other | Vermiculite* | | Recommended [] | 1 | | | | Other | |
| See gravimetric | # of Layers Asbestos | | | | Other | | See gravimetric | # of Layers Asbestos | / | | | - / | |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose Extinction | | | analysis sheet for results | Color of LayerDetected Yes N | 0 | | | | C Cellulose Extinction |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb,/Ver, PT | Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | 1 1 | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | e 5 Slide 6 Slide 7 Slide | 8 Asb./Ver, PT Total PT | %Asb. Or %Ver. | G Fiberglas |
| Required | PLM | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample | | Required [| PLM | | | 6 % | 0 | ☐ Synthetic Birefring |
| See SM-V □ | NOB PLM | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. | ! | See SM-V □ | NOB PLM | | | | | ☐ Horse Ha |
| analysis sheet for results | Comments: See #79 | 3 | | Birefringence | See Note #1. | | analysis sheet for results | Comments: | | | | | Birefringe |
| | | SCANNING OPTION Q.C. | | | | | TOT TOURS | Method: ☑ ELAP □ EPA | SCANNING OPTION | Q.C. □ | | POHITOMAN CONTINUES OF THE STATE OF THE STAT | 1 |
| 2 31 | Stereoscopic Exam | PLM Optical Properties | Asbestos | Other Fibrous | Non Fibrous | 1 | 2 35 | | | PLM Optical Propert | ies | Asbestos | Other |
| Field Number | 1 () | Morph Extinction RI⊥ RI∥ DS Color Color, Pleo Biref Sign Other | 100 C C C C C C C C C C C C C C C C C C | PLM % | PLM % | | Field Number | 1 1 2 | Morph Extinction RI1 | RI DS Color Color, Pleo | | Results PLM % | PLI |
| Gravimetric | clickhite Francis R | | Chrysotile | Cellulose | Mineral Filler | | Gravimetric | Color Programme Technology | | | | Chrysotile | d'a |
| Required 🖾 | Homogeneity Vermiculite | | Amosite | Fiberglass Other | Organic Binders Vermiculite* | | Required Recommended | Homogeneity Vermiculite | | | | Other | 1-6-2 |
| See gravimetric | # of Layers Asbestos | | | Other | Other | | See gravimetric | # of Layers Asbestos | | | | Odlei | |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | | | analysis sheet for results | Color of Layer Detected Yes N | lo | | | | Celluiose |
| SM-V | Point Counts Slide 1 Slide 2 | | Total PT %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | | | | Point Counts Stide 1 Slide 2 | Slide 3 Slide 4 Slide | e 5 Slide 6 Slide 7 Slide | 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Extinction El Fiberglas |
| | PLM , | | | ☐ Synthetic High | * If vermiculite is >10% the | | SM-V | PLM O | | | | | ☐ Synthetic |
| Required | NOB PLM 2/ 10 | |) | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | | Required 🗆 | NOB PLM | | | 0/30 | 10 | Birefring □ Horse Ha |
| See SM-V analysis sheet | Comments: | 7 1 0 | no v | Low to Moderate Birefringence | See Note #1. | | See SM-V analysis sheet | Comments: | | | | | Low to Mo Birefringe |
| for results | | SCANNING OPTION Q.C. | | | | | for results | Method: ELAP DEPA | Z SCANNING OPTION | Q.C. 🗆 | | | - |
| 3 32 | | 1 | Asbestos | Other Fibrous | Non Fibrous | 1 | 3 26 | <u> </u> | | | | Asbestos | Other |
| Field Number | Stereoscopic Exam | PLM Optical Properties Morph Extinction RI RI DS Color Color, Pleo Biref Sian Oth | Results PLM % | PLM % | PLM % | | 3 36 Field Number | Stereoscopic Exam | Moreh Edicalias DI | PLM Optical Propert | | Results PLM % | PL |
| Gravimetric | color Wite TELLANDE | MODIFICATION NT NT DOCKS CON, FIRE DIE SIGN CON | Chrysotile | Cellulose | Mineral Filler | | Gravimetric | Color Downexture | - Molph Extinction RII | RI DS Color Color, Pleo | Bilet Sign Other (defail) | Chrysotile | 14°C |
| Required 🛭 | Homogeneity 4 Vermiculite | | Amosite | Fiberglass | Organic Binders | | Required 🗋 | Homogeneity Vermiculite | | | | Arposite | 175 |
| Recommended | #-of Layers Asbestos | | Other | Other | Vermiculite* | | Recommended | # of Layers Asbestos | | | | Other | |
| See gravimetric analysis sheet | 7 - B | | | | Other | | See gravimetric analysis sheet | | | | | | |
| for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose Extinction | | | for results | Color of Layer Detected Yes N | lo | | | | Cellulose Extinction |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | e 5 Slide 6 Slide 7 Slid | 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Fiberglas |
| Required | PLM / | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample | | Required | PLM | | 4 | 0 200 | 6 | Birefring |
| See SM-V □ | NOB PLM O | / 0 | 220 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. | | See SM-V □ | NOB PLM | | | | | Horse Ha |
| analysis sheet for results | Comments: | / | | Birefringence | | | analysis sheet for results | Comments: | | | | | Birefringe |
| | Method: ELAP EPA | Scanning option Q.C. | | | L | | | Method: ELAP DEPA | SCANNING OPTION | Q.C. □ | | A ROLL | <u> </u> |
| 4 33 Field Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | | 4 §7 Field Number | Stereoscopic Exam | | PLM Optical Propert | ies | Asbestos Results PLM % | Other PL |
| Gravimetric | count hate France P | Morph Extinction RI 1 RI DS Color Color, Pleo Biref Sign Oth | | | Mineral Filler | 1 | Gravimetric | Color Texture | Morph Extinction RI1 | RI DS Color Color, Plea | Biref Sign Other Identity | | 1 |
| Required 2 | - · · · | | Amosite | Fiberglass | Organic Binders | | Required | | | | | Amosite | 1 |
| Recommended | Homogeneity Vermiculite | | Other | Other | Vermiculite* | | Recommended | Homogeneity Vermiculite | | | | Other | |
| See gravimetric | # of Layers Asbestos | | | | Other | | See gravimetric | # of Layers Asbestos | | | | - | |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose Extinction | | | analysis sheet for results | Color of Layer Detected Yes N | lo | | | _ | ☐ Cellulose |
| SM-V | Point Counts Slide 1 Slide 2 | | Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slid | le 5 Slide 6 Slide 7 Slid | 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Extinction |
| Required □ | PLM | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the | | Required | PI M | | | | | ☐ Syntheti Birefring |
| See SM-V | NOR DIM O IN | -1 0 | 200 | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. | | | 1 200 514 | | | | | ☐ Horse Ha |
| analysis sheet | Comments: | | | Birefringence | See Note #1. | | See SM-V analysis sheet | Comments: | | | | 1 | Low to Mo Birefrings |
| for results | | SCANNING OPTION Q.C. | | 1 | 1 | | for results | | ☐ SCANNING OPTION | Q.C. 🗆 | | | 1 |
| | mediod. / LET | | | | | 1 | 1 | | | | | | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing \$10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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| Asbestos in Bulk Insulation Samples - 40 CFR |
|--|
| Appendix E to Subpart E of Part 763 |
| EPA 600/R-93/116 |
| ELAP Items 198.1, 198.4, 198.6, 198.8 |

EPA Interim Method of the Determination of

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Start Date: 04/09/21 | 04/09/21 | | | | | | | | | | | |
|----------------------|--------------------------|---------|------------|----------------------|----------------|--------|---|------|--|--|--|---|
| Start Date: | Date Completed: 04/09/21 | | | | | | | | | | | |
| 122928 | FG | spo |] | ыт | EN | > | > | > | | | | Γ |
| tch # | TEM Iyst: | Methods | NOB | P PR | LM | > > | > | > | | | | |
| TEM Batch # | NOB TEM Analyst: | | | | | | | | | | | |
| 21-618 | SH | | | | Notes | - | Armen para a real and | | | | | |
| PLM Batch # | NOB TEM PREP: | | | | | | | | | | | |
| | MM | 13 | % Total | Asbestos | or Vermiculite | | | | | | | |
| RUSH | NOB PLM Analyst: | 6 | Asbestos | Types | or Vermiculite | Q | N | N | | | | |
| RU | MG/EV | 12 | | % | Carbonate | 57.5 | 51.5 | 52.7 | | | | |
| PANYNJ | MG | 1 | Non Asb | Residue % | NFr | 7 | 16.1 | 14.4 | | | | |
| Client/Project: | NOB PLM PREP: | 2 | | % | Organic | 31.4 | 32.4 | 32.9 | | | | |
| Client/ | NOB PL | | | 60 E 70 G 60 G | Field # | 31 | 32 | 33 | | | | |

1. Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not detected.

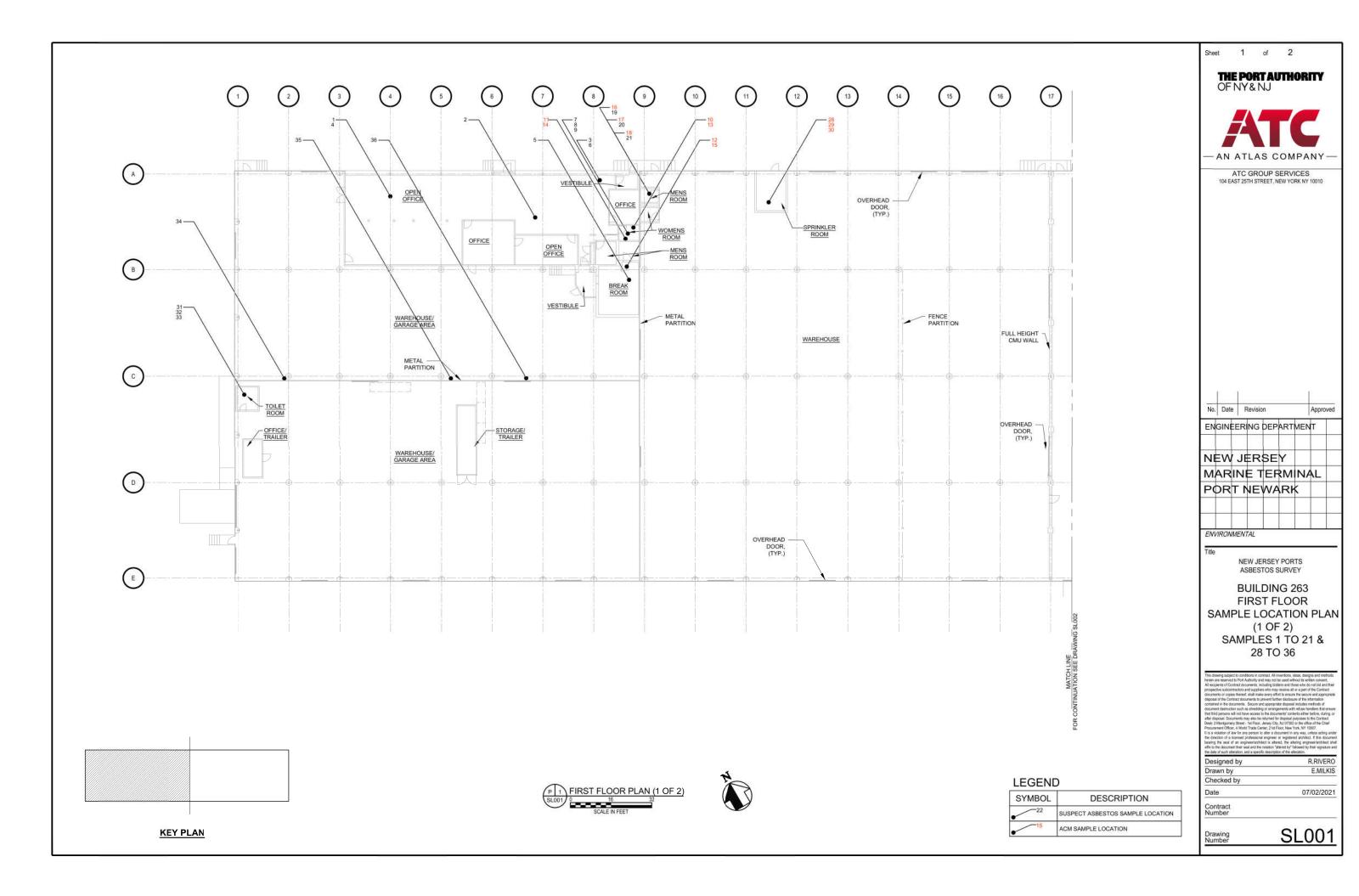
Page 1

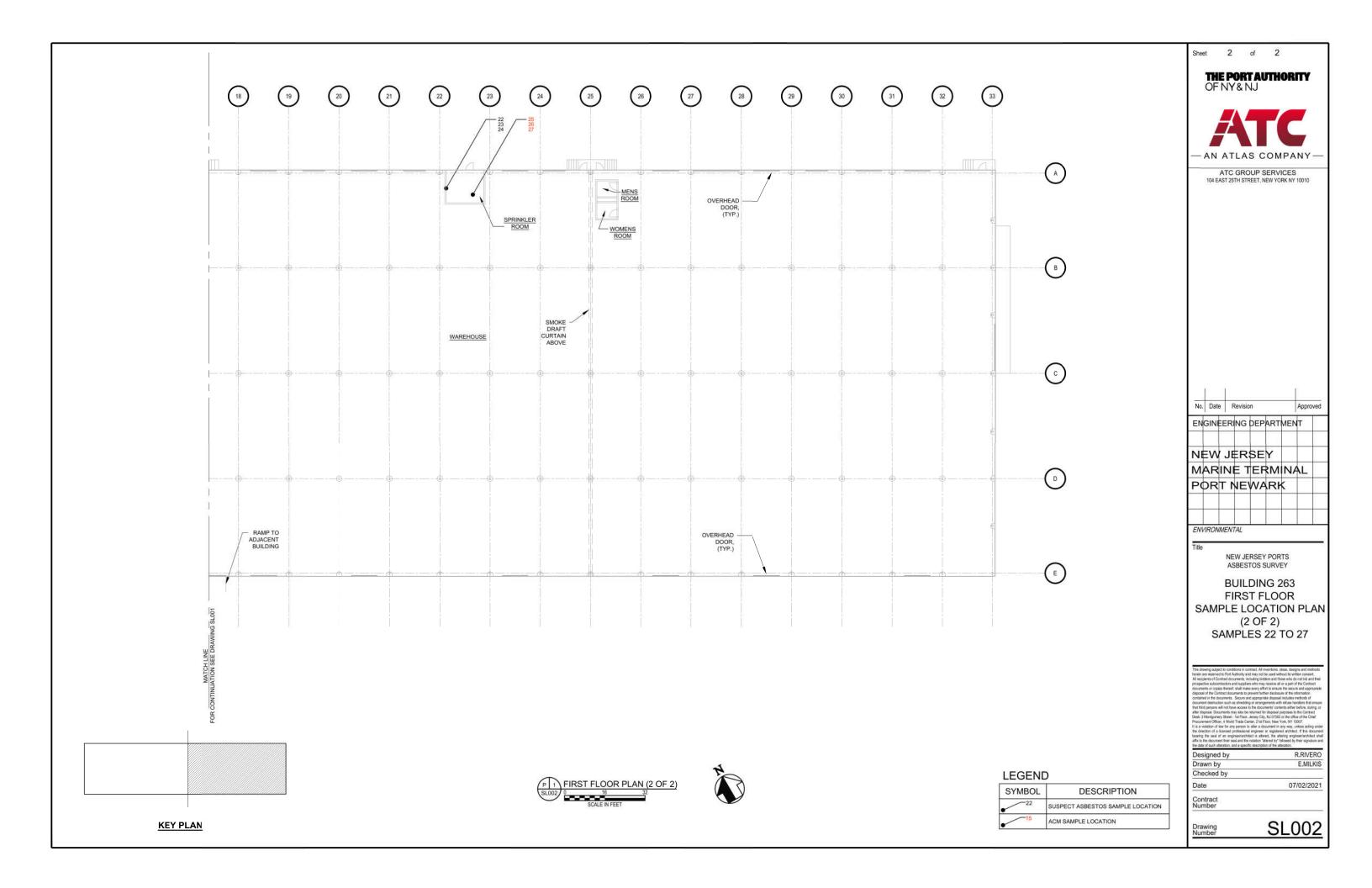
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APPENDIX B

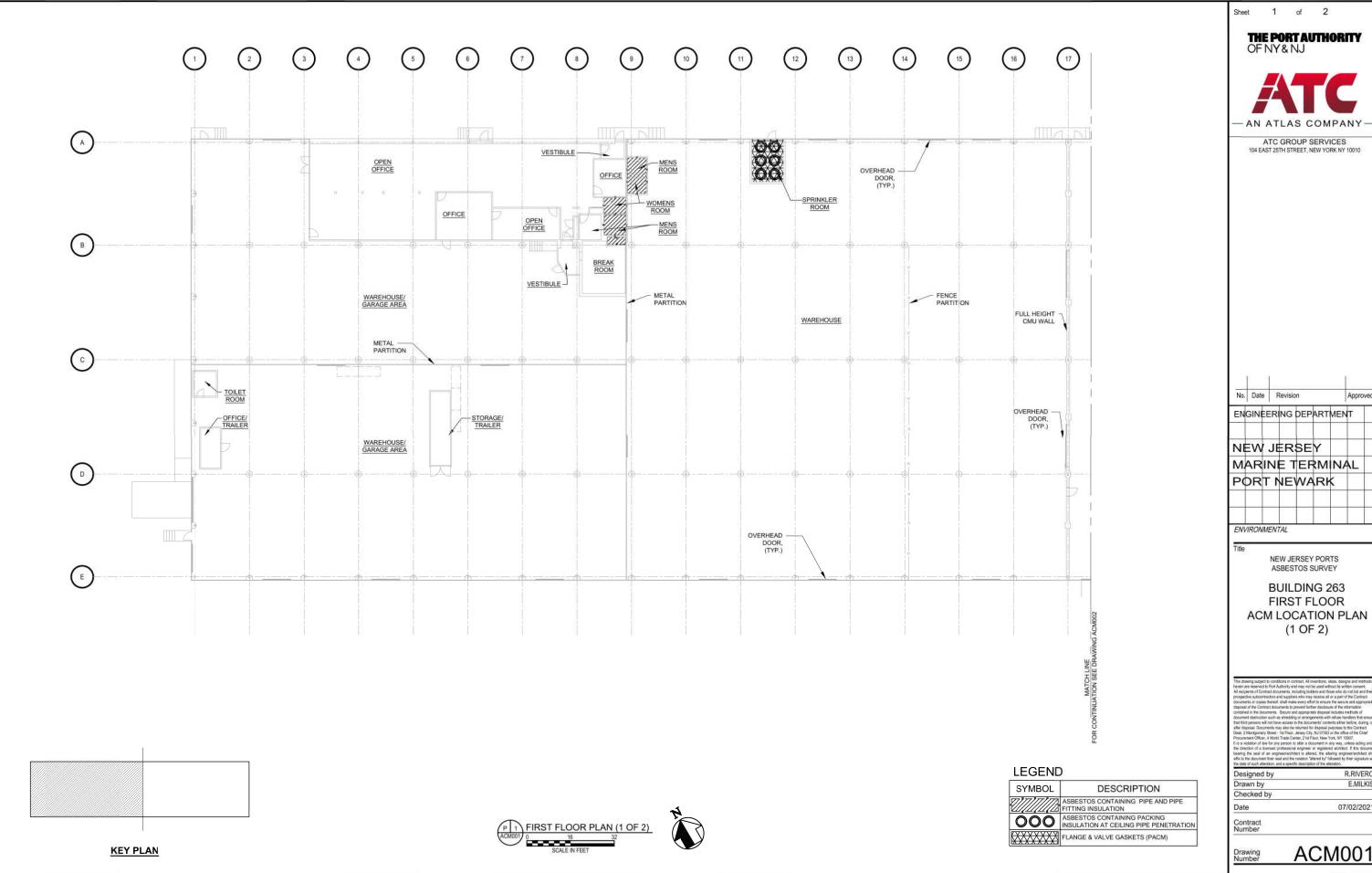
ASBESTOS SAMPLE LOCATION DRAWINGS





APPENDIX C
ASBESTOS LOCATION DRAWINGS

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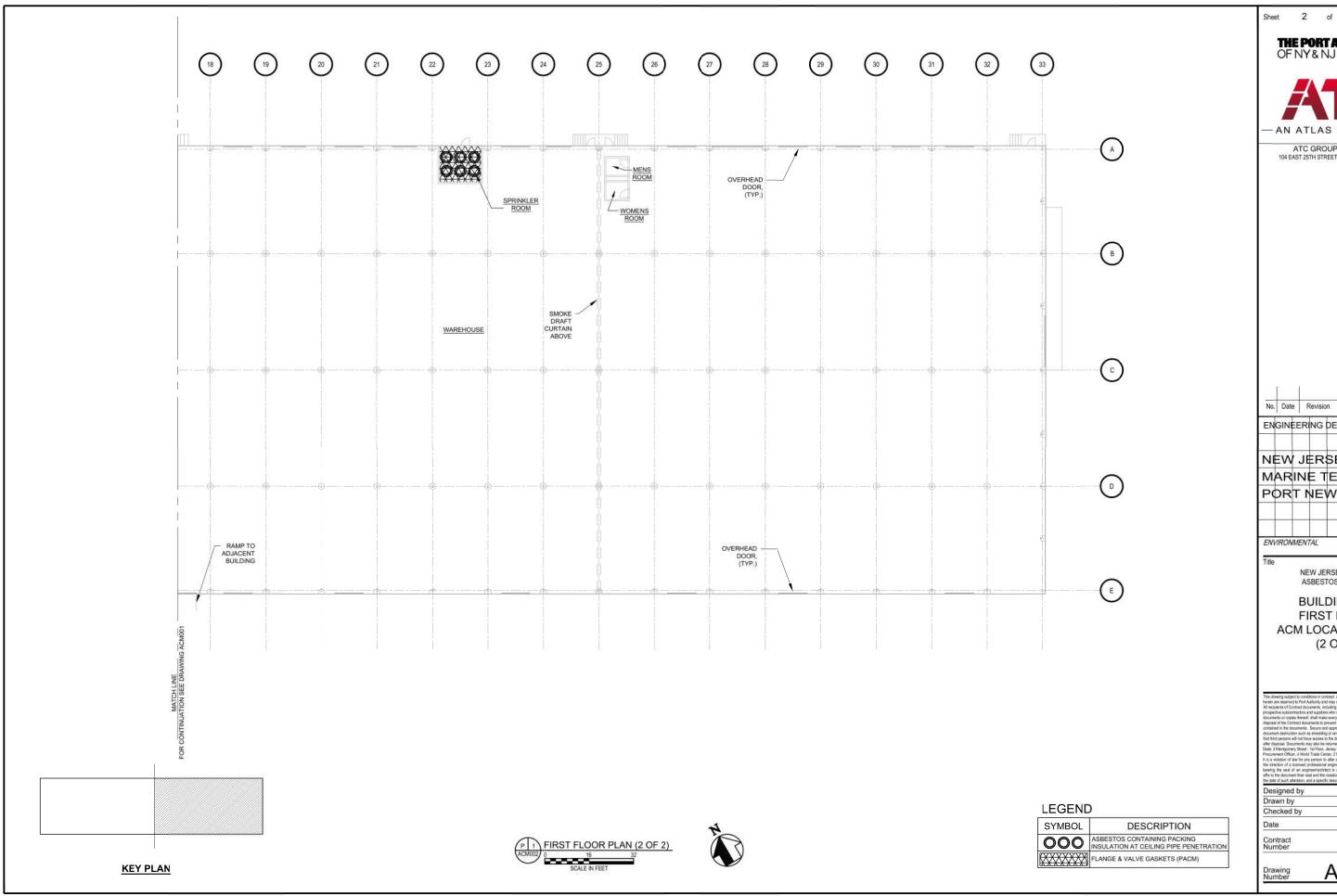


Sheet 1 of 2 THE PORT AUTHORITY ATC GROUP SERVICES Approved ENGINEERING DEPARTMENT MARINE TERMINAL PORT NEWARK

ASBESTOS SURVEY

BUILDING 263 FIRST FLOOR ACM LOCATION PLAN

| Designed by | R.RIVERO | | | |
|-------------|------------|--|--|--|
| Drawn by | E.MILKIS | | | |
| Checked by | | | | |
| Date | 07/02/2021 | | | |



Sheet 2 of 2 THE PORT AUTHORITY OF NY & NJ ATC GROUP SERVICES ENGINEERING DEPARTMENT NEW JERSEY MARINE TERMINAL PORT NEWARK

> NEW JERSEY PORTS ASBESTOS SURVEY

Approved

BUILDING 263 FIRST FLOOR ACM LOCATION PLAN (2 OF 2)

| Designed by | R.RIVERO | | | |
|-------------|------------|--|--|--|
| Drawn by | E.MILKIS | | | |
| Checked by | | | | |
| Date | 07/02/2021 | | | |

ACM002

APPENDIX D

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

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New York State – Department of Labor Division of Safety and Health

Division of Safety and Health License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative - Kevin Hamilton:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
SH 432 (8/12)
For the Commissioner of Labor

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI
ATC GROUP SERVICES LLC
104 EAST 25TH STREET 8TH FLOOR
NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below:

Miscellaneous

Ashestos

PA 100.2

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

age 1 of 1



NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual

EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

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Page 1 of 1

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



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MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

Fibers

NIOSH 7400 A RULES

Department of Health

Serial No.: 61223

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age 1 of 1

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

MS. MILENA BONEZZI COPY

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2016) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

estos EPA 1

Serial No.: 62824

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI CO V ACO NY Lab Id No:

ATC GROUP SERVICES LLC

104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Asbestos in Non-Friable Material-TEM

Item 198.6 of Manual (NOB by PLM)

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No : 62825

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspictiously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021 _ -

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Realth Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

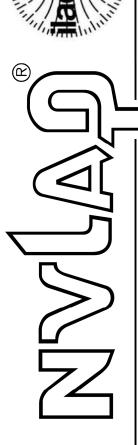
40 CFR 763 APX A No. III NIOSH 7402

Serial No.: 62826

NIOSH 7400 A RULES

Property of the New York State Department of Health. Gertificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to

Technology ommerce and C of Partment o artment $\overline{\Phi}$ of O S National Institute States United



20 7025 O/IE S **2** ccreditation 4 of ertificate

NVLAP LAB CODE: 101187-0

Services Group

New York, NY

for accredited by the National Voluntary Laboratory Accreditation Program listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

I the operation of a laboratory quality dated January 2009). Standard ISO/IEC ance with the recal competence for a r to joint ISO-ILAC This laboratory is accrec This accreditation demonst

2020-07-01 through 2021-06-30

Effective Dates





For the National Voluntary Labor

National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor
New York, NY 10010
Ms. Milena Bonezzi
Phone: 212-353-8280 x247 Fax: 212-353-8306
Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

<u>Code</u> <u>Description</u>

18/A01 EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of

Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code18/A02

Description
U.S. EPA's "Inte

U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR Part 763 Subpart F. Appendix A.

TR PAIR ATT ATT ATT ATT

For the National Voluntary Laboratory Accreditation Program



AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

104 East 25th St 8th Flr New York, NY 10010

Laboratory ID: LAP-100229

Issue Date: 08/30/2019

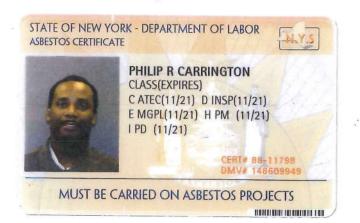
The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 06/12/1995

| IHLAP Scope Categ | ory Field of Testing (FC | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested |
|-----------------------------------|------------------------------------|----------------------------------|---|---|
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | - |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http:// www.aihaaccreditedlabs.org

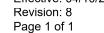


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HAIR BLK

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

Effective: 04/10/2015 Revision: 8



STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





NANCY B GUEVARA CLASS(EXPIRES) C ATEC(05/21) D INSP(05/21) H PM (05/21) I PD (05/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



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EYES BRO HAIR BRO HGT 5' 06"

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALRANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





RONEY D RIVERO CLASS(EXPIRES) C ATEC(08/21) D INSP(08/21) E MGPL(08/21) H PM (08/21) IPD (08/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



01213 00581057 61

EYES BRO HAIR GRY IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240



NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, EP, & PJ

ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING #301

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

July 2, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

July 2, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building #301

301 Craneway Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Roney D. Rivero

Senior Project Manager for ATC Group Services LLC Direct Line +1 212 284 0614

Email: roney.rivero@atcgs.com

Attachments

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

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| EXE | CUTIVE SUMMARY | 1 |
| 1.0 | INTRODUCTION | 2 |
| 2.0 | BUILDING DESCRIPTION | 2 |
| 3.0 | FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS | 2 |
| 4.0 | ACM INSPECTION SCOPE | 3 |
| 5.0 | ACM INSPECTION RESULTS | 5 |
| 6.0 | PCB-IN-CAULKING INSPECTION FINDINGS | 5 |
| 7.0 | UNIVERSAL WASTE OBSERVATION | 5 |
| 8.0 | CONCLUSIONS AND RECOMMENDATIONS | 6 |
| 9.0 | ASSUMPTIONS AND LIMITATIONS | 6 |

APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: Asbestos Sample Location Drawings

Appendix C: ACM Location Drawings

Appendix D: Lab Certifications / Accreditations, Company and Personnel Certifications

ATC Project No. 214PANEWR1 Page 1

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

EXECUTIVE SUMMARY

On February 26, 2021 and April 8, 2021, ATC completed the inspection for ACM at Port Newark, Building #301 (the Site). The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected sixty-nine (69) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, one (1) sampled homogeneous area was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content).

The material that tested positive for asbestos is:

• Pipe Fitting Insulation associated with Fiberglass Pipe Insulation

These materials are tabulated in Section 4.0.

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM/LCP |
|----------------------|----------------------|---------|
| Philip R. Carrington | AH-88-11798 | ACM |
| Nancy Guevara | AH-14-00412 | ACM |
| Roney D. Rivero | AH-88-06348 | ACM |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 301, Harbor Freight Transport Building, was constructed within the facility located northeast of the Port Newark Marine Terminal and is accessible via Navy Street. The building is currently occupied by Harbor Freight Transport and used for storage of general cargo. The building is a one-story steel framed structure, measuring 255 ft. by 528 ft. in plan. The building height varies from 38'-7" at the eave to 40'-9" at the ridge. The steel framing consists of five rows of columns with 22 cross beams spaced at 25 ft. The cross beams support 41 roof purlins, which in turn supporting the gypsum roof panel covered with rubber roofing in a single gable shape. The exterior wall consists of concrete grade beam supported CMU wall brick wall with corrugated metal siding or Plexiglas window panels on top. The ground floor is bituminous concrete pavement on grade. There is an office located in the middle of the east side of the building and two office annexes along south side of building. The suspended acoustical ceilings are present at both office annexes.

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the

ATC Project No. 214PANEWR1 Page 2

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of Port Newark Building 301 on February 26, 2021 and April 8, 2021 and collected sixty-nine (69) bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location. The intent of this survey was to locate and identify all accessible ACM.

The following twenty-three (23) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location |
|--|---|
| 2'X4' Ceiling Tile Type I | 1 st Floor – Warehouse Area, Lunch Room 1 |
| Paper Backing on Ceiling Fiberglass Insulation | 1 st Floor – Warehouse Area, Lunch Room 1 |
| Textured Plaster (One Coat) on Plywood | 1 st Floor – Warehouse Area, Lunch Room 1, |
| Ceiling | Gym Room |

ATC Project No. 214PANEWR1 Page 3

| Brick Wall Mortar | 1 st Floor – Warehouse Area Northeast Corner |
|---|---|
| 2' X 2' & 2' X 4' Ceiling Tile - Fissured | 1st Floor – Office space |
| Gypsum Board Paper - Wall | 1st Floor – Office space |
| Gypsum Board - Wall | 1st Floor – Office space |
| Joint Compound – Wall | 1st Floor – Office space |
| HVAC Duct Insulation Cover | 1 st Floor – Office space |
| Fiberglass Pipe Insulation Cover 3" OD | 1st Floor – Office space |
| CMU Mortar Wall | 1st Floor – Office space Electric Room |
| 2' X 4' Ceiling Tile Type I - Fissured | 2 nd Floor – Office space |
| Gypsum Board Paper - Wall | 2 nd Floor – Office space |
| Gypsum Board - Wall | 2 nd Floor – Office space |
| Joint Compound – Wall | 2 nd Floor – Office space |
| HVAC Duct Insulation Cover | 2 nd Floor – Office space |
| 2' X 4' Ceiling Tile Type II | 2 nd Floor – By Entrance to Office space |
| CMU Wall Mortar | 1 st Floor – (Abandoned Building) – Locker Room & Lunch Room |
| Gypsum Board Paper - Wall | 1st Floor – (Abandoned Building) – Lobby |
| Gypsum Board - Wall | 1 st Floor – (Abandoned Building) – Lobby |
| Joint Compound - Wall | 1st Floor – (Abandoned Building) – Lobby |
| Fiberglass Pipe Insulation Cover 3" OD | 1 st Floor – (Abandoned Building) – Men's & Women's Bathrooms |
| Pipe Fitting Insulation associated with F/G Pipe Insulation | 1 st Floor – (Abandoned Building) – Men's & Women's Bathrooms |

ATC Project No. 214PANEWR1 Page 4

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and analytical results of bulk samples collected, the following material is asbestos-containing (> 1%):

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| 67-69 | Pipe Fitting Insulation associated with F/G Pipe Insulation | 10% Chrysotile | 25 LF | ACM001 |

The following materials are presumed to be asbestos-containing material (PACM)

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|--|---------------------|-------------------------|-----------------------|
| N/A | Pipe and Pipe Fitting Insulation - Warehouse Area | PACM | 2,200 L.F. | ACM001 |
| N/A | Flange & Valve Gaskets - 2 Sprinkler Rooms | PACM | 50 Units | ACM001 |

ACM laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix B. Asbestos Location Plans are included in Appendix C.

6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection at the site, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

ATC Project No. 214PANEWR1 Page 5

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected sixty-nine (69) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, one (1) sampled homogeneous area was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content).

The material that tested positive for asbestos at Building 301 include the following:

• Pipe Fitting Insulation associated with F/G Pipe Insulation

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Various types of painted surfaces such as sprinkler pipes, gypsum board ceilings and walls, CMU walls, and roof decking have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 301, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 301 located in Newark, New Jersey.

The materials reported in Section 5.0 of this report would require abatement, removal and disposal prior to sprinkler system renovation due to the proximity to the sprinkle pipe system.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection. The valve gaskets inside the pipe flanges could not be tested since the sprinkler system is still operational. It is assumed, based on the number of flanges observed, that there are approximately 25 gaskets in each sprinkler room. There are 2 sprinkler rooms in this building, so it is assumed there are 50 gaskets that are presumed to be asbestos containing. The pipes in the warehouse area below the roof deck with suspected asbestos- containing insulation were not sampled due to access restrictions (height and electric hazard) at the time of the survey. Based on visual inspection and assumptions, we estimate 2,200 linear feet of pipe insulation presumed to be asbestos containing. This quantity should be verified with destructive sampling if abatement is planned prior to any renovation work.

If questions arise regarding asbestos content in building materials that were not tested by ATC, additional testing services should be procured to test those areas.

ATC Project No. 214PANEWR1 Page 6

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

ATC Project No. 214PANEWR1 Page 7

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APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES



New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

104 EAST 25TH STREET NEW YORK, NY 10010

Fax: (212) 353-3599

Phone: (212) 353-8280

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Sample Date: 2/26/2021

Date Received: 3/1/2021

Date Analyzed: 3/2/2021

ATC Batch # 21-225

Methods: ELAP 198.1, 198.6, 198.4

Location: PN 301

Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>Noi</u> | ı-Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|----------------|--|-----------------------------|-----------|------------------|-------------------------|----------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 1 | 1ST FLOOR WAREHOUSE AREA LUNCH ROOM 1 | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 21.9% Organic 58.3% Residue | |
| 21-225 -1 | AREA EUNOTTROOM T | | | | | 19.8% Carbonate | NONE DETECTED |
| | | Color: Tan | | | | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | ungor | Comments: NOB PL | M Inconclusive | | |
| 2 | 1ST FLOOR LUNCH ROOM 1 | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 26.3% Organic | |
| 21-225 -2 | | | | | | 48.8% Residue 24.9% Carbonate | NONE DETECTED |
| 27 220 2 | | Color: Tan | | | | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | ungor | Comments: NOB PL | M Inconclusive | | |
| 3 | 1ST FLOOR LUNCH ROOM 1 | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 25.8% Organic | |
| 21-225 -3 | | | | | 0.0% Vermiculite | 38.1% Residue 36.1% Carbonate | NONE DETECTED |
| 21-225 -5 | | Color: Tan | | | | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive | | |
| 4 | 1ST FLOOR LUNCH ROOM 1 | PAPER BACKING ON CEILING | G NOB-TEM | | | 96.1% Organic | |
| 21-225 -4 | | F/G INSULATION | | | 0.0% Vermiculite | 1.1% Residue 2.8% Carbonate | NONE DETECTED |
| 21-220 -4 | | Color: Blad | :k | | | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. HAS TAR | | |
| 5 | 1ST FLOOR LUNCH ROOM 1 | PAPER BACKING ON CEILING | G NOB-TEM | | | 92.9% Organic | |
| 04 005 5 | | F/G INSULATION | | | 0.0% Vermiculite | 1.1% Residue 6% Carbonate | NONE DETECTED |
| 21-225 -5 | | Color: Tan | /Rlack | | 0.070 1 00 | 070 0012011010 | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. HAS TAR | | |
| 6 | 1ST FLOOR LUNCH ROOM 1 | PAPER BACKING ON CEILING | G NOB-TEM | | | 98.9% Organic | |
| 21-225 -6 | | F/G INSULATION | | | 0.0% Vermiculite | 1% Residue 0.1% Carbonate | NONE DETECTED |
| 21-225 -0 | | Color: Tan | /Black | | | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. HAS TAR | | |
| 7 | 1ST FLOOR LUNCH ROOM 1 | TEXTURED PLASTER (ONE | NOB-TEM | | | | |
| 21-225 -7 | (GYM ROOM) | COAT) ON CEILING PLYWOO | טנ | | | 43.8% Residue 41.7% Carbonate | NONE DETECTED |
| 21-220 -1 | | Color: Tan | | | | /v Garbonato | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. Paint | | |

Batch # 21-225 Page 1 of 3 Report Prepared By: Grace Chan



ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>No</u> | n-Asbestos | NOB | Asbestos | |
|----------------------|--|---|--------------|-----------------|------------------------|--------------------------------|---------------|--|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type | |
| 8 | 1ST FLOOR LUNCH ROOM 1 (GYM ROOM) | TEXTURED PLASTER (ONE COAT) ON CEILING PLYWOO | NOB-TEM D | | | 13.1% Organic 47.6% Residue | | |
| 21-225 -8 | | | | | 0.0% Vermiculite | 39.3% Carbonate | NONE DETECTED | |
| Analyzed By: | Michael Gittings | Color: Tan Second Analyst: Feyza Gungor | | Comments: NOB P | LM Inconclusive. Paint | | | |
| 9 | 1ST FLOOR LUNCH ROOM 1 | TEXTURED PLASTER (ONE | NOB-TEM | | | 13.5% | | |
| Organic 21-225 -9 | (GYM ROOM) | COAT) ON CEILING PLYWOO | D | | 0.0% Vermiculite | 38.4% Restindunate | NONE DETECTED | |
| Analyzed By: | Michael Gittings | Color: Tan Second Analyst: Feyza G | ungor | Comments: NOB P | LM Inconclusive. Paint | | | |
| 10 | 1ST FLOOR WAREHOUSE AREA N/E CORNER | BRICK MORTAR | PLM | | 100% Mineral Filler | | | |
| 21-225 -10 | | | | | 0.0% Vermiculite | | NONE DETECTED | |
| | | Color: Tan | | | | | | |
| Analyzed By: | Michael Gittings | | | | | | | |
| 11 | 1ST FLOOR WAREHOUSE AREA N/E CORNER | BRICK MORTAR | PLM | | 100% Mineral Filler | | | |
| 21-225 -11 | | | | | 0.0% Vermiculite | | NONE DETECTED | |
| | | Color: Tan | | | | | | |
| Analyzed By: | Michael Gittings | | | | | | | |
| 12 | 1ST FLOOR WAREHOUSE AREA N/E CORNER | BRICK MORTAR | PLM | | 100% Mineral Filler | | | |
| 21-225 -12 | | | | | 0.0% Vermiculite | | NONE DETECTED | |
| | | Color: Tan | | | | | | |
| Analyzed By: | Michael Gittings | | | | | | | |

Batch # 21-225 Report Prepared By: Grace Chan Page 2 of 3



11) Supplement to test report batch #

12) PLM Letter is attached on this report.

ATC Group Services LLC

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Non-Asbestos <u>NOB</u> **Asbestos** Type of Material Sample # Location Method % Fibrous % Non-Fibrous % Type % Type NOTES: 1) The Limit of Detection is the same as the Reporting Limit for these results 2) The Reporting Limit (RL) is the Limit of Quantitation. For point counts the limit of quantitation of 0.25%; based on one asbestos point counter over 400 non-empty points. 3) Asbestos Containing Material (ACM) Definition: > 1% asbestos by weight is considered an ACM 4) Disclaimer: The laboratory, is not responsible for sample collection. Please refer to enclosed letter. This report may not be reproduced, except in full, without written approval by ATC Group Services. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This report relates only to the samples reported above as described in the chain of custody. Quality control data is available upon request 5) Accredited by NVLAP #101187-0 and by NY State ELAP #10879 6) Confidentiality Notice: The document(s) contained herein are confidential and privileged information, intended for the exclusive use of the individual or entity named above. 7) Liability Notice: ATC Group Services and its personnel shall not be liable for any misinformation provided to us by the client regarding these samples. This report relates only to samples submitted and analy 8) Asbestos results are reliable to 2 significant figures. The condition of all samples was acceptable upon receipt. 10) The laboratory certifies that the test results meet all requirements of NELAC.

13) TRACE: The result is reported as Trace when No points are counted and asbestos is identified. For ELAP Trace is < 1%.
14) ATC Group Services certifies that this report is an accurate and authentic report of the results obtained from the laboratory analysis
15) The uncertainty for these test results is available upon request.

. Amendments: . Amendment Dates:

16) ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite. For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

. Amended by:

Mei Wang

Approved by Quality Manager:

| Michael Gittings | | |
|------------------|-------|--|
| Analyst: | wy | |
| Feyza Gungor | Flyly | |
| Analyst: | ' 1 | |

Report Prepared By: Grace Chan Page 3 of 3 Batch # 21-225



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely,

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiley Bourson

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS BULK DOCUMENTS 2021\BULK_LETTER_DOC #DB4A.DOC ATC EFFECTIVE DATE 01/18/2021 REVISION #32

Page 1 of 1 DOCUMENT #DB4A



BATCH NO.

BUILK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Clien | PANYN | IJ | | NKLER RE | State of the state of the state of | TION | 3a. ATC Project No.: 214PNPEPJ1 | | 31.0331.11.033 | ct Manager: R. Rivero |) | |
|----------|-----------------------|-------------------------------|---------------|---------------------|------------------------------------|--------|------------------------------------|---|----------------|---|----------------------------------|--|
| | | | 2a. Project A | ddress: (Ci N PE | rcle One) PJ | | 3b. Task No.: | 001 | | nspector: PHILIP CARRINGTON | | |
| 5. Date: | 71 | JILDING NUMB mpling Areas: | | | 8. Turnaro o STAT o | 24 HR | ne: S o 72 HRS o | 9. Comment s (Fiell NOB → TEM Stop @ 1st Positive | | | | |
| ULK S | AMPLE L | OCATION |) | | | | | | | | | |
| | 11. Bulk Sample ID | 12. | Material | | 13. Thermal | 14. | 0 | 1 1 1 | | 15. | 16. | |
| Area No. | No. | | Material | | System | Floor | 0.001101 | ple Location mple Coordinates | | Material Total Qty. (LF, SF, PCS) | Asbestos Content (Type & % | |
| 1 | 1 | 2×4'0 | Right | TILE | | 1 | WAREHOUS | F ANTA | - | 400 | | |
| 1 | 2 | TYPE | I | | | 1 | LUNCH | LOVY 1 | <u></u> | SF. | | |
| - | 3 | | | | | | | ħ | | | | |
| 2 | 4 | PAPER B | ACKING | ON | | | | 11 | | 400 SF | | |
| 2 | 5 | CEIUN | 9 F/9 | | | | | / 1 | | | | |
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| 3 | 8 | CONE C | OAT | 010 | | Y | 11 | (GYM | Ruron | | | |
| 3 | 9 | CEI Li, | NG. PLY | wwD | | | | | | = - | | |
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| 7. Rein | quished By | 7 | 7/1/a | 19. Time | | eceive | 2 Cel | 21. Date | | Field | | |
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| 4b. Anal | yzed By: //w/ | log Coff | The- | | | 3 | 12/2-21 13 | 3:30 | | NOB-P | | |
| 4c. QC E | Bv: | 0 | | | | | | | | NOA - | | |

ATLAS_ ATC

ATC - New York
104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET

| | | OLYMPUS NIKON OPT |
|-------|------------|----------------------|
| umber | 214PNPEPJ1 | MIKON OF I |
| | | |

| | Client / F | roject F | ANYNJ, | / FIRES | PRINK | LER REI | HAB | | | | Project | Number 214Pl | NPEPJ1 | NIKON OPTIPHO |
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| | | | 3/2/2 | | Analyst | | | 116 | | | | | -225 | EMPERATURE °C |
| 1 Id Number | Stere | oscopic I | Éxam | | | | | ptical Pr | - | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required ☐ Recommended ☐ ee gravimetric.☑ | Color | Verm | iculite | | n Extinction | RII | RII DS | S Color Colo | or, Pleo Bi | ref Sign O | ther Identity | Chrysotile Amosite Other | Cellulose Fiberglass Other | 130 Mineral Filler Organic Binder Vermiculite* |
| analysis sheet for results | Color of Layer_ | Detec | ded Yes M | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V Required □ | Point Counts PLM | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V analysis sheet for results | NOB PLM Comments: | <u> </u> | | | NEPOHONING. | | | | MARKATAN AND AND AND AND AND AND AND AND AND A | 0 | 700 | | ☐ Horse Hair: Scales, Low to Moderate Birefringence | level of asbestos in a sampl might be underestimated. See Note #1. |
| | Method: E | LAP [| EPA | [] SCAN | NING OPTI | ON | | Q. | c. 🗆 | | | | <u> </u> | |
| 2 eld Number | Stere | oscopic I | Exam | Morni | n Extinction | RII | | ptical Pr | | | ther Identity | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required | Color TA | Textu | | | | | NII D | | , rieo bi | | | Chrysotile | Cellulose Fiberglass | Mineral Filler Organic Binder |
| Recommended [] | Homogeneity | Verm Asber | | 1 | | | | | | | | Other | Other | Vermiculite* |
| ee gravimetric D analysis sheet for results | Color of Layer | | ted Yes M | No | | | | | | | | | Cellulose Ondulose Extinction | Other |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb.Ner. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% the |
| Required D | NOB PLM | %_ | | <u></u> | | | | | | 0 | 700 | 0 | Birefringence Horse Hair: Scales, Low to Moderate | level of asbestos in a sampt might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | i | | , | | L | | | | | | Birefringence | See Hole #1. |
| 1011000110 | Mathod: DE | IAD [| EDA | PISCAN | NING ODTI | ON | | 10.0 | сП | | | | 1 | |
| | Method: 2 | LAP [| EPA | SCAN | NING OPTI | ON | | Q.0 | c . □ | | | | | |
| 3 | 1 | oscopic I | | | | | | ptical Pr | operties | | ther Identity | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| 3 eld Number Gravimetric | Stere | oscopic I | Exam | | NING OPTI | | | | operties | | ther Identity | Results PLM % Chrysotile | PLM % Cellulose | PLM % ### Mineral Filler |
| 3 Gravimetric Required (1) | Stere | oscopic I Textu | Exam re | | | | | ptical Pr | operties | | ther Identity | Results PLM % | PLM % | PLM % ### Mineral Filler Organic Binder Vermiculite* |
| 3 eld Number Gravimetric | Stere | Textu Verm Asbes | Exam re | Morpl | | | | ptical Pr | operties | | ther Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Olher | PLM % Mineral FillerOrganic Binder |
| Gravimetric Required C | Stere: Color Color Homogeneity # of Layers Color of Layer Point Counts | Textu Verm Asber | Exam re iculite | Morpl | | | | ptical Pr | operties | | | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other | PLM % |
| 3 Gravimetric Required ☐ Recommended ☐ ee gravimetric ☐ analysis sheet for results | Color Clayers # of Layers Color of Layer. | Textu Verm Asber | Exam re iculite stos | Morpi | Extinction | RII | RIA DS | ptical Pr | operties | ref Sign O | T Total PT | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Filler Organic Binder Vermiculite* Other 'If vermiculite is >10% the level of asbestos in a sampl might be underestimated. |
| Gravimetric Required Canalysis sheet for results SM-V Required Canalysis SM-V | Stere Color The Homogeneity # of Layers Color of Layer Point Counts PLM | Textu Verm Asber Detect Slide 1 | Exam re iculite stos | Morph / | Extinction | RI1 | RIA DS | Slide 7 | operties | ref Sign O | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| Gravimetric Required Recommended analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stere Color Comments: Method: PE | Textu Verm Asber Detect Slide 1 | re Francisculite State Yes N Slide 2 | Morph / | h Extinction | RI1 | RI DS | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampl might be underestimated. See Note #1. |
| Gravimetric Required Recommended analysis sheet for results SM-V Required analysis sheet for recommended analysis sheet | Stere Color Comments: Method: PE | Textu Yerm Asber Detect Slide 1 | Exam re Friculite Sloss Slide 2 Exam | Morph / / Slide 3 | h Extinction | RI1 | RIN DS | Slide 7 | Slide 8 | Asb.Ner. P | T Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampl might be underestimated. See Note #1. |
| Gravimetric Required ee gravimetric analysis sheet for results SM-V Required analysis sheet for results | Stere Color | Textu Y verm Asber Detect Slide 1 | Exam re | Morph No Slide 3 | Slide 4 | RI1 | RIN DS | Slide 7 | Slide 8 | Asb.Ner. P | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binder Vermiculite* Other 'If vermiculite is >10% the level of asbestos in a sampl might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| Analysis sheet for results Gravimetric Required □ analysis sheet for results SM-V Required □ analysis sheet for results Gravimetric Required □ analysis sheet for results | Stere Color Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: PE Stere Colon Delayer Homogeneity # of Layers | Textu Y Verm Asber Detect Slide 1 CLAP Oscopic E C Textu Asber Asber | Slide 2 Exam Slide 2 Exam Exam Exam Exam Exam Exam Exam Exam | Slide 3 | Slide 4 | RI1 | RIN DS | Slide 7 | Slide 8 | Asb.Ner. P | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binder Vermiculite* Other 'If vermiculite is >10% the level of asbestos in a sampl might be underestimated. See Note #1. Non Fibrous PLM % Organic Binder |
| Gravimetric Required analysis sheet for results See SM-V Required analysis sheet for results Gravimetric Required Gravimetric Required Recommended Recomme | Stere Color Comments: PLM NOB PLM Comments: Method: Stere Colon Nogeneity | Textu Verm Asber Detect Slide 1 CLAP Coscopic B C Textu Verm Verm | Slide 2 Exam Slide 2 Exam Exam Exam Exam Exam Exam Exam Exam | Slide 3 | Slide 4 | RI1 | RIN DS | Slide 7 | Slide 8 | Asb.Ner. P | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birstringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % # Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampl might be underestimated. See Note #1. Non Fibrous PLM % PLM % Organic Binder Vermiculite* |
| Gravimetric Required analysis sheet for results See SM-V Required analysis sheet for results See SM-V analysis sheet for results Gravimetric Required Recommended Recommended analysis sheet for results | Stere Color Comments: PLM NOB PLM Comments: Method: Stere Colon Discounts Stere Colon Discounts Homogeneity Homogeneity Color of Layer Point Counts | Slide 1 SLAP Oscopic E C Textu Asbert Asbert Asbert C Textu Asbert Detect | Exam re culite Slos Slide 2 EPA Exam re LEPA Exam re LEPA Stock St | Morph No Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 Q. Q. Color C | Slide 8 | Asb. Ner. P | T Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence | PLM % ### Mineral Filler Organic Binder Vermiculite* Other If vermiculite is >10% the level of a sbestos in a sampl might be underestimated. See Note #1. Non Fibrous PLM % PLM % Organic Binder Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample with the context of the co |
| Analysis sheet for results Required □ Analysis sheet for results Analysis sheet for Required □ Analysis sheet for Required □ Analysis sheet for results Analysis sheet for results Required □ Recommended □ analysis sheet for results Recommended □ | Stere Color Counts # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: E Stere Coloi | Slide 1 SLAP Oscopic E C Textu Asbert Asbert Asbert C Textu Asbert Detect | Exam re culite Slos Slide 2 EPA Exam re Siculite Tepa Exam re Siculite Tepa Store Store Tepa | Morph No Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 Q. Q. Color C | Slide 8 | Asb. Ner. P | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Synthetic Ondulose Extinction Fiberglass Isotopic Synthetic High | PLM % Mineral Filler Organic Binder Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sampl might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binder Vermiculite* Other |

Methods:
EPA Interim Method of the Determination of Asbestos In Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763

EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

ATC - New York

BULK ASBESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Microscopes: OLYMPUS BH-2/

ATLAS_ ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010

| Phon | ie: (212 | 2) 353-82 | 280, Fa | ax: (212) | 353-359 | 9 or 8 |
|------|----------|-----------|---------|-----------|---------|--------|
| | BULK | ASBES | TOS A | NALYS | IS SHEE | Т |

| | Client / Project PANYNJ/ FIR | | t Number 214PN | IPEPJ1 | NIKON OPTIPHOT | 1 | Client / Project PANYNJ/ | FIRESPRINKLER REHAB Project | t Number 214PN | IPEPJ1 | NIKON OPTIPHOT |
|-------------------------------------|--|--|---|---|---|-------------------------------------|----------------------------------|---|---------------------------|---|--|
| | Analysis Date $3/2/2021$ | L Analyst <u> </u> | Number 21- | 225 | EMPERATURE® 23 | : | Analysis Date <u>3/7/2</u> | 2021 Analyst <u>Y</u> (- Batch | Number 21- | 225 , | TEMPERATURE C 7 |
| 5 d Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | 1 9 | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color MAL Texture M | orph Extinction RI 1 RI DS Color Color, Pleo Birel Sign Other Identity | Chrysotile | Cellulose | 1 D Mineral Filler | Gravimetric | Color M Texture M | Morph Extinction RI1 RI DS Color Color, Pleo Biref Sign Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders | Required 🗆 | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders |
| ecommended 🗆 | # of Layers Asbestos | | Other | Other | Vermiculite* | Recommended □ | # of Layers Asbestos | | Other | Other | Vermiculite* |
| e gravimetric 🗸 analysis sheet | Color of Layer Delected Yes No | | | _ | Other | See gravimetric | Color of Layer Detected Yes N | | | _ | Other Other |
| for results | | | | Cellulose Ondulose Extinction | | for results | - | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | | SM-V | | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver, | ☐ Fiberglass (sotopic ☐ Synthetic High | |
| Required 🗆 | PLM | | | Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample | Required 🗆 | PLM 2/ | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V analysis sheet | | | | Low to Moderate Birefringence | might be underestimated. See Note #1, | See SM-V ☐ analysis sheet | NOB PLM | 0 20 | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Comments: Method: DELAP DEPA DESC | Høy Tøy ANNING OPTION Q.C. □ | | | | for results | Comments: Method: DELAP EPA | Pacit □SCANNING OPTION Q.C. □ | | | |
| 6 | | | Asbestos | Other Fibrous | Non Fibrous | 2 10 | <i></i> | | Asbestos | Other Fibrous | Non Fibrous |
| ld Number | Stereoscopic Exam | PLM Optical Properties | Results PLM % | PLM % | PLM % | Field Number | Stereoscopic Exam | PLM Optical Properties Marph Extinction RI1 RI DS Color Color Pleo Biref Sign Other Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color M/B/4(Texture Nt M | A STATE OF THE STA | Chrysotile | Cellulose | Mineral Filler | Gravimetric | Color Th Texture G | Maryon Extraction At 12 At 18 DO Color Color, Field Date: Sign Office substitute | Chrysotile | Cellulose | 100 Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders | Required Recommended | Homogeneity Vermiculite | 7 | Amosite | Fiberglass | Organic Binders |
| e gravimetric 🗹 | # of Layers Asbestos | | Other | Other | Vermiculite* | See gravimetric □ | # of Layers Asbestos | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | 0000 | analysis sheet for results | Color of Layer Detected Yes N | 10 | | ☐ Cellulose Ondulose | Curier |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | | SM-V | Point Counts Slide 1 Slide 2 | Silde 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ver.PT Total 97 | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| Required 🛘 | PLM | | | ☐ Synthetic High | * If vermiculite is >10% the | Required □ | PLM % | 2 700 | 3 | ☐ Synthetic High | * If vermiculite is >10% the |
| See SM-V 🗇 | NOB PLM 1/2 | 100 | 2 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | See SM-V | NOB PLM | | | Birefringence G Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | Hor Tay | | Low to Moderate Birefringence | See Note #1. | analysis sheet for results | Comments: | | | Low to Moderate Birefringence | See Note #1. |
| to, results | Method; □ ELAP □ EPA □ SC | ANNING OPTION Q.C. | | | | TO TO TO | Method: D'ELAP DEPA | D.SCÁNNING OPTION Q.C. DAY | | | |
| 7 d Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | 3 11 | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color To Texture 47 Mi | orph Extinction RL1 Rt DS Color Color, Pieo Biref Sign Other Identity | Chrysotile | Cellulose | (D) Mineral Filler | 4 : | Color TM Texture | Morph Extinction R11 R1 DS Color Color, Pleo Biref Sign Other Identity | Chrysotile | , PLNI 76 Cellulose | / Mineral Filter |
| Required Z | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders | Required 🗆 | Homogenelty Vermiculite | | Agrosite | Fiberglass | Organic Binders |
| ecommended 🗆 |) T | | Other | Other | Vermiculite* | Recommended 🗆 | 7 | | Other | Other | Vermiculite* |
| e gravimetric 🛭 analysis sheet | # of Layers Asbestos | | - | | Other | See gravimetric ☐ analysis sheet | # of Layers Asbestos | | | | Other |
| for results | Color of Layer Detected Yes No | | *************************************** | ☐ Cellulose Ondutose Extinction | | for results | Color of Layer Detected Yes N | 10 | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | SM-V | | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb.Ner. PT Total PT | %Asb. Or %Ver. | □ Fiberglass Isotopic | |
| Required 🗌 | PLM , | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample | Required | PLM 2/8 | 0 200 | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM /S | 1 0 20 | \bigcirc | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. | See SM-V □ | NOB PLM | | | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: ZELAP DEPA DSC | ANNING OPTION Q.C. | | Distribute | | analysis sheet for results | Comments: | Øscanning option Q.C. □ | | Direit (fig.)ce | The state of the s |
| | I WELHOU, ELAF CEPA 300 | Artifice Of For | A.L | 041 53 | | | Methody LI ELAP LI EPA | | | | |
| 8 d Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | 4 12 Field Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color 1/11 Texture 15 | proph Extinction RL1 RLII DS Color Color, Pleo Biref Sign Other Identity | Chrysotile | Cellulose | 100 Mineral Filler | Gravimetric | Color TA Texture C | Morph Extinction RII RI B DS Color Color, Pleo Biref Sign Offer Identity | Chrysotile | Cellulose | Mineral Filler |
| Required D | Homogeneity Vermiculite! | | Amosite | Fiberglass | Organic Binders | Required 🗆 | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders |
| ecommended 🗆 | # of Layers Asbestos | | Other | Other | verniculte- | Recommended | # of Layers Asbestos | | Other | Olher | Vermiculite* |
| e gravimetric L/ analysis sheet/ | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | Other | See gravimetric analysis sheet | Color of Layer Detected Yes N | | | ☐ Celiulose Ondulose | Other |
| for results | | 2 Cide 4 Cide 5 Cide 5 Cide 5 Cide 7 Cide 6 | Dr. O. J. T. C. | Extinction ☐ Fiberglass Isotopic | | for results | | State 2 Class 4 Class 5 State 5 Con 2 Con | | Extinction Fiberglass Isotopic | |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ver. PT Total PT | %Asb. Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required 🗆 | | | | Birefringence Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | Required 🗆 | | 0 700 | - | Birefringence | level of asbestos in a sample might be underestimated. |
| See SM-V 🔲 analysis sheet | NOB PLM S | Parnt 0 20 | | Low to Moderate Birefringence | See Note #1. | See SM-V analysis sheet | NOB PLM Comments; | | | Low to Moderate Birefringence | See Note #1. |
| for results | <u> </u> | ANNING OPTION Q.C. | | | | for results | | □ SCANNING OPTION Q.C. □ | | | |
| | ······································ | | | | <u> </u> | | | | | | <u> </u> |

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V), and it utilizes a 400 point count method.

L*LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/FORMS 2021/BULK/ASBESTOS ANALYSIS SHEET_FORM #B2.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by FLAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L¹LAB_FORMS,DOCUMENTS AND RECORDS:OPTICAL/ASBESTOS_BULK/ASBESTOS_BUL

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

03/02/21

Start Date:

122379

TEM Batch #

21-225

Batch #

PLM

RUSH

PANYNJ

Client/Project:

03/02/21

| Methods | NOB | TEM PLM | > | > | > > | > > | > > | > > | > > | > > | > | |
|---------|----------|----------------------------|------|------|--------|---------|----------------|--------|--------|--------|-------------|--|
| M | | PREP | > | > | > | > | > | > | > | > | > | |
| | | Notes | | | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | | | |
| 9 | Asbestos | Types or Vermiculite | QN | ND | QN | ND | QN | ND | QN | ΩZ | QZ | |
| 12 | | % Carbonate | 19.8 | 24.9 | 36.1 | 2.8 | 6.0 | 0.1 | 41.7 | 39.3 | 38.1 | |
| 11 | Non Asb | Residue % NFr | 58.3 | 48.8 | 38.1 | <u></u> | - - | 1.0 | 43.8 | 47.6 | 48.4 | |
| 5 | | % Organic | 21.9 | 26.3 | 25.8 | 1.96 | 92.9 | 6.86 | 14.5 | 13.1 | 13.5 | |
| | | Field# | 4 | 2 | က | 4 | 5 | 9 | 7 | 80 | 6 | |

1. Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not detected.

Client Copy

ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 4/8/2021

104 EAST 25TH STREET

Date Received: 4/8/2021

NEW YORK, NY 10010 **Fax:** (212) 353-3599

Phone: (212) 353-8280

Date Analyzed: 4/9/2021

Project: PANYNJ / FIRESPRINKLER REHABILITATION

ATC Batch # 21-619

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING #301 Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | Non | n-Asbestos | NOB | Asbestos |
|-----------------------|------------------------|--|---------|--------------------------------|--------------------|---|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 13 | 1ST FLOOR OFFICE SPACE | 2' X 2' & 2' X 4" CEILING TILE FISSURED | NOB-TEM | | 0.0% Vermiculite | 21.8% Organic 52.8% Residue 25.4% Carbonate | NONE DETECTED |
| 21-619 -1 | | C - l \ \ \ / l | _ | | 0.0% Verificante | 20.470 Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Whit Second Analyst: Feyza G | - | Comments: NOB PL | M Inconclusive | | |
| 14 | 1ST FLOOR OFFICE SPACE | 2' X 2' & 2' X 4" CEILING TILE FISSURED | NOB-TEM | | 0.00/ \/ilit- | 23.5% Organic 44.7% Residue | NONE DETECTED |
| 21-619 -2 | | | | | 0.0% Vermiculite | 31.8% Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: White Second Analyst: Feyza Gungor | | Comments: NOB PL | M Inconclusive | | |
| 15 | 1ST FLOOR OFFICE SPACE | 2' X 2' & 2' X 4" CEILING TILE FISSURED | NOB-TEM | | | 24.9% Organic 42% Residue | |
| 21-619 -3 | | | | | 0.0% Vermiculite | 33.1% Carbonate | NONE DETECTED |
| Analyzed By: Mei Wang | | Color: White Second Analyst: Feyza Gungor | | Comments: NOB PLM Inconclusive | | | |
| 16 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WA | ALLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -4 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | Color: Brov | vn | | | | |
| 17 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WA | ALLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | Color: Brov | vn | | | | |
| 18 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WA | ALLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -6 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | Color: Brow | vn | | | | |
| 19 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 4% Cellulose | 94% Mineral Filler | | |
| 04.040. 7 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -7 | | Color: Off V | I/laita | | 0.070 verificante | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | Color: Off v | VIIILE | | | | |
| | • | | | | | | |

Batch # 21-619 Page 1 of 7 Report Prepared By: Grace Chan



04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | Non | -Asbestos | <u>NOB</u> | Asbestos |
|--------------|------------------------|---|----------------|---|---------------------|------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 20 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-619 -8 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: Off Wh | nite | | | | |
| 21 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 4% Cellulose | 94% Mineral Filler | | |
| | | | . _ | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -9 | | Color: Off Wh | nite | | 0.0% verificulte | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 22 | 1ST FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -10 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: White | | | | | |
| 23 | 1ST FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | - - | 7, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -11 | | Color: White | | | 0.070 Verifficulte | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 24 | 1ST FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -12 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: White | | | | | |
| 25 | 1ST FLOOR OFFICE SPACE | HVAC DUCT INSULATION | PLM | 75% Cellulose | 17% Mineral Filler | | |
| 24.640 42 | | COVER | | 8% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -13 | | Color: Tan/Si | ilver | | oro /o v orrinounio | | |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 26 | 1ST FLOOR OFFICE SPACE | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose | 20% Mineral Filler | | |
| 21-619 -14 | | | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: Tan/Si | ilver | | | | |
| 27 | 1ST FLOOR OFFICE SPACE | HVAC DUCT INSULATION | PLM | 75% Cellulose | 20% Mineral Filler | | |
| | | COVER | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -15 | | Color: Tan/Si | ilver | | 0.070 Verimounte | | NONE BETEOTEB |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 28 | 1ST FLOOR OFFICE SPACE | F/G PIPE INSULATION COVER 3" | PLM | 70% Cellulose | 25% Mineral Filler | | |
| 21-619 -16 | | | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: White/ | Silver | | | | |
| 29 | 1ST FLOOR OFFICE SPACE | F/G PIPE INSULATION COVER | PLM | 70% Cellulose | 25% Mineral Filler | | |
| | | 3" | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -17 | | Color: White/ | Silver | | 5.370 T 511110WIIIO | | 52120120 |
| Analyzed By: | : Ivan Reyes | 100000000000000000000000000000000000000 | | | | | |
| | | | | | | | |
| | | | | | | | |

Report Prepared By: Grace Chan Page 2 of 7 Batch # 21-619



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| Sample # | | | | <u>Nor</u> | ı-Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|--------------|-------------------------------------|--|---------|------------------|----------------------|----------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 30 | 1ST FLOOR OFFICE SPACE | F/G PIPE INSULATION COVER 3" | PLM | 70% Cellulose | 25% Mineral Filler | | |
| 21-619 -18 | | 3 | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTE |
| A l D | han Davis | Color: White/ | Silver | | | | |
| Analyzed By: | 1ST FLOOR OFFICE SPACE | CMU MORTAR WALL | DLM | | 1000/ Minoral Filler | | |
| 31 | ELEC ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-619 -19 | | 0.1 0 | | | 0.0% Vermiculite | | NONE DETECTI |
| Analyzed By: | Ivan Reyes | Color: Brown | | | | | |
| 32 | 1ST FLOOR OFFICE SPACE | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-619 -20 | ELEC ROOM | | | | 0.0% Vermiculite | | NONE DETECT |
| | | Color: Brown | | | | | |
| Analyzed By: | - | | | | | | |
| 33 | 1ST FLOOR OFFICE SPACE ELEC ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-619 -21 | | | | | 0.0% Vermiculite | | NONE DETECTI |
| Analyzed By: | Ivan Reyes | Color: Brown | | | | | |
| 34 | 2ND FLOOR OFFICE SPACE | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 28.6% Organic | |
| 21-619 -22 | | FISSURED | | | 0.0% Vermiculite | 47.7% Residue 23.7% Carbonate | NONE DETECT |
| 21-019 -22 | | Color: White | | | | 2017/0 0412011410 | |
| Analyzed By: | Mei Wang | Second Analyst: Feyza Gu | ngor | Comments: NOB PL | M Inconclusive | | |
| 35 | 2ND FLOOR OFFICE SPACE | 2' X 4' CEILING TILE TYPE I FISSURED | NOB-TEM | | | 29.8% Organic 47.4% Residue | |
| 21-619 -23 | | | | | 0.0% Vermiculite | 22.8% Carbonate | NONE DETECT |
| Analyzed By: | Moi Wang | Color: White Second Analyst: Feyza Gu | ngor | Comments: NOB PL | M Inconclusive | | |
| 36 | 2ND FLOOR OFFICE SPACE | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 30.6% Organic | |
| | 2.15 / 25 5 / 6 / 7 / 6 2 / 7 / 6 2 | FISSURED | NOD-ILW | | 0.00()/ | 45.6% Residue | NONE DETECT |
| 21-619 -24 | | Color: White | | | 0.0% Vermiculite | 23.8% Carbonate | NONE DETECT |
| Analyzed By: | Mei Wang | Second Analyst: Feyza Gu | ngor | Comments: NOB PL | M Inconclusive | | |
| 37 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WAL | LPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -25 | | | | | 0.0% Vermiculite | | NONE DETECT |
| | | Color: Brown | | | | | |
| Analyzed By: | • | 0//00114 004 55 54 555 | 15114 | 050/ 0 :: : | 50/ 11/ | | |
| 38 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WAL | LPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -26 | | | | | 0.0% Vermiculite | | NONE DETECT |
| Analyzed By: | Ivan Reyes | Color: Brown | | | | | |
| 39 | • | GYPSUM BOARD PAPER WAL | LPLM | 95% Cellulose | 5% Mineral Filler | | |
| | | | | | 0.0% Vermiculite | | NONE DETECT |
| 21-619 -27 | | | | | | | |

Report Prepared By: Grace Chan Page 3 of 7 Batch # 21-619



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| | | | | Non | - <u>Asbestos</u> | <u>NOB</u> | <u>Asbestos</u> |
|--------------|-------------------------|----------------------------|----------|--------------------------------|---------------------|----------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 40 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-619 -28 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Off V | Vhite | | | | |
| Analyzed By: | • | | | | | | |
| 41 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 6% Cellulose | 92% Mineral Filler | | |
| 21-619 -29 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Payas | Color: Off V | Vhite | | | | |
| | 2ND FLOOR OFFICE SPACE | CVDCIIM BOARD | DLM | 40/ Callulana | O40/ Minaral Filler | | |
| 42 | 2ND FLOOR OFFICE SPACE | GYPSUM BUARD | PLM | 4% Cellulose 2% FiberGlass | 94% Mineral Filler | | |
| 21-619 -30 | | | | 270 1 10 01 01 000 | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Off V | Vhite | | | | |
| 43 | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 01.010.01 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -31 | | Color: Whit | 4 | | 0.070 Verrilledite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Odor. Will | | | | | |
| 44 | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -32 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 27 070 02 | | Color: Whit | e | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 45 | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -33 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Whit | e | | | | |
| Analyzed By: | | | | | | | |
| 46 | 2ND FLOOR OFFICE SPACE | HVAC DUCT COVER | PLM | 75% Cellulose 7% FiberGlass | 18% Mineral Filler | | |
| 21-619 -34 | | | | 7% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Payas | Color: Tan | 'Silver | | | | |
| 47 | 2ND FLOOR OFFICE SPACE | HVAC DUCT COVER | PLM | 75% Cellulose | 20% Mineral Filler | | |
| 41 | ZND I LOOK OFFICE SPACE | TIVAC DOCT COVER | PLIVI | 5% FiberGlass | | | |
| 21-619 -35 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Tan | Silver | | | | |
| 48 | 2ND FLOOR OFFICE SPACE | HVAC DUCT COVER | PLM | 75% Cellulose | 20% Mineral Filler | | |
| | | | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -36 | | Color: Tan | /Silver | | 0.0 /0 VEITHCUIRE | | NONE DETECTEL |
| Analyzed By: | Ivan Reyes | COIOI. I di l | J.1701 | | | | |
| 49 | 2ND FLOOR BY ENTRANCE | 2 X 4 CEILING TILE TYPE II | NOB-TEM | | | 24% Organic | |
| 21-619 -37 | TO OFFICE SPACE | | | | 0.0% Vermiculite | 31.4% Residue 44.6% Carbonate | NONE DETECTED |
| _, 0,0 01 | | Color: Whit | ie | | | | |
| | | Second Analyst: Feyza C | | Comments: NOB PLN | Inconclusive | | |

Report Prepared By: Grace Chan Page 4 of 7 Batch # 21-619



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| | | | | No | n-Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|--------------|--|----------------------------|----------|-------------------------------|---------------------|---|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 50 | 2ND FLOOR BY ENTRANCE | 2 X 4 CEILING TILE TYPE II | NOB-TEM | | | 20.7% Organic | |
| 21-619 -38 | TO OFFICE SPACE | | | | 0.0% Vermiculite | 20.7% Residue 58.6% Carbonate | NONE DETECTED |
| | | Color: Whi | | Comments: NOB PL | M Incorphysics | | |
| Analyzed By: | - | Second Analyst: Feyza (| | Commens, NOB PL | ivi inconclusive | | |
| 51 | 2ND FLOOR BY ENTRANCE TO OFFICE SPACE | 2 X 4 CEILING TILE TYPE II | NOB-TEM | | 0.0% Vermiculite | 18.5% Organic 12.6% Residue 68.9% Carbonate | NONE DETECTED |
| 21-619 -39 | | Color: Whi | te | | 0.0% verificante | 00.9 % Calbonate | NONE DETECTE |
| Analyzed By: | : Mei Wang | Second Analyst: Feyza | | Comments: NOB PL | .M Inconclusive | | |
| 52 | 1ST FLOOR ABANDONED BLDG | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-619 -40 | BEDG | | | | 0.0% Vermiculite | | NONE DETECTED |
| | . 5 | Color: Bro | wn | | | | |
| Analyzed By: | | OMILIWALI MODTAD | D. 14 | | 1000/ 14/ 15/ | | |
| 53 | 1ST FLOOR LOCKER ROOM & LUNCH ROOM | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-619 -41 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reves | Color: Bro | wn | | | | |
| 54 | 1ST FLOOR LOCKER ROOM | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-619 -42 | & LUNCH ROOM | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-019 -42 | | Color: Bro | wn | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 55 | 1ST FLOOR LOBBY | GYPSUM BOARD PAPER W | ALLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -43 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Payas | Color: Bro | wn | | | | |
| 56 | 1ST FLOOR LOBBY | GYPSUM BOARD PAPER W | ALI DI M | 95% Cellulose | 5% Mineral Filler | | |
| 50 | 131 I LOOK LOBB I | OTI SOM BOARDT AF ER W | VEELEINI | 95% Cellulose | | | NONE DETECTED |
| 21-619 -44 | | Calan Bra | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | Color: Bro | wn | | | | |
| 57 | 1ST FLOOR LOBBY | GYPSUM BOARD PAPER W | ALLPLM | | 100% Mineral Filler | | |
| 21-619 -45 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21010 10 | | Color: Bro | wn | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 58 | 1ST FLOOR LOBBY | GYPSUM BOARD | PLM | 3% Cellulose 2% FiberGlass | 95% Mineral Filler | | |
| 21-619 -46 | | | | 2% FINEIGIASS | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reves | Color: Off | Vhite | | | | |
| 59 | 1ST FLOOR LOBBY | GYPSUM BOARD | PLM | 2% Cellulose | 96% Mineral Filler | | |
| | | | . = | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTE |
| 21-619 -47 | | Color: Off | Mhito. | | 0.0% verificulte | | NONE DETECTED |
| Analyzed By | : Ivan Reyes | Color: Off | VIIIIE | | | | |

Report Prepared By: Grace Chan Page 5 of 7 Batch # 21-619



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| Location | Type of Material | 3.6 .1 1 | | | | |
|--------------------------------------|---|--|---|---|--|---|
| | VF - J | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 1ST FLOOR LOBBY | GYPSUM BOARD | PLM | 3% Cellulose | 95% Mineral Filler | | |
| | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| an Reves | Color: Of | f White | | | | |
| 1ST FLOOR LOBBY | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | | | | NONE DETECTED |
| | Color: W | hite | | 0.0 % VOITHIOGHIO | | NONE BETEGTED |
| an Reyes | | | | | | |
| 1ST FLOOR LOBBY | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | | 0.0% Vermiculite | | NONE DETECTED |
| ran Reves | Color: W | hite | | | | |
| 1ST FLOOR LOBBY | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | | 0.0% Vermiculite | | NONE DETECTED |
| | Color: W | hite | | | | |
| an Reyes | | | | | | |
| 1ST FLOOR BATHROOMS | F/G PIPE INSULATION COV 3" | ER NOB-TEM | | | 81.4% Organic 4.7% Residue | |
| | | | | 0.0% Vermiculite | 13.9% Carbonate | NONE DETECTED |
| lei Wang | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR BATHROOMS | | ER NOB-TEM | | | 78.4% Organic | |
| | 3 | | | 0.0% Vermiculite | 13.7% Residue 7.9% Carbonate | NONE DETECTED |
| | | | Comments: NOB PLM | A Inconclusive | | |
| | | | | | 00.00/ 0 | |
| 151 FLOOR BATHROOMS | 3" | EK NOR-IEM | | | 10.2% Residue | |
| | Color: Pl | ook/Prown | | 0.0% Vermiculite | 0.9% Carbonate | NONE DETECTED |
| lei Wang | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR ABADONED | PIPE FITTINGS INSULATIO | N PLM | | 55% Mineral Filler | | 10% Chrysotile |
| BEB B ATTINGO MO | | | 35% FiberGlass | 0.0% Vermiculite | | |
| ran Bayyaa | Color: Of | fWhite | | | | |
| | PIPE FITTINGS INSULATIO | N | | | | Total Asbestos: 10 % |
| BLDG BATHROOMS | | | | | | NOT ANALYZED |
| | | | | | | NOT ANALTZED |
| | | | Comments: Positive st | top, see #67 | | |
| 1ST FLOOR ABADONED BLDG BATHROOMS | PIPE FITTINGS INSULATIO | N | | | | |
| | | | | | | NOT ANALYZED |
| | | | Comments: Positive st | top, see #67 | | |
| 1 | an Reyes 1ST FLOOR LOBBY an Reyes 1ST FLOOR LOBBY an Reyes 1ST FLOOR BATHROOMS ei Wang 1ST FLOOR BATHROOMS ei Wang 1ST FLOOR BATHROOMS an Reyes 1ST FLOOR ABADONED BLDG BATHROOMS 1ST FLOOR ABADONED BLDG BATHROOMS | an Reyes 1ST FLOOR LOBBY Color: Wan Reyes 1ST FLOOR LOBBY JOINT COMPOUND Color: Wan Reyes 1ST FLOOR LOBBY JOINT COMPOUND Color: Wan Reyes 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Second Analyst: Feyza 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Color: Blace i Wang Second Analyst: Feyza 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Color: Blace i Wang Second Analyst: Feyza 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Color: Blace i Wang Second Analyst: Feyza 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION Color: Of an Reyes 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED | Color: White Color: White Color: White Color: White Color: White Color: White Color: White Color: White Color: White Color: White Color: White Color: White Color: White Color: White Color: White Color: White Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION Color: Off White 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION ST FLOOR ABADONED Color: Off White 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION PLM | AND REYES IST FLOOR LOBBY JOINT COMPOUND Color: White AND REYES COLOR: White AND REYES IST FLOOR LOBBY JOINT COMPOUND Color: White Color: White AND REYES COLOR: White AND REYES IST FLOOR BATHROOMS FIG PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLIN Second Analyst: Feyza Gungor Comments: NOB PLIN Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLIN Second Analyst: Feyza Gungor Comments: NOB PLIN Trace% Cellulose Color: Black/Brown Comments: NOB PLIN Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLIN Second Analyst: Feyza Gungor Comments: NOB PLIN Trace% Cellulose Color: Black/Brown Comments: NOB PLIN Trace% Cellulose Comments: NOB PLIN Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLIN Second Analyst: Feyza Gungor Comments: NOB PLIN Trace% Cellulose Comments: NOB PLIN Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLIN Trace% Cellulose Comments: NOB PLIN Trace% Cellulose Comments: NOB PLIN Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLIN Trace% Cellulose Comments: NOB PLIN Trace% Cellulose Comments: NOB PLIN Trace% Cellulose Comments: NOB PLIN Trace% Cellulose | Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: Black/Brown Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclu | an Reyes Cobr. White Cobr. White Cobr. White |

Report Prepared By: Grace Chan Page 6 of 7 Batch # 21-619



ATC Group Services LLC 104 E. 25th Street, 8th Floor

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| | | | | No | n-Asbestos | <i>NOB</i> | <u>Asbestos</u> |
|----------------|------------------------------------|--|---------------------------|-------------------------------|--|----------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| NOTES: | | | | | | | |
| 1) The Limi | it of Detection is the same as | the Reporting Limit for these results. | | | | | |
| 2) The Rep | oorting Limit (RL) is the Limit o | of Quantitation. For point counts the limit of | quantitation of 0.25%; | based on one asbestos | point counter over 400 non-empty poi | nts. | |
| 3) Asbesto | s Containing Material (ACM) | Definition: > 1% asbestos by weight is o | onsidered an ACM | | | | |
| report may | | ponsible for sample collection. Please refit t endorsement by NVLAP or any other ag quest. | | | | | |
| 5) Accredi | ited by NVLAP #101187-0 ar | nd by NY State ELAP #10879 | | | | | |
| 6) Confiden | ntiality Notice: The document(| s) contained herein are confidential and pr | rivileged information, i | ntended for the exclusive of | use of the individual or entity named al | pove. | |
| 7) Liability N | Notice: ATC Group Services | and its personnel shall not be liable for an | y misinformation prov | rided to us by the client req | garding these samples. This report re | lates only to samples subm | itted and analy |
| 8) Asbesto | s results are reliable to 2 sign | nificant figures. | | | | | |
| 9) The con | dition of all samples was acc | eptable upon receipt | | | | | |
| 10) The lab | ooratory certifies that the test r | esults meetall requirements of NELAC. | | | | | |
| 11) Supple | ment to test report batch # | Amendments: Ame | endment Dates: | Amended by: | | | |
| 12) PLM Le | etter is attached on this repor | t | | | | | |
| 13) TRACE | E: The result is reported as T | race when No points are counted and ast | oestos is identified. Fo | r ELAP Trace is < 1%. | | | |
| 14) ATC G | roup Services certifies that th | is report is an accurate and authentic rep | ort of the results obtain | ned from the laboratory an | alysis | | |
| 15) The un | certainty for these test results | is available upon request. | | | | | |
| | | 1 for the analysis of samples containing ≤ lite and may underestimate the level of as | | | | ds ELAP 198.1 followed by | ELAP 1986. |
| Ivan Rey | es 🚺 | van Regu | | | Mei Wan | g Meih | اسم |
| Analyst: | | Y | | | Approved Quality M | 3 | |
| Mei Wan | ng M | illong | | | | | |
| Analyst: | | | | | | | |
| Feyza Gu | ungor | terly | | | | | |
| Analyst: | | | | | | | |

Report Prepared By: Grace Chan Page 7 of 7 Batch # 21-619



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired.

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely.

Milena Bonezzi
ATC Group Services LLC
Director of Laboratory Services

Wiley Bourson

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS BULK DOCUMENTS 2021\BULK_LETTER_DOC #D84A.DOC

ATC EFFECTIVE DATE 01/18/2021 REVISION #32

BY MEI WANG

Page 1 of 1

DOCUMENT #DE



BATCH NO. 21-6(9) Page of

| 1. Clien | PANY | J.J | Project Na FIRESPRI | ime: INKLER RE | HABILITA | TION | 3a. ATC P | roject No.: 4PNPE I | | 4a. Proje | ect Manager: R. Rivero | 0 |
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24. Name and Signature:

24. Name and Signature:

25. Date

26 Time

27. Comments (Lab)

24a. Analyzed By:

24b. Analyzed By:

24c. QC By:

12m: Fanza Gunga Tuy & 4/9/21 H: 47



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BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| PROJECT INF | ORMATION | | | | | |
|-------------|----------------------------------|---------------------|-------|---|---|---|
| 1. Client | NYNJ | Project I FIRESP | | ER REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
| | | 2a. Project | Addre | ess: <mark>(Circle One)</mark> PE PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: | BUILDING NUM Sampling Areas: | 201 | | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH X | 9. Comment s (Field) NOB→ TEM Stop @ 1st Positive |

|). omogenous | 11. Bulk Sample ID | 12. Material | 13. Thermal | 14. | Sample Location | 15. Material Total | 16. Asbestos |
|-----------------|-----------------------|-----------------|----------------|-------|--------------------|-----------------------|-----------------|
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| 11 | 32 | W AZY | | | FUEL ROOM | | |
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| 12 | 34 | ZYY CENCINC | | 2 | OPPICE SPACE | | |
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| 13 | 37 | GYPSUN BOARD | | | | | |
| 13 | 38 | PAPER | | | | | |
| 13 | 39 | WALL | | | | | |
| 14 | 40 | GYPSUM BOARD | | | | | |
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| 24. Name and Signature: | 25. Date | 26 Time | 27. Comments (Lab) |
|---------------------------------------|----------|---------|--------------------|
| 24a. Analyzed By: Ivan Reyer Strantes | 4 9/2021 | 9:58am | |
| 24b. Analyzed By: ME Who G | 4(4127 | (f w | |
| 24c. QC By: | | | |
| TEM: Feyza Gungs Zen | 4/9/20 | 14:47 | |



BATCH NO. 21-619

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Client PANYNJ | | Project Name: FIRESPRINKLER | REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
|------------------|-----------------------------------|--------------------------------|---|--|---|
| | | 2a. Project Address: PN P | (Circle One) E PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: 4/8/21 | BUILDING NUMB Sampling Areas: | 30) | [1] : [| ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1 st Positive |

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| Homogenous | Bulk Sample ID | 12. Material | 13. Thermal | 14. | Sample Location | Material Total | 16. Asbestos |
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| 10 | 58 | CHIPS WY BOARD | | | | | |
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| LABORATORY INFORMATION | | -10: | |
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| 24. Name and Signature: | 25, Date 2 | 26 Time | 27. Comments (Lab) |
| 24a. Analyzed By: Dran Keyer a frankly | 49/2021 | 75 Saw | |
| 24b. Analyzed By: With whom te | 4/3/121 | 142 | |
| 24c. QC By: | CCI | | |
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| BATCH NO. | 2,1.19 | Page(| 1 of 4 |
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| 1. Client | Project Name: | | 3a. | . ATC Project No.: | | 4a. Projec | t Manager: | |
|--|--|-------------------|--------------------|-----------------------------|----------------|-----------------|---|----------------------|
| PANYNJ | FIRESPRINKLER RE 2a. Project Address: (Ci | | | 214PNPEF . Task No.: | J1 | 4b. Inspec | R. Rivero |) |
| | PN PE | PJ | 1.55 | 0001 | | PHI | LIP CARRIN | |
| 5. Date: 6. BUILDING NUMB 7. Sampling Areas: | 201 | | HRS o | 72 HRS 0 OTHE NORMAL RUS | | NOB→ 1 | nent s (Field) FEM 1 st Positive | |
| BULK SAMPLE LOCATION | | | | | | | | |
|). 11. 12. omogenous Bulk Sample ID | Material | 13. 14 Thermal | 40 | Sample Loca | ation | | 15. Material Total | 16. Asbestos |
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ATLAS ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | DANIVNI | / CIDEC | ואואום | ED DEL | ΛD | | | | (25) B W | Number 214PN | DEDI1 | NIKON OPTIPHOT |
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| 13 | Stereoscopic Exam | 1 | _ Allalyst | | PLM Or | tical Pro | perties | | _ batch is | Asbestos | Other Fibrous | Non Fibrous |
| d Number | 1.11 | Morph | Extinction | RII | | | r, Pleo Bire | ef Sign Oth | ner Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Unite Texture | _ | | | | | | | _ | Chrysotile | Cellulose | Mineral Filler |
| Required 🗹 | Homogeneity Vermiculite | | | | | | | | | Amosite | Fiberglass | Organic Binders Vermiculite* |
| ecommended [| # of Layers Asbestos | | | | | 1 | | | | Other | Other | vermicuno |
| e gravimetric A | · — | / | | | | | | | | | Section Management | Other |
| for results | Color of Layer Detected Yes | No | - | | 100 | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| | NOB PLM 100 | | | | | | | 9 | 21 | J | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | | | 7 | | | | | | | U | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: | 12 CCAN | NING OPTI | ON . | | lo. | C. 🗆 | | | | | |
| | Method: ☑ ELAP □ EPA | SCAN | NING OPTI | ON | |] \(\delta_1\) | У. П | | | | | |
| 14 Id Number | Stereoscopic Exam | | | | PLM OF | otical Pro | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color I CTexture | Morph | Extinction | RII | RI I DS | Color Colo | r, Pleo Bir | ef Sign Oth | ner Identity | Chrysotile | Cellulose | (Mineral Filler |
| Required 2 | | | | | | | | | | Amosite | Fiberglass | Organic Binders |
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| e gravimetric 🗗 | # of Layers Asbestos | /= | | | | | | | | | | Other |
| analysis sheet | Color of Layer Detected Yes | No - | | | | | | | | | ☐ Cellulose Ondulose | |
| for results | | | | | | | | | | | Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required | PLM | | | | | | | | _ | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | | | | | | 2 | 2 | 7 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet | Comments: | _ | | | | | | | | | Birefringence | See Note #1. |
| for results | Method: ☑ ELAP □ EPA | Ď SCAN | NING OPTI | ON | | Q. | c. 🗆 | | | | | |
| 15 | | | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| 15 Id Number | Stereoscopic Exam | | | | | otical Pr | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Mc Clexture | Morph | Extinction | RII | RII DS | Color Colo | or, Pleo Bir | et Sign Off | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 2 | 9,, | 1 | | | | | | | | Amosite | Fiberglass | Organic Binders |
| ecommended | Homogeneity Vermiculite | 1 | | | | | | | | Other | Other | Vermiculite* |
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| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total P1 | %Asb. Or %Ver. | ☐ Synthetic High | |
| Required | PLM | | | | | | | | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | ~? | | | | | 0 | Lus | U | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
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| 10, 100013 | Method: ☐ ELAP ☐ EPA | SCAN | NING OPTI | ON | | Q. | c. 🗆 | | | | | |
| 16 | Stereoscopic Exam | ΎT | | | PIMO | ntical Pr | operties | | | Asbestos | Other Fibrous | Non Fibrous |
| ld Number | O Stored Copie Exam | Morph | Extinction | RII | | | or, Pleo Bir | | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Colo Divorvexture | | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity \(\frac{1}{2} \) Vermiculite \(\frac{1}{2} \) | 1 | | | | | | | | Aprosite | Fiberglass | Organic Binders |
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| ee gravimetric analysis sheet for results | 1 | No | _ | | | | | | | 1 | Cellulose Ondulose | |
| analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Ash /Ver PT | Total PT | %Asb, Or %Ver | Cellulose Ondulose Extinction Fiberglass Isotopic | |
| analysis sheet | # of Layer Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 | No Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | - | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% the |
| analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| analysis sheet for results SM-V Required See SM-V | # of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 PLM | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | - | - | | Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | |
| analysis sheet for results SM-V Required | # of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 PLM NOB PLM Comments: | Slide 3 | | | Slide 6 | | | - | - | | Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet for results SM-V Required See SM-V analysis sheet | # of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 PLM NOB PLM | Slide 3 | Slide 4 | | Slide 6 | | Slide 8 | - | - | | Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | Client / Project PANYN | AN LIVES | PRINKL | EK KEF | IAR | | | · | Project | Number 214PN | IPEPJ1 | |
|--|--|------------------------|--------------|---------|---|------------|-----------------------------|--------------|----------------|---|--|---|
| | Analysis Date 4/0 | /2021 | _ Analyst | | | AL | | | Batch N | 34 | 619 | EMPERATURE S |
| 1 17 Field Number | Stereoscopic Exam | \overline{a} | | | PLM O | otical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colol Now Pexture | Morph | Extinction | RII | RI DS | Color Colo | r, Pleo Bin | ef Sign Oth | er Identity | Chrysotile | 95 Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | | | | | | | | | Amosile Other | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | | Oale | Other |
| analysis sheet for results | Color of Layer Detected Yes | s No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Side 1 Slide : | 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required 🛭 | 100 | | | | | | | 0 | <u> 200</u> | 0 | Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| See SM-V 🗆 analysis sheet | NOB PLM Comments: | | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: ELAP EPA | Z SCAN | INING OPTI | ON | | Q. | C. 🗆 | | | | | |
| 2 18 Field Number | ↑ Stereoscopic Exam | | | | PLM O | otical Pro | perties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Gravimetric | Color Diow, faxture | Morph | Extinction | RII | Ri DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | Chrysotile | 95 Celiulose | Mineral Filler |
| Required 🗆 | | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer Detected Ye | s No | | | | | | | | | ☑ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide : | 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb, Or %Ver. | Extinction Fiberglass Isotopic | |
| Required [| PLM | | | | | | | 0 | 295 | 9 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | LIGHT STATE | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | 10. | ~ <u></u> | | | | Birefringence | |
| | Method: ☐ ELAP ☐ EPA | LG SCAN | INING OPTI | ON | *************************************** | <u> </u> | C. 🗆 | | | | | <u> </u> |
| 3 19 Field Number | Stereoscopic Exam | <u> </u> | - | | | otical Pro | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Hall Latexture | Morpi | Extinction | RII | RI I DS | Color Colo | or, Pieo Bir | ef Sign Otl | ner identity | Chrysotile | Cellulose | Mineral Filler |
| | A 4000 C | | | | | | | | | | | |
| Required 🗆 | Homogeneity Vermiculite | - 4 | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🛘 | , | - | | | | | | | MITTER ANDREWS | Anosite | Fiberglass Other | Organic Binders Vermiculite* Other |
| | | s No | | | | | | | | | Other Other | Vermiculite* |
| Recommended See gravimetric analysis sheet | # of Layers Asbestos | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | | Other | Vermiculite* |
| Recommended See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | Other | Other Gellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | Vermiculite*Other * If vermiculite is >10% the |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | | _ | Other | Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | Vermiculite* |
| Recommended See gravimetric D analysis sheet for results SM-V Required | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide: PLM NOB PLM Comments: | 2 Slide 3 | | | Slide 6 | | | | _ | Other | Other Desilulose Ondulose Extinction Defiberglass Isotopic Synthetic High Biretringence | Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide PLM NOB PLM NOB PLM Comments: Method: ELAP EPA | 2 Slide 3 | Slide 4 | | | Q. | С. 🗆 | | _ | Other %Asb. Or %Ver. | Other Callulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide: PLM NOB PLM Comments: | 2 Slide 3 | INING OPTI | ION | PLM O | Q. | C. operties | 0 | 290 | Other | Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide PLM NOB PLM Comments: ELAP EPA Stereoscopic Exam Coor | 2 Slide 3 | | ION | PLM O | Q. | C. operties | 0 | _ | %Asb. Or %Ver. Asbestos Results PLM % Chrystile | Other Ot | Vermiculite* Other * If vermiculite is >10% the tevel of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| Recommended See gravimetric D analysis sheet for results SM-V Required See SM-V D analysis sheet for results 4 20 Field Number | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide: PLM | 2 Slide 3 | INING OPTI | ION | PLM O | Q. | C. operties | 0 | 290 | %Asb. Or %Ver. Asbestos Results PLM % | Other Ot | Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric Required Recommended See gravimetric See gravimetric | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide PLM NOB PLM Comments: Method: ELAP EPA Storeoscopic Exam Color Vermiculite Homogeneity Vermiculite | 2 Slide 3 | INING OPTI | ION | PLM O | Q. | C. operties | 0 | 290 | Asbestos Results PLM % Chrystile Aprosite | Other Other Other Other Other Otherse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric Required Recommended Recommended | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide PLM NOB PLM Comments: Method: ELAP EPA Storeoscopic Exam Color Vermiculite Homogeneity Vermiculite | 2 Slide 3 | INING OPTI | ION | PLM O | Q. | C. operties | 0 | 290 | Asbestos Results PLM % Chrystile Aprosite | Other Other Other Other Other Otherse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Ciganic Binders Vermiculite* |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | # of Layers Asbestos | 2 Slide 3 SCAN Morph | INING OPTI | ION | PLM O | Q. | C. operties | 0 | 2so | Asbestos Results PLM % Chrystile Aprosite | Other Other Other Other Other Otherse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose 7 Fiberglass Other | Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Ciganic Binders Vermiculite* |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | # of Layers Asbestos Asbestos Color of Layer Detected Ye | 2 Slide 3 SCAN Morph | n Extinction | ION RIT | PLM O | Q. | C. operties or, Pleo Bir | ef Sign Oil | 2so | Asbestos Results PLM % Chrystile Apriosite Other | Other Other Other Other Other Other Other Fibrous PLM % Cellulose Other Othe | Vermiculite* Other If vermiculite is >10% the tevel of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide: PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color | 2 Slide 3 SCAN Morph | n Extinction | ION RIT | PLM O | Q. | C. operties or, Pleo Bir | ef Sign Oll | 2so | Asbestos Results PLM % Chrystile Apriosite Other | Other Other Other Other Other Other Other Other Fibrous PLM % Cellulose Tiberglass Other | Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* Other |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

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BULK ASBESTOS ANALYSIS SHEET

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|--|--|------------------|--------------------|-------------|----------|------------|-------------|--------------|--------------|--|---|--|---|
| | Analysis Date 4/2 /2 | 2021 | Analyst_ | | _ | M | | | Batch N | lumber | 21-6 | 19 TI | EMPERATURE & |
| 1 21 Field Number | Stereoscopic Exam | | | | | otical Pro | | | | Asbestos Results PLN | Station 1 | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required Recommended | Color Texture | Morph | Extinction | RII | RI DS | Color Colo | r, Pleo Bir | ef Sign Oth | ner Identity | , | ysotile osite er | Cellulose Z Fiberglass Other | Mineral Filler Organic Binders Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes N | vo | | | | | | | | | T | Cellulose Ondulose Extinction | Other |
| SM-V Required See SM-V analysis sheet for results | LUCE BLUE | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %V | | Fiberglass Isotopic □ Synthetic High Birefringence □ Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| 2 22 | | T | | 345 | DI M O | | | | | Asbestos | s | Other Fibrous | Non Fibrous |
| Gravimetric Required Recommended See gravimetric analysis sheet | # of Layers Asbestos | | Extinction | RI1 | | otical Pro | | ef Sign Ott | ner Identity | Results PLI | ysotile osite er | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other |
| SM-V Required See SM-V analysis sheet | Point Counts Slide 1 Slide 2 PLM | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %V | /er. | Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| for results | Comments: | SCANN | IING OPTIO | ON | | Q.C | C. 🗆 | | | | | Birefringence | TOTAL FILE |
| for results | Method: ØELAP □ EPA | SCAN | ING OPTIO | ON | PLM O | | 3441000 | | | Asbestos | 2 | Other Fibrous | Non Fibrous |
| for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Lavers Ashestos | Morph | | RII | | Q.O | operties | ef Sign Otl | ner Identity | Results PLI | ysotile osite er | | Non Fibrous PLM % Mineral Filler |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Side 1 Slide 2 PLM | Morph No Slide 3 | | RII | | Slide 7 | operties | ef Sign Otl | | Christian Christ | ysotile osite er | Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Stereoscopic Exam Color | Morph No Slide 3 | Extinction | RII | RIII DS | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT | Asbestos Results PLI | VI %, yysotile osite er | Other Fibrous PLM % Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 24 Field Number Gravimetric Required Required Required Required Required Required Required Required Required Required Required Requ | Stereoscopic Exam Color | Morph No Slide 3 | Extinction Slide 4 | RII Slide 5 | RIII DS | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT 200 | Asbestos Results PLII Christian Chr | M %, systile site of the state | Other Fibrous PLM % Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

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See gravimetric [analysis sheet for results

SM-V

Required [

See SM-V

analysis sheet for results

NOB PLM

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Synthetic High

Horse Hair: Scales,

Low to Moderate Birefringence

If vermiculite is >10% the

level of asbestos in a sample

might be underestimated. See Note #1.

%Asb. Or %Ver.

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|---|--|-----------|--------------|----------|----------|------------|--------------|--------------|--------------|---------------------------|--|--|
| | . 9 | 2024 | Analyst | | ~ | DA | | | | Number 21- | 619 | EMPERATURE*c2 |
| 1 29 Field Number | Stereoscopic Exam | | | | PLM Op | tical Pro | operties | 65 | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required Recommended | Colon Land Colon C | Morph E | Extinction F | RI 1 | RI DS | Color Colo | or, Pleo Bir | ref Sign Otl | her Identity | Chrysotile | 70 Cellulose S Fiberglass Other | Mineral Filler Organic Binde |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes N | No | | | | | | | | | Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 S | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required See SM-V analysis sheet for results | 1 | | _ | | | | | 0 | 200 | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. |
| | Method: ✓ ELAP □ EPA | SCANNIN | NG OPTION | | | Q. | C. 🗆 | | | | | |
| 2 30 Field Number | Stereoscopic Exam | | | | | tical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required Recommended See gravimetric | ColorMute Parkitho/ P Homogeneity Vermiculite # of Layers Asbestos | Morph E | Extinction F | | RI DS | Color Colo | r, Pleo Bir | ef Sign Otl | her Identity | Chn/sotile | Cellulose Fiberglass Other | Mineral Filler Organic Binde Vermiculite* Other |
| analysis sheet for results | Color of Layer Detected Yes N | No : | | | | | | | | / | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 S | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required ☐ See SM-V ☐ | NOR PLW A | | Ì | b | | | | 0 | 200 | 0 | Birefringence Horse Hair: Scales, Low to Moderate | If vermiculite is >10% the level of asbestos in a samp might be underestimated. |
| analysis sheet for results | Comments: | 1 | | | | la. | | | | | Birefringence | See Note #1. |
| | Method: ☐ ELAP ☐ EPA | SCANNIN | NG OPTION | | | JQ. | C. 🗆 | | | | | |
| 3 31 Field Number | Stereoscopic Exam | Morph E | Extinction E | रा 1 | | Color Colo | perties | ed Sign Off | her Identity | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Cold WOWN Texture 6 | | - Amicuon | | | | i, rieo bii | — — — | - Identity | Chp/sotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | 4- | | | | | | | | Other | Fiberglass Other | Organic Binde Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | = | | | | | | | | | | Other |
| for results | Color of Layer Detected Yes N | No = | | | | | | | | 1 | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 S | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required See SM-V | 100 | | | _ | | | | 0 | 200 | 0 | Birefringence ☐ Horse Hair: Scales, Low to Moderate | If vermiculite is >10% the level of asbestos in a samp might be underestimated. |
| analysis sheet for results | Comments: | / | | | | - | | | | | Birefringence | See Note #1. |
| 10) Tesulis | Method: ☑ ELAP □ EPA | 6 SCANNIN | NG OPTION | | | Q.0 | C. 🗆 | | | | | |
| 4 32 Field Number | Stereoscopic Exam | | - | nuico: | PLM Op | tical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Drow Vexture C- | Morph E | Extinction F | | RI DS | Color Colo | r, Pleo Bir | ref Sign Oth | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | 4=: | | | | | | | | Amosite | Fiberglass | Organic Binde |
| See gravimetric | # of Layers Asbestos | /=: | | | | | | | | Other | Other | Other |
| analysis sheet for results | Color of Layer Detected Yes N | No = = | | | | | | === | == | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 S | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | 0 | 200 | 0 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: ELAP EPA | SCANNIN | NG OPTION | | | lq.d | c. 🗆 | | | | Sireningence | |
| | The state of the s | | | | | | 201 (SC172) | | | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

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|---|--|-------------------------|--|------------------------|--|--|---|
| | Client / Project PANYNJ/ Analysis Date 4 / 7/2 | | SBESTOS ANALYSIS SH IAB | Project | Number <u>214PN</u> Number <u>21</u> -6 | 519 | Microscop OLYMPUS BH NIKON OPTIPH |
| 1 25 Field Number | Stereoscopic Exam | <u> </u> | PLM Optical Properties | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Coloran St tregure 2 | Morph Extinction RLI | RI DS Color Color, Pleo Bir | ef Sign Other Identity | Chrysofile | 75 Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity 🔼 Vermiculite | | | | Amosite | | Organic Bind |
| Recommended | # of Layers Asbestos | | | | Øther | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes No | | | | | (T Cellulose Ondulose Extinction | Other |
| SM-V | | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 | Asb./Ver, PT Total PT | %Asb. Or %Ver. | □ Fiberglass Isotopic | - |
| Required 🗆 | PLM O J) | | | 0 200 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a same |
| See SM-V | NOB PLM V | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | / | the second secon | | 4 | Birefringence | out (tale #). |
| | Method: ☑ ELAP □ EPA | SCANNING OPTION | Q.C. □ | | | | |
| 2 26 | Stereoscopic Exam | | PLM Optical Properties | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | | Moret Endington DL | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color GM SI WESTER | Morph Extinction RI1 | RI DS Color Color, Pleo Bir | ef Sign Other Identity | Chrysptile | Z Cellulose | Mineral Filter |
| Required 🗆 | Homogeneity Vermiculite | <u> </u> | | | Armosite | SFiberglass | Organic Bind |

| <u> </u> | MICHIOU. LI ELAP LI EPA ALI SCANNING OPTION Q.C. LI | | | |
|-------------------------------|--|---------------------------|--|--|
| 3 27 Field Number | Stereoscopic Exam PLM Optical Properties | Res | sbestos Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color Color, Pleo Birel | Sign Other Identity | Chrysolije ZCellulose | 20 Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | | ArnositeFiberglass | Organic Binders |
| Recommended 🗆 | | | OtherOther | Vermiculite* |
| See gravimetric 🗆 | # of Layers N Asbestos 2 | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 / | Asb./Ver. PT Total PT %As | b. Or %Ver. | |
| Required 🗆 | PLM The second s | 0 200 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales. | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | Birefringence | |

Slide 4

Slide 5 Slide 6 Slide 7

Slide 8 Asb./Ver. PT Total PT

0 200 0

| | Method./ ECAP EFA | D SCAMERO OF HOM | G.O. L. | | | |
|-------------------------------|--------------------------------|-------------------------------------|--|---------------------------|------------------------------------|---|
| 4 28 Field Number | Sterepscopic Exam | · · | l Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | CANNIE SHEKKE P | Morph Extinction RI1 RI DS Colo | Color, Pleo Biref Sign Other Identity | Chrysotile | TQ Cellulose | 25 Mineral Filler |
| Required 🗆 | Homogeneity (1) Vermiculite | / | | mmosite | Fiberglass | Organic Binde |
| Recommended D | | | | Other | Other | Vermiculite* |
| See gravimetric 🛘 | # of Layers Asbestos | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | l l <u></u> f f | Slide 3 Slide 4 Slide 5 Slide 6 Sli | de 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM TJV | | 0 2.0 | 0 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | / | Andrew Control of the | · | Birefringence | |
| | Method: Z ELAP □ EPA | SCANNING OPTION | Q.C. □ | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of ashestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2

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BULK ASBESTOS ANALYSIS SHEET Microscopes: OLYMPUS BH-2 / Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Date 4 / 0 /2021 Analyst TAN 21-619 Batch Number 33 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RI DS Color Color, Pleo Biref Sign Other Ident cold Now Vexture / W Mineral Filler Gravimetri Cellulose Required [Organic Binder O Vermiculite* # of Lavers See gravimetric Other analysis sheet Color of Layer Cellulose Ondulose Extinction for results Point Counts Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotop SM-V Synthetic High If vermiculite is >10% the 200 Required [Birefringence evel of asbestos in a sample Horse Hair: Scales NOB PLM night be underestimated. See SM-V [Low to Moderate analysis sheet for results Method: ELAP EPA Q.C. SCANNING OPTION Asbestos Non Fibrous Other Fibrous 34 Stereoscopic Exam **PLM Optical Properties** Results PI M 9 PLM % RI DS Color Color, Pleo Biref Sign Other Mineral Filler Cellulose Chrysotil Required [Amosite Organic Binde Other Other Vermiculite* Other analysis sheet Color of Layer Cellulose Ondu Extinction for results Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Ash Ver PT Total PT Point Counts Slide 1 %Asb. Or %Ver. SM-V Synthetic High If vermiculite is >10% the Birefringence evel of asbestos in a sample Horse Hair: Scales, 0 night be underestimated. NOB PLM See SM-V [Low to Moderate See Note #1. analysis sheet Q.C. Method: ELAP EPA SCANNING OPTION 35 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RIII DS Color Color Pleo Biref Sign Other Gravimetric Cellulose ✓ Mineral Filler Required 8 Fibergla Organic Binder Vermiculite* See gravimetric analysis sheet Color of Laver Cellulose Ondul for results SM-V Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Synthetic High Required [evel of asbestos in a sample 8 NOB PLM night be underestimated. See SM-V [Low to Moderate analysis sheet for results Method: DELAP EPA SCANNING OPTION Q.C. 36 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Cellulose Mineral Filler Chrysoti Required Amosite Fiberala Organic Binders Other Other Vermiculite* of Layers Other analysis sheet Color of Laver for results Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Synthetic High If vermiculite is >10% the Required [Birefringence evel of asbestos in a sample Horse Hair: Scales, might be underestimated. NOB PLM See SM-V [analysis sheet for results Method: □ ELAP □ EPA SCANNING OPTION Q.C.

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing ≥10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2

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BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ | / FIRES | PRINKI | ER REL | IΛR | 979 5035 7637 | | | 2 W | Number 214PN | IDEDI1 | NIKON OPTIPHOT |
|---|---|---------|------------|---------|--------------|---------------|--------------|--------------|--------------|---------------------------|--|--|
| | 0 | 2021 | Analyst | | IAD < | NE | | | | | 619 | EMPERATURE & |
| 1 37 Field Number | Stereoscopic Exam | T | | | PLM O | otical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | color Brown Rexture P | Morph | Extinction | RII | RI II DS | Color Colo | or, Pleo Bir | ef Sign Otl | her Identity | Chrysotile | 25 Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | 1 | | | | | | | | Other | Fiberglass | Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required ☐ | PLM NOB PLM | | _ | | | | | 0 | 200 | ٥ | Birefringence Horse Hair: Scales, Low to Moderate | If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | | | | | | | | | | Birefringence | See Note #1. |
| | Method: □ ELAP □ EPA | □ SCAN | NING OPT | ION | | Q. | c. 🗆 | | | | | |
| 2 38 Field Number | Stereoscopic Exam | Momb | Extinction | RII | | and the same | operties | ef Sign Ot | her Identity | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required □ | Color Daw Fexture | worpn | Extinction | | KII DS | | or, Fleo Bir | er sign or | ner identity | Chrysøtile | Cellulose Fiberglass | Mineral Filler Organic Binder |
| Recommended | Homogeneity Vermiculite | 1 | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos Color of Layer Detected Yes | No | _ | : | | | | | | | Cellulose Ondulose | Other |
| for results SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| Required 🗆 | 1 01 | | _ | | | | | 0 | 250 | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V analysis sheet | NOB PLM Comments: | , | | | | | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Method: □ ELAP □ EPA | SCAN | NING OPT | ION | | Q. | С. 🗆 | | | | | |
| 3 39 Field Number | Stereoscopic Exam | | | | PLM O | ptical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Drownexture P | Morph | Extinction | RII | RII DS | S Color Col | or, Pleo Bir | ef Sign Ot | her Identity | Chrysotile | 7 Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | 1 | _ | | | | | | | Other | Fiberglass | Organic Binder Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos Color of Layer Detected Yes | | _ | : | | | | === | === | | | Other |
| for results SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Cellulose Ondulose Extinction Fiberglass Isotopic | |
| SM-V Required □ | DIM DI | Olide 5 | Olide 4 | Silde 5 | Silde 0 | Silde 7 | Silve 0 | 6 | 200 | AASD. OF AVEL. | ☐ Synthetic High Birefringence | • If vermiculite is >10% the |
| See SM-V | 101 | | | | | | | | 120 | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: ☐ ELAP ☐ EPA | SCAN | NING OPT | ION | | lo. | C. 🗆 | | | | Birefringence | Page 13-470 (Street) |
| 4 40 | Stegeoscopic Exam | T | | 0200 | PLM O | | operties | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number Gravimetric | Color Thurspure | Morph | Extinction | RII | RI I D | S Color Col | or, Pleo Bir | ref Sign Ot | her Identity | Results PLM % Chrysotile | PLM % Cellulose | PLM % |
| Required 🗆 | Homogeneity Vermiculite | /= | _ | : | | | | === | | Amosite | Fiberglass | |
| Recommended See gravimetric | # of Layers Asbestos | _ | = | | | | | | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes | No | | : | | | | | | / | Cellulose Ondulose | |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required ☐ | LO PILL | | _ | | | | | 0 | 200 | 0 | Birefringence Horse Hair: Scales, Low to Moderate | If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | / | | | | | C. 🗆 | | | | Birefringence | See Note #1. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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__ATEMS_ ATC

ATC - New York

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| RIIIK | ASRESTOS | ANALYSIS | SHEET |
|-------|-----------------|----------|-------|

| | D A BIVELS | | | S ANALYSIS SH | EET | | 24.454 | .DED.14 | Microscope OLYMPUS BH-: NIKON OPTIPHO |
|--|---|--|---|--|--------------|--------------|--|--|--|
| | Client / Project PANYNJ/ | 2024 | EK KEHAB | | | _ | Number 214PN | | 90 |
| | Analysis Date 4/4/12 | 2021 Analyst | | | | Batch N | | T | EMPERATURE OC. |
| 1 45 Field Number | Stereoscopic Exam | | PLM O | ptical Properties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Cold Texture | Morph Extinction | RI1 RII D | S Color Color, Plea Bir | ef Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | ./ | | | | | Aniosite Other | Fiberglass Other | Organic Binde Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | Ourer | Outer | Other |
| analysis sheet for results | Color of Layer Detected Yes I | vo ==================================== | | | | | | Cellulose Ondulose | |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction □ Fiberglass Isotopic | |
| | PLM O | | | | | <u></u> | 9 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| Required ☐ See SM-V ☐ | NOB PLM | | | | _ <u>_</u> | Yala | | ☐ Horse Hair: Scales, | level of asbestos in a samp might be underestimated. |
| analysis sheet | Comments: | 1 | | 1 | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: ZELAP DEPA | Z SCANNING OPTIO |)N | Q.C. 🗆 | | | | | |
| ² 46 | Stereoscopic Exam | | DI M O | ptical Properties | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morph Extinction | | S Color Color, Pleo Bir | ef Sign Oth | ner Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Lun 31 Herrure | | *************************************** | | | | Chrysgtile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | | | | | | Amesite | — Fiberglass Other | Organic Binde |
| See gravimetric | # of Layers Asbestos | | | | | | One | Otriei | Other |
| analysis sheet for results | Color of Layer Detected Yes I | No | | | | | | Cejlulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 Slide 8 | Asb./Ver, PT | Total PT | %Asb, Or %Ver. | Extinction O Fiberglass Isotopic | |
| | PIMOTO | | | | 0 | | | ☐ Synthetic High | * If vermiculite is >10% the |
| Required 🗆 | NOB PLM | | | | 10 | 500 | <u> </u> | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a samp might be underestimated, |
| See SM-V ☐ analysis sheet | Comments: | | | <u> </u> | L | l | | Low to Moderate Birefringence | See Note #1. |
| for results | | | | | | | · · · · · · · · · · · · · · · · · · · | - | |
| | Method: ☑ ELAP □ EPA | SCANNING OPTIC | ON | Q.C. 🗆 | | | | 1 | |
| 3 47 | | SCANNING OPTIC | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | SCANNING OPTIO | PLM O | ptical Properties | | ner identity | Results PLM % | PLM % | PLM % |
| Field Number Gravimetric | | | PLM O | ptical Properties | | ner Identity | Results PLM % | PLM % Cellulose | PLM % 2.0 Mineral Filler |
| Field Number Gravimetric Required | Stereoscopic Exam Color Cun St. Vessiure Homogeneity Vermiculite | | PLM O | ptical Properties | | ner Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fibergiass | PLM % Mineral Filler Organic Binde |
| Field Number Gravimetric Required Recommended | Stereoscopic Exam Color Cun St. Vessiure Homogeneity Vermiculite | | PLM O | ptical Properties | | her Identity | Results PLM % | PLM % Cellulose | PLM % 2.0 Mineral Filler |
| Gravimetric Required Recommended See gravimetric analysis sheet | Stereoscopic Exam Color Cun Of Vessione Homogeneity Vermiculite | Morph Extinction | PLM O | ptical Properties | | ner Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binde Vermiculite* |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color Lun Ci Vesture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes | Morph Extinction | PLM O | ptical Properties S Color Color, Pleo Bir | ef Sign Ott | | Results PLM % Chrysotile Amosile Cirler | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binde Vermiculite* |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V | Stereoscopic Exam Color Cur Cil Vesture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Si de 1 Slide 2 | Morph Extinction | PLM O | ptical Properties S Color Color, Pleo Bir | Asb./Ver, PT | Total PT | Results PLM % Chrysotile Amosile Olifer %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High | PLM % Mineral Filler Organic Binde Vermiculite* |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required Required | Stereoscopic Exam Color Lun Ci Vesture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Si de 1 Side 2 PLM | Morph Extinction | PLM O | ptical Properties S Color Color, Pleo Bir | ef Sign Ott | | Results PLM % Chrysotile Amosile Cirler | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Fitter Organic Binde Vermiculite* Other |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Stereoscopic Exam Color Lun Ci Vacture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 PLM NOB PLM | Morph Extinction | PLM O | ptical Properties S Color Color, Pleo Bir | Asb./Ver, PT | Total PT | Results PLM % Chrysotile Amosile Olifer %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V See SM-V | Stereoscopic Exam Color Lun Ci Vesture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Si de 1 Side 2 PLM | Morph Extinction | PLM O | ptical Properties S Color Color, Pleo Bir | Asb./Ver, PT | Total PT | Results PLM % Chrysotile Amosile Olifer %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samy might be underestimated. |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Stereoscopic Exam Color Lun Ci Vacture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Side 2 PLM NOB PLM Comments: Method: E ELAP EPA | Morph Extinction | PLM O RII RII D Slide 5 Slide 6 | ptical Properties \$ Color Color, Pleo Bir | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosile Oiller %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scates, Low to Moderate Birefringence Other Fibrous | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sammight be underestimated. See Note #1. |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color Lun Ci Vacture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 PLM NOB PLM Comments: | Morph Extinction | PLM O | ptical Properties S Color Color, Pleo Bir | Asb./Ver, PT | Total PT | Results PLM % Chrysotile Amosile Oiller %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binde Vermiculite* Other If vermiculite is >10% the level of asbestos in a samminght be underestimated. See Note #1. Non Fibrous PLM % |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V See SM-V analysis sheet for results 4 48 Field Number Gravimetric | Stereoscopic Exam Color Langer Vermiculite # of Layer Detected Yes Point Counts Side 1 Slide 2 PLM NOB PLM Comments: Method: ELAP □ EPA Stereoscopic Exam Color Langer Particles | Morph Extinction No Slide 3 Slide 4 | PLM O | ptical Properties S Color Color, Pleo Bir Slide 7 Slide 8 Q.C. ptical Properties | Asb./Ver, PT | Total PT | Results PLM % Chrysotile Amosile Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samy might be underestimated. See Note #1. Non Fibrous PLM % 20 Mineral Filler |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 48 Field Number Gravimetric Required Required | Stereoscopic Exam Color Langer Vermiculite # of Layer Detected Yes Color of Layer Detected Yes Point Counts Side 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Langer Pextiles Homogeneity Vermiculite | Morph Extinction No Slide 3 Slide 4 | PLM O | ptical Properties S Color Color, Pleo Bir Slide 7 Slide 8 Q.C. ptical Properties | Asb./Ver, PT | Total PT | Asbestos Results PLM % Chrysotile Amosile Cirler Asbestos Results PLM % Chrysotile Amosile/ | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % 2.0 Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sammight be underestimated. See Note #1. Non Fibrous PLM % 2.0 Mineral Filler Organic Bind |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 48 Field Number Gravimetric Required Recommended | Stereoscopic Exam Color Langer Vermiculite # of Layer Detected Yes Point Counts Side 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Layer Ashestas | Morph Extinction No Slide 3 Slide 4 | PLM O | ptical Properties S Color Color, Pleo Bir Slide 7 Slide 8 Q.C. ptical Properties | Asb./Ver, PT | Total PT | Results PLM % Chrysotile Amosile Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % 20 Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samminght be underestimated. See Note #1. Non Fibrous PLM % 20 Mineral Filler Organic Bind Vermiculite* |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 48 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Stereoscopic Exam Color Langer Vermiculite # of Layer Detected Yes Point Counts Side 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Layer Ashestas | Morph Extinction No Silide 3 Slide 4 SCANNING OPTIC Morph Extinction | PLM O | ptical Properties S Color Color, Pleo Bir Slide 7 Slide 8 Q.C. ptical Properties | Asb./Ver, PT | Total PT | Asbestos Results PLM % Chrysotile Amosile Cirler Asbestos Results PLM % Chrysotile Amosile/ | PLM % Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % 2.0 Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sammight be underestimated. See Note #1. Non Fibrous PLM % 2.0 Mineral Filler Organic Bind |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 48 Field Number Gravimetric Required Recommended Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color Langer Vermiculite # of Layer Detected Yes Point Counts Side 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Layer Asbestos Color of Layer Asbestos Color of Layer Detected Yes | Morph Extinction No Slide 3 Slide 4 Scanning Optic | PLM O RII RII D Slide 5 Slide 6 PLM O RII RII D | ptical Properties S Color Color, Pleo Bir Slide 7 Slide 8 Q.C. ptical Properties S Color Color, Pleo Bir | Asb./Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Amosile Olifer Asbestos Results PLM % Chrysotile Amosite Olifer | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Bind Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sammight be underestimated. See Note #1. Non Fibrous PLM % 20 Mineral Filler Organic Bind Vermiculite* |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 48 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color Layer | Morph Extinction No Silide 3 Slide 4 SCANNING OPTIC Morph Extinction | PLM O | ptical Properties S Color Color, Pleo Bir Slide 7 Slide 8 Q.C. ptical Properties | Asb./Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Amosile Citler %Asb. Or %Ver. Chrysotile Amosite Citler %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cillulose Ondulose Extinction Fiberglass Isotopic Synthetic High | PLM % Mineral Filler Organic Bind Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sam might be underestimated. See Note #1. Non Fibrous PLM % 20 Mineral Filler Organic Bind Vermiculite* Other |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 48 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See gravimetric Analysis sheet for results | Stereoscopic Exam Color Layer | Morph Extinction No Slide 3 Slide 4 Scanning Optic | PLM O RII RII D Slide 5 Slide 6 PLM O RII RII D | ptical Properties S Color Color, Pleo Bir Slide 7 Slide 8 Q.C. ptical Properties S Color Color, Pleo Bir | Asb./Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Amosile Citler %Asb. Or %Ver. Chrysotile Amosite Citler %Asb. Or %Ver. | PLM % Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Filler Organic Bind Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sammight be underestimated. See Note #1. Non Fibrous PLM % Organic Bind Organic Bind Other * If vermiculite is >10% the level of asbestos in a sammight be underestimated. |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 48 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color Layer | Morph Extinction No Slide 3 Slide 4 Scanning Optic | PLM O RII RII D Slide 5 Slide 6 PLM O RII RII D | ptical Properties S Color Color, Pleo Bir Slide 7 Slide 8 Q.C. ptical Properties S Color Color, Pleo Bir | Asb./Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Amosile Citler %Asb. Or %Ver. Chrysotile Amosite Citler %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Callulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Bind Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sammight be underestimated. See Note #1. Non Fibrous PLM % Organic Bind Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sammight be underestimated. |

Methods:

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantitof vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite." Note #2; ELAP requires method 198.8 for the analysis of surfacing material containing yearniculitie (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2

Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET

Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Date 4 / 9 /2021 Analyst 21-619 Batch Number Asbestos

Non Fibrous 41 Other Fibrous **PLM Optical Properties** Results PLM % PLM % Rill DS Color Color Pieo Biref Sign Other Identif Ø Gravimetrio Cellulose Mineral Filler Vermiculite* See gravimetric l analysis sheet for results SM-V %Asb. Or %Ver Synthetic High If vermiculite is > 10% the evel of asbestos in a sample NOB PLM See SM-V [Low to Moderate See Note #1. analysis sheet for results Method: Z ELAP D EPA SCANNING OPTION Q.C. 🗆

Asbestos Non Fibrous Other Fibrous 42 **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % PIM % 4__Cellulos Gravimetri 7_ Fibergk Organic Binde Required [Vermiculite* See gravimetric E analysis sheet Celtulose Ondulo for results Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb,/Ver, PT Total PT %Asb. Or %Ver. SM-V PLM If vermiculite is >10% the Required [evel of asbestos in a sample l Horse Hair: Scale NOB PLM might be underestimated. See SM-V Low to Moderate analysis sheet for results Q.C. 🗆 Method: ZELAP = EPA SCANNING OPTION

Asbestos Non Fibrous 43 Other Fibrous **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % PLM % Mineral Filler Cellulose Gravime Organic Binde O Vermiculite* See gravimetric Other analysis sheet for results Fiberglass Isotop Point Counts %Ash, Or %Ver SM-V Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total P1 0 If vermiculite is >10% the Required [evel of asbestos in a sample Horse Hair Scales NOB PLM See SM-V Low to Moderate See Note #1. analysis sheet for results SCANNING OPTION Q.C. 🗆 Method: Z ELAP

EPA

Asbestos 44 Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Cellulose Gravimetri (Q) Mineral Filler Required Organic Binder analysis sheet Color of Laver Celiulose Ondulo for results Point Count Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V If vermiculite is >10% the Required [Ce_{ℓ} evel of asbestes in a sample NOB PLA See SM-V [Low to Moderate See Note #1 analysis sheet for results Method: ZELAP □ EPA SCANNING OPTION Q.C. 🗆

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing £10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATEAS

ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010

Accreditations:

| | | Phone | : (212) 353-82 | 280, Fax: (2 | 12) 353-3 | 3599 or 830 | 6 | | | ELAP 108 |
|---------------------------------|-------------------------------|---|----------------|--|--------------|-----------------------|-------------|----------------------------|---|--|
| | | E | BULK ASBES | TOS ANAL | YSIS SH | IEET | | | | Microscope OLYMPUS BH- |
| | Client / Project PANYNJ/ | FIRESPRINKLE | ER REHAB | | | | Project | Number 214PN | IPEPJ1 | NIKON OPTIPH |
| | Analysis Date 4/1/2 | 021 Analyst _ | | SM | | | Batch I | Number 21- | 519 _T | EMPERATURE°C 2 |
| 1 53 Field Number | Stereoscopic Exam | | PLM | Optical Pr | operties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Cold VOLL Nexture | Morph Extinction | RII RI | DS Color Col | or, Pleo Bir | ef Sign Othe | er Identity | Chrysotile | Cellulose | Mineral Filler |
| Required [| Homogeneity Yermiculite | <i></i> | | | | | <u> </u> | Andosite | Fiberglass | Organic Bind |
| Recommended D | # of Layers Asbestos | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | Color of Layer Detected Yes N | | | | | | | | ☐ Cellulose Ondulose | Other |
| for results | | Slide 3 Slide 4 | Slide 5 Slide | 6 Slide 7 | Slide 8 | Asb./Ver, PT | Total PT | %Asb, Or %Ver. | Extinction Fiberglass Isotopic | |
| SM-V | | Side 3 Side 4 | Silde 3 Silde | o side / | Silve o | | | | Synthetic High | * If vermiculite is >10% the |
| Required ☐ See SM-V ☐ | NOB PLM | | | - | | | <u> </u> | 0 | Birefringence ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sam might be underestimated. |
| analysis sheet for results | Comments: | | | | | ĮĮ. | | <u> </u> | Birefringence | See Note #1, |
| | Method: DELAP DEPA | SCANNING OPTIO | N | Q. | c. 🗆 | | | | | |
| 2 54 Field Number | Stereoscopic Exam | *************************************** | PLM | Optical Pr | operties | | | Asbestos Results PLM %/ | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Drown Axture (| Morph Extinction | RII RI | DS Color Col | or, Pleo Bir | ef Sign Othe | er Identity | Chp/sotile | Cellulose | Mineral Filler |
| Required [] | Homogeneity Vermiculite | / | | | | | | mosite | Fiberglass | Organic Bind |
| Recommended 🗅 | # of Layers Asbestos | | | | | | | Olher | Other | Vermiculite* |
| See gravimetric analysis sheet | | / | | | | | | | | Other |
| for results | Color of Layer Detected Yes N | <u>. </u> , | | | | | | ŀ | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide | 6 Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required 🗌 | | | • | | | | 200 | 8 | Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sam |
| See SM-V analysis sheet | NOB PLM Comments: | | | | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1, |
| for results | Method: LELAP LEPA | SCANNING OPTIO | ·N | TQ. | c. 🗆 | | | | - | |
| 3 55 | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morph Extinction | PLM Rii Rii | Optical Pr | • | ef Sign Othe | or Identify | Results PLM % | PLM % | PLM % |
| Gravimetric | CotolDlawnexture | | | | | | | Chrysotile | 45 Cellulose | |
| Required [| Homogeneity Vermiculite | / | | | | | | Amosite | Fiberglass | -7~ |
| Recommended See gravimetric | # of Layers Asbestos | | | | | | | Other | Other | Other |
| analysis sheet for results | Color of Layer Petected Yes N | <u> </u> | | | | | | | ☐ Cellulose Ondulose | Outer |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide | 6 Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver, | Extinction ☐ Fiberglass Isotopic | |
| | 0/0 | | 0.120 | J. J. J. J. J. J. J. J. J. J. J. J. J. J | 0,,000 | | *- | | Synthetic High | * If vermiculite is >10% the |
| Required | NOD SIM | | | | | $\mid \emptyset \mid$ | 200 | 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sam might be underestimated. |
| See SM-V analysis sheet | Comments: | | | | <u> </u> | <u> </u> | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: ☑ ELAP □ EPA | SCANNING OPTIO | N | Q. | c. 🗆 | | | | | |
| 4 56 | Stereoscopic Exam | | PLM | Optical Pr | operties | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number Gravimetric | Color By Dewrexture | Morph Extinction | Ri± Ri∥ | DS Color Col | or, Pleo Bir | ef Sign Othe | er Identity | Results PLM % | PLM % | PLM % |
| Required | _ | | | | | | | Chrysotile Amosite | Cellulose Fiberglass | Mineral Filler Organic Bind |
| Recommended 🗆 | Homogeneity Vermiculite | 1 | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | Other |

Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT

Q.C.

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

for results SM-V

Required ...

See SM-V

analysis sheet

for results

Color of Layer ____ Detected Yes No

PLM

Method: Ø ELAP □ EPA

NOB PLM

Slide 2

☐ SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.*

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

D 230

Cellulose Ondulos

l Horse Hair: Scales,

Low to Moderate Birefringence

If vermiculite is >10% the

level of asbestos in a sample

might be underestimated.

See Note #1,

%Asb. Or %Ver.

| | Client / Project | PANYN | / FIRES | | | SBESTO IAB | S ANAL | YSIS SI | IEET | Project | Number 214PN | IPEPJ1 | Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT |
|-------------------------------|-------------------------|------------------------|------------|---------------|---------|-------------------|------------|-------------|--------------|---------------|---------------------------|---|--|
| | Analysis Date | ~ | 2021 | _ Analyst | | Ş | M | | | Batch N | 24 | 619 | EMPERATURE C |
| 1 49 Field Number | Stereoscopi | ic Exam | | | | PLM Op | otical Pro | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetri Required I | | xture_ | Morph | Extinction | RII | RI DS | Color Colo | r, Pleo Bi | ref Sign Ot | ther Identity | Chrysotile | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended I | Homogeneity Ve | sbestos | | | | | | | === | == | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer De | etected Yes | | | | | | | | == | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide | 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P7 | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% the |
| Required I | 1 | 9 | | 1 | | | | | 0 | 200 | J | Birefringence Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | C) FD4 | Locar | LUNG ORT | | | lo | 2 - | | | | Birefringence | |
| 2 50 | Method: 🗀 ELAP | □ EPA | SCAN | NING OPTI | ION | | 1000 | C. 🗆 | | | Asbestos | Other Fibrous | Non Fibrous |
| 2 50 Field Number | Stereoscop | ic Exam | More | Extinction | RII | | Color Colo | | | ther Identity | Results PLM % | PLM % | PLM % |
| Gravimetri | c COION MuleTe | xture | | - Exilicitori | | KII DO | | | | mer identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Ve | ermiculite | | _ | | | | | | | Amosite Other | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric | Mod Lawers As | sbestos | /= | _ | | | | | | | Other | Other | Other |
| analysis sheet for results | , | etected Yes | No | \equiv | | | == | == | === | == | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide | 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required | 5/12 | 0 | | | _ | | | | (0 | 2 | | Birefringence | If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | NOB PLM | 4 | | | | | | | 0 | In | U | Low to Moderate Birefringence | See Note #1. |
| for results | Method: DELAP | □ EPA | SCAN | INING OPTI | ION | | Q. | c. 🗆 | | | | | |
| 3 51 Field Number | Stereoscop | ic Exam | | | | PLM O | otical Pr | operties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetri | c Color White | exture C | Morph | Extinction | RII | RI II DS | Color Colo | or, Pleo Bi | ref Sign O | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | | ermiculite | | _ | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | | | / | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | 1 | sbestos | - | | | | | | | == | | | Other |
| for results | Color of Layer De | etected Yes | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide | 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required | 10/2 | >0 | | | | | | | 0 | , | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | | W. | | (| | | | | | n | | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: Method: ELAP | □ EPA | SCAN | INING OPTI | ION | | Q. | C. 🗆 | | | | | |
| 4 52 | 1 0 | | T | | | DI M O | -411 D | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscop | ic Exam | Morni | h Extinction | RII | The second second | ptical Pro | | | ther Identity | Results PLM % | PLM % | PLM % |
| Gravimetri | c Color Warne | exture | | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity V | ermiculite | /_ | = | : | | == | | | | Apriosite | Fiberglass | |
| Recommended See gravimetric | | | | | | | | | | | Other | Other | Vermiculite* |
| I nee di avillienic | # of Lavers A | sbestos | / | | | | | | | | | | Other |
| analysis sheet | # of Layers As | sbestos etected Yes | No _ | = | _ | | | | | | | ☐ Cellulose Ondulose | Other |
| | # of Layers As | etected Yes | No Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, P | T Total PT | %Asb. Or %Ver. | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | Other |

Methods:
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116
ELAP Items 198.1, 198.4, 198.6, 198.8

See SM-V

analysis sheet

NOB PLM

Method: ELAP EPA

Comments:

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2

☐ Horse Hair: Scales,

Low to Moderate

might be underestimated.

SCANNING OPTION

Q.C.

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

ATLAS_ ATC

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See gravimetric analysis sheet

Required [

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Gravimet

analysis sheet

for results

SM-V

Required [

See SM-V

for results

Required

ATC - New York

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BULK ASBESTOS ANALYSIS SHEET

PLM Optical Properties

Slide 6

RI || DS Color Color, Pleo Biref

Client / Project PANYNJ/ FIRESPRINKLER REHAB

Analysis Date 4 /

Stereoscopic Exam

Stereoscopic Exam

PLM

NOB PLM

| AC | cre | orta | tion |
|-----|-----|------|------|
| NVL | AP | 10 | 1187 |
| | EL | AP | 1087 |
| | | | |

| NVLAP 101187-0 |
|----------------|
| ELAP 10875 |
| Microscopes |

| | | | ELAP 10879 |
|----------|---------------------------|---|--|
| Project | Number 214PN | IPEPJ1 | Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT |
| Batch N | lumber 21-6 | 619т | EMPERATURE "C |
| | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Identity | Chrysotile | Cellulose Fiberglass | Mineral Filler Organic Binders |
| | other | Other | Other |
| otal PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic Synthetic High | * If vermiculite is >10% the |
| | | | |

evel of asbestos in a sample

Non Fibrous

PLM %

Mineral Filler

U Vermiculite*

vel of asbestos in a sample

might be underestimated.

Organic Binder

Birefringence

Other Fibrous

PLM %

Cellulose Ondulo

Synthetic High

Horse Hair: Scales,

Birefringence

Low to Moderate

Asbestos

Results PLM %

Other

| See SM-V □ | NOB PLM | | | | | | | | | | | | | | Low to Moderate | might be underestimated. See Note #1. |
|---|-----------------|-------|---------|---------|---------|------------|---------|---------|----------|-------------|-------|-------------|--------------|----------------------------|--|---|
| analysis sheet for results | Comments: | 397 | | | , | | | | | | | | | | Birefringence | |
| | Method: E | LAP | | EPA | SCAN | NING OPTI | ON | | | Q.C. 🗆 | | | | | | |
| 62 eld Number | Stered | osco | pic E | xam | | | | PLM (| Optical | l Propert | ies | | | Asbestos Results PLM %/ | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | cololuli | h | Texture | 6 | Morph | Extinction | RII | RII | DS Color | Color, Pleo | Biref | Sign Ott | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity _ | 4 | Vermio | culite | /_ | | | | | _ | | | | Amosite | Fiberglass | Organic Binders |
| Recommended [| # of Layers | 1 | Asbes | tos | _ | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer_ | _ | Detect | ed Yes | No = | _ | | | = | _ | | == | == | | Cellulose Ondulose Extinction | Other |
| SM-V | Point Counts | Slic | de 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | e 7 Slide | 8 A | sb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | 0 | So | | | | | | | | | 0 | 200 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | , | | | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1, |
| analysis sheet for results | Comments: | | | | , | | | | | | 100 | | | | Birefringence | |
| | Method: | LAP | | EPA | SCAN | NING OPTI | ON | | | Q.C. | | | | | | 1 |

PLM Optical Properties

Slide 6 Slide 7

Asb./Ver. PT Total PT

| | Method: E | LAP 🗆 | EPA | Ø SCANI | NING OPTI | ON | | | Q.C. | 1 | | | | | l | |
|--|-----------------|-----------|--|---------|------------|---------|---------|----------|-------------|--------|-----------|-------|------------|---------------------------|--|---|
| 64 Number | Stereo | oscopic E | The state of the s | | | | PLM C | ptical | Proper | ties | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required commended gravimetric | Homogeneity | | iculite | Morph | Extinction | RII | RI I | OS Color | Color, Plec | D Bire | ef Sign | Other | r Identity | Chrysotile Amosite Other | Cellulose Fiberglass Other | Mineral Filler Organic Binders Vermiculite* Other |
| nalysis sheet for results | Color of Layer_ | Detec | ted Yes | No | _ | | _ | | | | | _ | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | 7 Slic | de 8 | Asb./Ver. | PT 1 | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required 🗆 | PLM | | | | | | | | | | | | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | 0/1- | 2 | |) | - | | | | | C | > | 2- | U | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| nalysis sheet for results | Comments: | 1, | | 1 | 7 | - | | - | | | | | | | Birefringence | 355 /1016 # /. |
| | Method: Z E | LAP 🗆 | EPA | SCAN | NING OPTI | ON | | | Q.C. |] | | | | | 1 | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Slide 8 Asb./Ver. PT Total PT

0

| Analysis Date 4 / 2021 Analyst Back Namber 21-619 Stevenscopic Exam | | Client / Project PANYNJ/ FIRES | | <mark>SBESTOS ANA</mark> L IAB | YSIS SHI | EET | Project | Number 214PN | IPEPJ1 | Microscopes: OLYMPUS BH-2/ NIKON OPTIPHOT |
|--|--------------------|--------------------------------------|--|-----------------------------------|---------------|--|-------------|---|---|---|
| Store Convention Growments | | | | AL. | | | | 24 | 619 | EMPERATURE °C |
| Gravimatic Required NOB PLM Post Court of Layer PLM Option PLM NOB PLM Recommended See principal of tall system of tall and tall system of ta | J. | Stereoscopic Exam | | PLM Optical Pr | operties | | , | | | 1 |
| Recommended C of Lypers Asbestos Cotor of Lypers Cotorod Lypers Lypers Lypers Lypers Lypers Lypers Lypers Lypers Lypers Lypers | | | h Extinction RI1 | RI DS Color Col | or, Pleo Bire | f Sign Oth | er Identity | | | 1.0 |
| See gravimentic Centrol Layers Abbestor And See State 1 Side 2 Side 3 Side 3 Side 5 Side 5 Side 6 Side 7 Side 6 Asia And Note PT Total PT WARE OF Water Note PAIL Total PT WARE OF Water Note PAIL TOTAL PT TOTAL PT TOTAL PT WARE OF WATER O | 1 | Homogeneity | | | | | | | | |
| Cardinese Conditions Comments: Comme | | # of Layers Asbestos | | | | | | Other | Other | |
| Registed See SM.V Not B.P.L.M Not B.P. | | Color of Layer Detected Yes No | | | | | | | | |
| See SM / | SM-V | Point Counts Slide 1 Slide 2 Slide 3 | Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | | |
| series St.V Comments: Comm | | 104-1- | | | | 0 | 200 | 0 | Birefringence | level of asbestos in a sample |
| Method: ELAP BPA | analysis sheet | | | | | | | | | |
| Filed Number Gravmentic Gravmentic Gravmentic Sharv Regulard Regulard Sharv Regulard Regulard Sharv Regulard | for results | <u> </u> | INING OPTION | Q. | c. □ | | | | | |
| Gravimetric Required Homogeneity Vermiculitie Morph Extinction Rt 1 Rt 1 DS Color Color, Pleo Siret Sign Other Identity Chrysolile Chrysolile Chrysolile Chrysolile Chrysolile Color of Layer Detected Yes No Chrysolide Color of Layer Co | 1 00 | Stereoscopic Exam | ************************************** | PLM Optical Pr | operties | | | | ŀ | 1 |
| Recommended Golder | | h Extinction RII | RI DS Color. Colo | or, Pleo Bire | f Sign Oth | er Identity | | 2 | |
| See gravimetric # of Layers Asbestos Cotor of Layer Detected Yes No Cotor of Layer Cotor of Layer Cotor of Layer Detected Yes No Cotor of | 1 | Homogeneity Vermiculite | | | | | | | | |
| Color of Layer Defected Yes No Defected Ye | | # of Layers Asbestos | | | | | | Other | Other | |
| SM-V Required Point Counts Side 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb.Ver. PT Total PT %Asb. Or %Ver. Fiberglass isotopic Synthetic High Enformance Fiberglass in a sample might be underestimated. See SM-V See | | Color of Layer Detected Yes No | | | | | | | | |
| Required See SM-V analysis sheet for results See SM-V See Smear PLM Optical Properties See Smear PLM % Side 5 Side 5 Side 5 Side 6 Side 7 Side 8 Asb. Var. PT Total PT % Asb. Or % Var. See Smear PLM % Side 5 Side 6 Side 7 Side 8 Asb. Var. PT Total PT % Asb. Or % Var. See Smear PLM % See Smear PLM | SM-V | Point Counts Slide 1 Slide 2 Slide 3 | Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | Fiberglass Isotopic | |
| See SM-V Analysis sheet for results Comments: Co | Required 🗋 | | | | | 0 | 200 | 0 | Birefringence | level of asbestos in a sample |
| Method: ELAP EPA SCANNING OPTION Q.C. | 1 | <u> </u> | <u> </u> | | | | | | Low to Moderate | |
| Field Number Gravimetric Required Homogeneity Vermiculite Morph Extinction Rt 1 Rt DS Color Color, Pleo Biref Sign Other Identity Chrysoffle Chr | for results | | INING OPTION | Q. | C. 🗆 | | | *************************************** | | |
| Gravimetric Color Morph Extinction RI 1 RI DS Color Color, Pleo Biref Sign Other Identity Chrysottle 1 00 | Stereoscopic Exam | | PLM Optical Pr | operties | COMMERCIAL AND A STATE OF THE S | | | • | i . |
| Recommended Homogeneity Vermiculite Homogeneity Vermiculite Homogeneity Vermiculite Homogeneity Vermiculite Homogeneity Vermiculite Homogeneity Vermiculite Vermiculite Vermiculite Lower Lowe | | | h Extinction RI1 | RI DS Color Colo | or, Pleo Bire | f Sign Oth | er Identity | | 7 | -7// |
| See gravimetric # of Layers | Required 🗆 | Homogeneity Vermiculite | | | | | | Amosite | Fiberglass | Organic Binders |
| analysis sheet for results Color of Layer Detected Yes No | | # of Layers Asbestos | | | | | | Other | Other | |
| SM-V Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Required See SM-V NOB PLM NOB PLM NOB PLM Analysis sheat for results Comments: Pinterglass Isotopic Synthetic High Birefringence Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence See Note #1. | analysis sheet | Color of Layer Detected Yes No | | | | | | | | Ollies |
| Required NOB PLM NOB PLM See SM-V Analysis sheet for results Comments: Comments: Comments: See SM-V See Note #1. | SM-V | Point Counts Slide 1 Slide 2 Slide 3 | Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | 1 / | |
| See SM-V \(\text{ analysis sheet for results} \) Comments: Comments: The NOB PLM Low to Moderate Birefringence See Note #1. | Required 🗆 | PLM D | | | | Δ |)သ | 0 | Birefringence | |
| for results Comments. | i . | | | | | | | | Low to Moderate | |
| | | | INING OPTION | Q. | C. 🗆 | | | | · | |
| 4 60 Stefaoscopic Exam PLM Optical Properties Asbestos Other Fibrous Non Fibrous | | Stefaoscopic Exam | | PLM Optical Pr | operties | | | i | i e | \$ I |
| Field Number Gravimetric Color Morph Extinction R11 R1 DS Color Color, Pleo Birel Sign Other Identity Chrysotile Cellulose Mineral Filler | | Morp | h Extinction RI1 | | - | f Sign Olh | er Identity | | 7-2, | 90 |
| Required Homogeneity Vermiculite Amosite Z Fiberglass Organic Binders | | | | | | | | | | |
| Recommended Other Other Other Vermiculite* | | | | | | | | Other | Other | Vermiculite* |
| analysis sheet Color of Lower Detected Von No. | analysis sheet | | | | | | | | Ciroliulosa Ondulosa | Other |
| Extinction | for regults | | Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 | Ash Mer PT | Total PT | %Ash Or %Var | Extinction | |
| SM-V FURIT COURTS SINCE S CHICLE SINCE S CHICLE SINCE | | | COURCE I CHUCO | June o June / | Gildeo | 1303 V CI. 17 I | (Otal Pi | MADD. OF WORL. | | |
| NOB PLM UT NOB PLM UT NOB PLM | SM-V | 8/ | | | | | 200 | 0 | | |
| analysis sheet for results Comments: Method: CELAP | SM-V Required 🖸 | PLM EX | | | | 9 | 7,00 | 9 | Birefringence ☑ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Date 4/9 /2021 Analyst 21-619 65 Asbestos Non Fibrous Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Stack Brown NE Gravimetri _Mineral Filler Cellulose Amosite Fiberola Organic Binder 0 Vermiculite* See gravimetric analysis sheet for results Cellulose Ondulo Fiberglass Isotop Slide 2 Slide 6 Slide 7 %Asb. Or %Ver. Asb./Ver. PT Total P1 Slide 8 SM-V PLM If vermiculite is >10% the Required [evel of asbestos in a sample Horse Hair: Scales NOB PLM night be underestimated. See SM-V [Low to Moderate See Note #1. analysis sheet for results Q.C. 🗆 Method: ☐ ELAP ☐ EPA SCANNING OPTION 66 Asbestos Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Caele Bushin Gravimetr Cellulos Mineral Filler Fiberglas Organic Binders Other Vermiculite' Other analysis sheet color of Laver Detected Yes for results Slide 2 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopi SM-V Required [Birefringence evel of asbestos in a sample NOB PLM Horse Hair: Scales night be underestimated. See SM-V Low to Moderate analysis sheet Comments: for results Method: Ø ELAP □ EPA Q.C. SCANNING OPTION 67 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Mineral Filler Gravimet Chrysotil Cellulose 3 Fibergla Required Organic Binder Vermiculite* Other Asbestos Other analysis sheet for results Extinction Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V If vermiculite is >10% the 19 Required [evel of asbestos in a sample Horse Hair: Scales. NOB PLM night be underestimated. See SM-V [Low to Moderate ee Note #1. analysis sheet for results Method: DELAP EPA Q.C. ☐ SCANNING OPTION 68 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Chrysotil Cellulose Mineral Filler Required [Organic Binde Other Other See gravimetric analysis sheet Extinction Slide 4 Fiberglass Isotop Point Counts Slide 1 Slide 2 Slide 5 Slide 6 Slide 7 Slide 8 Asb /Ver PT Total PT %Asb. Or %Ver SM-V PIM If vermiculite is >10% the Required [Birefringence evel of asbestos in a sample Horse Hair: Scales night be underestimated. NOB PLM See SM-V [Low to Moderate see Note #1.

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

See

☐ SCANNING OPTION

Method: ☐ ELAP ☐ EPA

analysis sheet

for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2

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ATLAS.

ATC - New York

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BULK ASBESTOS ANALYSIS SHEET

| | Client / Pr | roject_F | PANYNJ | / FIRES | PRINKL | ER REI | HAB | | | | Proje | ct Number_ | 214PN | IPEPJ1 | NIKON OPTIPHO |
|---|--------------------------|---------------------------------|--------------|---------|------------|---------|-------------|---------------------------------------|-------------|----------|---------------|------------|------------------|--|--|
| | Analysis | Date 4 | 191 | 2021 | _ Analyst | | \subseteq | | | | | Number | 24 | 619 | EMPERATURE C |
| 1 69 Field Number | Stereo | scopic l | Exam | | | | | ptical Pr | • | | | 1 | estos s PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color | Textur | re | Morph | Extinction | RII | RI D | S Color Col | or, Pleo Bi | ref Sign | Other Identit | у | _ Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity | Vermi | iculite | | | | | · · · · · · · · · · · · · · · · · · · | | | | | _Amosite | Fiberglass | |
| See gravimetric analysis sheet for results | # of Lavors | | | | | | | | | | | | _Other | Other Cellulose Ondulose | Vermiculite* |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb.Ner. | PT Total P1 | %Asb. (| Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM | | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | ******************************* | | | | <u></u> | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: □ E | | 2 + 1 EPA | ~ - | NING OPTI | ON | | lo | c. 🗆 | **** | | | | Birefringence | |
| 13 | Mediod. DE | - L | J LFM | JOAN | WING OF IT | <u></u> | | 14. | · | | | Ask | 20100 | Other Fiberra | |

| 2 Field Number | Stered | scopic E | xam | | | | | ptical Pr | | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|-------------------------------|----------------|----------|---------|---------|------------|-------------|---------|--------------|-----------|-----------|-------|----------|---------------------------|--|---|
| Gravimetric | Color | Textur | е | Morph | Extinction | RI1 | RI# D | S Color Colo | r, Pleo B | ref Sign | Other | Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity | Vermi | cuiile | | | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended [| | | | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🛘 | # of Layers | Asbes | itos | | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer | Detec | ted Yes | No | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. | PT To | ital PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗌 | PLM | | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | • | | | | L | | | • | | | | Birefringence | 1010 #1. |
| тог годила | Method: DE | LAP [] | EPA | ☐ SCANI | NING OPTI | ON | | Q. | c. 🗆 | | | | | | |

| | | | | | | | | | | | | | | | <u> </u> |
|---|---|---------|---------|---------|---------|---------|---------|------------|---------------------------------|---------|--------------------------|------------------------|---------------------------------------|---|---|
| 3 Field Number | Stereoscopic Exam PLM Optical Properties | | | | | | | | | R | Asbestos esults PLM % | Other Fibrous PLM % | Non Fibrous PLM % | | |
| Required 🗌 | Homogeneity | | xture | | | RII | RII D | S Color Co | Color, Pleo Birel Sign Other Ic | | | ntity | Chrysotile Amosite | Fiberglass | Mineral Filler Organic Binde |
| Recommended See gravimetric analysis sheet for results | # of Layers | | | | | | | | | | | Other | Other | Vermiculite* | |
| SM-V | Point Counts PLM | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ve | . PT Total | PT % | Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V analysis sheet | LION DILL | | | | | | | | | | | | , , , , , , , , , , , , , , , , , , , | Horse Hair: Scales, Low to Moderate Birefringence | level of asbestos in a samp might be underestimated. See Note #1. |
| for results | Method: □ ELAP □ EPA □ SCANNING OPTION Q.C. □ | | | | | | | | | | | | | | |

| / | <u> </u> | | | | | | | <u>f</u> | | | ~~~ | | | L | L | |
|---|--|-----------|-----------|---------|------------------------|---------|---------|------------|------------|-------|-------------|---------------|--------------------------------|--|---|--|
| 4 Field Number | Stered | oscopic E | xam | | PLM Optical Properties | | | | | | | | | Other Fibrous PLM % | Non Fibrous PLM % | |
| Gravimetric Required Recommended See gravimetric | Homogeneity_ | | culite | Morph | Extinction | Riı | RIII C | OS Cotor C | olor, Pleo | Biref | Sign Oth | er Identity | Chrysotile Amosite Other | Cellulose Fiberglass Other | Mineral Filler Organic Binders Vermiculite* | |
| analysis sheet for results SM-V | Color of Layer _ | | ted Yes N | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | ' Slide | 8 A | sb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | | |
| Required 🗆 | 1000011 | | | | | | | | | | | | | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. | |
| analysis sheet for results | Comments: Method: □ ELAP □ EPA □ SCANNING OPTION Q.C. □ | | | | | | | | | | | Birefringence | See Note #1. | | | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:LAB_FORMS.DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS BULK/FORMS 2020BULK ASBESTOS ANALYSIS SHEET_FORM #82.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Start Date: 04/09/2 | 04/09/2 | | | | | |
|---------------------|-------------------------|---------|----------|----------------------------|--------------|--|
| Start Date: | Date Completed: 04/09/2 | | | | | |
| 122927 | FG | spo | m | TEM | > | |
| TEM Batch # 122927 | NOB TEM Analyst: | Methods | BON | PLM PREP | > | |
| 21-619 | SH | | | Notes | | |
| PLM Batch # | NOB TEM PREP: | | | | | |
| | MW | 13 | % Total | Asbestos or Vermiculite | | |
| RUSH | NOB PLM Analyst: | 6 | Asbestos | Types or Vermiculite | QN | |
| RU | /EV | 12 | | % Carbonate | 25.4 | |
| PANYNJ | MG/EV | 11 | Non Asb | Residue % NFr | 52.8 | |
| Client/Project: | NOB PLM PREP: | 2 | | % Organic | 21.8 | |
| Client/ | NOB PL | | | Field# | ئ | |

· orbodillo

| Sp | 100 | T | EM | > | > | > | > | > | > | > | > | > | > |
|---------|----------------|-----------|----------------|------|------|------|------|------|------|------|------|------|------|
| Methods | NOB | | LM | > | > | > | > | > | > | > | > | > | > |
| Σ | Andri Andri | PR | ΕP | > | > | > | > | > | > | > | > | > | > |
| | | | Notes | | | | | | | | | | |
| 13 | % Total | Asbestos | or Vermiculite | | | | | | | | | | |
| 6 | Asbestos | Types | or Vermiculite | QN | QN | ÖN | QN |
| 12 | | % | Carbonate | 25.4 | 31.8 | 33.1 | 23.7 | 22.8 | 23.8 | 44.6 | 58.6 | 68.9 | 13.9 |
| II. | Non Asb | Residue % | NFr | 52.8 | 44.7 | 42.0 | 47.7 | 47.4 | 45.6 | 31.4 | 20.7 | 12.6 | 4.7 |
| - 5 | | % | Organic | 21.8 | 23.5 | 24.9 | 28.6 | 29.8 | 30.6 | 24.0 | 20.7 | 18.5 | 81.4 |
| | | | Field# | 13 | 14 | 15 | 34 | 35 | 36 | 49 | 50 | 51 | 64 |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

Client Copy

Page 1

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| 04/09/21 | 04/09/21 | | | | | | | | | | |
|----------------------|--------------------------|---------|----------|----------------------------|------|------|--|---|--|--|--|
| Start Date: 04/09/21 | Date Completed: 04/09/21 | | | | | | | | | | |
| 122927 | FG | Methods | NOB | TEN Pln | | > | | | | | |
| TEM Batch # | NOB TEM Analyst: | Me | | PREP | | > | | | | | |
| 21-619 | SH | | 190 | Notes | | | | , | | | |
| PLM Batch # | NOB TEM PREP: | | | | | | | | | | |
| | MW | 13 | % Total | Asbestos or Vermiculite | | | | | | | |
| RUSH | NOB PLM Analyst: | 6 | Asbestos | Types or Vermiculite | Ŋ | S | | | | | |
| R | MG/EV | 12 | | % Carbonate | 7.9 | 6.0 | | | | | |
| PANYNJ | W | Ш | Non Asb | Residue % NFr | 13.7 | 10.2 | | | | | |
| Client/Project: | NOB PLM PREP: | 2 | | % Organic | 78.4 | 88.9 | | | | | |
| Client/F | NOB PL | | | Hed # | 65 | 99 | | | | | |

1. Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not detected.

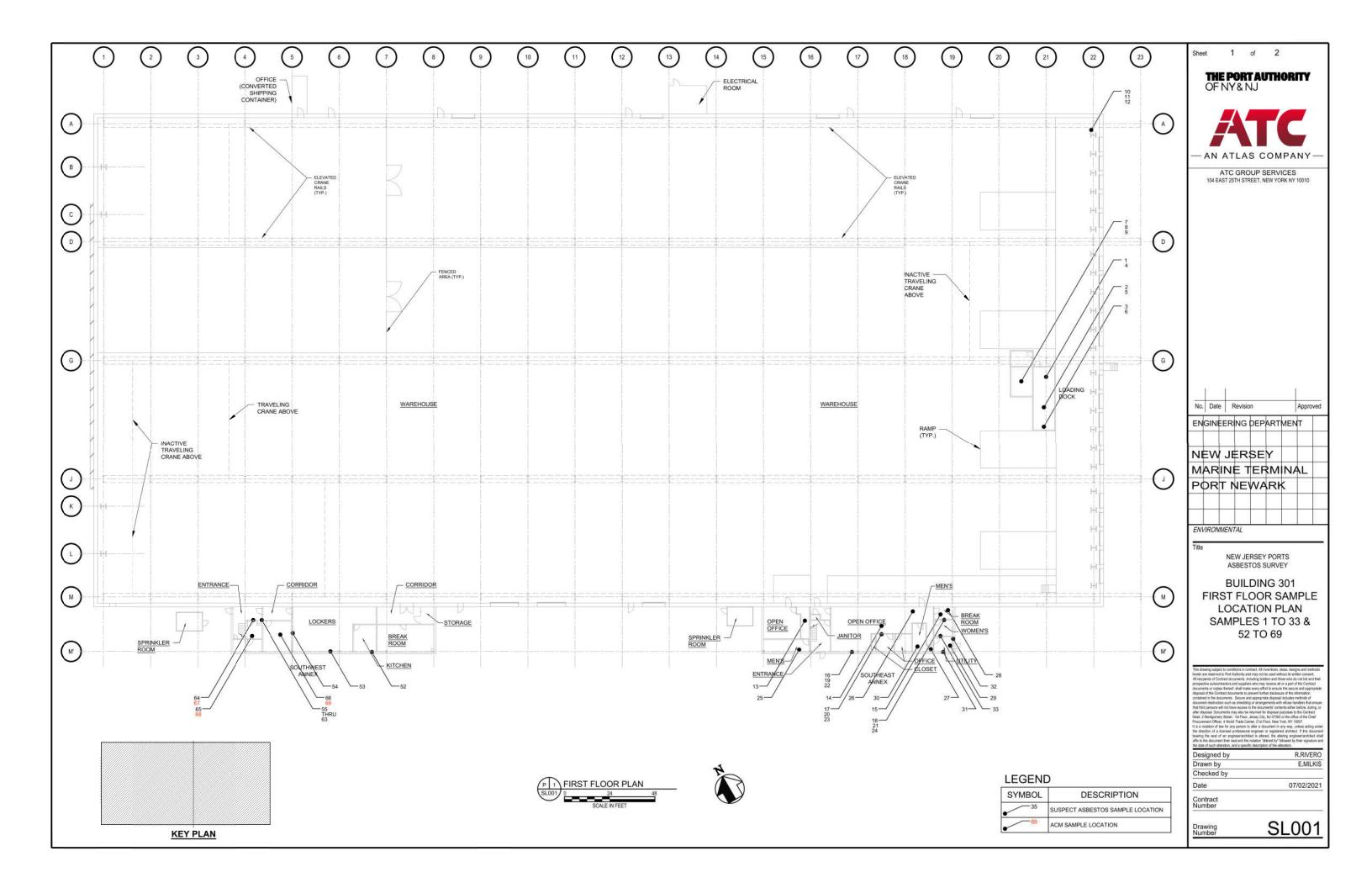
Page 2

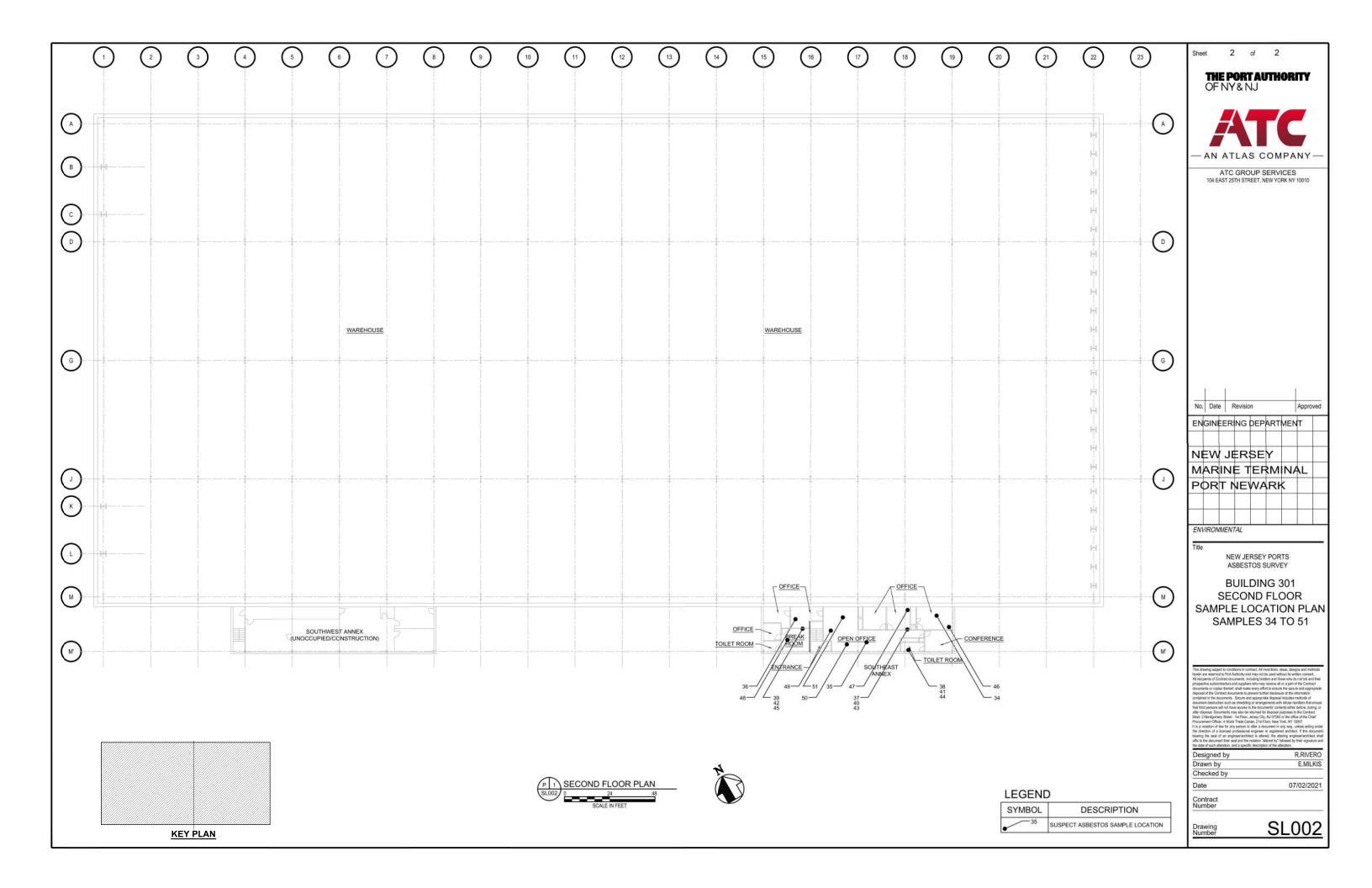
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APPENDIX B

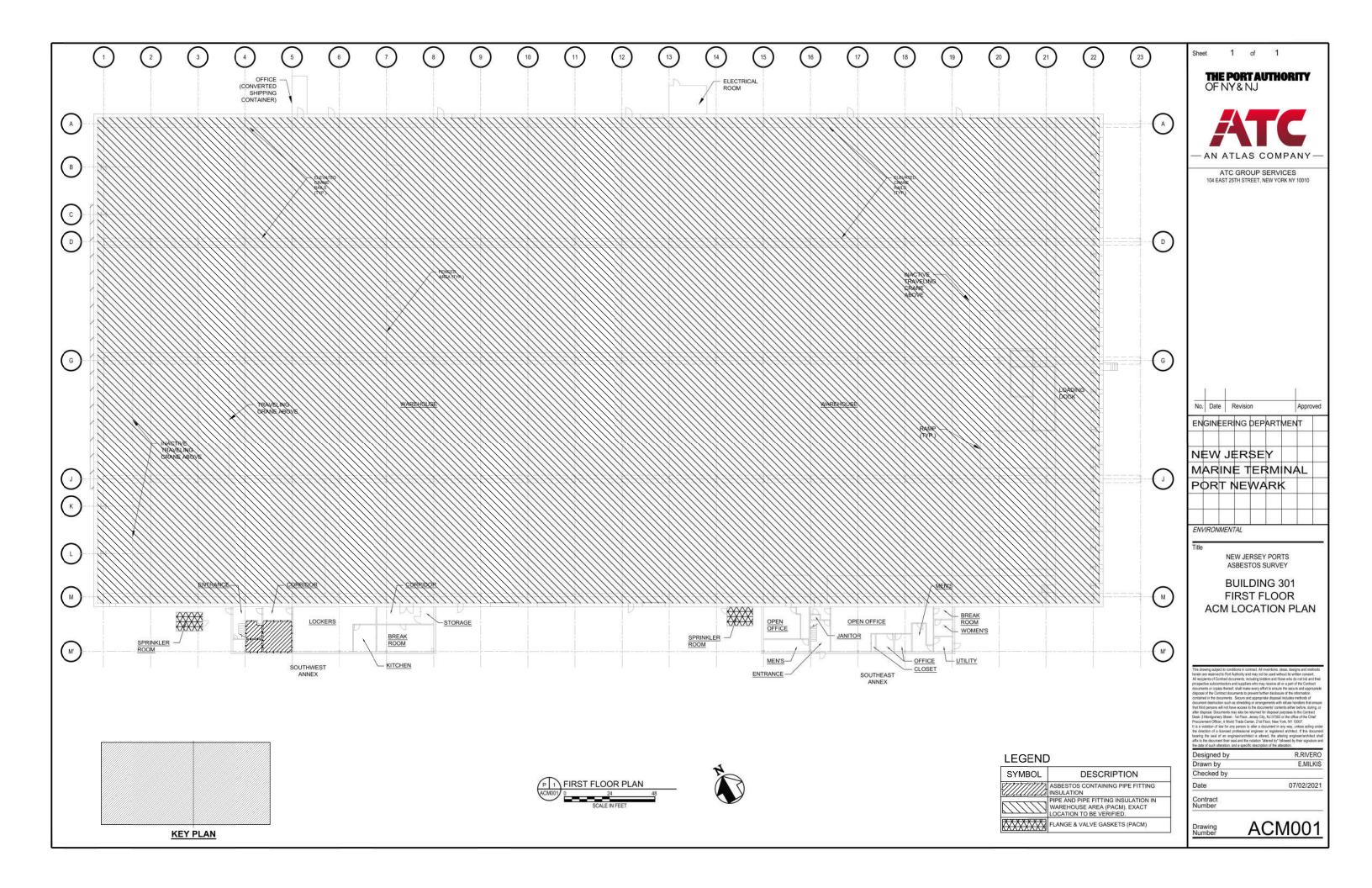
ASBESTOS SAMPLE LOCATION DRAWINGS





APPENDIX C
ASBESTOS LOCATION DRAWINGS

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APPENDIX D

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

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New York State – Department of Labor Division of Safety and Health

Division of Safety and Health License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative - Kevin Hamilton:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
SH 432 (8/12)
For the Commissioner of Labor

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI
ATC GROUP SERVICES LLC
104 EAST 25TH STREET 8TH FLOOR
NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below:

Miscellaneous

Ashestos

PA 100.2

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

age 1 of 1





Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual

EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

Fibers

NIOSH 7400 A RULES

Department of Health

Serial No.: 61223

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

age 1 of 1



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

MS. MILENA BONEZZI COPY

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2016) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

estos EPA 1

Serial No.: 62824

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

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O TENERO DE LA CONTROL DE LA C

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Asbestos in Non-Friable Material-TEM

Item 198.6 of Manual (NOB by PLM)

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No : 62825

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspictiously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

Y Ado C

Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

MISCELIANEOUS

Asbestos

40 CFR 763 APX A No. III NIOSH 7402

ribers

NIOSH 7400 A RULES

Serial No.: 62826

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

United States Department of Commerce National Institute of Standards and Technology



20 7025 O/IE S **2** ccreditation 4 of ertificate

NVLAP LAB CODE: 101187-0

TC Group Services L New York, NY

for accredited by the National Voluntary Laboratory Accreditation Program listed on the Scope of Accreditation, for:

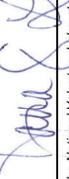
Asbestos Fiber Analysis

I the operation of a laboratory quality dated January 2009). Standard ISO/IEC ance with the recal competence for a r to joint ISO-ILAC This laboratory is accrec This accreditation demonst

2020-07-01 through 2021-06-30

Effective Dates





For the National Voluntary Laboratory Accreditation Prog

National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor
New York, NY 10010
Ms. Milena Bonezzi
Phone: 212-353-8280 x247 Fax: 212-353-8306
Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

<u>Code</u> <u>Description</u>

18/A01 EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of

Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code18/A02

Description
U.S. EPA's "Inte

U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40

CER Part 763 Subnart F Annendix A

For the National Voluntary Laboratory Accreditation Program



AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

104 East 25th St 8th Flr New York, NY 10010

Laboratory ID: LAP-100229

Issue Date: 08/30/2019

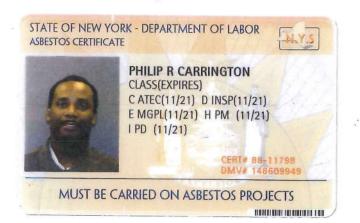
The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 06/12/1995

| IHLAP Scope Categ | ory Field of Testing (FC | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested |
|-----------------------------------|------------------------------------|----------------------------------|---|---|
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | - |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http:// www.aihaaccreditedlabs.org



01213 00585914 40

HAIR BLK

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

Effective: 04/10/2015 Revision: 8



STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





NANCY B GUEVARA CLASS(EXPIRES) C ATEC(05/21) D INSP(05/21) H PM (05/21) I PD (05/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



01213 005585171 14

EYES BRO HAIR BRO HGT 5' 06"

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





RONEY D RIVERO CLASS(EXPIRES) C ATEC(08/21) D INSP(08/21) E MGPL(08/21) H PM (08/21) IPD (08/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



01213 00581057 61

EYES BRO HAIR GRY IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

REHABILITATION OF FIRE PROTECTION SYSTEMS AT PORT NEWARK, ELIZABETH PORT AUTHORITY MARINE TERMINAL, AND PORT JERSEY – STAGE I REPORT

PN REHABILITATION OF FIRE PROTECTION SYSTEMS ENVIRONMENTAL REPORTS



NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, PE, & PJ

ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING # 255

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

May 7, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

May 7, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building # 255

255 East Port Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Roney D. Rivero

Senior Project Manager for ATC Group Services LLC Direct Line +1 212 284 0614 Email: roney.rivero@atcgs.com

Attachments

Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

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| | | Page |
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| EXE | CUTIVE SUMMARY | 1 |
| 1.0 | INTRODUCTION | 2 |
| 2.0 | BUILDING DESCRIPTION | 2 |
| 3.0 | FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS. | 2 |
| 4.0 | ACM INSPECTION SCOPE | 3 |
| 5.0 | ACM INSPECTION RESULTS | 4 |
| 6.0 | PCB-IN-CAULKING INSPECTION FINDINGS | 5 |
| 7.0 | UNIVERSAL WASTE OBSERVATION | 5 |
| 8.0 | CONCLUSIONS AND RECOMMENDATIONS | 5 |
| 9.0 | ASSUMPTIONS AND LIMITATIONS | 5 |
| | | |

APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: Asbestos Sample Location Drawings

Appendix C: ACM Location Drawings (N/A for this Project)

Appendix D: Lab Certifications / Accreditations, Company and Personnel Certifications

ATC Project No. 214PNPEPJ1 Page 1

Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

EXECUTIVE SUMMARY

On April 9, 2021 ATC completed the inspection for ACM at Port Newark, Building #255 (the Site). The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected fifty-one (51) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, none of the sampled homogeneous areas was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content). These materials are tabulated in Section 4.0.

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the Proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM | | |
|----------------------|----------------------|-----|--|--|
| Philip R. Carrington | АН-88-11798 | ACM | | |
| Nancy Guevara | AH-14-00412 | ACM | | |
| Roney D. Rivero | AH-88-06348 | ACM | | |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 255, date of construction unknown, is located on Port Street west of the intersection of Port and Marlin Streets. The building is an approximately 25 ft. tall one-story building with no basement, has a rectangular footprint of approximately 110 ft. wide by 158 ft. long in plan, with a total of 17,380 square feet of floor area.

The building is being occupied by the Port Authority Port Newark Sign shop for fabricating signs. The building serves as an office space on the southeast corner of the building and as a garage along the north side of the building. The ceiling system is made of suspended lightweight acoustical tile and lightweight perforated metal ceilings.

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

ATC Project No. 214PNPEPJ1 Page 2

Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of the building on April 9, 2021 and collected fifty-one (51) bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location. The intent of this survey was to locate and identify all accessible ACM.

The following seventeen (17) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location |
|------------------------------------|------------------------------------|
| 2' X 2' Ceiling Tile Type I | 1st Floor – Office by the Entrance |
| 2' X 2' Ceiling Tile Type II | 1st Floor – Lunch Room |
| 2' X 2' Ceiling Tile Type III | 1st Floor – Locker Room |
| Ceiling Blanket Insulation Backing | 1st Floor – Locker Room |

ATC Project No. 214PNPEPJ1 Page 3

| E'1 1 D' I 14' D | 15t E1 0 CC 1 41 E 4 I 1 D 0 | | |
|---|--|--|--|
| Fiberglass Pipe Insulation Paper on | 1st Floor – Office by the Entrance, Lunch Room & | | |
| Ceiling | Locker Room | | |
| 2' X 2' Ceiling Tile Type IV | 1st Floor – Storage Rooms | | |
| Fiberglass HVAC Duct Insulation Cover | 1st Floor – Office by the Entrance, Lunch Room & Locker Room | | |
| | | | |
| CMU Wall Mortar | 1st Floor – Office by the Entrance, Lunch Room & | | |
| | Locker Room | | |
| Gypsum Board Paper on Wall | 1 st Floor – Office by the Entrance, Lunch Room & | | |
| Gypsum Board Laper on Wan | Locker Room | | |
| C D 1 W 11 | 1 st Floor – Office by the Entrance, Lunch Room & | | |
| Gypsum Board on Wall | Locker Room | | |
| | 1st Floor – Office by the Entrance, Lunch Room & | | |
| Joint Compound on Wall | Locker Room | | |
| Fiberglass HVAC Duct Insulation 2 nd | 1st Floor – Office by the Entrance, Lunch Room & | | |
| Layer | Locker Room | | |
| Layer | Locker Room | | |
| 2' X 2' Ceiling Tile Type V | Printer Room | | |
| | | | |
| Fiberglass Insulation Cover (3" & 4" | Sprinkler Room | | |
| Pipes) | 1 | | |
| Mudded Fitting Insulation 3" Pipe | Sprinkler Room | | |
| Triaded Triang Manadon 5 Tripe | Sprinner resum | | |
| CMU Wall Mortar | Sprinkler Room | | |
| Civio wan moran | Sprinkler Room | | |
| | | | |
| 2' X 2' Ceiling Tile Type VI | Main Lobby | | |

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and review of the analytical results of bulk samples collected, **none of** the materials is asbestos-containing (> 1%).

Laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix B.

The following materials are presumed to be asbestos-containing material (PACM):

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| N/A | Flange & Valve Gaskets - Sprinkler Room | PACM | 15 Units | N/A |

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Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

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6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected fifty-one (51) bulk samples from all suspect asbestos-containing material. Based upon visual inspection and review of the analytical results of bulk samples collected, **none of the materials is asbestos-containing** (> 1%).

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Various types of painted surfaces such as sprinkler pipes and CMU walls, have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 255, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 255, located in Newark, New Jersey.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection. The valve gaskets inside the pipe flanges could not be tested since the sprinkler system is still operational. It is assumed, based on the number of flanges observed, that there are 15 gaskets in the sprinkler room and are presumed to be asbestos containing. This quantity should be verified with destructive sampling if abatement is planned prior to any renovation work.

If questions arise regarding asbestos content in building materials that were not tested by ATC,

ATC Project No. 214PNPEPJ1

Inspection Report for ACM Port Newark, Building # 255, Newark, NJ

additional testing services should be procured to test those areas.

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

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APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES

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Client: ATC - NEW YORK

104 EAST 25TH STREET NEW YORK, NY 10010

Phone: (212) 353-8280

Fax: (212) 353-3599

Location: PN / BUILDING #255 Project # 214PNPEPJ1/TASK0001

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Sample Date: 4/9/2021

Date Received: 4/9/2021

Date Analyzed: 4/12/2021

ATC Batch # 21-626

Methods: ELAP 198.1, 198.6, 198.4

Bulk Asbestos Analysis Results

| | | | | <u>No</u> | n-Asbestos | NOB_ | Asbestos |
|--------------|---------------------------------|---|-----------|--------------------------------|------------------|--------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 1 | 1ST FLOOR OFFICE BY ENTRANCE | 2' X 2' CEILING TILE TYPE 1 PIN HOLE | NOB-TEM | | | 25.3% Organic 46.3% Residue | |
| 21-626 -1 | | | | | 0.0% Vermiculite | 28.4% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman F | Peysakhov | Comments: NOB PI | _M Inconclusive | | |
| 2 | 1ST FLOOR OFFICE BY ENTRANCE | 2' X 2' CEILING TILE TYPE 1 PIN HOLE | NOB-TEM | | | 26.1% Organic 51.6% Residue | |
| 21-626 -2 | | | | | 0.0% Vermiculite | 22.3% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman F | Peysakhov | Comments: NOB PI | _M Inconclusive | | |
| 3 | 1ST FLOOR OFFICE BY ENTRANCE | 2' X 2' CEILING TILE TYPE 1 PIN HOLE | NOB-TEM | | | 25.1% Organic 48.9% Residue | |
| 21-626 -3 | | | | | 0.0% Vermiculite | 26% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman F | Peysakhov | Comments: NOB PI | _M Inconclusive | | |
| 4 | 1ST FLOOR LUNCH ROOM | 2' X 2' CEILING TILE TYPE II | NOB-TEM | | | 13.2% Organic 74.3% Residue | |
| 21-626 -4 | | | | | 0.0% Vermiculite | 12.5% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman Peysakhov | | Comments: NOB PLM Inconclusive | | | |
| 5 | 1ST FLOOR LUNCH ROOM | 2' X 2' CEILING TILE TYPE II | NOB-TEM | | | 13% Organic 67.7% Residue | |
| 21-626 -5 | | | | | 0.0% Vermiculite | 19.3% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman F | Peysakhov | Comments: NOB PI | _M Inconclusive | | |
| 6 | 1ST FLOOR LUNCH ROOM | 2' X 2' CEILING TILE TYPE II | NOB-TEM | | | 13.2% Organic 37.8% Residue | |
| 21-626 -6 | | | | | 0.0% Vermiculite | 49% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman F | Peysakhov | Comments: NOB PI | _M Inconclusive | | |
| 7 | 1ST FLOOR LOCKER ROOM | 2' X 4' CEIUNG TILE TYPE III | NOB-TEM | | | 24.5% Organic | |
| 21-626 -7 | | | | | 0.0% Vermiculite | 42.5% Residue 33% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman F | Peysakhov | Comments: NOB PI | _M Inconclusive | | |

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| | | | | Non-Asbestos | | NOB_ | Asbestos |
|----------------|-----------------------|---------------------------------------|----------|---------------------------------|------------------------------|----------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | ₩ Type | % Type |
| 8 | 1ST FLOOR LOCKER ROOM | 2' X 4' CEILING TILE TYPE III | NOB-TEM | | | 25.3% Organic | |
| 21-626 -8 | | | | | 0.0% Vermiculite | 52.6% Residue 22.1% Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Tan Second Analyst: Roman P | eysakhov | Comments: NOB PLI | M Inconclusive | | |
| 9 | 1ST FLOOR LOCKER ROOM | 2' X 4' CEILING TILE TYPE III | NOB-TEM | | | 24.8% Organic | |
| 21-626 -9 | | | | | 0.0% Vermiculite | 56.8% Residue 18.4% Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Tan Second Analyst: Roman P | eysakhov | Comments: NOB PLI | M Inconclusive | | |
| 10 | 1ST FLOOR LOCKER ROOM | BLANKET INSULATION | PLM | 50% Cellulose | 25% Mineral Filler | | |
| 21-626 -10 | | BACKING CEILING | | 20% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analysis of Dy | , Mai Wasa | Color: Tan | | | 5% Foil | | |
| Analyzed By | | DI ANIZET INICI II ATIONI | DIM | 500/ 0 " ' | 050/ Nr. 15:11 | | |
| 11 | 1ST FLOOR LOCKER ROOM | BLANKET INSULATION BACKING CEILING | PLM | 50% Cellulose 20% FiberGlass | 25% Mineral Filler | | |
| 21-626 -11 | | | | ZU/0 FIDETGIASS | 0.0% Vermiculite 5% Foil | | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Tan | | | | | |
| 12 | 1ST FLOOR LOCKER ROOM | BLANKET INSULATION BACKING CEILING | PLM | 50% Cellulose | 25% Mineral Filler | | |
| 21-626 -12 | | BACKING CELEING | | 20% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | · Mei Wang | Color: Tan | | | 5% Foil | | |
| | 1ST FLOOR OFFICE BY | E/C DIDE INSUITATION DADED | DIM | 400/ Callulana | 200/ Minaral Filler | | |
| 13 | ENTRANCE | F/G PIPE INSULATION PAPER CEILING | PLIVI | 40% Cellulose 30% FiberGlass | 20% Mineral Filler | | |
| 21-626 -13 | | | | 0070 Tiber Glass | 0.0% Vermiculite 10% Foil | | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Tan | | | | | |
| 14 | 1ST FLOOR LUNCH ROOM | F/G PIPE INSULATION PAPER | PLM | 40% Cellulose | 20% Mineral Filler | | |
| 21-626 -14 | | CEILING | | 30% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan | | | 10% Foil | | |
| Analyzed By | : Mei Wang | | | | | | |
| 15 | 1ST FLOOR LOCKER ROOM | F/G PIPE INSULATION PAPER CEILING | PLM | 40% Cellulose 30% FiberGlass | 20% Mineral Filler | | |
| 21-626 -15 | | . . – | | 5070 1 IDETOI055 | 0.0% Vermiculite 10% Foil | | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Tan | | | | | |
| 16 | 1ST FLOOR STORAGE | 2' X 2' CEIUNG TILE TYPE IV | NOB-TEM | | | 25.1% Organic | |
| 21-626 -16 | ROOMS | | | | 0.0% Vermiculite | 43.5% Residue 31.4% Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Tan Second Analyst: Roman P | evsakhov | Comments: NOB PLI | M Inconclusive | | |
| 17 | 1ST FLOOR STORAGE | 2' X 2' CEILING TILE TYPE IV | NOB-TEM | | | 24.7% Organic | |
| | ROOMS | | | | 0.0% Vermiculite | 42.9% Residue 32.4% Carbonate | NONE DETECTED |
| 21-626 -17 | | Color: Tan | | <u>2</u> 22.555.70 | | 22 | 32,20,120 |
| Analyzed By | : Mei Wang | Second Analyst: Roman P | eysakhov | Comments: NOB PLI | M Inconclusive | | |

Page 2 of 7 Batch # 21-626 Report Prepared By: Grace Chan



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| | | | | No | n-Asbestos | <u>NOB</u> | Asbestos |
|---------------|--------------------------------|---------------------------------------|----------|------------------|---------------------|--------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 18 | 1ST FLOOR STORAGE ROOMS | 2' X 2' CEILING TILE TYPE IV | NOB-TEM | | | 24.3% Organic 33.2% Residue | |
| 21-626 -18 | | | | | 0.0% Vermiculite | 42.5% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman P | eysakhov | Comments: NOB PL | M Inconclusive | | |
| 19 | 1ST FLOOR OFFICE BY ENTRANCE | F/G HVAC DUCT INSULATION COVER | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-626 -19 | ENTRANCE | COVER | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Light | Gray | | | | |
| 20 | 1ST FLOOR LUNCH ROOM | F/G HVAC DUCT INSULATION | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-626 -20 | | COVER | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Light | Gray | | | | |
| Analyzed By: | Mei Wang | | | | | | |
| 21 | 1ST FLOOR LOCKER ROOM | F/G HVAC DUCT INSULATION COVER | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-626 -21 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Light | Gray | | | | |
| 22 | 1ST FLOOR OFFICE BY ENTRANCE | CMU MORTAR WALLS | PLM | | 100% Mineral Filler | | |
| 21-626 -22 | LIVITANOL | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Moi Wang | Color: Gray | | | | | |
| 23 | 1ST FLOOR LUNCH ROOM | CMU MORTAR WALLS | PLM | | 100% Mineral Filler | | |
| 21-626 -23 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-020 -23 | | Color: Gray | | | | | |
| Analyzed By: | Mei Wang | · | | | | | |
| 24 | 1ST FLOOR LOCKER ROOM | CMU MORTAR WALLS | PLM | | 100% Mineral Filler | | |
| 21-626 -24 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Gray | | | | | |
| 25 | 1ST FLOOR OFFICE BY | GYPSUM BOARD PAPER - | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-626 -25 | ENTRANCE | WALLS | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | n | | | | |
| Analyzed By: | Mei Wang 1ST FLOOR LUNCH ROOM | GYPSUM BOARD PAPER - | DIM | 050/ 0-11-1 | FO/ Minaral Fills | | |
| 26 | 151 FLOOR LUNCH ROOM | WALLS | PLM | 95% Cellulose | 5% Mineral Filler | | NONE DETECTED |
| 21-626 -26 | | Color: Brow | n | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | 0001. 2101 | | | | | |
| 27 | 1ST FLOOR LOCKER ROOM | GYPSUM BOARD PAPER - WALLS | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-626 -27 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Brow | n | | | | |
| , many200 by. | . mor truing | | | | | | |
| | | | | D 02 000 | | | |

Report Prepared By: Grace Chan Page 3 of 7 Batch # 21-626



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| | | | | <u>Non</u> | -Asbestos | <u>NOB</u> | Asbestos |
|--------------|---------------------------------|-----------------------------------|------------|-------------------|------------------------------|-----------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 28 | 1ST FLOOR OFFICE BY ENTRANCE | GYPSUM BOARD | PLM | 5% Cellulose | 85% Mineral Filler | | |
| 21-626 -28 | ENTRANCE | | | 10% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzad Dy | Mai Wana | Color: Off V | Vhite | | | | |
| Analyzed By: | 1ST FLOOR LUNCH ROOM | GYPSUM BOARD | PLM | 5% Cellulose | 85% Mineral Filler | | |
| | 1011 LOOK LONGITHOOM | OTT OOM BOARD | FLIVI | 10% FiberGlass | | | NONE DETECTED |
| 21-626 -29 | | Color: Off V | Vhite | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | 0001. 011 1 | Time | | | | |
| 30 | 1ST FLOOR LOCKER ROOM | GYPSUM BOARD | PLM | 5% Cellulose | 85% Mineral Filler | | |
| 21-626 -30 | | | | 10% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Moi Wong | Color: Off V | Vhite | | | | |
| 31 | 1ST FLOOR OFFICE BY | JOINT COMPOUND | PLM | | 100% Mineral Filler | | |
| | ENTRANCE | | 1 2111 | | 0.0% Vermiculite | | NONE DETECTED |
| 21-626 -31 | | Color: Whit | e. | | 0.0% vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Oddi. Will | | | | | |
| 32 | 1ST FLOOR LUNCH ROOM | JOINT COMPOUND | PLM | | 100% Mineral Filler | | |
| 21-626 -32 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | Moi Wong | Color: Whit | e | | | | |
| Analyzed By: | 1ST FLOOR LOCKER ROOM | JOINT COM POUND | PLM | | 100% Mineral Filler | | |
| | TOT TEGOR EGGRERATEGOM | COUNT COUNT COME | i Livi | | | | NONE DETECTED |
| 21-626 -33 | | Color: Whit | in a | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Oddi. Willi | L. | | | | |
| 34 | 1ST FLOOR OFFICE BY ENTRANCE | HVAC DUCT INSULATION 2NI LAYER | PLM | 60% Cellulose | 20% Mineral Filler | | |
| 21-626 -34 | ENTITUTOE | D.VI.E.V. | | 10% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | Moi Wong | Color: Tan | | | 10% Foil | | |
| Analyzed By: | 1ST FLOOR LUNCH ROOM | HVAC DUCT INSULATION 2NI | D PIM | 60% Cellulose | 20% Mineral Filler | | |
| | 1311 EGGN EGNOTTNOOM | LAYER | - FLIVÍ | 10% FiberGlass | | | NONE DETECTED |
| 21-626 -35 | | Color: Tan | | | 0.0% Vermiculite 10% Foil | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color. Tall | | | | | |
| 36 | 1ST FLOOR LOCKER ROOM | HVAC DUCT INSULATION 2NI LAYER | D PLM | 60% Cellulose | 20% Mineral Filler | | |
| 21-626 -36 | | | | 10% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | 10% Foil | | |
| 37 | 1ST FLOOR PRINTER ROOM | 2 X 2 CEILING TILE TYPE 5 | NOB-TEM | | | 12.7% Organic | |
| | .511 EGGKT KINTEK KOOW | ZAZ OCILINO HILL THE U | INOD-IEIVI | | 0.09/ Namia: Ilia | 40.2% Residue | NONE DETECTED |
| 21-626 -37 | | Color: Tan | | | 0.0% Vermiculite | 47.1% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Second Analyst: Roman | | Comments: NOB PLI | // Inconclusive | | |

Report Prepared By: Grace Chan Page 4 of 7 Batch # 21-626



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| | | | | Non | -Asbestos | <u>NOB</u> | Asbestos |
|---------------|-----------------------------|--|-------------|--------------------------------|-----------------------------|----------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 38 | 1ST FLOOR PRINTER ROOM | 2 X 2 CEILING TILE TYPE 5 | NOB-TEM | | | 13.9% Organic | |
| 21-626 -38 | | | | | 0.0% Vermiculite | 60.7% Residue 25.4% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman Po | eysakhov | Comments: NOB PLI | M Inconclusive | | |
| 39 | 1ST FLOOR PRINTER ROOM | 2 X 2 CEILING TILE TYPE 5 | NOB-TEM | | | 14.5% Organic | |
| 21-626 -39 | | | | | 0.0% Vermiculite | 65.6% Residue 19.9% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan Second Analyst: Roman P | eysakhov | Comments: NOB PLI | VI Inconclusive | | |
| 40 | 1ST FLOOR SPRINKLER | F/G INSULATION OVER 3" & 4" | PLM | 60% Cellulose | 15% Mineral Filler | | |
| 21-626 -40 | ROOM | PIPES | | 20% FiberGlass | 0.0% Vermiculite 5% Foil | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | 070 1 011 | | |
| 41 | 1ST FLOOR SPRINKLER | F/G INSULATION OVER 3" & 4" | DI M | 60% Cellulose | 15% Mineral Filler | | |
| 41 | ROOM | PIPES | FLIVI | 20% FiberGlass | | | |
| 21-626 -41 | | | | | 0.0% Vermiculite 5% Foil | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | | | |
| 42 | 1ST FLOOR SPRINKLER ROOM | F/G INSULATION OVER 3" & 4" PIPES | PLM | 60% Cellulose | 15% Mineral Filler | | |
| 21-626 -42 | NO OIII | 1 11 23 | | 20% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan | | | 5% Foil | | |
| Analyzed By: | | | | | | | |
| 43 | 1ST FLOOR SPRINKLER ROOM | MUDDED FITTING INSULATION 3" PIPE | PLM | 5% Cellulose | 70% Mineral Filler | | |
| 21-626 -43 | | | | 25% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analona d Don | MailWann | Color: Light C | Gray | | | | |
| Analyzed By: | · | | | | | | |
| 43 | 1ST FLOOR SPRINKLER ROOM | MUDDED FITTING INSULATION 3" PIPE | PLM | 5% Cellulose 25% FiberGlass | 70% Mineral Filler | | |
| 21-626 -44 | | | | 20/0 TiberOlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Light C | Gray | | | | |
| 45 | 1ST FLOOR SPRINKLER | MUDDED FITTING | PLM | 5% Cellulose | 75% Mineral Filler | | |
| | ROOM | INSULATION 3" PIPE | | 20% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-626 -45 | | Color: Light C | - - - | | 0.070 Vermiculte | | NONE DETECTE |
| Analyzed By: | Mei Wang | Oolor. Eight C | , | | | | |
| 46 | 1ST FLOOR SPRINKLER ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-626 -46 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Tan | | | | | |
| 47 | 1ST FLOOR SPRINKLER ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-626 -47 | NOOW | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan | | | | | |
| Analyzed By: | Mei Wang | | | | | | |

Report Prepared By: Grace Chan Page 5 of 7 Batch # 21-626



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| 100 | | | | Non-Asbestos | | <u>NOB</u> | <u>Asbestos</u> | |
|-----------------------|-----------------------------|---|-----------|--------------------------------|---------------------|--------------------------------|-----------------|--|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type | |
| 48 | 1ST FLOOR SPRINKLER ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | | |
| 21-626 -48 | | | | | 0.0% Vermiculite | | NONE DETECTED | |
| | | Color: Tan | | | | | | |
| Analyzed By | r: Mei Wang | | | | | | | |
| 49 | 1ST FLOOR MAIN LOBBY | 2 X 2 CEILING TILE TYPE 6 SMOOTH | NOB-TEM | | | 14.6% Organic 75.6% Residue | | |
| 21-626 -49 | | | | | 0.0% Vermiculite | 9.8% Carbonate | NONE DETECTED | |
| Analyzed By: Mei Wang | | Color: Tan Second Analyst: Roman Peysakhov | | Comments: NOB PLM Inconclusive | | | | |
| 50 | 1ST FLOOR MAIN LOBBY | 2 X 2 CEILING TILE TYPE 6 SMOOTH | NOB-TEM | | | 15% Organic 82.7% Residue | | |
| 21-626 -50 | | | | | 0.0% Vermiculite | 2.3% Carbonate | NONE DETECTED | |
| Analyzed By: Mei Wang | | Color: Tan Second Analyst: Roman Peysakhov | | Comments: NOB PLM Inconclusive | | | | |
| 51 | 1ST FLOOR MAIN LOBBY | 2 X 2 CEILING TILE TYPE 6 SMOOTH | NOB-TEM | | | 11.7% Organic 63.5% Residue | | |
| 21-626 -51 | | | | | 0.0% Vermiculite | 24.8% Carbonate | NONE DETECTED | |
| Analyzed By | r: Mei Wang | Color: Tan Second Analyst: Roman | Peysakhov | Comments: NOB P | LM Inconclusive | | | |

Report Prepared By: Grace Chan Page 6 of 7 Batch # 21-626



ATC Group Services LLC

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Non-Asbestos <u>NOB</u> Asbestos Type of Material Sample # Location Method % Fibrous % Non-Fibrous % Type % Type NOTES 1) The Limit of Detection is the same as the Reporting Limit for these results. 2) The Reporting Limit (RL) is the Limit of Quantitation. For point counts the limit of quantitation of 0.25%; based on one asbestos point counter over 400 non-empty points 3) Asbestos Containing Material (ACM) Definition: > 1% asbestos by weight is considered an ACM 4) Disclaimer: The laboratory is not responsible for sample collection. Please refer to enclosed letter. This report may not be reproduced, except in full, without written approval by ATC Group Services. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This report relates only to the samples reported above as described in the chain of custody. Quality control data is available upon request. 5) Accredited by NVLAP #101187-0 and by NY State ELAP #10879 6) Confidentally Notice: The document(s) contained herein are confidential and privileged information, intended for the exclusive use of the individual or entity named above. 7) Liability Notice: ATC Group Services and its personnel shall not be liable for any misinformation provided to us by the client regarding these samples. This report relates only to samples submitted and analy 8) Asbestos results are reliable to 2 significant figures 9) The condition of all samples was acceptable upon receipt 10) The laboratory certifies that the test results meetall requirements of NELAC. 11) Supplement to test report batch # __ Amendments: ____ Amendment Dates: ___ _. Amended by: __ 12) PLM Letter is attached on this report. 13) TRACE: The result is reported as Trace when No points are counted and asbestos is identified. For ELAP Trace is < 1%. 14) ATC Group Services certifies that this report is an accurate and authentic report of the results obtained from the laboratory analysis 15) The uncertainty for these test results is available upon request. 16) ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite. For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 1986.

| Mei Wang WeiWay | Mei Wang Weike |
|--------------------------|---------------------------------|
| Analyst: | Approved by Quality Manager: |
| Roman Peysakhov Analyst: | |

This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Report Prepared By: Grace Chan Page 7 of 7 Batch # 21-626



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely,

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiley Bousson

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Page 1 of 1 DOCUMENT #DB4A

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BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

21-626

| 1. Clien | t | | Proie | ct Name: | | 3a. ATC Project No.: | 4a. Project Manager: |
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| 5. Date: | 21 | BUILDING NU Sampling Are | 20 | | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1 st Positive |

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| 24b. Analyzed By: REUSKANON DA | 4/12/18 | 10:00 | |
| 24c. QC By: | 1,4,1 | | |



BATCH NO. Page of

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

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| 1. Client PANYNJ | | Project Name: FIRESPRINKLEI | R REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero | |
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| 24b. Analyzed By: Research VIII | 4/12/01 | 10:00 | |
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ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

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Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☑ ELAP □ EPA

SCANNING OPTION

analysis sheet for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:\(\text{LAB_FORMS_DOCUMENTS} \) AND RECORDS\(\text{OPTICALASBESTOS_BULKASBESTOS} \) BULKASBESTOS BULK FORMS 2020\(\text{BULK ASBESTOS} \) ANALYSIS SHEET_FORM #82.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Low to Moderate Birefringence

See Note #1.

Q.C. □

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET

Project Number 214PNPEPJ1 Client / Project PANYNJ/ PA 23 21-626 Analysis Date 4// 2021 Analyst Batch Number Asbestos Other Fibrous Non Fibrous 5 Stereoscopic Exam **PLM Optical Properties** Results PLM % PIM % PIM % RI || DS Color Color, Pleo Biref Mineral Filler Fiberglas Amosite Organic Binde Required [_Vermiculite f of Layers Other analysis sheet Color of Layer Cellulose Ondufose for results Fiberglass Isotopi %Asb. Or %Ver. Slide 2 Slide 4 Asb, Ner, PT Total PT SM-V Point Counts Slide 1 Slide 3 Slide 5 Slide 6 Slide 7 PL! Required [vet of asbestos in a samp Horse Hair: Scale: might be underestimated. ڑے NOB PLM See SM-V Low to Moderate analysis sheet Q.C. Method: DELAP DEPA SCANNING OPTION Asbestos Non Fibrous 6 **PLM Optical Properties** Stereoscopic Exam Results PLM 9 PLM % PLM % Cellulose Mineral Filler Gravimetri And Texture Fiberglas _ Organic Binder Required Other Other Vermiculite* analysis shee for results Slide 5 Slide 6 Slide 7 Slide 8 | Asb,/Ver, PT | Total PT %Asb. Or %Ver. Fiberglass (sotopi SM-V Synthetic High f vermiculite is >10% the PLI Required [Birefringence evel of asbestos in a sample Horse Hair: Scales might be underestimated. NOB PLA See SM-V 🖺 Low to Moderate See Note #1, analysis sheet Method: DELAP DEPA Q.C. 7 SCANNING OPTION Non Fibrous Asbestos Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PIM % PLM % Gravimetri Chrysoti Mineral Filler __Organic Binde Required [Amosite Other Other Vermiculite¹ See gravimetric analysis sheet for results Extinction Fiberglass Isotop Slide 6 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Point Counts Slide 1 Slide 2 Slide 4 Slide 5 Slide 7 SM-V If vermiculite is >10% the PLM Birefringence evel of asbestos in a sample Horse Hair: Scales, night be underestimated NOB PLM Low to Moderate See SM-V Birefringence analysis sheet Comments: Method: DEPA T SCANNING OPTION Q.C. 🗌 Asbestos Other Fibrous Non Fibrous 8 Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Chrysotile Cellulose Mineral Filler Gravimet Fibergla: _Organic Binder Require Homogeneity (/ Other Other Other See gravimetric analysis sheet Color of Laver Cellulose On Extinction for results Fiberglass Isotopi %Ash, Or %Ver Point Counts Slide 1 Slide 2 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Birefringence Required [vel of asbestos in a sampl Horse Hair: Scales. might be underestimated NOB PLM D Y \supset See SM-V Low to Moderate analysis sheet Comments for results

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: DELAP EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% Vermiculite, with the exception of surfacing material that contains Vermiculite (SM-V). For samples containing \$10% Vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

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| BULK ASBESTOS ANALYSIS SHEET | BULK | ASBES | TOS | ANAL | YSIS | SHEE | Т |
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| Client / Project | PANYNJ/ | PA | | Project Number | 214PNPEPJ |
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| 22 | Analysis Date 4/(3/12 | OZI Analyst | | | | | | | lumber 21- | | EMPERATURE*C |
|--|--|--|---------|----------------------|-------------------------------------|--------------------------------------|-----------|--|---|--|--|
| 1 9 Field Number | Stereoscopic Exam | | | - | tical Pro | | 5 | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture F | Morph Extinction | RII | RI I DS | Color Colo | r, Pleo Bir | ef Sign | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗐 | Homogeneity Vermiculite | | | | | | : | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | # of Layers Asbestos | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | | | | | | | | | | | Other |
| for results | Color of Layer Detected Yes No | | | | | | : | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM 2 Y | | | | | | 0 | 200 | V | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | | Birefringence | |
| | Method: ☐ ELAP ☐ EPA | SCANNING OPTI | ON | | Q.C | C. 🗆 | 11.70 | | | | |
| 2 10 | Stereoscopic Exam | | | PLM Op | tical Pro | operties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Field Number | | Morph Extinction | RII | RII DS | Color Colo | r, Pleo Bir | ef Sign | Other Identity | Park | PLM % | PLM % |
| Gravimetric Required | Color Lim Texture | | | | | | | | Chrysotile | Cellulose 7 V Fiberglass | Mineral Filler Organic Binders |
| Recommended | Homogeneity Vermiculite | 4 | | | | | | | Other | Other | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | 4 | | | | | | | / | | Other / |
| analysis sheet for results | Color of Layer Detected Yes No | | | | | | | | | Cellulose Ondulose | foil |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | J |
| 2000 | DIM OT NO | | 37K07KR | N. STATE OF STATE OF | 300000 | | 9 | HO 1542/00/01/5/25 | J | Synthetic High | * If vermiculite is >10% the |
| Required | NOB PLM | | | | | | | n | | Birefringence ☐ Horse Hair; Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | Comments: | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | | SCANNING OPTI | ON | | 10.0 | c. 🗆 | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | I W EX |
| 3 11 Field Number | Stereoscopic Exam | | | | otical Pro | - Zhannan | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| 224000000 100 EX | Stereoscopic Exam Color Texture | Morph Extinction | RII | | otical Pro | - Zhannan | ef Sign | Other Identity | | PLM % Cellulose | Committee of the Commit |
| Field Number | - 1 | Morph Extinction | RI1 | | | - Zhannan | ef Sign | Other Identity | Results PLM % | PLM % | PLM % Mineral Filler Organic Binders |
| Field Number Gravimetric | Color Texture | Morph Extinction | RII | | | - Zhannan | ef Sign | Other Identity | Results PLM % Chrysotile | PLM % Cellulose | PLM % Mineral Filler |
| Gravimetric Required Recommended See gravimetric | Color _ Contracture _ C | Morph Extinction | RII | | | - Zhannan | ef Sign | Other Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* Other |
| Gravimetric Required Recommended | Color Texture | | RII | | | - Zhannan | ef Sign | Other Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* |
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| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Color Texture Homogeneity Vermiculite Homogeneity Vermiculite Homogeneity Detected Yes No Point Counts Slide 1 Slide 2 | 0 | | RII DS | Color Colo | or, Pleo Bir | | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction | PLM % Mineral Filler Organic Binders Vermiculite* Other Other If vermiculite is >10% the |
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Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing ≥10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2

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BULK ASBESTOS ANALYSIS SHEET Project Number 214PNPEPJ1 Client / Project PANYNJ/ PA Analysis Date 4/(0/2021 Analyst 21-626 Asbestos Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RIII DS Color Color, Pleo Biref (Texture Cellulose Mineral Filler Gravimetric Fiberglas Organic Binde Required [(0 Other See gravimetric [analysis sheet 10 for results Fiberglass Isotopi Point Counts Slide 1 Slide 2 Asb./Ver. PT Total PT SM-V Synthetic High If vermiculite is >10% the PLM Required [evel of asbestos in a sample Horse Hair: Scales. might be underestimated. NOB PLM See SM-V [Low to Moderate See Note #1. analysis sheet Comments: for results Q.C. Method: □ ELAP □ EPA SCANNING OPTION Ashestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % (U Cellulose (Texture Mineral Filler Gravimetrio ⊋ ∪ Fiberglas lomogeneity 🛴 / Vermiculite Other Vermiculite* (O Othe See gravimetric analysis sheet Cellulose Ondo Fiberglass Isotopia Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb Ner PT Total PT %Asb. Or %Ver. SM-V Synthetic High If vermiculite is >10% the Required [evel of asbestos in a sampl Horse Hair: Scales, NOB PLM See SM-V [See Note #1 analysis sheet Comments: for results Q.C. Method: □ ELAP □ EPA SCANNING OPTION Asbestos Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % Cellulose Carture. Mineral Filler Fiberglass Organic Binder Required (O Other See gravimetric analysis sheet Cellulose Ondulo for results Fiberglass Isotopi Slide 2 SM-V Synthetic High f vermiculite is >10% the U Required [evel of asbestos in a sample Horse Hair: Scales, night be underestimated. NOB PLM See SM-V L Low to Moderate analysis sheet Comments: for results Q.C. Method: ☐ ELAP ☐ EPA ☑ SCANNING OPTION Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Mineral Filler Organic Binde Vermiculite Other Other Vermiculite* # of Layers Asbestos See gravimetri analysis shee for results Fiberglass Isotopic Slide 8 Asb./Ver. PT Total PT Slide 1 Slide 2 Slide 4 Slide 5 Slide 6 Slide 7 %Asb. Or %Ver. SM-V Point Counts f vermiculite is >10% the PLN evel of asbestos in a sample Horse Hair: Scales, might be underestimated. NOB PLM J IN See SM-V Low to Moderate Birefringence

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 FPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Comments:

Method: □ ELAP □ EPA

SCANNING OPTION

analysis sheet

for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite Note #1: ELAP requires membrad ELAP 19.1 To the analysis of samples containing \$10% vermiculite (SM-V). For samples containing \$10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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| | Client / Project PANYN. | / | | PA | | / | | | Project | Number 214PN | IPEPJI | |
|--|---|---------------------|--------------|---------|-------------------|------------|----------------------------------|--------------|-------------|---|--|---|
| | Analysis Date 4/ | /2021 | _ Analyst | _ ~ | | 6 | | | Batch N | Number 21-6 | 626 | EMPERATURE*C |
| 17 Id Number | Stereoscopic Exam | | | | | otical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required ecommended ge gravimetric analysis sheet for results | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes | | n Extinction | RII | RI DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | ChrysotileAmositeOther | CelluloseFiberglassOther Cellulose Ondulose Extinction | Mineral FillerOrganic BindersOvermiculite*Other |
| SM-V Required See SM-V analysis sheet for results | Point Counts Slide 1 Slide 2 PLM NOB PLM O Y Comments: Method: □ ELAP □ EPA | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1, |
| 18 | Stereoscopic Exam | $\dot{\uparrow}$ | | | PLM Or | otical Pro | nerties | | | Asbestos | Other Fibrous | Non Fibrous |
| Gravimetric Required ecommended er gravimetric analysis sheet | Color Texture Hornogeneity Vermiculite # of Layers Asbestos | | Extinction | RI1 | 410 A PART 18-2.5 | Color Colo | | ef Sign Oth | er Identity | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other |
| SM-V Required See SM-V analysis sheet for results | NOB PLM Comments: | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ cellulose Ondulose Extinction ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| | Method: TELAD TEDA | TISCAN | MINIC OPTI | ON | | 0.0 | · [] | | | | 1 | 1 |
| 19 | Method: ELAP EPA Stereoscopic Exam | SCAN | NING OPTI | ON | PLM Or | | c. 🗆 | | | Asbestos | Other Fibrous | Non Fibrous |
| 19 Gravimetric Required ecommended analysis sheet for results | Stereoscopic Exam Color | Morph | Extinction | RII | RII DS | otical Pro | operties | | er Identity | Results PLM % Chrysotile Arnosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction | Non Fibrous PLM % U Mineral Filler Organic Binders U Vermiculite* Other |
| Gravimetric Required ecommended er gravimetric analysis sheet | Stereoscopic Exam Color | Morph No Slide 3 | Slide 4 | RI1 | | Slide 7 | operties Fr., Pleo Bir Slide 8 | ef Sign Oth | Total PT | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other | PLM % U Mineral Filler Organic Binders U Vermiculite* |
| Gravimetric Required ecommended et gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color | Morph No Slide 3 | Extinction | RI1 | RI | Slide 7 | operties or, Pleo Bir Slide 8 | Asb./Ver. PT | | Results PLM % ChrysotilleAmositeOther %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % U Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Gravimetric Required ecommended analysis sheet for results SM-V Required See SM-V analysis sheet | Stereoscopic Exam Color | Morph No Slide 3 | Slide 4 | RI1 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver. PT | | Results PLM % ChrysotilleAmositeOther %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Organic Binders Organic Binders Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| Gravimetric Required ecommended analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color | Morph No Slide 3 | Slide 4 | RI1 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT | Results PLM % ChrysotileOther Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | PLM % Omeganic Binders Organic Binders Other Other If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. |

Methods:
EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Comments:

Method: ELAP EPA

SCANNING OPTION

See SM-V □

analysis sheet

for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Low to Moderate

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ee Note #1.

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ATC - New York

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BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ/ | | PA | | | | | Project | Number 214PN | IPEPJ1 | NIKON OPTIP |
|--|---|----------------------------|---------|---|------------|--|--------------|--------------|---------------------------|--|---|
| | 1 1 | 2021 Analys | st | | | | | Batch N | 24. | 626 ₁ | EMPERATURE°c 2 } |
| 1 25 Field Number | Stereoscopic Exam | | | PLM Op | tical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required ☐ Recommended ☐ | Cotol Texture | Morph Extinction | RII | RI DS | Color Colo | r, Pleo Bin | ef Sign Oth | ner Identity | Chrysotile Amosité | Cellulose Fiberglass Other | Mineral Filler Organic Bine Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos / Color of Layer Detected Yes N | lo | | | | | | | | Celluiose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required ☐ See SM-V ☐ | PLM V NOB PLM | | | | | | | 2~ | <u>ر</u> | Birefringence Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% th tevel of asbestos in a sam might be underestimated. |
| analysis sheet for results | Comments: | SCANNING OP | TION | | Q.0 | c. 🗆 | | | | Birefringence | See Note #1. |
| 2 26 Field Number | Stereoscopic Exam | | · | PLM Op | tical Pro | operties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction | on RII | Rì (DS | Color Colo | r, Pleo Bin | ef Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | <i></i> | | | | | | | Amosite Other | Fiberglass Other | Organic Bind |
| See gravimetric analysis sheet | # of Layers Asbestos Color of Layer Detected Yes N | | | | | | | | | ٨ | Other |
| for results SM-V | Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Cellulose Ondulose Extinction D Fiberglass Isotopic | |
| Required [| I 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | + | | | | ٦ | 2~ | | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% th level of asbestos in a san |
| See SM-V analysis sheet for results | NOB PLM Comments: | | | | | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| ioi iestiia | Method □ ELAP □ EPA | SCANNING OP | TION | | Q.0 | c. 🗆 | | | | | |
| 3 27 Field Number | Stereoscopic Exam | | | | otical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color | Morph Extinction | on KII | RII DS | Color Colo | r, Pleo Bir | ef Sign Oth | ner Identity | Chrysotile | <u> </u> | S Mineral Fille |
| Required | Homogeneity Vermiculite | /=== | | | | ······································ | | | Amosite | Fiberglass | Organic Bina |
| Recommended See gravimetric analysis sheet | # of Layers Asbestos | | | | | | | | Olher | Other | Vermiculite* |
| for results | Color of Layer Detected Yes N | lo | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% th |
| Required ☐ See SM-V ☐ | NOB PLM | , | | *************************************** | | | | | | Birefringence ☐ Horse Hair: Scates, Low to Moderate | level of asbestos in a san might be underestimated. See Note #1. |
| analysis sheet for results | Commentsy Method: ☐ ELAP ☐ EPA | SCANNING OP | TION | | Q.(| C. 🗆 | | | | Birefringence | See Note #1. |
| 4 28 | | 7 | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morph Extinction | on RII | | Color Colo | operties or, Pleo Bir | ef Sign Oth | her identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required □ | Color Texture | J | | | | | | | Chrysøtile | Cellulose () Fiberglass | Mineral Fille Organic Bine |
| Recommended [| Homogeneity Vermiculite | / | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos / Color of Layer Detected Yes N | / | | | | | | | | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | Extinction Extinction | |
| | 1 | | | | | | | | | | |
| Required 🗆 | PLM U | 7 | | | | | 0 | 2~ | V | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a san |
| Required See SM-V analysis sheet for results | PLM U | ✓ ✓ ✓ SCANNING OP | | | | C. 🗆 | (0) | 2~ | J | Birefringence | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ/ Project Number 214PNPEPJ1 Analysis Date 4/ 10 /2021 Analyst 21-626 TEMPERATURE'C 23 Batch Number Non Fibrous Asbestos 21 Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RLII DS Color Color Pleo Biref Sign Other Identi 2 Cellulose Gravimetric Chrysotile Mineral Filler Required [Organic Binde /) Vermiculite* Other analysis sheet Detected Yes Color of Laver for results Extinction Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopic SM-V Synthetic High If vermiculite is >10% the 0 Required [Birefringence evel of asbestos in a sample Horse Hair: Scales. night be underestimated. NOB PLM See SM-V [See Note #1. analysis sheet for results Q.C. 🗆 Method: □ ELAP □ EPA SCANNING OPTION Asbestos Non Fibrous 22 Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Chrysotil Cellulose Mineral Filler Required [Amosite Organic Binde √ Vermiculite* Other Other analysis sheet Cellulose Ondule for results Slide 1 Slide 2 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopic Slide 3 Synthetic High If vermiculite is >10% the Required [Birefringence evel of asbestos in a sample Horse Hair: Scales, NOB PLM night be underes See SM-V Low to Moderate See Note #1. analysis sheet Comments: Q.C. Method: □ ELAP □ EPA SCANNING OPTION Asbestos Other Fibrous Non Fibrous 23 **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % Mineral Filler Color ______Texture_ Gravimetric Cellulos Organic Binde Other __Vermiculite* See gravimetric Other analysis sheet Color of Layer Detected Yes Cellulose Ondulos for results SM-V Point Counts | Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Synthetic High If vermiculite is >10% the () Required [evel of asbestos in a sample NOR PLM might be underestimated. See SM-V Low to Moderate Birefringence analysis sheet for results Q.C. Method: ☐ ELAP ☐ EPA SCANNING OPTION 24 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Cellulose Mineral Filler

Organic Binder d_Vermiculite* Other # of Layers analysis sheet for results Fiberglass Isotopic Point Counts Slide 1 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Synthetic High If vermiculite is >10% the PLM () Required level of asbestos in a sample Horse Hair: Scales, might be underestimated NOB PLM See SM-V [Low to Moderate analysis sheet Comments:/ for results Method: ☐ ELAP ☐ EPA SCANNING OPTION Q.C. 🛛 🔾

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculitie. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET

Client / Project PANYNJ/ Project Number 214PNPEPJ1 22 Analysis Date 4/\ \cup /2021 Analyst 21-626 Batch Number TEMPERATURE*C Asbestos 29 Other Fibrous Non Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI | DS Color Color, Pleo Biref Sign Other Identif Gravimetric Chrysotile Cellulose Mineral Filler (O_Fiberglas Organic Binders Other Vermiculite* See gravimetric Other analysis sheet Detected Yes Color of Laver for results Extinction Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopic SM-V Synthetic High If vermiculite is >10% the Required [Birefringence evel of asbestos in a sample Horse Hair: Scales. might be underestimated. NOB PLM See SM-V [Low to Moderate See Note #1. analysis sheet for results Q.C. Method: 17 FLAP | EPA SCANNING OPTION Ashestos Non Fibrous 30 Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Texture Mineral Filler Cellulose (O Fiberglas Required [Organic Binder Other Other Vermiculite* analysis sheet Cellulose Ondulo for results Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopic Synthetic High If vermiculite is >10% the Required [Birefringence level of asbestos in a sample Horse Hair: Scales, NOB PLM might be under See SM-V Low to Moderate See Note #1 analysis sheet Comments: / Q.C. Method: ☐ ELAP ☐ EPA SCANNING OPTION Asbestos Other Fibrous Non Fibrous 31 Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % Mineral Filler Gravimetric Cellulos Required Fiberglas Organic Binder O__Vermiculite* See gravimetric analysis sheet Color of Layer Cellulose Ondulos for results Fiberglass Isotopi SM-V Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Synthetic High If vermiculite is >10% the Required [evel of asbestos in a sampl NOR PLM might be underestimated. See SM-V Low to Moderate analysis sheet Comments: for results Q.C. Method: ☐ ELAP ☐ EPA SCANNING OPTION 32 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Cellulose Mineral Filler Required Fiberglas Organic Binder U Other Vermiculite* Other # of Layers Other analysis sheet Color of Layer for results Fiberglass Isotopi Point Counts Slide 1 Slide 4 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Synthetic High If vermiculite is >10% the PLM Required [Birefringence level of asbestos in a sample Horse Hair: Scales, might be underestimated. NOB PLM See SM-V [Low to Moderate analysis sheet Comments: for results

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☐ ELAP ☐ EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

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* If vermiculite is >10% the

level of asbestos in a sampl

might be underestimated.

See Note #1.

Horse Hair: Scales

Low to Moderate Birefringence

| 7.34.37 | | Phone | : (212) 353-8280 | 0, Fax: (212) 35 | 3-3599 or 8306 | | | NVLAP 101187-0 ELAP 10879 |
|---|---|------------------|------------------|---------------------|--------------------------|----------------------------------|--|--|
| | | ſ | BULK ASBEST | OS ANALYSIS S | HEET | | | Microscopes: OLYMPUS BH-2/ |
| | Client / Project PANYNJ/ | Р | 'A | | Proje | ct Number 214PN | NPEPJ1 | NIKON OPTIPHOT |
| | Analysis Date 4 / [0 /2 | 2021 Analyst_ | j į | <u></u> | Batch | Number 21- | 626 | EMPERATURE & 23 |
| 1 33 Field Number | Stereoscopic Exam | | | ptical Propertie | s | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | ColorTexture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction | RII RIII D | S Color Color, Pleo | Biref Sign Other Identit | Chrysotile Amôsite Other | Celiulose Fiberglass Other | Mineral FillerOrganic BindersVermiculite*Other |
| for results SM-V Required □ See SM-V □ analysis sheet for results | Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 Slide | B Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. |
| | Method: ELAP | SCANNING OPTIC |)N | Q.C. 🗆 | | | | |
| 2 34 Field Number | Stereoscopic Exam | | PLM O | ptical Propertie | S | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required □ Recommended □ See gravimetric □ | Color A Texture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction | RL RII D | S Color Color, Pleo | Biref Sign Other Identit | Chrysotile Amasite Other | Cellulose U Fiberglass Other | Mineral Filler |
| analysis sheet for results | Color of Layer Detected Yes N | o | | | | | Cellulose Ondulose Extinction | Loil |
| SM-V Required ☐ See SM-V ☐ | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 Slide | Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% the |
| | NOB PLM | - | | | | | Birefringence Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| analysis sheet | NOB PLM Comments: | | | | | | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample |
| | | SCANNING OPTIC |)N | Q.C. [] | | | Birefringence □ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| analysis sheet | Comments: | | PLM O | ptical Propertie | es s | Asbestos Results PLM % | Birefringence □ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| analysis sheet for results 3 35 Field Number Gravimetric | Comments: Method: ELAP EPA | SCANNING OPTIC | PLM O | | es s | Results PLM % Chrysotile | Birefringence □ Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| analysis sheet for results 3 35 Field Number | Comments: Method: ELAP DEPA Stereoscopic Exam Color Texture Homogeneity Vermiculite | | PLM O | ptical Propertie | es s | Results PLM % | Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Mineral Filler |
| analysis sheet for results 3 35 Field Number Gravimetric Required □ | Comments: Method: ELAP EPA Stereoscopic Exam Color Texture | Morph Extinction | PLM O | ptical Propertie | es s | Results PLM % Chrysotile Amosite | Biretringence ☐ Horse Hair: Scales, Low to Moderate Biretringence Other Fibrous PLM % Cellulose { U Fiberglass | Ievel of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filer Organic Birders |

| ioi results | Method: DELAP DEPA | SCANNING OPTION | Q.C. □ | |
|---|--|---------------------------------------|---|---|
| 1 36 | Stereoscopic Exam | PLM Optica | Il Properties Asbestos Results PLM % | Other Fibrous Non Fibrous |
| Gravimetric | | Morph Extinction RI 1 RI DS Color | Color, Plec Bire! Sign Other Identity Chrysotile | (50) |
| Required Recommended | Homogeneity Vermiculite | | Amosite | Other Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes No | | | Cellulose Ondulose Extinction |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide | te 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic |
| Required 🗌 | PLM O JO | | 0 2 0 | (C) Synthetic High Birefringence It vermiculite is >10% the level of asbestos in a sample |
| See SM-V analysis sheet | NOB PLM | | | Horse Hair: Scales, might be underestimated. Low to Moderate See Note #1. |
| for results | Comments: | A SCANNING OPTION | loc D | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Required [

See SM-V

analysis sheet

for results

NOR PLN

Comments:

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Required [

See gravimetric [analysis sheet for results SM-V Required [See SM-V analysis sheet for results

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| Accreditations NVLAP 1011874 ELAP 10879 |
|---|
| ELAP 1087 |

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| | r | A 843/844 | , | | | SBESTO | S ANAL | YSIS SH | IEET | | | | <u>Microscope:</u> OLYMPUS BH-2 MKON OPTIPHO |
|---|--|---|---------|-------------|-------------|----------|------------|--------------|---|--------------|---------------------------|--|---|
| | Client / Project | | | h | PA | | | | | Project | Number 214PN | IPEPJ1 | |
| , | Analysis Date <u>4</u> | <u>/ (> /</u> | 2021 | _ Analyst | ····· | <u>~</u> | 0 | | | Batch i | Number 21- | <u>526</u> | EMPERATURE C 2 |
| 1 41 Field Number | Stereoscopic I | xam | | | | PLM Op | | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Textur | e | Morph | Extinction | КII | RII OS | Color Colo | or, Pleo B⊪r | ef Sign Ot | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗀 | | | / | | | | | | | | Amosite_~ | 2/O Fiberglass | Organic Binde |
| Recommended | Homogeneity Vermi | cuite | 1 | | | | | | | | Other | Other | √ Vermiculite* |
| See gravimetric [| # of Layers Asbes | stos | ⊬ | | | | | | | | | | (Other |
| analysis sheet for results | Color of Layer Detec | led Yes | No | | | | | | | | | Cellulose Ondulose Extinction | F-1 |
| SM-V | Point Counts Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ∕ Fiberglass Isotopic | J |
| Required 🗆 | PLM U (| | | 7 | | | | | J | m | . 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | 1. | | | | | | | | | Birefringence | |
| | Method: □ ELAP □ | EPA | SCAN | NING OPTI | ION | | Q. | c. 🗆 | | | | | |
| 2 42 Field Number | Stereoscopic E | xam | | | | PLM Op | tical Pre | operties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| | 7. | 7- | Morph | Extinction | RII | RII DS | Color Colo | r, Pleo Bir | ef Sign Ot | her identity | | / PLM % | 1 |
| Gravimetric | | e | | | | | | · | | | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity \ Vermi | culite | | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | # of Lavers Ashes | itos | / | | | | | | | | Other | Other | / verniculte |
| See gravimetric analysis sheet |] | | f = | | | | | | | | | <i>t</i> | Other |
| for results | Color of Layer Detec | ted Yes | No | | | | | - | | | 1 | Extinction | Jord . |
| SM-V | Point Counts Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Stide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Ø Fiberglass Isotopic (☐ Synthetic High | <i>y</i> |
| Required 🗆 | PLM 0/14 | | | | | | | | Ø | 2 | U | Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | ŗ | | | | | | *************************************** | • | | Birefringence | |
| | Method: ELAP | EPA | ⊅ SCAN | NING OPTI | ION | | Q. | c. 🗆 | | | | | |
| 3 43 | | • ·-· · · · · · · · · · · · · · · · · · | · I | | | D1 11 0 | 41 - 1 5 | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic I | :xam | | - F. W | 61. | | | operties | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Calor Typrextur | e | Morph | Extinction | RII | RIII DS | Color Colo | or, Pleo Bir | et Sign Oti | her identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗀 | Homogeneity <u>i 1</u> Vermi | nulita | / | | | | | | | | Arnosite | Fiberglass | Organic Binde |
| Recommended | | come | 1 = | manament . | | | | | | | Other | Other | Vermiculite* |
| See gravimetric [| # of Layers Asbes | itos | _ | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detec | ted Yes | No | | | | | | | | | Cellulose Onduiose | |
| SM-V | Point Counts Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | Fiberglass Isotopic | |
| Required 🗆 | PLM O/ N | ļ | | | 1 | | | | O | 2u | U | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V □ | NOD BLAN | | | <i>(</i> | | | | | | 000 | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a samp might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | l | | I | | | | | I | | I | Birefringence | See Note #1. |
| | Method: □ ELAP □ | EPA | SCAN | NING OPTI | ION | | Q.(| c. 🗵 🔻 | <u></u> | | | | |
| 4 44 | · | | 1 | | | DI M Or | tical Dr | operties | | | Asbestos | Other Fibrous | Non Fibrous |
| 1 | Stereoscopic F | · yam | | | | - | | r, Plea Bir | ef Sign Of | her identity | Results PLM % | PLM % | PLM % |
| Field Number | Stereoscopic E | xam | Morph | Extinction | Rii | RH DS | | | | | | | |
| Field Number Gravimetric | | 7 | Morph | Extinction | Rij | RIII DS | | | | | Chrysotile | Cellulose | Mineral Filler |
| | Color_ + | e | Morph | Extinction | Ri i | RIII DS | | | | | Chrysotile Amosite | Cellulose Fiberglass | Organic Binde |
| Gravimetric | Color Textul Homogeneity Vermi | eculite | Morph | Extinction | Rij | RII OS | | | | | | | |
| Gravimetric Required □ Recommended □ See gravimetric □ | Color Texture Homogeneity Vermi | eculite | Morph | Extinction | Rii | RI DS | | | | | Amosite | Fiberglass | Organic Binde |
| Gravimetric Required ☐ Recommended ☐ | Color Textul Homogeneity Vermi # of Layers Asber | eculite | | Extinction | Rii | RI DS | | | | | Amosite | Fiberglass Other | Organic Binde U Vermiculite* |
| Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | Color Textul Homogeneity Vermi # of Layers Asber | e | | Extinction | Rii | Ri DS | Slide 7 | Slide 8 | Asb./Ver. P7 | | Amosite | Other | Organic Binde U Vermiculite* |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

NOB PLM

Method: ☐ ELAP ☐ EPA

☐ SCANNING OPTION

See SM-V 🗆

analysis sheet for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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☐ Horse Hair: Scales,

might be underestimated.

See Note #1.

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| | Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 | | | | | | | | | | | | | |
|-----------------|--|---------------|---|------------|---------|---------|-------------|--------------|--|--------------|---------------------------|--|---|--|
| | | | | | BULK A | SBESTO | OS ANAL | YSIS SH | IEET | | | | Microscopes: OLYMPUS BH-2 / | |
| Client / Proje | ect PA | NYNJ, | / | ſ | PA | | | ···· | ····· | Project | Number 214PI | NPEPJ1 | NIKON OPTIPHOT | |
| Analysis Da | ate <u>4</u> / | , (ŋ \ | 2021 | _ Analyst | | | -67 | | | Batch N | Number 21- | 626 T | EMPERATURE*C 23 | |
| Stereosc | opic Ex | am | | | | | - | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | |
| olor (L | _Texture | (- | Morph | Extinction | RII | RIII D | S Color Col | or, Pleo Bin | ef Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler | |
| omogeneity 📈 | : Vermicu | ilite | / | | | | | | | | Amosite | Fiberglass | Organic Binders | |
| (\ | | | 7 | | | | | | | | Other | Other | Vermiculite⁴ | |
| of Layers | Asbesto | ·s — / | | | | | | | | | | | Other | |
| olor of Layer | Detecte | d Yes | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | | |
| Point Counts SI | ilide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | |
| PLM | , | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample | |
| NOB PLM | m | | *************************************** | | × | | | | 0 | 2~ | 3 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. | |
| omments: | (| | . / | | | | | | ************************************** | | | Birefringence | | |
| lethod: ☐ ELAF | Р 🗆 І | PΑ | SCAN | NING OPTI | ON | | Q. | C. 🗆 | | | | 1 | | |
| | | | , | | | | | | | | | - | • | |

| 2 38 Field Number | Stere | oscopic E | Exam | | | | PLM O | ptical Pr | operties | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|---------------------------------|-----------------|-----------------|---------|----------------|---------------|---------|---------|-------------|------------|----------|-------|----------|---------------------------|--|---|
| Gravimetric | Color 7 | <u>~</u> Textur | e | Morph | Extinction | KIT | RIII D | S Calor Col | or, Pleo B | ref Sign | Other | Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🛭 | Homogeneity ` | √ Vermi | iculite | | | | | | | | · | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗓 | 1 | 7 | | 7 == | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 📮 | # of Layers | Asbes | slos | / | . | | | | | | | | | | Other |
| analysis sheet { for results | Color of Layer_ | Detec | ted Yes | No | | | | | | | | | | ☐ Cellulose Ondutose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver | . PT | otal PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [| PLM | 3 | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | 0/ | | | | | | | | 5 | | m | l) | ☐ Horse Hair: Scates, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | C | | | | | | | | | | | | Birefringence | |
| | Method: 🖒 E | LAP 🗆 | EPA | □/SCAN | NING OPTI | ON | | Q. | c. 🗆 | | | | | | |

| 3 39 Field Number | Stered | oscopic E | xam | | | | PLM O | ptical P | ropertie | 98 | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|-------------------------------------|-----------------|-----------|--|---------|------------|---------|---------|------------|------------|---------|---------|---------------|---------------------------|--|---|
| Gravimetric | | Texture | e | Morph | Extinction | RII | RI (D | S Color Co | olor, Pleo | Biref S | ign Ot | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| Required [] | Homogeneity S | Vermio | culite | / | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗓 | / | | | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🖟 analysis sheet | # of Layers | Asbes | ios — + | | | | | | | | | | | | Other |
| for results | Color of Layer_ | Detect | ed Yes N | io | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide | 8 Asb./ | Ver. P1 | Total PT | %Asb. Or %Ver. | 🖺 Fiberglass Isotopic | |
| Required [| PLM | (,) | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | M | | | | | | - | | þ | | m | U | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments | | MONAGE DE LA COMPANION DE LA C | | | | | - | | | | | | Birefringence | |
| 10.700 | Method: 🛱 E | LAP 🗆 | EPA | SCAN | NING OPTIO | ON | | Q | .C. 🗆 | | | | | | |

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|---|---|-----------|---------|---------|------------|---------|---------|-------------|-----------|---|--|--|---|--|--|--|--|--|
| 4 40 Field Number | Stered | oscopic E | xam | | | | PLM O | ptical P | ropertie | :5 | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % | | | | |
| Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Color C Homogeneity # of Layers Color of Layer _ | Asbes | culite | Morph | Extinction | RII | RI D | S Color Co | lor, Pleo | Biref Sign | Other Identity | ChrysotileOther | Cellulose Mineral F Diberglass Organic I Other Other Cellulose Ondulose Control Cellulose Ondulose | | | | | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide | Asb./Ver. | PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | y y | | | | |
| Required [| PLM | 1/20 | < | |) | | | | | 0 | 200 | U | ☐ Synthetic High Birefringence | If vermiculite is >10% the level of asbestos in a sample | | | | |
| See SM-V □ | NOB PLM | | | · | 1 | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. | | | | |
| analysis sheet for results | Comments: | 4 | | / | | | | | | | | | Birefringence | S | | | | |
| | Method: ☐ E | LAP 🗆 | EPA | ☐ SCAN | NING OPTI | ON | | Q | .c. 🗆 | *************************************** | " | W WOODS AND A STATE OF THE STAT | 1 | | | | | |

wentous.
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116 ELAP Ilems 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Gravimetric

See gravimetric analysis sheet

SM-V

Required [

See SM-V

analysis sheet for results

Point Counts Slide 1

Method: ELAP EPA

NOB PLM

ATC - New York

Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT

SCANNING OPTION

If vermiculite is >10% the

level of asbestos in a sample

might be underestimated.

Fiberglass Isotopic

Horse Hair: Scales,

Low to Moderate

ions: 187-0 10879

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|---|-------------------------|--|---------------|--------------------------------|--------------------------------------|--|
| Client / Project PANYNJ/ | BULK ASBE | STOS ANALYSIS SHEET | Project Numb | _{er_} 214PN | IPEPJ1 | Microscop OLYMPUS BH NIKON OPTIPH |
| Analysis Date 4/(3 /20 | 021 Analyst | -6 | Batch Numbe | r21- | 626 | TEMPERATURE*c 2 3 |
| Stereoscopic Exam | PLM | Optical Properties | | sbestos ults PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No | Morph Extinction RI1 RI | DS Color Color, Pleo Biref Sign O | ther Identity | Chrysotile Amosite Other | Cellulose Other Cetlulose Ondulose | Mineral Filler Organic Bino Vermiculite* |

| 2 46 Field Number | Stereoscopi | c Exam | PLM Optical Properties Resu | | | | | | | | | | Other Fibrous PLM % | Non Fibrous PLM % | |
|---|--------------------|-----------|-----------------------------|------------|---------|---------|---------------|--------------|-------------|------------|----------|--------------------------|------------------------------------|---|--|
| Gravimetric Required Recommended See gravimetric analysis sheet for results | Homogeneity Ve | miculite | | Extinction | RII | RIII | OS Color Colo | or, Pleo Bir | ef Sign (| Other Iden | tity - | Chrysotile Amosite Other | Cellulose Fiberglass Other | Mineral Filler Organic Binder Vermiculite* Other | |
| SM-V | Point Counts Slide | 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. F | T Total F | | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | |
| Required ☐ | NOB PLM | y_ | | | 7 | | | | 9 | Q ic | + | U | Birefringence Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. | |
| analysis sheet for results | Comments: | | | | | | 1 | | | | | | Birefringence | See Note #1. | |
| | Method: D ELAP | ☐ EPA | SCANI | NING OPTIO | ON | | Q. | C. 🗆 | | | | | | | |

Q.C.

| 3 47 Field Number | Stereoscopic Exam | 1 | ***** | | PLM O | ptical Pr | operties | K | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | |
|---|--|-----|---------------|---------|---------|--------------|-------------|-----------|----------|---------|---------------------------|---|---|--|
| Gravimetric Required □ Recommended □ See gravimetric □ | Homogeneity Vermiculite | Mor | ph Extinction | RII | RI II D | S Color Colo | or, Pleo Bi | ref Sign | Other Id | dentity | Chrysotile Amosite Other | Cellulose | Mineral Filler Organic Binde Vermiculite* | |
| analysis sheet for results SM-V | Color of Layer Detected Yes Point Counts Slide 1 Slide | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. | PT Tota | al PT | %Asb. Or %Ver. | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | | |
| Required 🗆 | L. | | 1 | | | | | 0 | P- | N | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a samp might be underestimated. | |
| See SM-V analysis sheet for results | Comments: | | LINE ORT | | | | | | | | | Low to Moderate Birefringence | See Note #1. | |

| ield Number | Stereoscopic Exam | | | | | | INTERNOMES! | ptical Pro | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | | |
|--|----------------------------------|--------------|--|------------|------------|---------|-------------|--------------|-------------|---------------------------|------------------------|----------------------|--|---|
| Required Recommended | Color | Vermic Asbes | culite | Morph | Extinction | RII | RI II D | S Color Colo | or, Pleo Bi | ref Sign (| Other Identity | Chrysotile | Cellulose Fiberglass Other | Mineral Filter Organic Binders Vermiculite* Other |
| analysis sheet | | | | | | | | | | | | | | - ALLINES |
| analysis sheet for results | Color of Layer_ | - 05,880.0 | ed Yes | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| analysis sheet | Color of Layer _ Point Counts | - 05.88616 | ed Yes | No Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. I | PT Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| analysis sheet for results | | Slide 1 | The state of the s | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. I | PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| analysis sheet for results SM-V Required See SM-V | Point Counts | Slide 1 | Slide 2 | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | | PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the |
| analysis sheet for results SM-V Required | Point Counts PLM | Slide 1 | Slide 2 | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | | PT Total PT Y | %Asb. Or %Ver. | Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a samp might be underestimated. |

Page _____ of ____

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing s10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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| t / Project _ | PANYNJ/ | PA | | Project Number 214PNPEPJ1 |
|---------------|-----------|----|-----|---------------------------|
| | 4 / 12021 | | 1 4 | 21.626 |

| Sereoscopic Exam | | Analysis Date 4/(J/2021 Analyst Batch Number Batch Numbe | | | | | | | | lumber 21-6 | 526 T | EMPERATURE °C | |
|--|--|--|--------------|--|---------|---------|------------|--------------------------|--------------|--------------|---|---|--|
| Contraction | | Stereoscopic Exam | | | | PLM Op | tical Pro | perties | | | | | |
| Repaired Homography Verticates | | Color Tun Texture T | Morph | Extinction | RII | RII DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | Chrysotile | | 1 Mineral Filler |
| Management Man | / | a · | 7 | | | | | | | | | | |
| Control Cont | | Homogeneity Vermiculite | 4 | | | | | | | | | | |
| Control Cont | 1 | # of Layers Asbestos | | | | | | | | | | | |
| Registed Comments Since | analysis sheet | Color of Layer Detected Yes N | lo | | | | | | | | | | |
| Required CI Sec SMAYD Grant Harmonic File Sec SMAYD Medicae (File AP) EPA SCAINING OPTION Q.C. Server Section PLM % SCAINING OPTION Q.C. Server Section PLM % SCAINING OPTION Q.C. Results PLM % PLM % PLM % PLM OPTICAL Properties Results PLM % PLM % PLM % PLM OPTICAL Properties Results PLM % PLM % PLM % PLM OPTICAL Properties Results PLM % PLM % PLM % PLM OPTICAL Properties Results PLM % PLM % PLM % PLM OPTICAL Properties Results PLM % PLM % PLM % PLM OPTICAL Properties Results PLM % PLM % PLM % PLM OPTICAL Properties Results PLM % PLM % PLM % PLM % PLM OPTICAL Properties Results PLM % PLM % PLM % PLM % PLM OPTICAL Properties Results PLM % PLM % PLM % PLM % PLM OPTICAL Properties Results PLM % | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | | |
| Mode PLIA | | PLM | | | | | | | | | | | * If vermiculite is >10% the |
| Section Community Section Se | | | | | | | | | | | | - | |
| Non-pine Comments | 1 | | | | | | | | | | | | |
| Stemoscopic Exam | | Comments: | | | | | | | | | | | |
| PLM Optical Properties Request Request Request Respect Request Request Respect | <u> </u> | Method: A ELAP EPA | | | | | | | | | | | |
| PLM | ² 50 | Stareoscopic Exam 1 PLM District Properties | | | | | | | | | | | |
| Contract | Field Number | | Morph | Extinction | RII | - | | - | ef Sign Oth | er Identity | Results PLM % | PLM % | PLM % |
| Recommended See gravitation Office Other | Gravimetric | Color Texture | - | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Mode of Layer Ashbeston Mode of Layer Detected Yes No Side 2 Side 3 Side 4 Side 5 Side 6 Side 7 Side 8 Ashbeston Other Institution Other | Required 🗸 | Homogeneity Vermiculite | | | | | | | | | Amosite | Fiberglass | |
| See gravinetic Color of Layer | Recommended 🗍 | T- | | | | | | | | | Other | Other | Vermiculite* |
| SALV Point Counts Side 1 Side 2 Gide 3 Side 4 Side 5 Side 6 Side 7 Side 6 Asb./ver. PT Total PT SAB. Or %Ver. Point Counts Side 1 Side 2 Gide 3 Side 4 Side 5 Side 6 Side 7 Side 6 Asb./ver. PT Total PT SAB. Or %Ver. PLM NOB PLW N | 1 3 | # of Layers Aspestos | | | | | | | | | | | Other |
| Point Counts Side 1 Side 2 Side 3 Side 4 Side 5 Side 6 Side 7 Side 8 Adb. Aver. PT Total PT Mabb. Or %Ver. | | Color of Layer Detected Yes N | io | | | | | | | | | | |
| Required D See SMV D Sharkys sheet Frei M Mannier 3 51 Reconnented D Re | SMAY | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | | |
| Required NoB PLM NoB PLM | | PIM | | | | | | | | | | | * If vermiculite is >10% the |
| See SAN U NOB PLIAN Point Counts Sirie 1 Side 2 Side 3 Side 4 Side 5 Side 6 Side 7 Side 8 Asb. Ver. PT Total PT MASb. Or Wer. PLIAN No Horder Streening or results PLIAN No Horder Streening PLIAN No Horder Streening PLIAN No Horder Streening PLIAN No Horder Streening PLIAN No Horder Streening PLIAN No Horder Streening PLIAN No Horder Streening PLIAN No Horder Streening PLIAN No Horder Streening PLIAN No Horder Streening PLIAN No Horder Streening PLIAN N | Required [| | | | | | | | | | | | level of asbestos in a sample |
| Method: DELAP DEAD DEAD SCANNING OPTION Q.C. | I . | NOB PLM | | | | | | | | m | ی | Low to Moderate | |
| Stereoscopic Exam | | Comments: | | ······································ | | | | | | | | Bireiningence | |
| Stereoscopic Exam PLM Optical Properties Results PLM % | | Method: □ ELAP □ EPA | SCAN | VING OPTIO | DN | | <u> Q.</u> | ≎. □ | | | | | , , |
| Gravmetric Required 0 Homogeneity Vermiculite | | Stereoscopic Exam | | | | PLM Op | tical Pro | perties | | | | | |
| Recommended Description of Layers Asbestos / Color of Layers Detected Yes No D | Gravimetric | Color Tag Texture | Morph | Extinction | RIi | RII DS | Color Colo | r, Pleo Bir | ef Sign Oth | ner Identity | Chrysotile | | 1500 |
| Recommended Gorge Verniculitie Colher Other | 1 | l'ex | 7 | | | | | | | | - | | |
| See gravimetic analysis sheet for results | | Homogeneity Vermiculite | | | | | | | | | | | |
| analysis sheet for results SM-V Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. PLM Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. PLM PLM PLM PLM PLM PLM PLM PLM PLM PLM | | # of LayersAsbestos | | | | | | | | | | | *************************************** |
| SM-V Required PLM | analysis sheet | Color of Layer Detected Vac N | | - | | | | | | | | Cellulara Cadulara | Q III O; |
| Required PLM NOB PLM NOB PLM | for results | Color of Layer Detected 123 1 | | | | | | | | | | Extinction | |
| Required See SM-V analysis sheet for results Comments Method: ELAP EPA SCANNING OPTION Q.C. | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | | |
| See SM-V analysis sheet for results NOB PLM | Required | PLM , | | | | | | | | | | | |
| analysis sheet for results Comments; Method: ELAP EPA SCANNING OPTION Q.C. | See SMLV [] | NOB PLM | | / | | | | | 0 | 2002 | . `\ | | might be underestimated. |
| Method: ELAP EPA SCANNING OPTION Q.C. Stereoscopic Exam PLM Optical Properties Results PLM % Other Fibrous PLM % PLM % | l . | | | | | | | l | L | L | | | See Note #1. |
| Fleid Number Stereoscopic Exam | | for results Comments. | | | | | | | | | | | |
| Fleid Number Stereoscopic Exam | | <u> </u> | □/SCAN | NING OPTI | DN | | Q.C | C. 🗆 | | | | | |
| Gravimetric Color Texture Chrysotile Cellulose Mineral Filter Required Homogeneity Vermiculite Homogeneity Vermiculit | for results | Method: DELAP DEPA | □ SCAN | NING OPTI | ON | | L | | | | Achaetae | Other Fibrous | Non Eibroue |
| Required Homogeneity Vermiculite | for results | Method: DELAP DEPA | □ SCAN | NING OPTI | ON | - | otical Pro | operties | | | | | i |
| Recommended Homogeneity Vermiculite Other Othe | for results 4 Field Number | Method: ☐ ELAP ☐ EPA Stereoscopic Exam | Í | | | - | otical Pro | operties | ef Sign Oth | ner identity | Results PLM % | PLM % | PLM % |
| See gravimetric analysis sheet for results Color of Layer Detected Yes No Det | for results 4 Field Number Gravimetric | Method: ELAP EPA Stereoscopic Exam Color Texture | Í | | | - | otical Pro | operties | ef Sign Oth | ner Identity | Results PLM % Chrysotile | PLM % Cellulose | PLM % Mineral Filler |
| analysis sheet for results Color of Layer Detected Yes No Col | for results 4 Field Number Gravimetric Required | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite | Í | | | - | otical Pro | operties | ef Sign Oth | ner Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM %Mineral FillerOrganic Binders |
| SM-V Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Required PLM | for results 4 Field Number Gravimetric Required Recommended | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Lavers Aspestos | Í | | | - | otical Pro | operties | ef Sign Ott | ner identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* |
| Required NOR PLM Since 1 Since 2 Since 3 Since 3 Since 3 Since 3 Since 3 Since 3 Since 4 Since 3 Since 4 Since 5 Since 6 Since | for results 4 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos | Morph | | | - | otical Pro | operties | ef Sign Off | ner Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* |
| Required D PLM Biretfringence If vermiculie is >10% the level of abbestos in a sample D Horse Hair: Scales, Imight be underestimated. | for results 4 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos | Morph | | | - | otical Pro | operties | et Sign Oth | ner identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction | PLM % Mineral Filler Organic Binders Vermiculite* |
| NOB PLM U Horse Hair; Scales, might be underestimated. | for results 4 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes | Morph | Extinction | RIA | RIJ DS | Color Colo | operties ir, Pleo Bir | | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic | PLM % Mineral Filler Organic Binders Vermiculite* |
| | for results 4 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes North Point Counts Slide 1 Slide 2 | Morph | Extinction | RIA | RIJ DS | Color Colo | operties ir, Pleo Bir | | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High | PLM % Mineral Filter Organic Binders Vermiculite* Other If vermiculite is >10% the |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Comments:

Method: ☐ ELAP ☐ EPA

☐ SCANNING OPTION

for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods EŁAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

L*LLAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS ANALYSIS SHEET_FORM #B2.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2.

Page _____ of ____

Q.C. 🗆



ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Start Date: 04/10/21 | 04/12/21 | |
|----------------------|--------------------------|--|
| Start Date: | Date Completed: 04/12/21 | |
| 122941 | RP | SPOOR TEM |
| TEM Batch # 122941 | NOB TEM Analyst: | W PREP |
| 21-626 | JD | Notes |
| PLM Batch# | NOB TEM PREP: | |
| | MW | 13 % Total Asbestos n Vermiculite |
| | NOB PLM Analyst: | 9 Asbestos Types or Vermiculite |
| PANYNJ RUSH | JYG/MI | Non Asb Residue % NFr Carbonate |
| Client/Project: | NOB PLM PREP: | 5 % Field # Organic |

| sp | | TEM | > | > | > | > | > | > | > | > | > | > |
|---------|------------------|----------------------------|------|------|------|------|------|------|------|----------|------|------|
| Methods | NOB | PLM | > | > | > | > | > | > | > | > | > | > |
| W | 8 1999 9 1921 | PREP | > | > | > | > | > | > | > | > | > | > |
| | | Notes | | | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | | | |
| 6 | Asbestos | Types or Vermiculite | ΩN | ND | QN | QN | QN | ND | ΩN | ON ON | N | QN |
| 12 | | % Carbonate | 28.4 | 22.3 | 26.0 | 12.5 | 19.3 | 49.0 | 33.0 | 22.1 | 18.4 | 31.4 |
| 11 | Non Asb | Residue % NFr | 46.3 | 51.6 | 48.9 | 74.3 | 2.79 | 37.8 | 42.5 | 52.6 | 56.8 | 43.5 |
| 2 | | % Organic | 25.3 | 26.1 | 25.1 | 13.2 | 13.0 | 13.2 | 24.5 | 25.3 | 24.8 | 25.1 |
| | | Field# | 1 | 2 | 3 | 4 | 5 | 9 | 7 | 82 | 6 | 16 |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

Page 1

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| 04/10/21 | 04/12/21 | | | | | | | | | | | | | |
|----------------------|--------------------------|---------|--|-----------|----------------|------|------|------|------|------|------|------|------|--|
| Start Date: 04/10/21 | Date Completed: 04/12/21 | | | | | | | | | | | | | |
| 122941 | RP | spo | m | | EM | > | > | > | > | > | > | > | > | |
| TEM Batch # | NOB TEM Analyst: | Methods | BON | PR PR | LM Ep | > | > | > | > | > | > | > | > | |
| 21-626 | JD | | | | Notes | | | | | | | | | |
| PLM Batch# | NOB TEM PREP: | | | | | | | | | | | | | |
| | MM | 13 | % Total | Asbestos | or Vermiculite | | | | | | | | | |
| | NOB PLM Analyst: | 6 | Asbestos | Types | or Vermiculite | ND | ND | 9 | Q | QV | ND | ΩN | ON | |
| HSU | JYG/MI | 12 | | % | Carbonate | 32.4 | 42.5 | 47.1 | 25.4 | 19.9 | 9.6 | 2.3 | 24.8 | |
| PANYNJ RUSH | JYC | 11 | Non Asb | Residue % | NFT | 42.9 | 33.2 | 40.2 | 2.09 | 65.6 | 75.6 | 82.7 | 63.5 | |
| Client/Project: | A PREP: | 9 | The state of the s | % | Organic | 24.7 | 24.3 | 12.7 | 13.9 | 14.5 | 14.6 | 15.0 | 11.7 | |
| Client/F | NOB PLM PREP: | | | | Field # | 17 | 18 | 37 | 38 | 39 | 49 | 50 | 51 | |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

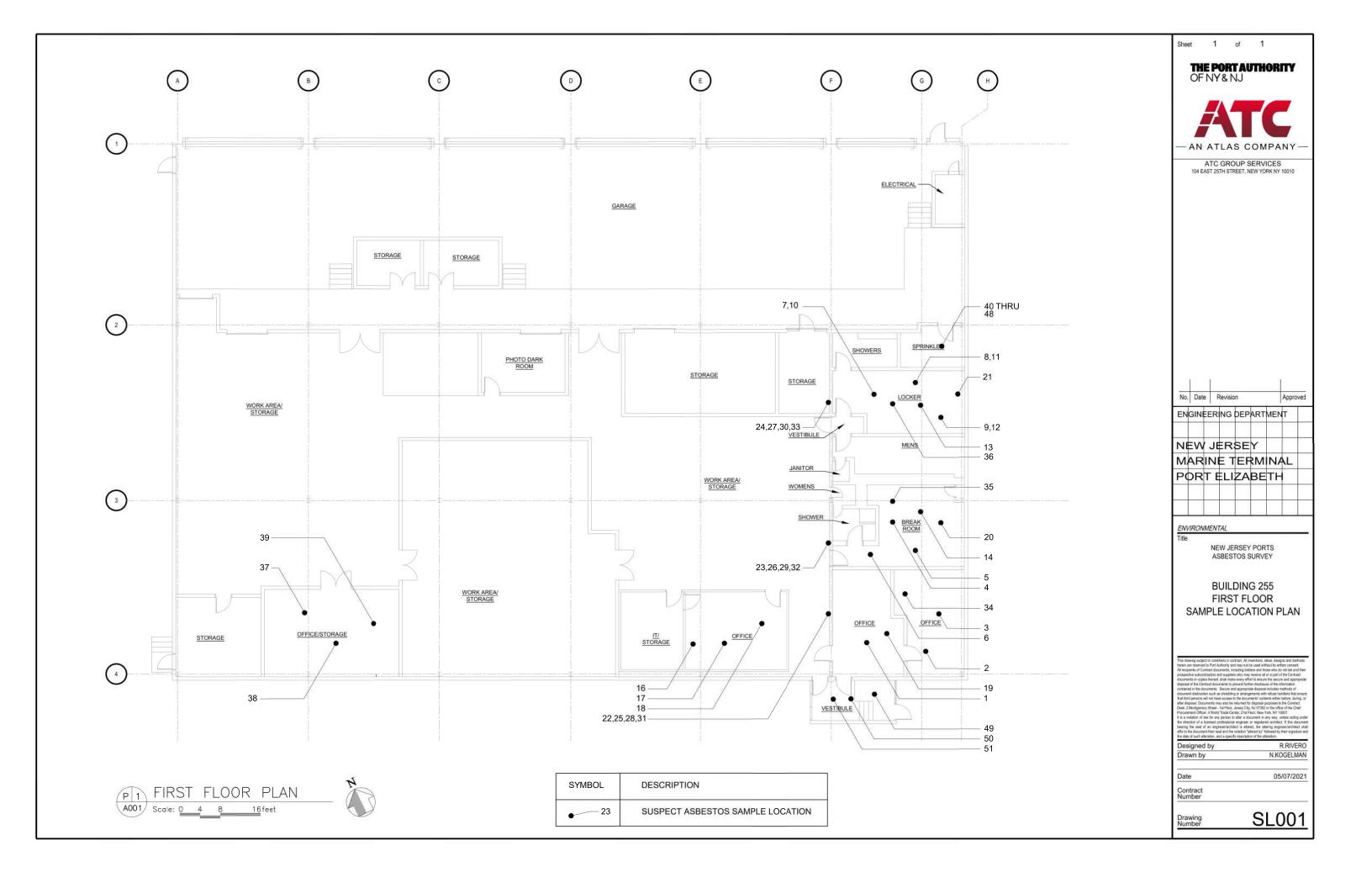
Page 2

Client Copy

APPENDIX B

ASBESTOS SAMPLE LOCATION DRAWINGS

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APPENDIX C

ASBESTOS LOCATION DRAWINGS

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APPENDIX D

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative - Kevin Hamilton:

This license has been issued in a ccordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the a sbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

> Amy Phillips, Director For the Commissioner of Labor

SH 432 (8/12)



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

Asbestos

EPA 100.2

of Health

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.



NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI
ATC GROUP SERVICES LLC
104 EAST 25TH STREET 8TH FLOOR

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material Item 198.1 of Ma

NEW YORK, NY 10010

EPA 600/M4/82/020

Asbestos in Non-Friable Material-TEM Item 198.4 of Manual Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III NIOSH 7402

Fibers

NIOSH 7400 A RULES

Serial No.: 61223

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI, COPY ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

> is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER All approved analytes are listed below:

Serial No.: 62824

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

- MS. MILENA BONEZZI 💆 🗸 💝 🗸 ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below: 』

Miscellaneous

Asbestos in Friable Material

Serial No.: 62825

Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicted by posted, and are printed or secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

MS. MILENA BONEZZI

NEW YORK, NY 10010

ATC GROUP SERVICES LLC

104 EAST 25TH STREET 8TH FLOOR



NEW YORK STATE DEPARTMENT OF HEALTH

WADSWORTH CENTER

Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Realth Law of New York State

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

NIOSH 7400 A RULES

Serial No.: 62826

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to

Technology Commerce and of S Department of Standards Standard States National Institute United



NVLAP LAB CODE: 101187-0

Services Group

New York, NY

accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC This accreditation demonstrates technical competence for a defined scope and the operation of a la management system (refer to joint ISO-ILAC-IAF Communique dated January 2009)

For the National Voluntary

2020-07-01 through 2021-06-30

National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor New York, NY 10010 Ms. Milena Bonezzi Phone: 212-353-8280 x247 Fax: 212-353-8306

Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

18/A01

Code **Description**

EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of

Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code **Description**

18/A02 U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40

CFR Part 763 Subnart F Annendix A

For the National Voluntary Laboratory Accreditation Program

Effective 2020-07-01 through 2021-06-30 Page 1 of 1





AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

Laboratory ID: LAP-100229

104 East 25th St 8th Flr New York, NY 10010

Issue Date: 08/30/2019

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

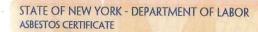
Initial Accreditation Date: 06/12/1995

| IHLA | P Scope Category | Field of Testing (FOT) | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested | |
|------|----------------------------------|------------------------------------|----------------------------------|---|---|--|
| 1 | Asbestos/Fiber icroscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | - | |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

Effective: 04/10/2015 Revision: 8

Page 1 of 1







PHILIP R CARRINGTON CLASS(EXPIRES) C ATEC(11/21) D INSP(11/21) E MGPL(11/21) H PM (11/21) I PD (11/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



01213 005585914 40 EYES BRO HAIR BLK HGT 54 09" IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





NANCY B GUEVARA CLASS(EXPIRES) C ATEC(05/21) D INSP(05/21) H PM (05/21) I PD (05/21)

MUST BE CARRIED ON ASBESTOS PROJECTS

01213 005585171 14

EYES BRO HAIR BRO HGT 5' 06"

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





RONEY D RIVERO
CLASS(EXPIRES)
C ATEC(08/21) D INSP(08/21)
E MGPL(08/21) H PM (08/21)
I PD (08/21)

CERT# 88-06348 DMV# 955602641

MUST BE CARRIED ON ASBESTOS PROJECTS

HARRIST COMPANY OF THE

EYES BRO HAIR GRY HGT 5: 11" IF FOUND RETURN TO:
NYSDOL - L&C UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

01213 005581057 61



NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, EP, & PJ

ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING #111

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

May 14, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

May 14, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building #111

111 Corbin Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Roney D. Rivero

Senior Project Manager for ATC Group Services LLC Direct Line +1 212 284 0614 Email: roney.rivero@atcgs.com

Attachments

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

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| 4.0 | ACM INSPECTION SCOPE | 3 |
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APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: PCB-in-Caulking Laboratory Results and Chain of Custodies

Appendix C: Asbestos, and PCB Bulk Sample Location Drawings

Appendix D: ACM Location Drawings (N/A for this Project)

Appendix E: Lab Certifications / Accreditations, Company and Personnel Certifications

ATC Project No. 214PANEWR1 Page 1

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

EXECUTIVE SUMMARY

On March 10, 2021, ATC completed the inspection for ACM at Port Newark, Building #111 (the Site). The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected fifteen (15) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, none of the sampled homogeneous areas was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content). These materials are tabulated in Section 4.0.

ATC collected and analyzed one (1) sample from suspect PCB-containing Caulking. Based upon review of the analytical results of bulk samples collected, the sample was found to be none detect for total PCBs. A tabulation of the laboratory results are summarized in in Section 6.0.

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM/LCP | | |
|----------------------|----------------------|---------|--|--|
| Philip R. Carrington | AH-88-11798 | ACM | | |
| Roney D. Rivero | AH-88-06348 | ACM | | |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 111, constructed in 1997, is located on the eastern side of Corbin Street. The 21 ft. tall, single story building has a near rectangular footprint, approximately 82 ft. wide by 128 ft. long in plan, with a total of 10,500 square feet of floor area. The building is occupied by Port Authority personnel and serves as a pump station for the Port Newark domestic and fire protection water systems. Most of the space consists of a large, open and full height mechanical space. There are isolated areas of office space along the interiors northeast portion.

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

ATC Project No. 214PANEWR1 Page 2

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of Port Newark Building 111 on March 10, 2021 and collected fifteen (15) bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location. The intent of this survey was to locate and identify all accessible ACM.

The following five (5) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location |
|---|---|
| 2' X 4' Suspended Ceiling Tile | 1 st Floor – Office Space, Lobby & Bathroom |
| Cinder Block Wall Mortar | 1 st Floor –Lobby, Bathroom & Generator Room |
| Soft Concrete Decking | 1st Floor – Above Pump Room, Above Generator Room & Above Electric Room |
| Expansion Board (Brown) on Decking Wall Perimeter | 1 st Floor – at Pump Room & , Generator Room Walls |
| Vertical Expansion Caulking on CMU Wall | 1 st Floor – Generator Room, Pump Room & East wall |

ATC Project No. 214PANEWR1 Page 3

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and analytical results of bulk samples collected, none of the materials are asbestos-containing (> 1%).

Laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix C.

6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC collected one (1) sample from suspect PCB-containing Caulking and submitted to a third party laboratory for analysis. The suspect PCB-containing Caulking sample collected was based on building component, application type as well as color and texture. Caulking materials with similar characteristics were assumed to be homogenous materials.

ATC submitted the suspect PCB samples to New York Environmental & Analytical Laboratories Inc., for Gas Chromatography with Electron Capture Detection (GC/ECD) analysis utilizing EPA Method 8082.

Based on laboratory analysis and results, the one (1) sample tested "none detect" for total PCBs.

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection at the site, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected fifteen (15) bulk samples from all suspect asbestos-containing material. Based upon visual inspection and review of the analytical results of bulk samples collected, **none of the materials is asbestos-containing** (> 1%).

ATC collected and analyzed one (1) sample from suspect PCB-containing Caulking. Based on laboratory analysis and results, the one (1) sample tested "none detect" for total PCBs.

ATC Project No. 214PANEWR1 Page 4

Inspection Report for ACM Port Newark, Building 111, Newark, NJ

Various types of painted surfaces such as sprinkler pipes, CMU walls, and roof decking have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 111, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 111 located in Newark, New Jersey.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection.

If questions arise regarding asbestos content in building materials that were not tested by ATC, additional testing services should be procured to test those areas.

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

ATC Project No. 214PANEWR1 Page 5

APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES

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ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280

Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 3/10/2021

104 EAST 25TH STREET NEW YORK , NY 10010

Date Received: 3/10/2021

Fax: (212) 353-3599

Project: PANYNJ/FIRESPRINKLER REHABILITATION

ATC Batch # 21-347

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / Building #111

Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>No</u> | <u>n-Asbestos</u> | NOB | Asbestos |
|--------------|------------------------------|---|---------|-----------------|-------------------------------|-------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 1 | 1ST FLOOR OFFICE SPACE | 2' X 2' SUSPENDED CEILING TILE | NOB-TEM | | | 2.4% Organic 70.6% Residue | |
| 21-347 -1 | | | | | 0.0% Vermiculite | 27% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Gray Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive. Ceiling Tile | | |
| 2 | 1ST FLOOR LOBBY | 2' X 2' SUSPENDED CEILING TILE | NOB-TEM | | | 1.7% Organic 86.1% Residue | |
| 21-347 -2 | | | | | 0.0% Vermiculite | 12.2% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Gray Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive. Ceiling Tile | | |
| 3 | 1ST FLOOR LOBBY | 2' X 2' SUSPENDED CEILING TILE | NOB-TEM | | | 3.2% Organic 83.5% Residue | |
| 21-347 -3 | | | | | 0.0% Vermiculite | 13.3% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Gray Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive. Ceiling Tile | | |
| 4 | 1ST FLOOR LOBBY | CINDER BLOCK / WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-347 -4 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Jian Hua Zhou | Color: Beig | e | | | | |
| 5 | 1ST FLOOR BATHROOM | CINDER BLOCK / WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-347 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Jian Hua Zhou | Color: Gray | | | | | |
| 6 | 1ST FLOOR GENERATOR ROOM | CINDER BLOCK / WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-347 -6 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Beige | e | | | | |
| | Jian Hua Zhou | | | | | | |
| 7 | 1ST FLOOR ABOVE PUMP ROOM | SOFT CONCRETE DECKING | PLM | | 100% Mineral Filler | | |
| 21-347 -7 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzad Do | lian Hua 7 hau | Color: Gray | | | | | |
| Analyzed By: | Jian Hua Zhou | | | | | | |

Report Prepared By: Grace Chan Page 1 of 3 Batch # 21-347



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>No</u> | n-Asbestos | NOB | Asbestos |
|----------------|-----------------------------------|---|---------|-----------------|---------------------|---|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 8 | 1ST FLOOR ABOVE GENERATOR ROOM | SOFT CONCRETE DECKING | PLM | | 100% Mineral Filler | | |
| 21-347 -8 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| A 1 1D | r 11 7 1 | Color: Gray | | | | | |
| Analyzed By: | | | | | | | |
| 9 | 1ST FLOOR ABOVE ELECTRIC ROOM | SOFT CONCRETE DECKING | PLM | | 100% Mineral Filler | | |
| 21-347 -9 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Jian Hua Zhou | Color: Gray | | | | | |
| 10 | 1ST FLOOR @ PUMP ROOM WALL | EXPANSION BOARD ON DECKING WALL PERIMETER (BROWN) | NOB-TEM | | 0.00/ \/ailita | 92.7% Organic 1.3% Residue | NONE DETECTED |
| 21-347 -10 | | , | | | 0.0% Vermiculite | 6% Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Black Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive | | |
| 11 | 1ST FLOOR @ GENERATOR WALL | EXPANSION BOARD ON DECKING WALL PERIMETER | NOB-TEM | | | 90% Organic 1.6% Residue | |
| 21-347 -11 | | (BROWN) | | | 0.0% Vermiculite | 8.4% Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Black Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive | | |
| 12 | 1ST FLOOR @ GENERATOR WALL | EXPANSION BOARD ON DECKING WALL PERIMETER (BROWN) | NOB-TEM | | 0.0% Vermiculite | 96.7% Organic 2.1% Residue 1.2% Carbonate | NONE DETECTED |
| 21-347 -12 | | O elem Ple el | | | 0.0 /0 Verrillounte | 1.270 Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Black Second Analyst: Feyza Gu | | Comments: NOB P | LM Inconclusive | | |
| 13 | 1ST FLOOR GENERATOR ROOM | VERTICAL EXPANSION CAULKING ON CMU WALL | NOB-TEM | | | 30.5% Organic 7.9% Residue | |
| 21-347 -13 | | | | | 0.0% Vermiculite | 61.6% Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Light Second Analyst: Feyza Gu | • | Comments: NOB P | LM Inconclusive | | |
| 14 | 1ST FLOOR PUMP ROOM | VERTICAL EXPANSION CAULKING ON CMU WALL | NOB-TEM | | | 31% Organic 3.8% Residue | |
| 21-347 -14 | | | | | 0.0% Vermiculite | 65.2% Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Light Second Analyst: Feyza Gu | • | Comments: NOB P | LM Inconclusive | | |
| 15 | 1ST FLOOR EAST WALL | VERTICAL EXPANSION CAULKING ON CMU WALL | NOB-TEM | | | 32.9% Organic 2.1% Residue | |
| 21-347 -15 | | | | | 0.0% Vermiculite | 65% Carbonate | NONE DETECTED |
| Analyzed By: I | Michael Gittings | Color: Light Second Analyst: Feyza Gu | • | Comments: NOB P | LM Inconclusive | | |

Report Prepared By: Grace Chan Page 2 of 3 Batch # 21-347



Analyst:

ATC Group Services LLC

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Sample # Location Type of Material Method % Fibrous % Non-Fibrous % Type % Type

| NOTES: | | | | |
|--|---------------------|-------------------------------|-------------------------------------|---------------------------------------|
| 1) The Limit of Detection is the same as the Reporting Limit for these results. | | | | |
| 2) The Reporting Limit (RL) is the Limit of Quantitation. For point counts the limit of quan | ntitation of 0.25% | ; based on one asbestos po | oint counter over 400 non-empty po | ints. |
| 3) Asbestos Containing Material (ACM) Definition: > 1% asbestos by weight is considered | ed an ACM | | | |
| 4) Disclaimer: The laboratory is not responsible for sample collection. Please refer to en report may not be used to claim product endorsement by NVLAP or any other agency of Quality control data is available upon request. | | | | |
| 5) Accredited by NVLAP #101187-0 and by NY State ELAP #10879 | | | | |
| 6) Confidentiality Notice: The document(s) contained herein are confidential and privilege | ed information, in | tended for the exclusive use | of the individual or entity named a | bove. |
| 7) Liability Notice: ATC Group Services and its personnel shall not be liable for any misir | nformation provid | ed to us by the client regard | ing these samples. This report rela | tes only to samples submitted and ana |
| 8) Asbestos results are reliable to 2 significant figures. | | | | |
| 9) The condition of all samples was acceptable upon receipt. | | | | |
| 10) The laboratory certifies that the test results meet all requirements of NELAC. | | | | |
| 11) Supplement to test report batch # Amendments: Amendment | t Dates: | Amended by: | | |
| 12) PLM Letter is attached on this report. | | | | |
| 13) TRACE: The result is reported as Trace when No points are counted and asbestos is | s identified. For E | LAP Trace is < 1%. | | |
| 14) ATC Group Services certifies that this report is an accurate and authentic report of the | he results obtaine | d from the laboratory analys | sis | |
| 15) The uncertainty for these test results is available upon request. | | , , | | |
| | | 1 400/ | | 1 A D 400 4 (W L E A D 400 0 |
| 16) ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% ve "This method does not remove vermiculite and may underestimate the level of asbestos | | | | _AP 198.1 followed by ELAP 198.6. |
| | | | | |
| <u> </u> | | | | |
| // // | | | | |
| Jian Hua Zhou | | | Mei Wang | meilon |
| Analyst: | | | Approved by Quality Manager | • |
| Michael Gittings | | | , , , | |
| Analyst: | | | | |
| Feyza Gungor Fund | | | | |

Report Prepared By: Grace Chan Page 3 of 3 Batch # 21-347



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely,

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiley Bourson

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS BULK DOCUMENTS 2021\BULK_LETTER_DOC #DB4A.DOC
ATC EFFECTIVE DATE 01/18/2021 REVISION #32

Page 1 of 1 DOCUMENT #DB4A



1. Client

PROJECT INFORMATION

| BATCH NO. | 21-347 |
|-----------|--------|

3a. ATC Project No.:

4a. Project Manager:

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

Project Name:

| | PANYNJ FIRESPRINKLER I 2a. Project Address: (PN PE | | | | TION | 214PNPEPJ1 3b. Task No.: 0001 | | R. Rivero 4b. Inspector: PHILIP CARRINGTON | | |
|---|--|----------------|------------------|-------------------|--------|---|-------------|---|-----------------------|---------------------------------------|
| | | | | Circle One) PJ | | | | | | |
| 5. Date: | The second secon | JILDING NUMB | | 8. Turnaro | | ne: | 10. | 9. Comment s (Field) | | |
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| ULK S | | OCATION | | - | | | | | | |
| mogenous | Bulk Sample ID | 12. | Material | 13. Thermal | 14. | Sample Lo | cation | | 15. Material Total | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
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| 7. Relino | quished By | A | 18. Date 19. Tir | | eceive | | 21. Date | 22. Tin | ne of S | Method ubmitta |
| Phi | lip Co | and | 3/10/21 3:00 | pm E | Wez | Ely | 3/10/20 | al 15: | / Field | |
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| CONTRACTOR OF THE PARTY OF THE | | | .)/ > | ac 8 ^y | 2 | 25; Date 26 T | me , 27 | . Commer | nts (Lab) | |
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ATEMS ATC

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| | Client / P | roject F | PANYNJ | / FIRES | I PRINKI | | SBESTO HAB | | YSIS SI | łEET | Projec | t Number214PN | NPEPJ1 | Microscopes: OLYMPUS BH-2/ NIKON OPT#PHOT |
|--|--|--|--|---------------------|--------------|-------------|---------------|--|--------------|-----------|-----------------------------|--|--|--|
| | Analysis | Date | 3/10 | /2021 | Analyst | | | D | | | Batch | Number21- | 347 | EMPERATURE C 23 |
| 1 1 Field Number | Stered | scopic I | Exam | | | | PLM O | ptical Pr | operties | \$ | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color GAY | Textu | re F | Morpi | Extinction | RI 1 | RI DS | Color Colo | or, Pleo Bi | ref Sign | Other Identity | Chrysotile | Cellulose | (Mineral Filler |
| Required | Homogeneity | Ų ∨ermi | iculite | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Layers | Asbe | | 1 | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer _ | T | ted Yes | No | | | | | | | | | Ceilulose Ondulose | Other |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | %Asb, Or %Ver, | Extinction ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | <u> </u> | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM | 16- | | | | | | | | 7 | 720 | 0 | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | Ce | 21/201 | Me | L | <u> </u> | | 1 | Birefringence | See Note #1. |
| | Method: ☐ E | LAP 🗆 | EPA | SCAN | NING OPTI | ON | | Q. | c. 🗆 | | | A.A | 1 | |
| 2 2 | Stered | scopic I | Exam | 7 | | | PLM O | ptical Pi | roperties | 3 | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Gar | r | - L | Morpl | Extinction | RII | | S Color Col | - | | Other Identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required | Color | Textu | re — | | | | | | | | | Chrysotile Amosite | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended | Homogeneity | Y Verm | iculite | 4 | | | | ····· | | | | Other | Other | Organic Bridges Vermiculite* |
| See gravimetric | # of Layers | Asbe: | stos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer _ | Detec | ted Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver. | PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V □ | NOB PLM | 9/2- | | | | | , | | | 0 | 200 | 0 | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| | | , | | | | | | | | | | | | |
| analysis sheet | Comments: | | | | | | Carin | 11/18 | <u> </u> | | | | Birefringence | 300 11010 111 |
| analysis sheet for results | Comments: | ĹAP [| EPA | □SCAN | NING OPTI | ON . | Carm | | c . □ | | | | | |
| | Method: 🚅 | LAP [| | 1 | | | | Q. ptícal Pi | ropertie | | | Asbestos Results PLM % | | Non Fibrous PLM % |
| for results | Method: □€ | | Exam | 1 | NING OPTE | | | Q. | ropertie | | Other Identity | 1 | Birefringence Other Fibrous | Non Fibrous |
| for results 3 3 Field Number | Method: De | oscopic I | Exam | 1 | | | | Q. ptícal Pi | ropertie | | Other Identity | Results PLM % | Other Fibrous | Non Fibrous PLM % D Mineral Filler |
| for results 3 Field Number Gravimetric | Stereo Color Homogeneity | Textu | Exam | 1 | | | | Q. ptícal Pi | ropertie | | Other Identity | Results PLM % Chrysotile | Other Fibrous PLM % Cellulose | Non Fibrous PLM % D Mineral Filler |
| 3 3 Field Number Gravimetric Required Recommended See gravimetric | Stered Color Homogeneity # of Layers | Textu | Exam ire iculite: | Morph | | | | Q. ptícal Pi | ropertie | | Other Identity | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % D Mineral Filler Organic Binders |
| 3 3 Field Number Gravimetric Required Ø | Stereo Color Homogeneity | Textu | Exam | Morph | | | | Q. ptícal Pi | ropertie | | Other Identity | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| for results 3 3 Field Number Gravimetric Required ☑ Recommended □ See gravimetric ☑ analysis sheet | Stered Color Homogeneity # of Layers | Textu | Exam ire iculite: | Morph | | | | Q. ptícal Pi | ropertie | | | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| for results 3 3 Field Number Gravimetric Required ☑ Recommended □ See gravimetric ☑ analysis sheet for results | Stered Color Homogeneity # of Layers Color of Layer | Textu Y Verm Asbe | Exam re iculite stos | Morpi | h Extinction | RII | RIE DS | Q. ptical Pi | roperties | ref Sign | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Other Fiberglass Sondutose Extinction Fiberglass Isotopic Synthetic High Birefringence | Non Fibrous PLM % D Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample |
| for results 3 3 Field Number Gravimetric Required ☑ Recommended □ See gravimetric ☑ analysis sheet for results SM-V Required □ See SM-V □ | Sterect Color Homogeneity # of Layers Color of Layer Point Counts PLM | Textu Y Verm Asbe | Exam re iculite stos | Morpi | h Extinction | RII | RI DS | Q. ptical PI S Color Color Slide 7 | or, Pleo Bi | ref Sign | | Results PLM % Chrysotile Amosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Other Synthetic High Birefningence Horse Hair. Scales, Low to Moderate | Non Fibrous PLM % D Mineral Filler Organic Binders Vermiculite* Other 'If vermiculite is >10% the |
| for results 3 3 Field Number Gravimetric Required ☑ Recommended □ See gravimetric ☑ analysis sheet for results SM-V Required □ | Sterect Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: | Textu Y verm Asbe Detect Slide 1 | re | No Slide 3 | h Extinction | RI1 | RIE DS | Q. ptical Pi S Color Col | or, Pleo Bi | ref Sign | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Other Fiberglass stotopic Synthetic High Birefringence Horse Hain Scales, | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. |
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| 3 3 Field Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Sterect Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE | Textu Y verm Asbe Detect Slide 1 | Exam re | No Slide 3 | h Extinction | RI1 | Slide 6 | Q. ptical Prical | Slide 8 | Asb./Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Other Synthetic High Birefningence Horse Hair. Scales, Low to Moderate | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. |
| for results 3 3 Field Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Sterect Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE | Textu Y verm Asbe Detect Slide 1 | Exam re stos sted Yes Slide 2 J EPA | Morpi No Slide 3 | h Extinction | RII Slide 5 | Slide 6 | Q. ptical Pi S Color Col Slide 7 | Slide 8 | Asb. Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair Scales, Low to Moderate Birefringence Other Fibrous PLM % | Non Fibrous PLM % D Mineral Filler Organic Binders Vermiculite* Other If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. |
| for results 3 3 Field Number Gravimetric Required See gravimetric See gravimetric SM-V Required See SM-V analysis sheet for results 4 4 Field Number | Method: Stered Color Color of Layer _ Point Counts PLM NOB PLM Comments: Method: E | Percentage of the control of the con | Exam re iculite stos Slide 2 Slide 2 Exam Fram Morpi No Slide 3 | Slide 4 | RII Slide 5 | Slide 6 | Q. ptical Prical | Slide 8 | Asb. Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair Scales, Low to Moderate Birefringence Other Fibrous PLM % | Non Fibrous PLM % D Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % O Mineral Filler Organic Binders |
| for results 3 3 Field Number Gravimetric Required ☑ Recommended ☐ See gravimetric ☑ analysis sheet for results SM-V Required ☐ See SM-V Required ☐ analysis sheet for results | Stered Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE Stered Color | Textu Yerm Ashe Detect Slide 1 Career Control Career Con | Exam re stos sted Yes Slide 2 J EPA Exam re | Morpi No Slide 3 | Slide 4 | RII Slide 5 | Slide 6 | Q. ptical Prical | Slide 8 | Asb. Ver. | PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile | Other Fibrous PLM % Cellulose Fiberglass Other Other Fiberglass Sotopic Synthetic High Birefringence Horse Hain Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| for results 3 3 Field Number Gravimetric Required See gravimetric See gravimetric SM-V Required See SM-V analysis sheet for results 4 4 Field Number Gravimetric Required Required See gravimetric Required See gravimetric | Stered Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE Stered Color Homogeneity # of Layers | Textu Yerm Asbe Detect Slide 1 LAP Coscopic I Verm Asbe | Exam re stos stos Slide 2 I EPA Exam re Siculte stos stos | No Slide 3 | Slide 4 | RII Slide 5 | Slide 6 | Q. ptical Prical | Slide 8 | Asb. Ver. | PT Total PT | Asbestos Results PLM % Chrysotile Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Anosite | Other Fibrous PLM % Cellulose Fiberglass Other Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hain: Scales, Low to Moderate Birefringence PLM % Cellulose Fiberglass Other | Non Fibrous PLM % D Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders |
| for results 3 3 Field Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 4 Field Number Gravimetric Required Required Required Recommended | Stered Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE Stered Color | Textu Yerm Asbe Detect Slide 1 LAP Coscopic I Verm Asbe | Exam re stos sted Yes Slide 2 J EPA Exam re | No Slide 3 | Slide 4 | RII Slide 5 | Slide 6 | Q. ptical Prical | Slide 8 | Asb. Ver. | PT Total PT | Asbestos Results PLM % Chrysotile Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Anosite | Other Fibrous PLM % Cellulose Fiberglass Other Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scates, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % D Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % O Mineral Filler Organic Binders Vermiculite* |
| for results 3 3 Field Number Gravimetric Required See gravimetric See gravimetric See SM-V Required See SM-V Analysis sheet for results 4 4 Field Number Gravimetric Required See gravimetric Required See gravimetric Required See gravimetric Required See gravimetric See gravimetric analysis sheet | Stered Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE Stered Color Homogeneity # of Layers | Textu Yerm Asbe Detect Slide 1 LAP Coscopic I Verm Asbe | Exam re stos stos Slide 2 I EPA Exam re Siculte stos stos | No Slide 3 | Slide 4 | RII Slide 5 | Slide 6 | Q. ptical Prical | Slide 8 | Asb. Ver. | Olher Identity PT Total PT | Results PLM % Chrysotile Amosite Other *Asbestos Results PLM % Chrysotile Amosite Other **Asb. Or **Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | Non Fibrous PLM % D Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % O Mineral Filler Organic Binders Vermiculite* |
| for results 3 3 Field Number Gravimetric Required See gravimetric See gravimetric SM-V Required See SM-V analysis sheet for results 4 4 Field Number Gravimetric Required Recommended See gravimetric Required See gravimetric Required See gravimetric analysis sheet for results | Stered Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: Stered Color Homogeneity # of Layers Color of Layer Point Counts | Textu Verm Asbe Detect Slide 1 Coscopic I Verm Asbe Detect De | Exam re | No Slide 3 | Slide 4 | Slide 5 | Slide 6 | Q. ptical Pi S Color Col Slide 7 | Slide 8 | Asb. Ver. | PT Total PT Other Identity | Results PLM % Chrysotile Amosite Other Asbestos Results PLM % Chrysotile Anosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence Synthetic High Birefringence | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite Organic Binders Other * If vermiculite is > 10% the level of asbestos in a sample |
| for results 3 3 Field Number Gravimetric Required See gravimetric See SM-V Analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 4 Field Number Gravimetric Required Recommended See gravimetric See gravimetric Required See SM-V SM-V See S | Sterect Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: DE Sterect Color Homogeneity # of Layers Color of Layer Point Counts PLM | Slide 1 LAP C Texture Detect Slide 1 Verm Asbe Detect Slide 1 Scopic I Scopi | Exam re | No Slide 3 | Slide 4 | Slide 5 | Slide 6 | Q. ptical Pi S Color Col Slide 7 | Slide 8 | Asb. Ver. | Olher Identity PT Total PT | Results PLM % Chrysotile Amosite Other *Asbestos Results PLM % Chrysotile Amosite Other **Asb. Or **Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Geliulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Sirefringence | Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* Other |

Methods:
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116
ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☐ ELAP ☐ EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Page _____ of ____

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BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Date 3/ 10 /2021 Analyst 21-347 TEMPERATURE °C Non Fibrous Asbestos 5 Other Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI | DS Calor Color, Plea Biref Sign Other Identii 6-22V 100 Mineral Filler Gravimetrio Cellulose Required Organic Binders O Vermiculite* See gravimetric analysis sheel Extinction Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V 0 Required vel of asbestos in a sample Horse Hair: Scales NOB PL might be underestimated. See SM-V Low to Moderate ee Note #1. analysis sheet for results Q.C. 🗆 GEANNING OPTION Method: ← ELAP □ EPA Asbestos Other Fibrous 6 Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % BUNC **りつ** Mineral Filler Gravimetric Cellulos Required Fiberglas Organic Binder __Vermiculite* See gravimetric [Other analysis sheet Celiulose Ondulose for results Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V If vermiculite is >10% the 200 Required [vel of asbestos in a sample NOB PLM might be underestimated, See SM-V (Low to Moderate ee Note #1, analysis sheet for results Q.C. 🗆 Method: □ ELAP □ EPA SCANNING OPTION Asbestos Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % υυ Mineral Filler Gravimetr Cellulose Required Fiberglas Organic Binder O Vermiculite* Color of Layer Detected Yes for results Point Counts Slide 2 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb. Ner. PT Total PT %Asb. Or %Ver. SM-V Zow Ü Required [vel of asbeslos in a sample Horse Hair: Scales NOB PLM might be underestimated. See SM-V [ee Note #1. analysis sheet for results Method: ☐ ELAP ☐ EPA SCANNING OPTION Q.C. Asbestos Other Fibrous Non Fibrous 8 Stereoscopic Exam **PLM Optical Properties** Results PLM 9 PLM % PLM % Color ONLY DO__Mineral Filler Cellulose Required [Organic Binde Vermiculite 17 Vermiculite* See gravimetric Other analysis sheet Cellulose Ondulos for results Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Point Counts Stide 1 Slide 2 Slide 3 %Asb. Or %Ver. Zev If vermiculite is >10% the Required [evel of asbestos in a samp NOB PLM See SM-V E Low to Moderate See Note #1.

| Methods: |
|---|
| EPA Interim Method of the Determination of |
| Asbestos in Bulk Insulation Samples - 40 CF |
| Appendix E to Subpart E of Part 763 |
| EPA 600/R-93/116 |
| FLAP items 198 1 198 4 198 6 198 8 |

Method: ☐ ELAP ☐ EPA

SCANNING OPTION

analysis sheet

for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method
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Q.C. 🗆

| RDS\OPTICAL\ASBESTOS_BUL | | ASBESTOS ANALYSIS SHEET_FORM #B2.6 |
|--------------------------|---------------------------|---------------------------------------|
| of. | ATC EFFECTIVE DATE 01/18/ | /2021 REVISION #33 BY MEI WÄNG FORM # |

ATLAS ATC

ATC - New York

BULK ASBESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | Microscopes: |
|------|----------------|
| | OLYMPUS BH-2/ |
| | NIKON OPTJEHOT |
| EPJ1 | 700 |
| | Cho |

| | Client / Project PAN | YNJ/ FIRES | PRINKL | LER REI | HAB | | | | Project | Number 214PN | NPEPJ1 | NIKON OPTIRH |
|---|--|---|--------------|---------|---------|---|------------------------------|-----------------|----------------------------|---|--|--|
| | Analysis Date 3/ | 0 /2021 | _ Analyst | | | | B | | Batch | Number 21- | 347 | TEMPERATURE*C |
| 1 9 Field Number | Stereoscopic Exam | | | | PLM O | ptical P | ropertie | s | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous |
| Gravimetric | Color Texture | 6 Morph | Extinction | RIT | RII DS | Color Col | or, Pleo B | iref Sign Ot | her identity | Chrysofile | Cellulose | 100 Mineral Filler |
| Required | Homogeneity Y Vermiculite | | | | | | | | | Amosite | Fiberglass | |
| Recommended | | -/- | | | | | | | | | Other | 7 Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected | Yes No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slid | e 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM 0/50 | | | | | -> | | | 200 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM (| | | | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sam might be underestimated. |
| analysis sheet | Comments: | | | | | | | | | | Low to Moderate Birefringence | See Note #1, |
| for results | Method: □ELAP □ EPA | SCAN | NING OPTIC | ON | | Q. | c. 🗆 | | | | | |
| | | | | | | ~. | <u> </u> | | | | | |
| 2 10 Field Number | Stereoscopic Exam | _ | | | PLM O | ptical P | ropertie | s | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Blank Texture | Morph | Extinction | RII | RII DS | Color Col | or, Pleo B | iref Sign Ot | her Identity | Chrysotile | Cellulose | 100 Mineral Filler |
| Required 🗸 | / | | | | | | | | | Amosite | Fiberglass | Organic Bind |
| Recommended | Homogeneity Vermiculite | -/- | _ | | | | | | | Other | Other | O Vermiculite* |
| See gravimetric | # of Layers Asbestos | _ | | | | | | | | | 70000 | Other |
| analysis sheet for results | Color of Layer Detected | Yes No | | | | | | | | | ☐ Cellulose Ondulose | |
| | Point Counts Slide 1 Slid | e 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction | |
| SM-V | DIM | 0.100.0 | Oligo y | Sildo o | Cildo G | Olide 7 | Olido D | 7.00.7 VOI. 1 1 | TOTAL | 70730. 01 7001. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | | | | | | | | | | _ | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sam |
| See SM-V analysis sheet | NOB PLM /S | | | | | | | 0 | 20 | 0 | Low to Moderate | might be underestimated. See Note #1. |
| | | | | | | | | | | | | |
| for results | Comments: | | | | | - 1- | | | | | Birefringence | |
| | Method: ELAP EPA | SCAN | NING OPTION | ON | | Q. | C. 🗆 | | | | pireiringence | |
| for results | | - | NING OPTION | ON | PLM O | Q. | | s | | Asbestos | Other Fibrous | Non Fibrous |
| for results 3 11 Field Number | Method: □ ELAP □ EPA Stereoscopic Exam | | NING OPTION | ON | | | opertie | | her Identity | Asbestos Results PLM % | Other Fibrous PLM % | PLM % |
| for results 3 11 Field Number Gravimetric | Method: ☑ ELAP ☐ EPA | | | | | ptical P | opertie | | her Identity | Results PLM % Chrysotile | Other Fibrous PLM % Cellulose | PLM % OP Mineral Filler |
| for results 3 11 Field Number Gravimetric Required | Method: □ ELAP □ EPA Stereoscopic Exam | | | | | ptical P | opertie | | her Identity | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass | PLM % OP Mineral Filler Organic Bind |
| for results 3 11 Field Number Gravimetric Required Recommended | Method: ELAP DEPA Stereoscopic Exam Color Blade Texture | | | | | ptical P | opertie | | her Identity | Results PLM % Chrysotile | Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Bind Vermiculite* |
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| 3 11 Field Number Gravimetric Required Recommended See gravimetric | Stereoscopic Exam Color Color Texture Homogeneity Vermiculite # of Layers Asbestos | | | | | ptical P | opertie | | her Identity | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Bind Vermiculite* |
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| for results 3 11 Field Number Gravimetric Required Recommended □ See gravimetric analysis sheet for results | Stereoscopic Exam Color Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Point Counts Slide 1 Slide | Yes No | a Extinction | Riı | RI DS | ptical Pi | ropertie: | ref Sign Otl | | Results PLM % Chrysotile Amosite Other | Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Bind Vermiculite* Other If vermiculite is >10% the |
| 3 11 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required Required | Stereoscopic Exam Color Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Point Counts Slide 1 Slide | Yes No | a Extinction | Riı | RI DS | ptical Pi | ropertie: | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Filler Organic Bind Vermiculite* Other If vermiculite is >10% the level of asbestos in a samminght be underestimated. |
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| 3 11 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V See SM-V | Stereoscopic Exam Color State Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Point Counts Stide 1 Stide PLM NOB PLM | Yes No Slide 3 | a Extinction | RI1 | RI DS | ptical Property of the Scotor Color Color Slide 7 | ropertie: | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Bind Vermiculite* Other If vermiculite is >10% the level of asbestos in a samminght be underestimated. |
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| 3 11 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color Stature Homogeneity Vermiculite # of Layer Detected Point Counts Slide 1 Slide PLM NOB PLM Comments: Method: ELAP EPA | Yes No | Slide 4 | RI1 | RII DS | ptical Pi | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Bind Other If vermiculite is >10% the level of asbestos in a sammight be underestimated. See Note #1. |
| for results 3 11 Field Number Gravimetric Required Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Stereoscopic Exam Color Flat Texture Homogeneity Vermiculite # of Layers Detected Point Counts Slide 1 Slid PLM NOB PLM NOB PLM Comments: Method: □ ELAP □ EPA | Yes No | s Extinction | RI1 | RII DS | ptical Property of the Scolor Color Color Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | PLM % Mineral Filler Organic Bind Overmiculite* Other * If vermiculite is >10% the level of asbestos in a sam might be underestimated. See Note #1. |
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analysis sheet

for results

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ELAP

☐ EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.*

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Page of ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Q.C.

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

DSCOPES: JS BH-27 PTIPHOT

| BULK ASBESTOS ANALYSIS SHEET | | <u>Micro</u> OLYMPU: |
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| KLER REHAB | Project Number 214PNPEPJ1 | NIKON OP |

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| | Analysis Date 3/10 /20 | 021 Analyst | <u> </u> | Batch Numb | 21.2 | R47 | ∠¥r EMPERATURE*C |
| 1 13 Field Number | Stereoscopic Exam | | PLM Optical Properties | Re | Asbestos esults PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Cofor Texture | Morph Extinction RI1 | RI DS Color Color, Pieo Biref Sig | gn Other Identity | | | 193 |
| Required | | | | | Chrysotile Amosite | Cellulose Fiberglass | Mineral Fille Organic Bir |
| Recommended | Homogeneity Vermiculite | | | | Other | Other | D Vermiculite |
| See gravimetric | # of Layers Asbestos | | | | Outer | Outer | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | | ļ | ☐ Cellulose Ondutose Extinction | Obles |
| SM-V | Point Counts Slide 1 Slide 2 Slide | de 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 Asb./Vi | er. PT Total PT % | Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| | PLM | | | | | ☐ Synthetic High | * If vermiculite is >10% t |
| Required 🗆 | | | | | | Birefringence Horse Hair: Scales, | level of asbestos in a sa |
| See SM-V ☐ analysis sheet | NOB PLM 2g | | | 200 0 | | 1 | might be underestimated See Note #1. |
| for results | Comments: | <u> </u> | | | | Diffingules | |
| <u> </u> | Method: ☐ ELAP ☐ EPA ☐ S | SCANNING OPTION | Q.C. 🗆 | | | | |
| 2 14 | 1 Stereoscopic Exam | | PLM Optical Properties | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | 1.1/3.1 | Morph Extinction RI1 | | Regn Other Identity | esults PLM % | PLM % | PLM % |
| Gravimetric | Color Texture | | | <u></u> | Chrysotile | Cellulose | 100 Mineral Fille |
| Required 🗷 | Homogeneity Vermiculite | | | | Amosite | Fiberglass | Organic Bin |
| Recommended | | | | | Other | Other | Vermiculite |
| See gravimetric | # of Layers Asbestos | | | | l | | Other |
| analysis sheet for results | Color of Layer Detected Yes No _ | | | | Į, | Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 Slide | de 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 Asb,/V | er. PT Total PT %/ | Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| | PLM | | | | | ☐ Synthetic High | * If vermiculite is >10% t |
| Required | | | | | | Birefringence ☐ Horse Hair: Scates, | level of asbestos in a sai |
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| for results 3 15 | | | · · · · · · · · · · · · · · · · · · · | | Asbestos | Other Fibrous | Non Fibrous |
| for results | Method: ☑ ELAP □ EPA □ Stereoscopic Exam | | PLM Optical Properties | Regn Other Identity | Asbestos esults PLM % | | PLM % |
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| for results 3 15 Field Number Gravimetric Required □ Recommended □ See gravimetric | Stereoscopic Exam | | PLM Optical Properties | | esults PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Fille Organic Bin |
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| for results 3 15 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V | Method: DELAP DEPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Delected Yes No Point Counts Slide 1 Slide 2 Slide | Morph Extinction R1.1 | PLM Optical Properties RI (DS Color Color, Pleo Biref Sig | gn Other Identity | esults PLM % Chrysotile Amosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic | PLM % LaD Mineral Fille Organic Bin Vermiculite' |
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| for results 3 15 Field Number Gravimetric Required □ See gravimetric Ø analysis sheet for results SM-V Required □ | Method: DELAP DEPA DES Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 Slide PLM NOB PLM Comments: | Morph Extinction RL1 de 3 Slide 4 Slide 5 | PLM Optical Properties RI DS Color Color, Pleo Biref Sig | gn Other Identity | esults PLM % Chrysotile Amosite Other Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Fille Organic Bin Vermiculite Other * If vermiculite is >10% I level of asbestos in a samight be underestimated |
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| for results 3 15 Field Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color Gray Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 Slide NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam | Morph Extinction R1.1 de 3 Slide 4 Slide 5 SCANNING OPTION | PLM Optical Properties RI II DS Color Color, Pleo Biref Sig | er, PT Total PT % | esults PLM % Chrysotile Amosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % ### Mineral Fille Organic Bir Vermiculite' Other #### Other #### Other ################################### |
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Medical Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 800/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: 🗆 ELAP

☐ EPA

SCANNING OPTION

for results

Q.C.

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

03/10/21

122510

21-347

PLM Batch#

PANYNJ RUSH

Client/Project:

03/11/21

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| | | Notes | | | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | | | |
| 9 | Asbestos | Types or Vermiculite | QN QN | N | Q | QN | N | ΩZ | Q.Z | QN | S | : |
| 12 | | % Carbonate | 27.0 | 12.2 | 13.3 | 6.0 | 8.4 | 1.2 | 61.6 | 65.2 | 65.0 | |
| 11 | Non Asb | Residue % NFr | 70.6 | 86.1 | 83.5 | 1.3 | 1.6 | 2.1 | 6.7 | 3.8 | 2.1 | |
| 5 | | % Organic | 2.4 | 1.7 | 3.2 | 92.7 | 90.0 | 96.7 | 30.5 | 31.0 | 32.9 | |
| | | Field # | - | 2 | 3 | 10 | 74 | 12 | 13 | 14 | 15 | |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not detected.

APPENDIX B

PCB-IN-CAULKINGING LABORATORY RESULTS AND CHAIN OF CUSTODIES

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88 Harbor Road Port Washington, NY 11050 (516) 944-9500

Laboratory Report for PCBs in Solid Waste

Report No.:2211030-17154

Customer: ATC Group Services LLC

104 East 25th Street New York, NY 10010 Analytical results pertain only to the samples tested in the condition received by the laboratory. This report must not be reproduced except in its entirety, unless with express written permission from the laboratory.

Project: Fire Sprinkler Rehabilitation, Port Newark, NJ

 Lab Sample ID:
 210311J126
 Collected:
 3/10/2021

 Client ID:
 13
 Received:
 3/11/2021

Description: Bldg 111, Pump Rm, NE, Vertical Expansion Caulk on CMU Wall

Collected: 3/10/2021

Received: 3/11/2021 9:45

| Parameter | Method | Analysis Date | LOQ | Result | Units | Flag(s) |
|------------|-----------|---------------|------|--------|-------|---------|
| PCB 1016 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1221 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1232 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1242 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1248 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1254 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| PCB 1260 | EPA 8082A | 03/12/21 | 0.55 | <0.55 | mg/kg | |
| Extraction | EPA 3550C | 03/11/21 | | | | |

Comment(s):

LOQ: Limit of Quantitation PCB: Polychlorinated biphenyl

High-level Limit of Quantitation (LOQ) of prep method EPA 3550C is 20 mg/kg; any PCB quantities reported less than 20 mg/kg are estimated. Samples analyzed on a wet-weight, "as-received" basis.

NYSDOH ELAP Lab ID 11510

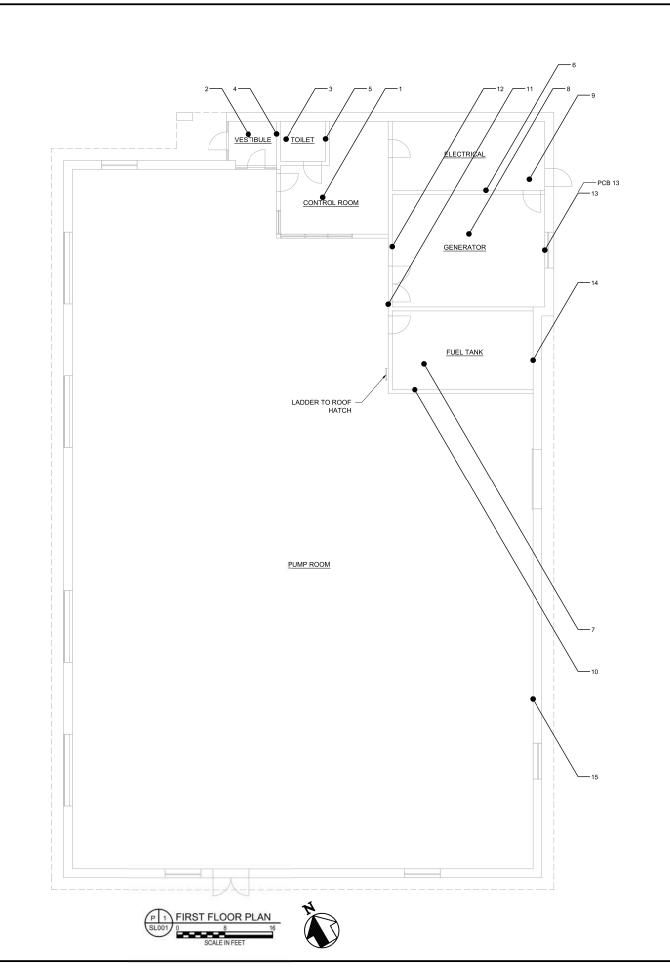
Page 1 of 1 Reported 3/12/2021 4:52 PM Approved:

Li Tsang, Laboratory Director

S. Com 0.550 MDL 3:00 Pm 9 Result/12 Lab Use Only 3/10/21 Time: d Ronau 01 Email Results to: \Box 3/11/21 PCB AZ Date # Date: Date: Building Gulk 2 210311 JO De Parosion Material 2 214PNPEPJ1 VERTICAL I Date: 03 12 2 PN PE 514 00 Signature: Signature: Turnaround Client Proj. 6000 W Address Location and/or Sample Description RM arrington GARRINGTON Jum D NEW YORK ENVIRONMENTAL Blodg !!! PHILL PANYNJ 3 Relinquished: Lab Use Only: Technician Sample # Project | Client 0

APPENDIX C
ASBESTOS AND PCB SAMPLE LOCATION DRAWINGS

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| SYMBOL | DESCRIPTION |
|--------|----------------------------------|
| 10 | SUSPECT ASBESTOS SAMPLE LOCATION |
| PCB 13 | SUSPECT PCB SAMPLE LOCATION |

Sheet 1 of 1 THE PORT AUTHORITY OF NY& NJ ATC GROUP SERVICES 104 EAST 25TH STREET, NEW YORK NY 10010 No. Date Revision Approved ENGINEERING DEPARTMENT NEW JERSEY MARINE TERMINAL PORT NEWARK ENVIRONMENTAL

ENVIRONMENTA

Title

NEW JERSEY PORTS ASBESTOS SURVEY

BUILDING 111 FIRST FLOOR SAMPLE LOCATION PLAN SAMPLES 1 TO 15

This disting subject to conditions in contract. All inventions, does, designs and methods herein are reserved to brit Authority and may not be used without a written conserved. All recipitars of Contract documents, including bidden and those who do not doll and the contract documents or copied to the contract documents or copied to the contract documents or copied to the contract documents for produces. Secure and except except so the most of the reserved interference of the contract documents for produced. Secure and except except so the contract of the contract documents and the contract documents and the contract documents and the contract documents and the contract documents. Secure and expended of occument destination such as shredding or amangements with refuse handers that entre bears the third present and not have sooned by the documents of contract and be subtracted and the land of the contract contracts and be subtracted and the subtracts of the documents of contract and the subtracts and the other documents of contracts. All the contracts of contracts and the contract of contracts and the contract of contracts of contracts. The contract of contracts of contra

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|--------------------|-----------|
| Drawn by | E.MILKI |
| Checked by | |
| Date | 05/14/202 |
| Contract Number | |

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APPENDIX D

ASBESTOS LOCATION DRAWINGS (N/A FOR THIS PROJECT)

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APPENDIX E

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative – Kevin Hamilton:

This license has been issued in a ccordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the a sbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

> Amy Phillips, Director For the Commissioner of Labor

SH 432 (8/12)



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

Asbestos

EPA 100.2

of Health

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.



NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR

NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual

EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM Item 198.4 of Manual Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III NIOSH 7402

Fibers

NIOSH 7400 A RULES

Serial No.: 61223

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI, COPY ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

> is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER All approved analytes are listed below:

Serial No.: 62824



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

- MS. MILENA BONEZZI 💆 🗸 💝 🗸 ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below: 』

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 62825

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicted by posted, and are printed or secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER

Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Realth Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI ATC GROUP SERVICES LLC

104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

> is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

NIOSH 7400 A RULES

Serial No.: 62826

Technology Commerce and of S Department of Standards Standard States National Institute United



702 O/IEC ccreditation of Certificate

NVLAP LAB CODE: 101187-0

Services Group

New York, NY

accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC This accreditation demonstrates technical competence for a defined scope and the operation of a la management system (refer to joint ISO-ILAC-IAF Communique dated January 2009)

For the National Voluntary

2020-07-01 through 2021-06-30

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor New York, NY 10010 Ms. Milena Bonezzi Phone: 212-353-8280 x247 Fax: 212-353-8306

Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

18/A01

National Voluntary

Laboratory Accreditation Program

Code **Description**

EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of

Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code **Description**

18/A02 U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40

CFR Part 763 Subnart F Annendix A

For the National Voluntary Laboratory Accreditation Program

Effective 2020-07-01 through 2021-06-30 Page 1 of 1





AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

Laboratory ID: LAP-100229

104 East 25th St 8th Flr New York, NY 10010

Issue Date: 08/30/2019

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 06/12/1995

| IHLAP Scope Category | Field of Testing (FOT) | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested |
|-----------------------------------|------------------------------------|----------------------------------|---|---|
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | - |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

Effective: 04/10/2015 Revision: 8

Page 1 of 1



Department of Health

ANDREW M. CUOMO Governor HOWARD A. ZUCKER, M.D., J.D. Commissioner

LISA J. PINO, M.A., J.D. Executive Deputy Commissioner

LAB ID: 11510

April 01, 2021

MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

Certificate Expiration Date: April 01, 2022

Dear Mr. Tsang,

Enclosed are certificate(s) of approval issued to your environmental laboratory for the current permit year. The certificate(s) supersede(s) any previously issued one(s) and is(are) in effect through the expiration date listed. Please carefully examine the certificate(s) to insure that the categories, subcategories, analytes, and methods for which your laboratory is approved are correct. In addition, verify that your laboratory's name, address, lead technical director, and identification number are accurate.

Pursuant to NYCRR Subpart 55-2.2, original certificates must be posted conspicuously in the laboratory and copies shall be made available to any client of the laboratory upon request.

Pursuant to NYCRR Subpart 55-2.6, any misrepresentation of the fields of accreditation (category - method - analyte) for which your laboratory is approved may result in denial, suspension, or revocation of your certification. Any use of the Environmental Laboratory Approval Program (ELAP) or National Environmental Laboratory Accreditation Program (NELAP) name, reference to the laboratory's approval status, and/or using the NELAP logo in any catalogs, advertising, business solicitations, proposals, quotations, laboratory analytical reports, or other materials must include the laboratory's ELAP identification number and distinguish between testing for which the laboratory is approved and testing for which the laboratory is not approved.

If you have any questions, please contact us at the Environmental Laboratory Approval Program, Wadsworth Center, New York State Department of Health, Empire State Plaza, Albany NY, 12237; by phone at (518) 485-5570; by facsimile at (518) 485-5568; and by email at elap@health.ny.gov.

Sincerely

Victoria Pretti

Director and QA Officer

Environmental Laboratory Approval Program

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 11510

MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2016) for the category

ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below:

| Bacteriology | | Metals III | |
|---|-------------------------------------|----------------------|---------------------|
| Coliform, Total / E. coli (Qualitative) | SM 20, 21-23 9223B (-04) (Colilert) | Sodium, Total | EPA 200.7 Rev. 4.4 |
| Enterococci | SM 23 9230D (Enterolert) | Miscellaneous | |
| Heterotrophic Plate Count | SimPlate | Odor | SM 21-23 2150 B (-9 |
| Metals I | | Turbidity | SM 21-23 2130 B (-0 |
| Barium, Total | EPA 200.7 Rev. 4.4 | Non-Metals | |
| Cadmium, Total | EPA 200.7 Rev. 4.4 | | EPA 200.7 Rev. 4.4 |
| Chromium, Total | EPA 200.7 Rev. 4.4 | Calcium Hardness | SM 18-22 2340B (-9 |
| Copper, Total | EPA 200.7 Rev. 4.4 | Color | SM 21-23 2120B (-0 |
| Iron, Total | EPA 200.7 Rev. 4.4 | | |
| Lead, Total | EPA 200.9 Rev. 2.2 | Specific Conductance | SM 21-23 2510B (-9 |
| Manganese, Total | EPA 200.7 Rev. 4.4 | | |
| Silver, Total | EPA 200.7 Rev. 4.4 | | |
| Zinc, Total | EPA 200.7 Rev. 4.4 | | |
| Metals II | | | |
| Aluminum, Total | EPA 200.7 Rev. 4.4 | | |
| Beryllium, Total | EPA 200.7 Rev. 4.4 | | |
| Molybdenum, Total | EPA 200.7 Rev. 4.4 | | |
| Nickel, Total | EPA 200.7 Rev. 4.4 | | |
| Vanadium, Total | EPA 200.7 Rev. 4.4 | | |
| Metals III | | | |
| Boron, Total | EPA 200.7 Rev. 4.4 | | |
| Calcium, Total | EPA 200.7 Rev. 4.4 | | |
| Magnesium, Total | EPA 200.7 Rev. 4.4 | | |
| Potassium, Total | EPA 200.7 Rev. 4.4 | | |

Serial No.: 63011





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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. LI TSANG NY ENVIRONMENTAL AND ANALYTICAL LABS INC 88 HARBOR ROAD PORT WASHINGTON, NY 11050 NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES POTABLE WATER All approved subcategories and/or analytes are listed below:

Bacteriology

Legionella ISO 11731:2017(E)



Department of Health

Serial No.: 63012

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

Is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below:

| Bacteriology | | Metals III | |
|---------------------------|----------------------------|-------------------|----------------------------|
| Enterococci | SM 23 9230D (Enterolert) | Cobalt, Total | EPA 200.7, Rev. 4.4 (1994) |
| Heterotrophic Plate Count | SimPlate | Molybdenum, Total | EPA 200.7, Rev. 4.4 (1994) |
| Metals I | | Thallium, Total | EPA 200.7, Rev. 4.4 (1994) |
| Barium, Total | EPA 200.7, Rev. 4.4 (1994) | Mineral | |
| Cadmium, Total | EPA 200.7, Rev. 4.4 (1994) | Calcium Hardness | EPA 200.7, Rev. 4.4 (1994) |
| Calcium, Total | EPA 200.7, Rev. 4.4 (1994) | of Health | SM 2340B-2011 |
| Chromium, Total | EPA 200.7, Rev. 4.4 (1994) | Hardness, Total | EPA 200.7, Rev. 4.4 (1994) |
| Copper, Total | EPA 200.7, Rev. 4.4 (1994) | | SM 2340B-2011 |
| Iron, Total | EPA 200.7, Rev. 4.4 (1994) | Miscellaneous | |
| Lead, Total | EPA 200.7, Rev. 4.4 (1994) | Turbidity | SM 2130 B-2011 |
| Magnesium, Total | EPA 200.7, Rev. 4.4 (1994) | Torbonty | |
| Manganese, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Nickel, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Potassium, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Silver, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Sodium, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Strontium, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Metals II | | | |
| Aluminum, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Antimony, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Arsenic, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Beryllium, Total | EPA 200.7, Rev. 4.4 (1994) | | |

EPA 200.7, Rev. 4.4 (1994)

EPA 200.7, Rev. 4.4 (1994)

EPA 200.7, Rev. 4.4 (1994)

Serial No.: 63013

Selenium, Total

Vanadium, Total Zinc, Total





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MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER All approved subcategories and/or analytes are listed below:

Bacteriology

Legionella ISO 11731:2017(E)



Serial No.: 63014

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MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved analytes are listed below:

Characteristic Testing

| TCLP | EPA 1311 | |
|---------------------------|-----------|------------|
| Polychlorinated Biphenyls | | |
| Aroclor 1016 (PCB-1016) | EPA 8082A | |
| Aroclor 1221 (PCB-1221) | EPA 8082A | |
| Aroclor 1232 (PCB-1232) | EPA 8082A | Department |
| Aroclor 1242 (PCB-1242) | EPA 8082A | of Health |
| Aroclor 1248 (PCB-1248) | EPA 8082A | |
| Aroclor 1254 (PCB-1254) | EPA 8082A | |
| Aroclor 1260 (PCB-1260) | EPA 8082A | |

Sample Preparation Methods

EPA 3550C

Serial No.: 63015





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MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Metals I

Lead, Total EPA 6010D

EPA 7000B

Miscellaneous

Asbestos in Friable Material Item 198.1 of Man

Item 198.1 of Manual EPA 600/M4/82/020

Department

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Lead in Dust Wipes

EPA 6010D EPA 7000B

Lead in Paint EPA 6010D

.ood iii ii diiik

EPA 7000B

Sample Preparation Methods

EPA 3050B

ASTM E-1979-17

Serial No.: 63016

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

Metals I

Lead, Total

NIOSH 7082

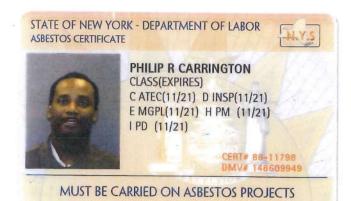
Miscellaneous

Fibers

NIOSH 7400 A RULES

NEW YOR STATE OF OPPORTUNITY Department of Health

Serial No.: 63017





01213 005585914 40 EYES BRO HAIR BLK HGT 54 09" IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE RONEY D RIVERO CLASS(EXPIRES) C ATEC(08/21) D INSP(08/21) E MGPL(08/21) H PM (08/21) I PD (08/21) MUST BE CARRIED ON ASBESTOS PROJECTS

01213 00581057 61

EYES BRO HAIR GRY IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240



NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, EP, & PJ

ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING #260

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

July 1, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

July 1, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building #260

260 Kellogg Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Panay D. Piyana

Roney D. Rivero
Senior Project Manager
for ATC Group Services LLC
Direct Line +1 212 284 0614
Email: roney.rivero@atcgs.com

Attachments

Inspection Report for ACM Port Newark, Building 260, Newark, NJ

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| 8.0 | CONCLUSIONS AND RECOMMENDATIONS | 6 |
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APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: Asbestos Sample Location Drawings

Appendix C: ACM Location Drawings

Appendix D: Lab Certifications / Accreditations, Company and Personnel Certifications

ATC Project No. 214PANEWR1
ATC Project No. 214PANEWR1

Inspection Report for ACM Port Newark, Building 260, Newark, NJ

Page 1

EXECUTIVE SUMMARY

On March 15 & April 15, 2021, ATC completed the inspection for ACM at Port Newark, Building #260 (the Site). The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected one hundred twenty-five asbestos bulk samples from all suspect asbestos-containing material on all accessible areas of Building 260. Based upon review of the analytical results of bulk samples collected, one (1) sampled homogeneous area was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content).

The material that tested positive for asbestos is:

• Mudded Joint Packing Pipe Fitting Insulation associated with Fiberglass Pipe Insulation (3" OD)

These materials are tabulated in Section 4.0.

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Inspection Report for ACM Port Newark, Building 260, Newark, NJ

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM/LCP |
|----------------------|----------------------|---------|
| Philip R. Carrington | AH-88-11798 | ACM |
| Nancy Guevara | AH-14-00412 | ACM |
| Roney D. Rivero | AH-88-06348 | ACM |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 260, construction date unknown, is located on the intersection of Kellogg Street and Corbin Street. The building consists of a three-story office building and a double height garage structure. The office building measures 129 ft. long by 46 ft. wide and is approximately 36 ft. tall. The double-height garage has a rectangular footprint of 121 ft. wide by 216 ft. long and is approximately 24 ft. tall. The overall roofs are a total of 32,890 sf., 6,670 sf. at the office building and 26,200 sf. over the garage.

The building is being used as the Administrative Building for the Port Authority's New Jersey Marin Terminals, office for the Port Authority police and a service garage for Port Authority vehicles. The framing system at both buildings consists of steel girders and open web joists supported by steel columns. The roof deck consists of a flat insulated gypsum panel system. The office building's exterior wall system is brick and concrete and the garage is a reinforced translucent panel system that extends to the roof line with roll-up overhead doors at the east elevation

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous

ATC Project No. 214PANEWR1 Page 2

Inspection Report for ACM Port Newark, Building 260, Newark, NJ

area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of the building on March 15 & April 15, 2021 and collected one hundred twenty-five bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location. The intent of this survey was to locate and identify all accessible ACM.

The following thirty-nine (39) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location | | |
|----------------------|--|--|--|
| CMU Wall Mortar | 1st Floor – Sprinkler Room, Hallway, Warehouse | | |
| Cementitious Plaster | 1st Floor – Sprinkler Room | | |

ATC Project No. 214PANEWR1 Page 3

| 2' X 2' Ceiling Tile Type I | 1 st Floor – Lobby, Lunch Room, South Offices |
|---|--|
| Spray-on Fire Proofing on Ceiling Deck Metal Beams | 1 st Floor – Lobby, Lunch Room, South Offices, Men's Locker Room |
| 2' X 4' Ceiling Tile Type II | 1 st Floor – Men's Locker Room, Entrance From Lunch Room |
| 2' X 4' Ceiling Tile Type III | 1st Floor – Hallway Men's Room |
| Spray-on Fire Proofing on Ceiling Deck & Metal Beams | 1 st Floor Warehouse – East Offices |
| Gypsum Board Paper - Wall | 1 st Floor Warehouse – East Offices |
| Gypsum Board - Wall | 1 st Floor Warehouse – East Offices |
| Joint Compound on Gypsum Board Wall | 1 st Floor Warehouse – East Offices |
| HVAC Duct Insulation | 1 st Floor Warehouse – East Offices by Main entrance Door, Hallway Restroom |
| Gypsum Board Paper - Ceiling | 1 st Floor - U.S.M. Shop |
| Gypsum Board - Ceiling | 1 st Floor - U.S.M. Shop |
| Joint Compound on Gypsum Board Ceiling | 1st Floor - U.S.M. Shop |
| HVAC Duct Insulation Cover Beige | 1 st Floor - Warehouse East Office Mezzanine |
| Fiberglass Ceiling Insulation Blanket | First Floor - Entry Room by U.S.M. Shop |
| Fiberglass Insulation Metal Jacket Covering | 1st Floor - Locker Room |
| Mudded Joint Packing Pipe Fitting Insulation associated with Fiberglass Pipe Insulation | 1 st Floor - Locker Room |
| 2' X 2' Ceiling Tile Paper | 1 st Floor - Hallway Restroom Ceiling |
| 2' X 2' Ceiling Tile Type I | 1st Floor - Lunch Room |
| HVAC Duct Insulation Cover | 1st Floor - Lunch Room |
| CMU Wall Mortar | 1 st Floor – Electric Shop, Carpenter Shop & Plumbing Shop |
| 2' X 2' Ceiling Tile | 2 nd Floor – Office Space |
| Gypsum Board Paper - Wall | 2 nd Floor – Office Space |
| Gypsum Board - Wall | 2 nd Floor – Office Space |
| Joint Compound on Gypsum Board Wall | 2 nd Floor – Office Space |
| HVAC Duct Insulation Cover | 2 nd Floor – Office Space |
| Spray-on Fire Proofing on Ceiling Deck Metal Beams | 2 nd Floor – Office Space |
| Fire Stop Sealant - Red | 2 nd Floor – Office Space @ Deck Level |

| 2' X 2' Ceiling Tile Type II | 2 nd Floor – Slope Sink |
|---|--|
| 2' X 2' Ceiling Tile Type I | 3 rd Floor – Office Space |
| HVAC Duct Insulation Cover | 3 rd Floor – Office Space |
| Gypsum Board Paper - Wall | 3 rd Floor – Office Space |
| Gypsum Board - Wall | 3 rd Floor – Office Space |
| Joint Compound on Gypsum Board Wall | 3 rd Floor – Office Space |
| Spray-on Fire Proofing on Ceiling Deck Metal Beams | 3 rd Floor – Office Space |
| Gypsum Board Paper - Ceiling | 3 rd Floor –East & West Side Staircases |
| Gypsum Board - Ceiling | 3 rd Floor –East & West Side Staircases |
| Joint Compound on Gypsum Board Ceiling | 3 rd Floor –East & West Side Staircases |

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and analytical results of bulk samples collected, the following materials are asbestos-containing (> 1%):

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| | Mudded Joint Packing Pipe Fitting Insulation associated with Fiberglass Pipe Insulation | 10% Chrysotile | 6 L.F. (See Note 1) | ACM001 |

<u>Note 1</u>: The ACM Mudded Joint Packing Pipe Fitting Insulation is located approximately 4' to 6' from the ground level and may not be impacted by the Sprinkler System Renovation.

The following materials are presumed to be asbestos-containing material (PACM):

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|--|---------------------|----------------------|-----------------------|
| N/A | Flange & Valve Gaskets - Sprinkler Room | PACM | 25 Units | ACM001 |

ACM laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix B. Asbestos Location Plans are included in Appendix C.

ATC Project No. 214PANEWR1 Page 4 ATC Project No. 214PANEWR1 Page 5

Inspection Report for ACM Port Newark, Building 260, Newark, NJ

6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection at the site, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected one hundred twenty-five asbestos bulk samples from all suspect asbestos-containing material on all accessible areas of Building 260. Based upon review of the analytical results of bulk samples collected, one (1) sampled homogeneous area located in Building 260 was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content).

The material that tested positive for asbestos in Building 260 is:

• Mudded Joint Packing Pipe Fitting Insulation associated with Fiberglass Pipe Insulation (3" OD)

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Various types of painted surfaces such as sprinkler pipes, gypsum board ceilings and walls, CMU walls, and roof metal decking have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 260, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 260 located in Newark, New Jersey.

The materials reported in Section 5.0 of this report may not require abatement prior to sprinkler system renovation because they are located approximately 4' to 6' from the ground level and may not be impacted due to the distance to the sprinkle pipe system.

ATC Project No. 214PANEWR1 Page 6

Inspection Report for ACM Port Newark, Building 260, Newark, NJ

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection. The valve gaskets inside the pipe flanges could not be tested since the sprinkler system is still operational. It is assumed, based on the number of flanges observed, that there are 25 gaskets in the sprinkler room and are presumed to be asbestos containing. This quantity should be verified with destructive sampling if abatement is planned prior to any renovation work.

If questions arise regarding asbestos content in building materials that were not tested by ATC, additional testing services should be procured to test those areas.

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

ATC Project No. 214PANEWR1 Page 7

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APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES



4 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280

Fax: 212-353-8306

Client: ATC - NEW YORK

104 EAST 25TH STREET NEW YORK , NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Sample Date: 3/15/2021

Date Received: 3/15/2021

Date Analyzed: 3/17/2021

ATC Batch # 21-427

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING 260 / 1ST FLOOR

Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>No</u> | n-Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|--------------|-----------------------|--|---------|-----------------|---------------------|--------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 1 | SPRINKLER ROOM | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-427 -1 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | 1 | | | | |
| Analyzed By: | Ivan Reyes | · | | | | | |
| 2 | 1ST FLOOR - HALLWAY | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-427 -2 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | _ | Color: Gray | 1 | | | | |
| Analyzed By: | | | | | | | |
| 3 | 1ST FLOOR - WAREHOUSE | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-427 -3 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | 1 | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 4 | SPRINKLER ROOM | CEMENTITIOUS PLASTER | PLM | | 100% Mineral Filler | | |
| 21-427 -4 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| A a b a d Do | han Barra | Color: Brov | vn | | | | |
| Analyzed By: | | | | | | | |
| 5 | SPRINKLER ROOM | CEMENTITIOUS PLASTER | PLM | | 100% Mineral Filler | | |
| 21-427 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brov | vn | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 6 | SPRINKLER ROOM | CEMENTITIOUS PLASTER | PLM | | 100% Mineral Filler | | |
| 21-427 -6 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brov | vn | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 7 | 1ST FLOOR LOBBY | 2' X 2' CEILING TILE TYPE 1 | NOB-TEM | | | 27.2% Organic 39.4% Residue | |
| 21-427 -7 | | | | | 0.0% Vermiculite | 33.4% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Whit Second Analyst: Feyza G | | Comments: NOB P | LM Inconclusive | | |

Report Prepared By: Grace Chan Page 1 of 8 Batch # 21-427



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| | | | | <u>Nor</u> | ı-Asbestos | <i>NOB</i> | <u>Asbestos</u> |
|--------------|--|--|---------|------------------|--------------------|----------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 8 | 1ST FLOOR - LUNCH ROOM | 2' X 2' CEILING TILE TYPE 1 | NOB-TEM | | | 27.5% Organic 56.1% Residue | |
| 21-427 -8 | | | | | 0.0% Vermiculite | 16.4% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PL | M Inconclusive | | |
| 9 | 1ST FLOOR - S. OFFICES | 2' X 2' CEILING TILE TYPE 1 | NOB-TEM | | 0.00/ \/ailit- | 28.3% Organic 55.8% Residue | NONE DETECTED |
| 21-427 -9 | | Color: Whit | _ | | 0.0% Vermiculite | 15.9% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Second Analyst: Feyza Gu | | Comments: NOB PL | M Inconclusive | | |
| 10 | 1ST FLOOR LOBBY | SPRAY ON FIRE PROOFING | PLM | 12% Cellulose | 86% Mineral Filler | | |
| 21-427 -10 | | ON CEILING DECK METAL BEAMS | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Color: Green Color: Green Color: Green SPRAY ON FIRE PROOFING ON CEILING DECK METAL BEAMS Color: Green | | | | | | |
| 11 | | SPRAY ON FIRE PROOFING | PLM | 15% Cellulose | 83% Mineral Filler | | |
| | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-427 -11 | | Color: Gree | ın | | 0.070 Verrinculie | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | 3001. 3100 | | | | | |
| 12 | | | PLM | 15% Cellulose | 83% Mineral Filler | | |
| 21-427 -12 | LOCKER ROOM | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Gree | n | | | | |
| 13 | 1ST FLOOR - SOUTH | SPRAY ON FIRE PROOFING | PLM | 12% Cellulose | 86% Mineral Filler | | |
| 15 | OFFICES | ON CEILING DECK METAL BEAMS | I LIVI | 2% FiberGlass | | | |
| 21-427 -13 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Gree | ın | | | | |
| 14 | 1ST FLOOR - SOUTH | SPRAY ON FIRE PROOFING | PLM | 18% Cellulose | 80% Mineral Filler | | |
| 21-427 -14 | OFFICES | ON CEILING DECK METAL BEAMS | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-421 -14 | | Color: Gree | n | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 15 | 1ST FLOOR - MEN'S LOCKER ROOM | 2' X 2' CEILING TILE TYPE 2 | NOB-TEM | | | 20.5% Organic 44.2% Residue | |
| 21-427 -15 | | | | | 0.0% Vermiculite | 35.3% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PL | M Inconclusive | | |
| 16 | ENTRANCE FROM LUNCH | 2' X 2' CEILING TILE TYPE 2 | NOB-TEM | | | 21% Organic | |
| 21-427 -16 | ROOM | | | | 0.0% Vermiculite | 37.2% Residue 41.8% Carbonate | NONE DETECTED |
| A | Mile and Own | Color: White | | Comments: NOB PL | M Inconclusive | | |
| | Michael Gittings | Second Analyst: Feyza Gu | | 30 | | 20.00/.5 | |
| 17 | ENTRANCE FROM LUNCH ROOM | 2' X 2' CEILING TILE TYPE 2 | NOB-TEM | | | 23.9% Organic 52.2% Residue | |
| 21-427 -17 | | | | | 0.0% Vermiculite | 23.9% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PL | M Inconclusive | | |

Report Prepared By: Grace Chan Page 2 of 8 Batch # 21-427



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| | | | | <u>Non</u> | -Asbestos | NOB | Asbestos |
|---------------|-----------------------------------|--|---------|-------------------|--------------------|--------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 18 | 1ST FLOOR - HALLWAY MEN'S ROOM | 2' X 2' CEILING TILE TYPE 3 | NOB-TEM | | | 19.1% Organic 63.9% Residue | |
| 21-427 -18 | | | | | 0.0% Vermiculite | 17% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PLN | / Inconclusive | | |
| 19 | 1ST FLOOR - HALLWAY MEN'S ROOM | 2' X 2' CEILING TILE TYPE 3 | NOB-TEM | | | 20.1% Organic 54.6% Residue | |
| 21-427 -19 | | | | | 0.0% Vermiculite | 25.3% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PLN | / Inconclusive | | |
| 20 | 1ST FLOOR - HALLWAY MEN'S ROOM | 2' X 2' CEILING TILE TYPE 3 | NOB-TEM | | | 18.8% Organic 53.5% Residue | |
| 21-427 -20 | | | | | 0.0% Vermiculite | 27.7% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: White Second Analyst: Feyza Gu | | Comments: NOB PLN | 1 Inconclusive | | |
| 21 | 1ST FLOOR WAREHOUSE E. | SPRAY ON FIREPROOFING | PLM | Trace% Cellulose | 20% Mineral Filler | | |
| 21-427 -21 | OFFICES | ON CEILING DECK & BEAMS | | 80% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Gray | | | | | |
| 22 | 1ST FLOOR WAREHOUSE E. | SPRAY ON FIREPROOFING | PLM | Trace% Cellulose | 20% Mineral Filler | | |
| | OFFICES | ON CEILING DECK & BEAMS | | 80% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-427 -22 | | Color: Gray | | | 0.0% vermiculie | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | odiai. diay | | | | | |
| 23 | 1ST FLOOR WAREHOUSE E. OFFICES | SPRAY ON FIREPROOFING ON CEILING DECK & BEAMS | PLM | Trace% Cellulose | 15% Mineral Filler | | |
| 21-427 -23 | | | | 85% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Gray | | | | | |
| 24 | 1ST FLOOR WAREHOUSE E. | SPRAY ON FIREPROOFING | PLM | Trace% Cellulose | 20% Mineral Filler | | |
| | OFFICES | ON CEILING DECK & BEAMS | | 80% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-427 -24 | | Color: Gray | | | 0.0 % Vermiodile | | NONE BETEGTED |
| Analyzed By: | Ivan Reyes | • | | | | | |
| 25 | 1ST FLOOR WAREHOUSE E. OFFICES | SPRAY ON FIREPROOFING ON CEILING DECK & BEAMS | PLM | Trace% Cellulose | 15% Mineral Filler | | |
| 21-427 -25 | | | | 85% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Gray | | | | | |
| 26 | 1ST FLOOR WAREHOUSE | GYPSUM WALL PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-427 -26 | | Color: Brow | n | | 0.0 % VOITHOUNG | | NONE BETEGTED |
| Analyzed By: | Ivan Reyes | | | | | | |
| 27 | E. OFFICES | GYPSUM WALL PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -27 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Brow | n | | | | |
| Alialyzeu By. | Ivan Neyes | | | | | | |

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| Sample | ₹ 7 | | | | Non | -Asbestos | NOP | Achantan |
|--|----------------|-----------------------|-----------------------|-----------|------------------|---------------------|-----|---------------|
| 24-27-38 | Sample # | Location | Type of Material | Method | | | | |
| Analyzed By: Nam Reyes | 28 | E. OFFICES | GYPSUM WALL PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| Analyzed By: Van Reyes | 21-427 -28 | | Color: Prov | m | | 0.0% Vermiculite | | NONE DETECTED |
| 24-97-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7 | Analyzed By: | Ivan Reyes | Color: Brow | /n | | | | |
| 21427-29 | 29 | 1ST FLOOR - WAREHOUSE | GYPSUM WALL BOARD | PLM | 2% Cellulose | 96% Mineral Filler | | |
| Analyzed By: Nam Reyes SPS Mineral Filler 21-427 - 30 Color: Gray Color: | 21-427 -29 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 30 E. OFFICES GYPSUM WALL BOARD PLM 3% Cellulose 2% FiberGlass 20% Mineral Filler 20% Vermiculife NONE DETECTED 21-427 -30 Color Gray Service | Analyzed By: | Ivan Reves | Color: Gray | | | | | |
| 21-427 -30 | | - | GYPSUM WALL BOARD | PI M | 3% Cellulose | 95% Mineral Filler | | |
| Color: White Colo | | 2. 6.11626 | on oom will borne | I LIVI | | | | NONE DETECTED |
| Analyzed By: Ivan Reyes 27427-32 Color: Gray Analyzed By: Ivan Reyes Color: Gray Analyzed By: Ivan Reyes Color: Gray Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Color: White Analyzed By: Ivan Reyes Color: White Color: Wh | 21-427 -30 | | Color: Crov | | | 0.0% vermiculite | | NONE DETECTED |
| 21-427 -31 | Analyzed By: | Ivan Reyes | Color: Gray | | | | | |
| Color Gray Analyzed By: Ivan Reyes Color White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Analyzed By: Ivan Reyes Color: White Color: White Analyzed By: Ivan Reyes Color: White Color: | 31 | E. OFFICES | GYPSUM WALL BOARD | PLM | 2% Cellulose | 96% Mineral Filler | | |
| Analyzed By: Ivan Reyes 15T FLOOR WAREHOUSE JOINT COMPOUND ON GWB PLM Trace% Cellulose 100% Mineral Filler 100% Minera | 21-427 -31 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 1ST FLOOR WAREHOUSE | Analyzed Dy | Ivan Payos | Color: Gray | | | | | |
| Analyzed By: Nan Reyes Source Sou | | | JOINT COMPOUND ON GWB | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| Analyzed By: Ivan Reyes Color: White Color: Wh | 21-427 -32 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-427 -33 E. OFFICES JOINT COMPOUND ON GWB PLM Trace% Cellulose 100% Mineral Filler | | | Color: White | е | | | | |
| 21-427 -33 | | | | | | | | |
| Analyzed By: Ivan Reyes Source So | 33 | E. OFFICES | JOINT COMPOUND ON GWB | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| Analyzed By: Ivan Reyes 21-427 -34 Analyzed By: Ivan Reyes Color: White Color: White Analyzed By: Ivan Reyes 35 | 21-427 -33 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 34 E. OFFICES JOINT COMPOUND ON GWB PLM Trace% Cellulose 100% Mineral Filler 21-427 -34 Color: White Analyzed By: Ivan Reyes 35 IST FLOOR WAREHOUSE LEVELING Color: Brown/Silver Analyzed By: Ivan Reyes Color: Brown/Silver Analyzed By: Ivan Reyes 36 E. OFFICES BY MAIN ENTRANCE DOOR LEVELING ENTRANCE DOOR Color: Brown/Silver Analyzed By: Ivan Reyes Color: Brown/Silver Analyzed By: Ivan Reyes Color: Brown/Silver Analyzed By: Ivan Reyes Tolor: Brown/Silver Analyzed By: Ivan Reyes Color: Brown/Silver Analyzed By: Ivan Reyes Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver | Analyzed By: | Ivan Reves | Color: White | е | | | | |
| 21-427 -34 Analyzed By: Ivan Reyes Toolor: White Color: White Analyzed By: Ivan Reyes 1ST FLOOR WAREHOUSE LEVELING PLM LEVELING PLM PLM PLM PLM PLM PLM PLM PLM PLM PLM | | - | JOINT COMPOUND ON GWB | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| Color: White Analyzed By: Ivan Reyes Switch Fiber Glass Switch Fiber Glass Switch Swit | | | | | | | | NONE DETECTED |
| Analyzed By: Ivan Reyes 1ST FLOOR WAREHOUSE | 21-427 -34 | | Color: White | e | | 0.070 Volimounte | | NONE BETEGTED |
| 21-427 -35 LEVELING 5% FiberGlass 0.0% Vermiculite NONE DETECTED Color: Brown/Silver Analyzed By: Ivan Reyes 8 | Analyzed By: | Ivan Reyes | | - | | | | |
| 21-427 -35 Color: Brown/Silver Analyzed By: Ivan Reyes 36 | 35 | 1ST FLOOR WAREHOUSE | | PLM | | 20% Mineral Filler | | |
| Analyzed By: Ivan Reyes 36 E. OFFICES BY MAIN ENTRANCE DOOR 21-427 -36 Color: Brown/Silver Analyzed By: Ivan Reyes Tolor: Brown/Silver Analyzed By: Ivan Reyes 15T FLOOR HALLWAY RESTROOM LEVELING Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver Color: Brown/Silver | 21-427 -35 | | LEVELINO | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 36 E. OFFICES BY MAIN ENTRANCE DOOR LEVELING PLM 75% Cellulose 5% FiberGlass 0.0% Vermiculite NONE DETECTED 1.0% Vermiculite | Analyzed By: | Ivan Reves | Color: Brow | n/Silver | | | | |
| ENTRANCE DOOR LEVELING 5% FiberGlass 0.0% Vermiculite NONE DETECTED 1.0% Vermiculite NONE DET | | | HVAC DUCT INSULATION | DI M | 75% Cellulose | 20% Mineral Filler | | |
| Color: Brown/Silver Analyzed By: Ivan Reyes 37 | 30 | | | FLIVI | | | | NONE DETECTED |
| Analyzed By: Ivan Reyes 37 | 21-427 -36 | | Color: Prov | m/Silver | | 0.0% Vermiculite | | NONE DETECTED |
| RESTROOM LEVELING 5% FiberGlass 21-427 -37 Color: Brown/Silver NONE DETECTED NONE DETECTED | Analyzed By: | Ivan Reyes | Color. Brow | ni/Silvei | | | | |
| 21-427 -37 Color: Brown/Silver 0.0% Vermiculite NONE DETECTED Color: Brown/Silver | 37 | | | PLM | 75% Cellulose | 20% Mineral Filler | | |
| Color: Brown/Silver | 21-427 -37 | KESTKUUM | LEVELING | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: Ivan Reyes | | | Color: Brow | n/Silver | | | | |
| | Analyzed By: | Ivan Reyes | | | | | | |

Report Prepared By: Grace Chan Page 4 of 8 Batch # 21-427



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| | | | | Non- | -Asbestos | NOB | Asbestos |
|--------------|-------------------------------|-------------------------------|---------|-------------------------------|---------------------|------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 38 | 1ST FLOOR USM SHOP CEILING | GYPSUM CEILING PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -38 | OLILING | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Payes | Color: Brow | /n | | | | |
| 39 | 1ST FLOOR USM SHOP | GYPSUM CEILING PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 33 | CEILING | OTI SOM CEILING I AI EIX | FLIVI | 33 /0 Cellulose | | | NONE DETECTE |
| 21-427 -39 | | Color: Brow | m. | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color. Brow | // I | | | | |
| 40 | 1ST FLOOR USM SHOP CEILING | GYPSUM CEILING PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -40 | CLILING | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | /n | | | | |
| Analyzed By: | <u> </u> | | | | | | |
| 41 | 1ST FLOOR USM SHOP CEILING | GYPSUM CEILING BOARD | PLM | 2% Cellulose 2% FiberGlass | 96% Mineral Filler | | |
| 21-427 -41 | | | | 2,0 1.20.0.00 | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Gray | , | | | | |
| 42 | 1ST FLOOR USM SHOP | GYPSUM CEILING BOARD | PLM | 2% Cellulose | 96% Mineral Filler | | |
| 21-427 -42 | CEILING | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-421 -42 | | Color: Gray | , | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 43 | 1ST FLOOR USM SHOP CEILING | GYPSUM CEILING BOARD | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-427 -43 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Pavas | Color: Gray | ' | | | | |
| 44 | 1ST FLOOR USM SHOP | CEILING JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | CEILING | ON GWB | I LIVI | Trace /0 Cellulose | | | NONE DETECTED |
| 21-427 -44 | | Color: Whit | ۵ | | 0.0% Vermiculite | | NONE DETECTEL |
| Analyzed By: | Ivan Reyes | Color. Willi | G | | | | |
| 45 | 1ST FLOOR USM SHOP CEILING | CEILING JOINT COMPOUND ON GWB | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-427 -45 | CEILING | ON GWB | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Whit | e | | | | |
| Analyzed By: | <u> </u> | OFILING JOINT COMPOUND | DIM | T 0/ 0 H I | 4000/ 84: 15:11 | | |
| 46 | 1ST FLOOR USM SHOP CEILING | CEILING JOINT COMPOUND ON GWB | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-427 -46 | | . | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Whit | e | | | | |
| 47 | 1ST FLOOR WAREHOUSE E. | | NOB-TEM | | | 50.5% Organic | |
| 21-427 -47 | OFFICE MEZZANINE | COVER BEIGE | | | 0.0% Vermiculite | 42.1% Residue 7.4% Carbonate | NONE DETECTED |
| , | | Color: Beig | e | Command NOD 5144 | (based at a | | |
| Analyzed By: | Michael Gittings | Second Analyst: Feyza Gu | ıngor | Comments: NOB PLN | Inconclusive | | |

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| Location | Type of Material | Method | | | | |
|--|---|---|---|--|--|--|
| | | Meinoa | % Fibrous | % Non-Fibrous | % Type | % Type |
| 1ST FLOOR WAREHOUSE E. OFFICE MEZZANINE | HVAC DUCT INSULATION COVER BEIGE | NOB-TEM | | | 53% Organic 41.1% Residue | |
| | | | | 0.0% Vermiculite | 5.9% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR WAREHOUSE E. OFFICE MEZZANINE | HVAC DUCT INSULATION COVER BEIGE | NOB-TEM | | | 56.7% Organic 39.7% Residue | |
| | | | | 0.0% Vermiculite | 3.6% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR ENTRY ROOM BY USM SHOP | FIBERGLASS CEILING INSULATION BLANKET | NOB-TEM | | | 66.4% Organic 20.3% Residue | |
| | | | | 0.0% Vermiculite | 13.3% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR ENTRY ROOM BY USM SHOP | FIBERGLASS CEILING | NOB-TEM | | | 74.3% Organic | |
| BT COM CITO | THOSE WITCH SERVICE | | | 0.0% Vermiculite | 5.2% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR ENTRY ROOM BY USM SHOP | FIBERGLASS CEILING INSULATION BLANKET | NOB-TEM | | | 64.2% Organic 7.9% Residue | |
| | | | | 0.0% Vermiculite | 27.9% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR - LOCKER EOOM | | NOB-TEM | | | 42.3% Organic | |
| | COVERNING | | | 0.0% Vermiculite | 26.2% Residue 31.5% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR - LOCKER EOOM | INSULATION METAL JACKET | NOB-TEM | | | 75.5% Organic 8.9% Residue | |
| | | | | 0.0% Vermiculite | 15.6% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR - LOCKER EOOM | | NOB-TEM | | | 69.7% Organic | |
| | COVERNING | | | 0.0% Vermiculite | 17.2% Carbonate | NONE DETECTED |
| Michael Gittings | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR - LOCKER EOOM | | PLM | Trace% Cellulose | 35% Mineral Filler | | 10% Chrysotile |
| | FIBERGLASS | | 55% FiberGlass | 0.0% Vermiculite | | |
| van Reyes | Color: Off W | /hite | | | 7 | otal Asbestos: 10 % |
| 1ST FLOOR - LOCKER EOOM | | | | | ' | |
| | ASSOCIATED WITH FIBERGLASS | | | | | NOT ANALYZED |
| | | | Comments: Positive s | top, see #56 | | |
| | 1ST FLOOR ENTRY ROOM BY USM SHOP Michael Gittings 1ST FLOOR ENTRY ROOM BY USM SHOP Michael Gittings 1ST FLOOR ENTRY ROOM BY USM SHOP Michael Gittings 1ST FLOOR ENTRY ROOM BY USM SHOP Michael Gittings 1ST FLOOR ENTRY ROOM BY USM SHOP Michael Gittings 1ST FLOOR - LOCKER EOOM Michael Gittings 1ST FLOOR - LOCKER EOOM Michael Gittings 1ST FLOOR - LOCKER EOOM Michael Gittings 1ST FLOOR - LOCKER EOOM Michael Gittings 1ST FLOOR - LOCKER EOOM | Michael Gittings Second Analyst: Feyza Gu 1ST FLOOR WAREHOUSE E. 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Report Prepared By: Grace Chan Page 6 of 8 Batch # 21-427



04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | Non | n-Asbestos | NOB | Asbestos |
|--------------|---------------------------------------|----------------------------|--------|--------------------|-------------------|--------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 58 | 1ST FLOOR - LOCKER EOOM | ASSOCIATED WITH | | | | | |
| 21-427 -58 | | FIBERGLASS | | | | | NOT ANALYZED |
| | | | | Comments: Positive | stop, see #56 | | |
| 59 | 1ST FLOOR HALLWAY RESTROOM CEILING | 2' X 2' CEILING TILE PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -59 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | /n | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 60 | 1ST FLOOR HALLWAY RESTROOM CEILING | 2' X 2' CEILING TILE PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -60 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | /n | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 61 | 1ST FLOOR HALLWAY RESTROOM CEILING | 2' X 2' CEILING TILE PAPER | PLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-427 -61 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | /n | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |

Report Prepared By: Grace Chan
Page 7 of 8
Batch # 21-427



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>No.</u> | <u>n-Asbestos</u> | NOB | <u>Asbestos</u> |
|----------------|--------------------------------|---|-------------------------|----------------------------|---|---------------------------|-------------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| OTES: | | | | | | | |
| 1) The Limit | t of Detection is the same a | as the Reporting Limit for these results. | | | | | |
| 2) The Repo | orting Limit (RL) is the Limit | t of Quantitation. For point counts the lim | nit of quantitation of | 0.25%; based on one a | sbestos point counter over 400 non- | empty points. | |
| 3) Asbestos | Containing Material (ACM |) Definition: > 1% asbestos by weight is | considered an ACM | 1 | | | |
| report may i | | sponsible for sample collection. Please rect endorsement by NVLAP or any other a request. | | | | | |
| 5) Accredite | ed by NVLAP #101187-0 a | nd by NY State ELAP #10879 | | | | | |
| 6) Confiden | tiality Notice: The documer | nt(s) contained herein are confidential and | d privileged informa | tion, intended for the exc | clusive use of the individual or entity | named above. | |
| 7) Liability N | Notice: ATC Group Services | s and its personnel shall not be liable for | any misinformation | provided to us by the cli | ient regarding these samples. This r | eport relates only to sam | ples submitted and anal |
| 8) Asbestos | results are reliable to 2 sig | gnificant figures. | | | | | |
| 9) The cond | lition of all samples was ac | ceptable upon receipt. | | | | | |
| 10) The lab | oratory certifies that the tes | st results meet all requirements of NELAC | . | | | | |
| 11) Supplen | nent to test report batch # _ | Amendments: Am | nendment Dates: _ | Amended by: | | | |
| 12) PLM Le | tter is attached on this repo | ort. | | | | | |
| 13) TRACE | : The result is reported as 1 | Trace when No points are counted and as | sbestos is identified | . For ELAP Trace is < 1 | %. | | |
| 14) ATC Gr | oup Services certifies that t | this report is an accurate and authentic re | eport of the results of | btained from the labora | tory analysis | | |
| 15) The und | ertainty for these test resul | Its is available upon request. | | | | | |
| | | .1 for the analysis of samples containing ulite and may underestimate the level of a | | | | ethods ELAP 198.1 follo | wed by ELAP 198.6. |
| van Reye | es J | van Regu | | | Mei War | ıg | |
| Analyst: | | · | | | Approved | by | |
| | | | | | Quality M | 3 | |
| Michael (| Gittings // | | | | Quanty 11 | gerr | |
| analyst: | W | | | | | | |
| Feyza Gu | ngor | Feyly | | | | | |
| Analyst: | | | | | | | |
| | | | | | | | |

Report Prepared By: Grace Chan Page 8 of 8 Batch # 21-427



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired.

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely.

Milena Bonezzi

ATC Group Services LLC
Director of Laboratory Services

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS BULK DOCUMENTS 2021\BULK_LETTER_DOC #DB4A.DOC

ATC EFFECTIVE DATE 01/18/2021 REVISION #32

Page 1 of 1

BY MEI W. DOCUMENT #D ATC AN ATLAS COMPANY- BATCH NO. 21-427

Page ____of ____6

| 7. Sampling Areas: Bulk Sample ID Bulk Sample ID No. CM UM And And And And And And And And And And | Flo OV Material | PJ 8-Turnalou o STAT o o 6 HRS o | 24 HR | | OTHER RUSH_X_ | 9. Comr NOB→ | ILIP CARRIN ment s (Field) | GTON |
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| 24. Name and Signature: | | 25, Date | 26 Time | 27. Comments (Lab) |
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| 24b. Analyzed By: H-chil Coll | Y | 3/17/2021 | 06:45 | 709-9 3/17/21 |
| 24c. QC By: | | 377 | | - A |



BATCH NO. 21-427

| 1. Client PANYNJ | Project Name: FIRESPRINKLER REF | POS DE INCHES SE DESENTA CASA POSEDADA EN IL | 3a. ATC Project No. 214PNPE | PJ1 | | Manager: R. Rivero | |
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| | 2a. Project Address: (Circ | cle One) PJ | 3b. Task No.: 0001 | | 4b. Inspect | tor: LIP CARRIN | GTON |
| 5. Date: 6. BUILDING NUME 7. Sampling Areas. | 260 | | I le: S o 72 HRS o OTHE S o NORMAL RUS | | 9. Commo | ent s (Field) | |
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BATCH NO. 21-427

| 1. Client | NYNJ | Project Name: FIRESPRINKLER R | | ON | 3a. ATC Project N 214PNP | | | t Manager: R. Rivero |) |
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| | | 2a. Project Address: (C | PJ | | 3b. Task No.: 000 | 1 | 4b. Inspec | tor: LIP CARRIN | IGTON |
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| 24. Name and Signature: | 25 Date | 26 Time | 27. Comments (Lab) |
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| 24c. QC By: | | | 12 10 311120-1 |



BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

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BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ | | | | | | | | 200200 | Number 214PN | IDEDI1 | NIKON OPTIPHOT |
|--|--|------------------------------|---------------------------------|---------|---------|------------|--------------------------|--------------|--------------|---|--|--|
| | | /2021 | Analyst | | | 9 | 1 | | | Number 214PN Number 21-4 | 127 | EMPERATURE °C |
| 1 Id Number | Stereoscopic Exam | | | | PLM O | ptical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous |
| Gravimetric | Color Texture U | Morph 1 | Extinction | RII | RI DS | Color Colo | r, Pleo Bir | ef Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite / | <i>Y</i> — | | | | | | | | Apriosite | Fiberglass | Organic Binders |
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| ee gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes No | | = | | | | == | | | | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | 0 | 100 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM | - | | | | | | | , -0 | | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet | Comments: | / | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | | SCANNII | NG OPTIO | ON | | Q. | C. 🗆 | | | | | |
| 2 | | | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| eld Number | Stereoscopic Exam | Manek | Federales | DI i | | ptical Pr | 15 | | an Ideath | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Texture | Morph | Extinction | RII | RIII DS | Color Colo | or, Pleo Bil | er Sign Otr | ner Identity | Chrysolife | Cellulose | Mineral Filler |
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| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | 1 | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
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| | | | | | | ptical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous |
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| for results 3 | Method: ELAP EPA Stereoscopic Exam Cold Texture | | | | | ptical Pr | operties | | ner identify | Results PLM % | PLM % | PLM % |
| for results 3 eld Number Gravimetric | Stereoscopic Exam Cold Texture Homogeneity Vermiculite | | | | | ptical Pr | operties | | per Identity | Results PLM % Chrysotile | PLM % | PLM % Mineral Filler |
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| did Number Gravimetric Required Recommended analysis sheet for results SM-V Required Requ | Stereoscopic Exam Cold Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No | Morph | Extinction | RII | RI DS | ptical Pr | operties or, Pleo Bir | ef Sign Oth | | Results PLM % Chrysottle Amposite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
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Methods; EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ Project Number 214PNPEPJ1 TEMPERATURE*c Analysis Date 3/10 /2021 Analyst SM 21-427 Batch Number 5 Asbestos Other Fibrous Non Fibrous **PLM Optical Properties** ∧ Stereoscopic Exam Results PLM % PLM % PLM % RIII DS Color Color, Pleo Biref Sign Other Iden Mineral Filler Gravimetric Cellulose Fiberglass Organic Binder Required √ Vermiculite* Other See gravimetric [analysis sheet Cellulose Ondulos for results Fiberglass Isotopie Slide 2 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V PIM Required [vel of asbestos in a sampl Horse Hair: Scales NOB PLM might be underestimated. See SM-V [Low to Moderate See Note #1. analysis sheet Q.C. Method: ELAP EPA SCANNING OPTION Other Fibrous 6 **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % PIM% Texture Gravimetri Cellulose Mineral Filler Fiberglas Organic Binder Required [Vermiculite* Other Other analysis sheet Color of Layer Cellulose Ondulos for results Fiberglass Isotopic Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Synthetic High If vermiculite is >10% the evel of asbestos in a sample night be underestimated NOB PLM See SM-V Low to Moderate See Note #1. analysis sheet for results Method: ELAP EPA SCANNING OPTION Q.C. Asbestos **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % PLM % Mineral Filler Texture Gravimetric Cellulose Required [Amosite Fiberglas Organic Binder O_Vermiculite* Other Other See gravimetric analysis sheet Detected Yes Slide 7 Slide 8 Asb.Ner. PT Total PT Fiberglass Isotopic Slide 2 SM-V Synthetic High PLM Required [vel of asbestos in a sampl Horse Hair: Scales. NOB PLM night be underestimated 200 See SM-V Low to Moderate See Note #1. analysis sheet Q.C. Method: ☑ ELAP ☐ EPA SCANNING OPTION Asbestos Other Fibrous Non Fibrous 8 **PLM Optical Properties** Stereoscopic Exam Results PLM 9 PLM % PLM % DS Color Color Plea Biref Sign Other Irlen Mineral Filler Gravimetric Chrysoti Cellulose Fiberglass Organic Binder Vermiculite* Other See gravimetric Other analysis sheet Color of Laver Detected Yes Cellulose Ondulose for results Slide 8 Asb./Ver. PT Total PT Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 %Asb. Or %Ver. SM-V Synthetic High If vermiculite is >10% the Required [evel of asbestos in a sample Horse Hair: Scales night be underestimated D NOB PLM 9/2 200 See SM-V [Low to Moderate See Note #1. analysis sheet for results Method: DELAP DEPA SCANNING OPTION Methods: EPA Interim Method of the Determination of

Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.*

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANY | IJ | | | | | | | Project | Number 214PN | PEPJ1 | MINON OF THE HOL |
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| | Analysis Date 3/16 | | 1 Analyst | | < | M | | | Batch N | 24 | 127 | EMPERATURE *C 2 |
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| Danies de P | Color United Texture | More | h Extinction | RII | RI DS | Color Colo | r, Pleo Bi | ref Sign Ot | her Identity | Chrysotile | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended See gravimetric | Homogeneity Vermiculite Asbestos Asbestos Color of Layer Detected Ye | s No | | | | | | | | Other | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | Vermiculite* |
| SM-V | Point Counts Slide 1 Slide | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P1 | Total PT | %Asb. Or %Ver. | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| Required See SM-V analysis sheet | NOB PLM | _ | _ | | | | | 0 | 200 | ٧ | ☐ Horse Hair: Scales, Low to Moderate Birefringence | level of asbestos in a sampl might be underestimated. See Note #1, |
| for results | Method: DELAP DEPA | □ SCA | NNING OPT | ION | | Q. | c. 🗆 | | | | | |
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| Recommended | Homogeneity Vermiculite # of Layers Asbestos | | | = | | | | _== | == | Other | Other | Vermiculite* |
| See gravimetric L | | s No | == | | | | | | | 1 | Cellulose Ondulose Extinction | |
| SM-V Required □ | Point Counts Side 1 Slide | 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sam might be underestimated. |
| See SM-V analysis sheet for results | NOB PLM Comments: Method: ELAP □ EPA | Herri | ANNING OP | TION | | I Q | .c. 🗆 | | | | Low to Moderate Birefringence | See Note #1. |
| 3 11 | | 1 | antinto or | | DI M O | ptical P | | ie . | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Mo | rph Extinction | n RII | | S Color Co | | | Other Identity | Results PLM % Chrysotile | PLM % | PLM % Mineral Filler |
| Gravimetric Required | Homogeneity Vermiculite | - | | _ | | | | | | Amosite | Fiberglas | Organic Bind |
| Recommended See gravimetric | # of Layers Asbestos | 7 | | | | | | == | | Other | Other | Other |
| analysis sheet for results | | es No | 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. | PT Total PT | %Asb. Or %Ver. | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide | 2 Slide | 3 Slide 4 | Side 5 | Side o | Olide 7 | Olide c | 0 | 200 | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% th level of asbestos in a san |
| See SM-V analysis sheet | NOB PLM Comments: | | | | | | | | 0 | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Method: ☐ ELAP ☐ EPA | ₽ sc | ANNING OF | TION | | C | .C. 🗆 | | | | | |
| 4 12 Field Number | Stereoscopic Exam | | orph Extincti | on RII | | Optical F | | | Other Identit | Asbestos Results PLM % | Other Fibrous PLM % | PLM % |
| Gravimetric Required □ | Color Texture Homogeneity Vermiculite | | O(p) Califor | | | | | == | == | Chrysotile Amosite | Fibergla | |
| Recommended See gravimetric | # of LayersAsbestos | / | | = | _ | | | | | Other | Other | Other |
| analysis sheet for results | Color of Layer Detected | | 0 004 | 4 604- 5 | Clido C | Quide 7 | Slide | 8 Asb./Ver. | PT Total PT | %Asb. Or %Ver. | Cellulose Ondulose Extinction Fiberglass Isotopic | |
| SM-V Required □ | | e 2 Slide | 3 Slide | 4 Slide 5 | Slide 6 | Slide 7 | Silde | O Asolivel. | 200 | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | ingin be underestimated |
| See SM-V analysis sheet for results | Comments: | T so | CANNING O | PTION | _ | | 2.C. 🗆 | | | | Birefringence | See Note #1. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 FPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculities (SM-V). For samples containing \$10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculitie. This method does not remove vermiculite and may underestimate the level of abbestos present in a sample containing greater than 10% vermiculitie."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculitie (SM-V) and it utilizes a 400 point count method.

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculitie (SM-V) and it utilizes a 400 point count method.

LilaB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS BULK FORMS_2021/REVISION #33 BY MEI WANG FORM #82

Page of ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

13

Gravimetric

See gravimetric analysis sheet for results

SM-V

Required [

See SM-V for results

analysis sheet for results

Client / Project PANYNJ

Stereoscopic Exam

Method: ELAP EPA

Analysis Date 3/ [/2021 Analyst

ATC - New York

BULK ASBESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

PLM Optical Properties

Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT

Organic Binder Vermiculite*

Non Fibrous

PLM %

Mineral Filler

If vermiculite is >10% the

level of asbestos in a sample

Non Fibrous

might be underestimated.

Project Number 214PNPEPJ1

Asbestos

Results PLM %

21-427

Other Fibrous

Cellulose

ATLAS_

ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| NVLAP 101187-0 |
|----------------|
| ELAP 10879 |
| |

| | | | В | ULK AS | BESTOS | ANALY | 'SIS SH | EET | | Number 214PN | DED11 | OLYMPUS BH-2 / NIKON OPTIPHOT |
|--------------------------------|------------------------------|---------|--------------|-----------|---------|-------------|-------------|----------------|----------------|---|--|--|
| | Client / Project PANYNJ | 12024 | | | | 7 | M | | | 24 / | 127 | 25 |
| | Analysis Date 3/ 1 6 | /2021 | Analyst _ | | | | ' | | Batch N | Asbestos | Other Fibrous | Non Fibrous |
| 1 17 Field Number | Stereoscopic Exam | | | | PLM Op | | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Mark Texture | Morph | Extinction | RII | RIII DS | Color Color | , Pleo Bin | ef Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler Organic Binders |
| Required 🖸 | Homogeneity 4 Vermiculite | | | | | | | | | Amosite Other | Fiberglass Other | Organic Binders Vermiculite* |
| Recommended | # of Layers Asbestos | / | | | | | | | | Other | Outer | Other |
| See gravimetric analysis sheet | Color of Layer Detected Yes | No. | | | | | | | | | ☐ Cellulose Ondulose | |
| for results | | | CEda 4 | Clida E T | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Sinde o | Silde / | Olide o | 7,50,7 701.1 7 | 7.500.7 | (140,000,000,000,000,000,000,000,000,000, | Synthetic High Birefringence | If vermiculite is >10% the |
| Required 🗆 | PLM 4/ | | | | | | | 0 | 200 | 0 | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | NOB PLM /8 | | | | | | | | 105 | | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: | DECANIN | ING OPTIC | NN. | | 0.0 | 2. □ | | | | | |
| | Method: GELAP EPA | SCANN | ING OF TIC | /N | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| 2 18 Field Number | Stereoscopic Exam | | | | PLM OF | | 000 | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Mic CTexture | Morph | Extinction | RII | RII DS | Color Colo | r, Pleo Bi | ref Sign Of | ther Identity | Chrysotile | Cellulose | (Mineral Filler |
| Required 🗹 | | / | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | /_ | =: | | | | | | | | ☐ Cellulose Ondulose | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% the |
| Required | PLM | | | | | | | | | | Birefringence | level of asbestos in a sample might be underestimated. |
| See SM-V □ | NOB PLM | | | - | | | | 0 | NO | 0 | Low to Moderate Birefringence | See Note #1. |
| analysis sheet for results | Comments: | | | | | 10 | c. 🗆 | | | | | |
| | Method: ∅ ELAP □ EPA | SCAN | NING OPTION | ON | | Įų. | С. 🗆 | | | Asbestos | Other Fibrous | Non Fibrous |
| 3 19 Field Number | Stereoscopic Exam | / | | | PLM O | ptical P | ropertie | s | | Results PLM % | PLM % | PLM % |
| Gravimetric | Cole The Texture | Morph | Extinction | RII | RII DS | Color Col | or, Pleo B | iref Sign O | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 2 | 1 | / | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | Homogeneity Vermiculite | 1/ | _ | : | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | 1 | _ | | | | | | | - | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [| PLM | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V | HOD DIM //p | _ | _ | | | | | 0 | 200 | 0 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet | Comments: / | | | J | | | | | | | Birefringence | |
| for results | Method: ELAP EPA | SCAN | NING OPT | ION | | Q | .c. 🗆 | | | | | |
| 4 20 Field Number | Stereoscopic Exam | | | | PLM C | ptical P | ropertie | es | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color A La La Texture | Morph | h Extinction | n RII | RI II D | S Color Co | lor, Pleo | Biref Sign (| Other Identit | Chrysotil | eCellulose | Mineral Filler |
| Required | 0000 | _ | _ | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended [| Homogeneity | 1= | _ | = | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | 1 | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. F | PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required [| D PLM | | | | | | | | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sam |
| See SM-V | WORD DI WO / O | | - | + | | | | 0 | 20 | 9 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet | Comments: | | | | -1 | | | A. Je | | | Birefringence | |
| for results | Methods PIELAD FRA | DECAL | UNING OPT | TION | | l C |).C. 🗆 | | | | | 1 |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☐ ELAP ☐ EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite." Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/FORMS_2021/BULK ASBESTOS_ANALYSIS_SHEET_FORM #B2.doc_ATC_EFFECTIVE_DATE_011/8/2021_REVISION #33 BY MEI WANG FORM #82

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Slide 5 Slide 6

SCANNING OPTION

SCANNING OPTION

Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Slide 7 Slide 5 Slide 6 Slide 2 Point Counts Slide 1 0 Horse Hair: Scales, Low to Moderate NOB PLM Q.C. Z SCANNING OPTION Method: ELAP EPA Other Fibrous Asbestos **PLM Optical Properties** PLM %

PLM % Results PLM % 14 Stereoscopic Exam RII DS Color Color, Plea Biref Mineral Filler Cellulose NeevFexture_ Gravimetric 7_Fiberglass Organic Binde Required [○ Vermiculite* Other Other See gravimetric Cellulose Ondulose analysis sheet for results Fiberglass Isotopic Asb./Ver. PT Total PT %Asb. Or %Ver. Slide 8 Slide 7 Slide 2 SM-V Synthetic High If vermiculite is >10% the vel of ashestos in a sample Horse Hair: Scales, might be underestimated. See Note #1. Low to Moderate NOB PLM See SM-V □

| 3 15 | Stereo | scopic E | xam | | | | PLM C | ptical | Proper | ties | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|--|-----------------|---------------|----------|---------|------------|---------|---------|---------|-------------|------|-----------|-------|----------|---------------------------|---|--|
| Required Recommended | Homogeneity _ | Textur Vermi | culite | Morph | Extinction | RII | RI D | S Color | Color, Pleo | Bire | ef Sign | Other | Identity | Chrysotile Amosite Other | CelluloseFiberglassOther | Mineral Filler Organic Binder Vermiculite* Other |
| See gravimetric analysis sheet for results | Color of Layer_ | Detec | cted Yes | No | | | | _ | | | | | | %Asb, Or %Ver. | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | 7 Slic | le 8 | Asb./Ver. | PIII | otal P1 | %ASB. OF %Ver. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required 🗆 | PLM | | | | | | | | | | | | | | Birefringence | level of asbestos in a sample |
| See SM-V 🗆 | NOD DI M | %- | | | | | | | | | 0 | | 200 | 0 | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | EDA | T/SCAN | NING OPTI | ION | | | Q.C. |] | | | | | | |

Q.C.

| ioi results | Method: Z El | AP 🗆 | EPA | SCAN | IING OPTIO | ON | | Q. | υ. ⊔ | | | | | |
|--------------------------------------|-------------------|----------|---------|---------|------------|---------|----------|--------------|------------|-------------|----------------|---------------------------|---|--|
| 4 16 | Stereo | scopic E | xam | 1 | | | PLM O | ptical Pr | opertie | s | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Required Recommended | Color Homogeneity | Vermi | culite | Morph | Extinction | RII | RI II DS | S Color Colo | or, Pleo B | iref Sign O | ither Identity | Chrysotile Amosite Other | CelluloseFiberglassOther | Mineral Filler Organic Binder Vermiculite* Other |
| analysis sheet for results | Color of Layer_ | Detec | ted Yes | No | _ | | | | | | T Total PT | %Asb. Or %Ver. | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | 1 Total P1 | 76ASD. OF 76VEL. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required 🗆 | | OD - | | | | | | | | 0 | 200 | 0 | Birefringence Horse Hair: Scales, Low to Moderate | level of asbestos in a sampl might be underestimated. See Note #1. |
| See SM-V analysis sheet for results | Comments: | / | FPΔ | TI 6CAN | NING OPT | ION | | I Q | .c. 🗆 | | | | Birefringence | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ELAP EPA

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification (SM-V). For samples containing y=10% vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

Note #2: ELAP requires method 198.8 for the analysis of samples containing vermiculite (SM-V) and it utilizes a 400 point count method.

Note #2: ELAP requires method 198.8 for the analysis of samples containing vermiculite. This method has limitations for identification and quantification of vermiculite. This method has limitations for identification and quantification and quanti

Page _____ of _____

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 Accreditations: NVLAP 101187-0 ELAP 10879

Microscopes:

| | | BULK | ASBESTOS ANALY | /SIS SHEET | | | Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT |
|--------------------------------------|-------------------------------|-----------------------|----------------------|--|---------------------------|--|---|
| | Client / Project PANYNJ | | | Proj | ect Number 214PI | NPEPJ1 | NIKON OPTIPHOT |
| | Analysis Date 3/ / | /2021 Analyst | M | Bate | ch Number 21 | -427 | EMPERATURE C |
| 1 21 Field Number | Stereoscopic Exam | | PLM Optical Pro | pperties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction RI1 | RI DS Color Color | , Pleo Biref Sign Other Iden | Chrysotile | | 20 Mineral Filler |
| Required Recommended | HomogeneityVermiculite | 4=== | | | Other | | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes N | lo | | | _ / | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total P | | Synthetic High | * If vermiculite is >10% the |
| Required □ | 1 10000 | | | 0 200 | 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | | | | | Low to Moderate Birefringence | See Note #1. |
| | Method: ☐ ELAP ☐ EPA | SCANNING OPTION | Q.0 | . . □ | | 1 | |
| 2 22 Field Number | Stereoscopic Exam | | PLM Optical Pro | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colo Texture P | Morph Extinction RI1 | RI DS Color Color | ; Pleo Biref Sign Other Ident | Chrysotile | Cellulose | 20 Mineral Filler |
| Required Recommended | Homogeneity——Vermiculite | /=== | | | — Amosite | Diberglass Other | Organic Binders Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | | | | _ / | | Other |
| for results | Color of Layer Detected Yes N | | | | _ / | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total P | 400 | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% the |
| Required □ | 1 | | | O he | 2 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | | | | | Low to Moderate Birefringence | See Note #1. |
| | Method: ELAP EPA | SCANNING OPTION | [Q.0 | :. [□] | | | l |
| 3 23 Field Number | Stereoscopic Exam | | PLM Optical Pro | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction RI 1 | RI DS Color Color | ; Pleo Biref Sign Other Ident | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | 4=== | | | Amosite | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | 4=== | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes N | lo | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total P | | Fiberglass Isotopic Synthetic High | |
| Required □ See SM-V □ | LION DILLI | | | O ha | 90 | Birefringence | If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | / | | | | Low to Moderate Birefringence | See Note #1. |
| TOT TESURS | Method: □ ELAP □ EPA | ☐ SCANNING OPTION | Q.C | :. | | | |
| 4 24 Field Number | Stereoscopic Exam | | PLM Optical Pro | Carrier Control of the Control of th | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction RI 1 | RI DS Color Color | , Pleo Biref Sign Other Ident | Chrysotile | Cellulose | 20 Mineral Filler |
| Required Recommended | Homogeneity | /=== | | | Other | Fiberglass | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | Other | Other |
| analysis sheet for results | Color of Layer Detected Yes N | lo | | | _ / | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total P | | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required | PLM O | | | O Vor | 0 6 | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| | NOR PLM | | | | | ☐ Horse Hair: Scales, | might be underestimated |
| See SM-V analysis sheet for results | NOB PLM Comments: | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L1AB_FORMS,DOCUMENTS AND RECORDSIOPTICAL\(\text{ASBESTOS}\) BULK\(\text{ASBESTOS}\) BULK\(\text{A

-ATLAS ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Microscopes:

| BULK ASBESTOS ANALYSIS SHEET | BULK | ASBESTOS | ANALYSIS | SHEET |
|------------------------------|------|-----------------|-----------------|-------|
|------------------------------|------|-----------------|-----------------|-------|

| | DANVNI | | | | 21404 | IDED14 | NIKON OPTIPHOT |
|---|--|--|--------------------|---|---|--|---|
| | Client / Project PANYNJ | | | Project | - American | NPEPJ1 | 2 |
| | Analysis Date 3/ 1 | 2021 Analyst | TY. | Batch | Number 21- | 427 | EMPERATURE*C |
| 1 25 Field Number | Stereoscopic Exam | | PLM Optical P | roperties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Dyne Jexture | Morph Extinction RI1 | RI DS Color Col | or, Pleo Biref Sign Other Identity | Chrysotile | Cellulose | Mineral Filter |
| Required 🗆 | Homogeneity Vermiculite/ | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | | / | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | | | | | | Other |
| for results | Color of Layer Detected Yes No |) | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | fiberglass Isotopic | |
| Required | PLMO N | | | 0 200 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | / | | | | Birefringence | See Note #1. |
| | Method: □ ELAP □ EPA □ | SCANNING OPTION | Q. | C. □ | | | |
| 2 26 | Stereoscopic Exam | T | PLM Optical P | ronarties | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Otereoscopic Exam | Morph Extinction RI1 | RI DS Color Col | | Results PLM % | PLM % | PLM % |
| Gravimetric | Colo Texture | | | | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | (=== | | | Amosite | Fiberglass | Organic Binders |
| See gravimetric | # of Layers Asbestos | <u>/</u> | | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes No | | | | | Cellulose Ondulose | Other |
| | Point Counts Slide 1 Slide 2 3 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| SM-V | PLM O | Side 5 Olide 4 Olide 5 | Side o Side / | | AASD. OF AVEL. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | NOB PLM | | | 0 200 | 0 | Birefringence Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | Comments: | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | | SCANNING OPTION | lo. | C. 🗆 | | | |
| 3 27 | | 1 | | | Ashastas | L Other Files | Non Fibraria |
| 3 27 Field Number | Stereoscopic Exam | | PLM Optical P | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color 200 V Texture | Morph Extinction R11 | RI DS Color Col | or, Pleo Biref Sign Other Identity | Chrysotile | 25 Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity 4 Vermiculite | <u>/</u> | | | Amosite | Fiberglass | Organic Binders |
| Recommended | | 7 | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | | | | | | Other |
| for results | Color of Layer Detected Yes No | <u> </u> | | | / | E Cellulose Ondulose Extinction | |
| | | | | | | | 1 |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb.Ner. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| SM-V Required □ | PIM O | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| | PIM O | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | - 0 - | %Asb. Or %Ver. | ☐ Synthetic High | level of asbestos in a sample might be underestimated. |
| Required See SM-V analysis sheet | PLM J | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | | %Asb. Or %Ver. | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample |
| Required □ | PLM NOB PLM Comments: | Slide 3 Slide 4 Slide 5 | | | *%Asb. Or %Ver. | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| Required See SM-V analysis sheet for results | NOB PLM Comments: Method: ZELAP □ EPA | | Q. | C. □ | Asbestos | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | level of asbestos in a sample might be underestimated. See Note #1. |
| Required See SM-V analysis sheet for results 4 28 Field Number | PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam | | | C. roperties | Asbestos Results PLM % | □ Synthetic High Birefringence □ Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | level of asbestos in a sample might be underestimated. See Note #1. |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric | NOB PLM Comments: Method: ZELAP □ EPA | SCANNING OPTION | Q. PLM Optical P | C. roperties | Asbestos Results PLM % | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required | PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam | SCANNING OPTION | Q. PLM Optical P | C. roperties | Asbestos Results PLM % Chrysotle Apriosite | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended | PLM NOB PLM Comments: Method: ZELAP PA Stereoscopic Exam Color Description | SCANNING OPTION | Q. PLM Optical P | C. roperties | Asbestos Results PLM % | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | NOB PLM Comments: Method: ZELAP | SCANNING OPTION Morph Extinction RI 1 | Q. PLM Optical P | C. roperties | Asbestos Results PLM % Chrysotle Apriosite | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | PLM NOB PLM Comments: Method: ELAP | SCANNING OPTION Morph Extinction RI 1 | PLM Optical P | C. roperties or, Pleo Biref Sign Other Identity | Asbestos Results PLM % Chrysotle Apriosite Other | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V | NOB PLM Comments: Method: ELAP | SCANNING OPTION Morph Extinction RI 1 | PLM Optical P | C, roperties or, Pieo Biref Sign Other Identity Slide 8 Asb./Ver. PT Total PT | Asbestos Results PLM % Chrysotle Apriosite | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required | PLM NOB PLM Comments: Method: ELAP | SCANNING OPTION Morph Extinction RI 1 | PLM Optical P | C. roperties or, Pleo Biref Sign Other Identity | Asbestos Results PLM % Chrysotle Apriosite Other | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| Required See SM-V analysis sheet for results 4 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V | NOB PLM Comments: Method: ELAP | SCANNING OPTION Morph Extinction RI 1 | PLM Optical P | C, roperties or, Pieo Biref Sign Other Identity Slide 8 Asb./Ver. PT Total PT | Asbestos Results PLM % Chrysotle Apriosite Other | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.5. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET OLYMPUS BH-2/ Client / Project PANYNJ Project Number 214PNPEPJ1 Analysis Date 3/ /2021 Analyst 21-427 Batch Number 29 Asbestos Other Fibrous Non Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI DS Color Color, Pleo Biref Sign Other Ident Gravimetric Mineral Filler 2 Fiberglass Organic Binder Vermiculite* analysis sheet Cellulose Ondule SM-V Slide 2 Asb./Ver. PT Total PT Fiberglass Isotopic PLM Synthetic High Required [If vermiculite is >10% the Birefringence evel of asbestos in a sample NOB PLA See SM-V Horse Hair: Scales, night be underestimated. Low to Moderate analysis sheet Comments: Birefringence for results Method: DELAP DEPA SCANNING OPTION Q.C. 30 Asbestos Other Fibrous Stereoscopic Exam Non Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI || DS Color Color, Pleo Biref Gravimetric Cellulose Mineral Filler Organic Binder Vermiculite* Other See gravimetric [Other analysis sheet for results Cellulose Ondulos SM-V Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopi PLM Synthetic High 0 Required [Birefringence vel of asbestos in a sample NOB PLM See SM-V Horse Hair: Scales night be underestimated. Low to Moderate analysis sheet Comments: for results Method: ELAP EPA SCANNING OPTION Q.C. 31 Asbestos Other Fibrous Stereoscopic Exam Non Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI II DS Color Color Plea Biref Gravimetr Cellulose Mineral Filler Required [Organic Binders Other See gravimetric [Other analysis sheet Color of Layer for results Cellulose Ondulose Point Counts SM-V Slide 2 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopi PLM Required [If vermiculite is >10% the 0 vel of asbestos in a sampl NOB PLM Horse Hair: Scales, See SM-V [might be underestimated. Low to Moderate analysis sheet for results Method: □ ELAP □ EPA SCANNING OPTION Q.C. 32 Asbestos Other Fibrous Stereoscopic Exam Non Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % CO Cellulose Mineral Filler Required [Organic Binde Vermiculite* See gravimetric [Other analysis sheet color of Layer for results Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Point Counts Slide 1 Slide 2 %Asb. Or %Ver. Fiberglass Isotop f vermiculite is >10% the Birefring vel of asbestos in a sample NOB PLM Horse Hair: Scale See SM-V night be underestimated. Low to Moderate analysis sheet See Note #1. for results Method: ELAP EPA SCANNING OPTION Q.C. 🗆 Methods:

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.*

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Page _____ of ______ ATC_EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2

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BULK ASBESTOS ANALYSIS

| SHEET | | | | | Microscop |
|---------------------|----------------|----------------|-------|------------------------|----------------------------|
| | Projec | t Number | 214PN | IPEPJ1 | OLYMPUS BH NIKON OPTIPH |
| Bate | | Number_ | 21- | 427 | TEMPERATURE - 2 |
| ies Biref Sign O | there Identity | Asb Results | | Other Fibrous PLM % | Non Fibrous PLM % |
| bilei Sign U | ther Identity | | 2 | _ | 1 ^ |

| | Client / Project PANYN | 4 1 | | | | | ъ. | 214 | DNIDEDIA | OLYMPUS BH- NIKON OPTIPHO |
|---------------------------------|--------------------------------|------------------|---------------|--------------|-----------------|--------------|----------------|---------------------------|--|--|
| | Analysis Date 3/ | /2021 Analy | rst | 7 | 1/ | | | ct Number 214 | 1-427 | 20 |
| 1 33 | Stereoscopic Exam | T | | DI M Onti- | 10 | 1890 | Batci | Number 2 Asbestos | | TEMPERATURE - |
| Field Number Gravimetric | 100 | Morph Extincti | | PLM Optica | Color, Pleo | | Other Identity | Results PLM 9 | Other Fibrous PLM % | Non Fibrous PLM % |
| Required [| Texture Texture | | | 355555 | | sign | Identify | Chrysg | nie Cellulos | |
| Recommended [| Homogeneity Y Vermiculite | | | | | | | Amosite | Fibergla | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| See gravimetric [| # of Layers Asbestos | | | | | | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | I out a I | | | | | 1 | Cellulose Ondulose Extinction | • |
| Section. | B145 | Silde 3 Silde 4 | Slide 5 | Slide 6 Slid | e 7 Slide 8 | Asb./Ver. | PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | E |
| Required C | | | | | | 0 | 200 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| analysis sheet | Comments: | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| for results | Method: ELAP EPA | SCANNING OP | TION | | 000 | | | | Birefringence | See Note #1, |
| 2 34 | | 2 SCANNING OP | IION | | Q.C. | | | | | |
| Field Number | Stereoscopic Exam | | P | LM Optica | l Propertie | es | | Asbestos | Other Fibrous | Non Fibrous |
| Gravimetric | Color Texture | Morph Extinction | n RII R | III DS Color | Color, Pieo I | Biref Sign (| Other Identity | Results PLM % | PLM % | PLM % |
| Required | Homogeneity Vermiculite | / | | | | | | Chrysotil | - 1 | The second second second |
| Recommended | | | | | | | | Apriosite | Fiberglas | () |
| See gravimetric analysis sheet | | | | | | | | - Outer | Other | Vermiculite* |
| for results | Color of Layer Detected Yes | No | | | | | | | Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 SI | lide 6 Slide | 7 Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | Extinction □ Fiberglass Isotopic | |
| Required | PLM | | | | | 0 |),,,,, | 8 | ☐ Synthetic High | * If vermiculite is >10% the |
| See SM-V □ | NOB PLM | | | | | 0 | 100 | O | Birefringence Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | / | | | | | | | Low to Moderate Birefringence | See Note #1. |
| | Method: DELAP DEPA | SCANNING OPTI | ION | | Q.C. 🗆 | | | | | |
| 3 35 Field Number | ↑ Stereos¢opic Exam | | PI | M Optical | Proportion | | | Asbestos | Other Fibrous | Non File |
| Gravimetric | COMPANY FEXTURES F | Morph Extinction | | | | | ther Identity | Results PLM % | PLM % | Non Fibrous PLM % |
| Required [| | | | | | | | Chrysøtile | Cellulose | Mineral Filler |
| Recommended | Homogeneity Vermiculite | 1 | | | | | | Agricsite | Fiberglass | Organic Binders |
| See gravimetric | # of Layers Asbestos | | | | | | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes N | No | | | | | | | | Other |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 Slide 4 | Out a Lou | | | | | | Cellulose Ondulose Extinction | |
| Denve | PLM | Side 5 Slide 4 | Slide 5 Slide | de 6 Slide | 7 Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Fiberglass Isotopic | |
| Required See SM-V | NOB PLM | | | | | 0 | 200 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| analysis sheet | Comments: | | | | | | ** | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| for results | Method: ☑ ELAP □ EPA | SCANNING OPTIC | ON . | 10 | Q.C. 🗆 | | | | Birefringence | Gee Note #1. |
| 36 | | 1 | | | ₹.0. □ | | | | | |
| ield Number | Stereoscopic Exam | | PLI | M Optical I | roperties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Gravimetric | COTOTIVING TEXTIFE | Morph Extinction | RI1 RII | DS Color C | olor, Pleo Bire | of Sign Oth | ner Identity | / | PLM % | PLM % |
| | Homogeneity Vermiculite | J | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Recommended | | 7 | | | | | | Other | Fiberglass Other | Organic Binders |
| analysis sheet | | 1 = 1 | | | | | | | Other | Vermiculite* |
| for results | Color of Layer Detected Yes No | o — — – | | | | | | | Cellulose Ondulose | Other |
| SM-V | Point Counts Slipe 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide | e 6 Slide 7 | Slide 8 | Asb.Ner. PT | Total PT | | Extinction Fiberglass Isotopic | |
| Required | PLM | | | | | 0 | 2 | | ☐ Synthetic High | If yerminylite in a terminylite in a ter |
| See SM-V □ | NOB PLM | | | | | 0 | 100 | 0 | Birefringence | If vermiculite is >10% the level of asbestos in a sample |
| analysis sheet for results | Comments: | / | | | | | | | Low to Moderate | might be underestimated. See Note #1. |
| | Method: ELAP EPA | SCANNING OPTION | N | In | СП | | | | | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ Project Number 214PNPEPJ1 Analysis Date 3/16 /2021 Analyst 21-427 37 Asbestos Non Fibrous Other Fibrous **PLM Optical Properties** Results PLM % PLM % PLM % RI || DS Color Color, Pleo Biref Cellulose Mineral Filler Required Fiberglas Organic Binde Vermiculite! Other analysis sheet Detected Yes for results Cellulose Ondu Point Counts Slide 1 Slide 2 SM-V Slide 6 Fiberglass Isotop Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. If vermiculite is >10% the Required | Birefringence evel of asbestos in a sample NOB PLM Horse Hair: Scales, night be underestimated. See SM-V [Low to Moderate See Note #1. analysis sheet Birefringence for results Method: □ ELAP □ EPA SCANNING OPTION Q.C. 38 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM 9 PLM % PLM % RI || DS Color Color, Pleo Biref Sign Other Identif Gravimetric Colon Muc Texture Cellulose Mineral Filler Organic Binde Vermiculite* Other See gravimetric Other analysis sheet Cellulose Ondulos Extinction Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V %Asb. Or %Ver. Fiberglass Isotopi Required [Birefringence evel of asbestos in a sample NOB PLM Horse Hair: Scales See SM-V might be underestimated. Low to Moderate See Note #1. analysis sheet for results Method: ELAP EPA SCANNING OPTION Q.C. 39 Asbestos Non Fibrous Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Cellulose Mineral Filler Organic Binder See gravimetric [Other analysis sheet Color of Laver Detected Yes Cellulose Ondulose for results Point Counts Slide 1 SM-V Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Synthetic High If vermiculite is >10% the Required [Birefringence 100 evel of asbestos in a sample Horse Hair: Scales NOB PLM See SM-V [might be underestimated. Low to Moderate ee Note #1. analysis sheet Birefringence for results Method: ELAP EPA Q.C. SCANNING OPTION 40 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM 9 PLM % PLM % Gravimetri Mineral Filler Required Organic Binde Other Vermiculite* See gravimetric Other analysis sheet Extinction SM-V Point Counts Stide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT Fiberglass Isotopi %Asb. Or %Ver. If vermiculite is > 10% the Required [Birefringence vel of asbestos in a sample Horse Hair Scales See SM-V NOB PLM ight be underestimated. Low to Moderate See Note #1. analysis sheet Comments: for results Method: ☐ ELAP ☐ EPA SCANNING OPTION Q.C.

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite

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BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ | | | | 100 | | | _ , , , , , , , , | Number 214 | | |
|--|--|--------------------------------|---------|---------|------------|-------------------------------|--------------|-------------------|--|---|--|
| | Analysis Date 3/ 16 | 2021 Analyst | | | B | | | _ Batch N | Number | 21-427 | TEMPERATURE O |
| 41 ield Number | Stereoscopic Exam | | | PLM Op | otical Pr | operties | | | Asbestos Results PLM | Other Fibrous | Non Fibrous PLM % |
| Gravimetric Required □ Recommended □ | Color Texture Vermiculite | Morph Extinction | RII | RIII DS | Color Colo | r, Pleo Bir | ef Sign Othe | er Identity | Chrys | otile 2 Cellulose | 96 Mineral Fille |
| See gravimetric L | # of Layer Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 Slide 2 Slide 3 Sl | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ve | ☐ Cellulose Ondulose Extinction C. ☐ Fiberglass Isotopic | Other |
| Required See SM-V analysis sheet for results | PLM NOB PLM Comments: | | - | | | | 0 | Cel | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is >10% t level of asbestos in a sa might be underestimated See Note #1. |
| | Method: ☐ ELAP ☐ EPA [| SCANNING OPTI | ON | | Q.0 | C. 🗆 | | | | | |
| Required Recommended | Color Texture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction | RII | PLM Op | | operties | | er Identity | Asbestos Results PLM Chrys Arios Other | otile Cellulose | Non Fibrous PLM % Mineral Fill Organic Bir Vermiculite Other |
| analysis shoot | Point Counts Side 1 Slide 2 PLM NOB PLM Comments: | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ve | Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair, Scales, Low to Moderate Birefringence | * If vermiculite is >10% level of asbestos in a si might be underestimate See Note #1. |
| (149)(1340)(1403) | Method: ELAP EPA | SCANNING OPTI | ON | | 0.0 | C. 🗆 | | | | | I. |
| 43 eld Number | Stereoscopic Exam | | | PLM Op | otical Pr | operties | | | Asbestos Results PLM | Other Fibrous % PLM % | Non Fibrous PLM % |
| Gravimetric Required Recommended | Stereoscopic Exam Coor Texture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction | RII | | | operties | | er Identity | | % PLM % otile Cellulose The Fiberglass | PLM % Mineral Fill Organic Bi Vermiculite |
| Gravimetric Required Recommended See gravimetric analysis sheet | Color of Layer Detected Yes No | | RI1 | | otical Pr | operties | | | Results PLM Chrys | % PLM % Otile Cellulose Tiberglass Other Cellulose Ondulose Extinction Cellulose Undulose Extinction Synthetic High Biretringence Horse Hair: Scales, | Mineral Fill Organic Bi Vermiculite Other If vermiculite is >10% level of asbestos in a sa |
| Gravimetric Required Recommended analysis sheet for results SM-V Required Required | Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | | Slide 5 | RI DS | otical Pr | operties | ef Sign Othe | Total PT | Chrys Amou Other %Asb. Or %Ve | % PLM % Cellulose Tiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Fil Organic Bi Vermiculite Other * If vermiculite is >10% level of asbestos in a si |
| Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Slide 3 Slide 4 | Slide 5 | RIII DS | Slide 7 | operties | Asb./Ver. PT | Total PT | Chrys Amou Other %Asb. Or %Ve | % PLM % Otile Cellulose Tiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | PLM % 9 Mineral Fill Organic Bi Vermiculite Other If vermiculite is >10% level of asbestos in a samight be underestimate |
| Gravimetric Required Recommended Recommended Recommended Recommended Recommended Recommended Required Required Required Required Recommended Recommen | Coor Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: □ELAP □ EPA | Slide 3 Slide 4 SCANNING OPTI | Slide 5 | RIII DS | Slide 7 | operties or, Pieo Bir Slide 8 | Asb./Ver. PT | Total PT | Results PLM Chrys Amos Øther | % PLM % Otile Cellulose Tiberglass Other Cellulose Ondulose Extinction T. Fiberglass Isotopic Synthetic High Birefringence Herse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Otile Cellulose Fiberglass Other | PLM % Mineral File Organic B Vermiculit Other If vermiculite is >10% level of asbestos in a smight be underestimate See Note #1. Non Fibrous PLM % Mineral File Organic B |
| Gravimetric Required Recommended Gravimetric Required Recommended Gravimetric Analysis sheet for results SM-V Required See SM-V Analysis sheet for results A4 analysis sheet Gravimetric Required Recommended Recommended Gravimetric Analysis sheet Gravimetric Analysis sheet Gravimetric Analysis sheet Gravimetric Analysis sheet | Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: DELAP DEPA Stereoscopic Exam Color Detected Yes Nobel Detected | Slide 3 Slide 4 SCANNING OPTI | Slide 5 | RIII DS | Slide 7 | operties | Asb./Ver. PT | Total PT | Asbestos Results PLM Chrys Amos Asbestos Results PLM Chrys Amos | % PLM % Cellulose Cellulose Ondulose Extinction Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Otile Cellulose Fiberglass Other | PLM % Mineral Fil Organic Bi Vermiculite Other If vermiculite is >10% level of asbestos in a simight be underestimate See Note #1. Non Fibrous PLM % Organic Bi Vermiculite Vermiculite |

EPA Interim Method of the Determination of

ELAP Items 198.1, 198.4, 198.6, 198.8

Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L*LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/FORMS 2021/BULK ASBESTOS ANALYSIS SHEET_FORM #82.doc

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ELAP Items 198.1, 198.4, 198.6, 198.8

BULK ASBESTOS ANALYSIS SHEET

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Accreditations: NVLAP 101187-0 ELAP 10879

Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT

-ATLAS

ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| BULK ASBESTOS | ANALYSIS | SHEET |
|---------------|----------|-------|
| | | |

| Microscopes: |
|----------------|
| OLYMPUS BH-2/ |
| NIKON OPTIPHOT |
| ~ |

| | Client / Project PANYNJ | | Project Number 214F | NPEPJ1 | NIKON OPTIPHOT | | Client / Project PANYNJ | | _ Project Number _ 214P | NPEPJ1 | NIKON OPTIP |
|--|---|---|--|--|--|---|--|--|---|--|--|
| | Analysis Date 3/ 6 | /2021 Analyst | Batch Number 21 | -427 | TEMPERATURE C | | Analysis Date 3/ | /2021 Analyst | _ Batch Number21 | -427 | TEMPERATURE C |
| 45 Id Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % | 1 49 Field Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colon Texture | Morph Extinction RI1 RI DS Color Color, Pleo Biref | Sign Other Identity Chrysoti | Cellulose | Mineral Filler | Gravimetric | opper Texture NR | Morph Extinction RI⊥ RI∥ DS Color Color, Pleo Biref Sign Oth | er Identity Chrysotile | Cellulose | 100 Mineral Fille |
| Required | | | Amosite | Fiberglas | L The state of the | Required 🗷 | Homogeneity Vermiculite | | Amosite | Fiberglass | |
| tecommended | Homogeneity Vermiculite | | | Other | Vermiculite* | Recommended | | | Other | Other | |
| ee gravimetric 🗆 | # of Layers Asbestos | | / | | Other | See gravimetric | # of Layers Asbestos | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | · | / | Cellulose Ondulose | | analysis sheet for results | Color of Layer Detected Yes N | | | ☐ Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 5 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ | Ver. PT Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. | Extinction □ Fiberglass Isotopic | |
| | PLM O | | 0)222 | ☐ Synthetic High | * If vermiculite is >10% the | 37555500 | PLM | | | ☐ Synthetic High | * If vermiculite is >10% t |
| Required | NOB PLM | | 0 500 0 | Birefringence Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | Required | NOB PLM-26 | | 200 0 | Birefringence Horse Hair: Scales, | level of asbestos in a sa might be underestimated |
| See SM-V analysis sheet | Comments: | | | Low to Moderate Birefringence | See Note #1. | See SM-V analysis sheet | Comments: | | 100 0 | Low to Moderate Birefringence | See Note #1. |
| for results | | SCANNING OPTION Q.C. | | - | 1 11 | for results | 1 - 22/07/2007/07/200 | SCANNING OPTION Q.C. | | | |
| | | | Asbestos | Other Fibrous | J | D 50 | | | Asbestos | I | l N-Fi |
| 46 Id Number | Stereoscopic Exam | PLM Optical Properties | Results PLM % | PLM % | Non Fibrous PLM % | 2 50 Field Number | Stereoscopic Exam | PLM Optical Properties | Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction RI RI DS Color Color, Pleo Biref | Sign Other Identity Chrysoti | e Cellulose | Mineral Filler | Gravimetric | dela rexture N | Morph Extinction RI 1 RI DS Color Color, Pleo Biref Sign Oth | er Identity Chrysotile | Cellulose | |
| Required | Homogeneity Vermiculite | | Aprosite | Fiberglas | s Organic Binders | Required 🗹 | | | Amosite | Fiberglass | Organic Bin |
| tecommended | | 7======= | Other | Other | Vermiculite* | Recommended | | ~ | Other | Other | |
| ee gravimetric 🗆 | # of Layers Asbestos | | / | 7 | Other | See gravimetric 📮 | # of Layers Asbestos | 1 | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | 0 | / | Cellulose Ondulose | | analysis sheet for results | Color of Layer Detected Yes N | o | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ | Ver. PT Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM O | | 0 200 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the | Required | PLM | | | ☐ Synthetic High Birefringence | • If vermiculite is >10% t |
| See SM-V | NOB PLM | | | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | See SM-V □ | NOB PLM 2/2 | 0 | 10 0 | ☐ Horse Hair: Scales, | level of asbestos in a sai might be underestimated |
| analysis sheet | Comments: | | | Low to Moderate Birefringence | See Note #1. | analysis sheet | Comments: | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: ☐ ELAP ☐ EPA [| SCANNING OPTION Q.C. | | | | for results | Method: ☑ ELAP □ EPA | SCANNING OPTION Q.C. | | 1 | |
| 47 | Stereoscopic Exam | PLM Optical Properties | Asbestos | Other Fibrous | Non Fibrous | 3 51 | Stereoscopic Exam | PLM Optical Properties | Asbestos | Other Fibrous | Non Fibrous |
| id Number | | Morph Extinction RII RI DS Color Color, Pleo Biref | | PLM % | PLM % | Field Number | Ball Ball All | | Results PLM % | PLM % | PLM % |
| Gravimetric | Colon Design Texture MC | | Chrysoti | | T WING ST INC. | Gravimetric | Color | | Chrysotile | Part of the same o | Mineral Fille |
| Required [2 | Homogeneity Vermiculite | | Amosite | Fiberglas | | Required Recommended | Homogeneity Vermiculite | 4======== | Amosite | Fiberglass | |
| tecommended | # of LayersAsbestos | | Other | Other | | See gravimetric | # of Layers Asbestos | | Other | Other | Vermiculite |
| ee gravimetric panalysis sheet | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | Other | analysis sheet | Color of Layer Detected Yes N | | | ☐ Cellulose Ondulose | Other |
| for results | | l | | Extinction | | for results | | | | Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb. | Wer. PT Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | Lancacca de la companya de la compan |
| Required | PLM | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample | Required □ | PLM | | | Birefringence | If vermiculite is >10% to level of asbestos in a sa |
| See SM-V □ | NOB PLM /8 | | 7 70 0 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1, | See SM-V □ | NOB PLM | | 200 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated See Note #1. |
| analysis sheet for results | Comments: | / | | Birefringence | | analysis sheet for results | Comments: | | | Birefringence | a seaso in contractor or |
| | Method: C ELAP EPA | SCANNING OPTION Q.C. | | | | | Method: ☐ ELAP ☐ EPA | ☐ SCANNING OPTION Q.C. □ | | | |
| 48 Id Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | 4 52 | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Del (Texture NP | Morph Extinction RI1 RI DS Color Color, Pleo Biref | Sign Other Identity | | 120 | Gravimetric | Color Carle Dienner N | Morph Extinction RI | er Identity | | 100 Mineral Fills |
| Required 2 | 0. | | Chrysoti | e Cellulose Fiberglas | T IMPORTANCE | Required | Control of the country of the countr | | Chrysotile Amosite | Cellulose Fiberglass | Organic Bir |
| Recommended | Homogeneity Vermiculite | 7 | Other | Other | Vermiculite* | Recommended | Homogeneity Vermiculite | 7 | Other | Other | Vermiculite' |
| ee gravimetric 🗆 | # of Layers Asbestos | | | | Other | See gravimetric | # of Layers Asbestos | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | | analysis sheet for results | Color of Layer Detected Yes N | | | ☐ Cellulose Ondulose | |
| O COLUMN STATES | Point Counts Clide 4 Clide 6 | Slide 2 Slide 4 Slide E Slide E State S S State S S State S S State S S S S S S S S S S S S S S S S S S S | Nor DT Total DT MA-1- C-MA | Extinction ☐ Fiberglass Isotopic | | | Point Counts Stide 4 Stide 5 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ver.PT | Total DT WASH OS WY | Extinction ☐ Fiberglass Isotopic | |
| SM-V | | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb. | Ner. PT Total PT %Asb. Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the | SM-V | | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. | ☐ Synthetic High | * If vegetables is a second |
| | PLM | | | Birefringence | level of asbestos in a sample | Required □ | PLM PLM | | | Birefringence | * If vermiculite is >10% t level of asbestos in a sa |
| Required | 16 | | | rmm, sreates, | might be underestimated. | See SM-V □ | NOB PLM | | 200 | Low to Moderate | might be underestimated See Note #1. |
| See SM-V | NOB PLM | | 0 200 0 | Low to Moderate Birefringence | See Note #1. | analysis should | 10 | | | | See Note #1, |
| | NOB PLM Comments: | COMMUNIC ONTON | 0 20 0 | Low to Moderate Birefringence | See Note #1. | analysis sheet for results | Comments: | FACCANDING ONTON | | Birefringence | See Note #1, |
| See SM-V analysis sheet for results | NOB PLM S Comments: Method: □ELAP □ EPA | SCANNING OPTION Q.C. | | Birefringence | | for results | Method: ☐ ELAP ☐ EPA | SCANNING OPTION Q.C. | | Birefringence | |
| See SM-V analysis sheet for results Methods: EPA Interim N | NOB PLM S Comments: Method: □ ELAP □ EPA S Method of the Determination of S (S) | SCANNING OPTION Q.C. ote #1: ELAP requires method ELAP 198.1 for the analysis of samples con MrV). For samples containing > 10% vermiculite ELAP requires methods El vermiculite. "This method does not remove vermiculite and may underesting vermiculite." | taining ≤10% vermiculite, with the exception LAP 198,1 followed by ELAP 198,6. This me | Birefringence of surfacing material the | at contains vermiculite | for results Methods: EPA Interim N Asbestos in B | Method: DELAP DEPA | ote #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤1 SM-V). For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 (vermiculite. "This method does not remove vermiculite and may underestimate the letter the property of the samples of the sampl | 0% vermiculite, with the exception followed by ELAP 198.6. This met | Birefringence of surfacing material that had has limitations for id- | t contains vermiculite |

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET

NIKON OPTIPHO Client / Project PANYNJ Project Number 214PNPEPJ1 Analysis Date 3/ 1(2021 Analyst 21-427 53 Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RI || DS Color Color, Pleo Biref Desture Mineral Filler Gravimetri Fiberglas Amosite Organic Binder Vermiculite* See gravimetric analysis shee Cellulose Ondulo for results Fiberglass Isotop Point Counts Slide 1 Slide 2 Slide 5 Slide 6 %Asb. Or %Ver. Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Synthetic High PLM If vermiculite is >10% the Required [evel of asbestos in a sample NOB PLM 700 night be underestimated. 0 See SM-V [Low to Moderate See Note #1. analysis sheet Birefringence Comments for results Method: ☑ ELAP ☐ EPA SCANNING OPTION Q.C. 54 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PI M 9 PLM % PLM % Mineral Filler Cellulose Required Amosite Fiberglas Organic Binder Other Other Vermiculite* See gravimetric analysis shee Color of Layer Cellulose Ondul for results Slide 4 Slide 6 Slide 7 Point Counts Slide 2 Slide 5 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V Synthetic High PLN If vermiculite is >10% the Birefringence evel of asbestos in a sample Horse Hair: Scales NOB PLM night be underestimated. 20 See SM-V Low to Moderate See Note #1. analysis sheet Comments for results Method: ELAP EPA SCANNING OPTION Q.C. 55 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Mineral Filler Cellulose Required . Amosite Fiberglas Organic Binde O Vermiculite* Other Other Other analysis sheet for results Cellulose Ondulose Extinction Slide 6 Fiberglass Isotoni Slide 5 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V PLM If vermiculite is >10% the Required [evel of asbestos in a sample Horse Hair Scales NOB PLM C might be underestimated. 200 See SM-V Low to Moderate See Note #1. analysis sheet for results Q.C. Method: ELAP EPA SCANNING OPTION 56 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM 9 PLM % PLM % Gravimetri Chrysot Cellulos Mineral Filler S Fiberglas Organic Binder Vermiculite* See gravimetric _ Other analysis sheet Cellulose Ondulo Detected Yes for results Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT Fiberglass Isotopi Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 %Asb. Or %Ver. SM-V Synthetic High Required [0 Birefringence evel of asbestos in a sample Horse Hair: Scales. NOB PLA night be underestimated. See SM-V [Low to Moderate analysis sheet Comments: for results Method: □ ELAP □ EPA ☐ SCANNING OPTION Q.C.

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2.

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| | Client / Project PANYNJ | BULK A | SBESTOS ANALYSIS SHE | | 14PNPEPJ1 | OLYMPUS BH-2 NIKON OPTIPHO |
|---|-------------------------------|--------------------------|----------------------------------|--|--|---|
| | Analysis Date 3/ | /2021 Analyst | M | Batch Number | 21-427 | TEMPERATURE °C |
| 1 57 Field Number | Stereoscopic Exam | | PLM Optical Properties | Asbesto Results PL | os Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Extinction RI1 | RI DS Color Color, Pleo Birel | | rysotile Cellulose | Mineral Filler |
| Required | Hammer No No In Fig. | | | | nosite Fiberglass | |
| Recommended | Homogeneity Vermiculite | - | | Ot | | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | extension and a second contracts | Other |
| analysis sheet for results | Color of Layer Detected Yes I | No | | | ☐ Cellulose Ondulose | |
| 100000000000000000000000000000000000000 | Delet Const. City 4 City 5 | | Taylor Taylor Taylor | | Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 A | ssb./Ver. PT Total PT %Asb. Or % | Synthetic High | |
| Required | PLM | | | | Birefringence | If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM - | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: See H | 56 | | | Birefringence | |
| | Method: □ ELAP □ EPA | ☐ SCANNING OPTION | Q.C. 🗆 | | | |
| 2 58 | Stereoscopic Exam | T | PLM Optical Properties | Asbesto | os Other Fibrous | Non Fibrous |
| Field Number | | Morph Extinction RI1 | RI DS Color Color, Pleo Biref | Results PL Sign Other Identity | M% PLM% | PLM % |
| Gravimetric | Color Texture | | | A CONTROL OF THE PROPERTY OF T | rysotile Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | | | An | nosite Fiberglass | Organic Binde |
| Recommended | # of Layers Asbestos | | | ot | nerOther | Vermiculite* |
| See gravimetric analysis sheet | | | | | | Other |
| for results | Color of Layer Detected Yes I | No | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 A | sb./Ver. PT Total PT %Asb. Or % | | |
| Required | PLM | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V 🗆 | NOB PLM | | | | ☐ Horse Hair: Scales, | level of asbestos in a samp might be underestimated. |
| analysis sheet | Comments: See #5 | 7 | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: □ ELAP □ EPA | ☐ SCANNING OPTION | Q.C. □ | | | |
| 3 59 | | 1 | | Asbesto | os Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | | PLM Optical Properties | Results PL | Oliver and the second s | PLM % |
| Gravimetric | Color Cexture | Morph Extinction RI 1 | RI DS Color Color, Pleo Biref | Transfer of the second | rysotije 7 Cellulose | Mineral Filler |
| Required [| Homogeneity Vermiculite | X | | An | nositeFiberglass | Organic Binde |
| Recommended | | 1=== | | | nerOther | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | / | | Other |
| analysis sheet for results | Color of Layer Detected Yes I | No | | | Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 A | Asb. Ner. PT Total PT %Asb. Or % | Extinction Uer □ Fiberglass Isotopic | |
| 12000000 | nu la | Olide 5 Olide 4 Olide 5 | Side 6 Side 7 Side 6 P | 200 | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | 124 | | | 0 500 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a samp |
| See SM-V analysis sheet | NOB PLM | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Comments: | The season was a serious | Тос П | | | |
| | Method: T ELAP L EPA | SCANNING OPTION | Q.C. 🗆 | | | 1 |
| 4 60 Field Number | Stereoscopic Exam | | PLM Optical Properties | Asbesto Results PL | | Non Fibrous PLM % |
| | Catalog Aum F | Morph Extinction RL1 | RI DS Color Color, Pleo Biref | Sign Other Identity | ac | |
| Gravimetric Required | Color Autexture | | | | rysottle Cellulose | Mineral Filler |
| Recommended | Homogeneity Vermiculite | / | | / | Fiberglass | _ |
| | # of Layers Asbestos | | | | ner Other | Vermiculite* |
| See gravimetric analysis sheet | Color of Layer Detected Yes 1 | 1 | | / | | Other |
| for results | Color of Layer Detected Yes 1 | <u> </u> | | / | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 A | sb./Ver. PT Total PT %Asb. Or % | | |
| Required | PLM | | | 0 200 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V □ | NOB PLM | | | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a samp might be underestimated. |
| analysis sheet | Comments: | | | | Birefringence | See Note #1. |
| for results | Mathod: DELAB DEBA | E SCANNING OPTION | loc 🗆 | | | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite." Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing year miculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Accreditations: NVLAP 101187-0 ELAP 10879

level of asbestos in a sample

might be underestimated.

Horse Hair: Scales,

| | | | BULK A | SBESTO | OS ANAL | YSIS S | HEET | | | | OLYMPUS BH- |
|---------------------------------|--|--------------|-----------------|---------|-------------|------------|-------------|----------------|---------------------------|--|--|
| | Client / Project PANYN. | J | | | | | | Project | Number 214PN | IPEPJ1 | WIKON OF IIPH |
| | Analysis Date 3/ | /2021 An | alyst | | 7 | M | | Batch I | Number 21- | 427 | EMPERATURE C |
| 1 61 Field Number | Stereoscopic Exam | | | PLM O | ptical P | ropertie | s · | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Transferture | Morph Exti | nction RI1 | RI II D | S Color Col | or, Pleo B | iref Sign C | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | / | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended See gravimetric | # of Layers Ashestos | | | | | | | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | === | | | Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slid | le 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM O | | | | | | 0 | 200 | 7) | ☐ Synthetic High Birefringence | If vermiculite is >10% the level of asbestos in a same |
| See SM-V □ | NOB PLM | | | | | | | - | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | - | | Birefringence | Total Hote W1. |
| | Method: □ELAP □ EPA | SCANNING | OPTION | | Q. | c. □ | | | | | |
| 2 62 Field Nughber | Stereoscopic Exam | | | PLM O | ptical P | ropertie | s | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Gravimetric | Color Texture | Morph Exti | nction RI1 | RI II D | S Color Col | or, Pleo B | iref Sign C | Other Identity | | PLM % | PLM % |
| Required | | | | | = | | | == | Chrysotile Amosite | Cellulose Fiberglass | Mineral Filler Organic Binde |
| Recommended | PERCENTION OF THE PERCENT OF THE PER | - = - | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slid | le 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a same |
| See SM-V 🗆 | NOB PLM | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | Carlott Marries | | 1- | | | | | Birefringence | The state of the s |
| | Method: □ ELAP □ EPA | SCANNING | OPTION | | Q. | c. 🗆 | | | | | |
| 3 63 Field Number | Stereoscopic Exam | | | PLM O | ptical P | ropertie | s | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph Exti | nction RI1 | RI II D | S Color Col | or, Pleo B | iref Sign C | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | | | : | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | - | | | | | | | | | Other |
| for results | Color of Layer Detected Yes | No | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slid | le 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a same |
| See SM-V □ | NOB PLM | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: □ ELAP □ EPA | SCANNING | ORTION | | 10 | <u>с</u> П | | | | Birefringence | |
| | Method: □ ELAP □ EPA | SCANNING | OPTION | | ĮĠ. | c. 🗆 | | | | | |
| 4 64 Field Number | Stereoscopic Exam | Morph Extir | notion DI I | | ptical P | | | Mb 1 | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | - Morph Exti | nction RI1 | RI II D | S Color Col | w, FINO B | | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | # of Lavers Ashestos | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | Color of Layer Detected Yes | No — | | | | | | | | ☐ Cellulose Ondulose | Other |
| for results | | | le 4 Sude 5 | CHAPE | 064-7 | 011-0 | IAnh Area 5 | T Tabel DT | WA-b C WW | Extinction Fiberglass Isotopic | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slid | le 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | TOTALLE | %Asb. Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the |

Metridos.
EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

See SM-V analysis sheet for results

NOB PLM

Method: ☐ ELAP ☐ EPA

☐ SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.0. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Page _____ of _______ ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Q.C.

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET



| 2 ◀ | |
|------------------|-------|
| SH | |
| NOB TEM PREP: | |
| MJG | 13 |
| NOB PLM Analyst: | 6 |
| SA/EV | 11 12 |
| NOB PLM PREP: | 2 |

03/17/21

Date (

Ę

03/16/21

Start Date:

122613

21-427

| şp | | TEM | > | > | > | > | > | > | > | > |
|---------|---------|----------------------------|------|------|------|------|------|------|------|---|
| Methods | NOB | PLM | > | > | > | > | > | > | > | > |
| 2 | | PREP | > | > | > | > | > | > | > | > |
| | | Notes | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | |
| 9 | | Types or Vermiculite | | QN | QN | QN | QN | ΩZ | QN | |
| 12 | | % Carbonate | 33.4 | 16.4 | 15.9 | 35.3 | 41.8 | 23.9 | 17.0 | |
| 11 | Non Asb | Residue % NFr | 39.4 | 56.1 | 55.8 | 44.2 | 37.2 | 52.2 | 63.9 | |
| 5 | | % Organic | 27.2 | 27.5 | 28.3 | 20.5 | 21.0 | 23.9 | 19.1 | |
| | | Field# | 7 | 8 | 6 | 15 | 16 | 17 | 18 | |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not detected.

>

>

2

27.7

53.

18.8

20

25.3

54.6

20.1

<u></u>

 $\frac{9}{2}$

42.

50.

47

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

Batch #

03/16/21

03/17/21

Client/Project:

| | - 2 | - 11 | 12 | 6 | 13 | | Met | Methods | |
|---------|--------------|------------------|----------------|-------------------------|----------------------------|-------|-----|---------|--|
| | , ro | Non Asb | | Asbestos | % Total | | ř | NOB | |
| Field # | % Organic | Kesique % NFr | % Carbonate | lypes or Vermiculite | Asbestos or Vermiculite | Notes | PLM | TEM | |
| 48 | 53.0 | 41.1 | 5.9 | ND | | | 1 | 1 | |
| 49 | 56.7 | 39.7 | 9. 9. | Q | | | > | > | |
| 50 | 66.4 | 20.3 | 13.3 | QN | | | > | 3 | |
| 51 | 74.3 | 20.5 | 5.2 | QN | | | > | > | |
| 52 | 64.2 | 6.7 | 27.9 | QN | | | > | > | |
| 53 | 42.3 | 26.2 | 31.5 | QN | | | > | > | |
| 54 | 75.5 | 8.9 | 15.6 | QN | | | > | > | |
| 55 | 69.7 | 13.1 | 17.2 | ON | | | > | > | |
| | | | | | | | | | |
| | | | | | | | | | |

ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 4/15/2021

104 EAST 25TH STREET

Date Received : 4/15/2021

NEW YORK, NY 10010 **Fax:** (212) 353-3599

Phone: (212) 353-8280

Date Analyzed: 4/16/2021

Project: PANYNJ / FIRESPRINKLER REHABILITATION

ATC Batch # 21-668

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING #260 Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>Noi</u> | ı-Asbestos | NOB | Asbestos |
|----------------|-----------------------------------|--|---------|--------------------------------|---------------------|--------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | ₩ Type | % Type |
| 62 | 1ST FLOOR WAREHOUSE LUNCH ROOM | 2' X 2' CEILING TILES TYPE 1 | NOB-TEM | | 0.00()(| 29.1% Organic 60.4% Residue | NONE DETECTED |
| 21-668 -1 | | | | | 0.0% Vermiculite | 10.5% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Whit Second Analyst: Roman F | - | Comments: NOB PL | M Inconclusive | | |
| 63 | 1ST FLOOR WAREHOUSE LUNCH ROOM | 2' X 2' CEILING TILES TYPE 1 | NOB-TEM | | | 28.6% Organic 59.2% Residue | |
| 21-668 -2 | | | | | 0.0% Vermiculite | 12.2% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Whit Second Analyst: Roman F | - | Comments: NOB PL | M Inconclusive | | |
| 64 | 1ST FLOOR WAREHOUSE LUNCH ROOM | 2' X 2' CEILING TILES TYPE 1 | NOB-TEM | | | 26.5% Organic 61.7% Residue | |
| 21-668 -3 | | | | | 0.0% Vermiculite | 11.8% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Whit Second Analyst: Roman F | | Comments: NOB PL | M Inconclusive | | |
| 65 | 1ST FLOOR LUNCH ROOM | HVAC DUCT INSULATION | PLM | 75% Cellulose | 20% Mineral Filler | | |
| 21-668 -4 | | COVER | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan/ | Silver | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 66 | 1ST FLOOR LUNCH ROOM | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose 5% FiberGlass | 20% Mineral Filler | | |
| 21-668 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Tan/ | Silver | | | | |
| 67 | 1ST FLOOR LUNCH ROOM | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose 5% FiberGlass | 20% Mineral Filler | | |
| 21-668 -6 | | | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan/ | Silver | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 68 | 1ST FLOOR ELECTRIC SHOP | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-668 -7 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyse of Div | luan Davian | Color: Gray | 1 | | | | |
| Analyzed By: | ivan keyes | | | | | | |

Page 1 of 8 Batch # 21-668 Report Prepared By: Grace Chan



New York, NY 10010 Tel. 212-353-8280

Fax: 212-353-8306

| | | | | No | n-Asbestos | <i>NOB</i> | Asbestos |
|----------------|-----------------------------------|------------------------------------|---------|------------------|---------------------|----------------------------------|--------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 69 | 1ST FLOOR CARPETERS SHOP | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-668 -8 | | | | | 0.0% Vermiculite | | NONE DETECTE |
| Analyzed By: I | van Reves | Color: Gr | ay | | | | |
| 70 | 1ST FLOOR PLUMBING | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| | SHOP | | | | 0.0% Vermiculite | | NONE DETECTE |
| 21-668 -9 | | Color: Gr | av. | | 0.0% vermiculite | | NONE DETECTE |
| Analyzed By: I | van Reyes | 0001. 011 | -y | | | | |
| 71 | 2ND FLOOR OFFICE SPACE | 2' X 2' CEILING TILE | NOB-TEM | | | 30.5% Organic | |
| 21-668 -10 | | | | | 0.0% Vermiculite | 48.6% Residue 20.9% Carbonate | NONE DETECTE |
| | _ | Color: Wh | | Comments: NOB PL | M Inconclusive | | |
| Analyzed By: I | | Second Analyst: Roman | | Comments: NOBTE | IN INCONCIONAL | | |
| 72 | 2ND FLOOR OFFICE SPACE | 2' X 2' CEILING TILE | NOB-TEM | | | 28.7% Organic 62.5% Residue | |
| 21-668 -11 | | | | | 0.0% Vermiculite | 8.8% Carbonate | NONE DETECTE |
| Analyzed By: I | van Reves | Color: Wh Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 73 | 2ND FLOOR OFFICE SPACE | <u> </u> | NOB-TEM | | | 29.4% Organic | |
| | | | | | 0.0% Vermiculite | 55.8% Residue 14.8% Carbonate | NONE DETECTE |
| 21-668 -12 | | Color: Wh | nite | | 0.0% verifficulte | 14.0% Carbonate | NONE DETECTE |
| Analyzed By: I | van Reyes | Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 74 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD PAPER WA BOARD | LL PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -13 | | BOAND | | | 0.0% Vermiculite | | NONE DETECTE |
| | _ | Color: Bro | own | | | | |
| Analyzed By: I | - | | | | | | |
| 75 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD PAPER WA BOARD | LL PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -14 | | | | | 0.0% Vermiculite | | NONE DETECTE |
| Analyzed By: I | van Reves | Color: Bro | own | | | | |
| 76 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD PAPER WA | LL PLM | 90% Cellulose | 10% Mineral Filler | | |
| | 21.13 / 20 01.1 01.1 102 01.1 102 | BOARD | 1 | 0070 Ochalosc | | | NONE DETECTE |
| 21-668 -15 | | Color: Bro | 214/12 | | 0.0% Vermiculite | | NONE DETECTE |
| Analyzed By: I | van Reyes | COIOI. BIC | JWII | | | | |
| 77 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD WALL WAL | L PLM | 8% Cellulose | 90% Mineral Filler | | |
| 21-668 -16 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTE |
| | | Color: Gr | ay | | | | |
| Analyzed By: I | van Reyes | | | | | | |
| 78 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD WALL WAL | L PLM | 10% Cellulose | 88% Mineral Filler | | |
| 21-668 -17 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTE |
| A1 15 | D | Color: Gr | ay | | | | |
| Analyzed By: I | van Reyes | | | | | | |

Page 2 of 8 Batch # 21-668 Report Prepared By: Grace Chan



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New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>Non-</u> | - <u>Asbestos</u> | <u>NOB</u> | Asbestos |
|--------------|-------------------------|----------------------------|--------|--------------------------------|---------------------|------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 79 | 2ND FLOOR OFFICE SPACE | GYPUM BOARD WALL WALL | PLM | 10% Cellulose | 88% Mineral Filler | | |
| 21-668 -18 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzad Pyr | Ivan Payos | Color: Gray | , | | | | |
| Analyzed By: | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Tracel/ Cellulace | 100% Mineral Filler | | |
| 80 | ZIND FLOOR OFFICE SPACE | JOINT COMPOUND | PLIVI | Trace% Cellulose | | | |
| 21-668 -19 | | Color: White | • | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color. Willia | e | | | | |
| 81 | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -20 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analysis Dev | har Davis | Color: White | е | | | | |
| Analyzed By: | • | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 02 | ZND FLOOR OFFICE SPACE | JOINT COMPOUND | PLIVI | Trace% Cellulose | | | |
| 21-668 -21 | | Color: White | • | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: White | e | | | | |
| 83 | 2ND FLOOR OFFICE SPACE | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose | 20% Mineral Filler | | |
| 21-668 -22 | | COVER | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | . 5 | Color: Tan/s | Silver | | | | |
| Analyzed By: | - | LIVAC DUCT NICH ATION | DIM | 750/ 0-11 1 | 400/ Marcal Eller | | |
| 84 | 2ND FLOOR OFFICE SPACE | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose 7% FiberGlass | 18% Mineral Filler | | |
| 21-668 -23 | | 0.1. 7. / | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Tan/s | silver | | | | |
| 85 | 2ND FLOOR OFFICE SPACE | HVAC DUCT INSULATION | PLM | 75% Cellulose | 17% Mineral Filler | | |
| 21-668 -24 | | COVER | | 8% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan/s | silver | | | | |
| Analyzed By: | • | | | | | | |
| 86 | 2ND FLOOR OFFICE SPACE | SPRAYED ON FIRE PROOFIN | G PLM | 12% Cellulose 3% FiberGlass | 85% Mineral Filler | | |
| 21-668 -25 | | | _ | 0,0 1,120, 0,400 | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Light | Green | | | | |
| 87 | 2ND FLOOR OFFICE SPACE | SPRAYED ON FIRE PROOFIN | G PLM | 15% Cellulose | 82% Mineral Filler | | |
| 21-668 -26 | | | | 3% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Light | Green | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 88 | 2ND FLOOR OFFICE SPACE | SPRAYED ON FIRE PROOFIN | G PLM | 12% Cellulose 3% FiberGlass | 85% Mineral Filler | | |
| 21-668 -27 | | | | O /V INGIGIDES | 0.0% Vermiculite | | NONE DETECTED |
| | Ivan Reyes | Color: Light | Green | | | | |

Batch # 21-668 Page 3 of 8 Report Prepared By: Grace Chan



04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280

| | | | | 2-353-8280 2-353-8306 | | | |
|--------------|--------------------------------------|-------------------------------------|------------|--------------------------------|--------------------|----------------------------------|---------------|
| i. | | | | Noi | n-Asbestos | NOB | Asbestos |
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 89 | 2ND FLOOR OFFICE SPACE | SPRAYED ON FIRE PROOFI | NG PLM | 10% Cellulose | 87% Mineral Filler | | |
| 21-668 -28 | | | | 3% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Ligl | ht Green | | | | |
| Analyzed By: | <u> </u> | | | | | | |
| 90 | 2ND FLOOR OFFICE SPACE | SPRAYED ON FIRE PROOFII | NG PLM | 12% Cellulose 3% FiberGlass | 85% Mineral Filler | | |
| 21-668 -29 | | | | 070 Tiberolass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Ligi | ht Green | | | | |
| 91 | 2ND FLOOR OFFICE @ | FIRE STOP SEALANT RED | NOB-TEM | | | 46.7% Organic | |
| | DECK LEVEL | | | | 0.0% Vermiculite | 27.5% Residue 25.8% Carbonate | NONE DETECTED |
| 21-668 -30 | | Color: Rec | d | | | 20.070 Carbonato | NONE BETEGTED |
| Analyzed By: | Ivan Reyes | Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 92 | 2ND FLOOR OFFICE @ DECK LEVEL | FIRE STOP SEALANT RED | NOB-TEM | | | 46.8% Organic 25.2% Residue | |
| 21-668 -31 | DEOREEVEE | | | | 0.0% Vermiculite | 28% Carbonate | NONE DETECTED |
| | | Color: Red | | Comments: NOB PL | M Inconclusive | | |
| Analyzed By: | • | Second Analyst: Roman | - | Confinents. NOB 1 L | IN Inconclusive | | |
| 93 | 2ND FLOOR OFFICE @ DECK LEVEL | FIRE STOP SEALANT RED | NOB-TEM | | | 49.5% Organic 22.8% Residue | |
| 21-668 -32 | | | | | 0.0% Vermiculite | 27.7% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Red Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 94 | 2ND FLOOR OFFICE SPACE | 2' X 2' CEILING TILES TYPE I | I NOB-TEM | | | 26.3% Organic | |
| 04 000 00 | SLOPE SINK | | | | 0.0% Vermiculite | 33.7% Residue 40% Carbonate | NONE DETECTED |
| 21-668 -33 | | Color: Wh | ite | | 0.070 Verifficance | 40 /0 Carbonate | NONE BETEGTED |
| Analyzed By: | Ivan Reyes | Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 95 | 2ND FLOOR OFFICE SPACE SLOPE SINK | 2' X 2' CEILING TILES TYPE I | II NOB-TEM | | | 26.9% Organic | |
| 21-668 -34 | SEOFE SHAK | | | | 0.0% Vermiculite | 52.4% Residue 20.7% Carbonate | NONE DETECTED |
| | | Color: Wh | | Comments: NOB PL | M Inconclusivo | | |
| Analyzed By: | Ivan Reyes | Second Analyst: Roman | Peysakhov | Confinents. NOB FL | .w mconclusive | | |
| 96 | 2ND FLOOR OFFICE SPACE SLOPE SINK | 2' X 2' CEILING TILES TYPE I | II NOB-TEM | | | 27.1% Organic 57.5% Residue | |
| 21-668 -35 | | | | | 0.0% Vermiculite | 15.4% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Wh Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 97 | 3RD FLOOR OFFICE SPACE | | NOB-TEM | | | 30.2% Organic | |
| | | _ ,,_ | NOD TEM | | 0.00/ \/amaiolita | 58.2% Residue 11.6% Carbonate | NONE DETECTED |
| 21-668 -36 | | Color: Wh | ito | | 0.0% Vermiculite | 11.0% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Second Analyst: Roman | | Comments: NOB PL | .M Inconclusive | | |
| 98 | 3RD FLOOR OFFICE SPACE | 2' X 2' CEILING TILE TYPE I | NOB-TEM | | | 22.9% Organic | |
| 21-668 -37 | | | | | 0.0% Vermiculite | 62.3% Residue 14.8% Carbonate | NONE DETECTED |
| | | Color: Wh | | Comments: NOB PL | M Inconclusive | | |
| Analyzed By: | Ivan Reyes | Second Analyst: Roman | Peysakhov | Odminients, NOD PL | .w moonousive | | |

Report Prepared By: Grace Chan Page 4 of 8 Batch # 21-668



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| Ver | | | | Non | ı-Asbestos | NOB | Asbestos |
|----------------|------------------------|------------------------------------|-----------|--|--------------------|--------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | ₩ Type | % Type |
| 99 | 3RD FLOOR OFFICE SPACE | 2' X 2' CEILING TILE TYPE I | NOB-TEM | | | 24.8% Organic 65.4% Residue | |
| 21-668 -38 | | | | | 0.0% Vermiculite | 9.8% Carbonate | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Wi Second Analyst: Roman | | Comments: NOB PL | M Inconclusive | | |
| 100 | 3RD FLOOR OFFICE SPACE | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose | 18% Mineral Filler | | |
| 21-668 -39 | | 331211 | | 7% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Ta | ın/Silver | | | | |
| 101 | 3RD FLOOR OFFICE SPACE | HVAC DUCT INSULATION | PLM | 75% Cellulose | 19% Mineral Filler | | |
| 21-668 -40 | | COVER | | 6% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-000 -40 | | Color: Ta | ın/Silver | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 102 | 3RD FLOOR OFFICE SPACE | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose | 18% Mineral Filler | | |
| 21-668 -41 | | | | 7% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Ta | ın/Silver | | | | |
| 103 | 3RD FLOOR OFFICE SPACE | GYPSUM BOARD PAPER W | ALL PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -42 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Br | own | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 104 | 3RD FLOOR OFFICE SPACE | GYPSUM BOARD PAPER W | ALL PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -43 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Br | own | | | | |
| 105 | <u> </u> | GYPSUM BOARD PAPER W | ALL PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -44 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Br | own | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 106 | 3RD FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 3% Cellulose2% FiberGlass | 95% Mineral Filler | | |
| 21-668 -45 | | | | 2% FIDEIGIASS | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Of | f white | | | | |
| 107 | 3RD FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 4% Cellulose | 94% Mineral Filler | | |
| | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-668 -46 | | Color: Of | f white | | 0.070 VOITHIOUMO | | HONE BETEGTED |
| Analyzed By: | Ivan Reyes | | | | | | |
| 108 | 3RD FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 7% Cellulose | 91% Mineral Filler | | |
| 21-668 -47 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Of | f white | | | | |
| - analyzed by. | Train Noyoo | | | | | | |

Report Prepared By: Grace Chan Page 5 of 8 Batch # 21-668



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| | | | | <u>Non-</u> | -Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|--------------|------------------------------------|-------------------------------|----------|--------------------------------|---------------------|------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 109 | 3RD FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -48 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Payas | Color: Wh | iite | | | | |
| | 3RD FLOOR OFFICE SPACE | JOINT COMPOUND | DIM | T0/ O-11 I | 4000/ Mi I Fill | | |
| 110 | SRD FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -49 | | Oalam Wh | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Wh | lite | | | | |
| 111 | 3RD FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -50 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Wh | iite | | | | |
| Analyzed By: | <u> </u> | | | | | | |
| 112 | 3RD FLOOR OFFICE SPACE ON BEAMS | SPRAYED ON FIRE PROOFINGS | PLM | 18% Cellulose 2% FiberGlass | 80% Mineral Filler | | |
| 21-668 -51 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Ligi | ht Green | | | | |
| 113 | 3RD FLOOR OFFICE SPACE | SPRAYED ON FIRE | PLM | 15% Cellulose | 83% Mineral Filler | | |
| | ON BEAMS | PROOFINGS | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-668 -52 | | Color: Ligi | ht Green | | 0.070 Verrindand | | NONE BETEOTES |
| Analyzed By: | Ivan Reyes | 2010.1. <u>Lig</u> i | 0.00 | | | | |
| 114 | 3RD FLOOR OFFICE SPACE ON BEAMS | SPRAYED ON FIRE PROOFINGS | PLM | 18% Cellulose | 80% Mineral Filler | | |
| 21-668 -53 | ON BEAWO | 110011100 | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Lig | ht Green | | | | |
| Analyzed By: | <u> </u> | | | | | | |
| 115 | 3RD FLOOR OFFICE SPACE ON BEAMS | SPRAYED ON FIRE PROOFINGS | PLM | 20% Cellulose 2% FiberGlass | 78% Mineral Filler | | |
| 21-668 -54 | | | | 270 1 1501 31403 | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Ligi | ht Green | | | | |
| 116 | 3RD FLOOR OFFICE SPACE | SPRAYED ON FIRE | PLM | 15% Cellulose | 83% Mineral Filler | | |
| 21-668 -55 | | PROOFINGS | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-000 -55 | | Color: Ligi | ht Green | | | | |
| Analyzed By: | Ivan Reyes | _ | | | | | |
| 117 | 3RD FLOOR STAIRCASE EAST | GYPSUM BOARD PAPER CEILING | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -56 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Povos | Color: Bro | own | | | | |
| | 3RD FLOOR STAIRCASE | GYPSUM BOARD PAPER | DIM | 000/ Callulana | 10% Mineral Filler | | |
| 118 | EAST EAST | CEILING | PLM | 90% Cellulose | | | |
| 21-668 -57 | | - Andrews | | | 0.0% Vermiculite | | NONE DETECTED |
| A | Ivan Reyes | Color: Bro | OWN | | | | |

Report Prepared By: Grace Chan Page 6 of 8 Batch # 21-668



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| | | | | <u>Non-</u> | - <u>Asbestos</u> | <u>NOB</u> | <u>Asbestos</u> |
|--------------|---|-------------------------------|--------|-------------------------------|---------------------|------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 119 | 3RD FLOOR STAIRCASE WEST | GYPSUM BOARD PAPER CEILING | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-668 -58 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Bro | wn | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 120 | 3RD FLOOR STAIRCASE EAST | GYPSUM BOARD CEILING | PLM | 4% Cellulose 2% FiberGlass | 94% Mineral Filler | | |
| 21-668 -59 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Off | White | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 121 | 3RD FLOOR STAIRCASE EAST | GYPSUM BOARD CEILING | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-668 -60 | LAGI | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Off | White | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 122 | 3RD FLOOR STAIRCASE WEST | GYPSUM BOARD CEILING | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-668 -61 | *************************************** | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Off | White | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 123 | 3RD FLOOR STAIRCASE EAST | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -62 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Whi | te | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 124 | 3RD FLOOR STAIRCASE EAST | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -63 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Whi | te | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 125 | 3RD FLOOR STAIRCASE WEST | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-668 -64 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Whi | te | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |

Report Prepared By: Grace Chan Page 7 of 8 Batch # 21-668



Roman Peysakhov

Analyst:

ATC Group Services LLC

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Non-Asbestos NOB Asbestos

| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
|----------------|--------------------------------|---|--------------------------|---------------------------|-------------------------------------|----------------------------|-----------------------|
| IOTES: | | | | | | | |
| 1) The Limit | of Detection is the same | as the Reporting Limit for these results. | | | | | |
| 2) The Repo | orting Limit (RL) is the Limi | t of Quantitation. For point counts the li | mit of quantitation of | 0.25%; based on one as | sbestos point counter over 400 non- | empty points. | |
| 3) Asbestos | Containing Material (ACM |) Definition: > 1% asbestos by weight is | s considered an ACM | 1 | | | |
| report may | | sponsible for sample collection. Please ct endorsement by NVLAP or any other request. | | | | | |
| 5) Accredite | ed by NVLAP #101187-0 a | nd by NY State ELAP #10879 | | | | | |
| 1 ' | • | nt(s) contained herein are confidential ar | | | • | | |
| 7) Liability N | Notice: ATC Group Service | s and its personnel shall not be liable fo | r any misinformation | provided to us by the cli | ent regarding these samples. This r | eport relates only to samp | les submitted and ana |
| 8) Asbestos | results are reliable to 2 sig | gnificant figures. | | | | | |
| 9) The cond | lition of all samples was ac | ceptable upon receipt. | | | | | |
| 10) The lab | oratory certifies that the tes | st results meet all requirements of NELA | C. | | | | |
| 11) Suppler | nent to test report batch # _ | Amendments: A | mendment Dates: _ | Amended by: | | | |
| 12) PLM Le | tter is attached on this repo | ort. | | | | | |
| 13) TRACE | : The result is reported as | Trace when No points are counted and a | asbestos is identified | . For ELAP Trace is < 19 | %. | | |
| 14) ATC Gr | oup Services certifies that | this report is an accurate and authentic | report of the results of | obtained from the laborat | ory analysis | | |
| 15) The unc | ertainty for these test resul | lts is available upon request. | | | | | |
| | | .1 for the analysis of samples containing ulite and may underestimate the level of | | | | nethods ELAP 198.1 follow | ed by ELAP 198.6. |
| van Reye | · | | | | Mei War | ng Meih | |
| | | in lique | _ | | | 5 VV | <u> </u> |
| Analyst: | 3 | \fi ' | | | Approved | . by | |

Quality Manager:

Page 8 of 8 Batch # 21-668 Report Prepared By: Grace Chan



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP1 using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained Trace or No PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any guestions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiley Bourson

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS_BULK DOCUMENTS 2021\BULK_LETTER_DOC_#DB4A.DOC ATC EFFECTIVE DATE 01/18/2021 REVISION #32

Page 1 of 1



| 1 16 | | |
|------|--------|-----------|
| Page | _of | |
| | Page _ | Page of 4 |

| 1. Clien | PAN | VИJ | Project Na FIRESPRII 2a. Project A | NKLER REF Odress: (Circ | Partie Print Partie 2 | TION | 3a. ATC Project No. 214PNPI 3b. Task No.: 0001 | | 4b. Inspec | t Manager: R. Rivero tor: LIP CARRIN | S - 5 - |
|----------|-----------------------------------|------------------------|--|----------------------------|--------------------------|--------------|---|------------------------|------------|--|---|
| 5. Date: | | Sampling Areas | (07) | | | 24 HR | ne: S o 72 HRS o OTH RS o NORMAL RU | | NOB→ T | ent s (Field) EM I st Positive | |
| | AMPLE 11. Bulk Sampl No. | E LOCATION e ID 12. | Material | | 13, Thermal System | 14. Floor | Sample L Sample | ocation Coordinates | | 15. Material Total Qty. (LF, SF, PCS) | 16. Asbestos Content (Type & % |
| w | 67 | 242' | FELLING | PU | | 1 | | PUN M | | 10 10 1100 | (Tipe a A |
| 20 | 66 | 7 17 | 1 I | | | | 1, | | | | - |
| 11 | 65 | / | DUCT 1 | USOP | 10 | | Luxua | 12001 | | | |
| 11 | 66 | 1 2 12 | | 12 | | | 1: | | | | |
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| 22 | 68 | Chu | HORPA | 72. | | | frite The | 5100 |) c | - | |
| 71 | 70 | | 11 | | | | CAMPERICAL COL | SHOW | 2 | | |
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| | F CUST | | 18. Date | 19. Time | 20.5 | eceive | ad Bu | 21 Date | 22. Tin | | Method ubmittal |
| P | lity | O. C. | 4/15/4 | 11309 | | | la Ely | 4/15/200 | | Field | k In Mail |
| II. | | NFORMATION | | | | | | | | Othe | |

ATC -AN ALLAS CONSANY

BATCH NO. 21-668 Page 2

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Client PAN | LINY | Project Name: FIRESPRINKLE | R REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
|---------------|---|-------------------------------|--------------------------|--|--|
| | | 2a. Project Address | s: (Circle One) PE PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 11.0121 | BUILDING N Sampling Ar | 261 | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1" Positive |

| Homogenous | Bulk Sample ID | 12. Material | 13, Thermal | 14. | | Sample | Location | Material Total | |
|------------|----------------|------------------|----------------|-------|-----|--------|----------------|-----------------------|----------------------|
| Area No. | No. | | System | Floor | | Sampl | le Coordinates | Qty. (LF, SF, PCS) | Content (Type & % |
| 16 | 80 | JOINT COMPOUND | D | 2 | Off | LE | SPACE | | |
| 26 | 81 | " | | 1 | 6 | 1 | | | |
| 24 | 82 | h | | | | | | | |
| 27 | 63 | HUAZ DUCT | | | | | | | |
| 27 | 84 | 1214,0000 | | | | | | | |
| 27 | 55 | COURT | | | | | | | |
| 28 | 86 | SPANYED ON | | Y | | | | | |
| 28 | 87. | FINE APROPLIAGE. | | | | | | | |
| 28 | 88 | | | | | | | | |
| 28 | 89 | 71 | | | | | | | |
| 28 | 90 | // | | - | | | | | |
| 29 | 91 | #1124 SIDP | | | | 0 | DECK LEV | Er (| |
| 29 | 92 | SEALANT | | | | | 4 | | |
| 29 | 93 | 保存の | | | | , | 1+ | | |
| 30 | 94 | 2×2' carring pis | | | 8 | 50 | opt sink | | |
| 30 | 95 | TYPEII | | | | | 11 | | |
| 130 | 96 | II. | | 1 | _ | | b | | |
| 31 | 97 | 242 CEICOG DE | | 3 | 0 | Wic | & SDAVE | | |

| 17. Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
|---------------------|------------|----------|-----------------|------------|----------|----------------------------|
| Dr lock | 11:10. | 1.5 | -110 Q at | 4/15/202 | - | Field |
| Theles | 4152 | 1,30pm | Eleler Ely | 1 4/11/201 | 13:35 | Walk In |
| | The second | 200 | l V | | | US Mail |
| I. | | | 350 | | | Fed-Ex |
| II. | | | | | | Other |

| 24a. Analyzed By: Lin Nors. Frankeyes Jan 1918 221 2:37 Ar 24b. Analyzed By: Lin Nors. Frankeyes Jan 24c. QC By: | 24. Name and Signature: | 110 | 25. Date | 26 Time | 27. Comments (Lab) |
|---|---------------------------------|--------------|------------|----------|--------------------|
| 1 | 24a. Analyzed By: Juan Keurch | alder. | 14/15/2021 | 2:37 W | |
| 24c, QC By: | 24b. Analyzed By: Lin NOB Trank | eucs Durally | - dichinz | 7:42 aux | |
| | 24c. QC By: | | 114. | 1 | |



24c. QC By:

| | | 7 7 1 |
|----------|----------|-------------|
| ATCH NO. | 01-10/08 | Page 5 of 4 |
| | 11.00 | |

PREC 4/16/28 10:20

| 1. Clier | PANYN | LI | Project Nar FIRESPRII | ne: NKLER REH | ABILITA | TION | | Project No 214PNPI | | 4a. Proje | ct Manager: R. Rivero |) |
|--|----------------|-----------------------------|--------------------------|------------------|--|---------|----------|-----------------------|---------------|-----------|--------------------------------------|----------------------|
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Metrods: E1'A Inserim Method of the Determination of Astesios in Bulk Insolution Samples: 46 CSR Appendix E is Subpart E of Part 783 EPA 800X-89116 ELAP herris 190.1 196.4, 198.6, 198.6

Note #1: ELAP requires method PLAP 195 1 for the analysis of swingles corresing 230% vermouting, with the exception of surfacing material that correlates vermiositie (SM V). For samples containing >10% vermiositin PLAP requires methods ELAP 156.1 (blowed by ELAP 189.6. This method has similations for scientification and quaryfix-glim of vermiositin. This treated does not remove vermiositis and may unnerselliptely (by level of salestos present in a sample containing greater than 10% vermiositin. Note 6%: ELAP requires method 198.5 for the arrayes of surfacing material containing verminating (SM-V), and if offices a 400 point count method.

LEVAD, PORMS, DOCUMENTS AND RECORDS/OPTICAL/ASRESTIVE_RULK/ASRESTIVE_COUNT OVER 200 PLOSCOT REVISION #33 BY MET WANG FORM #80

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| BULK ASBESTOS A | MAI VSIS SHEET |
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| DATE LAGRED LAG L | ment of the |

| *************************************** | Client / Project PANYNJ Analysis Date 4 / 5 / 2 | | NKLER RE | НАВ | M | | | Project Batch N | Number 214PN Jumber 21- | 668 | NIKON OPTIPH |
|---|--|---------------|--------------|-----------|-------------|--------------------|--------------|--------------------|----------------------------|---|--|
| 1 66 Field Number | Stereoscopic Exam | | | PLM O | ptical Pr | operties | 3 | - 8 | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required ☐ Recommended ☐ | # mill awers J. Ashesins | Morph Extin | clion FU1 | RII D | S Colur Cui | ov.Pleo Bi | ref Sign Oi | her Identity | Crinyottie Aprositie Other | Cellulose Fiberglass Other | 2-O Mineral Filler Organic Birid Vermiculte* |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | ☐ Cellulose Ondulose Extinction | Oiher |
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| Required □ | NOB PLM NOB PLM | | - | | | | 0 | 200 | 0 | Synthetic High Buretringence LI Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% to level of asbestos in a sam might be underestimated. |
| analysis sheet for results | Comments; | | | | <u> </u> | | | | | Birefringence | See Nove #1 |
| - 2550002400 - | Method; ☐ ELAP ☐ EPA | SCANNING | OPTION | | Q. | c . 🗆 | | | | | |
| 2 67 Field Number | Stereoscopic Exam | | | | ptical Pr | | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | COO REA SI YELLINE | Morph Extin | nction RLL | BIT D | S Color Col | ur, Pleu B | rel Sign Of | her identity | Chrysotto | 71 Cellulose | 20 Mineral Filter |
| Required Recommended | Notes and the second of the se | 4== | == | | | | | | Apricate Other | Fiberglass | Organic Bind Vermiculite* |
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| Required 🗆 | 100 | | | | | | 0 | 200 | 0 | ☐ Synthetic High Biretringence ☐ Horse Hair: Sculus | * if vermiculite is >10% to level of asbestos in a sam |
| Sec SM-V [] analysis sheet | NOB PLM Comments: | | | - | | | | | 4 | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Method: DELAP L EPA | SCANNING | OPTION | | lo. | c. 🗆 | | | | , constructives | |
| 3 68 | T En the | 1 | 70. 10000 | 10//6/12 | | | | | Asbestos | Other Fibrous | Non Fibrous |
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| Required 🗆 | HomogeneityVermiculte | 1 | | | | | | | Amgelle | Fiberglass | Organic Bind |
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| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | / | ☐ Celluluse Ondulose Extinction | Olher |
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| Required [| 1 | | | | | | 0 | 201 | Ō | ☐ Synthetic High Birethingence ☐ Horse Hair: Scales, | " If vermiculitie is >50%, the level of asbestos in a sam might be underestimated. |
| See SM-V [] analysis sheet | NOB PLM Comments; | | | 1 | | | | | | Low to Moderate Birefringence | See Note #1. |
| tor results | Method: GELAP () EPA | SCANNING | OPTION | | Q. | c, 🗆 | | | | | |
| 4 69 Field Number | Stereoscopic Exam | I | | PLM O | ptical Pr | | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Gravimetric | cold Meny rexours U | Morph Extin | otion RII | Rill D | S Celor Cal | or, Pico Bi | iref Sign Df | har Identity | Chrysplie | Cellulose | LOO Mineral Filter |
| Required (| Homogeneity Vermiculte | /- | | | | | | | Amesita | Fiberglass | Organic Bind |
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| Sec gravimetric [] | # of Layers Asteslos | /== | | | | | | | / | | Other |
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| Kegured 🗆 | 1 | | _ | | | | 0 | 200 | 0 | ☐ Synthetic High Birchingence ☐ Home Hair: Scales, | * if vermicultie is >10% tv level of asbestos in a sam might be underestimated |
| Scc SM-V □ | NOB PLM | 1 | | 1 | | | | | | Low to Moderate | See Note #1. |

PACTION Method of the Determination of Asbestos in Bulk Institution Samples - 40 CFR Appendix E to Subpert E of Part 763 EPA 600/R-93/115 ELAP items 198.1, 198.4, 198.6, 198.8

Method: | ELAP | EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermicultie, with the exception of surfacing material that contains vermicultie (SM-V). For samples containing \$10% vermicultie ELAP requires methods ELAP 188.1 followed by ELAP 198.6. This method has britations for identification or varieties. This method does not renove vernicultie and may underestimate the level of associates present in a sample containing greater than 10% vermicultie."

Note #2: ELAP requires method 198.8 for the enalysis of surfacing methods containing vermicultie (SM-V) and it utilizes a 400 point count method.

LIVAS FORMS DOCUMENTS AND RECORDS/OPTICAL/MSUESTOS BULK/VSBESTOS BULK/FORMS 2007/BULK ASBESTOS ANALYSIS SHEET, FORM #82 due ATC EPFECTIVE DATE 01/18/00/18/EPISCON #33 BY MET WANG FORM #82.

Q.C.

MeMod: ØELAP □ EPA

ATC - New York 104 East 25th Street, 8th FL, Now York, NY 30010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

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BULK ASBESTOS ANALYSIS SHEET

<u>Acizeškatkons:</u> NVLAP 101187-u

| | Client / Project PANYN!/ | FIRESPRINKLER REF | 1AB | | Project | Number 214PN | IPEPJ1 | MKON OPTIPIOT |
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| D berixpeΩ | } } Homogenery '⊷'n Vermodikte | <u> </u> | | | — — | Arrentie | Fiberglass | Crigaric Aindre |
| Resignmended I _a | # of Layers Asbestos | | | | | 9ther . | Olher | 🔾 Vermiculitar |
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| ereryska plaser Socresolls | Cumments: | <u> </u> | | • | | | Blickingence | |
| | Method: YIELAP : EPA | I ^V I SCANNING OPTION | Q. | Ç. 🗆 | | | | |
| 2 75 | Stereoscopic Exam | Ī | PLM Optical Pr | operties | : | Asbestos | Other Fibrous | Non Fibrous |
| Field thanhar | } _ [> | Morph Duncasn RIS | RIE DS Calor Sels | - | lter Ineológ | Results PLM % / | PLM:% | PLM % |
| Gravimetric | Copy NO Meane 12 | - | | | | elilbeyrdO | Cellulose | Mineral Fider |
| Required () Recognized () | Homogenety, 🖳 Vermiculte s | <u>/[==:::::::::::::::::::::::::::::::::::</u> | | | | Applicate | Մնացնեն | <u> </u> |
| See gravimatric | ≠of Layers | <u> </u> | · · · · · · · · · · · · · · · · · · · | | | Cither | (IIthrs: | Vərmiculle' Orars |
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| ₹eգոնթό ∐ | قري / Homageneity | <u> </u> | | | | | Fiberglass | Osgano, Sigser |
| Кесоттепсес 🗆 | į į | <u> </u> | | · | | Coner | Otine: | () Vermeculler |
| See gravimatric () (analysis sheet | Mortusyons (J. Aubestos | 1=== | | | | | | Olive |
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| Sen SMFV () | KODPLM () | | | | | | ∴ Herse Hair: Seales, Lime in MoSep ile | might be underest-mated See Note #1. |
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| eralysis shasi | (Comments; | / | | | | | ì | |

Mellinos. EPA Interim Mexical of the Determination of Asbestos in Bulk insitation Samples - 40 CAR Appearity E to Subpart E of Pan 703 FPA R02/8-03/115 FLAF 96ms 196 1, 198 4, 198 6, 199 8

Method: ⟨Z ELAP | □ ≤PA

FSCANNING OPTION

Note #1: HLAP requires mathed ELAP 198.1 for the analysis of selected containing \$10% verificable, with the execution of surfacing material that contains information (SM V). For samples containing #10% verificable and may underestimate the level of asthesios besent in a samule containing greater than 10% verificable. This method less for sense commodific and may underestimate level of asthesios besent in a samule containing greater than 10% verificable."

Pode #2: ELAP requires method 166 8 for the analysis of surfacing material containing normations (WHAM) and bullions of 400 point (such effect).

LIVAU_POMIS_DOCUMENTS_MD_RECORDS_OFTIGALMS_BESTOS_BULKASAFFSTOS_HITE ELAPTIONS_OR (EVISION #25 BY ME) WAVE TO AM #U2

Q.C. 🗇

BULK ASBESTOS ANALYSIS SHEET Cilent / Project PANYNJ/ FIRESPRINKLER REHAB Project Number ___214PNPEP.I1 Analysis Date 4 / 5 /2021 21-668

70 Asbestos Other Fibrous Non Elbrous Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % Ri JS Calor Celar, Flea Moster Filter Gaviatetri Geltulase Required Organic Sinder kecommended. Other Versioning Sec gravimetric anaysis sheet for poodle T Cellulose Onda Extinction Slice 7 | Slide B | Astr./Ver. [1] | Total PT Slide 6 SM-V 58de 2 Side 3 Slide 5 %Asb. Or %Ver. Synthetic High m 1200 If verra cubte is > 10% the Hequired (ние" of asbesida in a sample l lawe thin Scales, See SM-V I Low to Moderate Biretringence Sec Nels #1. andyss sheet for results

[Q.C. 🖫

Asbostos Other Filtrous Non Fibrous 71 Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM W. Gravimetrá Required Organic Binders O_Vernicalite* Recoinmended 🗆 ... Other See gravmettic Cliner aralysis abeet 1 Cellulase Caric Porti Counts | Slips 1 | Side 2 Slide 4 Slice 5 Slide 6 SM-V If venticality is >10% the Required [evel of asbestos in a sampte новациЮ) Plorse Miln: Scales, **⊘** |}∞ might be upderestimated. See Noto≢1, \circ See SM-V I Lue to Moderate Biogloppeope analysis sheet for results Q.C. 🗇 Methon: MELAP 🖸 EPA Ç≻SCANNING OPTION

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| | MRZNIMI: ZELAP LI EPA "Ó | SCANNING OPTION Q.C. | | | |

594 interm Method or the Determinaver, of Assestos in Bulk insufation Samples - 40 CFR Aspestos in Bulk insufation Samples - 40 CFR Asperdix E to Subject E of Part 765 EPA 600/R-93/115 ELAP Items 196.1, 196.4, 196.6, 196.6 Note #1: ELAP requires method ELAP 188 1 for the analysis of samples consisting #10% vermiculite, with the exception of surfacing material that contains verniculite (SM-V). For samples containing #10% commodification for production of the material surface and may unconstitute of the five realised does not remove vermiculate and may unconstitute in the five of sathestice present in a sample containing greater than 10% commodifie. The realised does not remove vermiculate and may unconstitute for a sathestic present in a sample containing greater than 10% commodified.

Note #2: REAP requires without 10% for the enalysis of surfacing material containing commodified (SM-V) and it offices a 400 point count method.

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| | | Рһоле | et (212) 3 | 353-8280 | , Fax: (21 | 12} 353-3 | 3599 or 830 |)6 | | | FI AV 10 |
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| See SM-V ∐i | NOBL/W | 1 | ! | 1 | | ! | Ι . | <u>i</u> | | Low to Moderate | migni be underestimated. |

53 A Internet Method of the Determination of Arbeida in Bulk Insulation Semples 40 CFR Aspendix Eto Suglan Etol Part 763 EPA 203/R-33/116 ELAP herris 198.1, 198.4, 198.6, 198.8

Method: ÆELAP ☐ EPA

É SCANNING OPTION

analysis sheet far results

Note #1: ELAP requires method ELAP 198. I for the analysis of samples containing 510%, variety the exception of surfacing material first contains vermicultic (SRAP). For samples containing 510% vermicultie ELAP requires methods eLLAP 583 f retriave by FLAP 108 6. This method like finishing is for identification of vermicultie. "This method does not remove verefaultic and may underestimate the circled actics present in a sample containing greater than 10% vermiculte."

Note #2: FLAP requires method 108,8 for the energy is of surfacing method actions greater than 108,8 for the energy is of surfacing method in the circled actions and trades a 400 point count method.

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See Note **∜**1.

BULK ASBESTOS ANALYSIS SHEET

Caent / Project | PANYNJ / FIRESPRINKLER REHAB 214PNPEPJ1 Project Number Analysis Date 4/15/2021 Analysi 21-668

Other Fibrous 78 Non Fibrous Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % PC) DS Color Color, Plea Biret Cravimetra Célulose Mineral Fitter (Arganic , Vecalculile" See gravimetrici analysis sheet Patingson Point Counts Slide 2 Slide 6 ⊈¥ibemiass isotoule SM V J Synthetic High тецьк SvermichHe is >10% dbe *`*}\\\ Required Bireffindence evel of asbestas in a sample 1 Books Hair: States, might be undereshmaled NOB FLM See SM V D Low to Moderate Bitelfängehee فحجاء ونساحه for results Methods () ELAP () EPA LI SCANNING OPYION Q.C. []

Other Fibrous 79 Asimetra Non Fibrous PLM Optical Properties Results PLM 5 PLM % grammanananan Ansur Talandina Crevimein Material Filter: Organic Binae O Vermiculite analysis sheet đ Čelfuluse Ondi for results Slide 2 Glide 3 Slide 4 Sixto 5 Saide 6 Shoor Sude 8 | Ast Jver, P1 | Total P7 %Asb. Or %Ver. J Fiberglass isotopio Sam@sedic High Myarmiades is v10%, due $L \odot t$ Respiced Birelátyjutca evel of astestos in a sample NOB P: M l Home Her; Scales might be underesomated isce S&AV 🗆 See Note #1. Birefringence Andysia stead for mourls. [Q.C. IT] Method: ☑ ELAP □ EPA D SCANNING OPTION

Non Fibrous Asbestos Other Fibrous 80 Stereoscopic Exam PLM Optical Properties Results PLM 9 PEM % PEM % (U) Menerak Filsen Gravimeln Chrys Organic Sindar Astaticials, аллуэк кізві Delected Yes Ar pesque Side 4 Silce 5 | Slide 6 | Slide 7 | Slide 8 | Aeb. Ver. PT; Total PT Sinte 2 Sode 3 SMIV Required 🗆 Bereinngense i-sel of edwolosio a sample might be underosterated i Helse Heir! Beaks, NOB PLM Sec SMAN Low to Moderate teelle siegen Direffingence Comments Su гези**к**а [Q.C. ?] Method: 선 ELAP 🗆 EPA ☑ SCANNING OPTION

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Methods: EPA Interior Mellipsi of the Determination of Assesses in Bulk Insulation Complete - 40 CFR Appendix E to Suspan E of Pag 753 FPA (SIGN-3341)6 Ft AP homs 198 1, 198 4, 198 0, 198 8

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BULK ASSESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10519 Phone: (212) 353-8288, Fax: (212) 353-3599 or 8306

<u>Microstopes</u>; OLYMPUS 6H-2 ; NIKON OPTIPHOT

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ATC - New York

\$04 East 25th Street, 8th FL, New York, NY 10010 Phone: (2 8306

| 212) | 353-8280, | Fax: | (212) | 353-3599 | GГ | 8: |
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| 2 91 | | | • | | Aels | estos | Other Fibrous | Non Fibrous |
| Field Suppler | Stereoscopic Fxam | | PLM Optical Pr | <u> </u> | Result | s P1,Nt % | PLM % | PLM % |
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Methods EPA Interim Method of the Determination of Actorsins to Bulk Insolation Samples - 40 CSR Appendix Elia Subpare Elia Hart 7831 EPA 8004-534116 ECAP Items 109,1 309,4, 188 6, 199,8

| | Client / Project PANYNJ/ | . Project i | Number 214PN | IPEPJ1 | NIKON OPTIPHOT | | |
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SEA Interse Malhos of the Determination of Ascestos in Bulk Insulsition Samples - 40 CPR Aspertix Eth Subpert Elot Part 763 EPA 500/R-95/11/8 ELAP Itams 198.1, 198.4, 195.6, 195.6 Note #1: GLAP requires method BLAP 198 1 for the analysis of sangles containing of LCA verminable, with the exception of surfacing material that contains extractible (SM-V). For samples containing > 10% verminable BLAP rapidos mathods ELAP 198.1 (aboved by ELAP 198.8.) This method has imitations by fishellipseins and quartification of verminable. This method does not remove verminable and may understanded that key of subjects present in a sample containing production 10% verminable. Note #2: ELAP requires method 199.8 for the straights of sufficient mathod containing varminable (BLAP) and it before a 400 acid count mathem of LAALPONAR DOCUMENTS AND RECONDINAMED ALABERTOS, BLAP ONLY 1997, BLAP CHARLES AND RECONDINAMED ALABERTOS, BLAP ONLY 1997, BLAP CHARLES AND WAND SORM #92

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ATC - New York

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| ELAP 1067: |
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| | Client / Project PANYNI/ | | SBESTOS ANALTSIS SM IAR | | Number 214PN | IDED11 | OLYMPUS BI MKON OM)(1) |
|-----------------------------------|--|--|------------------------------|---------------------------|---------------------------|---|---|
| | Analysis Date 4/5/20 | | THE SAU | Froject Balch f | 31 / | 568 | 70 |
| 1 98 | A Stereoscopic Exam | | PLM Optical Properties | | Asbestos Results PLM % | Other Fibrous PLM % | Mon Pibrous |
| Field Number Gravimetric | Coke in the Cokers | Moran Exlandion R: 1 | RI 95 Coko Color, Pleo Bra | el Sign Other Identity | Chrysolike | Celuirse | Maray Hite |
| Requiren ≦ | Pamaganuity 🛂 Vakriculita | <u> </u> | | _ ···· -···· | Amosite | Hibargiass | Organic Bini |
| Recommendee Di Sanguasinahki U | d) of Layers Ashessoe | <u> </u> | | | Other | Olher | <u>V_)</u> Vermicuille* C5ner |
| analysis sheet for resucs | Color of Layer Firecies Yes No | | | · | | F: Cellustone Continione Extinguion | |
| SM-V | Polm Courts Side 1 Slide 2 | Side 3 Side 4 Side 5 | Side 5 Silde 7 Side 6 | Asb.A/er. PT, Total PT | %Asb. Or %Ver. | II. Filonyfoss lautópic | |
| Sequimo i i | ! ()! | | | | | I.) Symbolic Kiph Birefringence E Horse Harr, Scoles, | Tif ventaiculte is #10% th lavel of Sahaelos in a een |
| See SM V ⊡ enalysis shool | NOB FLM S | | | <u> </u> | <u> </u> | Low to Moderate Birefringence | règh be verkurssimæsd Gee Nole ⊅. |
| tor results | | SCANNING OPTION | a.c. D | | | | |
| Z 99 Field Number | Stereoscopic Exam | | PLM Optical Proporties | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
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| Repáind ∰ Recommended ∏ | Hornogenially 4 Venricurite | | | · · _ · | Amasile | Fineglass | Organic Sin |
| Бин доморъета: <u>У</u> | ni of Ceyera Asbestos | <u>,</u> | · · · · · — | · — — — | · Olhər | Clines | <u>C</u> Venriouite* |
| analysis sheel for results | Calor of Layer Collected Yes No | <u> </u> | | | | ∩ Cellulose Corintoxe EXSCHEN | |
| SM V | Point Counts Slide 1 Slide 2 | Silde 3 Side 4 Silde 5 | Slide 6 Skide 7 Slide 8 | Asb/Ver. PT Total PT | %Asb. Or %Ver. | : 1Fibetgäss kotopic : 1 Synthetic High | |
| Recycles III. | NOD PIM 500 | | | | | Direfringence O Horse Halm Scales. | ' If vermisulite is A 10% th Sevel of Adamston in a sen might be dedomatic word |
| See SM V □ enelysis sheet | Contracts: | | | <u> Co [] Or :</u> | 0 | Low to Moderate Bireldingence | See Note #1 |
| for results | Method: ZELAP □ EPA J | SCANNING OPTION | Q.C. 🗆 | | | | |
| 3 100 Field Number | Stereoscopic Exam | | PLM Optical Properties | | Ashestos Results PLM % | Other Fibrous PLM % | Non Fibrous |
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| Required I Ì Recoinmended ∐ | ا Historia الراح Vernisofie المراح Historia | / ============ | | | Amhyte Kither | '-∱ Fibergiess Other | Otyanic Bire Vennicuitlet |
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| aralysis street for recalls | Color of Sayer Delettled Yes No | · · · · · · · · · · · · · · · · · · · | | | / | ⊒-Gelluluse Dadakas †sjimatoon | |
| 5M-V | l | Side 3 Slide 4 Slide 5 | Sade û Silen 7 Şizle 5 | A/20/Ver, if Tolef 13 | WASD, OF WVer, | Triberglass (sortopic | |
| Reдика d 🖰 | | | | <u>O 7.93</u> | | BircMingence II Horse Heir: Sceles, | * 8 vermischte is > 10% 13 level of asbestre in a san might be miderestingted |
| Spe SM V □ Arběyša shew; | NG8 PLM Cuaninesita: | .,.ll | | | | Low to Moderate Blieffingence | See Male #1 |
| formsælls | | SCANNING OPTION | Q.C. 🗆 | | | | |
| 4 101 Ficks Number | Stereoscopic Exam | | PLM Optical Properties | | Asbestos Results PLM % | Other Filayous PLM % | Non Fibrous PLM % |
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| Sacoromended ::: | # of Layers | <u> </u> | | _ : | Other | Oniner | Vramiculès* Cliher |
| anaiysis sheet for resurs | Color of Layer Detected Yes No | p ==================================== | | | | र्य Geliulose Ondulose §स्पोत्तरांका | |
| SM V | Paint Coems Saide 1 Slide 2 | Slice 3 Slice 4 Side 5 | Stine 8 Stinte 7 State 6 | Asp/Vrc P3 Total P1 | %Asb. Or %Ver, | N Fihanglans Isotopic N Synthetic High | |
| Requiser 🗒 | 91M 0 1 1 | | | <u>O 290</u> | | Rectangence Hosse Hair: Scoles. | 1 If venniousite is 5100\$ II licked of entiresors in a car |

EPA Interim Melinod of the Determination of Assestes in Bulk Insulation Samples - 43 CFR Appendix C to Subpart C of Part 763 SPA 300/R-93/116

SIAP beins 198 1 190.4 196.6, 198.8

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enalysis sheet

for results

NOB PLM

Method: □/ÉLAP □ EPA

É SCANNING OPTION

Comments:

Note #1: CLAP requires method CLAP 199.1 for the analysis of somples containing £10% remodate, with the exception of Audiacing restricted that containing which the exception of Audiacing restricted that containing and provided (SMAV). For samples containing years for exemption of the restricted that the exception of the professional transformation of the exemption of the professional transformation of the exemption of the professional transformation of the exemption of the exem

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Clast / Project PANYNI / FIRESPRINKLER REHAB Project Number ___214PNPEPJ1 Analysis Date 4/5/2021 Analyst

Non Fibrous Asbestos 94 PLM Optical Properties Results PLM % PLM % PLM % () Menoral Filter Oraymetri: Chrysotik Cetulasa O Verniculile* Other Other že gravimetrio enelysis sheet Helatiod Yes Titaliulose (Extinction 5lide 5 Slide 6 SiMe 7 J. Benthalle Halt If vegetingste is > 10% the Binefringence Required 🖺 lev≃ ef eshesins in e sænple NOS PLM) Horo (Mjr Skyles, might be underestimated. $\mathbb{O}\left(i
ight)$ Sec SM V 5 Los to Moderate See Note #!. for manife Method: AT GLAP TI EPA F/ SCANNING OPTION Q.C. 🗀

Ashestos Other Fibrous Non Fibrous 95 Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % Cellulase , Organio Sigidei 🖒 Vernikuāle" Other . Other analysis sheet for results Slide 2 Slide 5 Side 6 | Slide 7 Slide 6 | Asb Aver, PT | Total PT %Asb. Or %Ver. Synthetic High lf verojkadije is ≥2056 (he Required E 12 W might be underestimated. Gee SM-V □ Sec Note #1 andysia sissam Q.C. 🗆 Melhod: ØELAP 🗆 EPA ☐ SCANNING OPTION

Non Fibrous 96 **PLM Optical Properties** Stereoscopic Exam Results PLM % Mineral Filer Celluloss , Picergias Organic Bioder: O Verniculter of Lavers Cellutose Ondutose for results. ≓ajnt Goupas¦ (Sixte ≥ Sade 4 State 5 Shish B. Sikle i - Sidk 8 [Ash,(Va), PS] | (9,81) P. NASH, Or SVer, SMIV Synthetic High l! vermiozite is #10% the Bireiringence - Кершес 🗀 level u[extentora ig a sagrad Huise Heir: Sceles, Q 1200 NCO PLME See SM-V 9 Low to Modurate See Note ≢1. Birefringesce anatysis slieet log zeeglar Q.C. 🗆 Melhoul: [ZELAP | EPA SCANNING OPTION

| Storo | oscopic C | хачт | | | | | • | - | es | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLW % |
|-----------|---|---|---|--|--|--|--|--|--|---|--|--|--|---|
| | ۹. | - | Marzn | Edinesian | | H· : | US Color | Calor, Picc | Eirch | 819n C | other aderatly | | 1 | Maneral Filter |
| | ¨] | | <u> </u> | | | | | | | · · · · · - | | Cdirei | Olher | |
| | punananana | processors and the | | | | | | | | . — - | | | O Sellulose Ondollose Extinction | |
| 151 | | Slide 2 | State 3 | Slide 4 | Stine 5 | Slide | s ? Sija | a / § Shefr | в В | se (Ver H | 1 1mal 41 | %Asb. Or %Ver. | a Synthetic High Elipstringspose | Tif venr∮onēte is > 10%, the low⊴ of eabsoloviole semplo |
| Comments: | 1-[3/ | | | i | <u> </u> | | - | 1 | | 0 | <u> 200</u> | | □ Harse Hair: Scales, Law to Moderate Demiphygnace | might be underestimered See Note #1. |
| | Colle A. Homogenelly . # of Layers Color of Layer, Poset Courtle NOD PLM Compromes: | Color of Layer Courts Side 1 Post Courts Side 1 WOD PLAI Companyments: | # of Leyers Addresses Color of Layer DescribedYes & Post Counts Side 1 Side 2 | Color of Layer Plant State 1 State 2 State 3 NO PLAT Compress: | Color A Texture Maron Edinoson Homogenetty Vermiculta # of Leyers Addresses Color of Layer Brearted Ves No Post Counts State 1 State 2 State 3 State 4 91 M NOR PLM Compress: | Color of Layer Distorted Yes No Post Courts Side 1 Side 2 Side 3 Side 4 Side 5 Post Courts Side 1 Side 2 Side 3 Side 4 Side 5 Compress: | College A Texture Maron Edinosin Ri : H : Homegenelly Vermiculta Activers Activers Color of Layer Distorted Ves No Post Courts State 1 State 2 State 3 State 4 State 5 State 6 NSD PLM Compress: | Color of Layer Mercy Lodineson Ri : Ri : US Coor Homogenelly Vermiculia Adiestos Adiestos Editores Adiestos Adiestos Sinda 2 Sinda 3 Sinda 4 Sinda 5 Sinda 6 Sinda 6 Sinda 7 NOD PLM NOD PLM Comments: | Color of Layer Description Sinte 1 Sinte 2 Sinte 3 Sinte 4 Sinte 5 Sinte 6 Sinte 7 Sinte 6 Sinte 7 Sinte 8 Sinte 9 Sinte | Color of Layer Detected Ves No Four Courts State 1 State 2 State 4 State 5 State 6 State 7 State 8 A Maryon Extension Rich State 1 State 2 State 4 State 5 State 6 State 7 State 8 A Maryon Extension Rich | Homogenelly Vermiculta Fortitions State 1 State 2 State 3 State 4 State 5 State 6 State 6 State 8 Ase ///or Homogenelly NOD PLM Colongeria: | Homogenelly Vermiculta Fost Courtle State 1 State 2 State 3 State 4 State 6 State 6 State 6 Ass //or F1 3real 41 NOD PLM NOD PLM Colongarius: | Storooscopic Exam PLIN Optical Properties Results PLM % College A 1 Texture Margon Extinesian Ri | Storooscopic Exam PLM Optical Properties Results PLM % PLM % Color of Layer |

Methods. EPA Interim Method of the Determination of Asbasias in Birk insulastin Samples - 40 CFR Apprecix Fire Support Fiot Pag 783 HPA BODYE-939516 ELAP firms 108,1, 398,4, 498,6, 398,8

Note #1: ECAP requires method ELAP 1991 for the analysis of semples containing \$10% vermicultin, with the exception of surfacing present that contains graying the (SMAV). For samples containing >10% vermicultin SCAP requires methods ELAP 199.1 totowed by ELAP 199.0 first method has trutations for identification and nuanification. of vernitorite. This method does not remove vernitorite and may underestinate the level of asbestos present at a compte containing greater than 10% vernitorite.

Note #2: ELAF requires method 199,6 for the energials of surfacing methods containing vernitorite (SM-V) and it unlices a 400 point count method.

Light Crivis (SACA, WEDGE 9NURG CONDARAMOET CALAMOET CONDARAMOET SIZE DELICITIES DUE TO THE METHOD AND LYSIS SIZET FORM ABILITY.

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Comments

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See Note#1

Birdringence

Lue to Moderate Birefringence

l finae Hair: Scales,

At C

ATC - New York

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| NVLAT 10 | |
|----------|-------|
| CLAP | 10079 |

| NVLA7 101 | |
|-----------|-------|
| CUMP | 10079 |

BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ / FIRESPRINKLER REHAB Project | : Number214PN | JPEPJ1 | MKON CETIPHOT |
|--|--|---------------------------|--|---|
| | 4.1112024 | Number 21 | 668 | EMPERATURE TO Sol |
| 106 | Stereoscopic Exam PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Grevimetác Regured □ Reconicended □ | Margh Extractice Rt.; Rt.1 75 Cake Calor, Piece Sign Other sentity rlomogenety - Verniculte | Chrystole | Cellulose Fiberysass Other | Moeral Filer Organic Binder Vermicuber |
| ice grzymeato [2] epelysik sheet for sesulla SM-V | Copyrof Layer Celebrad Yes No | %Asb. Or %Ver. | ඒ College Ondulose Extraction ඒ f themplace tentopic | Other |
| Required Cl See SMA/ () analysis sheet for results | PLM CO 200. Societal Comments: Menthod: CEAP LEFPA ESCANNING OFFICE Q.C. | 0 | □ Synthetic High Amfingence □ Horse Huir, Beahas Low to Mederate Birstringesse | " Il verrecuble is >10% foc lavet of asbestos in a sample pright be uncorestimated. See Note #1. |
| | The state of the Dominion of the state of th | | <u>. </u> | |
| 107 ield Number | Styrepacopic Exam PLM Optical Proporties Name Educise Rt 311 05 Cubs Optic Peo Suc 300 Union Sentition | Asbestos Results PLM % | Other Fibrous PEM % | Non Fibrores PLM % |
| Gravimetác | Coly Marph Educion RJ 814 05 Culo, Pier Sign Unior Senting | Cree/scole | Cellulose | Mineral Filter |
| Required [] | Honogenety Verniculte | Amoste | Fiberglass | Crganic Binder Crganic Binder Vermiculater |
| šeo gravimetna 🖸 Spēļyšis aliest | # nd Layers Asbesins | 7.00 | Certolose Ondulose | Cthiai |
| for vosatile (SMI-V) | Point Courtis Steps 1 Sade 2 State 5 State 4 State 5 State 6 State 6 Ass./Ver. P15 Total P1 | %Asb. Or Weer. | | |
| Required [] | PLM 0 7.00 | | (7) Synthetic (Agb Partifingence | :" Il vermicuile is > 10% the Hevel of asbestos in a sample |
| See SM-V i I analysis sheet | NOS PLM Currents: | | El Horse Heir: Beeles. Low to Moderate Birefringesce | iright be uncerestmated. See Note 81. |
| for results | Method: ELAP 1: EPA / SCANNING OPTION Q.C. | | | |
| 108 Kil Hariber | Starepscopic Exam / PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrosa PLM % |
| Crewmedc Required □ | Column Co | Chrysnale | Cellilose | Mineral Filter (Argunic Henson |
| Recommended [] Recommended [] | Homogenety Vermonite / | One | | Vernicutte* |
| analysis sheel for results | Calar of: ayer Delected Yes No | | 57 Cemusore Codolose Egiloción | Cihei |
| SM-V Received FT | Foin Counts Side 1 Side 2 Slice 3 Slice 4 Side 5 Side 6 Side 7 Slide 8 Ast /Ver. PT Total PT | %Asb. Or %Ver. | y/Fibergloss Isotopie I.I. Synthesic High Birelringenne [] Horse Hart Scales, | ឺ If vemiculate is ការទេស) » Jevel of asbestos in a sample might be uncerestimated |
| See SM-V [] anzlysis sheet (or results | Doction of the Community of the Communit | <u></u> | Low to Moderate Binefringence | See Hole 61. |
| | Michigan P. Econ 11 Era 1) Schrifting Ortifolis (25. C) | | <u> </u> | |
| 109 24 Nanifez | Stereoscopic Exam PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Grassmosoc Reguland I J | Colyn Al (172 destruer Colon C | Cityspile | Caliulase Fiberglass | <u> </u> |
| Recommended 🗆 | # of Layors Asbestos | Other | | Venniouite |
| is sealts alse aralysis alset for easily aralysis | Color of Layer Colored Yes No | | [[-] OcSulesa Ondialase Extraction | nedPO |
| SM-V | Point Counts State 1 State 2 State 3 State 4 State 5 State 5 State 7 State 8 Asa (Mor. P7) Total PT | %Asb. Or %Ver. | ៉ា Fibergiass is atopic | |
| Required 🗆 | | 0 | 2 Syndactic High Electrifyones | * If vermicable is >10% tho level at aspessos in a sampli |
| See SM-V : I | мления | 1 | □ Horse Heet Stales, Low to Moderate | might be underestmaxed |

EPA Interve Method at the Determination at Aspectors in Burkersulation Samples - 40 CFR
Appropriate to Subpart E of Part 763 EPA 600/R-93/116 ELA7 Items 198.1, 198.4, 198.6, 198.8

Mathody (; E1AP | L.J. &PA

2) SCANNING OPTION

Note M1: ELAP requires method CLAP 190.1 for the analysis of samples containing show varietinities, with the exception of surfacing materia; that contains communic (SMA). For samples containing v10% verificially ELAP requires methods to Attach by PLAP 1986. This method has initiations for identification of variations of the method date not enrice the analysis may underestimate the level of adaptice protect in a sample containing greater than 10% verificable."

Rote #2: ELAP requires method 1998 for the enalysis of surfacing insteads positively verificable (SMA) and it to true a 400 north court in relinor).

**GAR_POSMS/CXXX.MPTR #40 NOTORIESSAM (CAMPEDLE) TOS. BULK-ADBRESCOS BULK-ADBRESCOS ADDRESCAM POSMS (CAMPEDLE) TOS. BULK-ADBRESCOS ADDRESCAM POSMS (CAMPEDLE) TOSMS (CAMPEDLE

(Q.C. 🗀

104 Fast 25th Street, 8th £L, New York, №Y 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 **BULK ASBESTOS ANALYSIS SHEET**

Ctent / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Dale 4 / \$\sum_1\sum_1/2021 Analysis 21-668 102 Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % RI | EG Coter Coter, Med, Unet Gravintetrio Cetulosi , Minerel Effer Organic Binden _Verniculie* Other enetysis streas Color of Caver Delected: for results Point Counts Sign 1 Stida 2 | \$ State 3 Slide 6 Side 7 Slide 6 | Ash Mer PT | Treat[PT SARb. Of %Ver. Í FBertalisas Isolupia Synthotic High (ð] 20s.

Method: : FEAP ☐ €PA Q.C. F1 Asbestos 103 Office Fibrops Non Fibrous Stereoscopic Exem PLM Optical Properties Results PLM 1 PLM % PLM % $\mathcal{I}_{\mathtt{Colline}}$ Mineral Eiler Regusted D Organio Biede Cliner ≤ee gravmevio l Other anaysis sheet Color of Laven for results Detection Slide 2 Slide 4 Stide 5 Slide 6 | Slide 7 | Slide B | Ast /Ver. [7] | Fotal PT %Asb. Or %Ver. Fiberglass kotopi SM-V 5ixte 3 **Byrdhelie High** If vermisulite is > 10% the Required E Avel of Asheatos in a sampte Horse Unit: States. Well the onless phases See SMA/ ice Note #1 aralysis sheet. Biredringence Mcthod: JATELAP | I I EPA **1.** SCANNING OPTION: Q.C. L.:

104 Asbesios Other Fibrous Non Fibrous Stereoscopic Exam PLM Optical Properties Results PLM % PEM W. PLM % Gravmetric ្ត Organia Gindan Recommended [_______Vernicuile* See gravipted in Caber analysis sheet - Cithologo Chelula for results || Fiberg!ass #setopic SM-V - Post Counte! - Clafe : Slide 2 Gizie G Side 5 Stide 6 Stide 7 Stide 6 Ast./Ver. PT Total PY %Asb. Or WVer Synthetic Italia $\mathcal{C}\mathcal{K}$ If verrisculed is >10% lbc. Birefringence Required evel of astesias in a sampli Horse Heix: Scales SOB P: M (vight be understimated) See SM-V (Low to Moderate Birefringence analysis sheet Comments: for results Method: / ELAP | | EPA Q.C. (.) ■ SCANNING OPTION

| 4 105 Flidd Manibus | Stereoscopic Exam | PLM Optical | Properties | Asbastos Results PLM % | Other Fibrous | Non Fibrous |
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| | Contact Action F | Williph Daniston Rill Rill DS Calor | Color, Fisc Bjod Sign Other Identity | Canyante | 120 | / Mineral Fider |
| Rogulma (,l | Homopereity C Verniculto / | r· ····-———— | | AnySsite | Fiberglass | Crganic Ethders |
| Recommencés 🗆 | | | | ðiter | Other | Vermicules" |
| See gravimetric 🗔 | # of Cayors Ashestos | [— — | —————————————————————————————————————— | | | ()#hcr |
| enelysis alteet for seanes | Color of Eayer Detended Yes No. | | ··· ········ ··· ··· ··· ··· ··· ··· · | | 기업에 Infose Onduksse Extinction | |
| SM-V | Point Courts Sale 1 Stice 2 8 | Ride 3 Slide 4 Slide 5 Stree 5 Stree | Y Stde 8 Asb./Ver PT Total PT | %Asb. Or %Ver. | ∏ Füherylese kolope: I | |
| Кединео 🗅 | PLW C/A | | Ø 2-€∂ | C) | T Synthetic High düreknagence | * If vernicuite is >10% the Avel of aspessos in a sample |
| 555 SWV (**) | NOSPIM (. | | | | Li Morse Hair: Beales, Unwite Moderate | might ne underestimated. Sec Nate ≠1 |
| analysis sheet for cesusa | Consinserate: | | ······································ | | Reminingence | |
| | Method: / ELAP DEPA D | SCANNING OPTION | Q.G. [7] | | | |

Methods APA estecim Method or the Oglemmation of Ashestas in Bulk Insufation Samples - 40 CFR Appendix E to Subsert E of Part 763 EPA 600/6-93/116 ELAJ^a Itams 198.1, 198.4, 198.6, 198.8

Note #T: ELAP requires method ELAP 199.0 for the analysis of samples containing \$10% vermicutins, with the exception of surfacing material fast, on leins estimated (SM-V). For is indice containing \$10% vermicutin and requires methods ELAP requires methods ELAP 199.6. The method has tritiations for inarrithmatic and required limited the eval of exhausts present in a sample containing greater from 10% vermicutins."

Note #2: ELAP requires method 10%.6 for the snalesh of surfacing material commands vermicuting (SM-V), and it utilizes a 400 point count method. The AR_EXEMBLECOMMENTS AND RECORDS/OPTIONAMSESTIOS_BILL MARRETTON (BULK TOWNS DEVIAGOED ANALYSIS SHEET, FORM 492 doi: 10.000 point count method. The AR_EXEMBLECOMMENTS AND RECORDS/OPTIONAMSESTIOS_BILL MARRETTON (BULK TOWNS DEVIAGOED ANALYSIS SHEET, FORM 492 doi: 10.000 point count method. The AR_EXEMBLECOMMENTS AND RECORDS/OPTIONAMSESTIOS_BILL MARRETTON (BULK TOWNS DATE) (BULK TOWNS DEVIAGOED ANALYSIS SHEET, FORM 492 doi: 10.000 point count method. The AR_EXEMBLECOMMENTS AND RECORDS/OPTIONAMSESTIOS_BILL MARRETTON (BULK TOWNS DATE) (BULK TOWN

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| | Analysis Dale 4 / | | | | | M | | | | Number 21- | 568 | EMPERATURE 10 |
| 1 114 | Stereoscopic Exa | | | | PLM Op | otical Pro | operties | | -10000 | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM %. |
| Gravimetric Required D Recommended D | Column T 44 Septement Vernicular Asbesius | ite | Morph Extinction | RII | HII DS | Color Colo | ir, Pleo Bin | ef Sign Olf | ner identify | Chrysotile Amogite | Cellulose | Mineral Filer Organic Binders Vermicular Other |
| analysis sheet for results | Color of Layer Detected | I Yes No _ | == | | | | | | | | La Cellulose Ondulose Extinction | OVIA |
| SM-V | | Side 2 Sid | le 3 Slide 4 | Stide 5 | Slide 6 | Stide 7 | Side 8 | Ash Ner, PT | Total PT | %Asb. Or %Ver. | Synthetic High | - Committee Title of the Committee |
| Required □ | NOH PLM | | | | | | | 0 | 7.05 | 0 | Birefringence □ Horse Hair: Scales, Low to Moderate | * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | | / | 4 | - | | | | - | - | Birefringence | See Note #1 |
| 131222 | Method: L/ELAP DE | PA ⊡s | CANNING OPT | ION | | Q. | C. □ | | | | | |
| 2 115 Field Number | Stereoscopic Exa | 80 | | | | otical Pr | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color t - g Cottone | F. | Marph Extinction | RII | RIII DS | Color Colo | er Plea Bir | ed Sign Cili | her Identity | Chrysosie Ayloste | 2.0 Cellulose 2_Fiberglass | Mineral Filler Organic Binders |
| Recommended [| # of Layers Asbestos | -7 | _= | === | | === | | === | - | Other | Other | O_Vermicuálie* |
| See gravimetric arealysis sheet for results | All the Market I was a few or | Yes No | == | | | | | | | / | d Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 5 | Slide 2 Slid | 50.3 Side 4 | Slide b | Side 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb, Or %Ver. | Fitnerglass Isotopic | |
| Required [| PLM & S- | | | | | | | 0 | 200 | 9 | ☐ Synthetic High Birefringence ☐ Horse Heir: Scales, | * If vermiculte is >10% the level of asbesios in a sample |
| See SM-V [_] analysis sheet | NOB PLM Comments: | | | | | | P | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Method: FELAP TIE | PA IIIs | CANNING OPT | ION | | Q. | c. [] | | | | | |
| 3 116 Field Number | Stereoscopic Exa | | | | | ptical Pr | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | colos gretadoro | 10 | Morph Extinction | RII | RIT DS | Calor Cal | or, Piec Bir | et Sign Of | ner Identity | Chrysotie | 2 Celulose | 83 Mineral Filler |
| Recommended [7] | Homogeneity Vermicul | ite | | | 3 | | - 725 | | _ | | Fiberglass Other | Organic Binden Vermioulte* |
| See gravimetric analysis sheet for results | If of LayersAsbestos Color of LayerDetected | | | | | | | | | | Callulose Ondulose | Other |
| SM-V | Point Counts Slide 1 | 5lide 2 Slide | de 3 Slice 4 | Slide 5 | Slide 6 | Slide 7 | Side 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Estinction Fibergless (sotopic | |
| Required [] | mus S | | | | | | | 0 | 790 | 8 | ∏ Syethetic High Dimfringence | * If wormiculitie is > 10% the level of asbestos in a sample |
| Sen SM-V (| NOB PLM | | | | | | | | | | ☐ Horse Hair, Scales, Low to Modecate Biretringence | might be underestimated. See Note #1. |
| for results | Comments: Method: ☐ ELAP ☐ E | PA T | SCANNING OPT | ION | | Q. | C. 🗆 | | | | The State of | |
| 4 117 | Stereoscopic Exa | | | | PLM O | ptical Pr | | | | Asbestos Results PLM %, | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | calar Do to 46 mara | F | Marph Extection | RII | FUII DS | Color Colo | or, Pleo Bir | ref Sign Ot | her identity | Chrysetile | 90 Cellulose | (Mineral Filter |
| Required [] | Homogeneity Vermicul | De / | = | | | | - 10-5 | | | Anydeite | Fiberglass | Organic Binden |
| Recommended [| # of LayersAsbeston | | | | - 20 | | | | | | Other | Vermiculne* |
| See gravimeinc [] analysis sheet for results | | 1 Yes No | | | | | | | | | Cellulose Occiulose Extinction | Other |
| SM-V | Point Counts Slids 1 | Slide 2 Slik | de 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | C) Fiberglass isotopic | |
| Required [| 131 | | | - | | | | 9 | 200 | 9 | ☐ Synthetic High Birefringeres ☐ Home Hair: Scales | * If vernyculte is >10% the level of aspestos in a sample |
| Sec SM-V [1 analysis sheet | NOB PLM / | | , | | | | | | | | Low to Woderate Birefringence | rright be underestimated. See Note #1, |
| Sor results | Comments: | PA I | CANNING OPT | ION | | [0] | c. 🗆 | | | | | |
| Methods: | The second secon | 10.6 | - Indiana of I | | West to the second | I ser. | | 5 1 2 | -100 | | | |

EPA interm Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 196.1 for the ensists of samples containing <10% verniculte, with the exception of surfacing material that contains verniculte (SM-V). For samples containing >10% verniculte ELAP requires methods ELAP 198.1 followed by ELAP 198.8. This method has limitations for identification of verniculte. This method does not remove verniculte and may underestimate the level of asbestos present in a sample containing greater than 10% verniculte." Note #2: ELAP requires method 199.9 for the analysis of surfacing material containing vermicults (SMAV) and il utilizes a 400 point oxinil method
LULAB_FORMS DOCUMENTS AND RECORDS/OPTICAL/ASSESTOS_BULK/ASSESTOS_B

BULK ASBESTOS ANALYSIS SHEET

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110 Other Fibrous Non Fibrous Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PIM W RI 3 DS Colum Coton, Flet Liner Mineral Hiller Gravistehi Cétulose Chrysoliji **Tiberales** Organic Binder Homogenety <u>Sal</u> Q verniculter Recommended 🛭 See gravimetdo l : Ilbar analyzis sheet J-69Îblose Ondokae 1:shorten À Fiberglass isotopie 5lde3 Slide 6 Säde 7 Slice 0 [Asb Mer. 96] Total PT %Åsb, Ør%Vor. SM-V d vermiesāla is vitos, jija Recured [7] Birefringeneo well of asbestes to a sappole 1 Kome Hair: Scales NOB PLM might be underest/mated Soc SM-V I Low to Moderate ee Note X1. analysis sheet for readits Q.C. [1] Method: ÆELAP □ EPA Z SCANNING OPTION

111 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM Y, RI 1 DS Color Coer, Med Direl Gravinetii -f-~Cedutose Ž Minerat Ettan , Organia Bindei Remogeneily 🛂 Vermiquiit Recommended 🗆 💆 Vennisulite" Ashestos. See gravameths l Other enalyzis street Séde 7 Slide 8 | Asb /Var, Pf | 1 stall?1" Point Counts Siide 2 Side 5 Slide 4 Slide 5 Slide 6 %Asb. Or %Ver. ù Fibergiass isotopia 9.842 vermisulila la > 1095 (he \odot lon. Required II. Blicklindenco evel of asbesins in a sense Tationne Hair: Sitates night be undercalimated NOB PLM See SM-V I Low to Medicate anatysis sheet. Comments: for results Q.C. LJ Method: () FLAP | LJ E.PA Ź SCANNING OPTION

Asbestos 112 Other Fibrous Non Fibrous Stereoscopic Exam PLM Optical Properties Results PLM % PLM % PLM % Clear-T - N. Y. Keniue <mark>∑___ Micesal Filler</mark> Gravimetri Celtrose Organio Dieders " (teregomaty <u>u.)</u> Vermoultet analysis sheet ට Geliulose Gndulose ුSatinution for results i f isanglata (setopo Sède 2 Sade 6 5lide / Silde 8 Asbover, P1 Total P1 %Asb. Or %Ver. SMA if verniculite is a 1055 the 2১৩ Regulated (direftgggence od oč nakostno je s sagryte Jitlorse Hair: Seases. MOR PLA migm tip undernalischeled See SMA/ Low to Resteptie See Note#1 analysis sheet for results Method: JAELAP I JEPA Q.C. Li ₹ 5CANNING OPTION

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|--|-----------------------------|-------------------------|------------------------------|---------------------------|---------------------------|---|--|
| 4 113 Field Kasabar | Stereoscopic Exam | | PLM Optical Properties | Asbesins Results PLM % | Other Fibrous | Non Fibrous PLM % | |
| Grævenredic Recydest () • Revonimended □ See gravimente (1) | Hornogeneily Verminates / | More Exercise 31: | Stij Lis Coler Coler, Plan F | Reaf Sign Other decility | Chrysolile Anycelle Other | Celluince 2-Füerglass Other | Milneral Filler Organic Hierters Verinscukter Other |
| analysis aheat Im neanly | Gold of Layer General Yes N | | | · | | F Callidose Confidence Extraction Le Fébriglass belogie | |
| SM V Recured □ | POM Counts Slide 7 | Slide 3 Slise 4 Slide 6 | Sida 6 Sida 7 Silce 8 | Asb.Ner. 27 Total PT | %Asb. Or %Ver. | I.J. Bynthotle High Biodeinnenne | " If vermisalite je >>0% toe level of asbesins in a saggala |
| See SMA/ (*) analysis aheet for results | NOR PLM Comments: | | | | | C Horse Hair: Scales, Luie to Moderale Bradiingense | might be underestmanel See Note #1. |
| | Mothor: LYELAP 🗆 EPA | ⊈ SCANNING OPTION | Q.C. F3 | | | | • |

Meteods. GPA, Interior Mathabilit the Disternization of Aspestos in Bulk Insulation Semples - 40 CFR Appendix E to Suppert E of Part 765 ECA 500/6/45/156 ELAP Irams 198.1, 198.4, 198.5, 198.9

Note \$1: ELAP requires method ELAP 198 1 for the analysis of samples containing viio 8, eveniculae, with the exception of surfacing material that centains varieties (SSA-V). For samples containing >10% vermiculae ELAP requires methods ELAP 188.1 followed by ELAP 188.6 This method has initiations for deriblication of vermiculae, "This method does not remove vermiculae and may undertainante this two for exhibiting present in a sample containing greater than 10% vermiculae."

Note \$2: FLAP requires method 199.6 to the energy sky of scrieding material containing vermiculae (NAV) and II office 4.400 point our shellod.

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| 87. | 1 | 10 | AP | NVL | - 8 | |
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| 197 | 1 | AP | EL | | | |
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|--|--|-------------------|-----------------------------------|--------------|----------------|--------------|--------------|---------------------------|---|--|
| | Analysis Dale 4 / 5/2021 | Analyst | | 9 | 1 | | | | 668 | EMPERATURE 'C |
| 1 122 Fleid Number | Stereoscopic Exam | | | Optical Pr | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravemetric Required [.] | Color Homogene C | orph Extinction | PUL RIL | DS Color Col | lor, Pleo Biro | el Sign Oll | her Identity | Chryylatile | 2 Calluidae | 95 Mineral File Organic Bins |
| Recommended [] See gravimetric [] analysis sheet | # of Leyers Asbestos | | | | | | | Other | Olher | Cither |
| for results SM-V | Color of Layer Selected Yes No Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 9 | Side 5 Side 6 | Sikle 7 | Slide 8 | Ash Ner, PT | Total PT | %Asb. Or %Ver. | Estimation Fillenglass Isotopic | |
| Required [] | PIMO | | | | | 0 | 209 | O . | ☐ Synthatin High Bertingense ☐ Horse Halt: Seuke. | * If vermiculite is >10% the level of asbestos in a sam |
| See SM-V □ analysis sheet for results | NOB PLM Comments: | | | | | | | | Low to Moderate Hirefringence | might be underestimated. See Note #1. |
| | Method: ☐ ELAP ☐ EPA U∫ SC | ANNING OPTION | | Q. | c. 🗆 | | | | | |
| Z 123 Field Number | Stereoscopic Exam | ornh Dynaston | | Optical Pr | | | te es | Ashestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required [_] | Color Color Color Plea Birel Sign Other Identity Chrys | | | | | | | Chrysopi6 | Cellulose Fiberglass | Mineral Filler Organic Bind |
| Recommended □ | N of Layers Asbestus | | | | | | | giner | Other | Vermiculite* |
| unalysis sheet for results | Color of Layer Datacled Yes No Foint Counts Slide 1 Slide 2 Slide | 2 Code 4 I | enes e T enes | 1 85 2 | T 201- 0-1 | | | / | 2 Cellulose Ondulose Extinction | -2111 |
| SM-V Required [] | PEM O STATE STATE STATE | 3 Side 4 S | Slide 5 Slide 6 | Slide 7 | Side 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Synthetic High Hirefringence | * If vermiculte is >18%, fiv level of asboslos in a sem |
| See SM-V analysis sheet for results | NOB PLM Comments: | | Version | | | | | | U Horse Hair: Scales, Law to Moderate Biretringence | might be underestimated See Note #1. |
| Sel Fascille | Method: ZELAP □ EPA SC | ANNING OPTION | | Q. | c. 🗆 | | | | | |
| 3 124 Flood Number | Stereoscopic Exam | orph Extinction (| | Optical Pr | operties | | ner identily | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM 1/4 |
| Gravimetric Required [1] | Collect Will Totaxture United | | | | s, 1 to the | - Juliu Oil | in acting | Chrysofile | Cellulose Fiberglass | Mineral Filer Organic Bind |
| Recommended [] | # of Enyers Asbestos | | | | | | | Other | Other | Vormiculde* |
| analysis sheet for results | Color of Layer Delected Yes No | | | | | | - | | C Cellulose Undulose Extinction | Other |
| SM-V | Point Counts Slids 1 Slide 2 Slide | 3 Slide 4 S | Side 5 Side t | Slide 7 | Slide 8 | | - | %Asb. Or %Ver. | Li Fiberglass Isotopic Li Synthetic High | * If warmiculie is > 10% the |
| Required \square | NOB PLM | | | | | 0 | 2G0 | 0 | Birefringence Horse Hair: Scales, Low to Moderate | level of asbesies in a sem might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | ANNING OPTION | | lq. | c. 🗆 | | | | Birefringence | George #1. |
| 4 125 | Stereoscopic Exam | | PLM | Optical Pr | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Grevimetric | COLON MY GENTURE CT ME | orph Extinction f | RIT RIT | DG Color Col | ar, Plea Bre | Sign Of | er Identay | Chorsone | Cellulose | /UD Mineral Filter |
| Required □ | Hamagenety | | | | | | - | /mosite | - Fiberglass | Organic Bind |
| San gravimetric analysis sheet | # of Layers Asbeslos | | | == | | | | Other | Other | O'verniculite* |
| for results | Point Counts Slids 1 Slide 2 Slide | 2 85404 | Mars I out | T Allow | gea, a. I | Ant at | - | / | Extinction Fitterglass isotopic | |
| SM-V | Point Counts Side 1 Slide 2 Slide | 3 Side 4 S | Slide 5 Slide 0 | Slide 7 | Slide 8 | Asb./Ver. FT | 2so | %Asb. Or %Ver. | Synthetic High Birchtingence | * If vermicable is >10% the |
| See SM-V | NOB PLM | | | | | | 200 | _0 | ☐ Horas Heir: Scales, Low to Moderate | level of asbestos in a sam might be underestimated. |

Methods EPA Interim Method of the Determination of Asbestos in Dulk Insulation Samples 40 CFR Appendix E is Subpart E of Part 783 EPA 800/R 93/n16 CLAP Items 198.1, 198.4, 198.6, 198.6

Methog: □ ELAP □ EPA

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analysis sheet for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculde; with the properties of surfacing material that contains vermiculta (SM-V). For samples containing \$10% vermiculte ELAP requires methods ELAP 199.1 followed by ELAP 199.0. This method has finitiations for identification of vermiculte. This method does not remove vermiculte and may underestimate the leave of settless present in a sample containing greater than 10% vermiculte."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermicultie (SM-V), and it utilizes a 400 point count method.

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See Note #1.

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| | · · · · · · · · · · · · · · · · · · · | FIRESPRINKLER | KEHAB | Project | Number 214PN | IPEPJ1 | 57 |
| | Analysis Date <u>4 / [∖ / 2</u> | <u>021 </u> | | Batch N | umber21- | <u>668 </u> | emperizations vo |
| 1 118 | Stereoscopic Exam | | PLM Optical Properties | | Asbestos Results PI,M % , | Other Fibrous | Non Fibruus PLM % |
| Gravintelne | Cara 2100 composition | Marph Extinction RI | J RI DS Cares Codes, Piece Sires Sign | Other Identity | Carysyllie | | / O Miceral Filler |
| Required () Responseded () | Homogenety Vermicular | | | | Ampsile | Hibarglass | Organic Bioders |
| Sec gravimelrie I I | # of Legera | | | | Other | ,Oller | Vertokulitja* |
| элвууса sheet Эн гирийз | Cuto of Layer | vo | | = | / | PT Češuloze Undolose Extinction | |
| SM-V | Port Counts 5 de 1 Side 2 | Side 3 Side 4 Sin | 16 b Silde 6 Säde 7 Slide 8 Asb./Ver. | . P 5 Tatal P 1 | WASD, Or %Vec | i I Floorglass Isotopic 11 Syndiedic High | |
| Fequent [] | P:MO O | | | 6-6-2 | <u> </u> | Birekiingence ☑ Koose Harr: Scales, | * II vernyoutte is a 10% sho kwel of sebestas in a sample : might be opsignessimated |
| See SM-V L1 and/ysis sheet for results | Comments: | | | | | Luw to Moderate Binefrängence | See Note #5. |
| | Method: Çl'ÉLAP ☐ ⊆PA | 1 : SCANNING OPTION | Q.C. L.J | | TATING LAAL | | |
| 2 119 Field Vascter | Stereoscopic Exam | | PLM Optical Properties | | Asbestos Results PLM %. | Other Fibross | Non Fibrous PLM % |
| Gravimetric | Color Mark Alphables (F | Morph Edinoban RI | Fill DS Color Color (1900 Diret Sign | Other Identity | Chrymisie | 270 Colleges | / O Mineral Filter |
| Required Recommended | Homogeneity Verminate | ===== | | | t/moste | Halorglass | Creanic Griders |
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| SM-V | Point Counts Sigle ? Slide 2 | Slide 3 Sáde 4 Sjk | le 5 Silde 6 Slide 7 Slide 8 Asb Aver | | %A5b. Or %Ver. | i.: Fibergilasa taotupio L.: Synthetic High | |
| Receircó I 1 | NOB PLM | | <u> </u> |) /১০০ | <u> </u> | Birefrispence District National Scales. | f If vernications > 10% the level of asbestos in a sample origin, be updetestimated. |
| See SN-V 🗀 : analysis sheel | Comments: | | | | | Low to Moderate Birefringence | See Note #1 |
| | - Commission / | | | | - crise illidicues | l . | |
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| for resurs 3 120 Field Survicer Grevinebic Requires [7] | Mintpod; ZELAP □ EPA Stereoscopic Exam Color National Color | | PLM Optical Properties | Other Identity | Results PLM % Chrysolfe Accode | Other Fibrous PLM W Geltulian Fibritiss | PLM 1/6 Control of History |
| for resurs 3 120 Field Sunser Grevimetric | Mntbnd: FLAP = EPA Stereoscopic Exam Color Table Fritims 2 | | PLM Optical Properties | Other Identity | Results PLM % | Other Fibrous PLM % | PLM % T.G. Miceral Filer Organic Rianers Vermouble* |
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Micharta:
5FA Infance Method of the Determination of Assessed in Bulk Insulation Samples: 40 CFR Aspendix E to Subosrt E of Part 763 ETA 30010 92/115 ELAP Itanis 158.1, 195.4, 190.6, 195.0

Note #1: ELAP requires method ELAP 180,1 for the entities of samples containing s104 verificable, with the exception of samples and little containing very verificable (SM-V). For camples concerning >10% verificable (CLAP requires methods bit AP 186.1 forward by ELAP 193.6. This method has antiflication and open diffication of verificable. This method does not remove verificable and may underestimate the feed of activates present in a sample containing greater than 10% verificable."

Note #2: ELAP requires method 180.1 for the analysis of spritching enterial containing verificable (SM-V), and it obtained to the open deposition of the containing greater than 10% verificable."

Note #2: ELAP requires method 180.1 for the analysis of spritching enterial containing present than 10% verificable."

Note #2: ELAP requires method 180.1 for the analysis of spritching enterial containing greater than 10% verificable.

Note #2: ELAP requires method 180.1 for the containing entering greater than 10% verificable."

Note #2: ELAP requires method 180.1 for the containing entering entering greater than 10% verificable.

Note #2: ELAP requires method 180.1 for the containing entering entering greater than 10% verificable."

Note #2: ELAP requires method 180.1 for the containing entering


ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Start Date: 04/15/21 | 04/16/21 | |
|------------------------|--------------------------|----------|
| Start Date: | Date Completed: 04/16/21 | |
| 122990 | NOB TEM Analyst: RP | hods |
| TEM Batch # 122990 | NOS TEM Analyst: | Per |
| 21-668 | HS | |
| PLM Batch# | NOB TEM PREP: | |
| | 뜨 | 6 - S |
| RUSH | NOB PLW Analyst: | Asheme |
| | SAVEV | 12 |
| Client/Project: PANYNJ | NOB PLM PREP: | 1 |

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| 99 | | TEM | , | > | ^ | > | > | > | * | • | ^ | > |
|---------|----------|----------------------------|------|------|------|------|------|------|------|------|------|------|
| Methods | 90 | PLM | > | > | > | > | > | , | > | > | > | |
| ·重 | | PREP | > | `` | > | > | > | > | > | > | > | > |
| | | Notes | | | | | | | | | | |
| • | % Total | Ashestos or Vermiculita | | | | | | | | | | |
| 6 | Asbestos | Types or Vermicuilts | S | QN | QN | ND | QN | QN | ΩN | QN | S | QN |
| 12 | | % Carthonate | 10.5 | 12.2 | 11.8 | 20.9 | 8.8 | 14.8 | 25.8 | 28.0 | 27.7 | 40.0 |
| | Non Asb | Residue % NPr | 60.4 | 59.2 | 61.7 | 48.6 | 62.5 | 55.8 | 27.6 | 25,2 | 22.8 | 33.7 |
| 10 | | Organic | 29.1 | 28.6 | 26.5 | 30.5 | 7.82 | 29.4 | 46.7 | 46.8 | 49.5 | 26.3 |
| | | # 200 | 62 | 63 | 64 | 78 | 72 | 73 | 91 | 82 | 89 | 94 |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

Client Copy

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ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Start Date: 04/15/21 | 04/16/21 | | | | | | | | | | | |
|----------------------|---------------------------|--|----------|----------------------------|------|------|------|------|----------|------|--------------|------|
| Start Date: | Date Completed: 04/16/21 | | | | | | | | | | | |
| 122990 | ₽. | - 15 - 15 - 15 - 15 - 15 - 15 - 15 - 15 | | TEM | > | > | > | > | > | | | |
| 4 ± | | Methods | NOB | PLM | } | ` | 3 | 3 | <u> </u> | | | ···· |
| | IOB TEM Analyst: | | | PREP | > | > | > | > | > | | | |
| TEM Batch # | NOB TEM Analyst: | | | | | | | | | | | |
| 21-668 | HS | | | Notes | | | | | | | | |
| PLM Batch# | NOB TEM PREP: | | | | | | | | | | | |
| | R | 43 | M Total | Asbestos or Vermituille | | | | | • | | | |
| RUSH | NOB PLIM Anatyst: - | 6 | Asbeetos | Types or Vermiculite | Q. | Ž | Q | QN | QN | | | |
| | SA/EV | 12 | | % Carbonate | 20.7 | 15.4 | 11.6 | 14.8 | 9.8 | | | |
| PANYNJ | 78 | | Non Asb | Residue % | 52.4 | 57.5 | 58.2 | 62.3 | 65.4 | | | |
| Client/Project: | NOB PLM PREP: | 2 | | % Organic | 26.9 | 27.1 | 30.2 | 22.9 | 24.8 | | | |
| Client/ | NOB PL | | | きるよ | 95 | 96 | 26 | 86 | 66 | | | |

+ 31 + 11

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

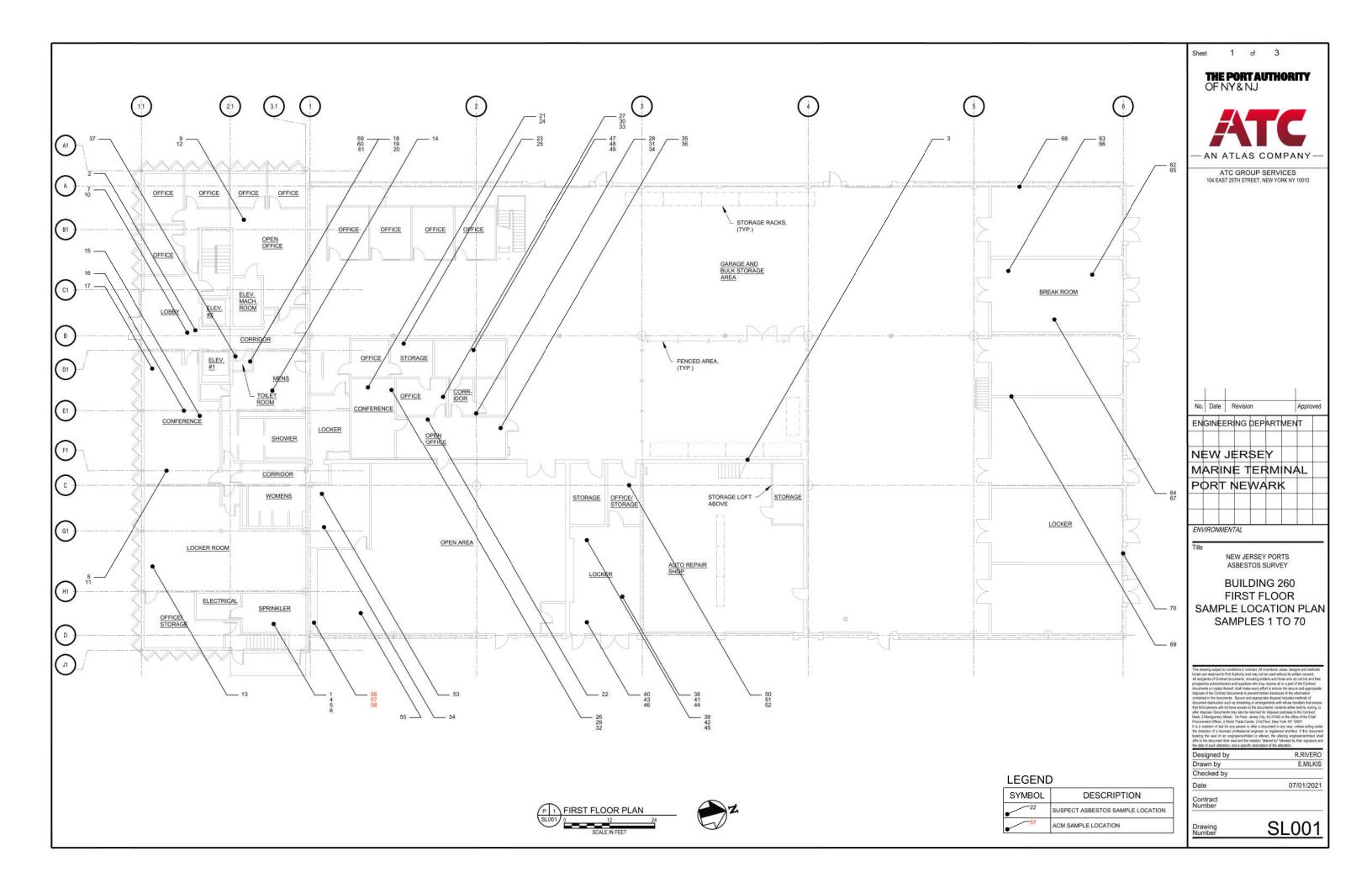
Page 2

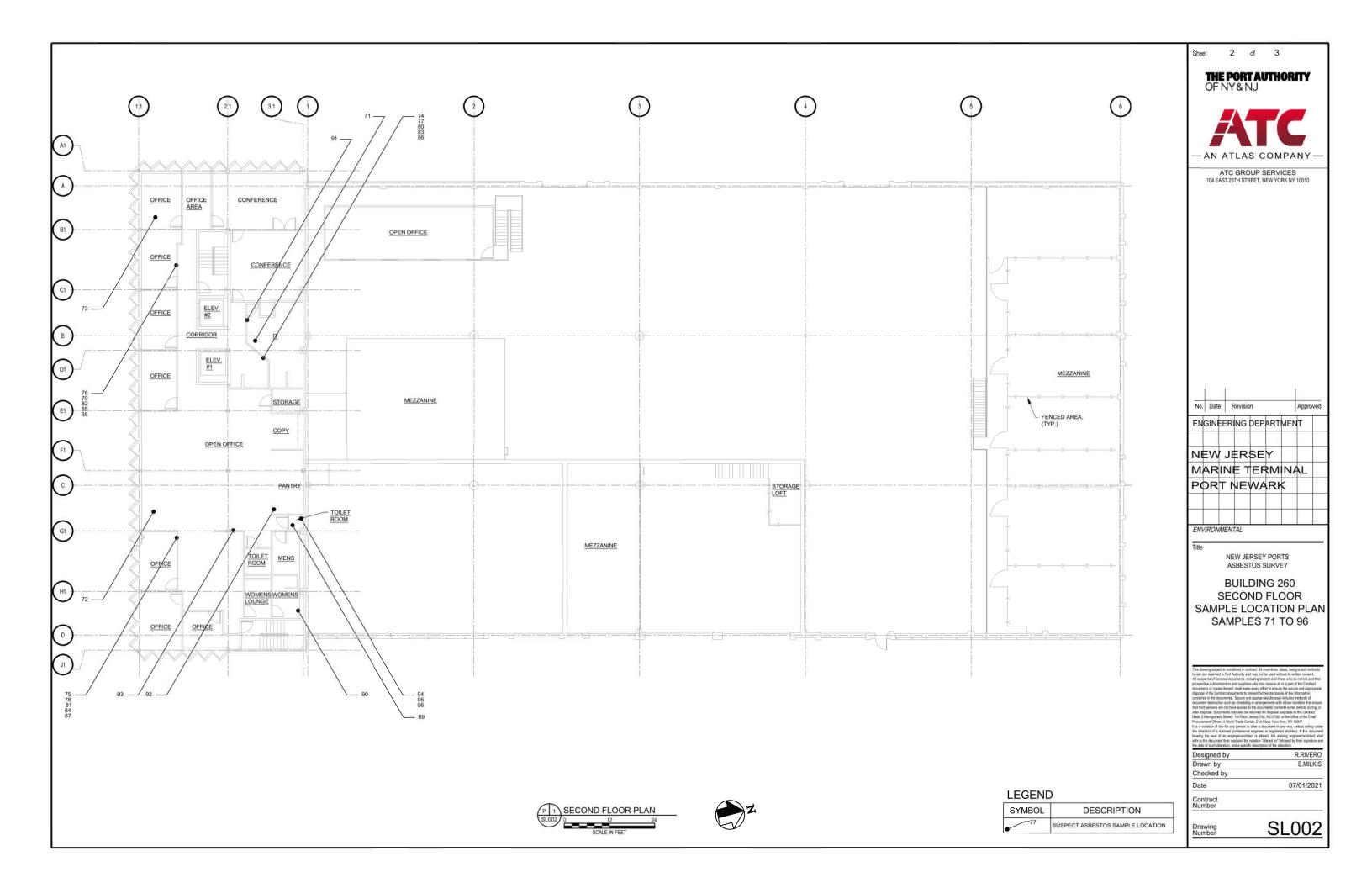
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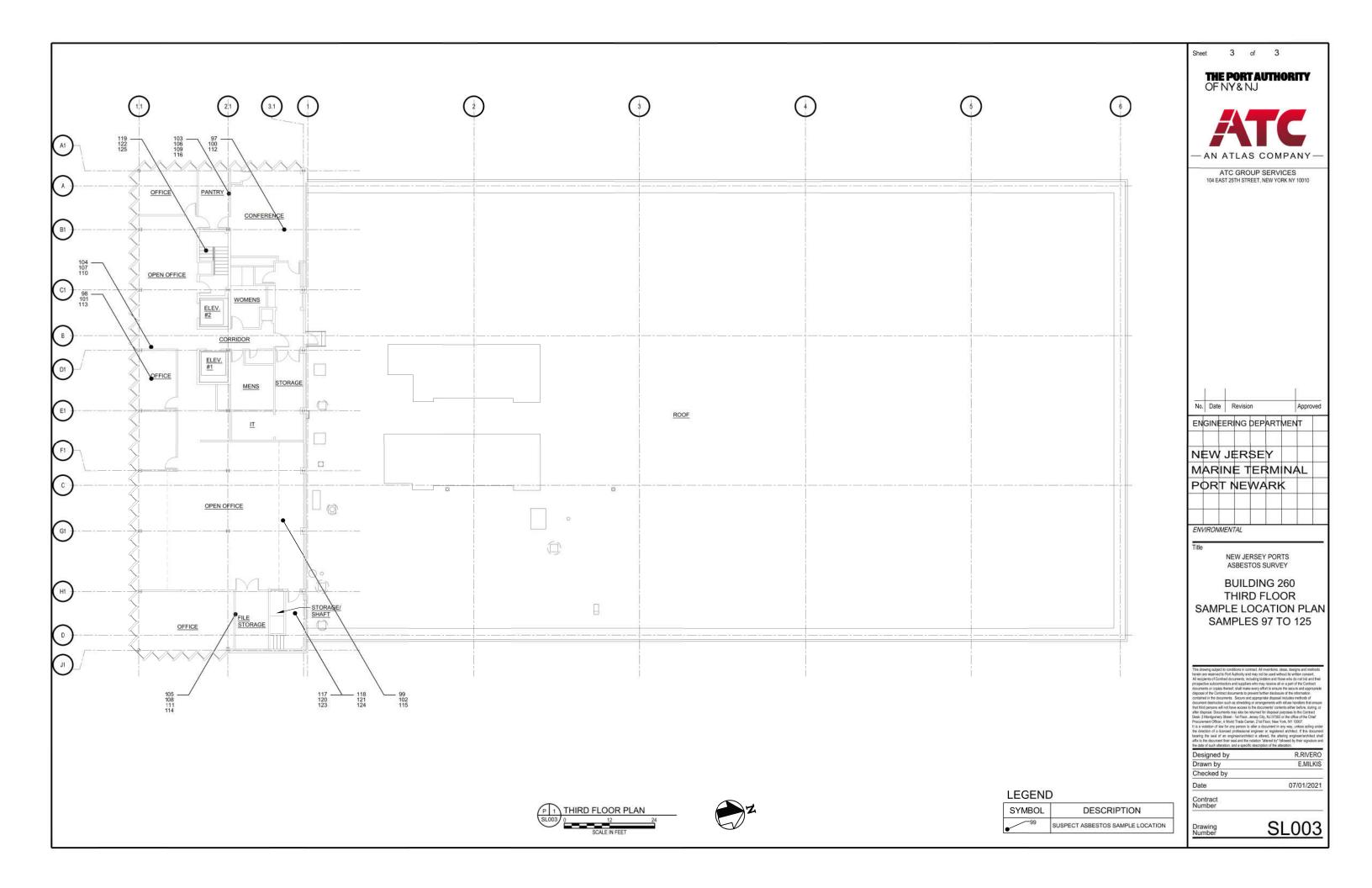
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APPENDIX B

ASBESTOS SAMPLE LOCATION DRAWINGS



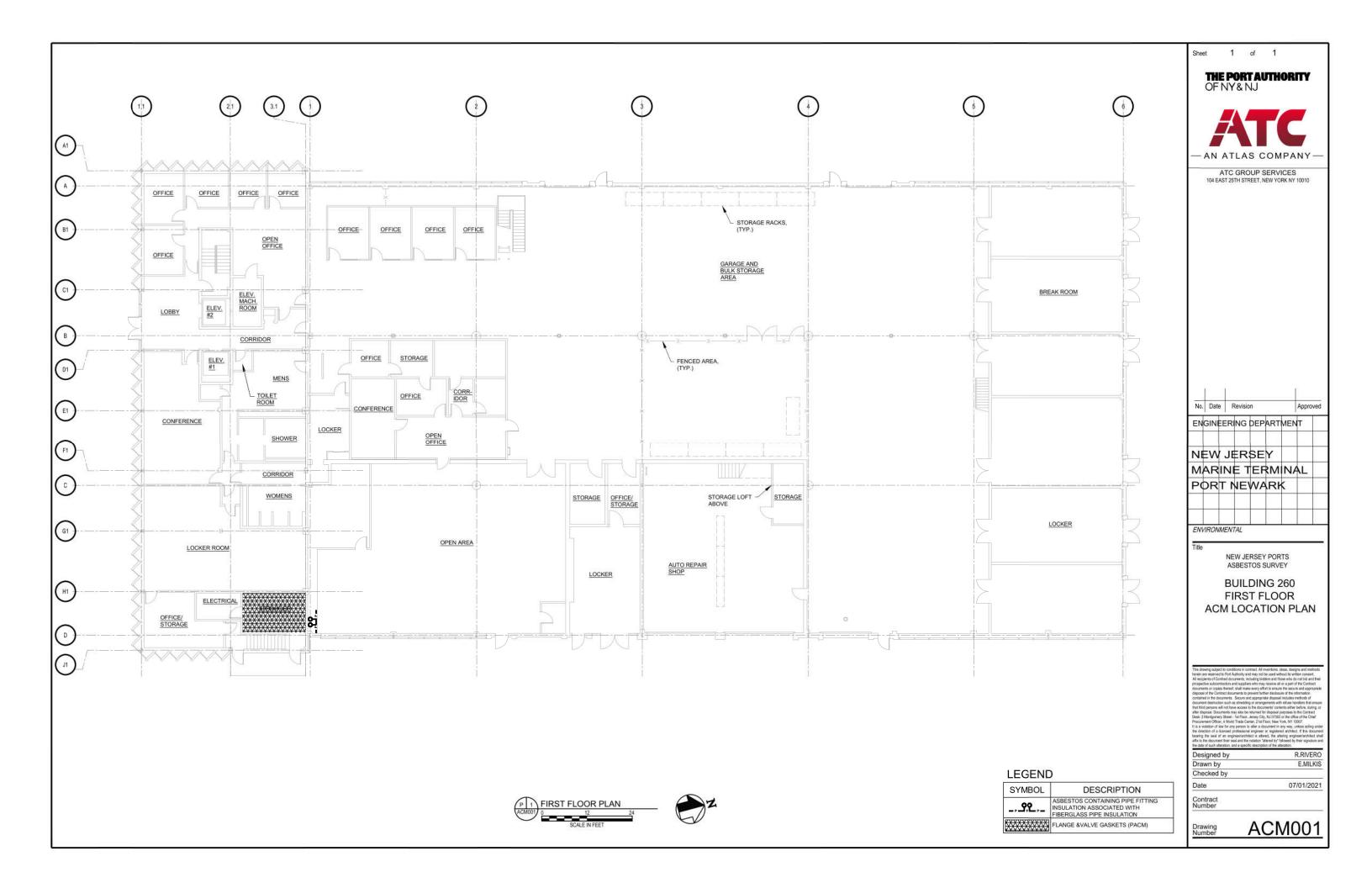




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APPENDIX C

ASBESTOS LOCATION DRAWINGS



APPENDIX D

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

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New York State – Department of Labor Division of Safety and Health

Division of Safety and Health License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative - Kevin Hamilton:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
SH 432 (8/12)
For the Commissioner of Labor

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below:

Miscellaneous

Ashestos

PA 100.2

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

age 1 of 1



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Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual

EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

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ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

Fibers

NIOSH 7400 A RULES

Department of Health

Serial No.: 61223

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NY Lab Id No: 10879

ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

MS. MILENA BONEZZI COPY

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2016) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

estos EPA 1

Serial No.: 62824

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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MS. MILENA BONEZZI CO V ACO NY Lab Id No:

ATC GROUP SERVICES LLC

104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Asbestos in Non-Friable Material-TEM

Item 198.6 of Manual (NOB by PLM)

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No : 62825

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021 _ -

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Flealth Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

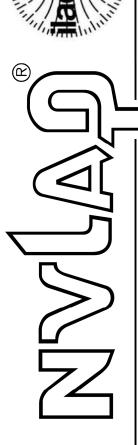
40 CFR 763 APX A No. III NIOSH 7402

Serial No.: 62826

NIOSH 7400 A RULES

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Technology ommerce and C of Partment o artment $\overline{\Phi}$ of O S National Institute States United



20 7025 O/IE S **2** ccreditation 4 of ertificate

NVLAP LAB CODE: 101187-0

Services Group

New York, NY

for accredited by the National Voluntary Laboratory Accreditation Program listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

I the operation of a laboratory quality dated January 2009). Standard ISO/IEC ance with the recal competence for a r to joint ISO-ILAC This laboratory is accrec This accreditation demonst

2020-07-01 through 2021-06-30

Effective Dates





For the National Voluntary Labor

National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor
New York, NY 10010
Ms. Milena Bonezzi
Phone: 212-353-8280 x247 Fax: 212-353-8306
Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

<u>Code</u> <u>Description</u>

18/A01 EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of

Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code18/A02

Description
U.S. EPA's "Inte

U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR Part 763 Subpart F. Appendix A.

TR PAIR ATT ATT ATT ATT

For the National Voluntary Laboratory Accreditation Program



AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

Effective: 04/10/2015

Revision: 8 Page 1 of 1

104 East 25th St 8th Flr New York, NY 10010

Laboratory ID: LAP-100229

Issue Date: 08/30/2019

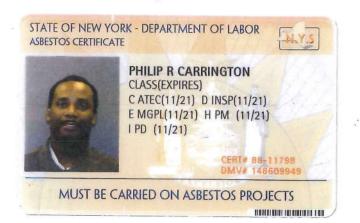
The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 06/12/1995

| IHLAP Scope Categ | ory Field of Testing (FC | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested |
|-----------------------------------|------------------------------------|----------------------------------|---|---|
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | - |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http:// www.aihaaccreditedlabs.org



01213 00585914 40

HAIR BLK

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





NANCY B GUEVARA CLASS(EXPIRES) C ATEC(05/21) D INSP(05/21) H PM (05/21) I PD (05/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



01213 005585171 14

EYES BRO HAIR BRO HGT 5' 06"

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALRANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





RONEY D RIVERO CLASS(EXPIRES) C ATEC(08/21) D INSP(08/21) E MGPL(08/21) H PM (08/21) IPD (08/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



01213 00581057 61

EYES BRO HAIR GRY IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240



NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, EP, & PJ

ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING #263

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

July 2, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

July 2, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building #263

263 Marlin Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Roney D. Rivero

Senior Project Manager for ATC Group Services LLC Direct Line +1 212 284 0614 Email: roney.rivero@atcgs.com

Attachments

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

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APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: Asbestos Sample Location Drawings

Appendix C: ACM Location Drawings

Appendix D: Lab Certifications / Accreditations, Company and Personnel Certifications

ATC Project No. 214PANEWR1

ATC Project No. 214PANEWR1

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

Page 1

EXECUTIVE SUMMARY

On February 26, 2021 and April 8, 2021, ATC completed the inspection for ACM at Port Newark, Building #263 (the Site). The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected thirty-six (36) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, five (5) sampled homogeneous areas were found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content). In addition, one (1) non-ACM homogeneous area, marked with an asterisk (*), should be treated as ACM due to its association/proximity with ACM within the same location.

The materials that tested positive for asbestos are:

- Aircell Pipe Insulation (3" OD)
- Elbow Insulation associated with Aircell Pipe Insulation
- Wrapped Cardboard Pipe Insulation (3" OD)
- Mudded Joint Fitting Insulation associated with Wrapped Cardboard Pipe Insulation *
- Packing Insulation at Ceiling Penetration for 8" OD Pipes (East Side)
- Packing Insulation at Ceiling Penetration for 8" OD Pipes (West Side)

These materials are tabulated in Section 4.0.

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM/LCP |
|----------------------|----------------------|---------|
| Philip R. Carrington | AH-88-11798 | ACM |
| Nancy Guevara | AH-14-00412 | ACM |
| Roney D. Rivero | AH-88-06348 | ACM |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 263 is a single-story steel frame warehouse which measures approximately 161 ft. by 634 ft. in plan. Most of the building is being used as a general cargo warehouse and sustain heavy forklift traffic. A portion of the building is used as a factory for light manufacturing. The floor in the warehouse is bituminous concrete and in the factory area the floor is plywood. The girders support steel roof purlins which support the corrugated metal roof decking. The building's height varies from approximately a minimum of 26 ft. at the north and south sides to 40 ft. at the ridge. A concrete masonry firewall divides the building into east and west portions. Several modular office structures exist in the building and are occupied by various tenants.

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

ATC Project No. 214PANEWR1 Page 2

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of Port Newark Building 263 on February 26, 2021 and April 8, 2021 and collected thirty-six (36) bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location. The intent of this survey was to locate and identify all accessible ACM.

The following twelve (12) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location |
|--|--|
| 1' X 1' Ceiling Tile | 1st Floor – Office Space |
| Gypsum Board | 1 st Floor – Office Space & Kitchen |
| CMU Wall Mortar | 1 st Floor – Office Space Women's Bathroom |
| Aircell Pipe Insulation (3" OD) | 1 st Floor – Office Space & Kitchen |
| Elbow Insulation associated with Aircell Pipe Insulation | 1st Floor – Office Space Kitchen |

ATC Project No. 214PANEWR1 Page 3

| Wrapped Cardboard Pipe Insulation (3" OD) | 1 st Floor – Bathroom in Warehouse Area (Open Building Space) |
|---|---|
| Mudded Joint Fitting Insulation associated with Wrapped Cardboard Pipe Insulation | 1 st Floor – Bathroom in Warehouse Area (Open Building Space) |
| CMU Wall Mortar | 1 st Floor Sprinkler Room East Side |
| Packing Insulation at Ceiling Penetration around 8" OD Pipes | 1st Floor East Side Sprinkler Room Ceiling |
| Packing Insulation at Ceiling Penetration around 8" | 1st Floor West Side Sprinkler Room |
| OD Pipes | Ceiling |
| Tectum Ceiling Board | 1 st Floor - Warehouse Bathroom |
| Wall Blanket Insulation | 1 st Floor - Warehouse Dividing Wall |

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and analytical results of bulk samples collected, the following materials are asbestos-containing (> 1%):

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| 10-12 | Aircell Pipe Insulation (3" OD) | 33% Chrysotile | 20 LF | ACM001 |
| 13-15 | Elbow Insulation associated with Aircell Pipe Insulation | 50% Chrysotile | 10 LF | ACM001 |
| 16-18 | Wrapped Cardboard Pipe Insulation (3" OD) | 12% Chrysotile | 12 LF | ACM001 |
| 19-21 | Mudded Joint Fitting Insulation associated with Wrapped Cardboard Pipe Insulation * | * | 6 LF | ACM001 |
| 25-27 | Packing Insulation at Ceiling Penetration around 8" OD Pipes | 67% Chrysotile | 3 SF | ACM001 |
| 28-30 | Packing Insulation at Ceiling Penetration around 8" OD Pipes | 67% Chrysotile | 3 SF | ACM002 |

^{*} This homogeneous area should be treated as ACM due to its association/proximity with ACM within the same location.

ATC Project No. 214PANEWR1 Page 4

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

The following materials are presumed to be asbestos-containing material (PACM)

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| N/A | Flange & Valve Gaskets - 2 Sprinkler Rooms | PACM | 50 Units | ACM001 & ACM02 |

ACM laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix B. Asbestos Location Plans are included in Appendix C.

6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection at the site, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected thirty-six (36) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, five (5) sampled homogeneous areas were found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content). In addition, one (1) homogeneous area, marked with an asterisk (*), should be treated as ACM due to its association/proximity with ACM within the same location.

The materials that tested positive for asbestos at Building 263 include the following:

- Aircell Pipe Insulation (3" OD)
- Elbow Insulation associated with Aircell Pipe Insulation
- Wrapped Cardboard Pipe Insulation (3" OD)
- Mudded Joint Fitting Insulation Associated with Wrapped Cardboard Pipe Insulation *
- Packing Insulation at Ceiling Penetration around 8" OD Pipes (East Side)
- Packing Insulation at Ceiling Penetration around 8" OD Pipes (West Side)

ATC Project No. 214PANEWR1 Page 5

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Various types of painted surfaces such as sprinkler pipes, gypsum board ceilings and walls, CMU walls, and roof decking have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 263, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 263 located in Newark, New Jersey.

The materials reported in Section 5.0 of this report would require abatement, removal and disposal prior to sprinkler system renovation due to the proximity to the sprinkle pipe system.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection. The valve gaskets inside the pipe flanges could not be tested since the sprinkler system is still operational. It is assumed, based on the number of flanges observed, that there are 25 gaskets in each sprinkler room. There are 2 sprinkler rooms in this building, so it is assumed there are 50 gaskets that are presumed to be asbestos containing. This quantity should be verified with destructive sampling if abatement is planned prior to any renovation work.

If questions arise regarding asbestos content in building materials that were not tested by ATC, additional testing services should be procured to test those areas.

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

ATC Project No. 214PANEWR1 Page 6

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|-----------|------------------|--------|--------------|

APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES



ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 2/26/2021

104 EAST 25TH STREET NEW YORK, NY 10010

Date Received: 3/1/2021

Phone: (212) 353-8280

Date Analyzed: 3/2/2021

Fax: (212) 353-3599

ATC Batch # 21-226

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Methods: ELAP 198.1, 198.6, 198.4

Location: PN - BUILDING 263 Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>Non-Asbestos</u> | | NOB | Asbestos |
|--------------|------------------------|-----------------------|----------|---------------------|---------------------|-----------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | ₩ Type | % Type |
| 1 | 1ST FLOOR OFFICE SPACE | 1" X 1" CEILING TILE | NOB-TEM | | | 31% Organic | |
| | | | | | O OO/ Marrai audita | 52.5% Residue | NONE DETECTED |
| 21-226 -1 | | | | | 0.0% Vermiculite | 16.5% Carbonate | NONE DETECTED |
| | | Color: | | Comments: NOB PLM | Inconclusive | | |
| Analyzed By: | Michael Gittings | Second Analyst: Feyza | a Gungor | Commonto: 110B 1 Em | mooneracive | | |
| 2 | 1ST FLOOR OFFICE SPACE | 1" X 1" CEILING TILE | NOB-TEM | | | 29.3% Organic | |
| | | | | | 0.00/ \/ailita | 48.1% Residue | NONE DETECTED |
| 21-226 -2 | | | | | 0.0% Vermiculite | 22.6% Carbonate | NONE DETECTED |
| | | Color: | | Comments: NOB PLM | Inconclusive | | |
| Analyzed By: | Michael Gittings | Second Analyst: Feyz | a Gungor | Commonio. 110B1 EW | mocholacive | | |
| 3 | 1ST FLOOR OFFICE SPACE | 1" X 1" CEILING TILE | NOB-TEM | | | 30.5% Organic | |
| | | | | | 0.00/ 1/ | 54.8% Residue | NONE BETEOTER |
| 21-226 -3 | | | | | 0.0% Vermiculite | 14.7% Carbonate | NONE DETECTED |
| | | Color: | | Comments: NOB PLM | Inconclusive | | |
| Analyzed By: | Michael Gittings | Second Analyst: Feyz | a Gungor | Commonto: 110B1 EW | mocridativo | | |
| 4 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 5% Cellulose | 95% Mineral Filler | | |
| | | | | Trace% FiberGlass | 0.00/ \/ailita | | NONE DETECTED |
| 21-226 -4 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| A l I D | Mi-l1 Oitti | Color: | White | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 5 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 4% Cellulose | 96% Mineral Filler | | |
| | (KITCHEN) | | | Trace% FiberGlass | 0.00/ \/ | | NONE DETECTED |
| 21-226 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | N. 1 10.00 | Color: | White | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 6 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 5% Cellulose | 95% Mineral Filler | | |
| | | | | Trace% FiberGlass | 0.00/ 1/ | | NONE DETECTED |
| 21-226 -6 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: | White | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 7 | 1ST FLOOR OFFICE | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| | WOMEN'S BATHROOM | | | | 0.00/ \/ | | NONE DETECTED |
| 21-226 -7 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: | Grey | | | | |
| Analyzed By: | Michael Gittings | | | | | | |

Batch # 21-226 Page 1 of 4 Report Prepared By: Grace Chan



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | Non- | <u>Asbestos</u> | <u>NOB</u> | <u>Asbestos</u> |
|--------------|---|--|--------|------------------------------------|------------------------|------------|----------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 8 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-226 -8 | WOWLNO BATTINOOM | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Grey | | | | | |
| | Michael Gittings | | | | | | |
| 9 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-226 -9 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Gray | | | | | |
| | 1ST FLOOR OFFICE | AIR CELL PIPE INSULATION 3" | DLM | 200/ Callulana | 470/ Minaral Filler | | 220/ Chrusatila |
| 10 | WOMEN'S BATHROOM | AIR CELL PIPE INSULATION 3 | PLIVI | 20% Cellulose Trace% FiberGlass | 47% Mineral Filler | | 33% Chrysotile |
| 21-226 -10 | | | | | 0.0% Vermiculite | | |
| Analyzed By: | Michael Gittings | Color: Tan | | | | | Total Ashastas: 33 % |
| 11 | 1ST FLOOR OFFICE | AIR CELL PIPE INSULATION 3" | | | | | Total Asbestos: 33 % |
| | WOMEN'S BATHROOM | | | | | | NOT ANALYZED |
| 21-226 -11 | | | | | | | NOT ANALTZED |
| | | | | Comments: Positive st | op, see #10 | | |
| 12 | 1ST FLOOR OFFICE KITCHEN AREA | AIR CELL PIPE INSULATION 3" | | | | | |
| 21-226 -12 | KITCHEN AREA | | | | | | NOT ANALYZED |
| | | | | Commente: Besitive et | on and #10 | | |
| | | | | Comments: Positive st | | | |
| 13 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | ELBOW INSULATION ASSOCIATED WITH AIRCELL | PLM | | 50% Mineral Filler | | 50% Chrysotile |
| 21-226 -13 | | PIPE INSULATION | | | 0.0% Vermiculite | | |
| Analyzad Dy | Michael Cittings | Color: Gray | | | | | |
| | Michael Gittings | EL DOWNNOL HATION | | | | | Total Asbestos: 50 % |
| 14 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | ELBOW INSULATION ASSOCIATED WITH AIRCELL | | | | | |
| 21-226 -14 | | PIPE INSULATION | | | | | NOT ANALYZED |
| | | | | Comments: Positive st | op, see #13 | | |
| 15 | 1ST FLOOR OFFICE | ELBOW INSULATION | | | | | |
| | KITCHEN AREA | ASSOCIATED WITH AIRCELL PIPE INSULATION | | | | | NOT ANALYZED |
| 21-226 -15 | | | | | | | NOT ANALIZED |
| | | | | Comments: Positive st | op, see #13 | | |
| 16 | 1ST FLOOR BATHROOM IN | WRAPPED CARD BOARD PIPE | PLM | 90% Cellulose | 10% Mineral Filler | | |
| 21-226 -16 | OPEN BUILDING SPACE | INSULATION | | | 0.0% Vermiculite | | NONE DETECTED |
| 2. 220 .0 | | Color: Tan | | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 17 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | WRAPPED CARD BOARD PIPE INSULATION | PLM | 80% Cellulose | 8% Mineral Filler | | 12% Chrysotile |
| 21-226 -17 | | | | | 0.0% Vermiculite | | |
| | M. 1 . 10 | Color: Tan | | Comments: POSSIRI F | E FIELD CONTAMINATION | | |
| | Michael Gittings | | | Johnnons, 1 Joseph | - I LED CONTINUINATION | | Total Asbestos: 12 % |

Report Prepared By: Grace Chan Page 2 of 4 Batch # 21-226



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>Non-</u> | -Asbestos | NOB | Asbestos |
|--------------|--|------------------------------------|--------|----------------------|--------------------|--------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 18 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | WRAPPED CARD BOARD PIPE INSULATION | | | | | |
| 21-226 -18 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive s | top, see #17 | | |
| 19 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | MUDDED JOINT FITTING INSULATION | PLM | Trace% Cellulose | 30% Mineral Filler | | |
| 21-226 -19 | OPEN BUILDING SPACE | INSULATION | | 70% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 20 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | MUDDED JOINT FITTING INSULATION | PLM | Trace% Cellulose | 25% Mineral Filler | | |
| 21-226 -20 | OF EN BOILDING OF NOE | MODERMON | | 75% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 21 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | MUDDED JOINT FITTING INSULATION | PLM | Trace% Cellulose | 30% Mineral Filler | | |
| 21-226 -21 | OF EN BOILDING OF AGE | INOCENTON | | 70% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | | | | | |
| Analyzed By: | Michael Gittings | · | | | | | |

Report Prepared By: Grace Chan Page 3 of 4 Batch # 21-226



Feyza Gungor

ATC Group Services LLC

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Non-Asbestos *NOB* **Asbestos**

| ample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
|----------------|-------------------------------|---|-------------------------|----------------------------|--|----------------------------|----------------------|
| OTES: | | | | | | | |
| 1) The Limi | t of Detection is the same | e as the Reporting Limit for these results. | | | | | |
| 2) The Rep | orting Limit (RL) is the Lin | nit of Quantitation. For point counts the lin | mit of quantitation of | 0.25%; based on one as | sbestos point counter over 400 non- | empty points. | |
| 3) Asbestos | Containing Material (ACI | M) Definition: > 1% asbestos by weight is | considered an ACM | 1 | | | |
| report may | | responsible for sample collection. Please uct endorsement by NVLAP or any other an request. | | | | | |
| 5) Accredit | ed by NVLAP #101187-0 | and by NY State ELAP #10879 | | | | | |
| 6) Confider | tiality Notice: The docume | ent(s) contained herein are confidential an | nd privileged informa | tion, intended for the exc | lusive use of the individual or entity | named above. | |
| 7) Liability I | Notice: ATC Group Servic | es and its personnel shall not be liable for | any misinformation | provided to us by the cli | ent regarding these samples. This re | eport relates only to samp | es submitted and ana |
| 8) Asbestos | s results are reliable to 2 s | ignificant figures. | | | | | |
| 9) The cond | dition of all samples was a | cceptable upon receipt. | | | | | |
| 10) The lab | oratory certifies that the te | est results meet all requirements of NELA | C. | | | | |
| 11) Supplei | ment to test report batch # | . Amendments: Ar | mendment Dates: _ | Amended by: | | | |
| 12) PLM Le | etter is attached on this rep | port. | | | | | |
| 13) TRACE | : The result is reported as | Trace when No points are counted and a | sbestos is identified. | . For ELAP Trace is < 19 | 6. | | |
| 14) ATC Gr | oup Services certifies tha | t this report is an accurate and authentic r | eport of the results of | obtained from the laborat | ory analysis | | |
| 15) The und | certainty for these test res | ults is available upon request. | | | | | |
| | | 8.1 for the analysis of samples containing culite and may underestimate the level of | | | | ethods ELAP 198.1 follow | ed by ELAP 198.6. |
| | | . 1 | | | | | |
| Aichael (| Gittings /// | | | | Mei Wan | g Mei | Wony |
| analyst: | w y | | | | Approved | 3 | |

Page 4 of 4 Batch # 21-226 Report Prepared By: Grace Chan



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP1 using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained Trace or No PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any guestions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiley Bourson

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS_BULK DOCUMENTS 2021\BULK_LETTER_DOC_#DB4A.DOC

Page 1 of 1



BATCH NO. 21-226 Page of 2

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Client PANYNJ | | Project Name: FIRESPRINKLER REHABILITATION | | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero | |
|------------------|-------------------------------------|---|----------|--|--|---|
| 1.7 | N I NO | 2a. Projec | t Addres | ss: <mark>(Circle One)</mark> PE PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: 21 | 6. BUILDING NUME 7. Sampling Areas: | 26 | 3 | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1 st Positive |

| | 11. Bulk Sample ID | 12. Material | 13. Thermal | 14. | Sample Location | 15. Material Total | 16. Asbestos |
|----------|-----------------------|-----------------------|----------------|-------|--------------------|-----------------------|-----------------------|
| Area No. | No. | | System | Floor | Sample Coordinates | Qty. (LF, SF, PCS) | Content (Type & %) |
| 1 | 1 | 1/4 / CEILING TILE | | 1 | OFFICE SPACE | 3,720 | ir. |
| 1 | 2 | | | 1 | 10 | | |
| 1 | 3 | | | | 11 | | |
| 2 | 4 | GYPSUA BOARD | | | // | 37205 | ÷ |
| 2 | 5 | /1 | | | 1. (14 jeta) | | |
| 2 | 6 | 4 | | | /1 | | |
| 3 | 7 | CHU HORTAR | | | 11 WOMEN'S BAPHO | D | |
| 3 | 8 | | | | 11 | | |
| 3 | 9 | | | | 11 | | |
| 4 | 10 | AIR CELL PIPE | | |) (| | |
| 4 | 11 | I'N SUID PUN 311 | | | 11 | SIZ CF | |
| 4 | 12 | | | | 11 KITCHEN ALFA | J- 8LF | |
| 5 | 13 | FLBOW | | | ix / / | POLE | |
| 5 | 14 | INSULATION ASSOCI | | | 11 | 1001 | |
| 5 | 15 | wipt AIR CELL PIPE IN | | | M KITCHEN ANEA |)ZLF | |
| 6 | 16 | WRAPIED CARD BUMI | 2 | | BATHROVY IN |) | |
| 6 | 17 | PIPE IN SULATION | | 1 | OPEN BUILDING | 7120 | F |
| 16 | 18 | J/ | | | SPACE. | | |

| 17. Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
|---------------------|----------|----------|-----------------|----------|----------|-------------------------|
| 00.0 | -11 | | 0.1 | 11 | | Field |
| 1. this (as) | 3/1/21 | 3:4001 | n Eleler En y | 3/1/201 | 16:00 | Walk In |
| | | 1 | 0 | | | US Mail |
| II. | | | | | | Fed-Ex |
| III. | | | | | | Other |

| 24. Name and Signature: | 25. Date | 26 Time | 27. Comments (Lab) |
|-----------------------------------|------------|---------|--------------------|
| 24a. Analyzed By: Mag by I Cot 16 | - 3/2/2021 | 07245 | 13/C/7 NOB- NOB- |
| 24b. Analyzed By: Acual Cithy | 3/2/2021 | (3:35 | NOB- LEW |
| 24c. QC By: | | | NOB- TEH |



| | | | - |
|-----------|--------|------|----|
| BATCH NO. | 21-00% | Page | of |
| | V1-770 | | |

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Client PANYNJ | | Project Name: FIRESPRINKLER | REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
|----------------------|-------------------------------|--------------------------------|----------------|--|---|
| | | 2a. Project Address: | | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: 2 2 2 2 2 1 | BUILDING No. Sampling Are | 203 | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1 st Positive |

| | 11. Bulk Sample ID | 12. Material | 13. Thermal | 14. | Sample Location | 15. Material Total | 16. Asbestos |
|----------|-----------------------|----------------------------------|----------------|-------|------------------------------------|-----------------------|-----------------|
| Area No. | No. | Material | System | Floor | Sample Coordinates | Qty. (LF, SF, PCS) | Content |
| 7 | 19 | MUDDED JOINT | | d | BATHROUS IN OPEN | 216 | |
| 7 | 20 | MUDDED JOINT FITTING INSUDPIN | | | BATHROUS IN OPEN BUILDING SPACE | | |
| 7 | 21 | 1, | | | _ 0 | | |
| | | 01 111 1 | A GN | | | | |
| | | Should be treated as | ACM | 1 be | cause pipe is ACM | | |
| | | | | | | * | |
| | | | | | | | |
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| | | n 1 | | | | | |
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| | | | | | | | |
| | | | | | | | |
| | | 10° . | | | | | |
| | | | | | | | |
| | | | | | | | |

| 17. Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
|---------------------|----------|----------|-----------------|----------|-------------|-------------------------|
| 06 0-07 | 2110 | | 5 10 9 | 11 | 720-725-555 | Field |
| 1. Fruit Coop | 5/1/2(| 3:40 1 | E Veler 2 V | 3/1/2021 | 16:00 | Walk In |
| | | | / | | | US Mail |
| II. | | | | | | Fed-Ex |
| III | | | | | | Other |

| LABORATORY INFORMATION | | | | |
|----------------------------------|----------|---------|--------------------|--|
| 24. Name and Signature: | 25. Date | 26 Time | 27. Comments (Lab) | |
| 24a. Analyzed By: Mekal Cill Ill | 3/2/2011 | 07:45 | | |
| 24b. Analyzed By: Mchar Cell | 3/2/271 | 13:3+ | | |
| 24c OC By: | | | | |

-ATLAS ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone

Accreditations: NVLAP 101187-0 ELAP 10879

| ie: (| 212) | 353- | 8280, | Fax: | (212) | 353- | 3599 | or | 8306 |
|-------|------|------|-------|------|-------|------|------|----|------|

| | | | SBESTOS ANALY | | | | OLYMPUS BH-2 NIKON OPTIPHOT |
|---|--|--|---|---|--|--|--|
| | Client / Project PANYNJ/ | | . / | Project | t Number 214PN | IPEPJ1 | . وسر |
| | Analysis Date <u>3/2/2</u> | 021 Analyst | <i>y</i> L | Batch | Number 21- | 226 _т | EMPERATURE C |
| 1 5 Field Number | Stereoscopic Exam | | PLM Optical Pro | · | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color White Texture | Morph Extinction RI1 | RI DS Color Color, | Pleo Biref Sign Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity 7 Vermiculite | / - | | | Amostle | Fiberglass | Organic Binder |
| Recommended 🗆 | | 1 | | | Øther | Other | Vermiculite* |
| See gravimetric □ | # of Layers Asbestos | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | | | Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb,/Ver, PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗌 | PLM 1/Q | WITH THE PROPERTY OF THE PROPE | | 0 20 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| analysis sheet for results | Comments: | | <u> </u> | | | Birefringence | See Note #1. |
| tor results | Method; ☐ ELAP ☐ EPA ,I | SCANNING OPTION | Q.C. | . D | | | |
| 2 6 | | T | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morph Extinction RI1 | PLM Optical Pro | • | Results PLM % | PLM % | PLM % |
| Gravimetric | Color White Texture | | | Theo biret sign office (definity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | | | | Amosite | Fiberglass | Organic Binder |
| Recommended | # of Layers Asbestos | 1 | | | Øther | Other | Vermiculite* |
| See gravimetric analysis sheet | | | | | | | Other |
| for results | Color of Layer Detected Yes No | | | | | Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fîberglass Isotopic | |
| Required 🗀 | PLM /Q | SCOTT AND THE PROPERTY OF THE PROPERTY OF | | 0 70 | 0 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1, |
| 1 | · · · · · · · · · · · · · · · · · · · | | | | | | |
| analysis sheet for results | Comments: | | | | | Birefringence | |
| | | D'SCANNING OPTION | Q.C. | . 🗆 | | Birefringence | |
| for results | | D'SCANNING OPTION | Q.C. | | Asbestos | Other Fibrous | Non Fibrous |
| for results 3 7 Field Number | Method: FELAP EPA Stereoscopic Exam | SCANNING OPTION Morph Extinction R11 | | perties | Results PLM % | Other Fibrous PLM % | PLM % |
| 3 7 Field Number Gravimetric | Method: ØELAP □ EPA | | PLM Optical Pro | perties | Results PLM % Chrysotile | Other Fibrous PLM % Cellulose | PLM % 170 Mineral Filler |
| 3 7 Field Number Gravimetric Required □ | Method: FELAP EPA Stereoscopic Exam | | PLM Optical Pro | perties | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass | PLM % 1700 Mineral Filler Organic Binder |
| for results 3 7 Field Number Gravimetric Required □ Recommended □ | Method: DELAP DEPA Stereoscopic Exam Color Gray Texture C | | PLM Optical Pro | perties | Results PLM % Chrysotile | Other Fibrous PLM % Cellulose | PLM % 100 Mineral Filler Organic Binder Vermiculite* |
| for results 3 | Stereoscopic Exam Color G / J Texture C Homogeneity J Vermiculite J | Morph Extinction R11 | PLM Optical Pro | perties | Results PLM % Chrysotile Amosite | Other Fibrous PLM % Cellulose Fiberglass | PLM % 1700 Mineral Filler Organic Binder |
| 3 7 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color 6/9 Texture 6 Homogeneity Vermiculite 4 # of Layers Asbestos Color of Layer Detected Yes No | Morph Extinction RI 1 | PLM Optical Pro | Pleo Biref Sign Other Identity | Results PLM % Chrysotile mosite Other | Other Fibrous PLM % Cellulose Fiberglass Other | PLM % 100 Mineral Filler Organic Binder Vermiculite* |
| for results 3 | Stereoscopic Exam Color G 7 Texture C Homogeneity Vermiculite / # of Layer Asbestos Color of Layer Detected Yes No | Morph Extinction R11 | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb./Ver. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other |
| 3 7 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Method: DELAP DEPA Stereoscopic Exam Color G/J Texture C Homogeneity Vermiculite / Asbestos Color of Layer Detected Yes No. Point Counts Slide 1 Slide 2 PLM C | Morph Extinction RI 1 | PLM Optical Pro | Pleo Biref Sign Other Identity | Results PLM % Chrysotile mosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Synthetic High Birefringence | PLM % / 170 Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| for results 3 | Method: ELAP EPA Stereoscopic Exam Color Gray Texture C Homogeneity Vermiculite / Asbestos Color of Layer Detected Yes Non Point Counts Slide 1 Slide 2 PLM NOB PLM | Morph Extinction RI 1 | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb./Ver. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Synthetic High | PLM % f 50 Mineral Filler Organic Binder Vermiculite* Other |
| 3 7 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required Required | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Non Point Counts Slide 1 Slide 2 PLM NOB PLM Comments; | Morph Extinction RI I | PLM Optical Pro | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Sirberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samplimight be underestimated. |
| for results 3 | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Non Point Counts Slide 1 Slide 2 PLM NOB PLM Comments; | Morph Extinction RI 1 | PLM Optical Pro | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| for results 3 | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Non Point Counts Slide 1 Slide 2 PLM NOB PLM Comments; | Morph Extinction RI I | PLM Optical Pro | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Sirberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samplimight be underestimated. |
| for results 3 7 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Note of the period of the per | Morph Extinction RI I | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb.Ner. PT Total PT Operties | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % / DO Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampli might be underestimated. See Note #1. Non Fibrous PLM % |
| for results 3 | Stereoscopic Exam Color G// Texture C Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Note of Layer | Morph Extinction R11 Side 3 Slide 4 Slide 5 | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb.Ner. PT Total PT Operties | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % / 170 Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % |
| for results 3 | Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Note of the period of the per | Morph Extinction R11 Side 3 Slide 4 Slide 5 | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb.Ner. PT Total PT Operties | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysoide | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % / DO Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampli might be understimated. See Note #1. Non Fibrous PLM % / O Mineral Filler |
| for results 3 | Stereoscopic Exam Color G// Texture C Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Note of Layer | Morph Extinction R11 Side 3 Slide 4 Slide 5 | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb.Ner. PT Total PT Operties | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Chrysotile Ampsite | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % / ② Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % / ② Mineral Filler Organic Binder |
| for results 3 | Stereoscopic Exam Color Gray Texture C Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM Stereoscopic Exam Color Gray Texture Homogeneity Vermiculite | Morph Extinction RI I Slide 3 Slide 4 Slide 5 SCANNING OPTION Morph Extinction RI I | PLM Optical Pro | Pleo Biret Sign Other Identity Slide 8 Asb.Ner. PT Total PT Operties | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Chrysotile Ampsite | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % / ② Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % / ② Mineral Filler Organic Binder Vermiculite* |
| for results 3 | Stereoscopic Exam Color G/G Texture C Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM Stereoscopic Exam Comments: Method: ELAP EPA Stereoscopic Exam Color G Taxture Asbestos Color of Layer Detected Yes N | Morph Extinction RI I Slide 3 Slide 4 Slide 5 SCANNING OPTION Morph Extinction RI I | PLM Optical Pro RI DS Color Color. Slide 6 Slide 7 Q.C. PLM Optical Pro RI DS Color Color. | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT O Perties Pleo Biref Sign Other Identity | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Chrysotile Ampsite | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampli might be underestimated. See Note #1. Non Fibrous PLM % / ② Mineral Filler Organic Binder Vermiculite* |
| for results 3 7 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required analysis sheet for results 4 8 Field Number Gravimetric Required Recommended See gravimetric Required See gravimetric Required See gravimetric SM-V | Stereoscopic Exam Color Gray Texture CHomogeneity Vermiculite Asbestos Color of Layer Detected Yes Non Nobert Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Point Counts Stide 1 Stide 2 | Morph Extinction R11 Slide 3 Slide 4 Slide 5 Slove 5 State 4 Slide 5 | PLM Optical Pro RI DS Color Color. Slide 6 Slide 7 Q.C. PLM Optical Pro RI DS Color Color. | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT Perties Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT Slide 8 Asb.Ner. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysoile Ampsite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % / ⑦ Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampli might be underestimated. See Note #1. Non Fibrous PLM % / ② Mineral Filler Organic Binder Vermiculite* |
| for results 3 | Stereoscopic Exam Color Gray Texture C Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Gray Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM Stereoscopic Exam | Morph Extinction R11 Slide 3 Slide 4 Slide 5 Slove 5 State 4 Slide 5 | PLM Optical Pro RI DS Color Color. Slide 6 Slide 7 Q.C. PLM Optical Pro RI DS Color Color. | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT O Perties Pleo Biref Sign Other Identity | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Chrysotile Asbestos Results PLM % Chrysotile Ampsite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Other Cellulose Fiberglass Other | PLM % / DO Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % / O Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| for results 3 7 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required analysis sheet for results 4 8 Field Number Gravimetric Required Recommended See gravimetric Required See gravimetric Required See gravimetric SM-V | Stereoscopic Exam Color Gray Texture CHomogeneity Vermiculite Asbestos Color of Layer Detected Yes Non Nobert Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Color Gray Texture CHOMENT Stereoscopic Exam Point Counts Stide 1 Stide 2 | Morph Extinction R11 Slide 3 Slide 4 Slide 5 Slove 5 State 4 Slide 5 | PLM Optical Pro RI DS Color Color. Slide 6 Slide 7 Q.C. PLM Optical Pro RI DS Color Color. | Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT Perties Pleo Biref Sign Other Identity Slide 8 Asb.Ner. PT Total PT Slide 8 Asb.Ner. PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysoile Ampsite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Harris Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence | PLM % / ② Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sampli might be underestimated. See Note #1. Non Fibrous PLM % / ② Mineral Filler Organic Binder Vermiculite* Other * If vermiculite is >10% the |

weenous: EPA interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/115

Note #1; ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantificat of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L'LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS_ANALYSIS_SHEET_FORM #82.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

| PLM Optical Properties | | bestos Its PLM ' |
|--|----------------|---------------------|
| Analyst | Batch Number | 2 |
| SPRINKLER REHAB | Project Number | r <u>214</u> |
| BULK ASBESTOS ANALYSIS SHEET | | |
| ATC - New York 104 East 25 th Street, 8 th FL, New York, NY 1001 Phone: (212) 353-8280, Fax: (212) 353-3599 or 83 | | |
| | | |

| ATC | | | 3-8280, Fax: (212) 353-3599 or 830 | 6 | NVLAP 101187-0 ELAP 10879 | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | ESTOS ANALYSIS SHEET | | <u>Microscopes:</u> OLYMPUS BH-2/ NIKON OPTIPHOT | | | | | | | |
| | Client / Project PANYNJ/ F | FIRESPRINKLER REHA | AB | Project Number 214PNPEPJ1 | | | | | | | | |
| | Analysis Date 3/2 /20 |)21 Analyst | ML | Batch Number 21-226 | TEMPERATURE °C | | | | | | | |
| 1 1 Field Number | Stereoscopic Exam | 1 | LM Optical Properties | Asbestos Other Fit Results PLM % PLM | | | | | | | | |
| Gravimetric | Color TM Texture | Morph Extinction RI1 R | II DS Color Color, Plea Biref Sign Other | | ellulose / D Mineral Filler | | | | | | | |
| Required (| Homogeneity Vermiculite | | | | bergiass Organic Binders ther Vermiculite* | | | | | | | |
| See gravimetric | # of Layers Asbestos | | | Officer | Other | | | | | | | |
| analysis sheet for results | Color of Layer Detected Yes No | | | Celtulose Or Extinction | ndulose | | | | | | | |
| SM-V | Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 Stide 5 S | Slide 6 Slide 7 Slide 8 Asb./Ver. PT | otal PT %Asb. Or %Ver. D Fiberglass Is | · 1 | | | | | | | |
| Required 🗌 | | | | ☐ Synthetic Hi Birefringenc | level of asbestos in a sample | | | | | | | |
| See SM-V □ | NOB PLM | ATTIVING COLUMN ASSESSMENT ASSESS | | C Horse Hair: S Low to Moder Birefringence | rate See Note #1. | | | | | | | |
| analysis sheet for results | Comments: | | la a m | = Bitestingence | | | | | | | | |
| | Method: □ELAP □ EPA □ SCANNING OPTION Q.C. □ | | | | | | | | | | | |
| 2 Field Number | Stereoscopic Exam | P | LM Optical Properties | Asbestos Other Fit | | | | | | | | |
| Gravimetric | Color Tan Texture T | Morph Extinction RI1 R | RI DS Color Color, Pleo Biref Sign Other | | ellulose 15 Mineral Filler | | | | | | | |
| Required | Homogeneity 7 Vermiculite | | | | berglass Organic Binders | | | | | | | |
| Recommended 🗆 | # of Layers Asbestos | | | Other Of | ther Vermiculite* | | | | | | | |
| See gravimetoe analysis sheet for results | Color of Layer Detected Yes No | | | Cellulose Or Extinction | Other Other | | | | | | | |
| SM-V | Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 Slide 5 S | Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. Fiberglass Is | sotopic | | | | | | | |
| Required 🗌 | PLM | | | ☐ Synthetic Hi Birefringend | | | | | | | | |
| See SM-V | NOD DI W 27 | | 101 | Par Horse Hair: Low to Mode: | Scales, might be underestimated. rate See Note #1. | | | | | | | |
| analysis sheet for results | Comments: | | | Birefringence | e | | | | | | | |
| | Method: ELAP [] EPA [| SCANNING OPTION | Q.C. □ | | | | | | | | | |
| 3 Sield Namber | Stereoscopic Exam | 1 | PLM Optical Properties | Asbestos Other Fit Results PLM % PLM | | | | | | | | |
| Gravimetric | Color T/M Texture | Morph Extinction RI1 R | RI DS Color Color, Pleo Biref Sign Othe | | ellulose 100 Mineral Filler | | | | | | | |
| Required 🗂 | Homogeneity | Amosile Fi | berglass Organic Binder | | | | | | | | | |
| Recommended | # of Layers Asbeslos | | | Other O | ther Vermiculite* | | | | | | | |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes No | Other | | | | | | | | | | |
| SM-V | Point Counts Slide 1 Slide 2 S | Extinction Fotal PT %Asb. Or %Ver. | sotopic | | | | | | | | | |
| Required | PLM | ☐ Synthetic H Birefringeno | " If vermiculite is >10% the | | | | | | | | | |
| C CH V | NOB PLM % | | | 7650 | lievel of aspesios in a sample | | | | | | | |

| See SM-V □ | NOB PLM 6 | | | | | might be underestimated, See Note #1. |
|-------------------------------|--------------------------------------|--|--------------------------------------|---------------------------|---|---|
| analysis sheet for results | Comments: | <i>′</i> | | | and migerioe | |
| 10,750 | Method: ☐ELAP ☐ EPA ☐SCAN | NING OPTION C | ≀.C. □ | | | |
| 4 4 Field Number | Stereoscopic Exam | PLM Optical F | Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color (1 h FC Texture F Morph | Extinction RII RI DS Color Co | olor, Pieo Biref Sign Other Identity | Chrysotile | Cendidae | 9K Mineral Filler |
| Required | Homogeneity Vermiculite / | | | Amosite | Fiberglass | Organic Binders |
| Recommended | 7 - | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | / / | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 Slide 3 | Slide 4 Slide 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM 2 | TO SECONDATE OF THE PROPERTY O | 070 | 7 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | • | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated, See Note #1. |
| analysis sheet for results | Comments: | | | | DREITHIGHTOG | |
| | Method: ☐ ELAP ☐ EPA ☐ SCAN | NING OPTION C |).C. □ | | | |

Page _____ of _____

Methods:

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763

EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY ME! WANG FORM #32

ELAP Items 198.1, 198.4, 198.6, 198.8

Page ____ of ____

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or

Accreditations: NVLAP 101187-0

-ATEAS ATC

ATC - New York

| 104 LUST 20 | Oucci, o | i L., 14C44 | TOIR, INT | 10010 |
|----------------|--------------|-------------|-----------|---------|
| Phone: (212) 3 | 853-8280, Fa | ax: (212) | 353-3599 | or 8306 |

| Microsco |
|-------------|
| OLYMPUS B |
| NIKON OPTIP |
| |

Project Number 214PNPEPJ1

| | 104 Last 25 Street, 6 12, New York, NY 10010 |
|------------------|--|
| | Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 |
| | BULK ASBESTOS ANALYSIS SHEET |
| Client / Project | PANYNJ/ FIRESPRINKLER REHAB |

| | Analysis | Date | 3/2 /2 | 2021 | _ Analyst | | MC- | | | | Batch | Number 21- | 226 | EMPERATURE® |
|--|---|--|--|--------------------------|--|---------------------------|--------------|--|--|---|------------------------|--|--|--|
| 13 Id Number | Stere | oscopic I | Exam | | | | | ptical Pi | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color GM | Textu | re <u> </u> | Morph حر) | Extinction | RII (- 546 | | Color Col | or, Pleo B | ref Sign Ot | her Identity | 50 Chrysotile | Cellulose | 5 OMineral Filler |
| Required 🗀 | Homogeneity | 1 verm | iculite | 1+ | | | | +- | 7-1 | - - - - - | | Amosite | Fiberglass | Organic Binde |
| (ecommended 🗌 | nomogeneny | T | | | | | _ | <u> </u> | <i>ナ</i> ノ | | 二二 | Other | Other | Vermiculite* |
| ee gravimetric 🗌 | # of Layers | Asbe | stos 🔼 _ | _ | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer | Detec | cted Yes I | 10 | | | | | | | | | ☐ Celtulose Ondulose | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| | PLM | 1/ | 17 | 17 | 1/ | | Olido d | | Olido o | ļ | 7 | 5 | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | | 1/3 | 110 | 12 | 12 | - | | | | 4 | <u> </u> | <u> </u> | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | *************************************** | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | ~ | | | | Direntingerice | |
| | Method: 🖵 | LAP [| EPA | ☐ SCAN | NING OPTI | ON | | Q. | c . □ | | | | | |
| 14 | Stere | oscopic l | Exam | | ······································ | | PLM O | ptical P | opertie | s | | Asbestos | Other Fibrous | Non Fibrous |
| ld Number | | • | | Morph | Exlinction | RII | | S Color Col | - | | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color | Textu | re | | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity _ | Verm | iculite | | | | | | | | | Arnosite | Fiberglass | Organic Binde |
| tecommended 🗔 | # of Layers | Asbe | stos | | | | | | | | | Other | Other | Vermiculite* |
| ee gravimetric 🗆 analysis sheet | | | | | | | | | | | | | | Other |
| for results | Color of Layer_ | Detec | cted Yes I | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [] | PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM | | | | | | | · · · · | | | | | 🖺 Horse Hair: Scales, | level of asbestos in a samp might be underestimated, |
| analysis sheet | Comments: | | <u> </u> | | | 5-e | P . [] | J | | <u> </u> | <u></u> | <u> </u> | Low to Moderate Bisefringence | See Note #1. |
| for results | Method: ☐ E | LAP [|) EPA | SCAN | NING OPTI | | | lo. | c . □ | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | <u> </u> | | | T Schooles | Cth mil | Man Citaria |
| 15 ld Number | Stere | oscopic l | Exam | | | , | PLM O | ptical P | | s | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| | Stere | | | Morph | n Extinction | SI1 | | | ropertie | | her Identity | Results PLM % | PLM % | PLM % |
| ld Number | Color | Textu | те | Morph | n Extinction | RII | | ptical P | ropertie | | her Identity | l. | 1 | l . |
| d Number Gravimetric | | Textu | те | Morph | Extinction | RIT | | ptical P | ropertie | | her Identity | Results PLM % Chrysotile | PLM % Cellulose | PLM % Mineral Filler Organic Binde |
| Id Number Gravimetric Required tecommended | Color | Textu | rre | Morph | n Extinction | RIT | | ptical P | ropertie | | her Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Required decommended ee gravimetric analysis sheet | Color Homogeneity # of Layers | Textu Verm Asbe | rre | | n Extinction | SIT. | | ptical P | ropertie | | ther Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binde |
| Gravimetric Required Recommended Regravimetric Regravimetric | Color Homogeneity # of Layers Color of Layer _ | Textu Verm Asbe | stos | 10 | | | RIII DE | ptical P | ropertie | ref Sign Ot | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction | PLM % Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Required decommended ee gravimetric analysis sheet | Color Homogeneity # of Layers | Textu Verm Asbe | rre | | Extinction | RI1 | | ptical P | ropertie | | | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic | PLM % Mineral Filler Organic Binde Vermiculite* Other |
| Gravimetric Required tecommended analysis sheet for results | Color# of Layers Color of Layer _ Point Counts | Textu Verm Asbe | stos | 10 | | | RIII DE | ptical P | ropertie | ref Sign Ot | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Required ctecommended analysis sheet for results SM-V | Color# of Layers Color of Layer _ Point Counts | Textu Verm Asbe | stos | 10 | | | RIII DE | ptical P | ropertie | ref Sign Ot | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. |
| Gravimetric Required cee gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Color # of Layers Color of Layer _ Point Counts PLIM | Textu Verm Asbe | stos | 10 | | | RIII DS | ptical Pi | ropertie: or, Pleo B | ref Sign Ot | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Biretringence | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp |
| Gravimetric Required tecommended analysis sheet for results SM-V Required See SM-V See SM-V | Color # of Layers Color of Layer Point Counts PLM NOB PLM | Verm Asbe Detection Slide 1 | stos | No Slide 3 | | Slide 5 | RIII DS | ptical Pi | ropertie | ref Sign Ot | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. |
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| Gravimetric Required □ tecommended □ ee gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Color | Verm Asbe Detection Slide 1 | stos cted Yes ! Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. |
| Gravimetric Required tecommended analysis sheet for results SM-V Required see SM-V analysis sheet for results | Color | Textu Verm Asbe Detection 1 | stos s | Slide 3 | Slide 4 | Slide 5 | RIII DS | ptical Properties of the prope | Slide 8 | Asb.Ner. PT | | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scates, Low to Moderate Birefringence Other Fibrous | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. |
| Gravimetric Required tecommended analysis sheet for results SM-V Required analysis sheet for results SM-V Analysis sheet for results analysis sheet for results | Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: □ E | Textu Verm Asbe Detect Slide 1 ELAP oscopic | stos | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Vor. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binde Vermiculite* Other "If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. |
| Gravimetric Required Required Required Required Required Required Required Required Required Required Required Required Analysis sheet for results | Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: | Textu Verm Asbe Detect Slide 1 ELAP Textu Textu | stos | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scates, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Binde Vermiculite* Other "If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| Gravimetric Required tecommended see gravimetric analysis sheet for results SM-V Required see SM-V analysis sheet for results for results 16 Gravimetric Required Gravimetric Required cecommended see gravimetric cecommended see gravimetric cecommended see gravimetric cecommended cecommend | Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: □ E | Textu Verm Asbe Detect Slide 1 ELAP oscopic | stos | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scates, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / O Mineral Filler Organic Binde |
| Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimetric Gravimended Gravim | Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: | Textu Verm Asbe Detect Slide 1 ELAP Textu Verm Asbe | stos Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 3 Slide | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Gravim | Color | Textu Verm Asbe Detect Slide 1 ELAP Textu Asbe Detect | stos Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 2 Slide 3 Slide | Slide 3 | Slide 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb.Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetigh Birefringence Horse Hair Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Gravimetric analysis sheet for results SM-V Required analysis sheet for results SM-V Required analysis sheet for results 16 Id Number Gravimetric Required analysis sheet for results | Color | Textu Verm Asbe Detect Slide 1 ELAP Textu Asbe Detect | stos EPA Exam iculite Slide 2 Exam iculite stos cted Yes I | Slide 3 Slide 3 | Slide 4 | Slide 5 | RIII DS | ptical Pi | C. ropertie- ropertie- propertie- Asb./Ver. PT | her Identity Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / Mineral Filler Organic Binde Vermiculite* |
| Gravimetric Gravimetric Arequired Content of the commended Content of the content of t | Color | Textu Verm Asbe Detect Slide 1 ELAP Textu Asbe Detect | stos EPA Exam iculite Slide 2 Exam iculite stos cted Yes I | Slide 3 Slide 3 | Slide 4 | Slide 5 | RIII DS | ptical Pi | C. ropertie- ropertie- propertie- Asb./Ver. PT | Total PT | Asbestos Results PLM % — Chrysotile — Amosite — Other *Asb. Or %Ver. Aspectos Aspectos Results PLM % — Chrysotile — Amosite — Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Other Cellulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binde Vermiculite* Other "If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / O Mineral Filler Organic Binde Vermiculite* Other |
| Gravimetric Canalysis sheet for results See SM-V Canalysis sheet for results 16 Id Number Gravimetric Canalysis sheet for results 16 Id Number Gravimetric Canalysis sheet for results SM-V Required Canalysis sheet for results | Color Homogeneity # of Layers Color of Layer Point Counts PLM NOB PLM Comments: Method: □ E Stere Color of Layers Color of Layers Color of Layers Point Counts PLM NOB PLM | Textu Verm Asbe Detect Slide 1 ELAP Textu Asbe Detect | stos EPA Exam iculite Slide 2 Exam iculite stos cted Yes I | Slide 3 Slide 3 | Slide 4 | Slide 5 | RIII DS | ptical Pi | C. ropertie- ropertie- propertie- Asb./Ver. PT | her Identity Total PT | Asbestos Results PLM % — Chrysotile — Amosite — Other *Asb. Or %Ver. Aspectos Aspectos Results PLM % — Chrysotile — Amosite — Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence | PLM % Mineral Filler Organic Binde Vermiculite* Other * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. Non Fibrous PLM % / Omineral Filler Organic Binde Vermiculite* Other |
| Gravimetric Gravimetric Arequired Content of the commended Content of the content of t | Color | Textu Verm Asbe Detect Slide 1 Textu Verm Asbe Slide 1 | stos EPA Exam iculite Slide 2 Exam iculite stos cted Yes I | Slide 3 SCAN Morph // | Slide 4 | Slide 5 ON Rt1 Slide 5 | RIII DS | ptical Pi | C. ropertie- ropertie- propertie- Asb./Ver. PT | her Identity Total PT | Asbestos Results PLM % — Chrysotile — Amosite — Other *Asb. Or %Ver. Aspectos Aspectos Results PLM % — Chrysotile — Amosite — Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Other Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Fiberglass Low to Moderate Extinction Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binde Vermiculite* Other If vermiculite is >10% the level of asbestos in a samp might be underestimated. Non Fibrous PLM % Mineral Filler Organic Binde Vermiculite* Other If vermiculite is >10% the level of asbestos in a samp might be underestimated. |

Methods:
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

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| 8306 | | | |

BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ/ FIRESPRINKLER REHAB 126-Analysis Date 3/7 /2021 Analyst

Project Number 214PNPEPJ1 TEMPERATURE °C 21-226

Non Fibrous Asbestos Other Fibrous 9 Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RI || DS Color Color, Pleo Biref Color Coy Texture Cellulose Mineral Filler Gravimetrio __ Organic Binder Required Vermiculite* See gravimetric [analysis sheet for results Extinction %Asb. Or %Ver. Fiberglass Isotopic Point Counts SM-V If vermiculite is >10% the PIM 700 Required [Birefringence evel of asbestos in a samol Horse Hair Scales might be underestimated, NOB PLM See SM-V Low to Moderate analysis sheet Q.C. SCANNING OPTION Method; ☐ ELAP ☐ EPA

| - 1 | 2 10 Field Number | Stereoscopic Exam | PEM Ontical Properties | Asbestos sults PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|-----|-------------------------------|--------------------------------|--|-------------------------|----------------------------------|---|
| | Gravimetric | Color Texture T | Morph Extinction RI 1 RI DS Color, Color, Pleo Biref Sign Other Identity 1 1517 155 Mile The Color Sign Other Identity 3 | 3 Chrysotile | | <u>47</u> Mineral Filler |
| | Required 🗌 | Homogeneity | <i>─┼ ─┼ ─┼ ─┼ ─┼</i> ─/ ─/ | Amosite | Fiberglass | Organic Binde |
| | Recommended 🗌 | | | Other | Other | Vermiculite* |
| | See gravimetric 🗆 | # of Layers Asbestos / | | | | Other |
| | analysis sheet for results | Color of Layer Detected Yes No | | 1 | Cellulose Ondulose Extinction | |
| Ì | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %As | sb. Or %Ver. | Fiberglass Isotopic | |
| | Required 🗌 | PLM 1/6 (| 11 4 4 12 3 | 25 | | * If vermiculite is >10% the level of asbestos in a samp |
| | See SM-V | NOB PLM | | | | might be underestimated. See Note #1. |
| | analysis sheet for results | Comments: | | | Birefringence | |
| - | ioi results | Method: PELAP FPA | SCANNING OPTION Q.C. | | | |

| 3 11 | Storo | scopic E | | | | | DIMEO | ntical E | roperti | oe. | | | | Asbestos | Other Fibrous | Non Fibrous |
|-------------------------------|------------------|-----------|---------|---------|------------|---------|---------|-----------|------------|-------|---------|-------------|---------------|----------------------------------|------------------------------|--|
| Field Number | Sterec | scopic s | Zaiii | | | | | • | • | 62 | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color | Textua | re | | Extinction | RI1 | RII D | S Color C | olor, Plec | Biref | Sign | Other I | Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗅 | Homogeneity | Vermi | iculite | | | | - | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | | | | | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers | Asbes | stos | _ | | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer _ | ted Yes I | 10 | | | | | | | | | | | Cellulose Ondulose Extinction | | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide | 8 As | b./Ver. | PT Tot | tal PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [] | PLM | | | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | | | | | | | | | | Low to Moderate | might be underestimated. See Note #1, |
| analysis sheet for results | Comments: | | | | see 10 | | | | | | | | Birefringence | | | |
| | Method: 🗆 E | LAP | EPA | SCAN | NING OPTI | ON | | C |).C. 🗆 | | | | | | | |

| 4 12 Field Number | Stereo | scopic E | Exam | | | | | | Prope | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | |
|---|---------------------------------|----------|---------|---------|------------|---------|-------|----------|-------------|-------|-------------|---------------------------|------------------------|--|---|
| | Color | Textu | re | Morph | Extinction | RI1 | RI [| DS Color | Color, Plea | Biref | Sign C | other Identity | Chrysotile | | Mineral Filler |
| Required Recommended | Homogeneity | Vermi | iculite | | | | | | | | | | Amosite | Fiberglass | Organic Binders Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Color of Layer _ | | | | | | | | | | | | | ☐ Celiulose Ondulose | Other |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide | 6 Slide | 7 Slid | e 8 | Asb,/Ver, P | T Total PT | %Asb. Or %Ver. | Extinction G Fiberglass Isotopic | |
| Required 🗌 | PLM | | | | | | ļ | | | | | ļ | | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is > 10% the level of asbestos in a sample |
| See SM-V ☐ analysis sheet | NOB PLM | | | | | | | 5 | | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Comments: | LAP [| EPA | ☐ SCAN | NING OPTI | ON | Se | | Q.C. [| | | | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #52

17

Gravimetric

Required

See gravimetric [analysis sheet for results

SM-V

Required [

See SM-V analysis sheet

18

Required [Recommended [

See gravimetric [analysis sheet for results

SM-V

See SM-V □ analysis sheet

19

Gravimetric

Required I

analysis sheet

for results

SM-V

Required [

See SM-V analysis sheet for results

20

See gravimetric I analysis sheet

for results

Required [

See SM-V

analysis sheet

for results

Method: ☐ ELAP ☐ EPA

Point Counts

NOB PLI

Comments:

Point Counts

Comments:

Color of Layer __

Point Counts Stide 1

Method; ØELAP □ EPA

Color of Layer ____ Detected Yes N

Point Counts Slide 1 Slide 2

Method: ØELAP □ EPA

SCANNING OPTION

Method: ☐ ELAP ☐ EPA

ATC - New York

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Accreditations: NVLAP 101187-0 ELAP 10879

| | AIC - NEW TOIK |
|----|--|
| | 104 East 25th Street, 8th FL, New York, NY 10010 |
| | Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 |
| | BULK ASBESTOS ANALYSIS SHEET |
| :t | PANYNJ/ FIRESPRINKLER REHAB |
| Ī | 217 12021 MIC |

| | Client / Project | PANYN. | I/ FIRES | PRINK | LER REI | HAB | | | | Project | Number 214PI | NPEPJ1 | NIKON OP 11PHO) |
|---------------------------------|--------------------|---|--|--------------|---------|---|--------------|--|------------------------|-------------------|---|--|---|
| | Analysis Date | | | _ Anaiyst | | MC | • | | | | | 226 | EMPERATURE °C Z |
| 1 21 Field Number | Stereoscop | oic Exam | | | | | ptical Pr | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color GIZ T | exture | Morph | n Extinction | RI1 | RIII DS | S Color Colo | or, Pleo Bi | ref Sign Of | ther identity | Chrysotile | Cellulose | 3 Mineral Filler |
| Required | Homogeneity V | /ermiculite | $\mathcal{A} =$ | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Louisia | chactas | <i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i> | | , | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🗆 | # of Layers A | Asbestos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer E | Detected Yes | No | | | | | | | | _ | Cellulose Ondulose Extinction | |
| SM⊹V | Point Counts Slide | e 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb, Or %Ver. | Fiberglass Isotopic | |
| SM-V | .72 | | ******* | *** | | | | | | - | 0 | ☐ Synthetic High | * If vermiculite is >10% the |
| Required [| PLM | 2 | | | | | | | 0 | 200 | | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | | | | | | | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | , | | | | Section Commission Com | 42000040000+0000042000 | ADHROUNDHOUD DOWN | 1234 MANUAL STATE OF THE STATE | Birefringence | |
| | Method: ELAP | □ EPA | J⊒ SCAN | NING OPTI | ON | | Q. | c. 🗆 | | | | 1 | |
| 2 | | · · · · · · · · · · · · · · · · · · · | <u> </u> | | | *************************************** | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscop | pic Exam | | | | PLM O | ptical Pr | operties | \$ | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color T | - Aylııca | Morph | Extinction | RII | RIII DS | Color Colo | r, Pleo Bi | ref Sign Of | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| | 1 | exture | | | | | | | | | Amosite | Fiberglass | wirlerar riller Organic Binders |
| Required Recommended | Homogeneity \ | /ermiculite | | | | | | | | | | 1 | |
| | # of Layers A | Asbestos | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | | | | | | | | | | | | | Other |
| for results | Color of Layer D | Detected Yes | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide | e 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, P1 | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Danish of D | PLM | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| Required 🗔 | NOB PLM | | - | | - | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | | | <u></u> | <u> </u> | | <u> </u> | | | <u> </u> | | | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: | | | | | | | | | | | | |
| | Method: 🗆 ELAP | ☐ EPA | ☐ SCAN | NING OPTI | ON | | Q. | C. □ | | | | <u> </u> | |
| 3 | Stereosco | pic Exam | | • | | PLM O | ptical Pr | operties | 3 | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | | | Morph | n Extinction | RLI | | S Color Colo | - | | ther Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color T | exture | | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity V | /ermiculite | | | | | | | | | Arnosite | Fiberglass | Organic Binder: |
| Recommended 🛘 | | *************************************** | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🗆 | # of Layers A | Asbestos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer [| Delected Yes | No | | | | | | | | | ☐ Cellulose Ondulose | |
| | Point Counts Slide | e 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb.Ner. P | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| SM-V | | e i Silde z | Silue 3 | alide 4 | Side 5 | Onde 6 | Slide / | Silde 6 | ASD./Vel. F | TotalFI | 76ASD. OF 76V61. | ☐ Synthetic High | |
| Required 🗌 | PLM | | | | | | | | | <u> </u> | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | 1 | 1 | | | | | | Birefringence | Sec Note #12 |
| 701 YESUIS | Method: 🗆 ELAP | □ ЕРА | ☐ SCAN | NING OPTI | ION | | Q. | C. 🗌 | | | | 1 | |
| 4 | | | | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereosco | pic Exam | | | | | ptical Pi | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color T | exture | Morpi | h Extinction | RII | RII D | S Calor Col | or, Pleo Bi | ref Sign O | ther Identity | Chrysotile | Celiulose | Mineral Filler |
| Required [| | | | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended 🗆 | Homogeneity\ | /ermiculite | | | | | | | | | Other | Other | Vermiculite* |
| | # of Layers | Asbestos | | | | | | | | | - Oulei | - Cale | |
| See gravimetric analysis sheet | 0-1 | | . | | | | | | | | | | Other |
| for results | Color of Layer E | Detected Yes | L#0 | | | | | | | | | ☐ Ceilulose Ondulose Extinction | |
| SM-V | Point Counts Slide | e 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Peguined [7] | PLM | | | | | | | | | | | Synthetic High | * If vermiculite is >10% the |

ral Filler anic Binders niculite' level of asbestos in a sampl] Horse Hair: Scales, might be underestimated. NOB PLM See SM-V Low to Moderate ee Note #1. analysis sheet Comments: for results Q.C. Method: ☐ ELAP ☐ EPA ☐ SCANNING OPTION

Page ____ of ____

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculitie ET AP requires methods ELAP 198.1 followed by ELAP 198.5. This method has limitations for identification of vermiculitie. This method does not remove vermiculitie and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculitie. This method does not remove vermiculitie and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculitie. Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculitie (SM-V) and it utilizes a 400 point count method.

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| | | 12) 353-8280, Fax: (21 | | | | | NVLAP 101187-0 ELAP 10879 |
|---------------------------------------|---------------------|---|----------------------|---|----------------------------|--|---|
| | BUL | K ASBESTOS ANAL | YSIS SHEET | | | | Microscopes: OLYMPUS BH-2 / |
| Client / Project PANYNJ/ FI | RESPRINKLER | REHAB | | Project | Number 214PN | IPEPJ1 | NIKON OPIPHOT |
| Analysis Date 3/ 7/202 | 21 Analyst | wc | | Batch N | Number 21- | 226 _т | EMPERATURE °C |
| Stereoscopic Exam | <u> </u> | PLM Optical Pro | • | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| or Ton Texture F | Morph Extinction RI | | r, Pleo Biref Sign O | ther Identity | Chrysotile | √ V Cellulose | Mineral Filler |
| nogeneity / Vermiculite / | +-+- | +-+-++ | ' | | Amosite | Fiberglass | Organic Binders |
| | エエフ | | | | Other | Other | Vermiculite* |
| Layers Asbestos / | | | | | | _ | Olher |
| or of Layer Detected Yes No _ | | | | | / | Cellulose Ondulose Extinction | |
| oint Counts Slide 1 Slide 2 Slid | ie 3 Slide 4 Slid | de 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fibergtass Isotopic | |
| PLM / 7 / 6 | 7 /7 | | 4 | 3.3 | 12 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| NOB PLM | 3 / 6 | *************************************** | | | | ☐ Horse Hair: Scales, Low to Moderate | rnight be underestimated. See Note #1. |
| omments: /JS | ible field | Contarraction | 77 7 | ــــــــــــــــــــــــــــــــــــــ | | Birefringence | See Note #1. |
| ····· | SCANNING OPTION | | ,, 5. □ | | | | |
| Stereoscopic Exam | | DI M Ontina! D- | onortica | | Asbestos | Other Fibrous | Non Fibrous |
| · · · · · · · · · · · · · · · · · · · | Morph Extinction RI | PLM Optical Pro | • | ther Identity | Results PLM % | PLM % | PLM % |
| or Texture | pn Sautonon (5) | | But Gigil U | Keriaty | Chrysotile | Cellulose | Mineral Filler |
| nogeneity Vermiculite | | | | | Amosite | Fiberglass | Organic Binders |
| Layers Asbestos | | | | | Other | Other | Vermiculite* |
| - | | | | | | | Other |
| or of Layer Detected Yes No _ | | | | <u> </u> | | Cellulose Ondulose Extinction | |
| oint Counts Slide 1 Slide 2 Slide | de 3 Slide 4 Slid | de 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| PLM | | | | | | Synthetic High Birefringence | If vermiculite is >10% the level of asbestos in a sample |
| NOB PLM | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| omments: | - | see 1 | 7 | | | Birefringence | OCC NOCE IT. |
| ethod: 🗆 ELAP 🔲 EPA 🗀 S | SCANNING OPTION | | c.'o | | | | |
| Stereoscopic Exam | | PLM Optical Pro | onerties | | Asbestos | Other Fibrous | Non Fibrous |
| | Morph Extinction RI | <u> </u> | • | ther identity | Results PLM % | PLM % | PLM % |
| or C Texture | | | | | Chrysotile | Cellulose | 39 Mineral Filler |
| mageneity | | | | | Amosite | <u> </u> | Organic Binders |
| Layers Asbestos | | | | | Other | Other | Vermiculite* |
| | | | | | | / | Other |
| or of Layer Detected Yes No _ | | | | = $=$ $=$ | | Extinction | |
| oint Counts Slide 1 Slide 2 Slide | de 3 Slide 4 Slid | de 5 Slide 6 Slide 7 | Slide 8 Asb.Ner. P | <u> </u> | %Asb. Or %Ver. | Fiberglass Isotopic | |
| PLM S | C-1000000 | | | 20 | 0 | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| NOB PLM | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| omments: | | | | | | Birefringence | |
| ethod: DELAP DEPA DS | SCANNING OPTION | Q.0 | C. 🗆 | *************************************** | | | <u></u> |
| Stereoscopic Exam | ······ | PLM Optical Pr | operties | | Asbestos Results PLM %/ | Other Fibrous | Non Fibrous PLM % |
| or C12 Texture | Morph Extinction R | 1 RI DS Color Colo | r, Plea Biref Sign O | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| | | | | | Amosite | 7 Fiberglass | Organic Binders |
| nogeneity Vermiculite | | | | | Other | Other | Vermiculite* |
| Layers Asbestos | | | | | | | Other |
| or of Layer Detected Yes No _ | | | | | | ☐ Cellulose Ondutose Extinction | |
| oint Counts Slide 1 Slide 2 Slide | de 3 Slide 4 Sli | de 5 Slide 6 Slide 7 | Slide 8 Asb./Ver. P | Total PT | %Asb. Or %Ver. | Fiberglass isotopic | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 500/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

NOB PLN

Q.C. 🗆

20

Horse Hair: Scale:

Low to Moderate Birefringence

If vermiculite is >10% the

evel of asbestos in a sample

might be underestimated.

See Note #1.

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

Batch #

RUSH

PANYNJ

Client/Project:

03/02/21

| 1.27.20 | 03/02/21 | | | | | | | | | | |
|---------|--------------------------|---------|----------|----------------------------|----------|------|------|--|--|-----------------------------|--|
| | Date Completed: 03/02/21 | | | | | | | | | | |
| 10077 | <u> </u> | ရှ | | TEN | > | > | > | | | | |
| | St: | Methods | NOB | PLN PREF | | > | > | | | | |
| | NOB TEM Analyst: | | | | | | | | | | |
| > | HS | | | Notes | | | | The state of the s | | Market Market State Company | |
| | NOB TEM PREP: | | | | | | | | | | |
| | MJG | 13 | % Total | Asbestos or Vermiculite | | | | | | | |
| | NOB PLM Analyst: | 6 | Asbestos | Types or Vermiculite | QN | Q.N. | ND | | | | |
| | MG/EV | 12 | | % Carbonate | 16.5 | 22.6 | 14.7 | | | | |
| | MG | L see | Non Asb | Residue % NFr | 52.5 | 48.1 | 54.8 | | | | |
| • | NOB PLM PREP: | 5 | | % Organic | 31.0 | 29.3 | 30.5 | | | | |
| | NOB PL | | | Field # | ~ | 2 | 3 | | | | |

Client Copy

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not defected.

ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 4/8/2021

104 EAST 25TH STREET

Date Received: 4/8/2021

NEW YORK, NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Date Analyzed: 4/9/2021

ATC Batch # 21-618

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING #263 Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>No</u> | on-Asbestos | NOB | Asbestos |
|-------------|--|--|--------|--------------------|---------------------|--------|----------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 22 | 1ST FLOOR SPRINKLER ROOM EAST | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-618 -1 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | : Ivan Reyes | Color: Bro | wn | | | | |
| 23 | 1ST FLOOR SPRINKLER ROOM EAST | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-618 -2 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Bro | wn | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 24 | 1ST FLOOR SPRINKLER ROOM EAST | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-618 -3 | TOOM LITE! | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Bro | wn | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 25 | 1ST FLOOR SPRINKLER ROOM EAST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | PLM | | 33% Mineral Filler | | 67% Chrysotile |
| 21-618 -4 | | | | | 0.0% Vermiculite | | |
| | | Color: Gra | ny | | | | |
| Analyzed By | : Ivan Reyes | | | | | | Total Asbestos: 67 % |
| 26 | 1ST FLOOR SPRINKLER ROOM EAST @ CEILING | PACKING INSULATION PENETRATION 8" PIPES | | | | | |
| 21-618 -5 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive | e stop, see #25 | | |
| 27 | 1ST FLOOR SPRINKLER ROOM EAST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | | | | | |
| 21-618 -6 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive | e stop, see #25 | | |
| 28 | 1ST FLOOR SPRINKLER ROOM WEST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | PLM | | 33% Mineral Filler | | 67% Chrysotile |
| 21-618 -7 | ····· ··· · · · · · · · · · · · · · | | | | 0.0% Vermiculite | | |
| | | Color: Gra | ny | | | | |
| Analyzed By | : Ivan Reyes | | | | | | Total Asbestos: 67 % |

Page 1 of 3 Batch # 21-618 Report Prepared By: Grace Chan



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Flo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | Non | -Asbestos | NOB | Asbestos |
|--------------|--|--|---------|------------------------------------|-------------------|---|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 29 | 1ST FLOOR SPRINKLER ROOM WEST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | | | | | |
| 21-618 -8 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive s | top, see #28 | | |
| 30 | 1ST FLOOR SPRINKLER ROOM WEST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | | | | | |
| 21-618 -9 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive s | top, see #28 | | |
| 31 | 1ST FLOOR WAREHOUSE SMALL BATHROOM | TECTUM ŒILING BOARD | NOB-TEM | | 0.0% Vermiculite | 31.4% Organic 11.1% Residue 57.5% Carbonate | NONE DETECTED |
| 21-618 -10 | | Color: White | o/Tan | | 0.0% vermiculte | 57.5% Carbonale | NONE DETECTED |
| Analyzed By: | Mei Wang | Second Analyst: Feyza G | | Comments: NOB PLN | / Inconclusive | | |
| 32 | 1ST FLOOR WAREHOUSE SMALL BATHROOM | TECTUM ŒILING BOARD | NOB-TEM | | | 32.4% Organic 16.1% Residue | |
| 21-618 -11 | | | | | 0.0% Vermiculite | 51.5% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: White Second Analyst: Feyza G | | Comments: NOB PLN | / Inconclusive | | |
| 33 | 1ST FLOOR WAREHOUSE SMALL BATHROOM | TECTUM ŒILING BOARD | NOB-TEM | | | 32.9% Organic 14.4% Residue | |
| 21-618 -12 | | 0.1. 144.4 | - | | 0.0% Vermiculite | 52.7% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: White Second Analyst: Feyza G | | Comments: NOB PLN | 1 Inconclusive | | |
| 34 | 1ST FLOOR WAREHOUSE DIVIDING WALL | WALL BLANKET INSULATION | PLM | Trace% Cellulose | 5% Mineral Filler | | |
| 21-618 -13 | | | | 95% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Brov | vn | | | | |
| 35 | 1ST FLOOR WAREHOUSE | WALL BLANKET INSULATION | PLM | Trace% Cellulose | 5% Mineral Filler | | |
| 21-618 -14 | DIVIDING WALL | | | 95% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brov | vn | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 36 | 1ST FLOOR WAREHOUSE DIVIDING WALL | WALL BLANKET INSULATION | PLM | Trace% Cellulose 95% FiberGlass | 5% Mineral Filler | | |
| 21-618 -15 | | | | 00/0 1 IDETOI035 | 0.0% Vermiculite | | NONE DETECTED |
| | Ivan Reyes | Color: Brov | vn | | | | |

Report Prepared By: Grace Chan Page 2 of 3 Batch # 21-618



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Non-Asbestos <u>NOB</u> <u>Asbestos</u> Sample # Location Type of Material Method % Fibrous % Type % Type % Non-Fibrous NOTES: 1) The Limit of Detection is the same as the Reporting Limit for these results. 2) The Reporting Limit (RL) is the Limit of Quantitation. For point counts the limit of quantitation of 0.25%; based on one asbestos point counter over 400 non-empty points. 3) Asbestos Containing Material (ACM) Definition: > 1% asbestos by weight is considered an ACM 4) Disclaimer: The laboratory is not responsible for sample collection. Please refer to enclosed letter. This report may not be reproduced, except in full, without written approval by ATC Group Services. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government This report relates only to the samples reported above as described in the chain of custody. Quality control data is available upon request. 5) Accredited by NVLAP #101187-0 and by NY State ELAP #10879 6) Confidentality Notice: The document(s) contained herein are confidental and privileged information, intended for the exclusive use of the individual or entity named above. 7) Liability Notice: ATC Group Services and its personnel shall not be liable for any misinformation provided to us by the client regarding these samples. This report relates only to samples submitted and analy 8) Asbestos results are reliable to 2 significant figures. 9) The condition of all samples was acceptable upon receipt 10) The laboratory certifies that the test results meetall requirements of NELAC. __. Amendments: ____. Amendment Dates: ___ 11) Supplement to test report batch # ___ 12) PLM Letter is attached on this report. 13) TRACE: The result is reported as Trace when No points are counted and asbestos is identified. For ELAP Trace is < 1%. 14) ATC Group Services certifies that this report is an accurate and authentic report of the results obtained from the laboratory analysis 15) The uncertainty for these test results is available upon request. 16) ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite. For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite." Mei Wang Ivan Reyes Analyst: Approved by Quality Manager: Mei Wang Analyst: Feyza Gungor Analyst:

Report Prepared By: Grace Chan Page 3 of 3 Batch # 21-618



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired.

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely.

Milena Bonezzi

ATC Group Services LLC Director of Laboratory Services

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS BULK DOCUMENTS 2021\BULK_LETTER_DOC #D84A.DOC
ATC EFFECTIVE DATE 01/18/2021 REVISION #32
BY MEI WANG

Page 1 of 1

BY MEI WANG DOCUMENT #DB4A



BATCH NO. 21- 618 Page of

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| PROJ | ECT | INF | ORM | ATION | |
|------|-----|-----|-----|-------|--|
|------|-----|-----|-----|-------|--|

| 1. Client | PANYNJ | Project Name: FIRESPRINKLER RI | EHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
|-----------|----------------|-----------------------------------|---------------|--|---|
| | 7.11110 | 2a. Project Address: (C PN PE | PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: | 6. BUILDING NU | 265 | [[전 시간 3일보다] | ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1st Positive |

BULK SAMPLE LOCATION

| 0. Homogenous | 11. Bulk Sample ID | 12. Material | 13. Thermal | 14. | Sample Location | 15. Material Total | 16. Asbestos |
|------------------|-----------------------|--------------------|----------------|-------|--------------------|-----------------------|-----------------|
| Area No. | No. | | System | Floor | Sample Coordinates | Qty. (LF, SF, PCS) | Content |
| 8 | 22 | CHU WAIL | | 1 | SPRINKIER RUM FAST | | |
| 8 | 23 | MORM | | + | | | |
| 8 | 24 | (1) | | | | | |
| g | 25 | PACKING INSULATION | | | e cercing | 35.F | |
| 9 | 26 | @ PENETRATIONS | | | | | |
| 9 | 77 | 8" PIDES | | | | | |
| 10 | 25 | packine jajucaja | | | SPAINKLER FOR WEST | 35.F | |
| 10 | 29 | @ PENE MODIONS | | | D CEILING | | |
| 10 | 30 | B" PINES | | | | | |
| 11 | 31 | TECTUM CELLING | - | | WANTINSTE'S SHALL | | |
| 1 | 32 | BOARD | | | BARAGUNA | | |
| 1) | 33 | / | | 1 | | | |
| 12 | 34 | WALL BLAKET | | | WATTE HOUSE ANDIN | | |
| 12 | 35 | just conson | | | DIVIDING WALL | | |
| 12 | 36 | 11 | | 1 | 11 | | |
| 0 | | | | | | | |
| | | | | _ | | | |
| | | | | | | | 6 |

CHAIN OF CUSTODY

| | 7. Relinquished By | 1 | 8. Date | 19. Time | 20. Received By | | 21. Date | 22. Time | 23. Method of Submitta |
|----------|--------------------|-----|---------|----------|-----------------|---|----------|----------|---------------------------|
| 8 17,511 | H. 1-0 Co | 11 | 1000 | 21190 | 110 | 0 | // | / 15 | Field |
| | 1 villes Co | 230 | 10/4 | 3,10m | Elleler | | 1/8/2011 | 11:25 | Walk In |
| II. | / | | * | | | 0 | | | US Mail |
| | | | | | | | | | Fed-Ex |
| III. | | | | | QC BY | | | | Other |

LABORATORY INFORMATION

| LADORATOR INTORMATION | | | | |
|-------------------------------------|----------|---------|--------------------|--|
| 24. Name and Signature: | 25, Date | 26 Time | 27. Comments (Lab) | |
| 24a. Analyzed By: Dan Reger Shooks. | 49/2021 | 8:48 am | | |
| 24b. Analyzed By: In Finds & | 49912 | 13-35 | | |
| 24c. QC By: | | | | |
| ton: Ken Garage To O | 419121 | 111.110 | | |

ton: Jegen Gunga Joy 8

19/21 14

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | | | | OS ANALYSIS S | HEET | | | Microscopes: OLYMPUS BH-2/ NIKON OPTIPHOT |
|--|---|---|-----------------|---|------------------------|--|--|--|
| | Client / Project PANYNJ/ | | ER REHAB | | Proje | | NPEPJ1 | 2 |
| | Analysis Date 4/4/// | 2021 Analyst | | $ \mathcal{M}$ $-$ | Batc | h Number 21- | ·618 | EMPERATURE °C |
| 1 22 Field Number | Stereoscopic Exam | | | Optical Properties | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Descriptions G | Morph Extinction | RII RII I | OS Color Color, Pleo B | iref Sign Other Identi | ty Chrysovile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | | | | | Amesite | Fiberglass | |
| Recommended See gravimetric | # of Layers Asbestos | | | | | Other | Other | Vermiculite* Other |
| analysis sheet | Color of Layer Detected Yes I | No | | | | - / | □ Cellulose Ondulose | Otrier |
| for results | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 Slide 8 | Asb./Ver. PT Total P | / WAsb, Or %Ver, | Extinction ☐ Fiberglass Isotopic | |
| SM-V | | Side 5 Side 4 | Sade J Silde U | Sade / Sade b | 22 7 | | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | 101 | | | | 1 O LOG | 0 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | Comments: | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: Ø ELAP □ EPA | SCANNING OPTI | ON | Q.C. 🗆 | | , and the second | - | |
| 2 23 | Stereoscopic Exam | | PI M C | Optical Properties | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | l l | Morph Extinction | | OS Color Color, Pleo B | | | PLM % | PLM % |
| Gravimetric | Color DIO Court Exture | | | | | Chrysotile | 1 | Mineral Filler |
| Required Recommended | Homogeneity Yermiculite | | | | | Other | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | 01161 | Other |
| analysis sheet for results | Color of Layer Detected Yes I | No | | | | | ☐ Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 Slide 8 | Asb./Ver. PT Total P | T %Asb. Or %Ver. | Extinction ☐ Fiberglass isotopic | |
| Required [| PLM E | | | *************************************** | 0 2% |) a | Synthetic High Biretringence | * If vermiculite is >10% the |
| See SM-V D | NOD BLIA | | | | | 10 | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| 1 | <u> </u> | <u> </u> | L i | 1 | | 1 | | See Note #1. |
| analysis sheet | Comments: | <i>i</i> | | | | | Birefringence | |
| analysis sheet for results | Comments: Method: C ELAP | SCANNING OPTI | ON | Q.C. 🗆 | | | Birefringence | |
| for results | | SCANNING OPTI | | Q.C. □ | 3 | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| for results | Method: ← ELAP □ EPA | Morph Extinction | PLM (| | | Results PLM % | Other Fibrous PLM % | PLM % |
| for results 3 24 Field Number | Method: GELAP GEPA Stereoscopic Exam Color Di Vi Waxture | | PLM (| Optical Properties | | Results PLM % | Other Fibrous PLM % | PLM % Mineral Filler |
| for results 3 24 Field Number Gravimetric | Stereoscopic Exam Color W Wexture Homogeneity Vermiculite | | PLM (| Optical Properties | | Results PLM % The Chrysptile | Other Fibrous PLM % Cellulose | PLM % Mineral Filler |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ | Method: GELAP GEPA Stereoscopic Exam Color Di Vi Waxture | | PLM (| Optical Properties | | Results PLM % Chrysptile Apposite | Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ | Stereoscopic Exam Color W Wexture Homogeneity Vermiculite | Morph Extinction | PLM (| Optical Properties | | Results PLM % Chrysptile Apposite | Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | Stereoscopic Exam Color 2/1/2 W Nexture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction | PLM (| Optical Properties DS Color Color, Pleo B | iref Sign Other Ident | Results PLM % Chrysptile Agrosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic | PLM % Mineral Filler Organic Binders Vermiculite* |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color Whexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Delected Yes Point Counts Slide 1 Slide 2 | Morph Extinction | PLM (| Optical Properties DS Color Color, Pleo B | iref Sign Other Ident | Results PLM % Chrysptile Amosite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ | Stereoscopic Exam Color 2 W Nexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM | Morph Extinction | PLM (| Optical Properties DS Color Color, Pleo B | Asb./Ver. PT Total P | Results PLM % Chrysptile Amosite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cetlulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ | Stereoscopic Exam Color 2 Wexture Homogeneity Vermiculite # of Layers Defected Yes Point Counts Slids 1 Slide 2 PLM NOB PLM Comments: | Morph Extinction No Slide 3 Slide 4 | PLM C | Optical Properties DS Color Color, Pleo B | Asb./Ver. PT Total P | Results PLM % Chrysptile Amosite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglas Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Stereoscopic Exam Color 2 W Nexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Defected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM | Morph Extinction | PLM C | Optical Properties DS Color Color, Pleo B | Asb./Ver. PT Total P | Results PLM % Chrysptile Apposite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cetlulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet analysis sheet | Stereoscopic Exam Color 2 Wexture Homogeneity Vermiculite # of Layers Defected Yes Point Counts Slids 1 Slide 2 PLM NOB PLM Comments: | Morph Extinction No Slide 3 Slide 4 | PLM C | Optical Properties DS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties | Asb./Ver, PT Total P | Results PLM % Chrysptile Apposite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cetlulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Stereoscopic Exam Color Line Vermiculite Homogeneity Vermiculite # of Layers Asbestos Color of Layer Defected Yes Point Counts Side 1 Stide 2 PLM NOB PLM Comments: Method: ELAP EPA | Morph Extinction No Slide 3 Slide 4 | PLM C | Optical Properties OS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties | Asb. Ver. PT Total P | Results PLM % Chrysptile Agrosite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. |
| for results 3 24 Field Number Gravimetric Required □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Stereoscopic Exam Color 2 | No Slide 3 Slide 4 | PLM C | Optical Properties Slide 7 Slide 8 Q.C. Optical Properties Optical Properties | Asb./Ver. PT Total P | Results PLM % Chrysptile Ambsite Other T %Asb. Or %Ver. Asbestos Results PLM % Chrysptile Amosite | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 333 Mineral Filler Organic Binders |
| for results 3 24 Field Number Gravimetric Required □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 25 Field Number Gravimetric Required □ Recommended □ | Stereoscopic Exam Color D. W. Wiexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: DELAP DEPA Stereoscopic Exam Color Texture | No Slide 3 Slide 4 | PLM C | Optical Properties Slide 7 Slide 8 Q.C. Optical Properties Optical Properties | Asb./Ver. PT Total P | Results PLM % Chrysptile Agrosite Other T %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglas Isotopic Synthetic High Birefringence Horse Hain: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Binders Vermiculite* Other *If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 23 Mineral Filler Organic Binders Vermiculite* |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V analysis sheet for results 4 25 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | Stereoscopic Exam Color 2 1 Nexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Colo Texture Homogeneity Vermiculite # of Layers Asbestos | Morph Extinction No Slide 3 Slide 4 SCANNING OPTI | PLM C | Optical Properties Slide 7 Slide 8 Q.C. Optical Properties Optical Properties | Asb./Ver. PT Total P | Results PLM % Chrysptile Ambsite Other T %Asb. Or %Ver. Asbestos Results PLM % Chrysptile Amosite | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Onduiose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 333 Mineral Filler Organic Binders |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 25 Field Number Gravimetric Required □ Recommended □ See gravimetric analysis sheet for results | Stereoscopic Exam Color Division Nexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: DELAP DEPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes | Morph Extinction No Slide 3 Slide 4 SCANNING OPTI Morph Extinction | PLM C | Optical Properties DS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties CS Color Color, Pleo B | Asb./Ver, PT Total P | Results PLM % Chrysptile Amosite Other Asbestos Results PLM % Armosite Armosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglas Isotopic Synthetic High Birefringence Horse Hain: Scales, Low to Moderate Birefringence PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other *If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 23 Mineral Filler Organic Binders Vermiculite* |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 25 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color Live Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slids 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slids 1 Slids 2 | Morph Extinction No Slide 3 Slide 4 Morph Extinction Morph Extinction A Slide 3 Slide 4 | PLM C | Optical Properties DS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties CS Color Color, Pleo B | Asb./Ver. PT Total P | Results PLM % Chrysptile Amosite Other Asbestos Results PLM % Armosite Armosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Fiberglass Other Cellulose Fiberglass Other Cellulose Fiberglass Isotopic | PLM % Mineral Filler Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |
| for results 3 24 Field Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 25 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required Recommended See gravimetric analysis sheet for results SM-V Required Required R | Stereoscopic Exam Color 2 | Morph Extinction No Slide 3 Slide 4 SCANNING OPTI Morph Extinction | PLM C | Optical Properties DS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties CS Color Color, Pleo B | Asb./Ver, PT Total P | Results PLM % Chrysptile Amosite Other Asbestos Results PLM % Armosite Armosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 3.3 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| for results 3 24 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 25 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color 2 | Morph Extinction No Slide 3 Slide 4 Morph Extinction Morph Extinction A Slide 3 Slide 4 | PLM C | Optical Properties DS Color Color, Pleo B Slide 7 Slide 8 Q.C. Optical Properties CS Color Color, Pleo B | Asb./Ver, PT Total P | Results PLM % Chrysptile Amosite Other Asbestos Results PLM % Armosite Armosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % 3.3 Mineral Filler Organic Binders Vermiculite* Other |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.8. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS MALLYSIS SHEET_FORM #B2.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2

ATLAS_ ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

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| BULK ASBESTOS ANALYSIS SHEET |
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| | Client / Project PANYNJ/ | FIRESP | KINKLE | IN INLI | IAB | | | | Project | Number 214PN | ILCLIT | 5 |
|---|--|-------------------------------|---------------------|---------------------------------------|---------------|-------------------------------|-------------|--------------|--------------|--|---|---|
| | Analysis Date 4/1 /20 | 021 | Analyst _ | | 1 | 1 | | | Batch N | lumber 21-6 | 518 _T | EMPERATURE C |
| 1 26 Field Number | Stereoscopic Exam | | | | PLM O | otical Pr | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Texture | Morph 6 | Extinction | RII | RI II DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Texture | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | Homogeneity Vermiculite | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | Outer | Outer | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | | | | | | -= | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM | | | | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet | Comments: See # 2 | | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | | _\ □ SCANNII | NG OPTIO | M | | lo. | C. 🗆 | | | | | |
| | Method: LI ELAP LI EPA L | _ SCANNII | NG OF TIO | N . | | | J. L. | | | | | |
| 2 27 | Stereoscopic Exam | | | | PLM O | ptical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Field Number | | Morph I | Extinction | RII | RIII DS | Color Colo | r, Pleo Bir | ef Sign Oth | ner Identity | | | |
| Gravimetric | Color Texture | | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required [| Homogeneity Vermiculite | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Layers Asbestos | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | | | | | | | | | | | | Other |
| for results | Color of Layer Detected Yes No | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| | PLM | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| Required | NOR DI M | | - | | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | | | | | | | | | | | Low to Moderate Birefringence | See Note #1, |
| | Comments: See #2 | | | | | | | | | | | |
| for results | | _ | | | | lo | 0 [| | | | | |
| | | □ SCANNI | NG OPTIO | N | | Q. | C. □ | | | | | |
| | | | | N | Marie Britain | ptical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| for results | Method: □ ELAP □ EPA □ | | NG OPTIO | Sta 1 | Marie Britain | ptical Pr | | ref Sign Oth | ne Odentity | | | |
| for results 3 28 Field Number | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture □ | | | BH_ | Marie Britain | ptical Pr | operties | ref Sign Ott | | Results PLM % | PLM % | PLM % |
| for results 3 28 Field Number Gravimetric | Stereoscopic Exam Color Performance Texture Homogeneity Vermiculite March M | | | BH_ | Marie Britain | ptical Pr | operties | ref Sign Ott | | Results PLM % | PLM % Cellulose | PLM % 33 Mineral Filler |
| for results 3 28 Field Number Gravimetric Required □ Recommended □ | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Lavers Asbestos | | | BH_ | Marie Britain | ptical Pr | operties | ref Sign Otl | | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM % 33 Mineral Filler Organic Binders |
| 3 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos | Morph | | BH_ | Marie Britain | ptical Pr | operties | ref Sign Otl | | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other | PLM % 33 Mineral Filler Organic Binders Vermiculite* |
| 3 28 Field Number Gravimetric Required Recommended See gravimetric | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Lavers Asbestos | Morph | | BH_ | | ptical Pr | operties | | Chr. | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction | PLM % 33 Mineral Filler Organic Binders Vermiculite* |
| 3 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No | Morgh | | BH_ | Marie Britain | ptical Pr | operties | ref Sign Ott | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic | PLM % 33 Mineral Filler Organic Binders Vermiculite* |
| for results 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color Texture Textu | Morgh | Extinction | ड्रीय । इन्ध्र । इन्ध्र । | | ptical Pr | operties | | Chr. | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No. Point Counts Slide 1 Slide 2 PLM 0 1 | Morgh | Extinction | ड्रीय । इन्हें इन्हें इन्हें | | ptical Pr | operties | | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| 3 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture Homogeneity Vermiculite | Morgh | Extinction | ड्रीय । इन्हें इन्हें इन्हें | | ptical Pr | operties | | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| 3 28 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Morgh | Extinction | Slide 5 | | ptical Pr | operties | | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results | Method: □ ELAP □ EPA □ Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Morph Slide 3 | Extinction | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./Ver. PT | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| 3 28 Field Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam | Morph Slide 3 | Extinction | Slide 5 | Slide 6 | ptical Pr Scolor Colo W | Slide 8 | Asb./ver. PT | Chr. | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CT/Chv Asbestos Results PLM % | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V Required □ analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Texture | Morph Slide 3 | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CT/JChv Asbestos Results PLM % Chrysotile | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| for results 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 29 Field Number Gravimetric Required □ | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide, 1 Slide 2 PLM Vermiculite 2 PLM Vermiculite 3 NOB PLM Vermiculite 4 Stereoscopic Exam Color Texture 4 Homogeneity Vermiculite 4 Homogeneity Vermiculite 4 | Morph Slide 3 | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filter Organic Binders |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V Required □ analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite | Morph Slide 3 | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CT/JChv Asbestos Results PLM % Chrysotile | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 28 | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM 1 2 NOB PLM 2 2 PLM 2 2 PLM 2 2 PLM 2 2 PLM 3 3 Rethod: ELAP EPA 1 Stereoscopic Exam Color Texture Homogeneity Vermiculite 4 # of Layers Asbestos | Morph Slide 3 | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % 33 Mineral Filter Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filter Organic Binders |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 29 Field Number Gravimetric Required □ Recommended □ | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM 1 2 NOB PLM 2 2 PLM 2 2 PLM 2 2 PLM 2 2 PLM 3 3 Rethod: ELAP EPA 1 Stereoscopic Exam Color Texture Homogeneity Vermiculite 4 # of Layers Asbestos | Morph Slide 3 SCANNI Morph | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 29 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layer Detected Yes No Point Counts Slide,1 Slide 2 PLM Vermiculite NOB PLM PLM PLAN Comments: Method: ELAP PLAN Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No | Morph Slide 3 SCANNI Morph | Extinction Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 29 Field Number Gravimetric Required □ Recommended □ See gravimetric analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color Detected Yes No Point Counts Slide 1 Slide 2 | Morph Slide 3 SCANNI Morph | Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./Ver, PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Fiberglass Southeringence Synthetic High | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |
| 3 28 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V Required □ See SM-V □ analysis sheet for results 4 29 Field Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM Point Counts Slide 1 Slide 2 PLM NOB P | Morph Slide 3 SCANNI Morph | Slige 4 | Slide 5 | Slide 6 | ptical Pr | Slide 8 | Asb./Ver, PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. CHACLE Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % 33 Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Comments:

Method: ☐ ELAP ☐ EPA

See #28

☐ SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82.

Q.C.

ATC - New York

BULK ASBESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 Accreditations: NVLAP 101187-0

Microscopes: OLYMPUS BH-2 /

ATLAS

ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Non Fibrous

PLM %

If vermiculite is >10% the

See Note #1.

evel of asbestos in a sample

Non Fibrous

PLM %

Other

If vermiculite is >10% the evel of asbestos in a sample

Non Fibrous

PLM %

Mineral Filler Organic Binden Vermiculite* Other

If vermiculite is >10% the vel of asbestos in a sample

Non Fibrous

PLM %

Other

If vermiculite is >10% the evel of asbestos in a sample

ee Note #1.

Mineral Filler

Organic Binder

See Note #1.

might be underestimated.

See Note #1.

Mineral Filler _Organic Binder O Vermiculite*

. Mineral Filler

_ Organic Binde _____ Vermiculite*

Other Fibrous

PLM %

Cellulose

_____Fiberglas

Extinction

Synthetic High

Birefringence

] Horse Hair: Scales, Low to Moderate

Other Fibrous

PLM %

Celluiose Ondulos

Horse Hair: Scales,

Other Fibrous

PLM %

Cellulose

Horse Hair: Scales Low to Moderate

Other Fibrous

🗆 Cellulose Ondulos

Synthetic High

Low to Moderate Birefringence

Cellulose

Low to Moderate

BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ/ | FIRESPRINKLER REHAB | Project Number 214PN | IPEPJ1 | NIKON OF TIPHOT | := . | | Client / Project PANYNJ/ | FIRESPRINKLER F | REHAB | Projec | t Number 214PN | NPEPJ1 |
|--------------------------------|----------------------------------|--|---|--|--|------|---------------------------------|---|------------------------|---------------------------------|---------------------------|--|----------------------------|
| | Analysis Date 4/9 /20 | D21 Analyst | Batch Number 21- | 618 | EMPERATURE 2 | | | Analysis Date 4 / 2 | 021 Analyst | DI | Batch | Number 21- | -618 |
| 1 30 Field Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | | 1 34 Field Number | Stereoscopic Exam | | PLM Optical Propert | ies | Asbestos Results PLM % | Other I |
| Gravimetric | Color Texture | Morph Extinction RI⊥ RI∥ DS Color Color, Pleo Biref Sign Othe | | Cellulose | Mineral Filler | | Gravimetric | Cold Mo Wexture | Morph Extinction RII | RI DS Cofor Color, Pleo | Biref Sign Other Identify | | * |
| Required | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders | | Required [| | | | | Amosite | 95 |
| Recommended | | | Other | Other | Vermiculite* | | Recommended [] | 1 | | | | Other | |
| See gravimetric | # of Layers Asbestos | | | | Other | | See gravimetric | # of Layers Asbestos | / | | | - / | |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose Extinction | | | analysis sheet for results | Color of LayerDetected Yes N | 0 | | | | C Cellulose Extinction |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb,/Ver, PT | Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | 1 1 | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | e 5 Slide 6 Slide 7 Slide | 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | G Fiberglas |
| Required | PLM | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample | | Required [| PLM | | | 6 % | 0 | ☐ Synthetic Birefring |
| See SM-V □ | NOB PLM | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. | ! | See SM-V □ | NOB PLM | | | | | ☐ Horse Ha |
| analysis sheet for results | Comments: See #79 | 3 | | Birefringence | See Note #1. | | analysis sheet for results | Comments: | | | | | Birefringe |
| | | SCANNING OPTION Q.C. | | | | | TOT TOURS | Method: ☑ ELAP □ EPA | SCANNING OPTION | Q.C. □ | | POHITOMAN CONTINUES OF THE STATE OF THE STAT | 1 |
| 2 31 | Stereoscopic Exam | PLM Optical Properties | Asbestos | Other Fibrous | Non Fibrous | 1 | 2 35 | | | PLM Optical Propert | ies | Asbestos | Other |
| Field Number | 1 (1 | Morph Extinction RI⊥ RI∥ DS Color Color, Pleo Biref Sign Other | 100 C C C C C C C C C C C C C C C C C C | PLM % | PLM % | | Field Number | 1 1 2 | Morph Extinction RI1 | RI DS Color Color, Pleo | | Results PLM % | PLI |
| Gravimetric | clickhite Francis R | | Chrysotile | Cellulose | Mineral Filler | | Gravimetric | Color Programme Technology | | | | Chrysotile | d'a |
| Required 🖾 | Homogeneity Vermiculite | | Amosite | Fiberglass Other | Organic Binders Vermiculite* | | Required Recommended | Homogeneity Vermiculite | | | | Other | 1-6-2 |
| See gravimetric | # of Layers Asbestos | | | Other | Other | | See gravimetric | # of Layers Asbestos | | | | Odlei | |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | | | analysis sheet for results | Color of Layer Detected Yes N | lo | | | | Celluiose |
| SM-V | Point Counts Slide 1 Slide 2 | | Total PT %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | | | | Point Counts Stide 1 Slide 2 | Slide 3 Slide 4 Slide | e 5 Slide 6 Slide 7 Slide | 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Extinction El Fiberglas |
| | PLM , | | | ☐ Synthetic High | * If vermiculite is >10% the | | SM-V | PLM O | | | | | ☐ Synthetic |
| Required | NOB PLM 2/ 10 | |) | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | | Required 🗆 | NOB PLM | | | 0/30 | 10 | Birefring □ Horse Ha |
| See SM-V analysis sheet | Comments: | 7 1 0 | no v | Low to Moderate Birefringence | See Note #1. | | See SM-V analysis sheet | Comments: | | | | | Low to Mo Birefringe |
| for results | | SCANNING OPTION Q.C. | | | | | for results | Method: ELAP DEPA | Z SCANNING OPTION | Q.C. 🗆 | | | - |
| 3 32 | | 1 | Asbestos | Other Fibrous | Non Fibrous | 1 | 3 26 | | | | | Asbestos | Other |
| Field Number | Stereoscopic Exam | PLM Optical Properties Morph Extinction RI RI DS Color Color, Pleo Biref Sian Oth | Results PLM % | PLM % | PLM % | | 3 36 Field Number | Stereoscopic Exam | Moreh Edicalias DL | PLM Optical Propert | | Results PLM % | PL |
| Gravimetric | color Wite TELLANDE | MODIFICATION NT NT DOCKS CON, FIRE DIE SIGN CON | Chrysotile | Cellulose | Mineral Filler | | Gravimetric | Color | - Molph Extinction RII | RI DS Color Color, Pleo | Bilet Sign Other (defail) | Chrysotile | 14°C |
| Required 🛭 | Homogeneity 4 Vermiculite | | Amosite | Fiberglass | Organic Binders | | Required 🗋 | Homogeneity Vermiculite | | | | Arposite | 175 |
| Recommended | #-of Layers Asbestos | | Other | Other | Vermiculite* | | Recommended | # of Layers Asbestos | | | | Other | |
| See gravimetric analysis sheet | 7 - B | | | | Other | | See gravimetric analysis sheet | | | | | | |
| for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose Extinction | | | for results | Color of Layer Detected Yes N | lo | | | | Cellulose Extinction |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide | e 5 Slide 6 Slide 7 Slid | 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Fiberglas |
| Required | PLM / | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample | | Required | PLM | | 4 | 0 200 | 6 | Birefring |
| See SM-V □ | NOB PLM O | / 0 | 220 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. | | See SM-V □ | NOB PLM | | | | | Horse Ha |
| analysis sheet for results | Comments: | / | | Birefringence | | | analysis sheet for results | Comments: | | | | | Birefringe |
| | Method: ELAP EPA | Scanning option Q.C. | | | L | | | Method: ELAP DEPA | SCANNING OPTION | Q.C. □ | | A ROLL | <u> </u> |
| 4 33 Field Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | | 4 §7 Field Number | Stereoscopic Exam | | PLM Optical Propert | ies | Asbestos Results PLM % | Other PL |
| Gravimetric | count hate France P | Morph Extinction RI 1 RI DS Color Color, Pleo Biref Sign Oth | | | Mineral Filler | 1 | Gravimetric | Color Texture | Morph Extinction RI1 | RI DS Color Color, Plea | Biref Sign Other Identity | | 1 |
| Required 2 | - · · · | | Amosite | Fiberglass | Organic Binders | | Required | | | | | Amosite | 1 |
| Recommended | Homogeneity Vermiculite | | Other | Other | Vermiculite* | | Recommended | Homogeneity Vermiculite | | | | Other | |
| See gravimetric | # of Layers Asbestos | | | | Other | | See gravimetric | # of Layers Asbestos | | | | - | |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose Extinction | | | analysis sheet for results | Color of Layer Detected Yes N | lo | | | _ | ☐ Cellulose |
| SM-V | Point Counts Slide 1 Slide 2 | | Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slid | le 5 Slide 6 Slide 7 Slid | 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Extinction |
| Required □ | PLM | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the | | Required | PI M | | | | | ☐ Syntheti Birefring |
| See SM-V | NOR DIM O IN | -1 0 | 200 | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. | | | 1 200 514 | | | | | ☐ Horse Ha |
| analysis sheet | Comments: | | | Birefringence | See Note #1. | | See SM-V analysis sheet | Comments: | | | | 1 | Low to Mo Birefrings |
| for results | | SCANNING OPTION Q.C. | | 1 | 1 | | for results | | ☐ SCANNING OPTION | Q.C. 🗆 | | | 1 |
| | method: / LET | | | | | 1 | 1 | | | | | | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing \$10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:\text{LAB_FORMS_DOCUMENTS AND RECORDS\times PTICAL\times BULK\times Asbestos in Bulk Insulation Samples - 40 CFR |
|--|
| Appendix E to Subpart E of Part 763 |
| EPA 600/R-93/116 |
| ELAP Items 198.1, 198.4, 198.6, 198.8 |

EPA Interim Method of the Determination of

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Start Date: 04/09/21 | 04/09/21 | | | | | | | | | | | |
|----------------------|--------------------------|---------|------------|----------------------|----------------|--------|--|------|--|--|--|---|
| Start Date: | Date Completed: 04/09/21 | | | | | | | | | | | |
| 122928 | FG | spo |] | ыт | EN | > | > | > | | | | Γ |
| tch # | TEM lyst: | Methods | NOB | P PR | LM | > > | > | > | | | | |
| TEM Batch # | NOB TEM Analyst: | | | | | | | | | | | |
| 21-618 | SH | | | | Notes | - | Armen para a series de la constanta de la cons | | | | | |
| PLM Batch # | NOB TEM PREP: | | | | | | | | | | | |
| | MM | 13 | % Total | Asbestos | or Vermiculite | | | | | | | |
| RUSH | NOB PLM Analyst: | 6 | Asbestos | Types | or Vermiculite | Q | N | N | | | | |
| RU | MG/EV | 12 | | % | Carbonate | 57.5 | 51.5 | 52.7 | | | | |
| PANYNJ | MG | 1 | Non Asb | Residue % | NFr | 7 | 16.1 | 14.4 | | | | |
| Client/Project: | NOB PLM PREP: | 2 | | % | Organic | 31.4 | 32.4 | 32.9 | | | | |
| Client/ | NOB PL | | | 60 E 70 G 60 G | Field # | 31 | 32 | 33 | | | | |

1. Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not detected.

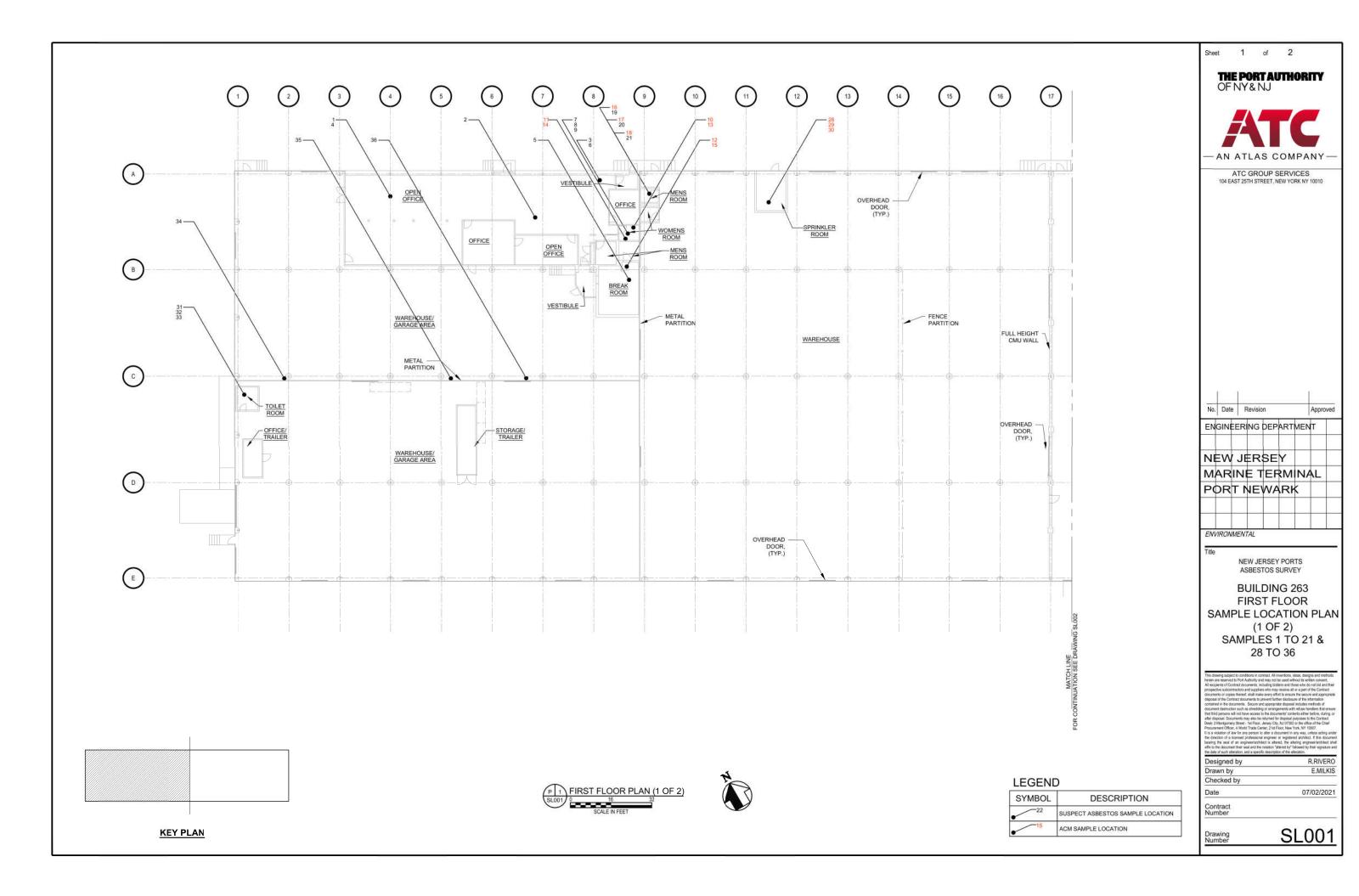
Page 1

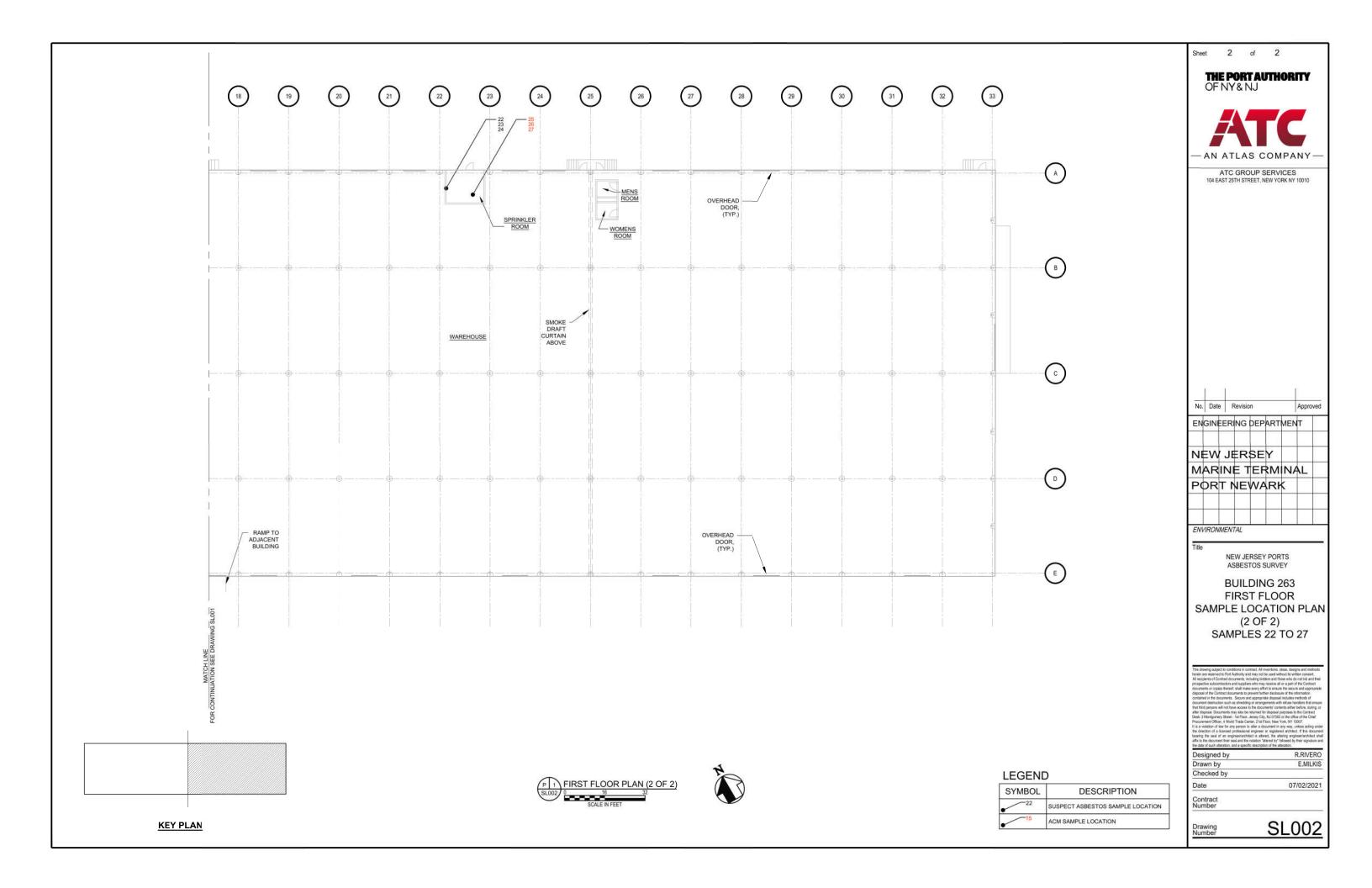
Client Copy

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APPENDIX B

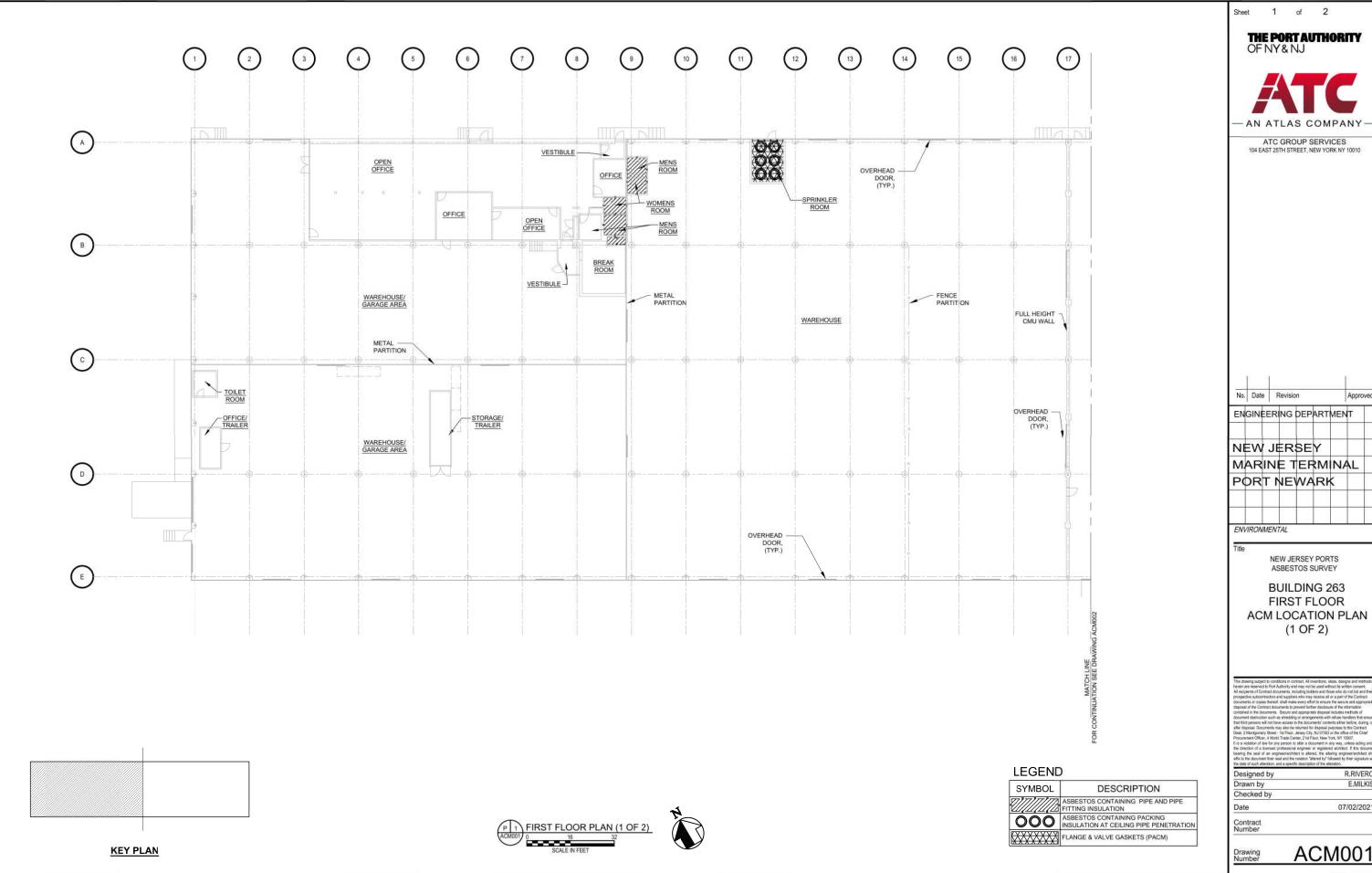
ASBESTOS SAMPLE LOCATION DRAWINGS





APPENDIX C
ASBESTOS LOCATION DRAWINGS

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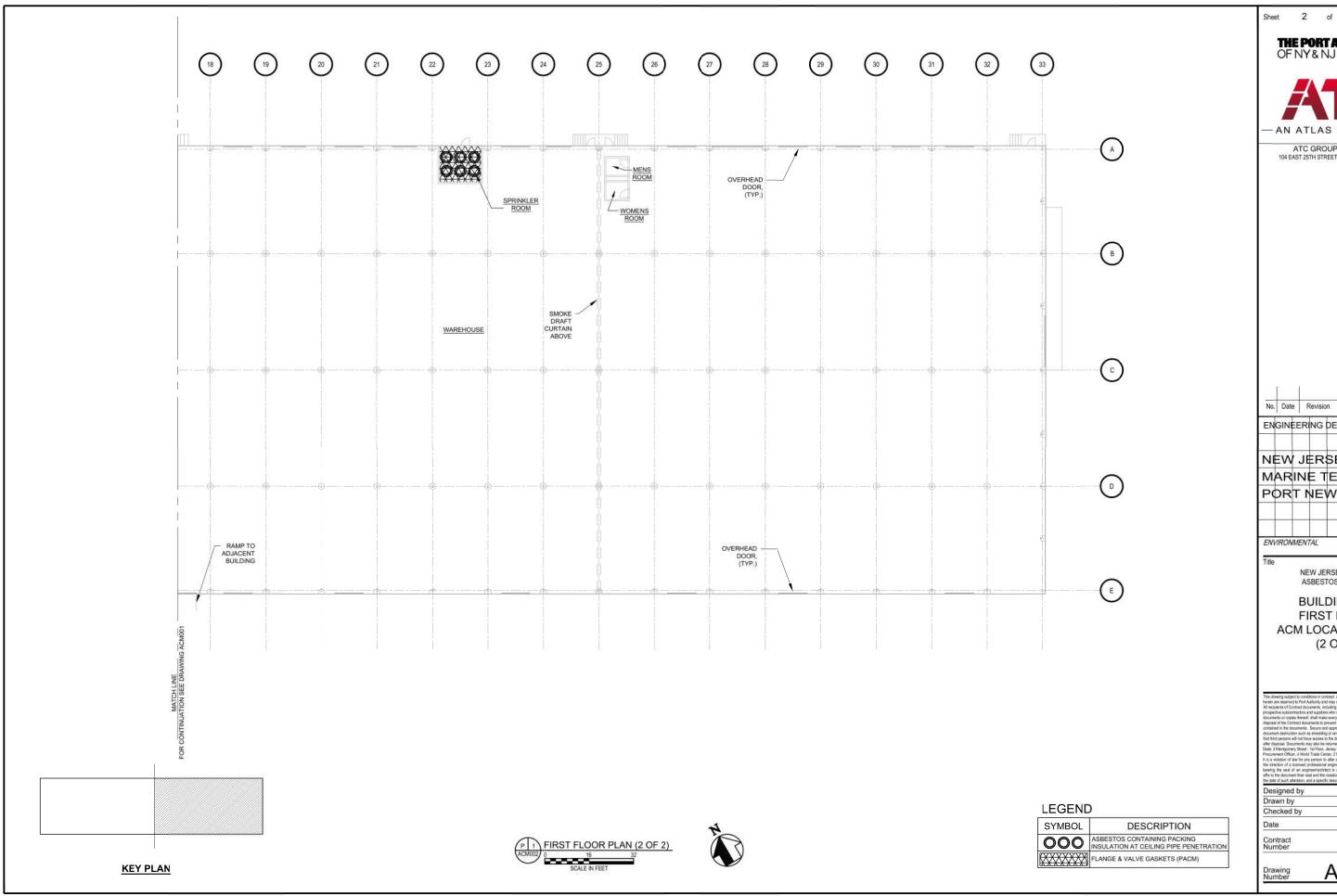


Sheet 1 of 2 THE PORT AUTHORITY ATC GROUP SERVICES Approved ENGINEERING DEPARTMENT MARINE TERMINAL PORT NEWARK

ASBESTOS SURVEY

BUILDING 263 FIRST FLOOR ACM LOCATION PLAN

| Designed by | R.RIVERO | | | |
|-------------|------------|--|--|--|
| Drawn by | E.MILKIS | | | |
| Checked by | | | | |
| Date | 07/02/2021 | | | |



Sheet 2 of 2 THE PORT AUTHORITY OF NY & NJ ATC GROUP SERVICES ENGINEERING DEPARTMENT NEW JERSEY MARINE TERMINAL PORT NEWARK

> NEW JERSEY PORTS ASBESTOS SURVEY

Approved

BUILDING 263 FIRST FLOOR ACM LOCATION PLAN (2 OF 2)

| Designed by | R.RIVERO | | | |
|-------------|------------|--|--|--|
| Drawn by | E.MILKIS | | | |
| Checked by | | | | |
| Date | 07/02/2021 | | | |

ACM002

APPENDIX D

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

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New York State – Department of Labor Division of Safety and Health

Division of Safety and Health License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative - Kevin Hamilton:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the a sbestos project worksite. This license verifies that all persons employed by the licensee on an a sbestos project in New York State have been issued an Asbestos Certificate, a ppropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director For the Commissioner of Labor

SH 432 (8/12)

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

Ashestos

PA 100.2

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



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is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual

EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

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is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

Fibers

NIOSH 7400 A RULES

Department of Health

Serial No.: 61223

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NY Lab Id No: 10879

ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

MS. MILENA BONEZZI COPY

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2016) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

estos EPA 1

Serial No.: 62824

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI CO V ACO ACO NY Lab Id No:

ATC GROUP SERVICES LLC

104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Asbestos in Non-Friable Material-TEM

Item 198.6 of Manual (NOB by PLM)

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No : 62825

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspictiously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021 _ -

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Realth Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

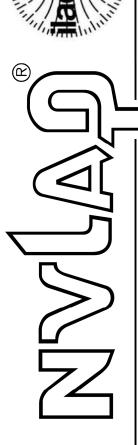
40 CFR 763 APX A No. III NIOSH 7402

Serial No.: 62826

NIOSH 7400 A RULES

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Technology ommerce and C of Partment o artment $\overline{\Phi}$ of O S National Institute States United



20 7025 O/IE S **2** ccreditation 4 of ertificate

NVLAP LAB CODE: 101187-0

Services Group

New York, NY

for accredited by the National Voluntary Laboratory Accreditation Program listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

I the operation of a laboratory quality dated January 2009). Standard ISO/IEC ance with the recal competence for a r to joint ISO-ILAC This laboratory is accrec This accreditation demonst

2020-07-01 through 2021-06-30

Effective Dates





For the National Voluntary Labor

National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor
New York, NY 10010
Ms. Milena Bonezzi
Phone: 212-353-8280 x247 Fax: 212-353-8306
Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

<u>Code</u> <u>Description</u>

18/A01 EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of

Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code18/A02

Description
U.S. EPA's "Inte

U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR Part 763 Subpart F. Appendix A.

TR TAIL ATT STORY

For the National Voluntary Laboratory Accreditation Program



AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

104 East 25th St 8th Flr New York, NY 10010

Laboratory ID: LAP-100229

Issue Date: 08/30/2019

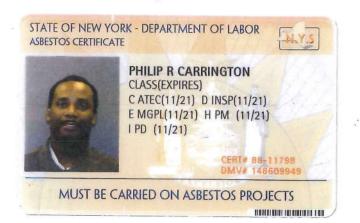
The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 06/12/1995

| IHLAP Scope Categ | ory Field of Testing (FC | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested |
|-----------------------------------|------------------------------------|----------------------------------|---|---|
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | - |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http:// www.aihaaccreditedlabs.org



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HAIR BLK

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

Effective: 04/10/2015 Revision: 8 Page 1 of 1

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





NANCY B GUEVARA CLASS(EXPIRES) C ATEC(05/21) D INSP(05/21) H PM (05/21) I PD (05/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



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EYES BRO HAIR BRO HGT 5' 06"

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





RONEY D RIVERO CLASS(EXPIRES) C ATEC(08/21) D INSP(08/21) E MGPL(08/21) H PM (08/21) IPD (08/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



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NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, EP, & PJ

REVISED ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING #263

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

December 15, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

December 15, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Revised Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building #263

263 Marlin Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Roney D. Rivero

Senior Project Manager for ATC Group Services LLC Direct Line +1 212 284 0614 Email: roney.rivero@atcgs.com

Attachments

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| 3.0 | FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS | 2 |
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APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: PCB-in-Caulking Laboratory Results and Chain of Custodies

Appendix C: Asbestos, and PCB Bulk Sample Location Drawings

Appendix D: ACM Location Drawings

Appendix E: Lab Certifications / Accreditations, Company and Personnel Certifications

EXECUTIVE SUMMARY

On February 26, 2021 and April 8, 2021, ATC completed the inspection for ACM at Port Newark, Building #263 (the Site). Additionally, on November 9, 2021 a supplemental limited survey was perform in response to the Scope of Work changes and recommendations as indicated in the Stage 1 Report dated July 12, 2021 (50% submission). The Architectural team recommended surveying both Sprinkler Valve Rooms corrugated exterior wall and doors. The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected sixty-three (63) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, twelve (12) sampled homogeneous areas were found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content). In addition, one (1) non-ACM homogeneous area, marked with an asterisk (*), should be treated as ACM due to its association/proximity with ACM within the same location.

The materials that tested positive for asbestos are:

- Aircell Pipe Insulation (3" OD)
- Elbow Insulation associated with Aircell Pipe Insulation
- Wrapped Cardboard Pipe Insulation (3" OD)
- Mudded Joint Fitting Insulation associated with Wrapped Cardboard Pipe Insulation *
- Packing Insulation at Ceiling Penetration for 8" OD Pipes (East Side Sprinkler Room)
- Packing Insulation at Ceiling Penetration for 8" OD Pipes (West Side Sprinkler Room)
- Interior Door Caulking East Side Sprinkler Room Door
- Caulking on Interior Wall Perimeter East Side Sprinkler Room Exterior Wall Interior Side
- Packing Insulation at Wall Pipe Penetration East Side Sprinkler Room Interior Wall
- Interior Door Caulking West Side Sprinkler Room Door
- Caulking on Interior Wall Perimeter West Side Sprinkler Room Exterior Wall Interior Side
- Packing Insulation at Wall Pipe Penetration around 4" OD and Floor Pipe Penetration around 8" OD West Side Sprinkler Room Interior Wall and Floor
- Exterior Door Caulking Remnants West Side Sprinkler Room Door

These materials are tabulated in Section 4.0.

ATC collected and analyzed five (5) samples from suspect PCB-containing Caulking. Based upon review of the analytical results of bulk samples collected, the samples were found to be none detect for total PCBs. A tabulation of the laboratory results is summarized in in Section 6.0.

ATC Project No. 214PANEWR1

ATC Project No. 214PANEWR1

Page 2

Page 3

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM/LCP |
|----------------------|----------------------|---------|
| Philip R. Carrington | АН-88-11798 | ACM |
| Nancy Guevara | AH-14-00412 | ACM |
| Roney D. Rivero | AH-88-06348 | ACM |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 263 is a single-story steel frame warehouse which measures approximately 161 ft. by 634 ft. in plan. Most of the building is being used as a general cargo warehouse and sustain heavy forklift traffic. A portion of the building is used as a factory for light manufacturing. The floor in the warehouse is bituminous concrete and in the factory area the floor is plywood. The girders support steel roof purlins which support the corrugated metal roof decking. The building's height varies from approximately a minimum of 26 ft. at the north and south sides to 40 ft. at the ridge. A concrete masonry firewall divides the building into east and west portions. Several modular office structures exist in the building and are occupied by various tenants.

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

ATC Project No. 214PANEWR1

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC Project No. 214PANEWR1

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of Port Newark Building 263 on February 26, 2021, April 8, 2021 and November 9, 2021 and collected sixty-three (63) bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location and recommendations as indicated in the Stage 1 Report dated July 12, 2021 (50% submission). The intent of this survey was to locate and identify all accessible ACM.

The following twenty-one (21) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location | |
|---------------------------------|--|--|
| 1' X 1' Ceiling Tile | 1 st Floor – Office Space | |
| Gypsum Board | 1 st Floor – Office Space & Kitchen | |
| CMU Wall Mortar | 1 st Floor – Office Space Women's Bathroom | |
| Aircell Pipe Insulation (3" OD) | 1st Floor – Office Space & Kitchen | |

| Elbow Insulation associated with Aircell Pipe | 1st Floor – Office Space Kitchen | | | |
|--|--|--|--|--|
| Insulation | 1 1 1001 Office Space Ritchen | | | |
| Wrapped Cardboard Pipe Insulation (3" OD) | 1 st Floor – Bathroom in Warehouse Area (Open Building Space) | | | |
| Mudded Joint Fitting Insulation associated with Wrapped Cardboard Pipe Insulation | 1 st Floor – Bathroom in Warehouse Area (Open Building Space) | | | |
| CMU Wall Mortar | 1 st Floor Sprinkler Room East Side | | | |
| Packing Insulation at Ceiling Penetration around 8" OD Pipes | 1st Floor East Side Sprinkler Room Ceiling | | | |
| Packing Insulation at Ceiling Penetration around 8" OD Pipes | 1st Floor West Side Sprinkler Room Ceiling | | | |
| Tectum Ceiling Board | 1 st Floor - Warehouse Bathroom | | | |
| Wall Blanket Insulation | 1st Floor - Warehouse Dividing Wall | | | |
| November 9, 2021 Sampling | | | | |
| Interior Door Caulking | East Side Sprinkler Room Door | | | |
| Caulking on Interior Wall Perimeter | East Side Sprinkler Room Exterior Wall Interior Side | | | |
| Packing Insulation at Wall Pipe Penetration | East Side Sprinkler Room Interior Wall | | | |
| Weather Strip Seal Block | East Side Sprinkler Room at Corrugated Wall & Concrete Wall | | | |
| Interior Door Caulking | West Side Sprinkler Room Door | | | |
| Caulking on Interior Wall Perimeter | West Side Sprinkler Room Exterior Wall Interior Side | | | |
| Packing Insulation at Wall Pipe Penetration around 4" OD and Floor Pipe Penetration around 8" OD | West Side Sprinkler Room Interior Wall and Floor | | | |
| Exterior Door Caulking Remnants | West Side Sprinkler Room Door | | | |
| Weather Strip Seal Block | West Side Sprinkler Room at Corrugated Wall & Concrete Wall | | | |

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and analytical results of bulk samples collected, the following materials are asbestos-containing (> 1%):

ATC Project No. 214PANEWR1 Page 4

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| 10-12 | Aircell Pipe Insulation (3" OD) | 33% Chrysotile | 20 LF | ACM001 |
| 13-15 | Elbow Insulation associated with Aircell Pipe Insulation | 50% Chrysotile | 10 LF | ACM001 |
| 16-18 | Wrapped Cardboard Pipe Insulation (3" OD) | 12% Chrysotile | 12 LF | ACM001 |
| 19-21 | Mudded Joint Fitting Insulation associated with Wrapped Cardboard Pipe Insulation * | * | 6 LF | ACM001 |
| 25-27 | Packing Insulation at Ceiling Penetration around 8" OD Pipes | 67% Chrysotile | 3 SF | ACM001 |
| 28-30 | Packing Insulation at Ceiling Penetration around 8" OD Pipes | 67% Chrysotile | 3 SF | ACM002 |

^{*} This homogeneous area should be treated as ACM due to its association/proximity with ACM within the same location.

| ACM found as a result of the ADDITIONAL survey performed on November 9, 2021 | | | | |
|--|---|---------------------|---------|-----|
| 37-39 | Interior Door Caulking – East Side Sprinkler Room Door | 3.6% Chrysotile | 18 L.F. | N/A |
| 40-42 | Caulking on Interior Wall Perimeter - East Side Sprinkler Room Exterior Wall Interior Side | 4.5% Chrysotile | 60 L.F. | N/A |
| 43-45 | Packing Insulation at Wall Pipe Penetration - East Side Sprinkler Room Interior Wall | 80.0% Chrysotile | 2 S.F. | N/A |
| 49-51 | Interior Door Caulking – West Side Sprinkler Room Door | 3.0% Chrysotile | 18 L.F. | N/A |
| 52-54 | Caulking on Interior Wall Perimeter - West Side Sprinkler Room Exterior Wall Interior Side | 2.1% Chrysotile | 60 L.F. | N/A |
| 55-57 | Packing Insulation at Wall Pipe Penetration around 4" OD and Floor Pipe Penetration around 8" OD - West Side Sprinkler Room Interior Wall and Floor | 67.0% Chrysotile | 6 S.F. | N/A |

ATC Project No. 214PANEWR1 Page 5

| Inspection Report for ACM |
|---------------------------------------|
| Port Newark, Building 263, Newark, NJ |

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| 3 X - 6 H | Exterior Door Caulking Remnants – West Side Sprinkler Room Door | 4.0% Chrysotile | 12 L.F. | N/A |

The following materials are presumed to be asbestos-containing material (PACM)

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| N/A | Flange & Valve Gaskets - 2 Sprinkler Rooms | PACM | 50 Units | ACM001 & ACM02 |

No PACM was found as a result of the ADDITIONAL survey performed on November 9, 2021

Note: Visual inspection of the entrance doors to both Sprinkler Rooms indicated that the door insulation is fiberglass.

ACM laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix C. Asbestos Location Plans are included in Appendix D.

6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC collected five (5) samples from suspect PCB-containing Caulking and submitted to a third party laboratory for analysis. The suspect PCB-containing Caulking sample collected was based on building component, application type as well as color and texture. Caulking materials with similar characteristics were assumed to be homogenous materials.

ATC submitted the suspect PCB samples to New York Environmental & Analytical Laboratories Inc., for Gas Chromatography with Electron Capture Detection (GC/ECD) analysis utilizing EPA Method 8082.

Based on laboratory analysis and results, the five (5) samples tested "none detect" for total PCBs. A tabulation of the laboratory results are summarized in the table below. PCB laboratory results are attached in Appendix B.

| ATC Sample Number(s) | Material Location & Description | Total PCB Content (mg/kg) |
|-------------------------|---|---------------------------|
| PCB 37 | Interior Door Caulking – East Side Sprinkler Room Door | ND |
| PCB 40 | Caulking on Interior Wall Perimeter - East Side Sprinkler Room Exterior Wall Interior Side | ND |

ATC Project No. 214PANEWR1 Page 6

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

| ATC Sample Number(s) | Material Location & Description | Total PCB Content (mg/kg) |
|-------------------------|---|---------------------------|
| PCB 49 | Interior Door Caulking - West Side Sprinkler Room Door | ND |
| PCB 52 | Caulking on Interior Wall Perimeter - West Side Sprinkler Room Exterior Wall Interior Side | ND |
| PCB 58 | Exterior Door Caulking Remnants - West Side Sprinkler Room Door | ND |

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection at the site, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected sixty-three (63) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, twelve (12) sampled homogeneous areas were found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content). In addition, one (1) homogeneous area, marked with an asterisk (*), should be treated as ACM due to its association/proximity with ACM within the same location.

The materials that tested positive for asbestos at Building 263 include the following:

- Aircell Pipe Insulation (3" OD)
- Elbow Insulation associated with Aircell Pipe Insulation
- Wrapped Cardboard Pipe Insulation (3" OD)
- Mudded Joint Fitting Insulation Associated with Wrapped Cardboard Pipe Insulation *
- Packing Insulation at Ceiling Penetration around 8" OD Pipes (East Side)
- Packing Insulation at Ceiling Penetration around 8" OD Pipes (West Side)
- Interior Door Caulking East Side Sprinkler Room Door
- Caulking on Interior Wall Perimeter East Side Sprinkler Room Exterior Wall Interior Side
- Packing Insulation at Wall Pipe Penetration East Side Sprinkler Room Interior Wall
- Interior Door Caulking West Side Sprinkler Room Door
- Caulking on Interior Wall Perimeter West Side Sprinkler Room Exterior Wall Interior Side
- Packing Insulation at Wall Pipe Penetration around 4" OD and Floor Pipe Penetration

ATC Project No. 214PANEWR1 Page 7

Inspection Report for ACM Port Newark, Building 263, Newark, NJ

around 8" OD - West Side Sprinkler Room Interior Wall and Floor

• Exterior Door Caulking Remnants – West Side Sprinkler Room Door

ATC collected and analyzed five (5) samples from suspect PCB-containing Caulking. Based on laboratory analysis and results, the five (5) samples tested "none detect" for total PCBs.

Various types of painted surfaces such as sprinkler pipes, gypsum board ceilings and walls, CMU walls, and roof decking have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 263, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 263 located in Newark, New Jersey.

The materials reported in Section 5.0 of this report would require abatement, removal and disposal prior to sprinkler system renovation due to the proximity to the sprinkle pipe system.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection. The valve gaskets inside the pipe flanges could not be tested since the sprinkler system is still operational. It is assumed, based on the number of flanges observed, that there are 25 gaskets in each sprinkler room. There are 2 sprinkler rooms in this building, so it is assumed there are 50 gaskets that are presumed to be asbestos containing. This quantity should be verified with destructive sampling if abatement is planned prior to any renovation work.

If questions arise regarding asbestos content in building materials that were not tested by ATC, additional testing services should be procured to test those areas.

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

ATC Project No. 214PANEWR1 Page 8

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APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES

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ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280

Fax: 212-353-8306

Client: ATC - NEW YORK

104 EAST 25TH STREET NEW YORK , NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Sample Date: 2/26/2021

Date Received: 3/1/2021

Date Analyzed: 3/2/2021

ATC Batch # 21-226

Methods: ELAP 198.1, 198.6, 198.4

Location: PN - BUILDING 263

Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | Non- | <u>Asbestos</u> | <i>NOB</i> | Asbestos |
|----------------|--------------------------------------|---------------------------------|----------|-------------------|---------------------|---|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | ₩ Type | % Type |
| 1 21-226 -1 | 1ST FLOOR OFFICE SPACE | 1" X 1" CEILING TILE | NOB-TEM | | 0.0% Vermiculite | 31% Organic 52.5% Residue 16.5% Carbonate | NONE DETECTED |
| | | Color: | Гаn | | | | |
| Analyzed By: | : Michael Gittings | Second Analyst: Feyza | a Gungor | Comments: NOB PLM | Inconclusive | | |
| 2 | 1ST FLOOR OFFICE SPACE | 1" X 1" CEILING TILE | NOB-TEM | | | 29.3% Organic 48.1% Residue | |
| 21-226 -2 | | | | | 0.0% Vermiculite | 22.6% Carbonate | NONE DETECTED |
| Analyzed By: | : Michael Gittings | Color: Second Analyst: Feyza | | Comments: NOB PLM | Inconclusive | | |
| 3 | 1ST FLOOR OFFICE SPACE | 1" X 1" CEILING TILE | NOB-TEM | | | 30.5% Organic | |
| 21-226 -3 | | | | | 0.0% Vermiculite | 54.8% Residue 14.7% Carbonate | NONE DETECTED |
| Analyzed By: | : Michael Gittings | Color: Second Analyst: Feyza | | Comments: NOB PLM | Inconclusive | | |
| 4 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 5% Cellulose | 95% Mineral Filler | | |
| 21-226 -4 | | | | Trace% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed Ry | : Michael Gittings | Color: | White | | | | |
| 5 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 4% Cellulose | 96% Mineral Filler | | |
| 3 | (KITCHEN) | OTT OOM BOARD | FLIVI | Trace% FiberGlass | | | |
| 21-226 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Michael Gittings | Color: | White | | | | |
| 6 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 5% Cellulose | 95% Mineral Filler | | |
| 21-226 -6 | | | | Trace% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzod By | : Michael Gittings | Color: | White | | | | |
| | - | OMUMORTAR | DIM | | 4000/ 14: 15:11 | | |
| 7 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-226 -7 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzod Pyr | · Michael Cittings | Color: | Grey | | | | |
| Analyzeu By: | : Michael Gittings | | | | | | |

Report Prepared By: Grace Chan Page 1 of 4 Batch # 21-226



ATC Group Services LLC 104 E. 25th Street, 8th Floor

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | Non- | Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|--------------|--------------------------------------|---|--------|-----------------------|-----------------------|------------|----------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 8 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | CMU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-226 -8 | WOMENS BATTICOOM | | | | 0.0% Vermiculite | | NONE DETECTED |
| | Mr. L. LOW | Color: Grey | | | | | |
| | Michael Gittings 1ST FLOOR OFFICE | CMU MORTAR | DIM | | 4000/ Minaral Filler | | |
| 9 | WOMEN'S BATHROOM | CINU MORTAR | PLM | | 100% Mineral Filler | | |
| 21-226 -9 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Gray | | | | | |
| 10 | 1ST FLOOR OFFICE | AIR CELL PIPE INSULATION 3" | PLM | 20% Cellulose | 47% Mineral Filler | | 33% Chrysotile |
| 21-226 -10 | WOMEN'S BATHROOM | | | Trace% FiberGlass | 0.0% Vermiculite | | |
| | | Color: Tan | | | | | |
| | Michael Gittings | | | | | | Total Asbestos: 33 % |
| 11 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | AIR CELL PIPE INSULATION 3" | | | | | |
| 21-226 -11 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive st | op, see #10 | | |
| 12 | 1ST FLOOR OFFICE | AIR CELL PIPE INSULATION 3" | | | | | |
| 21-226 -12 | KITCHEN AREA | | | | | | NOT ANALYZED |
| 21-220 -12 | | | | | | | |
| | | | | Comments: Positive st | op, see #10 | | |
| 13 | 1ST FLOOR OFFICE WOMEN'S BATHROOM | ELBOW INSULATION ASSOCIATED WITH AIRCELL | PLM | | 50% Mineral Filler | | 50% Chrysotile |
| 21-226 -13 | | PIPE INSULATION | | | 0.0% Vermiculite | | |
| Analyzed By: | Michael Gittings | Color: Gray | | | | | T |
| 14 | 1ST FLOOR OFFICE | ELBOW INSULATION | | | | | Total Asbestos: 50 % |
| | WOMEN'S BATHROOM | ASSOCIATED WITH AIRCELL PIPE INSULATION | | | | | NOT ANALYZED |
| 21-226 -14 | | | | | | | NOT ANALTZED |
| | | | | Comments: Positive st | op, see #13 | | |
| 15 | 1ST FLOOR OFFICE KITCHEN AREA | ELBOW INSULATION ASSOCIATED WITH AIRCELL | | | | | |
| 21-226 -15 | | PIPE INSULATION | | | | | NOT ANALYZED |
| | | | | Comments: Positive st | op, see #13 | | |
| 16 | 1ST FLOOR BATHROOM IN | WRAPPED CARD BOARD PIPE | DI M | 90% Cellulose | 10% Mineral Filler | | |
| | OPEN BUILDING SPACE | INSULATION | FLIVI | 50 /0 CellulOSE | | | NONE BETEGTES |
| 21-226 -16 | | Color: Tan | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color. Tan | | | | | |
| 17 | 1ST FLOOR BATHROOM IN | WRAPPED CARD BOARD PIPE | PLM | 80% Cellulose | 8% Mineral Filler | | 12% Chrysotile |
| 21-226 -17 | OPEN BUILDING SPACE | INSULATION | | | 0.0% Vermiculite | | |
| | | Color: Tan | | Commente: POSSIBIL | E FIELD CONTAMINATION | | |
| Analyzed By: | Michael Gittings | | | Johnnons, 1 Joseph | - I LED CONTAINMATION | | Total Asbestos: 12 % |

Report Prepared By: Grace Chan Page 2 of 4 Batch # 21-226



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| | | | | Non | -Asbestos | NOB | Asbestos |
|--------------|--|------------------------------------|--------|----------------------|--------------------|--------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 18 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | WRAPPED CARD BOARD PIPE INSULATION | | | | | |
| 21-226 -18 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive s | top, see #17 | | |
| 19 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | MUDDED JOINT FITTING INSULATION | PLM | Trace% Cellulose | 30% Mineral Filler | | |
| 21-226 -19 | OPEN BUILDING SPACE | INSULATION | | 70% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | | | | | |
| Analyzed By: | : Michael Gittings | | | | | | |
| 20 | 1ST FLOOR BATHROOM IN OPEN BUILDING SPACE | MUDDED JOINT FITTING INSULATION | PLM | Trace% Cellulose | 25% Mineral Filler | | |
| 21-226 -20 | OF LIN BUILDING SPACE | INSOLATION | | 75% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Gray | | | | | |
| Analyzed By: | : Michael Gittings | · | | | | | |
| 21 | 1ST FLOOR BATHROOM IN | MUDDED JOINT FITTING | PLM | Trace% Cellulose | 30% Mineral Filler | | |
| 0.4.000 | OPEN BUILDING SPACE | INSULATION | | 70% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-226 -21 | | | | | 0.070 Vennioune | | NONE BETEOTEB |
| Analyzod By: | : Michael Gittings | Color: Gray | | | | | |
| Analyzeu by. | . Michael Gittings | | | | | | |

Report Prepared By: Grace Chan Page 3 of 4 Batch # 21-226



Feyza Gungor

ATC Group Services LLC

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Non-Asbestos <u>NOB</u> <u>Asbestos</u> Sample # Location Type of Material % Fibrous % Non-Fibrous % Type % Type NOTES: 1) The Limit of Detection is the same as the Reporting Limit for these results. 2) The Reporting Limit (RL) is the Limit of Quantitation. For point counts the limit of quantitation of 0.25%; based on one asbestos point counter over 400 non-empty points. 3) Asbestos Containing Material (ACM) Definition: > 1% asbestos by weight is considered an ACM 4) Disclaimer: The laboratory is not responsible for sample collection. Please refer to enclosed letter. This report may not be reproduced, except in full, without written approval by ATC Group Services. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This report relates only to the samples reported above as described in the chain of custody. Quality control data is available upon request. 5) Accredited by NVLAP #101187-0 and by NY State ELAP #10879 6) Confidentiality Notice: The document(s) contained herein are confidential and privileged information, intended for the exclusive use of the individual or entity named above. 7) Liability Notice: ATC Group Services and its personnel shall not be liable for any misinformation provided to us by the client regarding these samples. This report relates only to samples submitted and analy 8) Asbestos results are reliable to 2 significant figures. 9) The condition of all samples was acceptable upon receipt. 10) The laboratory certifies that the test results meet all requirements of NELAC. 11) Supplement to test report batch #_ . Amendments: ____. Amendment Dates: 12) PLM Letter is attached on this report. 13) TRACE: The result is reported as Trace when No points are counted and asbestos is identified. For ELAP Trace is < 1%. 14) ATC Group Services certifies that this report is an accurate and authentic report of the results obtained from the laboratory analysis 15) The uncertainty for these test results is available upon request.

| Michael Gittings | Mei Wang McW- |
|------------------|------------------------------|
| Analyst: | Approved by Quality Manager: |

16) ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite. For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6.

"This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Report Prepared By: Grace Chan Page 4 of 4 Batch # 21-226



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP1 using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained Trace or No PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired.

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely

Wiley Bourson Milena Bonezzi

ATC Group Services LLC Director of Laboratory Services

> L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS_BULK DOCUMENTS 2021\BULK_LETTER_DOC_#DB4A.DOC ATC EFFECTIVE DATE 01/18/2021 REVISION #32 Page 1 of 1



BATCH NO

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Client PAN | /N.I | Project FIRESF | | | HABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
|---------------|--------------|-------------------|-------|---------------|-------------------------------------|---------------------------------|-----------------------------------|
| LAN | 140 | 2a. Projec | PN PN | ess: (C PE | ircle One) PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: 6. | BUILDING NUI | MBER:26 | 3 | - 1 | 8. Turnaround Tin o STAT o 24 HR | ne: S o 72 HRS o OTHER | 9. Comment s (Field) NOB→ TEM |

| 2 24 | 7. S | ampling Areas: | o 6 HRS | o 48 l | HRS o NORMAL RUSH_X_ Stop @ 1 | st Positive | _ |
|----------|-----------------------|-----------------------|----------------|--------|-------------------------------|-----------------------|-----------------------|
| BULK S | AMPLE L | OCATION | | | | | |
| | 11. Bulk Sample ID | 12. Material | 13. Thermal | 14. | | Material Total | 16. Asbestos |
| Area No. | No. | | System | Floo | r Sample Coordinates | Qty. (LF, SF, PCS) | Content (Type & %) |
| 1 | 1 | 1x1 cFilial TILE | | 1 | OFFICE SPACE | 3,7205 | ر م |
| 1 | 2 | | | 1 | 10 | | |
| 1 | 3 | | | | 11 | | |
| 2 | 4 | GYPSUH BOARD | | | // | 37205 | = |
| 2 | 5 | // | | | 1. (14 jeta) | | |
| 2 | 6 | 4 | | | /1 | | |
| 3 | 7 | CHU HORTAR | | | 11 WOHAN'S BAPNOOD | | |
| 3 | 8 | | | | 11 | | |
| 3 | 9 | | | | 11 77 | | |
| 4 | 10 | AIR CELL DIPE | | |)) | | |
| 4 | 11 | INSUMPION 311 | | | j _i j _i | 12 CF | |
| 4 | 12 | | | | 11 KITCHEN ANGA | - 8LF | |
| 5 | 13 | FLBOW | | | Ty. | 1115 | |
| 5 | 14 | INSULATION ASSOCI | | | 11 // | 162F | |
| 5 | 15 | wipt AIR CELL PIPE IN | 15. | | M FIFEER ANEA | RLF | |
| 6 | 16 | WRAPPED CARD BUT | | | BATHROVY IN |) | |
| 6 | 17 | PIPE IN SULADIO | | | OPEN BUILDING | 7120 | F |
| 10 | 18 | 1 | | | SPACE |] | |

| 17. Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
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| III. | | | | | | |

| 24. Name and Signature: | 25. Date | 26 Time | 27. Comments (Lab) |
|--------------------------------|----------|---------|--------------------|
| 24a. Analyzed By: Mighael City | 3/2/2021 | 07245 | 13/C/7 NOB-1 |
| 24b. Analyzed By: Adv. City 4/ | 3/2/2021 | (3:35 | NOB- P |
| 24c. QC By: | | | NOB- |



PROJECT INFORMATION

| | | - | - | |
|-----------|--------|------|------|--|
| BATCH NO. | 21-226 | Page | _ of | |

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Clier | PANYN | J. I | Project Nar FIRESPRII | ne: NKLER RE | HABILITA | TION | 3a. ATC Pro | oject No.: 1PNPEPJ | | 4a. Projec | t Manager: R. Rivero |) |
|-------------------|-----------------------|--------------------------------|--------------------------|-----------------|-----------------|--------|---------------------------------|------------------------------|----------|------------|---|-----------------------|
| | | | 2a. Project A | N PE | rcle One) PJ | | 3b. Task No | 0001 | | 4b. Inspec | ctor: ILIP CARRIN | IGTON |
| 5. Date: | (2) 6. Bl | UILDING NUMB ampling Areas: | ER: 76 | | | 24 HR | ne: S o 72 HRS RS o NORMA | | | NOB→ | nent s (Field) ΓΕΜ 1 st Positive | |
| BULK S | SAMPLE L | OCATION | | | | | | | | | | |
| 10. Homogenous | 11. Bulk Sample ID | 12. | Material | | 13. Thermal | 14. | 5 | Sample Locati | on | | 15. Material Total | 16. Asbestos |
| Area No. | No. | | | | System | Floor | | Sample Coo | | | Qty. (LF, SF, PCS) | Content (Type & %) |
| 7 | 19 | MUDDA | DJON | u T | | d | BATHI | 2004 | in 6 | PEN | 215 | |
| 7 | 20 | FITTING | INSU | Din |) | | BATHI | DING | SPA | UZ | -61 | |
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| CHAIN C | OF CUSTO | ΟΥ | | | | | | | | | | |
| | quished By | | 18. Date | 19. Time | e 20. R | eceive | ed By | | 21. Date | 22. Tin | ne of S | Method ubmittal |
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| III. | | | | | | | | | , | | Othe | |
| | TORY INF | ORMATION | | | | | | | | | 1 | |
| | e and Signat | | | | | | 25. Date | 26 Time | 27. | Commer | nts (Lab) | |
| | lyzed By: / | e /14 (C-16 | 1/12 | | | ű | 15/2/2/ | 07:4 | 5 | | | |
| | | chal Cop | 1/60 | | | 3 | 12/21 | 13:3+ | | | | |
| 24c. QC | Ву: | | 0 | | | | | | | | | |

ATLAS ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT

BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ/ | FIRESPRIN | KLER REI | HAB | | | | Project | Number 214PN | IPEPJ1 | NIKON OPTIPHOT |
|---|--|--|-------------|-------------|-------------------------------------|---------------------------|----------------|--------------|--|---|--|
| | Analysis Date 3/2 /2 | | | M | 1 | | | | Number 21- | 226 | زح |
| | Analysis Date 37 34 72 | UZI Allaly | St | | | | | battiii | , , , , , , , , , , , , , , , , , , , | 1 | EMPERATURE °C |
| 1 cld Number | Stereoscopic Exam | | | | ptical Pr | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color TM Texture | Morph Extinct | on Rii | RI DS | Color Colo | r, Plea Bir | ef Sign Oth | er Identity | Chrysotile | Cellulose | 10 Mineral Filler |
| Required 🗇 | Homogeneity / Vermiculite / | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | $-\tau$ | - | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🗂 | # of Layers Asbestos | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | 0 | | | | | | | _ | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| | PLM | | - | | | | | | | ☐ Synthetic High Birefringence | * If yermiculite is >10% the |
| Required 🗌 | NOB PLM 96 | | | | | | (2) | 20 | , – | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | 1/(8 | | | | | | | W | Comment | Low to Moderate Birefringence | See Note #1, |
| for results | Comments: Method: LELAP | SCANNING OF | TION | | 10.0 | c. 🗆 | | | | | |
| | Wethou. CHELAP 13 EPA | 23 SCANNING OF | TION | | 1,40, | 9. LJ | | | | <u> </u> | |
| 2 ield Number | Stereoscopic Exam | | | | ptical Pr | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Tay Texture T | Morph Extinct | on RII | RII DS | Color Colo | or, Pleo Bir | ef Sign Oth | ner Identily | Chrysotife | Cellutose | Mineral Filler |
| Required | Homogeneity 7 Vermiculite | · | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | | | | | | | | | Other | Other | |
| See gravimelrie 🗍 | # of Layers Asbestos | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | o | | | | | | | 4 | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | V02 DI W 2/ | | 7790* | | | | \overline{O} | 200 | 7 | 🗆 Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet | Comments: | | | I | | | | 276.2 | | Low to Moderate Birefringence | See Note #1. |
| | | | | | | | | | | ŀ | 1 1 |
| for results | Method: ELAP [] EPA | SCANNING O | PTION | ··········· | Q. | c. 🗆 | | | | | |
| | | SCANNING O | PTION | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| for results | Method: ☐ ELAP ☐ EPA Stereoscopic Exam | | | | ptical Pr | operties | | ldestit. | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| 3 | | Morph Extinct | | | | operties | | ner Identity | | i . | : : |
| 3 leld Number | Stereoscopic Exam Color Tom Texture | | | | ptical Pr | operties | | ner Identity | Results PLM % | PLM % | PLM % Mineral Filler Organic Binders |
| 3 ield Number Gravimetric | Stereoscopic Exam Color Ty Texture Texture Vermiculite / | | | | ptical Pr | operties | | ner Identity | Results PLM % Chrysotile | PLM % Cellulose | PLM % Mineral Filler |
| 3 ield Number Gravimetric Required (1) Recommended (1) | Stereoscopic Exam Color Tom Texture | | | | ptical Pr | operties | | ner Identity | Results PLM % Chrysotile Amosile | PLM % Cellulose Fiberglass | PLM % |
| 3 ield Number Gravimetric Required D | Stereoscopic Exam Color Ty Texture Texture Vermiculite / | Morph Extinct | | | ptical Pr | operties | | ner Identity | Results PLM % Chrysotile Amosile | PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 ield Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet | Stereoscopic Exam Color 100 Texture 1 Homogeneity Vermiculite 1 # of Layers Asbestos Color of Layer Detected Yes No | Morph Extinct | ion RII | | ptical Pr | roperties or, Pleo Bir | | | Results PLM % Chrysotile Amosile | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 leid Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V | Stereoscopic Exam Color Texture Homogeneity | Merph Extinct | ion RII | RI I D | ptical Pr | roperties or, Pleo Bir | ef Sign Oth | | Results PLM % Chrysotile Amosile Other | PLM % Celkulose Fiberglass Other Celfulose Ondulose Extinction Fiberglass Isotopic Synthetic High | PLM % Mineral Filler Organic Binders Vermiculite* Other |
| Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required | Stereoscopic Exam Color I/M Texture I Homogeneity Vermiculite I # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM | Merph Extinct | ion RII | RI I D | ptical Pr | roperties or, Pleo Bir | ef Sign Oth | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cifutose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % |
| 3 leid Number Gravimetric Required □ Recommended □ See gravimetric □ analysis sheet for results SM-V | Stereoscopic Exam Color Tym Texture Tym Homogeneity Vermiculite Tym # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM | Merph Extinct | ion RII | RI I D | ptical Pr | roperties or, Pleo Bir | ef Sign Oth | | Results PLM % Chrysotile Amosile Other | PLM % CelkuloseFiberglassOther Circlinulose Ondulose ExtinctionFiberglass IsotopicSynthetic HighBirefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V | Stereoscopic Exam Color Tym Texture Tym Homogeneity Vermiculite Tym # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Merph Extinct | on RI± | RI I D | ptical Pr | roperties or, Pleo Bir | ef Sign Oth | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Celkulose Fiberglass Other Céllulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
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| 3 leid Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Stereoscopic Exam Color Tym Texture Tym Homogeneity Vermiculite Tym # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Morph Extinct | 4 Slide 5 | RI DS | ptical Pr | Slide 8 | Asb. Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Celkulose Fiberglass Other Céllulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| 3 ield Number Gravimetric Required Recommended analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color I M Texture I Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes No Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP DEPA | Morph Extinct | 4 Slide 5 | RI DS | ptical Pr | Slide 8 | Asb. Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Circilulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Gravimetric Required Recommended Recommended analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color TOM Texture Towns Texture Towns Texture Towns Texture Towns Texture Towns Texture Tex | Morph Extinct | 4 Slide 5 | RI DS | ptical Pr | Slide 8 | Asb. Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Circilulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % The mineral Filler |
| 3 ield Number Gravimetric Required Recommended Analysis sheet for results SM-V Required See SM-V Analysis sheet for results A ield Number Gravimetric | Stereoscopic Exam Color TM Texture T Homogeneity Vermiculite I # of Layers Asbestos Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: JELAP DEPA Stereoscopic Exam Color M T Texture T Homogeneity Vermiculite | Morph Extinct | 4 Slide 5 | RI DS | ptical Pr | Slide 8 | Asb. Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile | PLM % Cellulose Fiberglass Other Cifulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % The mineral Filler |
| 3 | Stereoscopic Exam Color TOM Texture Towns Texture Towns Texture Towns Texture Towns Texture Towns Texture Tex | Morph Extinct | 4 Slide 5 | RI DS | ptical Pr | Slide 8 | Asb. Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Celkulose Fiberglass Other Cifulose Ondulose Extinction Siretringence Siretringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Tifulose | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders |
| 3 ield Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 ield Number Gravimetric Required Recommended Recommended Recommended | Stereoscopic Exam Color TM Texture T Homogeneity Vermiculite I # of Layers Asbestos Color of Layer Detected Yes N Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: JELAP DEPA Stereoscopic Exam Color M T Texture T Homogeneity Vermiculite | Morph Extinct Slide 3 Slide Morph Extinct Morph Extinct | 4 Slide 5 | RI DS | ptical Pr | Slide 8 | Asb. Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Celkulose Fiberglass Other Cellulose Ondulose Extinction Siberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose 77 Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 ield Number Gravimetric Required See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 ield Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color TA Texture THOMOGENEITY Vermiculite Method: Stereoscopic Exam Color of Layer Detected Yes Not Stereoscopic Exam Color Ab TA Texture THOMOGENEITY Asbestos Color of Layer Detected Yes Not Stereoscopic Exam Color Ab TA Texture THOMOGENEITY Asbestos Color of Layer Detected Yes Not Stereoscopic Exam | Morph Extinct Slide 3 Slide Morph Extinct Morph Extinct | 4 Slide 5 | RI DS | ptical Pr | Slide 8 | Asb. Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cifcilulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birofringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 ield Number Gravimetric Required Recommended analysis sheet for results SM-V Required analysis sheet for results SM-V Required A ield Number Gravimetric Required Recommended See gravimetric Required analysis sheet for results | Stereoscopic Exam Color Tom Texture Towns Indicate the stereoscopic Exam Color of Layers Asbestos Color of Layer Detected Yes Note Point Counts Slide 1 Slide 2 PLM NOB PLM Stereoscopic Exam Color Marc Texture Towns Indicate the stereoscopic Exam Color Marc Texture Towns Indicate the stereoscopic Exam Color Marc Texture Towns Indicate the stereoscopic Exam Color Marc Texture Towns Indicate the stereoscopic Exam Color Marc Texture Towns Indicate the stereoscopic Exam Color of Layer Detected Yes Note Point Counts Slide 1 Slide 2 | Morph Extinct Slide 3 Slide Morph Extinct Morph Extinct | 4 Slide 5 | RI DS | Slide 7 | Slide 8 | Asb. Ner. PT | Total PT | Asbestos Results PLM % — Chrysotile — Amosite — Other %Asb. Or %Ver. — Chrysotile — Amosite — Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Citutose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose T// Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 | Stereoscopic Exam Color To Texture To Textu | Morph Extinct Slide 3 Slide Morph Extinct Morph Extinct | 4 Slide 5 | RI DS | Slide 7 | Slide 8 | Asb. Ner. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Therefore Fiberglass Other Cellulose Synthetic High Birefringence Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % PLM % Organic Binders Vermiculite* Other |
| 3 | Stereoscopic Exam Color TOM Texture Towns Texture Texture Towns Texture T | Morph Extinct Slide 3 Slide Morph Extinct Morph Extinct | 4 Slide 5 | RI DS | Slide 7 | Slide 8 | Asb. Ner. PT | Total PT | Asbestos Results PLM % — Chrysotile — Amosite — Other %Asb. Or %Ver. — Chrysotile — Amosite — Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Céllulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birofringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |
| 3 | Stereoscopic Exam Color TOM Texture Towns In Texture Towns I Shapes I Shap | Morph Extinct Slide 3 Slide Morph Extinct Morph Extinct | A Slide 5 | RI DS | Slide 7 Q. Ptical Pr S Color Cole | Slide 8 | Asb. Ner. PT | Total PT | Asbestos Results PLM % — Chrysotile — Amosite — Other %Asb. Or %Ver. — Chrysotile — Amosite — Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose T// Fiberglass Other Cellulose T// Fiberglass Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % PLM % Granic Binders Vermiculite* Organic Binders Vermiculite Other |

Methods:
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116
ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method bean 10% vermiculite (SM-V) and it utilizes a 400 point count method.

L:\LaB_FORMS,DOCUMENTS AND RECORDS\(\text{OPTICALVASBESTOS}\)_BULK\(\text{ASBESTOS}\) BULK\(\text{FORMS}\(\text{2DTBULK}\) ASBESTOS ANALYSIS SHEET_FORM #82.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

5

Gravimetrio

Required

See gravimetric analysis sheet for results

SM-V

Required [

See SM-V

6

Gravimetri

Required

analysis sheet for results

SM-V

See SM-V

Gravimetric

Required

analysis sheet

for results

SM-V

Required [

See SM-V

analysis sheet for results

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Gravimetrio

Recommended

See gravimetric [analysis sheet

for results

Required [

See SM-V

analysis sheet for results

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analysis sheet

ATC - New York

Client / Project PANYNJ/ FIRESPRINKLER REHAB

SCANNING OPTION

C) SCANNING OPTION

Slide 4

☐ SCANNING OPTION

Analysis Date 3/2 /2021 Analyst

Stereoscopic Exam

Color WH Texture

PLM // (2)

Method; ✓☐ ELAP ☐ EPA

Color Whith Texture

PLM

Method: 🗗 ELAP 🔲 EPA

Stereoscopic Exam

Slide 1

Method: ✓ □ ELAP □ EPA

Stereoscopic Exam

Vermiculite

Detected

Slide 2

Slide 3

Slide 4

SCANNING OPTION

Slide 5

Slide 1

Texture_C

Detected Yes

NOB PLM

Comments

Color of Layer

Point Counts

NOB PLM

Stereoscopic Exam

Point Counts

NOB PLN

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

PLM Optical Properties

RI DS Color Color, Pleo Biref Sign Other Identif

Q.C. 🗆

PLM Optical Properties

Slide 7

PLM Optical Properties

Slide 7

PLM Optical Properties

Slide 8

Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT

Q.C.

Asb.Ner. PT Total PT

20

200

Q.C. 🗆

Slide 6

Slide 6

2)

Non Fibrous

PLM %

O Vermiculite*

evel of asbestos in a sample

PLM %

O Vermiculite*

If vermiculite is >10% the

evel of asbestos in a sample

Non Fibrous

PLM %

If vermiculite is >10% the

evel of ashestos in a sample

Non Fibrous

Mineral Filler

__Organic Binde

Vermiculite' Other

If vermiculite is >10% the

might be underestimated

See Note #1.

evel of asbestos in a sampl

PLM %

might be underestimated.

See Note #1.

0

Mineral Filler

Organic Binders

might be underestimated.

Mineral Filler

Organic Binders

might be underestimated.

Mineral Filler

Organic Binder

TEMPERATURE °C

Project Number 214PNPEPJ1

Asbestos

Results PLM %

%Asb. Or %Ver

Asbestos

Results PLM 9

%Asb. Or %Ver.

Asbestos

Results PLM %

%Asb. Or %Ver.

Asbestos

Results PLM %

%Asb. Or %Ver

Other

W

Total PT

20

Chryso

21-226

Other Fibrous

PLM %

Fiberglass Isotop

Horse Hair: Scales

PLM %

T /_ Fiberglass

Fiberalass i

Horse Hair: Scales

Other Fibrous

PLM %

Cellulose Ondul

Low to Moderate

Other Fibrous

PLM % Cellulose

Other

Cellulos

Fiberglass

Low to Moderate

Cellulose

Low to Moderate

Cellulose

ATEAS. ATC

ATC - New York

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|---|
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| |

| | | DASIN | MIL/ FIDE | | | SBESTO | JO AINAL | | | | 21404 | IDEDIA | OLYMPUS B NIKON OPTO |
|---|--|--|--------------------|--------------------|----------|-------------|---------------------------|---------------|--------------|-----------------|---|--|--|
| | Client / Project | | | | | HAB JV (| <u> </u> | | | | t Number 214PN | 226 - | 71 |
| | Analysis Date | 3/ /_ | /2021 | Analyst | | 7.0 | | | | Batch | | | EMPERATURE C |
| 1 9 Field Number | Stereosco | pic Exam | | 1 10 11 | | | • | roperties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Cry 1 | Fexture(| C Mor | h Extinction | | RI II D | S Color Col | or, Pleo Bir | er Sign Ui | her Identity | Chrysotite | Cellulose | 199 Mineral Fills |
| Required 🗆 | Homogeneity | Vermiculite _ | _/ = | | | | | | | | Amosite | Fiberglass | |
| Recommended | # of Layers/ | Asbestos _ | | | | | | | | | Other | Other | Vermiculite' Other |
| See gravimetric analysis sheet for results | Color of Layer I | Detected Y | es No | | | | | | | | | ☐ Celiulose Ondulose | On to |
| SM-V | Point Counts Slid | e 1 Slide | 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P1 | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| Required [| PLM % | | | | | | | | <i></i> | 7,00 | | Synthetic High Birefringence | If vermiculite is >10% t |
| See SM-V | NOB PLM | | | | | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sa might be underestimated |
| analysis sheet for results | Comments: | | | | <u> </u> | <u> </u> | 1 | | | <u> </u> | 1 | Birefringence | See Note #1. |
| Tor results | Method: ELAP | □ ЕРА | Æ SCA | NNING OPT | ION | | Q. | c. 🗆 | | | | | |
| 2 10 | Stereosco | pic Exam | · | | | PLM C | ptical P | roperties | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | | - | 7 - | oh Extinction | | RI II D | S Color, Col | • | | ther Identity | Results PLM % | PLM % | 9 PLM % |
| Gravimetric | Color Tan | Fexture | | | 1.517 | 105 | M(i) | | | _ (_ | | 70 Cellulose | 1-1 |
| Required Recommended | Homogeneity | Vermiculite _ | , <u> </u> | | + | | / / | L | | -]- | Other | Other | Vermiculite |
| See gravimetric 🗆 | # of Layers | Asbestos / | _ | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer | Detected Y | es No | | | | | | | | | Cellulose Ondulose | |
| SM-V | Point Counts Slid | le 1 Slide | 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | %Asb. Or %Ver. | Fiberglass Isotopic | |
| Required | PLM 1 | 7/ | 1 /1 | 1/4 | | | | | 4 | 12 | 33 | ☐ Synthetic High Birefringence | * If vermiculite is >10% i |
| See SM-V | NOB PLM | 8-1-1- | | | | | | | • | 1 | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimate See Note #1. |
| analysis sheet for results | Comments: | | | | | <u></u> | | | | · · · · · · · | | Birefringence | occ Asic #1. |
| | Method: ELAP | □ ЕРА | ☐ SCA | NNING OPT | ION | | Q. | .c. 🗆 | | | | | |
| | <u> </u> | | | | | | | | | | | | |
| 3 11 | Stereosco | pic Exam | Į. | | | PLM C | ptical P | roperties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| 3 11 Field Number Gravimetric | | pic Exam | Mor | ph Extinction | n Rli | | - | roperties | | ther identity | Results PLM % | Other Fibrous PLM % Cellulose | Non Fibrous PLM % Mineral Fill |
| Field Number | Color | Texture | Mor | ph Extinction | n RII | | - | | | ther identity | 1 | PLM % | PLM % Mineral Fills |
| Field Number Gravimetric | Color | Texture | Mor | ph Extinction | n RII | | - | | | ther identity | Results PLM % Chrysotile | PLM % Cellulose | PLM % Mineral Fill Organic Bir |
| Gravimetric Required Recommended See gravimetric | Color | Texture | | ph Extinction | | | - | | | ther identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM % Mineral Fill Organic Bir |
| Field Number Gravimetric Required Recommended | Color | Texture Vermiculite _ | | | | | - | | | ther identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM % Mineral Fill Organic Bir |
| Gravimetric Required Recommended See gravimetric analysis sheet | Color Homogeneity # of Layers | Texture Vermiculite Asbestos Detected \ | res No | | | | - | lor, Pleo Bir | | | Results PLM % Chrysotile Amosite | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic | PLM % Mineral Fill Organic Bir |
| Gravimetric Required Recommended See gravimetric analysis sheet for results | # of Layers Color of Layer Point Counts Slice | Texture Vermiculite Asbestos Detected \ | res No | | | RII D | S Color Co | lor, Pleo Bir | ef Sign O | | Results PLM % Chrysotile Amosite Other | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Fill Organic Bir |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V See SM-V | Color Homogeneity # of Layers Color of Layer Point Counts Slic PLM | Texture Vermiculite Asbestos Detected \ | res No | | | RII D | S Color Co | lor, Pleo Bir | ef Sign O | | Results PLM % Chrysotile Amosite Other | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scates, Low to Moderate | PLM % Mineral Fill Organic Bir Vermiculite Other |
| Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required Required | Color Homogeneity # of Layers Color of Layer Point Counts Slic PLM NOB PLM Comments: | Vermiculite | res No Slide 3 | Slide 4 | Slide 5 | RII D | Side 7 | Slide 8 | ef Sign O | | Results PLM % Chrysotile Amosite Other | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Fills Organic Bir Vermiculite Other * If vermiculite is >10% level of asbestos in a sa |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Color Homogeneity # of Layers Color of Layer Point Counts Slic PLM NOB PLM | Texture Vermiculite Asbestos Detected \ | res No Slide 3 | | Slide 5 | RI II D | Side 7 | Slide 8 | ef Sign O | | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % Mineral Fill Organic Bit Vermiculite Other * If vermiculite is >10% level of asbestos in a sa might be underestimate See Note #1. |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Color Homogeneity # of Layers Color of Layer Point Counts Slic PLM NOB PLM Comments: | VermiculiteAsbestos | res No | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | ef Sign O | | Results PLM % Chrysotile Amosite Other | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scates, Low to Moderate | PLM % Mineral Fill Organic Bit Vermiculite Other * If vermiculite is >10% level of asbestos in a sa might be underestimate See Note #1. |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Color Homogeneity # of Layers Color of Layer Point Counts Slic PLM NOB PLM Comments: Method: □ ELAP | Vermiculite | res No | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | ef Sign O | | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair. Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Fill Organic Bir Vermiculite Other * If vermiculite is > 10% level of asbestos in a samight be underestimate See Note #1. Non Fibrous PLM % |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Color Homogeneity # of Layers Color of Layer Point Counts Slic PLM NOB PLM Comments: Method: □ ELAP Stereosco | Vermiculite_ Asbestos Detected \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | res No = 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | ef Sign O | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair. Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Fill Organic Bir Vermiculite Other If vermiculite is >10% level of asbestos in a samight be underestimate See Note #1. Non Fibrous PLM % Mineral Fill |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric | Color Homogeneity # of Layers Color of Layer Point Counts Slic PLM NOB PLM Comments: Method: □ ELAP Stereosco Color Homogeneity | Vermiculite | res No = 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | ef Sign O | Total PT | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair. Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Fill Organic Bir Vermiculite Other * If vermiculite is >10% level of asbestos in a samight be underestimate See Note #1. Non Fibrous PLM % Mineral Fill Organic Bir Vermiculite |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required | Color Homogeneity # of Layers Color of Layer Point Counts Slic PLM NOB PLM Comments: Method: □ ELAP Stereosco Color Homogeneity # of Layers | Vermiculite | res No | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | ef Sign O | Total PT | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair. Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Fill Organic Bir Vermiculite Other * If vermiculite is >10% level of asbestos in a sa might be underestimate See Note #1. Non Fibrous PLM % Mineral Fill Organic Bir |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required Recommended See gravimetric See gravimetric | Color Homogeneity # of Layers Color of Layer Point Counts Slic PLM NOB PLM Comments: Method: □ ELAP Stereosco Color Homogeneity | Vermiculite | res No | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | ef Sign O | Total PT | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Synthetic High Birefringence Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Fill Organic Bir Vermiculite Other * If vermiculite is >10% level of asbestos in a samight be underestimate See Note #1. Non Fibrous PLM % Mineral Fill Organic Bir Vermiculite |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Color Homogeneity # of Layers Color of Layer Point Counts Slic PLM NOB PLM Comments: Method: □ ELAP Stereosco Color Homogeneity # of Layers Color of Layer | Vermiculite | res No | Slide 4 NNING OPT | Slide 5 | Slide 6 | Slide 7 | Slide 8 | ef Sign O | Total PT | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cther Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Fill Organic Bir Vermiculite Other * If vermiculite is >10% level of asbestos in a sa might be underestimate See Note #1. Non Fibrous PLM % Mineral Fill Organic Bir Vermiculite Other |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 12 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Color Homogeneity # of Layers Color of Layer Point Counts Slic PLM NOB PLM Comments: Method: ELAP Stereosco Color Homogeneity # of Layers Color of Layer | Texture | res No | Slide 4 NNING OPT | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | Asbestos Results PLM % Chrysotile Amosite Other Asbestos Results PLM % Chrysotile Amosite Other | PLM % Celiulose Fiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair. Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence | PLM % Mineral Fill Organic Bir Vermiculite Other * If vermiculite is >10% level of asbestos in a sa might be underestimate See Note #1. Non Fibrous PLM % Mineral Fill Organic Bir Vermiculite Other * If vermiculite is >10% level of asbestos in a sa |
| Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required analysis sheet for results SM-V Gravimetric Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Color Homogeneity # of Layers Color of Layer Point Counts Slice NOB PLM Comments: Method: ELAP Stereosco Color Homogeneity # of Layers Color of Layer Point Counts Slice PLM | Texture | res No | Slide 4 NNING OPT | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | Asbestos Results PLM % Chrysotile Amosite Other Asbestos Results PLM % Chrysotile Amosite Other | PLM % Celiulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair. Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High | PLM % Mineral Fill Organic Bir Vermiculite Other * If vermiculite is >10% level of asbestos in a sa might be underestimate See Note #1. Non Fibrous PLM % Mineral Fill Organic Bir Vermiculite Other |

EPA Interim Method of the Determination of

Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method ∕ □ ELAP □ EPA

Point Counts

NOB PLA

Q.C.

Extinction

Horse Hair: Scale

Low to Moderate

13

Gravimetric

Required D

See gravimetric [analysis sheet

for results

SM-V

Required [

See SM-V □ analysis sheet

14

Gravimetric Required [

See gravimetric [analysis sheet

for results

SM-V

Required [

See SM-V analysis sheet

Gravimetrio

Required

analysis sheet

for results

SM-V

Required [

See SM-V analysis sheet for results

16

Gravimetric

See gravimetric L analysis sheet

for results

SM-V Required [

See SM-V analysis sheet for results

for results

3 15 Field Number

EPA Interim Method of the Determination of

ELAP Items 198.1, 198.4, 198.6, 198.8

Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

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| Accredita | tion: |
|-----------|-------|
| NVLAP 101 | |
| ELAP | 1087 |

-AT-ATC

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| TS & & 15 / 8 1 / 8 | BULK | ASBESTOS | ANALYSIS SHEE | | = | | MICROSCOPES: OLYMPUS BH-2 / NIKON OPTIPHOT | | | D 4 813/811 / | | | S ANALYSIS S | HEET | | 04.50 | IDED14 | OLYMPUS BH-2 / NIKON OP MPHOT |
|---|---|-------------------|------------------------|---------------------|---------------------------------------|--|---|------------------------|---------------------------------|--|---|-------------------|--|--|----------------|---------------------------|--|--|
| Client / Project PANYNJ/ F | | MC | | | t Number 214P | | 25 | 1 | | Client / Project PANYNJ/ | | KEHAB | 1/ | | | Number 214PN | | 7 |
| Analysis Date 3/2 /20 | 021 Analyst | 770- | | Batch | | L-226 | TEMPERATURE C | : | f | Analysis Date 3/ ⁷ /2 | UZIAnalyst | | | | Batch N | lumber 21- | | TEMPERATURE °C |
| Stereoscopic Exam | | • | cal Properties | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | | 1 17 Field Number | Stereoscopic Exam | | • | tical Propertie | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Color Gy Texture | Morph Extinction R11 | RII DS Co | olor Color, Pleo Biref | Sign Other Identity | S Chrysoti | ie Cellulose | 5 OMineral Filler | | Gravimetric | Color Ton Texture F | Morph Extinction RI | <u> </u> | Color Color, Pleo | Biref Sign Of | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| Homogeneity Vermiculite | | | | <u> </u> | Amosite | Fiberglas | organic Binders | | Required 🗆 | Homogeneity M Vermiculite M | | | <u> </u> | <i>‡</i> <u>‡</u> <u>‡</u> = | = | Amosite | Fiberglass | Organic Binders |
| # of Layers Asbestos | J- d- + | -++ | t de | 1 | Other | Other | Vermiculite* | | Recommended | # of Layers Asbestos / | | | ∠ | 1 | | Other | Other | Vermiculite* |
| Color of Layer Detected Yes No | | | | | | ☐ Celtulose Ondulose | Other | AU or Sah | See gravimetric analysis sheet | Color of Layer Detected Yes No | | | | | | | Celiulose Ondulose | Other |
| | lide 3 Slide 4 Slide : | 5 Slide 6 S | Slide 7 Slide 8 Asb | .Ner. PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | | Addition of the second | for results | | Slide 3 Slide 4 Slide | te 5 Slide 6 | Slide 7 Slide 8 | Asb Ner. PT | T Total PT | %Asb. Or %Ver. | Extinction Fiberglass sotopic | |
| PLM 1/7 / | 7 | 5 Slide 6 S | | 4 8 | %ASB. OF %Ver. | ☐ Synthetic High | * If vermiculite is >10% the | # # # | SM-V | PEM / A / C | /17 1/38 | Je 3 Slide 6 | Side / Side b | ASD, IVEL, FI | 3.3 | // ASD. Of ///vel. | ☐ Synthetic High | * If vermiculite is >10% the |
| NOB PLM | 12 12 | | | 7 0 | J | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | V. | Required See SM-V | NOB PLM | 18/0 | | | 1-7- | 5 | 104 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| Comments: | | | | | | Low to Moderate Birefringence | See Note #1. | | analysis sheet | | ssible field | CONTAN | F10+70 6 | | | | Low to Moderate Birefringence | See Note #1. |
| Method: DELAP DEPA D | SCANNING OPTION | | Q.C. □ | | | 1 | | | for results | ······································ | SCANNING OPTION | (mg) 1000 | Q.c. | | | | | |
| Stereoscopic Exam | | DI M Onti | cal Properties | | Asbestos | Other Fibrous | Non Fibrous | | ² 18 | Stereoscopic Exam | | PLM On | tical Propertie |)C | 1 | Asbestos | Other Fibrous | Non Fibrous |
| · | Morph Extinction RI1 | | olor Color, Pleo Biref | Sign Other Identity | Results PLM % | PLM % | PLM % | | Field Number | | Morph Extinction RI | <u> </u> | Color Color, Pleo | | ther Identity | Results PLM % | PLM % | PLM % |
| Color Texture | | | | | Chrysoti Amosite | 1 | Mineral Filler | | Gravimetric | Color Texture | | | | | | Chrysotile Amosite | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Homogeneity Vermiculite | | | | | Other | Fiberglas Other | Organic Binders Vermiculite* | | Required Recommended | Homogeneity Vermiculite | | | | | | Other | Other | Vermiculite* |
| # of Layers Asbestos | | | | | | | Other | | See gravimetric | # of Layers Asbestos | | | | | | | | Other |
| Color of Layer Detected Yes No | | | | | | ☐ Cellulose Ondulose Extinction | | . : | analysis sheet for results | Color of Layer Detected Yes No | • | | | | | | ☐ Ceilulose Ondulose Extinction | |
| Point Counts Slide 1 Slide 2 S | lide 3 Slide 4 Slide | 5 Slide 6 S | Slide 7 Slide 8 Asb | ./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fibergiass Isotopic | | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Sli | de 5 Slide 6 | Slide 7 Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | □ Fiberglass Isotopic | |
| PLM | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample | | Required | PLM | | | | | | | Synthetic High Birefringence | If vermiculite is >10% the level of asbestos in a sample |
| NOB PLM | | | | | | Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. | | See SM-V □ | NOB PLM | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| Comments: | | ee B | Q.C. □ | | | Bitefringence |] | | analysis sheet for results | Comments: Method: □ ELAP □ EPA | SCANNING OPTION | <u>See</u> | | | | | Birefringence | |
| Method: ☐ ELAP ☐ EPA ☐ | SCANNING OPTION | | U.C. | | Asbestos | 1 04 711 | | | [A | Method: LI ELAP LI EPA | SCANNING OPTION | | Q.C. | | | Asbestos | 04 | Non Fibrous |
| Stereoscopic Exam | | • | ical Properties | | Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | | 3 19 Field Number | Stereoscopic Exam | | <u> </u> | tical Propertie | | | Results PLM % | Other Fibrous PLM % | PLM % |
| Color Texture | Morph Extinction RI1 | RII DS C | olor Color, Pleo Biref | Sign Other Identity | Chrysoti | le Cellulose | Mineral Filler | | Gravimetric | Color Color Texture | Morph Extinction R | II KII DS | Cotor Color, Pleo I | Biret Sign O | other Identity | Chrysotile | 7 Cellulose | 39 Mineral Filler |
| Homogeneity Vermiculite | | | | | Amosite | | | | Required [| Homogeneity Vermiculite | | | | | | Amosite | <u> </u> | Organic Binders |
| # of Layers Asbestos | | | | | Other | Other | Vermiculite* | | Recommended C | # of Layers Asbestos | | | | | | Other | Other | Vermiculite* |
| Color of Layer Detected Yes No | | | | | | ☐ Cellulose Ondulose | Other | | See gravimetric analysis sheet | Color of Layer Detected Yes N | . | | | | | | Cellulose Ondulose | Other |
| - | lide 3 Slide 4 Slide | 5 Slide 6 5 | Slide 7 Slide 8 Ast | .Ner. PT Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | | | for results | | | de 5 Slide 6 | Slide 7 Slide 8 | Asb.Ner. P | T Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| PLM PLM | Jac 5 Gade 4 Glide | S Gide 0 | Silde 7 Olide 0 Mac | vei.Ti Totari i | 76/130. Of 76VOI. | Synthetic High | * If vermiculite is >10% the | | SM-V | PLM 2 | | Jaco Jaco | Olide 7 Olide G | 0 | 20 | () | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| NOB PLM | | | | | | Birefringence | level of asbestos in a sample might be underestimated. | | Required See SM-V | NOB PLM | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| Comments: | <u> </u> | ee 13 | | | <u> </u> | Low to Moderate Birefringence | See Note #1. | | analysis sheet | Comments: | | | | | | | Birefringence | See Note #1. |
| Method: □ ELAP □ EPA □ | SCANNING OPTION | | Q.C. 🗆 | | | | | | for results | Method; ☐ ELAP ☐ EPA | Z SCANNING OPTION | | Q.C. 🗆 | | | | | |
| Stereoscopic Exam | | PLM Opti | ical Properties | | Asbestos | Other Fibrous | Non Fibrous | | 4 20 | Stereoscopic Exam | | PLM Op | tical Propertie | 9S | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Colof [14] Texture 15 | Morph Extinction RL1 | RI I DS Co | olor Color, Pleo Biref | Sign Other Identity | Results PLM % | PLM % | PLM % | | Field Number Gravimetric | Color Coty Texture | Morph Extinction R | II RII DS | Color Color, Plea I | Biref Sign O | Other Identity | Chrysotile | PLM % | Mineral Filler |
| 1 | | | | | Chrysoti Amosite | € Cellulose Fiberglas | Milleral Filler | | Required [| 4 | | | | | | Amosite | Fiberglass | |
| Homogeneity / Vermiculite | | | | | Other | Other | Vermiculite* | | Recommended [| Homogeneity Vermiculite | | | | | | Other | Other | Vermiculite* |
| # of Layers Asbestos | | | | | | | Other | | See gravimetric | # of Layers Asbestos | | | | | | | _ | Other |
| Color of Layer Detected Yes No | | | | | | Celiulose Ondulose Extinction | *************************************** | | analysis sheet for results | Color of Layer Detected Yes N | o | | - | | | | ☐ Cellulose Ondutose Extinction | |
| Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 Slide | 5 Slide 6 S | Slide 7 Slide 8 Asb | .Ner. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | *************************************** | | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Sli | de 5 Slide 6 | Slide 7 Slide 8 | Asb.Ner. P | T Total PT | %Asb. Or %Ver. | ☑ Fiberglass Isotopic | |
| PLM 762 | | | |) 200 | \bigcirc | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample | | Required [| PLM /8 | garage action action of the control | | | 0 | 200 | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| NOB PLM | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. | | See SM-V | NOB PLM | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| Comments: | | | | | | Birefringence | | | analysis sheet for results | Comments: | | | | | | | Birefringence | |
| | 100411111111111111111111111111111111111 | | 100 | | · · · · · · · · · · · · · · · · · · · | | | i · | 10) TOURIS | March of The Ab The The | COANDING COMO | | 00 - | | | | 1 | 1 |
| | SCANNING OPTION | I EL AD 400 4 5 " | Q.C. | ataining =400° | with with Man | | t contains as === in the | | Methods: | · | SCANNING OPTION ote #1: ELAP requires met | had 51 AD 100 1 (| Q.C. | olae castairia- | <100/ | lita with the execution | f curfacina material 11- | t contains version #*- |

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing \$10% vermiculite ELAP 188.1 followed by ELAP 198.6. This method has limitations for identification and quantificat of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10%. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

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ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | Olivet (E | F | PANYNI | / FIRE | SPRINK | | | S ANAL | YSIS SH | EET | Di | Number 214PN | IDEDI1 | Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT |
|---------------------------------|------------------|--|---|----------|--|----------|----------|--------------|---|---|---|---------------------------|--|---|
| | | | 3/7/ | | | | H 16 | | | | | 24 | | ・アト |
| | Analysis | Date | o/ <u> </u> | <u> </u> | Anaiyst | v | | | | | Batch N | | | EMPERATURE °C |
| 21 ield Number | Stere | oscopic I | Exam | Morr | h Extinction | RII | | ptical Pr | • | | ner Identity | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Colf | Textu | ге | - WIGHT | ——— | | KIN DO | | n, rieo bij | | | Chrysotile | Cellulose | 3 > Mineral Filler |
| Required 🗌 | Homogeneity | ∑ Verm | iculite | 1= | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Layers | Asber | ctor | · | | , | | | | , | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | | | | | | | | | | | | | _ | Other |
| for results | Color of Layer_ | Detec | oted Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [| PLM | /2- | | | | | | | | 0 | 200 | 0 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| analysis sheet for results | Comments: | <u> </u> | <u></u> | | | | I | L | *************************************** | 1 | | CBACK-HOLLO-CEALANDER | Birefringence | See Note #1. |
| ioi resuits | Method: 2 | LAP [| EPA | J⊒ ŚCAN | NING OPTI | ON | | Q. | c. 🗆 | | | | | |
| | I | | | | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| ield Number | Stere | oscopic I | Exam | | | | | ptical Pr | - | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color | Textu | re | Morp | h Extinction | RII | Rt D: | S Color Colo | or, Pleo Bi | et Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗀 | Homogeneity | Verm | iculite | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | | | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🗌 | # of Layers | Asbe | stos | - | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer _ | Detec | cted Yes | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | □ Fiberglass Isotopíc | |
| Required 🗆 | PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM | | | | | | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet | Comments: | | 1 | | <u>. </u> | | <u> </u> | <u> </u> | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: □ E | ELAP [|] EPA | □ SCAN | NNING OPT | ON | | Q. | С. 🗆 | | *************************************** | | | |
| | <u> </u> | | _ | 1 | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| ield Number | Stere | oscopic i | Exam | 12 | oh Extinction | RII | | ptical Pr | | | 12-22 | Results PLM % | PLM % | PLM % |
| Gravimetric | Color | Textu | re | INIOT]. | n extriction | | KI D | S Cotor Cole | or, Pleo Bi | er Sign Otr | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity | Verm | iculite | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended [] | | | *************************************** | | . | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🛘 | # of Layers | Asbe | stos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer | Dele | cted Yes | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| | PLM | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the |
| Required [| | | | | | | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | Comments: | | <u> </u> | | | | | <u></u> | | | | | Low to Moderate Birefringence | See Note #1 |
| for results | Method: E | ELAP [|] EPA | □ SCAI | NNING OPT | ION | | Q. | C. 🗆 | • | | | | |
| | T | ······································ | | | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| ield Number | Stere | oscopic | Exam | | | | PLM O | ptical Pi | roperties | ; | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color | Textu | ıге | Mort | oh Extinction | RII | RII D | S Calor Cal | or, Pleo Bi | ef Sign Of | her Identity | Chrysotile | Celiulose | Mineral Filler |
| Required | | | | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended [| Homogeneity _ | Verm | iculite | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🏻 | # of Layers | Asbe | stos | _ | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer_ | Deter | cted Yes | No | | | | | | | | | ☐ Cellulose Ondulose | _ |
| | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, PT | | | Extinction | |
| SM-V | · FORE COUNTS | | | | | | | | | | | | | |
| | | <u></u> | Ollue 2 | Since 0 | Jinue 4 | Olido o | Olido o | Onde I | SHUE 6 | ASD./Vel. PT | Total PI | %Asb. Or %Ver. | ☐ Synthetic High | * If verroiculite is > 10% the |
| Required [| OI M | | Silue 2 | Since 0 | Side 4 | Ollus 0 | Onde o | Onde i | Since 6 | ASD, Vel. P1 | Total PI | %Asb. Or %Ver. | | * If vermiculite is > 10% the level of asbestos in a sample imight be underestimated. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Comments:

Method: 🗆 ELAP 💢 EPA

☐ SCANNING OPTION

See SM-V 🗌

analysis sheet

for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite FI AP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.*

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

LilaB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/FORMS_2021/BULK/ASBESTOS_ANAL/YSIS_SHEET_FORM #82.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Q.C.

Low to Moderate

See Note #1.

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

03/02/21

| Client/Project: | PANYNJ | RUSH | | PLM Batch # 2 | 21-226 | TEM Batch # 122381 | 122381 | Start Date: |
|----------------------|---------------------------|-------------------------|----------------------------|---------------|-------------|-----------------------------------|--------|-----------------|
| NOB PLM PREP: | MG/EV | NOB PLM Analyst: MJG | | NOB TEM PREP: | SH | NOB TEM Analyst: | FG | Date Completed: |
| 1 | | | | | | Applicate Cart Care Edward Street | | |
| ç | 11 17 | 9 | 13 | | | Meth | spo | |
| | Non Asb | Ashestos | % Total | | | ON | 8 | |
| % Field # Organic | Residue % % NFr Carbonate | Types or Vermiculite | Asbestos or Vermiculite | Notes | \$ 10 miles | PLM PREP | TEM | |

| 9 | | TE | 1 > | > | \ | | I | I | | |
|---------|----------|--|------------|------|----------|--|---|---|----------|--|
| Methods | NOB | PLI | *** | > | > | | | | <u> </u> | |
| ž | | PRE | | > | > | | | | | |
| | | Notice No | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | |
| 6 | Asbestos | Types or Vermiculite | ND | ΩN | QN | | | | | |
| 12 | | % Carbonate | 16.5 | 22.6 | 14.7 | | | | | |
| 11 | Non Asb | Residue % | | 48.1 | 54.8 | | | | | |
| 2 | | % Organic | 31.0 | 29.3 | 30.5 | | | | | |

က

1. Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not defected.



ATC Group Services LLC 104 E. 25th Street, 8th Floor

14 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 4/8/2021

104 EAST 25TH STREET NEW YORK, NY 10010

Date Received: 4/8/2021

Fax: (212) 353-3599

Date Analyzed: 4/9/2021

ATC Batch # 21-618

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Phone: (212) 353-8280

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING #263
Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>No</u> | on-Asbestos | <i>NOB</i> | <u>Asbestos</u> |
|--------------|--|--|--------|--------------------|---------------------|------------|----------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 22 | 1ST FLOOR SPRINKLER ROOM EAST | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-618 -1 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Bro | wn | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 23 | 1ST FLOOR SPRINKLER ROOM EAST | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-618 -2 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Bro | wn | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 24 | 1ST FLOOR SPRINKLER ROOM EAST | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-618 -3 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Bro | wn | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 25 | 1ST FLOOR SPRINKLER ROOM EAST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | PLM | | 33% Mineral Filler | | 67% Chrysotile |
| 21-618 -4 | | | | | 0.0% Vermiculite | | |
| | | Color: Gra | у | | | | |
| Analyzed By: | Ivan Reyes | | | | | | Total Asbestos: 67 % |
| 26 | 1ST FLOOR SPRINKLER ROOM EAST @ CEILING | PACKING INSULATION PENETRATION 8" PIPES | | | | | |
| 21-618 -5 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive | e stop, see #25 | | |
| 27 | 1ST FLOOR SPRINKLER ROOM EAST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | | | | | |
| 21-618 -6 | - | | | | | | NOT ANALYZED |
| | | | | Comments: Positive | a ston see #25 | | |
| | | | | | 5 SIUP, SEC #20 | | |
| 28 | 1ST FLOOR SPRINKLER ROOM WEST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | PLM | | 33% Mineral Filler | | 67% Chrysotile |
| 21-618 -7 | | | | | 0.0% Vermiculite | | |
| | | Color: Gra | у | | | | |
| Analyzed By: | Ivan Reyes | | | | | | Total Asbestos: 67 % |

Report Prepared By: Grace Chan Page 1 of 3 Batch # 21-618



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>Non</u> | -Asbestos | NOB | Asbestos |
|-------------|--|--|---------|------------------------------------|-------------------|--------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 29 | 1ST FLOOR SPRINKLER ROOM WEST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | | | | | |
| 21-618 -8 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive s | op, see #28 | | |
| 30 | 1ST FLOOR SPRINKLER ROOM WEST @ CEILING | PACKING INSULATION @ PENETRATION 8" PIPES | | | | | |
| 21-618 -9 | | | | | | | NOT ANALYZED |
| | | | | Comments: Positive s | op, see #28 | | |
| 31 | 1ST FLOOR WAREHOUSE SMALL BATHROOM | TECTUM ŒILING BOARD | NOB-TEM | | | 31.4% Organic 11.1% Residue | |
| 21-618 -10 | | | | | 0.0% Vermiculite | 57.5% Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Whi Second Analyst: Feyza (| | Comments: NOB PLN | 1 Inconclusive | | |
| 32 | 1ST FLOOR WAREHOUSE SMALL BATHROOM | TECTUM CEILING BOARD | NOB-TEM | | | 32.4% Organic 16.1% Residue | |
| 21-618 -11 | | | | | 0.0% Vermiculite | 51.5% Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Whi Second Analyst: Feyza (| | Comments: NOB PLM | 1 Inconclusive | | |
| 33 | 1ST FLOOR WAREHOUSE SMALL BATHROOM | TECTUM CEILING BOARD | NOB-TEM | | | 32.9% Organic 14.4% Residue | |
| 21-618 -12 | | | | | 0.0% Vermiculite | 52.7% Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Whi Second Analyst: Feyza (| | Comments: NOB PLN | 1 Inconclusive | | |
| 34 | 1ST FLOOR WAREHOUSE DIVIDING WALL | WALL BLANKET INSULATION | N PLM | Trace% Cellulose 95% FiberGlass | 5% Mineral Filler | | |
| 21-618 -13 | | | | 95% FIDEIGIASS | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | : Ivan Reyes | Color: Bro | wn | | | | |
| 35 | 1ST FLOOR WAREHOUSE DIVIDING WALL | WALL BLANKET INSULATION | N PLM | Trace% Cellulose | 5% Mineral Filler | | |
| 21-618 -14 | DIVIDING WALL | | | 95% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | · Ivan Reves | Color: Bro | wn | | | | |
| 36 | 1ST FLOOR WAREHOUSE | WALL BLANKET INSULATION | N PLM | Trace% Cellulose | 5% Mineral Filler | | |
| J0 | DIVIDING WALL | WALL DEMINET INSULATION | TLIVI | 95% FiberGlass | | | |
| 21-618 -15 | | - · - | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | : Ivan Reyes | Color: Bro | wn | | | | |
| , | ·- / | | | | | | |

Report Prepared By: Grace Chan Page 2 of 3 Batch # 21-618



ATC Group Services LLC

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Non-Asbestos <u>NOB</u> Asbestos Type of Material Location Method % Fibrous % Non-Fibrous % Type % Type NOTES 1) The Limit of Detection is the same as the Reporting Limit for these results. 2) The Reporting Limit (RL) is the Limit of Quantitation. For point counts the limit of quantitation of 0.25%; based on one asbestos point counter over 400 non-empty points 3) Asbestos Containing Material (ACM) Definition: > 1% asbestos by weight is considered an ACM 4) Disclaimer: The laboratory is not responsible for sample collection. Please refer to enclosed letter. This report may not be reproduced, except in full, without written approval by ATC Group Services. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This report relates only to the samples reported above as described in the chain of custody. Quality control data is available upon request. 5) Accredited by NVLAP #101187-0 and by NY State ELAP #10879 6) Confidentally Notice: The document(s) contained herein are confidential and privileged information, intended for the exclusive use of the individual or entity named above. 7) Liability Notice: ATC Group Services and its personnel shall not be liable for any misinformation provided to us by the client regarding these samples. This report relates only to samples submitted and analy 8) Asbestos results are reliable to 2 significant figures 9) The condition of all samples was acceptable upon receipt 10) The laboratory certifies that the test results meetall requirements of NELAC. __. Amendments: ____. Amendment Dates: ____ 11) Supplement to test report batch # _. Amended by: ___ 12) PLM Letter is attached on this report. 13) TRACE: The result is reported as Trace when No points are counted and asbestos is identified. For ELAP Trace is < 1%. 14) ATC Group Services certifies that this report is an accurate and authentic report of the results obtained from the laboratory analysis 15) The uncertainty for these test results is available upon request. 16) ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite. For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 1986. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Mei Wang

Approved by Quality Manager:

| Ivan Reyes | Jan Vine |
|--------------|----------|
| Analyst: | |
| Mei Wang | Meilon |
| Analyst: | |
| Feyza Gungor | tayly/ |

Analyst:

Report Prepared By: Grace Chan Page 3 of 3 Batch # 21-618



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired.

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

incerely,

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiles Bousson

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS BULK DOCUMENTS 2021\BULK_LETTER_DOC #DB4A.DOC ATC EFFECTIVE DATE 01/18/2021 REVISION #32

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BATCH NO.

| 1. Clier | PANY | NJ | Project Name: FIRESPRINKLEF | | | 3a. ATC Project N 214PNP | | -70 | ct Manager: R. Rivero |) |
|----------|-----------------------|----------------|--------------------------------|------------------------|-------------------------------|---|----------------|-----------------|--------------------------|----------------|
| | | 7,000,00 | 2a. Project Address PN F | : (Circle One PE PJ | 9) | 3b. Task No.: 000 | 1 | 4b. Inspe PH | ctor: ILIP CARRIN | IGTON |
| 5. Date: | 6. BI | UILDING NUMB | ER:7/ 2 | F15510000 | around Tim | | | | nent s (Field) | |
| 4/8/ | 7. Sa | ampling Areas: | 26) | | | S o 72 HRS o OT RS o NORMAL R | | NOB→ Stop @ | 1 st Positive | |
| | | OCATION | | | 400 | | | | | |
| modenous | 11. Bulk Sample ID | 12. | Material | 13. Therr | 14. | Sample | Location | | 15. Material Total | 16. Asbesto |
| Area No. | No. | | Waterial | Syste | 5555 | | le Coordinates | | Qty. (LF, SF, PCS) | Conten |
| 8 | 22 | CHU 4 | VAIL | | | SPRINKU | FO PUNT | FAST | | (1) po u |
| 8 | 23 | | orm | | 1 | | | | | |
| 8 | 24 | | (1 | | | | | | | |
| 9 | 25 | PACKING | INSULAT | in | | | o ekili. | ug | 35.F | |
| 9 | 26 | Q PE | NETRATIO | us | | | | | | |
| 9 | 77 | 8" | PIPES | | | | | | | |
| 10 | 28 | PACKING | jusuca | ija) | | SPAINKLE P | 2 804 U | 局厂 | 35.F | |
| 10 | 29 | @ PFA | US MADION | -5 | | @ CE | ling | | | |
| 10 | 30 | 8" | PIPES | | | | | | | |
| 11 | 31 | TECTU | 7 CELLING | | | WANTING | | ne | | |
| 1 | 32 | BOAT | RD | | $\perp \downarrow \downarrow$ | BARRIN | JM | | | |
| 1) | 33 | | / | | 4 | SHI. | | 0.00 | | |
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| 12 | 35 | jasu | cosion | | | DIVIDIA | 4 WA | LL | | |
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| IAIN O | F CUSTO |)V | | | | | | 1.5 | | |
| | quished By | _/ | 18. Date 19. T | ime 20 | Receive | d Bv | 21. Date | 22. Tin | | //ethodubmitta |
| Ph | ilif (| and | 1 . 1 | 8pm | Elie | 0 | 2/8/202 | | Field | |
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| | 1117 | ORMATION | _ | اودد | | | | | | |
| | and Signatu | - | | 0 | 2 | | | . Commer | nts (Lab) | |
| | lyzed By: | Lan Ken | to will | Kym | , | 19/2021 8. | 48 am | | | |
| lo. QC I | lyzed By: | VV | Programme - | Y | - (| 45112 15 | -9 " | | | |

ATLAS. ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| BULK | ASBESTOS | ANALYSIS | SHEE |
|------|-----------------|-----------------|------|
|------|-----------------|-----------------|------|

| Client / Project PANYNJ / FIRESPRINKLER REHAB Project Number 214PNPI | | | | | | | | | | PEPJ1 | NIKON OPTIPHOT | | |
|--|---|------------------------|------------|----------|----------|---------------|-------------|--------------|----------------|------------------------|------------------------|---|---|
| | <i>∠</i> ⊃ | 021 | Analyst | | | \mathcal{D} | | | | Number | 21-6 | 518 | EMPERATURE*C |
| 1 22 Field Number | Stereoscopic Exam | | | | | ptical Pro | <u> </u> | | | Asbe Results | | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required □ | Color | Morph | Extinction | RI I | RI D | S Color Colo | r, Pleo Bir | ef Sign Oth | ner Identity | - | Chrysonie Amasite | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended See gravimetric | # of Layers Asbestos | | | | | | | | | | other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes N | lo | | | | | | | | 1 | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | <u></u> | %Asb, O | r %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% the |
| Required ☐ See SM-V ☐ | NOB PLM | | | | | | | 0 | LOO | 0 | | Birefringence ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | 14 SCAN | NING OPTI | ON | | 10.0 | : n | | | | | Birefringence | |
| | | | | | | | | | | | | | |
| 2 23 Field Number | Stereoscopic Exam PLM Optical Properties Asbestos Results PLM % Morph Extinction RI 1 RI DS Color Color, Pleo Biref Sign Other Identity | | | | | | | | | Other Fibrous PLM % | Non Fibrous PLM % | | |
| Gravimetric Required □ | Color Director Color | | | | ······· | | | | | | Cho/sotile Amosite | Cellulose Fiberglass | / Mineral Filler Organic Binders |
| Recommended | # of Layers Asbestos | | | | | | | | | -/ | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes N | | | | | | | | | | | ☐ Celkulose Ondulose Extinction | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. O | r %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required 🖸 | PLM OUT | | | | | | | | 200 | 0 | | Biretringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| See SM-V ☐ analysis sheet | Comments: | | | | <u> </u> | | | <u> </u> | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: ← ELAP □ EPA | SCAN | NING OPTI | ON | | TQ.0 | S. 🗆 | | | | | | |
| 3 24 | | 1 | | | | | | | | Asbe | etne | Other Fibrous | Non Fibrous |
| 3 24 Field Number | Stereoscopic Exam | Morph | Extinction | RII | | ptical Pro | - | ef Sign Otl | her Identity | Results | 1 | PLM % | PLM % |
| Gravimetric Required □ | Color MW Nexture | | | | | | | | | | Chrysotile Anyosite | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended | Homogeneity Vermiculite | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos Color of Layer Detected Yes N | z = | | | | | | | | | | □ Celluiose Ondulose | Other |
| for results SM-V | Point Counts Slide 1 Stide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, PT | Total PT | %Asb. O | r %Ver. | Extinction ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM D | | | _ | | | | 0 | 200 | o | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V analysis sheet | NOB PLM Comments: | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Method: Ø ELAP □ EPA | SCAN | NING OPTI | ON | | Q.0 | c. 🗆 | | | | | | |
| 4 25 Field Number | Stereoscopic Exam | , Morph | Extinction | , RII | | ptical Pro | - | | her / Ogentity | Asbe Results | | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colol TV Texture | | 1 | 題 | | Coin Coin | | ref Sign OII | _Chr | 67 | Chrysotile | Cellulose | 33 Mineral Filler |
| Recommended | Homogeneity Vermiculite | 4 | | FEE I | HH | | | | | | Amosite Other | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | | F | <u> </u> | 175// | | | _ = _ | | | Onlei | Other | Other |
| analysis sheet for results | Color of Layer Detected Yes N | lo | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, PT | Total PT | %Asb. 0 | r,%Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | * If your invite is > 4.00/ at - |
| Required | Non-0111 | - [1 | 1/2 | <u> </u> | | | | G. | 6 | wt/ | scho | Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet for results | Comments: | - In-House and America | | | <u> </u> | 1 | <u></u> | <u> </u> | | | | i.ow to Moderate Birefringence | See Note #1. |
| r ror resums | Comments; | | | | | | | | | | | | Į. |
| | Method: CELAP DEPA | ☐ SCANI | NING OPTI | ON | | Q.0 | ≎. 🗆 | | | | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing s10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

L:LAB_FORMS,DOCUMENTS AND RECORDSIOPTICAL/ASBESTOS_BULK/ASBESTOS BULK/FORMS 2020/BULK ASBESTOS ANALYSIS SHEET_FORM #82.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

BULK ASBESTOS ANALYSIS SHEET

Client / Project PANYNJ/ FIRESPRINKLER REHAB

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

_ Project Number ___214PNPEPJ1

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ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | Client / Project PANYNJ/ | / FIRESPRINKL | ER REHA | AΒ | | | | Project I | Number 214PN | IPEPJ1 | NIKON OPTIPHO |
|--|--|--|--|---|---|---|---|---|--|---|---|
| | O: | 2021 Analyst_ | | < | M | | | Batch N | umber 21-618 | | EMPERATURE 2 |
| 1 30 Field Number | Stereoscopic Exam | 1 | 1 | PLM Opt | tical Pro | perties | | T | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | ColorTexture | Morph Extinction | RII | RI DS (| Color Colo | r, Pleo Bin | ef Sign Oth | er Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | 500 STA | | | | | | === | | Amosite | Fiberglass | Organic Binde |
| Recommended | Homogeneity Vermiculite | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes ! | No | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required | PLM | | | | | | | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | | 8 | 7000 | | - | | | | | Birefringence | CONTRACTORIA |
| | Method: □ ELAP □ EPA □ SCANNING OPTION Q.C. □ | | | | | | | | | | |
| 2 31 Field Number | Stereoscopic Exam | | Ì | PLM Opt | tical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | couldn't Extrine P | Morph Extinction | RII | RII DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗗 | | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended | Homogeneity Vermiculite | 1 | | | | | | | Other | Other | U Vermiculite* |
| See gravimetric Q | # of Layers Asbestos | / | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes I | No | | | | | | | | ☐ Cellulose Ondulose | 357369955 |
| ASSESSMENT OF | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| SM-V | | Side 3 Side 4 | Slide 5 | Silue 0 | Silue / | Slide 6 | ASD./Vel. F1 | TotalFi | AMSD. OF MAREL. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | PLM | | | | | | | | | Birefringence Horse Hair: Scales, | level of asbestos in a sampl |
| See SM-V □ | NOB PLM | | | | | | 0 | w | U | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | 1 | | | To a | | | | | Bireningence | |
| | Method: ☐ ELAP ☐ EPA | SCANNING OPTION | ON | | ω. | c. 🗆 | | | | | |
| 3 32 Field Number | Stereoscopic Exam | | | PLM Op | tical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | color Ville Tourise F | Morph Extinction | RII | RII DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗗 | | | | | == | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | Homogeneity Vermiculite | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | #of Layers Asbestos | / | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | ☐ Cellulose Ondulose | |
| | Delatorate office a logiste of | Gilde n Gilde 4 | Clide E | Olida C | 0014- 7 | Ollde D | IA-LAG- DE | Table | NA-1-0-WV | Extinction Fiberglass Isotopic | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Synthetic High | |
| Required | PLM / | | | | | | | | | Birefringence | If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM O | - | | | | | 0 | 200 | Ų | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | th | | | 10. | c. 🗆 | | | // | bitettingence | |
| | Method: ☐ ELAP ☐ EPA | SCANNING OPTIO | ON | | ω.ι | →. □ | | | | | |
| 4 33 Field Number | Stereoscopic Exam | | | PLM Op | tical Pro | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | court hate training | Morph Extinction | RII | RI DS | Color Colo | r, Pleo Bir | ef Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗹 | / | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | Homogeneity Vermiculite | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric Z | # of Layers Asbestos | 4 | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | == | | | | | ☐ Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| | PLM | 0,100 | 0.000 | - | Cildo I | 0,140 0 | , 1003 (01) | 75.00.7.7 | 707.001.01 | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | 0 . | | | | - | | | 2 | | Birefringence | level of asbestos in a samp might be underestimated. |
| See SM-V analysis sheet | NOB PLM | | | | | | 0 | a | , , | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: | SCANNING OPTI | ON | | lo. | C. 🗆 | | | | | |
| Methods: | 1 | / | 362 | D 100 1 | | | | DOI | and the state of t | | |
| EPA Interim M Asbestos in Bu Appendix E to EPA 600/R-93 | ulk Insulation Samples - 40 CFR Subpart E of Part 763 | (SM-V). For samples cor of vermiculite. "This met Note #2: ELAP requires | ntaining >10% nod does not method 198. | vermiculite remove veri 8 for the ana | ELAP req miculite and alysis of sur | uires metho d may under facing mate | ds ELAP 198.1 restimate the le erial containing | followed by E evel of asbeste vermiculite (S KASBESTOS | e, with the exception of s ELAP 198.6. This methor os present in a sample of SM-V) and it utilizes a 40 BULK FORMS 2020/BULF TC EFFECTIVE DATE 01/1 | d has limitations for iden ontaining greater than 1 0 point count method. CASBESTOS ANALYSIS | ntification and quantification 0% vermiculite." SHEET_FORM #82.doc |

| Note #1: ELAP red | quires method E | LAP 198,1 for t | he analysis of | samples cont | aining ≤10% v | remiculite, w | ith the exc | eption of surf | facing material that |
|-----------------------|-----------------|------------------|------------------|----------------|----------------|----------------|-------------|----------------|----------------------|
| (SM-V), For sample | | | | | | | | | |
| of vermiculite, "This | s method does | not remove ven | miculite and m | ay underestin | nate the level | of asbestos p | resent in a | sample cont | taining greater than |
| Note #2: ELAP red | auires method 1 | 98.8 for the ana | alvsis of surfac | ing material c | ontaining verr | niculite (SM-) | And it ut | lizes a 400 p | oint count method. |
| | | | | | | | | | SBESTOS ANALYSI |
| | | | | | | ATC F | FEECTIVE | DATE 01/18/2 | 021 REVISION #33 |

| | Client / P | Date 4 | 19 /2 | 2021 | Analyst | | 1 | 1 | | | _ Project _ Batch N | Number 214PN lumber 21-0 | 518 | EMPERATURE C |
|---|---|--|------------|-----------------------------|--|--|--|--|--|---|--|-----------------------------|--|---|
| 26 leid Number | | oscopic E | | I was | Euler-Fr | DI. | | otical Pro | A A STATE OF THE S | of Circ Cir | as Ido-th | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color | Textur | re | Morph | Extinction | RII | RI II DS | Color Colo | r, Pleo Biri | et Sign Oth | er Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity | Vermi | iculite | _ | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | Open State Control (1999) | | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🗆 | # of Layers | Asbes | stos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer_ | Detec | ted Yes M | Vo | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| - | PLM | | | | | | | | | | | | Synthetic High | * If vermiculite is >10% the |
| Required 🗆 | NOB PLM | | | | | | | | | | | | Birefringence Horse Hair: Scales, | level of asbestos in a sampl might be underestimated. |
| See SM-V analysis sheet | | _ | 11. | | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: | - | etti | | UNG ODT | 011 | | 10/ | C. 🗆 | | | | | |
| | Method: 🗆 E | LAP L | EPA | □ SCANI | NING OPTI | ON | | | <i>y</i> . ⊔ | | | | | |
| 27 ield Number | Stered | oscopic E | Exam | | | | PLM O | otical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| | 0.1 | Morph Extinction RI 1 RI DS Color Color, Pleo Biref Sign Other Identity | | | | | | | | | | | | |
| Gravimetric | Color | 40.000.000 | | | | | | | Cellulose | Mineral Filler | | | | |
| Required | Homogeneity _ | Verm | ículite | _ | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended 🗆 | # of Layers | Asbes | stos | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | Color of Laure | Dates | V 1 | | | | | | | | | | | Other |
| for results | Color of Layer_ | Detec | cted Yes I | | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sampl |
| See SM-V | NOB PLM | | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| analysis sheet | Comments: | S.P | e # | 20 | | | | | | | | | Birefringence | See Note #1. |
| for results | Method: □ E | 0 | EPA | | NING OPTI | ION | | Q.0 | c. 🗆 | | | | | |
| 20 | | | | | | | | | - | | | Asbestos | Other Fibrous | Non Fibrous |
| 28 ield Number | Stere | oscopic l | Exam | | | | In the state of | otical Pro | -1. | | | Results PLM % | PLM % | PLM % |
| Gravimetric | color | Textu | re 🛨 | Morph | Extinction | 13791 | 777 | Color Colo | J. Pleo Bir | ef Sign Oth | e Oldentity | Chrysotile | Cellulose | 33 Mineral Filler |
| Required 🗆 | Homogeneity | J Vorm | iculite | 1- | - | 12:13 1 | - 13 | 1 | -1 | $-\dot{+}-$ | -+- | Amosite | Fiberglass | Organic Binde |
| Recommended | Promogeneity_ | T veiiii | icume | t | 4 | 拉拉 | 1727 | 1 | 1 | _ <u> </u> | | Other | Other | Vermiculite* |
| See gravimetric 🗆 | # of Layers | Asbe | stos | - | - | | | | | | | | | Other |
| analysis sheet for results | Color of Layer_ | Detec | cted Yes I | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| CHIL | Point Counts | Slide,1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT | %Asb, Or %Ver. | ☐ Fiberglass Isotopic | |
| SM-V | PLM | il | iT | 11 | 1 | Olido o | Olido o | Olido 1 | Ondo o | 11 | f. | 179/00 | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | | 1 | 12 | 11 | 12 | | | | | 4 | 6 | 6+/sChr | Birefringence Horse Hair: Scales, | level of asbestos in a sampl might be underestimated. |
| See SM-V | NOB PLM | • | | · | ı | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| analysis sheet for results | Comments: | / | | | | | | lo. | C. 🗆 | | | | | |
| | Method: Z E | LAP L |] EPA | □ SCAN | NING OPT | ION | | α. | 6. □ | | | | L | |
| 29 | Stere | oscopic I | Exam | | | | PLM O | ptical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| ield Number | | 440000 | 3601 | Morph | Extinction | RII | RIII D | Color Colo | or, Pleo Bir | ef Sign Oth | ner Identity | | | |
| Gravimetric | Color | Textu | re | - | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity_ | Verm | niculite | | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | # of Layers | Asbe | stos | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | | | | No. | | | | | | | | | G 6. P. J | Other |
| for results | Color of Layer | Deter | cted Yes | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V 🗆 | NOB PLM | | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| analysis sheet | Comments: | 50 | o H | 74 | | | | | | | L | 1 | Birefringence | See Note #1. |
| for results | Method: E | | EPA | for it | NING OPT | ION | | Q. | c. 🗆 | | | | | |
| Methods: | | W. 17 | 3 | Note #1- FI | AP requires | s method FI | AP 198 1 fo | r the analysi | s of samples | s containing <1 | 0% vermicuti | te, with the exception of | surfacino material that co | ontains vermiculite |
| Asbestos in Bi Appendix E to EPA 600/R-93 | tethod of the Dete ulk Insulation Sar Subpart E of Par 3/116 98.1, 198.4, 198.6 | mples - 40 0 rt 763 | CFR (| SM-V). For of vermiculit | samples co e. "This me AP requires | entaining >10 thod does no s method 19 | % vermiculi of remove ve 8.8 for the a | ite ELAP req ermiculite an nalysis of su | uires metho d may unde rfacing mate | ds ELAP 198.1 restimate the le erial containing | followed by evel of asbes vermiculite (LKASBESTO | | d has limitations for iden ontaining greater than 1 0 point count method. < ASBESTOS ANALYSIS 5 | tification and quantification 0% vermiculite." GHEET_FORM #B2.doc |

Page _____ of ____

104 East 25th Street, 8th FL, New York, NY 10010

| | | 1 110110 | . (z iz) 00 | 0-0200, 1 | ax. (2) | 2) 000-0 | 1000 01 000 | | | | CLAP 108 |
|---|--|------------------------------------|-------------|-----------|------------|--------------|--|---------------------------|---|--|--|
| | | 1 | BULK AS | BESTOS | ANAL | YSIS SH | EET | | | | Microscope OLYMPUS BH |
| | Client / Project PANYNJ/ | FIRESPRINKL | ER REHA | В | | | | Project | Number 214PN | IPEPJ1 | NIKON OPTIPH |
| | Analysis Date 4 / 20 | 021 Analyst_ | | J | N | | | Batch N | Number 21- | 618 | EMPERATURE 25 |
| 1 34 Field Number | Stereoscopic Exam | | | LM Opti | | - | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required Recommended | Cold No. Nexture F | Morph Extinction | RIA F | RII DSC | ofor Color | r, Pleo Bire | ef Sign Othe | er identity | ChrysofileArnosite Other | Cellulose Fiberglass Other | Mineral Filler Organic Bind Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes No | , | | | | | | | | , ☐ Cellulose Ondulose Extinction | Other |
| SM-V Required [] | N. D. O. | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Stide 8 | Asb./Ver, PT | Total PT | %Asb. Or %Ver. | Fiberglass Isotopic☐ Synthetic HighBirefringence | * If vermiculite is >10% the |
| See SM-V ☐ analysis sheet | NOB PLM | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate Birefringence | level of asbestos in a sam might be underestimated, See Note #1. | |
| for results | Comments: Method: ☑ ELAP □ EPA □ | SCANNING OPTIC | NC | | Q.C | 2. □ | | | CONSTRUCTION OF THE CO | | |
| 2 35 Field Number | Stereoscopic Exam | | F | LM Opti | ical Pro | perties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color New Nexture F | Morph Extinction | RI1 F | RII DSC | olor Color | r, Pleo Biro | ef Sign Othe | er Identity | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | i i | | | | | | | | Arripsite | Fiberglass Other | Organic Bind Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes No | <u></u> | | | | | | | | C Cellutose Ondulose | Other |
| SM-V | Point Counts Stide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Extinction | |
| Required [] | L NOD BLU (U) | | | | | | 0 | 200 | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sam might be underestimated. |
| See SM-V analysis sheet for results | NOB PLM Comments: | | | | | | <u> </u> | | | Low to Moderate Birefringence | See Note #1. |
| | Method: ELAP DEPA | Z) SCANNING OPTIC | ON | | Q.C |). 🗆 | | | | | |
| 3 36 Field Number | Stereoscopic Exam | | | LM Opti | | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Mus (exture | Morph Extinction | RII F | RIII DSC | olor Colo | r, Pleo Bir | ef Sign Othe | er identity | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | | | | | | | | Arposite | Fiberglass Other | Organic Bind Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos Octoor of Layer Detected Yes No | } | | | | | | | | & Cellulose Ondulose Extinction | Other |
| SM-V | PIM CO | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| Required □ | NOR PLAN | | | | | | | <u> </u> | | ☐ Horse Hair: Scales, Low to Moderate Sizefringence | level of asbestos in a sam might be underestimated. See Note #1, |
| analysis sheel for results | Comments: Method: CELAP CEPA | SCANNING OPTIC | ON | | Q.0 | c. 🗆 | THE PERSON NAMED AND ADDRESS OF THE PERSON NAMED AND ADDRESS O | | | Sacrangemen | |
| 4 37 Field Number | Stereoscopic Exam | xam PLM Optical Properties Results | | | | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % | |
| Gravimetric | Color Texture | Morph Extinction | RI1 F | RII DSC | Color Colo | r, Pleo Bin | ef Sign Oth | er Idenlity | Chrysotile | | Mineral Filter |
| Required Recommended | Homogeneity Vermiculite | | | | | | | | Amosite | Fiberglass Other | Organic Bind Vermiculite* |
| | # of Layers Asbestos | | | | | | | | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Point Counts Slide 1

Method: ☐ ELAP ☐ EPA

NOB PLM

Slide 2 Slide 3

☐ SCANNING OPTION

analysis sheet

for results

SM-V

Required

See SM-V

analysis sheet for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:\(\text{LAB_FORMS.DOCUMENTS AND RECORDSIOPTICAL\(\text{LASBESTOS}\)_BULK\(\text{LASBESTOS}\)_BUL

☐ Cellulose Ondulo

] Horse Hair: Scales,

Low to Moderate

If vermiculite is >10% the

might be under See Note #1.

level of asbestos in a sample

%Asb. Or %Ver.

Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| # # | st: | Met |
|-----------------|---------------------|-----|
| TEM Batch # | NOB TEM Analyst: | |
| 21-618 | SH | |
| PLM Batch # | NOB TEM PREP: | |
| | MW | 13 |
| RUSH | NOB PLM Analyst: | 6 2 |
| PANYNJ | MG/EV | 1 |
| Client/Project: | NOB PLM PREP: | 9 |

เปรียบตัวสีกลา

04/09/21

Start Date:

122928

04/09/21

Completed:

E G

| | 1 | 1 200 30 200 | : | T . | T . | T | T | <u>T</u> | T. | T | 1 | T |
|---------|----------|----------------------------|----------|------|------|---|---|----------|----|---|---|---|
| Methods | NOB | TEN | J | > | > | | | | | | | ļ |
| Met | Ž | PLM PREP | | > | > | | | | | | | |
| | | Notes | - | | | | | | | | | |
| 13 | % Total | Ashestos or Vermiculite | | | | | | | | | | |
| 6 | Asbestos | Types or Vermiculite | | QN | QN | | | | | | | |
| 12 | | % Carbonate | 57.5 | 51.5 | 52.7 | | | | | | | |
| 11 | Non Asb | Residue % NFr | 1 | 16.1 | 14.4 | | | | | | | |
| - 5 | | % Organic | 31.4 | 32.4 | 32.9 | | | | | | | |
| | | Field# | 31 | 32 | 33 | | | | | | | |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116. 2. Refer to PLM analysis sheet for NOB results and/or point count data. 3. Vermiculite not reported = not detected.



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Client: ATC - NEW YORK

104 EAST 25TH STREET NEW YORK , NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Location: PN 263 / SPRINKLER ROOM

Project # 214PNPEPJ1/TASK0001

Sample Date: 11/9/2021

Date Received: 11/9/2021

Date Analyzed: 11/11/2021

ATC Batch # 21-1759

Methods: ELAP 198.1, 198.6, 198.4

Bulk Asbestos Analysis Results

| | | | | <u>No</u> | n-Asbestos | NOB | Asbestos |
|-------------------------|---|--|----------|-------------------|---------------------------------|---|----------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | ₩ Type | % Type |
| 37 | 1ST FLOOR EAST SIDE SPRINKLER ROOM DOOR | INTERIOR DOOR CAULKING | NOB-PLM | | | 33.8% Organic 6.5% Residue | 3.6% Chrysotile |
| 21-1759 -1 | | | | | 0.0% Vermiculite | 56.1% Carbonate | |
| Analyzed By: | Michael Gittings | Color: Tan | | | | 7 | otal Asbestos: 3.6 % |
| 38 | 1ST FLOOR EAST SIDE SPRINKLER ROOM DOOR | INTERIOR DOOR CAULKING | NOB-PREP | | | 37.9% Organic 8.9% Residue | |
| 21-1759 -2 | | | | | | 53.2% Carbonate | NOT ANALYZED |
| Analyzed By: | Michael Gittings | Color: Tan | | Comments: Not and | alyzed by NOB PLM, positive sto | p, see #37 | |
| 39 21-1759 -3 | 1ST FLOOR EAST SIDE SPRINKLER ROOM DOOR | INTERIOR DOOR CAULKING | NOB-PREP | | | 36.3% Organic 8.6% Residue 55.1% Carbonate | NOT ANALYZED |
| | Michael Gittings | Color: Tan | | Comments: Not and | alyzed by NOB PLM, positive sto | | |
| 40 21-1759 -4 | 1ST FLOOR EAST SIDE SPRINKLER ROOM / EXTERIOR WALL INTERIOR | INTERIOR CAULKING ON WALL PERIMETER | NOB-PLM | | 0.0% Vermiculite | 33.3% Organic 4.5% Residue 57.7% Carbonate | 4.5% Chrysotile |
| Analyzed By: | Michael Gittings | Color: Tan | | | | 1 | otal Asbestos: 4.5 % |
| 41 | 1ST FLOOR EAST SIDE SPRINKLER ROOM / EXTERIOR WALL INTERIOR | INTERIOR CAULKING ON WALL PERIMETER | NOB-PREP | | | 33.6% Organic 10.3% Residue 56.1% Carbonate | NOT ANALYZED |
| 21-1759 -5 | Michael Gittings | Color: Tan | | Comments: Not and | alyzed by NOB PLM, positive sto | | NOT ANALTZED |
| 42 | 1ST FLOOR EAST SIDE | INTERIOR CAULKING ON | NOB-PREP | | | 31.7% Organic | |
| 42 21-1759 -6 | SPRINKLER ROOM / EXTERIOR WALL INTERIOR | WALL PERIMETER | NOB-PREP | | | 6.6% Residue 61.7% Carbonate | NOT ANALYZED |
| | Michael Gittings | Color: Tan | | Comments: Not and | alyzed by NOB PLM, positive sto | p, see #40 | |
| 43 | 1ST FLOOR EAST SPRINKLER ROOM INT. | PACKING INSULATION @ EXT | PLM | | 20% Mineral Filler | | 80% Chrysotile |
| 21-1759 -7 | WALL | | | | 0.0% Vermiculite | | |
| | | Color: White | | | | | |
| Analyzed By: | Michael Gittings | | | | | | Total Asbestos: 80 % |

Report Prepared By: Grace Chan Page 1 of 4 Batch # 21-1759



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| VP1 | | | | <u>No</u> | n-Asbestos | <u>NOB</u> | Asbestos |
|--------------|---|---|----------|--------------------|---------------------------------|---|----------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 44 | 1ST FLOOR EAST SPRINKLER ROOM INT. | PACKING INSULATION @ EXT WALL PIPE INSULATION | | | | | |
| 21-1759 -8 | WALL | | | | | | NOT ANALYZED |
| | | | | Comments: Positive | e stop, see #43 | | |
| 45 | 1ST FLOOR EAST SPRINKLER ROOM INT. | PACKING INSULATION @ EXT WALL PIPE INSULATION | | | | | |
| 21-1759 -9 | WALL | | | | | | NOT ANALYZED |
| | | | | Comments: Positive | e stop, see #43 | | |
| 46 | 1ST FLOOR EAST SIDE | WEATHER STRIP SEAL BLOCK | (| | | 52.5% Organic | |
| 21-1759 -10 | SPRINKLER ROOM @ CORRUGRATED WALL | NOB-TEM | | | 0.0% Vermiculite | 30.3% Residue 17.2% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Gray | | Comments: NOB P | LM Inconclusive | | |
| 47 | 1ST FLOOR EAST SIDE | Second Analyst: Mark Peys WEATHER STRIP SEAL BLOCK | akhov | | | 51.4% Organia | |
| 21-1759 -11 | SPRINKLER ROOM @ CORRUGRATED WALL | NOB-TEM | ` | | 0.0% Vermiculite | 51.4% Organic 30.6% Residue 18% Carbonate | NONE DETECTED |
| 21-1759 -11 | | | | Commenter NOD D | I M leases lusine | | |
| Analyzed By: | Michael Gittings | Color: Gray Second Analyst: Mark Peys | akhov | Comments: NOB P | LIVI Inconclusive | | |
| 48 | 1ST FLOOR EAST SIDE SPRINKLER ROOM @ | WEATHER STRIP SEAL BLOCK NOB-TEM | | | | 50.4% Organic 34% Residue | |
| 21-1759 -12 | CORRUGRATED WALL | | | | 0.0% Vermiculite | 15.6% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Gray Second Analyst: Mark Peys | ackhov | Comments: NOB P | LM Inconclusive | | |
| 49 | 1ST FLOOR WEST SIDE SPRINKLER ROOM DOOR | INT DOOR CAULKING | NOB-PLM | | | 33.3% Organic 5.3% Residue | 3% Chrysotile |
| 21-1759 -13 | | Color: Tan | | | 0.0% Vermiculite | 58.4% Carbonate | |
| Analyzed By: | Michael Gittings | Color. Tall | | | | Т | otal Asbestos: 3.0 % |
| 50 | 1ST FLOOR WEST SIDE SPRINKLER ROOM DOOR | INT DOOR CAULKING | NOB-PREP | | | 34.7% Organic 7.9% Residue | NOT ANALYZED |
| 21-1759 -14 | | Color: Tan | | | | 57.4% Carbonate | NOT ANALYZED |
| Analyzed By: | Michael Gittings | Color. Tan | | Comments: Not and | alyzed by NOB PLM, positive sto | p, see #49 | |
| 51 | 1ST FLOOR WEST SIDE SPRINKLER ROOM DOOR | INT DOOR CAULKING | NOB-PREP | | | 35.1% Organic 8.6% Residue | |
| 21-1759 -15 | | | | | | 56.3% Carbonate | NOT ANALYZED |
| Analyzed By: | Michael Gittings | Color: Tan | | Comments: Not and | alyzed by NOB PLM, positive sto | p, see #49 | |
| 52 | 1ST FLOOR WEST SIDE EXT WALL INTERIOR SIDE | INI. CAULKING ON WALL PERIMETER | NOB-PLM | | | 37.9% Organic 3.1% Residue | 2.1% Chrysotile |
| 21-1759 -16 | | | | | 0.0% Vermiculite | 56.9% Carbonate | |
| Analyzed By: | Michael Gittings | Color: Tan | | | | т | otal Asbestos: 2.1 % |
| 53 | 1ST FLOOR WEST SIDE EXT | INI. CAULKING ON WALL | NOB-PREP | | | 35% Organic | otal Asucstus. 2.1 % |
| 21-1759 -17 | WALL INTERIOR SIDE | PERIMETER | | | | 8% Residue 57% Carbonate | NOT ANALYZED |
| 21-1109 -11 | | Color: Tan | | 0 | Land by NOR BLU | | |
| Analyzed By: | Michael Gittings | | | Comments: Not and | alyzed by NOB PLM, positive sto | p, see #52 | |

Report Prepared By: Grace Chan Page 2 of 4 Batch # 21-1759



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| | | | | No | n-Asbestos | NOB | Asbestos |
|---|---|--|----------------------------------|--------------------|--|--|-----------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | <u> NOВ</u> % Туре | % Type |
| 54 | 1ST FLOOR WEST SIDE EXT WALL INTERIOR SIDE | INI. CAULKING ON WALL PERIMETER | NOB-PREP | | | 36.9% Organic 7.1% Residue | NOT ANALYZED |
| 21-1759 -18 | | 0.1. T | | | | 56% Carbonate | NOT ANALYZED |
| Analyzed By: | Michael Gittings | Color: Tan | | Comments: Not ana | alyzed by NOB PLM, positive sto | p, see #52 | |
| 55 | 1ST FLOOR WEST SIDE SPRINKLER ROOM | PACKING INSULATION PIPE @ PENETRATION | PLM | | 33% Mineral Filler | | 67% Chrysotile |
| 21-1759 -19 | INTERIOR WALL & FLOOR @ PIPE PENETRATION | | | | 0.0% Vermiculite | | |
| Analyzed By: | Michael Gittings | Color: White | | | | | Total Asbestos: 67 % |
| 56 21-1759 -20 | 1ST FLOOR WEST SIDE SPRINKLER ROOM INTERIOR WALL & FLOOR @ PIPE PENETRATION | PACKNG INSULATION PIPE @ L PENETRATION |) | | | | NOT ANALYZED |
| | G | | | Comments: Positive | e stop, see #55 | | |
| 57 | 1ST FLOOR WEST SIDE | PACKNG INSULATION PIPE @ |) | | | | |
| 21-1759 -21 | SPRINKLER ROOM INTERIOR WALL & FLOOR @ PIPE PENETRATION | PENETRATION | | | | | NOT ANALYZED |
| | | | | Comments: Positive | e stop, see #55 | | |
| 58 | 1ST FLOOR WEST SIDE SPRINKLER ROOM DOOR | EXT DOOR CAULKING | NOB-PLM | | | 29.4% Organic 49.1% Residue | |
| 21-1759 -22 | | | | | 0.0% Vermiculite | 21.5% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Brown | 1 | Comments: NOB-PI | LM inconclusive, positive stop, s | see #59 | |
| 59 | 1ST FLOOR WEST SIDE SPRINKLER ROOM DOOR | EXT DOOR CAULKING | NOB-PLM | | | 38.9% Organic 5.1% Residue | 4% Chrysotile |
| 21-1759 -23 | | | | | 0.0% Vermiculite | 52% Carbonate | |
| Analyzed By: | Michael Gittings | Color: Brown | 1 | | | | Total Asbestos: 4.0 % |
| 60 | 1ST FLOOR WEST SIDE SPRINKLER ROOM DOOR | EXT DOOR CAULKING | NOB-PREP | | | 38.6% Organic 8.1% Residue | |
| 21-1759 -24 | | | | | | 53.3% Carbonate | NOT ANALYZED |
| | | Color: Brown | 1 | | | | |
| Analyzed By: | Michael Gittings | | 1 | Comments: Not ana | alyzed by NOB PLM, positive sto | p, see #59 | |
| | Michael Gittings 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT | WEATHER STRIP SEAL BLOCK | | Comments: Not ana | alyzed by NOB PLM, positive sto | 50% Organic | |
| Analyzed By: 61 21-1759 -25 | 1ST FLOOR WEST SIDE | | NOB-TEM | Comments: Not ana | olyzed by NOB PLM, positive sto | | NONE DETECTED |
| 61 21-1759 -25 | 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT WALL @ CORRUGRATED | WEATHER STRIP SEAL BLOCK Color: Black Second Analyst: Mark Peys | NOB-TEM | Comments: Not ana | 0.0% Vermiculite | 50% Organic 35.1% Residue | NONE DETECTED |
| 61 21-1759 -25 | 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT WALL @ CORRUGRATED WALL & CONCRETE WALL Michael Gittings 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT | Color: Black | NOB-TEM | | 0.0% Vermiculite | 50% Organic 35.1% Residue | NONE DETECTED |
| 61 21-1759 -25 Analyzed By: | 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT WALL @ CORRUGRATED WALL & CONCRETE WALL Michael Gittings 1ST FLOOR WEST SIDE | Color: Black Second Analyst: Mark Peys WEATHER STRIP SEAL BLOCK | NOB-TEM sakhov NOB-TEM | | 0.0% Vermiculite | 50% Organic 35.1% Residue 14.9% Carbonate | NONE DETECTED |
| 61 21-1759 -25 Analyzed By: 62 21-1759 -26 | 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT WALL @ CORRUGRATED WALL & CONCRETE WALL Michael Gittings 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT WALL @ CORRUGRATED | Color: Black Second Analyst: Mark Peys | NOB-TEM | | 0.0% Vermiculite LM Inconclusive 0.0% Vermiculite | 50% Organic 35.1% Residue 14.9% Carbonate 50.5% Organic 28.4% Residue | |
| 61 21-1759 -25 Analyzed By: 62 21-1759 -26 | 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT WALL @ CORRUGRATED WALL & CONCRETE WALL Michael Gittings 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT WALL @ CORRUGRATED WALL & CONCRETE WALL Michael Gittings 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT | Color: Black Second Analyst: Mark Peys WEATHER STRIP SEAL BLOCK | Sakhov NOB-TEM NOB-TEM Sakhov | Comments: NOB PI | 0.0% Vermiculite LM Inconclusive 0.0% Vermiculite LM Inconclusive | 50% Organic 35.1% Residue 14.9% Carbonate 50.5% Organic 28.4% Residue 21.1% Carbonate 50.8% Organic 26.9% Residue | NONE DETECTED |
| 61 21-1759 -25 Analyzed By: 62 21-1759 -26 Analyzed By: | 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT WALL @ CORRUGRATED WALL & CONCRETE WALL Michael Gittings 1ST FLOOR WEST SIDE PRINKLER ROOM / RXT WALL @ CORRUGRATED WALL & CONCRETE WALL Michael Gittings 1ST FLOOR WEST SIDE | Color: Black Second Analyst: Mark Peys WEATHER STRIP SEAL BLOCK Color: Black Second Analyst: Mark Peys | sakhov NOB-TEM sakhov NOB-TEM | Comments: NOB PI | 0.0% Vermiculite LM Inconclusive 0.0% Vermiculite | 50% Organic 35.1% Residue 14.9% Carbonate 50.5% Organic 28.4% Residue 21.1% Carbonate | |

Report Prepared By: Grace Chan Page 3 of 4 Batch # 21-1759



Analyst:

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| M | | | | <u>No</u> | n-Asbestos | NOB | Asbestos |
|----------------|--------------------------------|---|------------------------|--------------------------|---|--------------------------|--------------------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| NOTES: | | | | | | | |
| 1) The Limit | of Detection is the same | as the Reporting Limit for these results. | | | | | |
| 2) The Repo | orting Limit (RL) is the Limi | it of Quantitation. For point counts the lin | nit of quantitation of | 0.25%; based on one a | asbestos point counter over 400 non-e | mpty points. | |
| 3) Asbestos | Containing Material (ACM | 1) Definition: > 1% asbestos by weight is | considered an ACM | | | | |
| report may r | | esponsible for sample collection. Please of ct endorsement by NVLAP or any other a request. | | | | | |
| 5) Accredite | ed by NVLAP #101187-0 a | and by NY State ELAP #10879 | | | | | |
| 6) Confident | tiality Notice: The documer | nt(s) contained herein are confidential an | d privileged informat | ion, intended for the ex | clusive use of the individual or entity r | named above. | |
| 7) Liability N | lotice: ATC Group Service | s and its personnel shall not be liable for | any misinformation | provided to us by the c | lient regarding these samples. This re | port relates only to sam | ples submitted and analy |
| 8) Asbestos | results are reliable to 2 sig | gnificant figures. | | | | | |
| 9) The cond | ition of all samples was ac | ceptable upon receipt. | | | | | |
| 10) The labo | oratory certifies that the tes | st results meet all requirements of NELA | C. | | | | |
| 11) Supplen | nent to test report batch # | Amendments: Ar | nendment Dates: | Amended by | · | | |
| 12) PLM Let | tter is attached on this repo | ort. | | | | | |
| 13) TRACE: | The result is reported as | Trace when No points are counted and a | sbestos is identified. | For ELAP Trace is < 1 | %. | | |
| 14) ATC Gro | oup Services certifies that | this report is an accurate and authentic r | eport of the results o | btained from the labora | atory analysis | | |
| 15) The unc | ertainty for these test resu | Its is available upon request. | | | | | |
| | | .1 for the analysis of samples containing ulite and may underestimate the level of | | | | thods ELAP 198.1 follow | wed by ELAP 198.6. |
| | | | | | | | |

| Michael Gittings | Mei Wang |
|------------------|------------------------------|
| Analyst: | Approved by Quality Manager: |
| Mark Peysakhov | |

Report Prepared By: Grace Chan Page 4 of 4 Batch # 21-1759



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired.

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

<u>Methods</u>

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely.

Milena Bonezzi

ATC Group Services LLC Director of Laboratory Services

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Page 1 of 1

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS BULK DOCUMENTS 2021\BULK_LETTER_DOC #DB4A.DOC
ATC EFFECTIVE DATE 06/24/2021 REVISION #33
BY MET WANG

DOCUMENT #D

ATC

BATCH NO. 21-1760 21-1759 Page of C

| | PANYNJ | | Project Nar FIRESPRIM | ne: NKLER REH | IABILITA | TION | 3a. ATC Pro | oject No.: IPNPEP | J1 | 4a. Proje | ct Manager: R. Rivero | 0 |
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25. Date 26 Time 27. Comments (Lab)

24a. Analyzed By: 11 Cha 22 06:30

24b. Analyzed By: 11 Cha 24 06:20

24c. COBy



PROJECT INFORMATION

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 2a Project-Address: Circle One) 3b. Task No: 4b. Inspector 4p. Inspect | 1. Clie | PANYN | J 1 | Project Name: FIRESPRINKL | | ABILITA | TION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Projec | ct Manager: |) |
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-ATLINE ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET

| 91 | 214PNPEPJ1 | NG | NIKON U/W/Z |
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| | Client / Project PANYNJ/ | | | P | * | NPEPJ1 | VC 11/11/21 |
|---------------------------------------|--|-------------------------|---|------------------------|---------------------------|---|---|
| | Analysis Date <u>11/10 /20</u> | 021 Analyst | MJG | В | atch Number 21 | -1759-17 59 | TEMPERATURE °C 27 |
| 37 leld Number | Stereoscopic Exam | 1 | PLM Optical Prope | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color T M Texture Mc | | RII DS Color Color, Ple | o Bitel Sign Other Id | entity 36 Chrysotile | Cellulose | 64 Mineral Filler |
| Required 🗹 | Homogeneity Vermiculite | l | $f \rightarrow f \rightarrow f \rightarrow f \rightarrow f \rightarrow f \rightarrow f \rightarrow f \rightarrow f \rightarrow f \rightarrow$ | -1 | Amosite | Fiberglass | Organic Binders |
| Recommended [| | | | | Other | Other | |
| See gravimetric 🗖 analysis sheet | | | | | | | Other |
| for results | Color of Layer Detected Yes No | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Sli | de 8 Asb./Ver. PT Tota | PT %Asb. Or %Ver. | ☐ Fiberglass isotopic | - |
| Required | PLM | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM 1/3 1/3 | 13/3 | | 4 1 | 1 36 | ☐ Horse Hair; Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | <u> </u> | | | | Birefringence | dee Note #1. |
| | Method: ZELAP DEPA D | SCANNING OPTION | Q.C. [|] | | | |
| 38 | Stereoscopic Exam | | PLM Optical Prope | artiae | Asbestos | Other Fibrous | Non Fibrous |
| ield Number | | | RI DS Color Color, Pie | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Tan Texture M | | | | Chrysotile | Ceflulose | Mineral Filler |
| Required [2] | Homogeneity / Vermiculite _ (| | | | Amosite | Fiberglass | Organic Binders |
| See gravimetric 🔀 | # of Layers Asbestos | | | | Other | Other | Vermiculite* |
| analysis sheet | Color of Layer Detected Yes No | | | | | C Calledana Cartesia | Other |
| for results | | | | | | Callulose Ondulose Extinction | |
| SM-V | | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Sli | de 8 Asb./Ver, PT Tota | IPT %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required [| l | | | | | Birefringence ☐ Horse Hair: Scales, | If vermiculite is >10% the level of asbestos in a sample |
| See SM-V analysis sheet | NOB PLM | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Comments: Method: DELAP DEPA DEPA | | 3-5- | 4 | | Prettingence | |
| · · · · · · · · · · · · · · · · · · · | Method: DELAP DEPA D | SCANNING OPTION | d.c. □ | | | | |
| 39 ield Number | Stereoscopic Exam | 1 | PLM Optical Prope | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color M Texture 1 | Morph Extinction RI1 | RI DS Color Color, Ple | o Biref Sign Other Id | enlity Chrysotile | Cellulose | Mineral Filler |
| Required D | Homogeneity 1 Vermiculite 1 | | | * | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | # of Layers Asbestos | | | | Other | Other | Vermiculite* |
| See gravimetric | # Of Layers Asbestos | | | A DINA MARINE PROPERTY | | | Other |
| for results | Color of Layer Detected Yes No | | | | | Cellulose Onduiose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide | de 8 Asb.Ner. PT Tota | PT %Asb, Or %Ver. | ☐ Fiberglass Isotopic | |
| Required \square | PLM | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | Se 37 | | | Birefringence | See Note #1. |
| | Method: DELAP DEPA D | 3 SCANNING OPTION | Q.C. [| | | | |
| 40 | Stereoscopic Exam | | PLM Optical Prope | erties | Asbestos | Other Fibrous | Non Fibrous |
| ield Number | Color Ton Texture MK | Morph Extinction RI1 | Rit DS Color Color, Ple | o Biref Sign Other Id | Results PLM % | PLM % | PLM % |
| Gravimetric | Color M Texture | 1 1 1506 10 | 71 MUS | <u> </u> | 7 | Cellulose | Mineral Filler |
| Required A | Homogeneity Vermiculite 7 | | +++ | ナチニノ | Amosite | Fiberglass | Organic Binders Vermiculite* |
| See gravimetric 🛭 | # of Layers Asbestos | | | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes No | | | | | □ Cellulose Ondulose | Other |
| | Control of the Contro | Tide 9 Cit 1 Cit 5 | Olive a Levi e L | | | Extinction Fiberglass Isotopic | |
| SM-V | | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide | de 8 Asb./Ver, PT Tota | I PT %Asb. Or %Ver. | ☐ Fiberglass isotopic ☐ Synthelic High | |
| Required 🗍 | | , , | | | | Birefringence | If vermiculite is >10% the level of asbestos in a sample |
| See SM-V 🗌 analysis sheet | | 12 1/2 | | 9 8 | 50 | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Comments: | | | | | | |

Methods:

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763

EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Method: DELAP DEPA

SCANNING OPTION

Q.C. 🗆

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Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing ≥10% vermiculite ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

ELLAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS BULK/ASBESTOS ANALYSIS SHEET_FORM #B2.doc

ATC EFFECTIVE DATE 08/24/2021 REVISION #34 BY MEI WANG FORM #B2

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-ATLAS

14 T.C.

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | | D.0 | \ B.I\/B51 | / D. D.C | | BULK A | SBESTO | OS ANAL | YSIS SI | HEET | | | | <u>Microscopes</u> OŁYMPUS BH-2 NIKON OPTIPHO |
|----------------------------------|------------------|------------|------------|---|------------|-------------|---|--------------|---------------------------------------|--------------|---------------|---|--|---|
| | | roject PA | | | # 263 | | | | | | Project | | NPEPJ1 | |
| | Analysis | Date | /10 /2 | 021 | _ Analyst | | | MJC | 3 | | Batch i | | -1760-176 9 | TEMPERATURE °C 3 |
| 45 leld Number | Stered | oscopic Ex | am | Henry | Extinction | | | ptical P | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color | Texture | | Morpr | EXTINCTION | RIL | RII DS | S Color Colo | or, Pleo Bi | ref Sign O | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| Required [| Homogeneity | Vermicu | dite | | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended 🗆 | iomegonom, _ | 10,,,,,, | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🗆 | # of Layers | Asbesto | s | - | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer_ | Detected | d Yes N | io | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | 1 |
| Required [| PL.M | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is > 10% the |
| See SM-V □ | NOB PLM | | | | | | | | | | | | ☐ Horse Hair: Scales, | level of asbestos in a sampl might be underestimated. |
| analysis sheet | Comments: | | | | <u> </u> | <u> </u> | ee 9 | <u> </u> | į. | | 1 | <u> </u> | Low to Moderate Birefringence | See Note #1. |
| for results | Method: □ E | LAP DE | ΡΔ | □ SCAN | NING OPTI | | ce 7 | | c. 🗆 | | ···· | | | |
| | | | | | | | | 100. | <u> </u> | | | | | |
| 46 ield Number | Stered | oscopic Ex | am | | | | | ptical P | - | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color G 1-7 | Texture | M | Morph | Extinction | RII | RII DS | S Cotor Colo | or, Pleo Bi | ref Sign O | ther Identity | Chrysotile | Cellulose | 100 Mineral Filler |
| Required/ | Homogeneity | Z_ Vermicu | lite | <u> </u> | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended 🗌 | # of Lavers | Asbesto | . / | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetrice analysis sheet | # Or Cayers | Asbesio | · | | | | | | | | | | | Other |
| for results | Color of Layer _ | | d Yes N | o | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sampt |
| See SM-V 🗀 | NOB PLM | 7/ | | | | | | | | 0 | 200 | /5 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| analysis sheet for results | Comments: | | l | *************************************** | | L | L | | I | | CLA | | Birefringence | See Note #1. |
| 100 152 0002 | Method: DE | LAP [] E | PA | ZSCAN | NING OPTI | ON | *************************************** | Q. | c. 🗆 | | | | | |
| 47 | | | / | | | | | | | | | Asbestos | | Na Filana |
| 47 leid Number | Stered | scopic Ex | am | Morph | Extinction | RII | | Optical Po | | | ther Identity | Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color (NA | Texture | 14 | - | - | | | | | | | Chrysotile | Cellulose | 122 Mineral Filler |
| Required | Homogeneity | ✓ Vermicul | lite | / | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended 🗆 | | 7 | 1 | I | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🖳 | # of Layers | Asbesto | s | - | | | | <u>.</u> | | | | | | Other |
| analysis sheet / for results | Color of Layer | Detected | d Yes N | ا | | | | | | | | | ☐ Cellulose Ondulose | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| Required 🗌 | PLM | | | | | | | | | | | , | Synthetic High Birefringence | * If vermiculite is > 10% the |
| See SM-V ☐ | 1100 07 11 | 75 | | //· | | | | | | 6 | 200 | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | <u></u> | l. | | | | L. | | <u> </u> | 1 | | | Birefr)ngence | See Note #1, |
| 101 1000110 | Method: 17 E | LAP 🗆 E | PA | SCAN | VING OPTI | ON | ************ | Q.C | C. 🗆 | | | | | |
| 48 | r <u>/</u> | | - | | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| eld Number | Stereo | scopic Ex | am / | More | Extinction | Riı | | ptical P | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color (suby | Texture | M | wiospi | EXTRICTOR | LUI T | RII DS | Color Colo | II, PIEO BI | er sign U | Iher Identity | Chrysolile | Cellulose | Mineral Filler |
| Required Z | Homogeneity | 1 Vermicu | iite | / | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended 🗆 | | 1 | ···· | 7 | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 💋 | # of Layers | Asbesto | s | _ | | | | | | - | | | | Other |
| analysis sheet for results | Color of Layer _ | Detected | Yes N | اه | | | | | · · · · · · · · · · · · · · · · · · · | | | | ☐ Celiulose Ondulose | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,Ner. P | | N/A-b 0 7 | Extinction Fiberglass Isotopic | |
| | . I DIEL OUD IIS | Office I | JING Z | Juug 3 | CHUC 4 | പാസ്യാ | ORDER D | : DIN 164 / | - Aures | CASU (VB) P | u intalel | %Asb. Or %Ver. | - · · · · · · · · · · · · · · · · · · · | |

Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 800/R-93/116 ELAP Items 198.1, 198.4, 193.6, 198.8

SCANNING OPTION

PLM

Method: Ø ELAP ☐ EPA

NOB PLM

See SM-V 🔲 analysis sheet

for results

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Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ±10% vermiculite, with the exception of surfacing material that contains vermiculite
(SM-V). For samples containing ±10% vermiculite ELAP 198.6. This method has limitations for identification and quantification
of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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| | BULK ASBESTOS ANALYSIS SHEET Client / Project _ PANYNJ/ BLDG # 263 Project Number 214PNPEPJ1 | | | | | | | | | | | | | <u>Microscopes:</u> OLYMPUS BH-2 / NIKON OPTIPHOT |
|---------------------------------|---|----------|------------|---|-----------------|-------------|----------|------------|-------------|------------------|------------------|---|---|---|
| | | | | | | | | | | | Project | | | |
| | Analysis Da | ate _1: | 1/10/: | 2021 | Analyst | | | MJG | 3 | | Batch ! | | 1760 1749 | TEMPERATURE *C |
| 1 41 Field Number | Stercoso | copic E | xam | | | | | ptical Pi | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Toh | _ Textur | e ME | Morph | Extinction | RII | RII DS | Color Colo | r, Pleo Bi | ef Sign Otl | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required D | Homogeneity 1 | Vermio | | 1 | | | | | | | — | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | 1 | _ | | / | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric D | # of Layers | _ Asbest | tos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer | _ Detect | ed Yes I | No | | | | | | | | | ☐ Callulose Ondulose Extinction | |
| SM-V | Point Counts 5 | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🛘 | PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is > 10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated, See Note #1. |
| analysis sheet for results | Comments: | | | | | 5 | ~ | Ý. |) | | | *************************************** | Birefringence | |
| | Method: DELA | P 🗆 | EPA | SCAN | NING OPTI | ON | ······ | Q.0 | C. 🗆 | | ····· | | | |
| ² 42 | Stereos | copic E | xam | | | | PLM O | ptical P | ropertie | s | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Color Tab | | 1/5 | Morph | Extinction | RII | RII DS | Color Colo | r, Pleo Bi | ef Sign Otl | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required [7] | 1 | | | , | | | | | | | | Chrysotile Amosite | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended | Homogeneity | _ Vermic | uite / | - | - - | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers | _ Asbest | tos | _[| | | | | | | | | | Other |
| analysis sheet for results | Color of Layer | _ Detect | ed Yes I | No . | | | | ····· | | | | | Cellulose Ondulose | |
| SM-V | Point Counts S | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass isotopic | |
| Required [| PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | 1100 5111 | | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | | | | | 5 | | 4 | 5 | <u> </u> | <u> </u> | | Birefringence | See Note #1. |
| ioi results | Method: ELA | P 🖸 | EPA | □ SCAN | NING OPTH | | | | C. 🗆 | | | | | |
| 3 43 | 500000 | ania E | | | | ····· | DI NE O | ndia al De | | _ | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoso | copic E | Xanı | Moroh | Extinction | RII | | ptical P | • | | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color white | _ Textur | e <u> </u> | | | 1.546 1 | | 4/5 = | 7 | ~ ~ ~ | _ d _y | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity | _ Vermio | culite | 4=1 | | | | 1= | | <i></i> | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Layers | _ Asbest | tos Z | 1-4 | | | <u>v</u> | <u> </u> | | <u> </u> | _ 1 | Other | Other | vernicuite. |
| See gravimetric analysis sheet | Color of Layer | Dotoot | od Van I | | | | | | | | | • | <u> </u> | Other |
| for results | Color of Cayer | _ Detect | ed les i | | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts 5 | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Stide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | Tarana and |
| Required [] | PLM C | /2 | 11 | 1/1 | 1/1 | | | | | 4 | 5 | 80 | Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | | | | | | | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | - 1- | | | | | | 10. | | 14/ | | | | |
| | Method: DELA | P 🗆 | EPA | □ SCAN | NING OPTI | ON | | Q.(| U. L. | 176 | | | | |
| 4 44 Field Number | Stereose | copic E | xam | *************************************** | | | PLM O | ptical Pi | fopertie | s | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color | Textur | e | Morph | Extinction | RiJ | RII DS | Color Colo | r, Pleo Bi | ref Sign Oli | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity | Vermin | rulite | | | | | | | | | Amosile | Fiberglass | Organic Binders |
| Recommended | | _ | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers | _ Asbesi | tos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer | _ Detect | ed Yes I | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts S | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculile is >10% the |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

See SM-V

for results

NOB PLM

Method: □ ELAP □ EPA

Comments:

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See 4'

☐ SCANNING OPTION

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Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (8M-V). For samples containing \$10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has fimilations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (8M-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 08/24/2021 REVISION #34 8Y MEI WANG FORM #82

Horse Hair: Scales,

level of asbestos in a sample

might be underestimated.

Q.C. 🗆

☐ Horse Hair: Scales

If vermiculite is >10% the

evel of asbestos in a sampl

might be underestimated.

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

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| EL. | AΡ | 1087 |

THAS ATC

SM-V

See SM-V 🗌 analysis sheet

for results

NOB PLM

EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

ATC - New York

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| BULK | ASBESTOS | ANALYSIS | SHEET |
|------|----------|----------|-------|

| | Client / Project PANYN | i/ BLDG | | BULK A | SBESTO |)S ANAL | YSIS SI | HEET | Project | Number 214P | NPEPJ1 | OLYMPUS BH- NIKON OPTIPHO |
|--|--|----------|-------------|-------------|-------------|--------------|----------------|--------------|---------------------|---------------------------|---|--|
| | Analysis Date 11/10 / | | Analyst | | | MJO | <u> </u> | | | | 1760 1759 | 7. |
| 1 53 | | <u> </u> | _ Analyst | | | | | | battri | Asbestos | Other Fibrous | Non Fibrous |
| 1 53 Field Number | Stereoscopic Exam | | | | | ptical P | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color TM Texture Mc | | Extinction | RII | RII DS | S Calor Cole | or, Pleo B | iref Sign OI | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | 1 | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended 🗆 | | T | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes | No | | | | | | | | | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb, Ner, PT | Total PT | %Asb. Or %Ver. | Extinction □ Fiberglass Isotopic | |
| | 77.14 | | | | | | | | | | ☐ Synthetic High | * If vermiculite is >10% the |
| Required [] | 1102 2111 | | | | | | | | | | Bìrefringence □ Horse Hair: Scales, | level of asbestos in a sample |
| See SM-V analysis sheet | Comments: | | | C_ | | <u> </u> | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: DELAP DEPA | □ SCAN | NING OPTI | | Ce. | 57 | C. 🗆 | | | | | |
| | 1 1100000 | | | ~ | | | | | | Asbestos | | I |
| 2 54 Field Number | Stereoscopic Exam | | | | | optical P | • | | | Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color TA Texture M | Morph | Extinction | RII | RII DS | S Color Col | or, Pleo B | iref Sign OI | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | , | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | # of Layers Asbestos | <u> </u> | | | | | | | | Other | Olher | Vermiculite* |
| See gravimetric 2 | Color of Layer Detected Yes | No. | | | | | | | | | ☐ Cellulose Ondulose | Other |
| for results | | | | | | | | | | | Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, P1 | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | and the state of t |
| Required 🗆 | PLM | | | | | | | | | | Birefringence | If vermiculite is >10% the level of asbestos in a sam |
| See SM-V □ | NOB PLM | <u> </u> | | | | | | | | | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | <u>م</u> | 52 | | | | | Birefringence | |
| | Method: DELAP DEPA | ☐ SCAN | NING OPTI | ON | | Q. | C. 🗆 | | | | | |
| 3 55 Field Number | Stereoscopic Exam | | | | | Optical P | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Color Texture F | Morph | Extinction | 1718 | | S Color Col | or, Plea B | iref Sign Or | ther Identity | 67 Chrysotile | Cellutose | 33 Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | 1 | - | -f- | f | | / - | + | | Amosite | Fiberglass | Organic Binde |
| Recommended | | | | | J., | | | 上上 _ | $= \mathcal{I}_{=}$ | Other | Olher | Vermiculite* |
| See gravimetric 🖺 | # of Layers Asbestos | _ | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | - |
| Required 🗆 | PLM 1/2 1/2 | 1/1 | 7, | | | | | 4 | 6 | 67 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sam |
| See SM-V □ | NOB PLM | | ' | | | | | | | | U Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | | | Birefringence | |
| | Method: DELAP DEPA | □ SCAN | NING OPTI | ON | | Q. | .c. 🗆 | | | | <u> </u> | <u> </u> |
| 4 56 Field Number | Stereoscopic Exam | | | | | Optical P | - | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravîmetric | Color Texture | Morph | Extinction | RI1 | RIID | S Color Col | lor, Pieo E | iref Sign O | ther identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | <u> </u> | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | - - | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |

Method: DELAP DEPA ☐ SCANNING OPTION Q.C. 🗆 Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763

Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb.Ner. PT Total PT

Jee 5x

SCANNING OPTION

Q.C. □

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Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP 198.1 followed by ELAP 198.5. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite. Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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%Asb. Or %Ver.

BULK ASBESTOS ANALYSIS SHEET

| Client / Project | PANYNJ/ BLDG # 26 | 3 | Project Number | 214PNPEPJ1 | NIKON OPTIPI |
|------------------|-------------------|--------|----------------|---------------------------|---------------|
| Analysis Date | 11/10/2021 Anal | st MJG | Batch Number | 21 -1760 -1759 | TEMPERATURE C |

| | ~~~~ | ~ | | | | | | | | | | | | |
|--|------------------|-----------|---------|-------------|------------|---------|---------|-------------|------------|--------------|--------------|---------------------------|--|--|
| 1 49 Field Number | Stereo | oscopic E | Exam | | | | PLM O | ptical P | ropertie | s | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric Required ☐ Recommended ☐ See gravimetric ☑ | Color A | 7 | re | Morph / | Extinction | LTGE | RII DS | S Color Col | In Pleo Bi | rel Sign Oth | her Identity | | | 6 4 Mineral Filler |
| enalysis sheet for results | Color of Layer _ | Detec | ted Yes | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass isotopic | |
| Required 🗀 | PLM | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | 74 | 7. | /y | 1/2 | | | | | 4 | 11 | 36 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | | | | | Birefringence | |
| | Method: DE | LAP [| EPA | SCAN | NING OPTI | ION | | Q. | c. 🗆 | | | | 1 | |

| | 7 | | | | | | | | | | | | | | · |
|-------------------------------|-----------------|-------------------------------------|-----------|---------|---|---------|----------|---------|-------------|-------|-------------|-------------|---------------------------|--|---|
| 50 Number | Stereo | scopic E | xam | | | | PLM | Optica | l Proper | ties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required | Color &X | Textur $\hat{\mathcal{T}}$ Vermi | re ME | Morph | Extinction | Riu | RII C | S Color | Color, Pleo | Biref | Sign Oth | er Identity | Chrysotile | Cellulose | Mineral Filler Organic Binders |
| commende(1 🗆 gravimetric 🖒 | | Asbes | | | • | | | | | | | | Other | Other | Vermiculite* |
| nalysis sheef for results | Color of Layer, | Detect | ted Yes N | 0 | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | 7 Slide | 8 A | sb,/Ver, PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM | | | | · | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | | | | | | | l | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| nalysis sheel for resulta | Comments: | | <u> </u> | | | 5-6 | <u> </u> | 49 | , | L | | | | Birefringence | See Note #1. |
| | Mothod: A E | IAD [7 | EDA | T SCAN | WINC OPT | ON | | 7 | OC 🗆 | | | ···· | | 1 | |

| S 51 Field Number | Stereo | scopic E | xam | | | | PLM C | Optical | Proper | ties | | | | Aspestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|-------------------------------|------------------|--|-----------|---------|-------------|---------|-------------|-----------|------------|-------|----------------|---|----------|---------------------------|--|---|
| Gravimetric | Color Tan | Texture | M | Morph | Extinction | RII | RII D | S Color C | olor, Pieo | Biref | Sign | Olher | Idenlity | Chrysotile | Cellulose | Mineral Filler |
| Required [] | Homogeneity | Vermic | ulite | | | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗇 | | | 1 | | · | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers | Asbest | os ' | l | · | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer _ | Detecte | ed Yes No | | - | | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Stide 7 | ' Slide | 8 A | sb.Ver. | PT T | otal PT | %Asb. Or %Ver. | ☐ Fiberglass isotopic | |
| Required 🗀 | PL M | | | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | ······································ | | | | Sec | , [| 19 | | Е. | ************** | | | I | Birefringence | 000 11000 111, |
| | Method: 🗖 El | LAP 🗌 | EPA [| SCAN | NING OPTION | NC | | , c | ì.C. □ | | *********** | *************************************** | | | | |

| | Wethou. | LAP L | EFA | LI SCAN | VING OP I | UN | | Q. | ∨. ⊔ | | | | <u> </u> | <u> </u> |
|--|--------------------------------|---|---------|---------|--------------------------------|----------------------------|---|----------|-------------|-------------|----------|---------------------------|---|---|
| 4 52 Field Number | Stereo | scopic E | xam | | | | PLM O | ptical P | ropertie | s | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Required D Recommended D See gravimetric D analysis sheet | Homogeneity | L Vermi | | / J | Chrysotile Amosite Other | Cellulose Fiberglass Other | Mineral Filter Organic Binders Vermiculite* Other | | | | | | | |
| for results / | Color of Layer Point Counts | | ted Yes | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb.Ner. PT | Total PT | %Asb, Or %Ver. | ☐ Celiulose Ondulose Extinction ☐ Fiberglass Isotopic | |
| Required 🗌 | PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales. | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V [] analysis sheet for results | NOB PLM Comments: | NOB PLM 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 | | | | | | | | | | | | might be underestimated. See Note #1. |
| | Method: DE | LAP 🗌 | EPA | | VING OPTION | | 1 | | | | | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

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Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASSESTOS_BULK/FORMS_2021/8ULK_ASSESTOS_ANALYSIS SHEET_FORM #B2.doc

ATC EFFECTIVE DATE 06/24/2021 REVISION #34 BY MEI WANG FORM #B2

Horse Hair: Scales,

evel of asbestos in a sample

might be underestimated.

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

-ATEAS

ATC

ATC - New York

104 East 25th Street, 8th Fl., New York, NY 10010

Accreditations;

| | | Př | one: (212) | 353-828 | 30, Fax: (| (212) 35 | 3-3599 or | 8306 | | | ELAP 1087 |
|--|---|----------------|--------------|-------------|--------------|-------------|--------------|----------------|---|--|--|
| | | | BULK A | SBESTO | S ANAL | YSIS S | HEET | | | | Microscopes OLYMPUS BH-2 |
| | Client / Project PANYNJ/ | BLDG # 26 | 3 | | | | | Project | Number 214P | NPEPJ1 | NIKON OPTIPHO |
| | Analysis Date 11/10/2 | | | | MJO | 3 | | | *************************************** | -176 0 1759 | TEMPERATURE *C 2 |
| 1 61 Field Number | Stereoscopic Exam | | | | Optical P | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Md Texture Mc | Morph Extinct | ion RII | RII D | S Calor Cal | or, Plao B | iret Sign (| Other Identity | Chrysotile | Cellulose | (27) Mineral Filler |
| Required | Homogeneity 7 Vermiculite / | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended 🗆 | | | | | | | | | Other | Other | O Vermiculite* |
| See gravimetric C analysis sheet for results | # of Layers Asbestos /_ Color of Layer Detected Yes N | 0 | | | | | | | | ☐ Cellulose Ondulose Extinction | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide | 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. F | T Total PT | %Asb. Or %Ver, | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | Synthetic High | * If vermiculite is >10% the |
| i i | NOB PLM 76 | | | | | - | 10 | 2.60 | | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sampl might be underestimated. |
| See SM-V [] analysis sheet | | | | | | | | 200 | | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: | | | | 10 | a [] | | | · · · · · · · · · · · · · · · · · · · | | |
| L | Method: ☑ ELAP □ EPA | Z SCANNING OI | PTION | | ų. | C. 🗆 | | | | | |
| ² 62 | Stereoscopic Exam | | | PLM C | ptical P | ropertie | s | *** | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | M. I A.E | Morph Extinct | on RI1 | RII DS | S Color Colo | or, Pleo B | iref Sign C | Other Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Oct - Texture / C | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | | | | | | | | Amosite | Fiberglass | Organic Binden |
| Recommended | # of Layers Asbestos | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric D analysis sheet | | | | | | | | | | | Other |
| for results | Color of Layer Detected Yes No | ° | | | | | | | | Cellulose Ondulose Extinction | - |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide | 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | T Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | ļ |
| Required [| PLM | | | | | | | | | ☐ Synthetic High Birefringence | * if vermiculite is >10% the |
| | NOB PLM | | | | | - | 15 | 5_ | 70 | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | Comments: | | ٦ | | <u> </u> | | 10 | Par | | Low to Moderate Birefringence | See Note #1. |
| for results | | SCANNING OF | TION | | | c. 🗆 | | | | | |
| i | Wethou. 15 ELAF C. EFA | D SCANNING OF | HUN | | C4. | · | | | | <u> </u> | |
| 3 63 Field Number | Stereoscopic Exam | | | | ptical P | · | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Adul Texture 15 | Morph Extinct | on RLL | RII DS | S Color Colo | or, Pleo Bi | iref Sign C | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required/ | 7 | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended | Homogeneity / Vermiculite / / | | | | | | | | Other | Other | O Vermiculite* |
| See gravimetric 🗹 | # of Layers Asbestos | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | | | | | | | ☐ Cellulose Ondulose | |
| | | | | | | | | | | Extinction | Vering 1.00 |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide | 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb, Ner. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | *** |
| Required 🗆 | PLM | | | | | | | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | - | | | | 0 | 200 | S | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | <u></u> | | | 1 | | | Birefringence | See (vote #1, |
| | Method: DELAP □ EPA | SCANNING OF | TION | | Q. | C. 🗆 | | *** | | | |
| 4 64 | r// | 7 | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam / | | | | ptical P | , | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Texture | Morph Extinct | on RII | RIE DS | S Color Colo | or, Pleo Bi | ref Sign C | Other Identity | Chrysotile | Cellulose | Mineral Filler |
| (Required [| Homogonoity 1/2 | } | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended | Homogeneity Vermiculite | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🗆 | # of Layers Asbestos | - | | | | | | | · · · | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | o | | | | | | | | Celiulose Onduiose | |
| | Doint Counts City of City | Clide 2 OT : | 4 600 5 | 1 001 2 | | T ou : : | T | | | Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide | 1 Slide 5 | Slide 6 | Slide 7 | Since 8 | JASD./Ver. P | Total PT | %Asb. Or %Ver. | I | 1 |

SCANNING OPTION

Q.C. 🗆

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Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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| | | 1107 |
|----|----|------|
| EL | ΑP | 108 |

| | | | | | | BULK A | SBESTO | S ANAL | YSIS SI | HEET | | | | Microscopes; OLYMPUS BH-2 / |
|-------------------------------|------------------|---|---------------|-----------------|---|-------------|-------------|--------------|-------------|---|--------------|---------------------------|--|---|
| | Client / P | roject_P | LNYNA | / BLDC | # 263 | | | | | | Project | Number 214P | NPEPJ1 | NIXON OPTIPHOT |
| | Analysis | Date 1 | 1/10/2 | 2021 | _ Analyst | | | MJG | i | | Batch N | | 1760-1759 | 73 |
| 1 57 Field Number | Stere | oscopic E | xam | | | | | ptical P | · | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color | Textur | re | - Morph | Extinction | RI 1 | RII DS | S Color Colo | or, Pleo Bi | ref Sign Ott | ner Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗀 | Homogeneity | Vermi | culite | _ | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended [] | | | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🗌 | # of Layers | Asbes | TOS | _ | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer _ | Detect | ted Yes I | ٠ | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | *************************************** | İ | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | L | | L | I | محصو | C. C- | | <u> </u> | | , | Birefringence | Gee Note WI. |
| (o) results | Method: □ E | LAP [] | EPA | ☐ SCAN | NING OPTI | ON | | | C. 🗆 | | ····· | | | |
| ² 58 | 1 | | | | | | | | | *************************************** | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stere | oscopic E | xam | | | | | ptical P | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Bon | Textur | e <u>//</u> - | Morph | Extinction | RI⊥ | RI# DS | Color Colo | or, Pieo Bi | ref Sign Oth | ner Identity | Chrysotile | Cellulose | 100 Mineral Filler |
| Required D | Homogeneity_ | 1_ Vermi | culite | , | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗀 | | <i>l</i> | | / | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers | Asbes | tos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer | Detect | ted Yes I | No | | | | | | | | | ☐ Celiulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🛚 | PLM | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | 2/5 | | | | - | | | | 0 | 200 | D | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | See | ے۔ | Î | | | | Birefringence | |
| | Method: ☑ E | LAP 🗆 | EPA | Ø SCAN | NING OPTI | ON | | Q.f | C. □ | | | | | |
| ³ 59 | | oscopic E | | $\overline{}$ | | | DIREC | | | _ | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | J Siere | | | 110-1 | Podination | 51 | | ptical P | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color Zion | Textur | e M | - Molpi | Extinction | RII STAC | 1511 DS | Scolor Colo | or, Pleo Bl | ref. Sign Oll | ner Identity | Chrysotile | Cellulose | 56 Mineral Filler |
| Required L | Homogeneity | 1 Vermi | culite | $H \rightarrow$ | | | | | + | \leftarrow $+$ $-$ | - <i></i> | Amosite | Fiberglass | Organic Binders |
| Recommended | | \mathcal{T}_{-} | | | | | | L = | Z V | = < | -Z | Other | Other | Vermiculite* |
| See gravimetric | # of Layers | Asbes | tos/ | - | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer_ | Detect | ted Yes I | ٠ | | | | | | | | | Cellulose Ondulose | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [] | PLM | *************************************** | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | 1/3 | 1/3 | 7 | 1/2 | | | | | 4 | 9 | 44 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |

| Field Number | * | | | | | | | | | | s PLM % | PLM % | PLM % |
|-------------------------------|--------------------|---------------|------------------|---------|---------|------------------|-----------------|--|-------------|-------|--------------|------------------------------------|--|
| Gravimetric | Color Zion Tex | ture <u>A</u> | Morph Extinction | n RII | | olor Color, I | Pleo Bire | Sign Olhe | er Identity | 44 | _ Chrysotile | Cellulose | 56 Mineral Filler |
| Required LZ | Homogeneity 7 Ver | miculite / | 1-+ | | | Í - , | $\vdash \dashv$ | <u>_</u> | | | _Amosite | Fiberglass | Organic Binde |
| Recommended 🗆 | \mathcal{T} | | LI | | | | _ | = == | | | _ Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asb | estos | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Det | ected Yes No | · | | | | | 201/08/2018 | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide | Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, PT | Total PT | %Asb. | Or %Ver. | ☐ Fiberglass Isotopic | |
| Required □: | PLM | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sam |
| See SM-V | NOB PLM 1/2 | 7 / 3 | 1/2 | | | | | 4 | 9 | 4 | 4 | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | | | | Bitefringence | |
| | Method: □ ELAP | □ EPA | ☐ SCANNING OP | TION | | Q.C. | | | | | | | |
| 4 60 | Stereoscopio | Exam | 1 | | PLM Op | tical Pro | perties | ······································ | | | estos | Other Fibrous | Non Fibrous |

| 4 60 Field Number | Stereo | scopic E | xam | | | | PLM | Optica | il Prope | rties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|---|-------------------------|-----------|---------|----------|------------|---------|---------|----------|-------------|--------|------------|----------------|---------------------------|--|--|
| Gravimetric | colof & Orn | Textur | e Æ | Morph | Extinction | RII | Ri I | DS Color | Color, Plea | Biref | Sign C | Other Identity | Chrysotile Amosite | Cellulose | Mineral Filler Organic Binders |
| Recommended [| Homogeneity # of Layers | / Vermio | 7 | <u> </u> | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer | | | io | | | | | | | | | | Cellulose Ondulose | Other |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide | 6 Slide | e 7 Slic | de 8 A | sb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM | | | | | | | | | | | | | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales. | * If vermiculite is >10% the level of asbestos in a sampl |
| See SM-V □ | NOB PLM | | | | | | | | | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | Comments: | | | | | | | | | | | | | |
| | Method: DEL | AP 🗆 | EPA | SCAN | VING OPTIC | ON | 1a.c. □ | | | | | | | 1 | |

Methods:
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116
ELAP Items 198.1, 198.4, 198.6, 198.8

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Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.5, This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L*LAB_FORMS,DOCUMENTS AND RECORDS:OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS_BULK/ASBESTOS_ANALYSIS_SHEET_FORM #B2.dec

ATC EFFECTIVE DATE 08/24/2021 REVISION #34 BY MEI WANG FORM #B2

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/115 ELAP Items 198.1, 198.4, 198.6, 198.8

NOB PLM

Method: □ ELAP □ EPA

Comments:

See SM-V

analysis sheet

for results

Synthetic High

Birefringence

Low to Moderate Birefringence

Horse Hair: Scales,

f vermiculite is >10% the

evel of asbestos in a sample

might be underestimated.

See Note #1.



ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Start Date: 11/10/21 | 11/11/21 |
|----------------------|--------------------------|
| Start Date: | Date Completed: 11/11/21 |
| 125166 | MP |
| TEM Batch # 125166 | NOB TEM Analyst: |
| 21-1759 | SH |
| PLM Batch# | NOB TEM PREP: |
| | MJG |
| | NOB PLM Analyst: |
| PANYNJ RUSH | SA//Z.ANSARI |
| Client/Project: | NOB PLM PREP: |

| ş | 54000 10000 | TEM | | | | | | | > | > | > | |
|---------|----------------|----------------------------|------------|---------------|---------------|------------|---------------|---------------|------|------|------|------------|
| Methods | NOB | PLM | > | | | > | | | > | > | > | > |
| Ž | | PREP | > | > | > | > | > | > | > | > | > | > |
| | | Notes | | Positive Stop | Positive Stop | | Positive Stop | Positive Stop | | | | |
| 13 | % Total | Asbestos or Vermiculite | 3.6 | Δ. | <u>a.</u> | 4.5 | <u>a.</u> | <u>a</u> . | | | | 3.0 |
| 6 | Asbestos | Types or Vermiculite | Chrysotile | Y Y | ۲ ۷ | Chrysotile | NA | NA | QN | QN | QN | Chrysofile |
| 12 | | % Carbonate | 56.1 | 53.2 | 55.1 | 57.7 | 56.1 | 61.7 | 17.2 | 18.0 | 15.6 | 58.4 |
| 7 | Non Asb | Residue % | 6.5 | 6.8 | 8.6 | 4.5 | 10.3 | 6.6 | 30.3 | 30.6 | 34.0 | ري ري |
| 2 | | % Organic | 33.8 | 37.9 | 36.3 | 33.3 | 33.6 | 31.7 | 52.5 | 51.4 | 50.4 | 33.3 |
| | | Field# | 37 | 38 | 39 | 40 | 1 | 42 | 46 | 47 | 48 | 64 |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

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Page 1

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

11/10/21

11/11/21

| ch # 125166 Start Date: | FEM Date Completed: | Methods | NOB | TEM PLM PREP | `` | } | > | > | > | > | > | > | > > | > > |
|-------------------------|---------------------|---------|----------|----------------------------|---------------|---------------|------------|---------------|---------------|--------|------------|---------------|--------|--|
| TEM Batch # | NOB TEM Analyst: | | | | | | | | | | | | | |
| # 21-1759 | HS SH | | | Notes | 0 | C | | C | C | u 9 | | C | | - Commission of the Commission |
| PLM Batch # | NOB TEM PREP: | | | je. | Positive Stop | Positive Stop | | Positive Stop | Positive Stop | | | Positive Stop | | |
| | MJG | 13 | % Total | Asbestos or Vermiculite | | | 2.1 | | 200 | | 4.0 | | | |
| RUSH | NOB PLM Analyst: | 6 | Asbestos | l ypes or Vermiculite | ¥. | Ą Z | Chrysotile | Υ V | Ϋ́ | QN | Chrysotile | Ϋ́ | ND | 2 |
| K | SA//Z.ANSARI | 12 | 0 | % Carbonate | 57.4 | 56.3 | 56.9 | 57.0 | 56.0 | 21.5 | 52.0 | 53.3 | 14.9 | 21.1 |
| PANYNJ | SAJIZ | 11 | Non Asb | residue % | 7.9 | 8.6 | 3.1 | 8.0 | 7.1 | 49.1 | 5.1 | 8.1 | 35.1 | 28.4 |
| Client/Project: | NOB PLM PREP: | - 5 | /0 | Organic | 34.7 | 35.1 | 37.9 | 35.0 | 36.9 | 29.4 | 38.9 | 38.6 | 50.0 | 50.5 |
| Client | NOB PI | | | Field# | 90 | 51 | 52 | 53 | 54 | 58 | 59 | 09 | 61 | 62 |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

Page 2

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ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Start Date: 11/10/21 | 11/11/21 | | | | | | | | | | | |
|----------------------|--------------------------|---------|----------|----------------------------|-------|--|--|--|---|----|---------------------------------------|---|
| Start Date: | Date Completed: 11/11/21 | | | | | | | | | | | |
| 125166 | МР | - June | | TE | | | | | | | | |
| TEM Batch # | NOB TEM Analyst: | Mathode | BON | PL PRE | | | | | | | | |
| 21-1759 | SH | | | Notes | Notes | | | · · · · · · · · · · · · · · · · · · · | *************************************** | | T T T T T T T T T T T T T T T T T T T | |
| PLM Batch# | NOB TEM PREP: | | | | | | The state of the s | THE PROPERTY OF THE PROPERTY O | THE RESIDENCE AND ASSOCIATION OF THE PERSON | | | |
| | MJG | 13 | % Total | Asbestos or Vermiculite | | | | | | | | |
| RUSH | NOB PLM Analyst: | 6 | Asbestos | Types | QN | | | | | | | |
| J. | SA//Z.ANSARI | 12 | | % Carbonate | 22.3 | | | | | 77 | | |
| PANYNJ | SAIZ. | Ţ | Non Asb | Residue % | 26.9 | | | | | | | |
| Client/Project: | NOB PLM PREP: | 2 | | % Organic | 50.8 | | | | | | | · |
| Client | NOB PL | | | Field # | 63 | | | | | | | |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

Page 3

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APPENDIX B

PCB-IN-CAULKING LABORATORY RESULTS AND CHAIN OF CUSTODIES

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88 Harbor Road Port Washington, NY 11050 (516) 944-9500

Laboratory Report for PCBs in Solid Waste (Revised)

Report No.:2215161-19616R

Customer: Atlas Technical Consultants

104 East 25th Street, 8th Fl. New York, NY 10010

Analytical results pertain only to the samples tested in the condition received by the laboratory. This report must not be reproduced except in its entirety, unless with express written permission from the laboratory.

Project: Fire Sprinkler Rehabilitation; Bldg. 263

Collected: 11/9/2021 Lab Sample ID: 211110H030 PCB 37 Received: 11/10/2021 Client ID: 7:30 East Side Sprinkler Room Door, Int Door Caulking Description:

| Parameter | Method | Analysis Date | LOQ | Result | Units | Flag(s) |
|------------|-----------|---------------|-------|--------|-------|---------|
| PCB 1016 | EPA 8082A | 11/12/21 | 0.480 | <0.480 | mg/kg | |
| PCB 1221 | EPA 8082A | 11/12/21 | 0.480 | <0.480 | mg/kg | |
| PCB 1232 | EPA 8082A | 11/12/21 | 0.480 | <0.480 | mg/kg | |
| PCB 1242 | EPA 8082A | 11/12/21 | 0.480 | <0.480 | mg/kg | |
| PCB 1248 | EPA 8082A | 11/12/21 | 0.480 | <0.480 | mg/kg | |
| PCB 1254 | EPA 8082A | 11/12/21 | 0.480 | <0.480 | mg/kg | |
| PCB 1260 | EPA 8082A | 11/12/21 | 0.480 | <0.480 | mg/kg | |
| Extraction | EPA 3550C | 11/10/21 | | | | |

Lab Sample ID: 211110H031 Collected: 11/9/2021 Client ID: PCB 40 Received: 11/10/2021 7:30 East Side Sprinkler Room Ext Wall, Int Side Caulking Description:

| Parameter | Method | Analysis Date | LOQ | Result | Units | Flag(s) |
|------------|-----------|---------------|-------|--------|-------|---------|
| PCB 1016 | EPA 8082A | 11/12/21 | 0.491 | <0.491 | mg/kg | |
| PCB 1221 | EPA 8082A | 11/12/21 | 0.491 | <0.491 | mg/kg | |
| PCB 1232 | EPA 8082A | 11/12/21 | 0.491 | <0.491 | mg/kg | |
| PCB 1242 | EPA 8082A | 11/12/21 | 0.491 | <0.491 | mg/kg | |
| PCB 1248 | EPA 8082A | 11/12/21 | 0.491 | <0.491 | mg/kg | |
| PCB 1254 | EPA 8082A | 11/12/21 | 0.491 | <0.491 | mg/kg | |
| PCB 1260 | EPA 8082A | 11/12/21 | 0.491 | <0.491 | mg/kg | |
| Extraction | EPA 3550C | 11/10/21 | | | | |

Lab Sample ID: 211110H032 Collected: 11/9/2021 PCB 49 Client ID: Received: 11/10/2021 7:30 Description: West Side Sprinkler Room Door, Int Door Caulking

| Parameter | Method | Analysis Date | LOQ | Result | Units | Flag(s) |
|------------|-----------|---------------|-------|---------|-------|---------|
| PCB 1016 | EPA 8082A | 11/12/21 | 0.467 | <0.467 | mg/kg | |
| PCB 1221 | EPA 8082A | 11/12/21 | 0.467 | < 0.467 | mg/kg | |
| PCB 1232 | EPA 8082A | 11/12/21 | 0.467 | <0.467 | mg/kg | |
| PCB 1242 | EPA 8082A | 11/12/21 | 0.467 | <0.467 | mg/kg | |
| PCB 1248 | EPA 8082A | 11/12/21 | 0.467 | <0.467 | mg/kg | |
| PCB 1254 | EPA 8082A | 11/12/21 | 0.467 | <0.467 | mg/kg | |
| PCB 1260 | EPA 8082A | 11/12/21 | 0.467 | <0.467 | mg/kg | |
| Extraction | EPA 3550C | 11/10/21 | | | | |

ENVIRONMENTAL

88 Harbor Road Port Washington, NY 11050 (516) 944-9500

Laboratory Report for PCBs in Solid Waste (Revised)

Report No.:2215161-19616R

Lab Sample ID: 211110H033 Collected: 11/9/2021 Client ID: PCB 52 Received: 11/10/2021 7:30 West Side Sprinkler Room Ext Wall, Int. Side Caulking Description:

| Parameter | Method | Analysis Date | LOQ | Result | Units | Flag(s) |
|------------|-----------|---------------|-------|--------|-------|---------|
| PCB 1016 | EPA 8082A | 11/12/21 | 0.482 | <0.482 | mg/kg | |
| PCB 1221 | EPA 8082A | 11/12/21 | 0.482 | <0.482 | mg/kg | |
| PCB 1232 | EPA 8082A | 11/12/21 | 0.482 | <0.482 | mg/kg | |
| PCB 1242 | EPA 8082A | 11/12/21 | 0.482 | <0.482 | mg/kg | |
| PCB 1248 | EPA 8082A | 11/12/21 | 0.482 | <0.482 | mg/kg | |
| PCB 1254 | EPA 8082A | 11/12/21 | 0.482 | <0.482 | mg/kg | |
| PCB 1260 | EPA 8082A | 11/12/21 | 0.482 | <0.482 | mg/kg | |
| Extraction | EPA 3550C | 11/10/21 | | | | |

| Lab Sample ID: | 211110H034 | Collected: | 11/9/2021 | |
|----------------|--|------------|------------|------|
| Client ID: | PCB 58 | Received: | 11/10/2021 | 7:30 |
| Description: | West Side Sprinkler Room Ext Door, Ext Door Caulking | | | |

| Parameter | Method | Analysis Date | LOQ | Result | Units | Flag(s) |
|------------|-----------|---------------|-------|--------|-------|---------|
| PCB 1016 | EPA 8082A | 11/12/21 | 0.497 | <0.497 | mg/kg | |
| PCB 1221 | EPA 8082A | 11/12/21 | 0.497 | <0.497 | mg/kg | |
| PCB 1232 | EPA 8082A | 11/12/21 | 0.497 | <0.497 | mg/kg | |
| PCB 1242 | EPA 8082A | 11/12/21 | 0.497 | <0.497 | mg/kg | |
| PCB 1248 | EPA 8082A | 11/12/21 | 0.497 | <0.497 | mg/kg | |
| PCB 1254 | EPA 8082A | 11/12/21 | 0.497 | <0.497 | mg/kg | |
| PCB 1260 | EPA 8082A | 11/12/21 | 0.497 | <0.497 | mg/kg | |
| Extraction | EPA 3550C | 11/10/21 | | | | |

Comment(s):

LOQ: Limit of Quantitation PCB: Polychlorinated biphenyl

High-level Limit of Quantitation (LOQ) of prep method EPA 3550C is 20 mg/kg; any PCB quantities reported less than 20 mg/kg are estimated. Samples analyzed on a wet-weight, "as-received" basis.

Revision History:

Repot revised on 12/1/2021, replaces report generated on 11/12/2021.

- Client IDs revised as per original chain of custody.

Page 1 of 2

67834

NEW YORK ENVIRONMENTAL

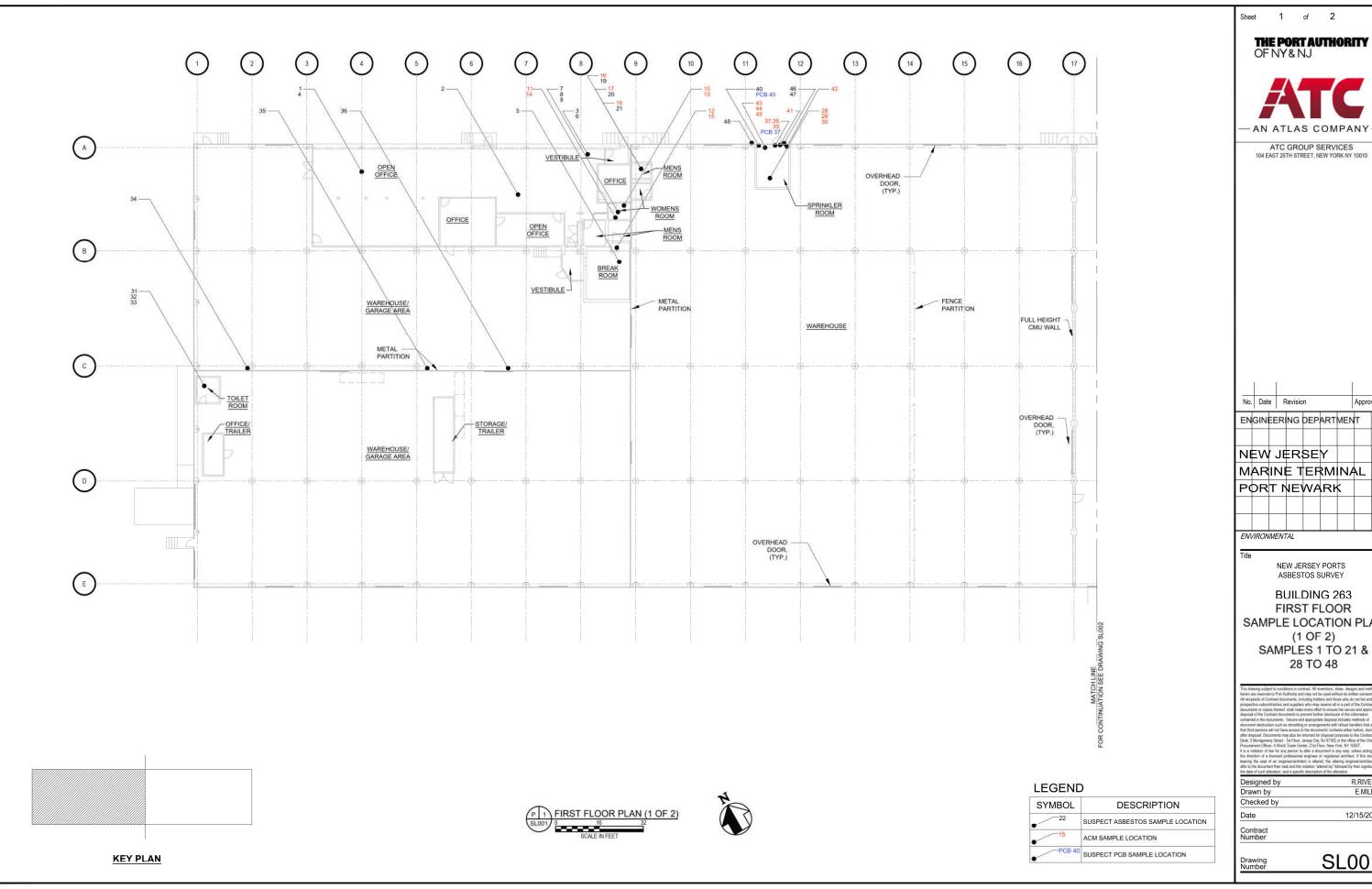
| Client P. | PANYNJ | Client Proj. # | 214PNPEPJ1 | Date // | 9/207 | |
|---------------|--|----------------------|-------------------------|----------------------|--|---------|
| Project PORT | FIRE SPRINKLER REHABILITATION Project PORT NEWARK, PORT ELYZABETH, PORT JERSEY | Address (Circle One) | PE PJ - Building#_ | 1# 263 | 1 | |
| Technician | PITILD CARLIAGE TON | Turnaround | 3241 ZE | | Lab Use Only | |
| Sample # | Location and/or Sample Description | escription | Material | PCB ID | Result | MDI |
| 16 3T | PAST SIDE SPINDIUM DOE | GOOD LOW | IM. DOUZ CAUCKING | 2 | < 420 | 0,480 |
| on 40 | en e, te c | L BA. WALL | intrunce envising | 2 | So.49 | 146 |
| h 49 | WEST C. C. C. | Dow ? | THE DOOR CALLKING | 2 | <0,467 | 0,467 |
| DKIS 52 | 1, 11 70 6. | EXT WAR | 3 | Ø√ | Co.48Z | 0.482 |
| K3 58 | U C II BKT | BLT DOUR | CXT. DOUR CASULINE | CN | Co.497 | 794.0 |
| | | | | | | |
| | | | | | | |
| | | | 22,5761 | | | |
| | | | C 1 9 6 1 6 | | | |
| | | | | | | |
| Relinquished: | Philip Can | Signature: | Anije Cars Da | Date: 11-9-2/ | Time: | 7 pm |
| Received: | C.Adams | Signature: | CHATTER Cora Robers Da | Date: 11-10-21 Time: | | D 7.30 |
| Lab Use Only: | | | ш | mail Results to: | Email Results to: LONEY. DIVELD @ ONCAPOS? | W @OUCA |
| NYEA #. | Analyst Initials At | Analy | Analysis Date: 11/12/2/ | | | |

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APPENDIX C
ASBESTOS AND PCB SAMPLE LOCATION DRAWINGS

APPENDIX D

ASBESTOS LOCATION DRAWINGS



THE PORT AUTHORITY ATC GROUP SERVICES 104 EAST 25TH STREET, NEW YORK NY 10010

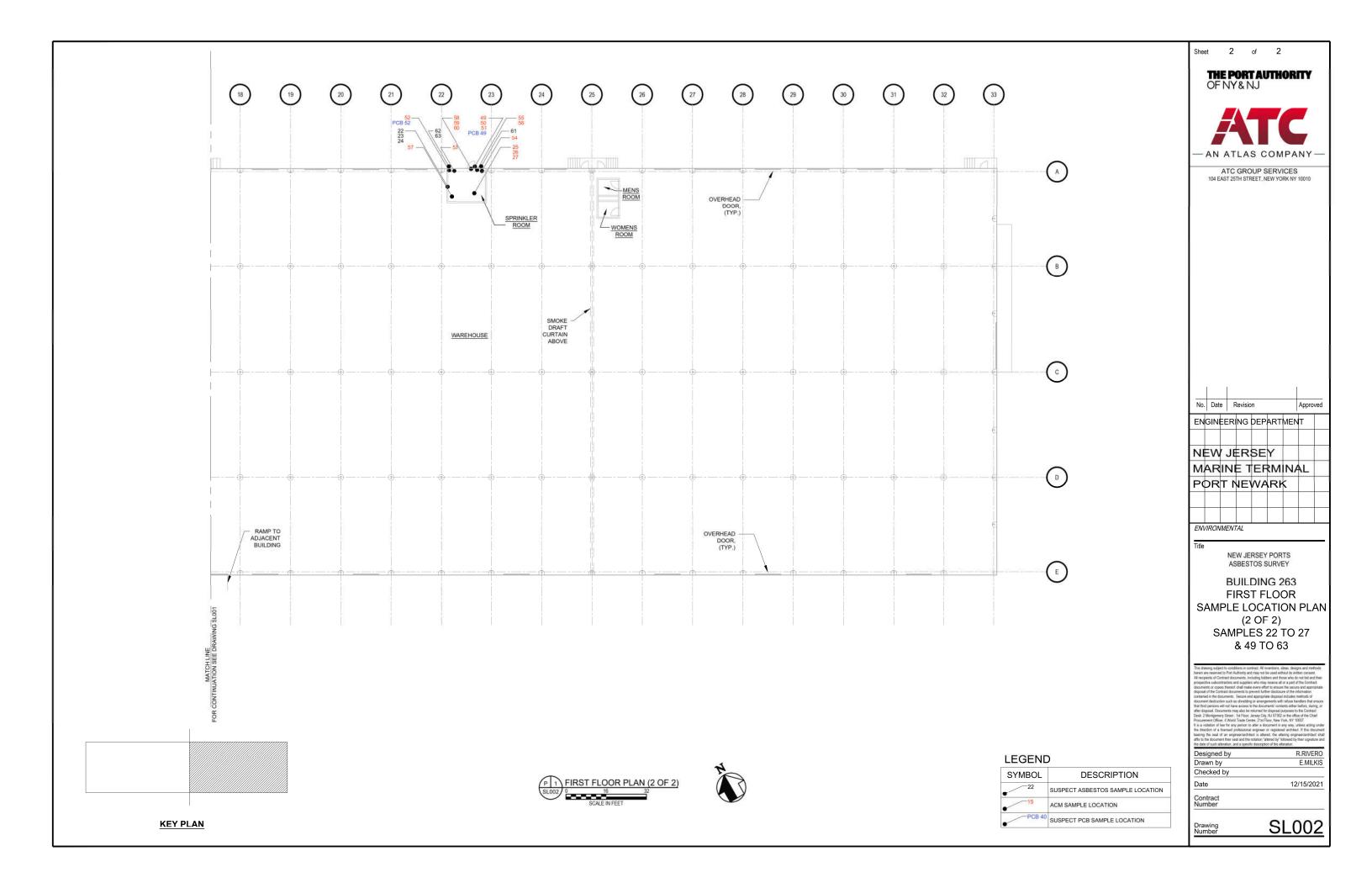
ENGINEERING DEPARTMENT

PORT NEWARK

BUILDING 263 FIRST FLOOR SAMPLE LOCATION PLAN

| Designed by | R.RIVERO |
|-------------|------------|
| Drawn by | E.MILKIS |
| Checked by | |
| Date | 12/15/2021 |
| Contract | |

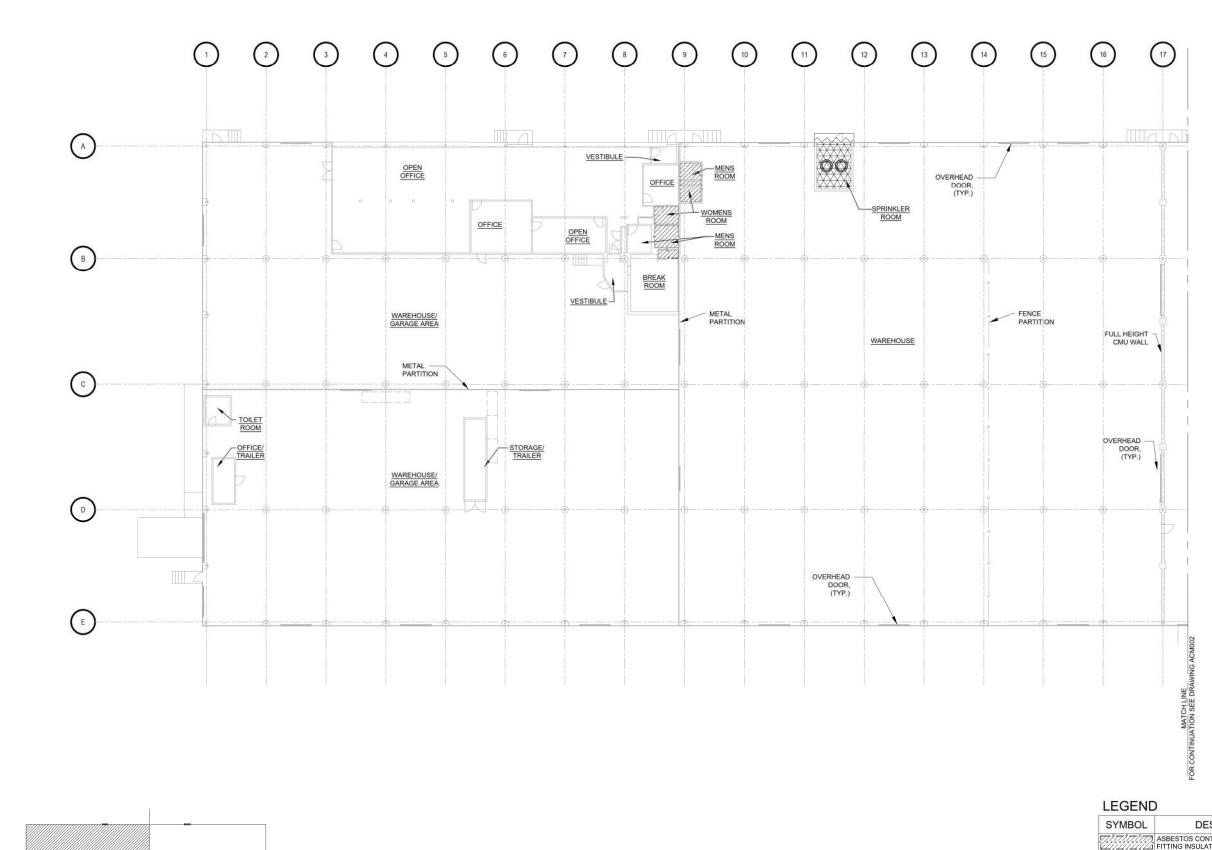
SL001



APPENDIX E

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

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FIRST FLOOR PLAN (1 OF 2)

KEY PLAN

| SYMBOL | DESCRIPTION | |
|--------|--|--|
| | ASBESTOS CONTAINING PIPE AND PIPE FITTING INSULATION | |
| 00 | ASBESTOS CONTAINING PACKING INSULATION AT CEILING PIPE PENETRATION | |
| | ASBESTOS CONTAINING INTERIOR DOOR CAULKING, WALL CAULKING ON INTERIOR SIDE OF THE EXTERIOR WALL, PACKING INSULATION AT PIPE PENETRATION ON INTERIOR SIDE OF THE EXTERIOR WALL. | |
| | FLANGE & VALVE GASKETS (PACM) | |

Sheet 1 of 2

THE PORT AUTHORITY
OF NY & NJ

AN ATLAS COMPANY

ATC GROUP SERVICES
104 EAST 25TH STREET, NEW YORK NY 10010

No. Date Revision Approved

ENGINEERING DEPARTMENT

NEW JERSEY
MARINE TERMINAL
PORT NEWARK

ENVIRONMENTAL

Title

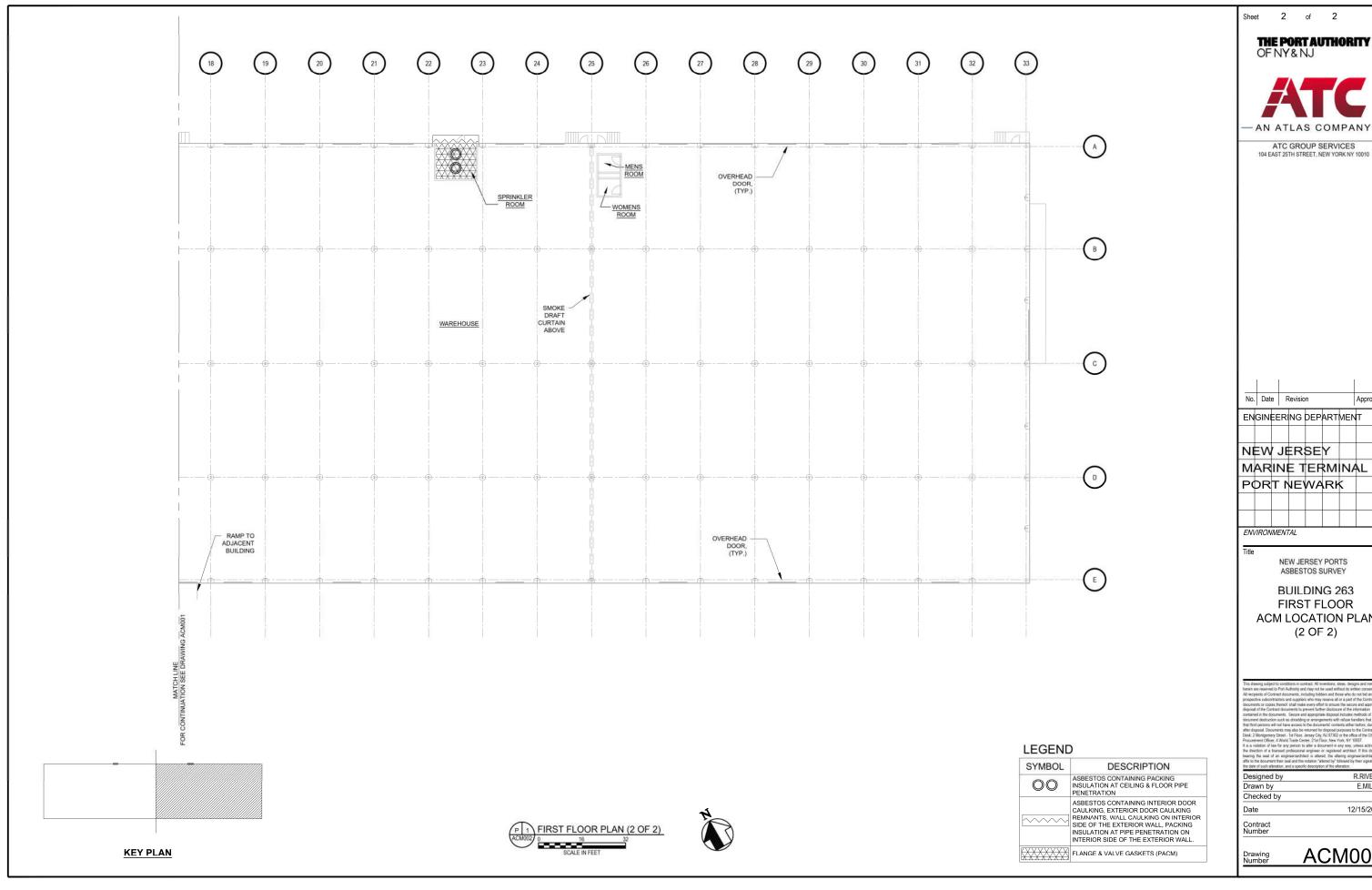
NEW JERSEY PORTS ASBESTOS SURVEY

BUILDING 263 FIRST FLOOR ACM LOCATION PLAN (1 OF 2)

herein ner visionied to Pint Auflands yed may not be used without far within consent. All mojested to Chrotian documents, funding blodders and fore who do not bell and the prolegative subcontraction and suppliers who may aroun all or a good of the Contract, and the properties of the contraction of the contraction of the contract deglocal of the Contract documents to prevent there' disclosure of the information contrained in the documents. Secure and appropriate disposal includes methods of document developments each secure that all propriate disposal includes methods of document developments and the office of enresigements with freither banders that sent that their gestions will not flow access to the documents' contents without factors, during the 24th Most progress Series - 11 stories, where Christian Contents and the Contents of the Contents of Pocument Officer, 4 Whold Track Centers, 71st Flow, New York, NY 10007. It is a visidation of last for any previous fellow a document in any way, unless admitting the division of a learned professionoid engineer or registered architect. This document behavior of a learned professionoid engineer or registered architect. The document feel date of an engineeric tellular is allessed, the allessed excellent in engineeric the division of such altered or support of the altered to the date of such altered or such as a profession of the altered to the date of such altered or and a specific description of the altered to the date of such altered or the contraction of the altered to the date of such altered or the contraction of the altered to the date of such altered or the contraction of the altered to the date of such altered or the contraction of the altered to the date of such altered or the contraction of the altered to the date of such altered to the contraction of the altered to the date of such altered to the contraction of the altered to the date of such altered to the contraction of the altered to the date of such altered to the contraction of

| Designed by | R.RIVERO |
|-------------|------------|
| Drawn by | E.MILKIS |
| Checked by | |
| Date | 12/15/2021 |
| Contract | |

Drawing Number ACM001



THE PORT AUTHORITY

MARINE TERMINAL

BUILDING 263 FIRST FLOOR ACM LOCATION PLAN

| Designed by | R.RIVERO |
|-------------|------------|
| Drawn by | E.MILKIS |
| Checked by | |
| Date | 12/15/2021 |
| | |

ACM002

New York State – Department of Labor Division of Safety and Health

Division of Safety and Health License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative - Kevin Hamilton:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
SH 432 (8/12)
For the Commissioner of Labor

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below:

Miscellaneous

Ashestos

PA 100.2

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

age 1 of 1





Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual

EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

Fibers

NIOSH 7400 A RULES

Department of Health

Serial No.: 61223

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

age 1 of 1



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

MS. MILENA BONEZZI COPY

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2016) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

estos EPA 1

Serial No.: 62824

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

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O TENERO DE LA CONTROL DE LA C

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Asbestos in Non-Friable Material-TEM

Item 198.6 of Manual (NOB by PLM)

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No : 62825

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspictiously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

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Expires 12:01 AM April 01, 2022 Issued April 01, 2021 _ -

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Realth Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

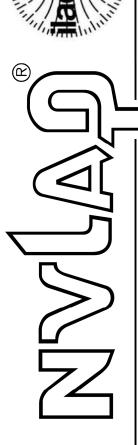
40 CFR 763 APX A No. III NIOSH 7402

Serial No.: 62826

NIOSH 7400 A RULES

Property of the New York State Department of Health. Gertificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to

Technology ommerce and C of partment o Standards artment $\overline{\Phi}$ of O S National Institute States United



20 7025 O/IE S **2** ccreditation 4 of ertificate

NVLAP LAB CODE: 101187-0

Services Group

New York, NY

for accredited by the National Voluntary Laboratory Accreditation Program listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

I the operation of a laboratory quality dated January 2009). Standard ISO/IEC ance with the recal competence for a r to joint ISO-ILAC This laboratory is accrec This accreditation demonst

2020-07-01 through 2021-06-30

Effective Dates





For the National Voluntary Labor

National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor
New York, NY 10010
Ms. Milena Bonezzi
Phone: 212-353-8280 x247 Fax: 212-353-8306
Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

<u>Code</u> <u>Description</u>

18/A01 EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of

Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code18/A02

Description
U.S. EPA's "Inte

U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR Part 763 Subpart F. Appendix A.

TR PAIR ATT ATT ATT ATT

For the National Voluntary Laboratory Accreditation Program



AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

Effective: 04/10/2015

Revision: 8 Page 1 of 1

104 East 25th St 8th Flr New York, NY 10010

Laboratory ID: LAP-100229

Issue Date: 08/30/2019

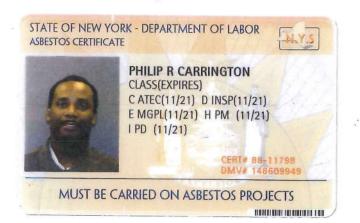
The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 06/12/1995

| IHLAP Scope Categ | ory Field of Testing (FC | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested |
|-----------------------------------|------------------------------------|----------------------------------|---|---|
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | - |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http:// www.aihaaccreditedlabs.org



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HAIR BLK

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





NANCY B GUEVARA CLASS(EXPIRES) C ATEC(05/21) D INSP(05/21) H PM (05/21) I PD (05/21)

> CERT# 14-00412 DMV# 234032668

MUST BE CARRIED ON ASBESTOS PROJECTS



01213 005585171 14

EYES BRO
HAIR BRO
HGT 5' 06"

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240 STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





RONEY D RIVERO CLASS(EXPIRES) C ATEC(08/21) D INSP(08/21) E MGPL(08/21) H PM (08/21) I PD (08/21)

RT# 88-06348

MUST BE CARRIED ON ASBESTOS PROJECTS

URITED STORES



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EYES BRO

IF FOUND RETURN TO:
NYSDOL - LEC UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240



Department of Health

ANDREW M. CUOMO Governor HOWARD A. ZUCKER, M.D., J.D. Commissioner

LISA J. PINO, M.A., J.D. Executive Deputy Commissioner

LAB ID: 11510

April 01, 2021

MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

Certificate Expiration Date: April 01, 2022

Dear Mr. Tsang,

Enclosed are certificate(s) of approval issued to your environmental laboratory for the current permit year. The certificate(s) supersede(s) any previously issued one(s) and is(are) in effect through the expiration date listed. Please carefully examine the certificate(s) to insure that the categories, subcategories, analytes, and methods for which your laboratory is approved are correct. In addition, verify that your laboratory's name, address, lead technical director, and identification number are accurate.

Pursuant to NYCRR Subpart 55-2.2, original certificates must be posted conspicuously in the laboratory and copies shall be made available to any client of the laboratory upon request.

Pursuant to NYCRR Subpart 55-2.6, any misrepresentation of the fields of accreditation (category - method - analyte) for which your laboratory is approved may result in denial, suspension, or revocation of your certification. Any use of the Environmental Laboratory Approval Program (ELAP) or National Environmental Laboratory Accreditation Program (NELAP) name, reference to the laboratory's approval status, and/or using the NELAP logo in any catalogs, advertising, business solicitations, proposals, quotations, laboratory analytical reports, or other materials must include the laboratory's ELAP identification number and distinguish between testing for which the laboratory is approved and testing for which the laboratory is not approved.

If you have any questions, please contact us at the Environmental Laboratory Approval Program, Wadsworth Center, New York State Department of Health, Empire State Plaza, Albany NY, 12237; by phone at (518) 485-5570; by facsimile at (518) 485-5568; and by email at elap@health.ny.gov.

Sincerely

Victoria Pretti

Director and QA Officer

Environmental Laboratory Approval Program

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 11510

MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2016) for the category

ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below:

| Bacteriology | | Metals III | |
|---|-------------------------------------|----------------------|---------------------|
| Coliform, Total / E. coli (Qualitative) | SM 20, 21-23 9223B (-04) (Colilert) | Sodium, Total | EPA 200.7 Rev. 4.4 |
| Enterococci | SM 23 9230D (Enterolert) | Miscellaneous | |
| Heterotrophic Plate Count | SimPlate | Odor | SM 21-23 2150 B (-9 |
| Metals I | | Turbidity | SM 21-23 2130 B (-0 |
| Barium, Total | EPA 200.7 Rev. 4.4 | Non-Metals | |
| Cadmium, Total | EPA 200.7 Rev. 4.4 | | EPA 200.7 Rev. 4.4 |
| Chromium, Total | EPA 200.7 Rev. 4.4 | Calcium Hardness | SM 18-22 2340B (-9 |
| Copper, Total | EPA 200.7 Rev. 4.4 | Color | SM 21-23 2120B (-0 |
| Iron, Total | EPA 200.7 Rev. 4.4 | | |
| Lead, Total | EPA 200.9 Rev. 2.2 | Specific Conductance | SM 21-23 2510B (-9 |
| Manganese, Total | EPA 200.7 Rev. 4.4 | | |
| Silver, Total | EPA 200.7 Rev. 4.4 | | |
| Zinc, Total | EPA 200.7 Rev. 4.4 | | |
| Metals II | | | |
| Aluminum, Total | EPA 200.7 Rev. 4.4 | | |
| Beryllium, Total | EPA 200.7 Rev. 4.4 | | |
| Molybdenum, Total | EPA 200.7 Rev. 4.4 | | |
| Nickel, Total | EPA 200.7 Rev. 4.4 | | |
| Vanadium, Total | EPA 200.7 Rev. 4.4 | | |
| Metals III | | | |
| Boron, Total | EPA 200.7 Rev. 4.4 | | |
| Calcium, Total | EPA 200.7 Rev. 4.4 | | |
| Magnesium, Total | EPA 200.7 Rev. 4.4 | | |
| Potassium, Total | EPA 200.7 Rev. 4.4 | | |

Serial No.: 63011

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES POTABLE WATER All approved subcategories and/or analytes are listed below:

Bacteriology

Legionella ISO 11731:2017(E)



Department of Health

Serial No.: 63012

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



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MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

Is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below:

| Bacteriology | | Metals III | |
|---------------------------|----------------------------|-------------------|----------------------------|
| Enterococci | SM 23 9230D (Enterolert) | Cobalt, Total | EPA 200.7, Rev. 4.4 (1994) |
| Heterotrophic Plate Count | SimPlate | Molybdenum, Total | EPA 200.7, Rev. 4.4 (1994) |
| Metals I | | Thallium, Total | EPA 200.7, Rev. 4.4 (1994) |
| Barium, Total | EPA 200.7, Rev. 4.4 (1994) | Mineral | |
| Cadmium, Total | EPA 200.7, Rev. 4.4 (1994) | Calcium Hardness | EPA 200.7, Rev. 4.4 (1994) |
| Calcium, Total | EPA 200.7, Rev. 4.4 (1994) | of Health | SM 2340B-2011 |
| Chromium, Total | EPA 200.7, Rev. 4.4 (1994) | Hardness, Total | EPA 200.7, Rev. 4.4 (1994) |
| Copper, Total | EPA 200.7, Rev. 4.4 (1994) | | SM 2340B-2011 |
| Iron, Total | EPA 200.7, Rev. 4.4 (1994) | Miscellaneous | |
| Lead, Total | EPA 200.7, Rev. 4.4 (1994) | Turbidity | SM 2130 B-2011 |
| Magnesium, Total | EPA 200.7, Rev. 4.4 (1994) | Torbonty | |
| Manganese, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Nickel, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Potassium, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Silver, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Sodium, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Strontium, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Metals II | | | |
| Aluminum, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Antimony, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Arsenic, Total | EPA 200.7, Rev. 4.4 (1994) | | |
| Beryllium, Total | EPA 200.7, Rev. 4.4 (1994) | | |

EPA 200.7, Rev. 4.4 (1994)

EPA 200.7, Rev. 4.4 (1994)

EPA 200.7, Rev. 4.4 (1994)

Serial No.: 63013

Selenium, Total

Vanadium, Total Zinc, Total

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NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER All approved subcategories and/or analytes are listed below:

Bacteriology

Legionella ISO 11731:2017(E)



Serial No.: 63014

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



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NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved analytes are listed below:

Characteristic Testing

| TCLP | EPA 1311 | |
|---------------------------|-----------|------------|
| Polychlorinated Biphenyls | | |
| Aroclor 1016 (PCB-1016) | EPA 8082A | |
| Aroclor 1221 (PCB-1221) | EPA 8082A | |
| Aroclor 1232 (PCB-1232) | EPA 8082A | Department |
| Aroclor 1242 (PCB-1242) | EPA 8082A | of Health |
| Aroclor 1248 (PCB-1248) | EPA 8082A | |
| Aroclor 1254 (PCB-1254) | EPA 8082A | |
| Aroclor 1260 (PCB-1260) | EPA 8082A | |

Sample Preparation Methods

EPA 3550C

Serial No.: 63015

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88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Metals I

Lead, Total EPA 6010D

EPA 7000B

Miscellaneous

Asbestos in Friable Material Item 198.1 of Man

Item 198.1 of Manual EPA 600/M4/82/020

Department

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Lead in Dust Wipes

EPA 6010D EPA 7000B

Lead in Paint EPA 6010D

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EPA 7000B

Sample Preparation Methods

EPA 3050B

ASTM E-1979-17

Serial No.: 63016

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NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



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NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

Metals I

Lead, Total

NIOSH 7082

Miscellaneous

Fibers

NIOSH 7400 A RULES

NEW YOR

Department of Health

Serial No.: 63017

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Page 1 of 1



NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, EP, & PJ

ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING #301

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

July 2, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

July 2, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building #301

301 Craneway Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Roney D. Rivero

Senior Project Manager for ATC Group Services LLC Direct Line +1 212 284 0614 Email: roney.rivero@atcgs.com

Attachments

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

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APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: Asbestos Sample Location Drawings

Appendix C: ACM Location Drawings

Appendix D: Lab Certifications / Accreditations, Company and Personnel Certifications

ATC Project No. 214PANEWR1 Page 1

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

EXECUTIVE SUMMARY

On February 26, 2021 and April 8, 2021, ATC completed the inspection for ACM at Port Newark, Building #301 (the Site). The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected sixty-nine (69) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, one (1) sampled homogeneous area was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content).

The material that tested positive for asbestos is:

• Pipe Fitting Insulation associated with Fiberglass Pipe Insulation

These materials are tabulated in Section 4.0.

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM/LCP |
|----------------------|----------------------|---------|
| Philip R. Carrington | AH-88-11798 | ACM |
| Nancy Guevara | AH-14-00412 | ACM |
| Roney D. Rivero | AH-88-06348 | ACM |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 301, Harbor Freight Transport Building, was constructed within the facility located northeast of the Port Newark Marine Terminal and is accessible via Navy Street. The building is currently occupied by Harbor Freight Transport and used for storage of general cargo. The building is a one-story steel framed structure, measuring 255 ft. by 528 ft. in plan. The building height varies from 38'-7" at the eave to 40'-9" at the ridge. The steel framing consists of five rows of columns with 22 cross beams spaced at 25 ft. The cross beams support 41 roof purlins, which in turn supporting the gypsum roof panel covered with rubber roofing in a single gable shape. The exterior wall consists of concrete grade beam supported CMU wall brick wall with corrugated metal siding or Plexiglas window panels on top. The ground floor is bituminous concrete pavement on grade. There is an office located in the middle of the east side of the building and two office annexes along south side of building. The suspended acoustical ceilings are present at both office annexes.

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the

ATC Project No. 214PANEWR1 Page 2

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of Port Newark Building 301 on February 26, 2021 and April 8, 2021 and collected sixty-nine (69) bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location. The intent of this survey was to locate and identify all accessible ACM.

The following twenty-three (23) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location |
|--|---|
| 2'X4' Ceiling Tile Type I | 1 st Floor – Warehouse Area, Lunch Room 1 |
| Paper Backing on Ceiling Fiberglass Insulation | 1 st Floor – Warehouse Area, Lunch Room 1 |
| Textured Plaster (One Coat) on Plywood | 1 st Floor – Warehouse Area, Lunch Room 1, |
| Ceiling | Gym Room |

ATC Project No. 214PANEWR1 Page 3

| Brick Wall Mortar | 1 st Floor – Warehouse Area Northeast Corner |
|---|---|
| 2' X 2' & 2' X 4' Ceiling Tile - Fissured | 1st Floor – Office space |
| Gypsum Board Paper - Wall | 1st Floor – Office space |
| Gypsum Board - Wall | 1 st Floor – Office space |
| Joint Compound – Wall | 1st Floor – Office space |
| HVAC Duct Insulation Cover | 1st Floor – Office space |
| Fiberglass Pipe Insulation Cover 3" OD | 1st Floor – Office space |
| CMU Mortar Wall | 1st Floor – Office space Electric Room |
| 2' X 4' Ceiling Tile Type I - Fissured | 2 nd Floor – Office space |
| Gypsum Board Paper - Wall | 2 nd Floor – Office space |
| Gypsum Board - Wall | 2 nd Floor – Office space |
| Joint Compound – Wall | 2 nd Floor – Office space |
| HVAC Duct Insulation Cover | 2 nd Floor – Office space |
| 2' X 4' Ceiling Tile Type II | 2 nd Floor – By Entrance to Office space |
| CMU Wall Mortar | 1 st Floor – (Abandoned Building) – Locker Room & Lunch Room |
| Gypsum Board Paper - Wall | 1st Floor – (Abandoned Building) – Lobby |
| Gypsum Board - Wall | 1st Floor – (Abandoned Building) – Lobby |
| Joint Compound - Wall | 1st Floor – (Abandoned Building) – Lobby |
| Fiberglass Pipe Insulation Cover 3" OD | 1 st Floor – (Abandoned Building) – Men's & Women's Bathrooms |
| Pipe Fitting Insulation associated with F/G Pipe Insulation | 1 st Floor – (Abandoned Building) – Men's & Women's Bathrooms |

ATC Project No. 214PANEWR1 Page 4

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and analytical results of bulk samples collected, the following material is asbestos-containing (> 1%):

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|-------------------------|-----------------------|
| 67-69 | Pipe Fitting Insulation associated with F/G Pipe Insulation | 10% Chrysotile | 25 LF | ACM001 |

The following materials are presumed to be asbestos-containing material (PACM)

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|--|---------------------|----------------------|-----------------------|
| N/A | Pipe and Pipe Fitting Insulation - Warehouse Area | PACM | 2,200 L.F. | ACM001 |
| N/A | Flange & Valve Gaskets - 2 Sprinkler Rooms | PACM | 50 Units | ACM001 |

ACM laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix B. Asbestos Location Plans are included in Appendix C.

6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection at the site, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

ATC Project No. 214PANEWR1 Page 5

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected sixty-nine (69) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, one (1) sampled homogeneous area was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content).

The material that tested positive for asbestos at Building 301 include the following:

• Pipe Fitting Insulation associated with F/G Pipe Insulation

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Various types of painted surfaces such as sprinkler pipes, gypsum board ceilings and walls, CMU walls, and roof decking have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 301, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 301 located in Newark, New Jersey.

The materials reported in Section 5.0 of this report would require abatement, removal and disposal prior to sprinkler system renovation due to the proximity to the sprinkle pipe system.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection. The valve gaskets inside the pipe flanges could not be tested since the sprinkler system is still operational. It is assumed, based on the number of flanges observed, that there are approximately 25 gaskets in each sprinkler room. There are 2 sprinkler rooms in this building, so it is assumed there are 50 gaskets that are presumed to be asbestos containing. The pipes in the warehouse area below the roof deck with suspected asbestos- containing insulation were not sampled due to access restrictions (height and electric hazard) at the time of the survey. Based on visual inspection and assumptions, we estimate 2,200 linear feet of pipe insulation presumed to be asbestos containing. This quantity should be verified with destructive sampling if abatement is planned prior to any renovation work.

If questions arise regarding asbestos content in building materials that were not tested by ATC, additional testing services should be procured to test those areas.

ATC Project No. 214PANEWR1 Page 6

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

ATC Project No. 214PANEWR1 Page 7

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APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES



New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

104 EAST 25TH STREET NEW YORK, NY 10010

Fax: (212) 353-3599

Phone: (212) 353-8280

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Sample Date: 2/26/2021

Date Received: 3/1/2021

Date Analyzed: 3/2/2021

ATC Batch # 21-225

Methods: ELAP 198.1, 198.6, 198.4

Location: PN 301

Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>Noi</u> | ı-Asbestos | <u>NOB</u> | <u>Asbestos</u> | |
|----------------|--|-----------------------------|-----------|------------------|-------------------------|----------------------------------|-----------------|--|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type | |
| 1 | 1ST FLOOR WAREHOUSE AREA LUNCH ROOM 1 | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 21.9% Organic 58.3% Residue | | |
| 21-225 -1 | AREA EUNOTTROOM T | | | | | 19.8% Carbonate | NONE DETECTED | |
| | | Color: Tan | | | | | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | ungor | Comments: NOB PL | M Inconclusive | | | |
| 2 | 1ST FLOOR LUNCH ROOM 1 | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 26.3% Organic | | |
| 21-225 -2 | | | | | | 48.8% Residue 24.9% Carbonate | NONE DETECTED | |
| 27 220 2 | | Color: Tan | | | | | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | ungor | Comments: NOB PL | M Inconclusive | | | |
| 3 | 1ST FLOOR LUNCH ROOM 1 | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 25.8% Organic | | |
| 21-225 -3 | | | | | 0.0% Vermiculite | 38.1% Residue 36.1% Carbonate | NONE DETECTED | |
| 21-225 -5 | | Color: Tan | | | | | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive | | | |
| 4 | 1ST FLOOR LUNCH ROOM 1 | PAPER BACKING ON CEILING | G NOB-TEM | | | 96.1% Organic | | |
| 21-225 -4 | | F/G INSULATION | | | 0.0% Vermiculite | 1.1% Residue 2.8% Carbonate | NONE DETECTED | |
| 21-220 -4 | | Color: Blad | :k | | | | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. HAS TAR | | | |
| 5 | 1ST FLOOR LUNCH ROOM 1 | PAPER BACKING ON CEILING | G NOB-TEM | | | 92.9% Organic | | |
| 04 005 5 | | F/G INSULATION | | | 0.0% Vermiculite | 1.1% Residue 6% Carbonate | NONE DETECTED | |
| 21-225 -5 | | Color: Tan | /Rlack | | 0.070 1 00 | 070 0012011010 | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. HAS TAR | | | |
| 6 | 1ST FLOOR LUNCH ROOM 1 | PAPER BACKING ON CEILING | G NOB-TEM | | | 98.9% Organic | | |
| 21-225 -6 | | F/G INSULATION | | | 0.0% Vermiculite | 1% Residue 0.1% Carbonate | NONE DETECTED | |
| 21-225 -0 | | Color: Tan | /Black | | | | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. HAS TAR | | | |
| 7 | 1ST FLOOR LUNCH ROOM 1 | TEXTURED PLASTER (ONE | NOB-TEM | | | | | |
| 21-225 -7 | (GYM ROOM) | COAT) ON CEILING PLYWOO | טנ | | | 43.8% Residue 41.7% Carbonate | NONE DETECTED | |
| 21-220 -1 | | Color: Tan | | | | /v Garsonato | | |
| Analyzed By: I | Michael Gittings | Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. Paint | | | |

Batch # 21-225 Page 1 of 3 Report Prepared By: Grace Chan



ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>No</u> | n-Asbestos | NOB | Asbestos |
|-------------------------------|--|---|--------------|-----------------|------------------------|--------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 8 | 1ST FLOOR LUNCH ROOM 1 (GYM ROOM) | TEXTURED PLASTER (ONE COAT) ON CEILING PLYWOO | NOB-TEM D | | | 13.1% Organic 47.6% Residue | |
| 21-225 -8 | | | | | 0.0% Vermiculite | 39.3% Carbonate | NONE DETECTED |
| Analyzed By: Michael Gittings | | Color: Tan Second Analyst: Feyza G | ungor | Comments: NOB P | LM Inconclusive. Paint | | |
| 9 | 1ST FLOOR LUNCH ROOM 1 | TEXTURED PLASTER (ONE | NOB-TEM | | | 13.5% | |
| Organic 21-225 -9 | (GYM ROOM) | COAT) ON CEILING PLYWOO | D | | 0.0% Vermiculite | 38.4% Restindunate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Tan Second Analyst: Feyza G | ungor | Comments: NOB P | LM Inconclusive. Paint | | |
| 10 | 1ST FLOOR WAREHOUSE AREA N/E CORNER | BRICK MORTAR | PLM | | 100% Mineral Filler | | |
| 21-225 -10 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan | | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 11 | 1ST FLOOR WAREHOUSE AREA N/E CORNER | BRICK MORTAR | PLM | | 100% Mineral Filler | | |
| 21-225 -11 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan | | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 12 | 1ST FLOOR WAREHOUSE AREA N/E CORNER | BRICK MORTAR | PLM | | 100% Mineral Filler | | |
| 21-225 -12 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Tan | | | | | |
| Analyzed By: | Michael Gittings | | | | | | |

Batch # 21-225 Report Prepared By: Grace Chan Page 2 of 3



11) Supplement to test report batch #

12) PLM Letter is attached on this report.

ATC Group Services LLC

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Non-Asbestos <u>NOB</u> **Asbestos** Type of Material Sample # Location Method % Fibrous % Non-Fibrous % Type % Type NOTES: 1) The Limit of Detection is the same as the Reporting Limit for these results 2) The Reporting Limit (RL) is the Limit of Quantitation. For point counts the limit of quantitation of 0.25%; based on one asbestos point counter over 400 non-empty points. 3) Asbestos Containing Material (ACM) Definition: > 1% asbestos by weight is considered an ACM 4) Disclaimer: The laboratory, is not responsible for sample collection. Please refer to enclosed letter. This report may not be reproduced, except in full, without written approval by ATC Group Services. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This report relates only to the samples reported above as described in the chain of custody. Quality control data is available upon request 5) Accredited by NVLAP #101187-0 and by NY State ELAP #10879 6) Confidentiality Notice: The document(s) contained herein are confidential and privileged information, intended for the exclusive use of the individual or entity named above. 7) Liability Notice: ATC Group Services and its personnel shall not be liable for any misinformation provided to us by the client regarding these samples. This report relates only to samples submitted and analy 8) Asbestos results are reliable to 2 significant figures. The condition of all samples was acceptable upon receipt. 10) The laboratory certifies that the test results meet all requirements of NELAC.

13) TRACE: The result is reported as Trace when No points are counted and asbestos is identified. For ELAP Trace is < 1%.
14) ATC Group Services certifies that this report is an accurate and authentic report of the results obtained from the laboratory analysis
15) The uncertainty for these test results is available upon request.

. Amendments: . Amendment Dates:

16) ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite. For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

. Amended by:

Mei Wang

Approved by Quality Manager:

| Michael Gittings | | |
|------------------|-------|--|
| Analyst: | wy | |
| Feyza Gungor | Flyly | |
| Analyst: | ' 1 | |

Report Prepared By: Grace Chan Page 3 of 3 Batch # 21-225



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely,

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiley Bourson

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS BULK DOCUMENTS 2021\BULK_LETTER_DOC #DB4A.DOC ATC EFFECTIVE DATE 01/18/2021 REVISION #32

Page 1 of 1 DOCUMENT #DB4A



BATCH NO.

BUILK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Clien | PANYN | IJ | | NKLER RE | State of the state of the state of | TION | | t No.: NPEPJ1 | 31,0331,11,033 | ct Manager: R. Rivero |) |
|--|-----------------------|-------------------------------|---------------|---------------------|------------------------------------|--------|-----------------|----------------------------------|----------------|---|----------------------------------|
| | | | 2a. Project A | ddress: (Ci N PE | rcle One) PJ | | 3b. Task No.: | 001 | 4b. Inspe | ctor: | IGTON |
| 5. Date: | 71 | JILDING NUMB mpling Areas: | | | 8. Turnaro o STAT o o 6 HRS | 24 HR | 9. Comi NOB→ | ment s (Field) | | | |
| ULK S | AMPLE L | OCATION |) | | | | | | | | |
| | 11. Bulk Sample ID | 12. | Material | | 13. Thermal | 14. | 0 | 1 1 1 | | 15. | 16. |
| Area No. | No. | | Material | | System | Floor | 0.001101 | ple Location mple Coordinates | | Material Total Qty. (LF, SF, PCS) | Asbestos Content (Type & % |
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| Tru | nge | COL | 3/1/2/ | 3.40 | Ed | rele | 2 4 6 | 3/1/20 | 1 16- | Wall US I | Mail |
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| 4b. Anal | yzed By: //w/ | log Coff | The- | | | 3 | 12/2-21 13 | 3:30 | | NOB-P | |
| 4c. QC I | Bv: | 0 | | | | | | | | NOA - | |

ATLAS_ ATC

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BULK ASBESTOS ANALYSIS SHEET

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| | | | 3/2/2 | | Analyst | | | 116 | | | | | -225 | EMPERATURE °C |
| 1 Id Number | Stere | oscopic I | Éxam | | | | | ptical Pr | - | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required ☐ Recommended ☐ ee gravimetric.☑ | Color | Verm | iculite | | n Extinction | RII | RII DS | S Color Colo | or, Pleo Bi | ref Sign O | ther Identity | Chrysotile Amosite Other | Cellulose Fiberglass Other | 130 Mineral Filler Organic Binder Vermiculite* |
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| See SM-V analysis sheet for results | NOB PLM Comments: | <u> </u> | | | NEPOHONING. | | | | MARKATAN AND AND AND AND AND AND AND AND AND A | 0 | 700 | | ☐ Horse Hair: Scales, Low to Moderate Birefringence | level of asbestos in a sampl might be underestimated. See Note #1. |
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| Recommended [] | Homogeneity | Verm Asber | | 1 | | | | | | | | Other | Other | Vermiculite* |
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| analysis sheet for results | Comments: | | i | | , | | L | | | | | | Birefringence | See Hole #1. |
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| 3 Gravimetric Required (1) | Stere | oscopic I Textu | Exam re | | | | | ptical Pr | operties | | ther Identity | Results PLM % | PLM % | PLM % ### Mineral Filler Organic Binder Vermiculite* |
| 3 eld Number Gravimetric | Stere | Textu Verm Asber | Exam re | Morpl | | | | ptical Pr | operties | | ther Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Olher | PLM % Mineral FillerOrganic Binder |
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Methods:
EPA Interim Method of the Determination of Asbestos In Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763

EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

ATC - New York

BULK ASBESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Microscopes: OLYMPUS BH-2/

ATLAS_ ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010

| Phon | ie: (212 | 2) 353-82 | 280, Fa | ax: (212) | 353-359 | 9 or 8 |
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| | Client / Project PANYNJ/ FIR | | t Number 214PN | IPEPJ1 | NIKON OPTIPHOT | 1 | Client / Project PANYNJ/ | FIRESPRINKLER REHAB Project | t Number 214PN | IPEPJ1 | NIKON OPTIPHOT |
|-------------------------------------|--|--|---|---|---|-------------------------------------|----------------------------------|---|---------------------------|---|--|
| | Analysis Date $3/2/2021$ | L Analyst <u> </u> | Number 21- | 225 | EMPERATURE® 23 | : | Analysis Date <u>3/7/2</u> | 2021 Analyst <u>Y</u> (- Batch | Number 21- | 225 , | EMPERATURE C 7 |
| 5 d Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | 1 9 | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color MAL Texture M | orph Extinction RI 1 RI DS Color Color, Pleo Birel Sign Other Identity | Chrysotile | Cellulose | 1 D Mineral Filler | Gravimetric | Color M Texture M | Morph Extinction RI1 RI DS Color Color, Pleo Biref Sign Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders | Required 🗆 | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders |
| ecommended 🗆 | # of Layers Asbestos | | Other | Other | Vermiculite* | Recommended □ | # of Layers Asbestos | | Other | Other | Vermiculite* |
| e gravimetric 🗸 analysis sheet | Color of Layer Delected Yes No | | | _ | Other | See gravimetric C | Color of Layer Detected Yes N | | | _ | Other Other |
| for results | | | | Cellulose Ondulose Extinction | | for results | - | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | | SM-V | | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver, | ☐ Fiberglass (sotopic ☐ Synthetic High | |
| Required 🗆 | PLM | | | Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample | Required 🗆 | PLM 2/ | | | Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V analysis sheet | | | | Low to Moderate Birefringence | might be underestimated. See Note #1, | See SM-V ☐ analysis sheet | NOB PLM | 0 20 | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Comments: Method: DELAP DEPA DESC | Høy Tøy ANNING OPTION Q.C. □ | | | | for results | Comments: Method: DELAP EPA | Pacit □SCANNING OPTION Q.C. □ | | | |
| 6 | | | Asbestos | Other Fibrous | Non Fibrous | 2 10 | <i></i> | | Asbestos | Other Fibrous | Non Fibrous |
| ld Number | Stereoscopic Exam | PLM Optical Properties | Results PLM % | PLM % | PLM % | Field Number | Stereoscopic Exam | PLM Optical Properties Morph Extinction RI1 RI DS Color Color Pleo Biref Sign Other Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color M/B/4(Texture Nt M | A STATE OF THE STA | Chrysotile | Cellulose | Mineral Filler | Gravimetric | Color Th Texture G | Maryon Extraction At 12 At 18 DO Color Color, Field Date: Sign Office substitute | Chrysotile | Cellulose | 100 Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders | Required Recommended | Homogeneity Vermiculite | 7 | Amosite | Fiberglass | Organic Binders |
| e gravimetric 🗹 | # of Layers Asbestos | | Other | Other | Vermiculite* | See gravimetric □ | # of Layers Asbestos | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | 0000 | analysis sheet for results | Color of Layer Detected Yes N | 10 | | ☐ Cellulose Ondulose | Curier |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | | SM-V | Point Counts Slide 1 Slide 2 | Silde 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ver.PT Total 97 | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| Required 🛘 | PLM | | | ☐ Synthetic High | * If vermiculite is >10% the | Required □ | PLM % | 2 700 | 3 | ☐ Synthetic High | * If vermiculite is >10% the |
| See SM-V 🗇 | NOB PLM 1/2 | 100 | 2 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | See SM-V | NOB PLM | | | Birefringence G Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | Hor Tay | | Low to Moderate Birefringence | See Note #1. | analysis sheet for results | Comments: | | | Low to Moderate Birefringence | See Note #1. |
| to, results | Method; □ ELAP □ EPA □ SC | ANNING OPTION Q.C. | | | | TO TO TO | Method: D'ELAP DEPA | D.SCÁNNING OPTION Q.C. DAY | | | |
| 7 d Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | 3 11 | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color To Texture 47 Mi | orph Extinction RL1 Rt DS Color Color, Pieo Biref Sign Other Identity | Chrysotile | Cellulose | (D) Mineral Filler | 4 : | Color TM Texture | Morph Extinction R11 R1 DS Color Color, Pleo Biref Sign Other Identity | Chrysotile | , PLNI 76 Cellulose | / Mineral Filter |
| Required Z | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders | Required 🗆 | Homogenelty Vermiculite | | Agrosite | Fiberglass | Organic Binders |
| ecommended 🗆 |) T | | Other | Other | Vermiculite* | Recommended 🗆 | 7 | | Other | Other | Vermiculite* |
| e gravimetric 🛭 analysis sheet | # of Layers Asbestos | | - | | Other | See gravimetric ☐ analysis sheet | # of Layers Asbestos | | | | Other |
| for results | Color of Layer Detected Yes No | | *************************************** | ☐ Cellulose Ondutose Extinction | | for results | Color of Layer Detected Yes N | 10 | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | SM-V | | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb.Ner. PT Total PT | %Asb. Or %Ver. | □ Fiberglass Isotopic | |
| Required 🗌 | PLM , | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample | Required | PLM 2/8 | 0 200 | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | 000 | \bigcirc | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. | See SM-V □ | NOB PLM | | | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: ZELAP DEPA DSC | ANNING OPTION Q.C. | | Distribute | | analysis sheet for results | Comments: | Øscanning option Q.C. □ | | Direit (fig.)ce | Taranta de la companya della companya della companya de la companya de la companya della company |
| | I WELHOU, ELAF CIEFA 350 | Artifice Of For | A.L | 041 53 | | | Methody LI ELAP LI EPA | | | | |
| 8 d Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | 4 12 Field Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color 1/11 Texture 15 | proph Extinction RL1 RLII DS Color Color, Pleo Biref Sign Other Identity | Chrysotile | Cellulose | 100 Mineral Filler | Gravimetric | Color TA Texture C | Morph Extinction RII RI B DS Color Color, Pleo Biref Sign Offer Identity | Chrysotile | Cellulose | Mineral Filler |
| Required D | Homogeneity Vermiculite! | | Amosite | Fiberglass | Organic Binders | Required 🗆 | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders |
| ecommended 🗆 | # of Layers Asbestos | | Other | Other | verniculte- | Recommended | # of Layers Asbestos | | Other | Olher | Vermiculite* |
| e gravimetric L/ analysis sheet/ | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | Other | See gravimetric analysis sheet | Color of Layer Detected Yes N | | | ☐ Celiulose Ondulose | Other |
| for results | | 2 Cide 4 Cide 5 Cide 5 Cide 5 Cide 7 Cide 6 | Dr. O. J. T. C. | Extinction ☐ Fiberglass Isotopic | | for results | | State 2 Class 4 Class 5 State 5 Con 2 Con | | Extinction Fiberglass Isotopic | |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ver. PT Total PT | %Asb. Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required 🗆 | | | | Birefringence Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | Required 🗆 | | 0 700 | - | Birefringence | level of asbestos in a sample might be underestimated. |
| See SM-V 🔲 analysis sheet | NOB PLM S | Parnt 0 20 | | Low to Moderate Birefringence | See Note #1. | See SM-V analysis sheet | NOB PLM Comments; | | | Low to Moderate Birefringence | See Note #1. |
| for results | <u> </u> | ANNING OPTION Q.C. | | | | for results | | □ SCANNING OPTION Q.C. □ | | | |
| | ······································ | | | | <u> </u> | | | | | | <u> </u> |

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V), and it utilizes a 400 point count method.

L*LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/FORMS 2021/BULK/ASBESTOS ANALYSIS SHEET_FORM #B2.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by FLAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L¹LAB_FORMS,DOCUMENTS AND RECORDS:OPTICAL/ASBESTOS_BULK/ASBESTOS_BUL

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

03/02/21

Start Date:

122379

TEM Batch #

21-225

Batch #

PLM

RUSH

PANYNJ

Client/Project:

03/02/21

| Methods | NOB | TEM PLM | > | > | > > | > > | > > | > > | > > | > > | > | |
|---------|----------|----------------------------|------|------|--------|---------|----------------|--------|--------|--------|-------------|--|
| M | | PREP | > | > | > | > | > | > | > | > | > | |
| | | Notes | | | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | | | |
| 9 | Asbestos | Types or Vermiculite | QN | ND | QN | ND | QN | ND | QN | ΩZ | QZ | |
| 12 | | % Carbonate | 19.8 | 24.9 | 36.1 | 2.8 | 6.0 | 0.1 | 41.7 | 39.3 | 38.1 | |
| 11 | Non Asb | Residue % NFr | 58.3 | 48.8 | 38.1 | <u></u> | - - | 1.0 | 43.8 | 47.6 | 48.4 | |
| 5 | | % Organic | 21.9 | 26.3 | 25.8 | 1.96 | 92.9 | 6.86 | 14.5 | 13.1 | 13.5 | |
| | | Field# | 4 | 2 | က | 4 | 5 | 9 | 7 | 80 | 6 | |

1. Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not detected.

Client Copy

ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 4/8/2021

104 EAST 25TH STREET

Date Received: 4/8/2021

NEW YORK, NY 10010 **Fax:** (212) 353-3599

Phone: (212) 353-8280

Date Analyzed: 4/9/2021

Project: PANYNJ / FIRESPRINKLER REHABILITATION

ATC Batch # 21-619

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING #301 Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | Non | n-Asbestos | NOB | Asbestos |
|--------------|------------------------|--|---------|------------------|--------------------|---|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 13 | 1ST FLOOR OFFICE SPACE | 2' X 2' & 2' X 4" CEILING TILE FISSURED | NOB-TEM | | 0.0% Vermiculite | 21.8% Organic 52.8% Residue 25.4% Carbonate | NONE DETECTED |
| 21-619 -1 | | C - l \ \ \ / l | _ | | 0.0% Verificante | 20.470 Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Whit Second Analyst: Feyza G | - | Comments: NOB PL | M Inconclusive | | |
| 14 | 1ST FLOOR OFFICE SPACE | 2' X 2' & 2' X 4" CEILING TILE FISSURED | NOB-TEM | | 0.00/ \/ilit- | 23.5% Organic 44.7% Residue | NONE DETECTED |
| 21-619 -2 | | | | | 0.0% Vermiculite | 31.8% Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: Whit Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive | | |
| 15 | 1ST FLOOR OFFICE SPACE | 2' X 2' & 2' X 4" CEILING TILE FISSURED | NOB-TEM | | | 24.9% Organic 42% Residue | |
| 21-619 -3 | | | | | 0.0% Vermiculite | 33.1% Carbonate | NONE DETECTED |
| Analyzed By: | : Mei Wang | Color: Whit Second Analyst: Feyza G | - | Comments: NOB PL | M Inconclusive | | |
| 16 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WA | ALLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -4 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | Color: Brov | vn | | | | |
| 17 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WA | ALLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | Color: Brov | vn | | | | |
| 18 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WA | ALLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -6 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | Color: Brow | vn | | | | |
| 19 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 4% Cellulose | 94% Mineral Filler | | |
| 04.040. 7 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -7 | | Color: Off V | I/laita | | 0.070 verificante | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | Color: Off v | VIIILE | | | | |
| | • | | | | | | |

Batch # 21-619 Page 1 of 7 Report Prepared By: Grace Chan



04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | Non | -Asbestos | <u>NOB</u> | Asbestos |
|--------------|------------------------|---|----------------|---|---------------------|------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 20 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-619 -8 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: Off Wh | nite | | | | |
| 21 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 4% Cellulose | 94% Mineral Filler | | |
| | | | . _ | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -9 | | Color: Off Wh | nite | | 0.0% verificulte | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 22 | 1ST FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -10 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: White | | | | | |
| 23 | 1ST FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | - - | 7, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -11 | | Color: White | | | 0.070 Verifficulte | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 24 | 1ST FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -12 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: White | | | | | |
| 25 | 1ST FLOOR OFFICE SPACE | HVAC DUCT INSULATION | PLM | 75% Cellulose | 17% Mineral Filler | | |
| 24.640 42 | | COVER | | 8% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -13 | | Color: Tan/Si | ilver | | oro /o v orrinounio | | |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 26 | 1ST FLOOR OFFICE SPACE | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose | 20% Mineral Filler | | |
| 21-619 -14 | | | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: Tan/Si | ilver | | | | |
| 27 | 1ST FLOOR OFFICE SPACE | HVAC DUCT INSULATION | PLM | 75% Cellulose | 20% Mineral Filler | | |
| | | COVER | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -15 | | Color: Tan/Si | ilver | | 0.070 Verimounte | | NONE BETEOTEB |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 28 | 1ST FLOOR OFFICE SPACE | F/G PIPE INSULATION COVER 3" | PLM | 70% Cellulose | 25% Mineral Filler | | |
| 21-619 -16 | | | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: White/ | Silver | | | | |
| 29 | 1ST FLOOR OFFICE SPACE | F/G PIPE INSULATION COVER | PLM | 70% Cellulose | 25% Mineral Filler | | |
| | | 3" | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -17 | | Color: White/ | Silver | | 5.370 T 511110WIIIO | | 52120120 |
| Analyzed By: | : Ivan Reyes | 100000000000000000000000000000000000000 | | | | | |
| | | | | | | | |
| | | | | | | | |

Report Prepared By: Grace Chan Page 2 of 7 Batch # 21-619



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>Nor</u> | <u>Non-Asbestos</u> | | <u>Asbestos</u> |
|--------------|-------------------------------------|--|---------|------------------|----------------------|----------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | <u>NOB</u> % Type | % Type |
| 30 | 1ST FLOOR OFFICE SPACE | F/G PIPE INSULATION COVER 3" | PLM | 70% Cellulose | 25% Mineral Filler | | |
| 21-619 -18 | | 3 | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTE |
| A l D | han Davis | Color: White/ | Silver | | | | |
| Analyzed By: | 1ST FLOOR OFFICE SPACE | CMU MORTAR WALL | DLM | | 1000/ Minoral Filler | | |
| 31 | ELEC ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-619 -19 | | 0.1 0 | | | 0.0% Vermiculite | | NONE DETECTI |
| Analyzed By: | Ivan Reyes | Color: Brown | | | | | |
| 32 | 1ST FLOOR OFFICE SPACE | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-619 -20 | ELEC ROOM | | | | 0.0% Vermiculite | | NONE DETECT |
| | | Color: Brown | | | | | |
| Analyzed By: | - | | | | | | |
| 33 | 1ST FLOOR OFFICE SPACE ELEC ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-619 -21 | | | | | 0.0% Vermiculite | | NONE DETECTI |
| Analyzed By: | Ivan Reyes | Color: Brown | | | | | |
| 34 | 2ND FLOOR OFFICE SPACE | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 28.6% Organic | |
| 21-619 -22 | | FISSURED | | | 0.0% Vermiculite | 47.7% Residue 23.7% Carbonate | NONE DETECT |
| 21-019 -22 | | Color: White | | | | 2017/0 0412011410 | |
| Analyzed By: | Mei Wang | Second Analyst: Feyza Gu | ngor | Comments: NOB PL | M Inconclusive | | |
| 35 | 2ND FLOOR OFFICE SPACE | 2' X 4' CEILING TILE TYPE I FISSURED | NOB-TEM | | | 29.8% Organic 47.4% Residue | |
| 21-619 -23 | | | | | 0.0% Vermiculite | 22.8% Carbonate | NONE DETECT |
| Analyzed By: | Moi Wang | Color: White Second Analyst: Feyza Gu | ngor | Comments: NOB PL | M Inconclusive | | |
| 36 | 2ND FLOOR OFFICE SPACE | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 30.6% Organic | |
| | 21.5 1 25 511 51 1152 51 1152 | FISSURED | NOD-ILW | | 0.00()/ | 45.6% Residue | NONE DETECT |
| 21-619 -24 | | Color: White | | | 0.0% Vermiculite | 23.8% Carbonate | NONE DETECT |
| Analyzed By: | Mei Wang | Second Analyst: Feyza Gu | ngor | Comments: NOB PL | M Inconclusive | | |
| 37 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WAL | LPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -25 | | | | | 0.0% Vermiculite | | NONE DETECT |
| | | Color: Brown | | | | | |
| Analyzed By: | • | 0//00114 004 55 54 555 | 15114 | 050/ 0 :: : | 50/ 11/ | | |
| 38 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WAL | LPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -26 | | | | | 0.0% Vermiculite | | NONE DETECT |
| Analyzed By: | Ivan Reyes | Color: Brown | | | | | |
| 39 | • | GYPSUM BOARD PAPER WAL | LPLM | 95% Cellulose | 5% Mineral Filler | | |
| | | | | | 0.0% Vermiculite | | NONE DETECT |
| 21-619 -27 | | | | | | | |

Report Prepared By: Grace Chan Page 3 of 7 Batch # 21-619



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| | | | | Non | - <u>Asbestos</u> | <u>NOB</u> | <u>Asbestos</u> |
|--------------|-------------------------|----------------------------|----------|--------------------------------|---------------------|----------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 40 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-619 -28 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Off V | Vhite | | | | |
| Analyzed By: | • | | | | | | |
| 41 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 6% Cellulose | 92% Mineral Filler | | |
| 21-619 -29 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Payas | Color: Off V | Vhite | | | | |
| | 2ND FLOOR OFFICE SPACE | CVDCIIM BOARD | DLM | 40/ Callulana | O40/ Minaral Filler | | |
| 42 | 2ND FLOOR OFFICE SPACE | GYPSUM BUARD | PLM | 4% Cellulose 2% FiberGlass | 94% Mineral Filler | | |
| 21-619 -30 | | | | 270 1 10 01 01 000 | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Off V | Vhite | | | | |
| 43 | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 01.010.01 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -31 | | Color: Whit | 4 | | 0.070 Verrilledite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Odor. Will | | | | | |
| 44 | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -32 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 27 070 02 | | Color: Whit | e | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 45 | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -33 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Whit | e | | | | |
| Analyzed By: | | | | | | | |
| 46 | 2ND FLOOR OFFICE SPACE | HVAC DUCT COVER | PLM | 75% Cellulose 7% FiberGlass | 18% Mineral Filler | | |
| 21-619 -34 | | | | 7% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Payas | Color: Tan | 'Silver | | | | |
| 47 | 2ND FLOOR OFFICE SPACE | HVAC DUCT COVER | PLM | 75% Cellulose | 20% Mineral Filler | | |
| 41 | ZND I LOOK OFFICE SPACE | TIVAC DOCT COVER | PLIVI | 5% FiberGlass | | | |
| 21-619 -35 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Tan | Silver | | | | |
| 48 | 2ND FLOOR OFFICE SPACE | HVAC DUCT COVER | PLM | 75% Cellulose | 20% Mineral Filler | | |
| | | | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -36 | | Color: Tan | /Silver | | 0.0 /0 VEITHCUIRE | | NONE DETECTEL |
| Analyzed By: | Ivan Reyes | COIOI. I di l | J.1701 | | | | |
| 49 | 2ND FLOOR BY ENTRANCE | 2 X 4 CEILING TILE TYPE II | NOB-TEM | | | 24% Organic | |
| 21-619 -37 | TO OFFICE SPACE | | | | 0.0% Vermiculite | 31.4% Residue 44.6% Carbonate | NONE DETECTED |
| _, 0,0 01 | | Color: Whit | ie | | | | |
| | | Second Analyst: Feyza C | | Comments: NOB PLN | Inconclusive | | |

Report Prepared By: Grace Chan Page 4 of 7 Batch # 21-619



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | No | n-Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|--------------|--|----------------------------|----------|-------------------------------|---------------------|---|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 50 | 2ND FLOOR BY ENTRANCE | 2 X 4 CEILING TILE TYPE II | NOB-TEM | | | 20.7% Organic | |
| 21-619 -38 | TO OFFICE SPACE | | | | 0.0% Vermiculite | 20.7% Residue 58.6% Carbonate | NONE DETECTED |
| | | Color: Whi | | Comments: NOB PL | M Incorphysics | | |
| Analyzed By: | - | Second Analyst: Feyza (| | Commens, NOB PL | ivi inconclusive | | |
| 51 | 2ND FLOOR BY ENTRANCE TO OFFICE SPACE | 2 X 4 CEILING TILE TYPE II | NOB-TEM | | 0.0% Vermiculite | 18.5% Organic 12.6% Residue 68.9% Carbonate | NONE DETECTED |
| 21-619 -39 | | Color: Whi | te | | 0.0% verificance | 00.9 % Calbonate | NONE DETECTE |
| Analyzed By: | : Mei Wang | Second Analyst: Feyza | | Comments: NOB PL | .M Inconclusive | | |
| 52 | 1ST FLOOR ABANDONED BLDG | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-619 -40 | BEDG | | | | 0.0% Vermiculite | | NONE DETECTED |
| | . 5 | Color: Bro | wn | | | | |
| Analyzed By: | | OMILIWALI MODTAD | D. 14 | | 1000/ 14/ 15/ | | |
| 53 | 1ST FLOOR LOCKER ROOM & LUNCH ROOM | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-619 -41 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reves | Color: Bro | wn | | | | |
| 54 | 1ST FLOOR LOCKER ROOM | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-619 -42 | & LUNCH ROOM | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-019 -42 | | Color: Bro | wn | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 55 | 1ST FLOOR LOBBY | GYPSUM BOARD PAPER W | ALLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -43 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Payas | Color: Bro | wn | | | | |
| 56 | 1ST FLOOR LOBBY | GYPSUM BOARD PAPER W | ALI DI M | 95% Cellulose | 5% Mineral Filler | | |
| 50 | 131 I LOOK LOBB I | OTI SOM BOARDT AF ER W | VEELEINI | 95% Cellulose | | | NONE DETECTED |
| 21-619 -44 | | Calan Bra | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | Color: Bro | wn | | | | |
| 57 | 1ST FLOOR LOBBY | GYPSUM BOARD PAPER W | ALLPLM | | 100% Mineral Filler | | |
| 21-619 -45 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21010 10 | | Color: Bro | wn | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 58 | 1ST FLOOR LOBBY | GYPSUM BOARD | PLM | 3% Cellulose 2% FiberGlass | 95% Mineral Filler | | |
| 21-619 -46 | | | | 270 FINEIGIASS | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reves | Color: Off | Vhite | | | | |
| 59 | 1ST FLOOR LOBBY | GYPSUM BOARD | PLM | 2% Cellulose | 96% Mineral Filler | | |
| | | | . = | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTE |
| 21-619 -47 | | Color: Off | Mhito. | | 0.0% verificulte | | NONE DETECTED |
| Analyzed By | : Ivan Reyes | Color: Off | VIIIIE | | | | |

Report Prepared By: Grace Chan Page 5 of 7 Batch # 21-619



04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| Location | Type of Material | M.d. J | | | NOB | Asbestos |
|--------------------------------------|---|--|---|---|--|---|
| | VF - J | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 1ST FLOOR LOBBY | GYPSUM BOARD | PLM | 3% Cellulose | 95% Mineral Filler | | |
| | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| an Reves | Color: Of | f White | | | | |
| 1ST FLOOR LOBBY | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | | | | NONE DETECTED |
| | Color: W | hite | | 0.0 % VOITHIOGHIO | | NONE BETEGTED |
| an Reyes | | | | | | |
| 1ST FLOOR LOBBY | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | | 0.0% Vermiculite | | NONE DETECTED |
| ran Reves | Color: W | hite | | | | |
| 1ST FLOOR LOBBY | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | | 0.0% Vermiculite | | NONE DETECTED |
| | Color: W | hite | | | | |
| an Reyes | | | | | | |
| 1ST FLOOR BATHROOMS | F/G PIPE INSULATION COV 3" | ER NOB-TEM | | | 81.4% Organic 4.7% Residue | |
| | | | | 0.0% Vermiculite | 13.9% Carbonate | NONE DETECTED |
| lei Wang | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR BATHROOMS | | ER NOB-TEM | | | 78.4% Organic | |
| | 3 | | | 0.0% Vermiculite | 13.7% Residue 7.9% Carbonate | NONE DETECTED |
| | | | Comments: NOB PLM | A Inconclusive | | |
| | | | | | 00.00/ 0 | |
| 151 FLOOR BATHROOMS | 3" | EK NOR-IEM | | | 10.2% Residue | |
| | Color: Pl | ook/Prown | | 0.0% Vermiculite | 0.9% Carbonate | NONE DETECTED |
| lei Wang | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR ABADONED | PIPE FITTINGS INSULATIO | N PLM | | 55% Mineral Filler | | 10% Chrysotile |
| BEB B ATTINGO MO | | | 35% FiberGlass | 0.0% Vermiculite | | |
| ran Bayyaa | Color: Of | fWhite | | | | |
| | PIPE FITTINGS INSULATIO | N | | | | Total Asbestos: 10 % |
| BLDG BATHROOMS | | | | | | NOT ANALYZED |
| | | | | | | NOT ANALTZED |
| | | | Comments: Positive st | top, see #67 | | |
| 1ST FLOOR ABADONED BLDG BATHROOMS | PIPE FITTINGS INSULATIO | N | | | | |
| | | | | | | NOT ANALYZED |
| | | | Comments: Positive st | top, see #67 | | |
| 1 | an Reyes 1ST FLOOR LOBBY an Reyes 1ST FLOOR LOBBY an Reyes 1ST FLOOR BATHROOMS ei Wang 1ST FLOOR BATHROOMS ei Wang 1ST FLOOR BATHROOMS an Reyes 1ST FLOOR ABADONED BLDG BATHROOMS 1ST FLOOR ABADONED BLDG BATHROOMS | an Reyes 1ST FLOOR LOBBY Color: Wan Reyes 1ST FLOOR LOBBY JOINT COMPOUND Color: Wan Reyes 1ST FLOOR LOBBY JOINT COMPOUND Color: Wan Reyes 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Second Analyst: Feyza 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Color: Blace i Wang Second Analyst: Feyza 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Color: Blace i Wang Second Analyst: Feyza 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Color: Blace i Wang Second Analyst: Feyza 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION Color: Of an Reyes 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS 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White Color: White Color: White Color: White Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION Color: Off White 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION ST FLOOR ABADONED Color: Off White 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION PLM | AND REYES IST FLOOR LOBBY JOINT COMPOUND Color: White AND REYES COLOR: White AND REYES IST FLOOR LOBBY JOINT COMPOUND Color: White Color: White AND REYES IST FLOOR LOBBY JOINT COMPOUND PLM Trace% Cellulose Color: White AND REYES Color: White AND REYES IST FLOOR BATHROOMS FIG PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLM 3" Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLM Second Analyst: Feyza Gungor Comments: NOB PLM Second Analyst: Feyza Gungor Comments: NOB PLM 3" Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLM 3" Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLM 3" Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLM 35% FiberGlass Color: Off White AND PLM ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION Comments: Positive si IST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION Comments: Positive si | Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: Black/Brown Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang 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White Cobr. White Cobr. White |

Report Prepared By: Grace Chan Page 6 of 7 Batch # 21-619



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | No | n-Asbestos | <i>NOB</i> | <u>Asbestos</u> |
|----------------|------------------------------------|--|---------------------------|-------------------------------|--|----------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| NOTES: | | | | | | | |
| 1) The Limi | it of Detection is the same as | the Reporting Limit for these results. | | | | | |
| 2) The Rep | oorting Limit (RL) is the Limit o | of Quantitation. For point counts the limit of | quantitation of 0.25%; | based on one asbestos | point counter over 400 non-empty poi | nts. | |
| 3) Asbesto | s Containing Material (ACM) | Definition: > 1% asbestos by weight is o | onsidered an ACM | | | | |
| report may | | ponsible for sample collection. Please refit t endorsement by NVLAP or any other ag quest. | | | | | |
| 5) Accredi | ited by NVLAP #101187-0 ar | nd by NY State ELAP #10879 | | | | | |
| 6) Confiden | ntiality Notice: The document(| s) contained herein are confidential and pr | rivileged information, i | ntended for the exclusive of | use of the individual or entity named al | pove. | |
| 7) Liability N | Notice: ATC Group Services | and its personnel shall not be liable for an | y misinformation prov | rided to us by the client req | garding these samples. This report re | lates only to samples subm | itted and analy |
| 8) Asbesto | s results are reliable to 2 sign | nificant figures. | | | | | |
| 9) The con | dition of all samples was acc | eptable upon receipt | | | | | |
| 10) The lab | ooratory certifies that the test r | esults meetall requirements of NELAC. | | | | | |
| 11) Supple | ment to test report batch # | Amendments: Ame | endment Dates: | Amended by: | | | |
| 12) PLM Le | etter is attached on this repor | t | | | | | |
| 13) TRACE | E: The result is reported as T | race when No points are counted and ast | oestos is identified. Fo | r ELAP Trace is < 1%. | | | |
| 14) ATC G | roup Services certifies that th | is report is an accurate and authentic rep | ort of the results obtain | ned from the laboratory an | alysis | | |
| 15) The un | certainty for these test results | is available upon request. | | | | | |
| | | 1 for the analysis of samples containing ≤ lite and may underestimate the level of as | | | | ds ELAP 198.1 followed by | ELAP 1986. |
| Ivan Rey | es 🚺 | van Regu | | | Mei Wan | g Meih | اسم |
| Analyst: | | Y | | | Approved Quality M | 3 | |
| Mei Wan | ng M | illong | | | | | |
| Analyst: | | | | | | | |
| Feyza Gu | ungor | terly | | | | | |
| Analyst: | | | | | | | |

Report Prepared By: Grace Chan Page 7 of 7 Batch # 21-619



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired.

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely.

Milena Bonezzi
ATC Group Services LLC
Director of Laboratory Services

Wiley Bourson

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS BULK DOCUMENTS 2021\BULK_LETTER_DOC #D84A.DOC

ATC EFFECTIVE DATE 01/18/2021 REVISION #32

BY MEI WANG

Page 1 of 1

DOCUMENT #DB



BATCH NO. 21-6(9) Page of

| 1. Clier | PANY | J.I | Project Na FIRESPR | ame: INKLER RI | EHABILITA | TION | 3a. ATC Proje | ect No.: PNPEP | J1 | 4a. Proje | ect Manager: R. Rivero | 0 |
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| omogenous | 11. Bulk Sample ID | 12. | Material | | 13. Thermal | 14. | Sa | mple Locat | ion | | 15. Material Total | 16. Asbest |
| Area No. | No. | 1- 1- | | , | System | Floor | 5 | Sample Coo | ordinates | | Qty. (LF, SF, PCS) | Conte |
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| П. | | | | | QC BY | 1 | | | w.e | | Othe | |

24. Name and Signature:

24. Name and Signature:

24. Analyzed By:

25. Date

26 Time

27. Comments (Lab)

24b. Analyzed By:

24c. QC By:

14m: Fenza Gunger Typ 4 49/21 4:47



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BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| PROJECT INF | ORMATION | | | | | |
|-------------|----------------------------------|---------------------|-------|---|---|---|
| 1. Client | NYNJ | Project I FIRESP | | ER REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
| | | 2a. Project | Addre | ess: <mark>(Circle One)</mark> PE PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: | BUILDING NUM Sampling Areas: | 201 | | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH X | 9. Comment s (Field) NOB→ TEM Stop @ 1st Positive |

|). omogenous | 11. Bulk Sample ID | 12. Material | 13. Thermal | 14. | Sample Location | 15. Material Total | 16. Asbestos |
|-----------------|-----------------------|-----------------|----------------|-------|--------------------|-----------------------|-----------------|
| Area No. | No. | (1000MMHH 3000) | System | Floor | Sample Coordinates | Qty. (LF, SF, PCS) | Content |
| 11 | 31 | CHU DIOIZPAIL | | 1 | OFFICE SPORE | | |
| 11 | 32 | W AZY | | | FUEL ROOM | | |
| 1) | 33 | 1) | | 7 | | | |
| 12 | 34 | ZYY CENCINC | | 2 | OPPICE SPACE | | |
| 13 | 35 | TILE SHIPE I | | 1 | 11 | | |
| 12 | 36 | FISSORED | | | | | |
| 13 | 37 | GYPSUN BOARD | | | | | |
| 13 | 38 | PAPER | | | | | |
| 13 | 39 | WALL | | | | | |
| 14 | 40 | GYPSUM BOARD | | | | | |
| 14 | 41 | 1 | | | | | |
| 14 | 42 | /1 | | | | | |
| 15 | 43 | JOINT COMPOUN | | | | | |
| 15 | 44 | 11 | | | | | |
| 15 | 45 | /ì | | | | | |
| 16 | 46 | HVAC DUGT | | | | | |
| ib | 47 | COURR | | 10 | | | |
| 16 | 48 | // | | 1 | | | |

| 17, Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
|---------------------|----------|----------|-----------------|----------|----------|-------------------------|
| 14:10 | 11011 | 210.00 | -1 0 0 . | .// | 15 / | Field |
| Mulif Com | 41814 | 2,50hr | Eleler | 4/8/2011 | 15:25 | Walk In |
| | 11 . 1 | | 0 | | | US Mail |
| 1 | | | | | | Fed-Ex |
| | | | GALE. | | | Other |
| III. | | | | | | |

| 24. Name and Signature: | 25. Date | 26 Time | 27. Comments (Lab) |
|---------------------------------------|----------|---------|--------------------|
| 24a. Analyzed By: Ivan Reyer Strantes | 4 9/2021 | 9:58am | |
| 24b. Analyzed By: ME Who G | 4(4127 | (f w | |
| 24c. QC By: | | | |
| TEM: Feyza Gunge Zen | 4/9/20 | 14:47 | |



BATCH NO. 21-619 Page 3 of 4

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Client | NYNJ | Project Name: FIRESPRINKLER | REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
|-----------------|-----------------------------------|--------------------------------|---|--|---|
| | | 2a. Project Address: PN P | (Circle One) E PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: 4/8/21 | BUILDING NUMB Sampling Areas: | 30) | [1] : [| ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1 st Positive |

| | | OCATION | | | | w = = :: | |
|------------|----------------|--------------------|----------------|-------|---------------------|-----------------------|----------------------|
| Homogenous | Bulk Sample ID | 12. Material | 13. Thermal | 14. | Sample Location | Material Total | 16. Asbestos |
| Area No. | No. | | System | Floor | Sample Coordinates | Qty. (LF, SF, PCS) | Content (Type & % |
| 17 | 49 | 2X4 chiere pich | | 2 | 134 GUPPARCE 10 | | |
| 117 | 56 | TYPE IT | | 1 | OFFICE TABLE | | |
| 17 | 51 | 1/ | | - | 11 | | |
| 118 | 23 | CTU WAY | | Y | ABMOUNED BUNG | | |
| 118 | 53 | HORME | | 1 | The flugz LOCKAR | | |
| 118 | 54 | il | | | TUDA & 4 CHAHT 1200 | 27 | |
| 19 | 7 | GYPSUY RUMEN | | | 1st FLOOR LOBB | 4 | |
| 119 | 56 | PAPAN | | | | | |
| 19 | 57 | WAL | | | | | |
| 10 | 58 | CHIPS WY BOARD | | | | | |
| 20 | 59 | 11 | | | | | |
| 20 | 60 | 71 | | 1 | | | |
| 21 | 61 | JOINT COMFOUND | | | 4 - | | |
| 21 | 62 | 1/ | | | | | |
| 21 | 63 | · · · · | | | 1 1 - | | |
| 22 | 64 | F/G P. PER INSUDIU | R | | BARA ROVES | | |
| 28 | 65 | court 3" | | | | | |
| 22 | 66 | 11 | | | 2 | | |

| 17 Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
|--------------------|----------|----------|-----------------|----------|----------|-------------------------|
| Ma / A | til-la | 2000 | -1 1 E | 10/06 | 7/202 | Field |
| 7 Vily | HIXILI | 3(20pm | bleter V | 4/8/2021 | 16:25 | Walk In |
| | 11011 | | U | | | US Mail |
| I. | | | | | | Fed-Ex |
| III. | | | | | | Other |

| LABORATORY INFORMATION | | -10: | |
|--|------------|---------|--------------------|
| 24. Name and Signature: | 25, Date 2 | 26 Time | 27. Comments (Lab) |
| 24a. Analyzed By: Dran Keyer a frankly | 49/2021 | 75 Saw | |
| 24b. Analyzed By: With whom te | 4/3/121 | 142 | |
| 24c. QC By: | CCI | | |
| MIN. Kon Conser CO. O | 11/0/0. / | 1. 17 | |

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|-----------|----------|-------|--------|
| BATCH NO. | 2,1.19 | Page(| 1 of 4 |
| | 61-101-1 | | |

| 1. Client | Project Name: | | 3a. | . ATC Project No.: | | 4a. Projec | t Manager: | |
|--|--|-------------------|--------------------|-----------------------------|----------------|-----------------|---|----------------------|
| PANYNJ | FIRESPRINKLER RE 2a. Project Address: (Ci | | | 214PNPEF . Task No.: | J1 | 4b. Inspec | R. Rivero |) |
| | PN PE | PJ | 1.55 | 0001 | | PHI | LIP CARRIN | |
| 5. Date: 6. BUILDING NUMB 7. Sampling Areas: | 201 | | HRS o | 72 HRS 0 OTHE NORMAL RUS | | NOB→ 1 | nent s (Field) FEM 1 st Positive | |
| BULK SAMPLE LOCATION | | | | | | | | |
|). 11. 12. omogenous Bulk Sample ID | Material | 13. 14 Thermal | 40 | Sample Loca | ation | | 15. Material Total | 16. Asbestos |
| Area No. No. | The state of the s | System F | loor | Sample Co | and the second | | Qty. (LF, SF, PCS) | Content (Type & % |
| 23 67 APE 41 | TPING | | 1 A | BANDUNFO | B609 | | | |
| 23 68 jus | Simpon | | | BAJA | 2014 | 5 | | |
| 23 69 | 11 | | _ | | 1) | | | |
| 21 | | | | | | | | |
| 191 | | | | | | | | |
| 201 | | | | | | | | |
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| | | | | | | | | |
| HAIN OF CUSTODY | | | | | | | | |
| 17. Relinquished By | 18. Date 19. Time | e 20. Red | eived By | У | 21. Date | 22. Tin | | Method ubmittal |
| thitela | 4/2/2 3020 | | teler | /) | 4 Kbori | 15- | 25 Field | t |
| They card | 7/8/930 | | vere | | 110000 | 19- | USI | Mail |
| I. | | | | | | | Fed- Othe | |
| II. ABORATORY INFORMATION | | | | | | | | |
| 24. Name and Signature: | 0 0 | | 25. ₁ [| Date 26 Tim | ne 27 | Commer | nts (Lab) | |
| 4a. Analyzed By: Dran her | ec Du C | 2 , . | 4 | 9/2021 9:5 | 8 am | o o i i i i i i | (200) | |
| 24b. Analyzed By: | to lost to | Y | 101 | e 121 14 | 2 | | | |

ATLAS ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Microscopes: OLYMPUS BH-2 /

|--|

| | Client / Project PANYNJ/ | FIRESP | PRINKL | EK KEH | AB | | | | _ Project | Number 214PN | PEPJ1 | 0 - |
|---|--|--|---------------------------------|-------------|---------|--|--------------------------------------|--------------|----------------------------|--|--|---|
| | Analysis Date 4/0/2 | 2021 | Analyst_ | | | W | | | _ Batch N | umber 21-6 | 519 m | EMPERATURE 65 |
| 13 eld Number | Stereoscopic Exam | | | | PLM O | otical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Un Cr Texture | Morph | Extinction | RII | RI DS | Color Colo | r, Pleo Bire | f Sign Oth | er Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 2 | - | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended [| Homogeneity Vermiculite | 4 | | | | | | | | Other | Other | |
| ee gravimetric | # of Layers Asbestos | 1- | — | | | | | | _ | | | Other |
| analysis sheet for results | Color of Layer Detected Yes I | No | : | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| | PLM | | 3-44-07-00 | | | | | | | - | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| Required | NOB PLAND INC | | | | | | | 9 | 21 | J | ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | | | 7 | | | | | 0 | - 4 | - | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: | SCANN | IING OPTIO | ON | | Q. | C. 🗆 | - | | | | |
| | memod. Zo zoni | 1 | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| 14 eld Number | Stereoscopic Exam | | | | | otical Pro | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color (CTexture | Morph | Extinction | RII | RII DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | Chrysotile | Cellulose | (Mineral Filler |
| Required 2 | , | _ | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | Homogeneity Vermiculite | 1= | : | | | | | | | Other | Other | |
| See gravimetric 🗗 | # of Layers Asbestos | X- | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | ☐ Cellulose Ondulose | |
| 40744040 | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| SM-V | PLM | - | - | | | | | | | | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | | | 200 | | | | | 2 | 2 | | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | NOB PLM | | - | | | | | 67 | | J | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: | - | | | | | | | | | | |
| | | m | | | | 0 | 2 [] | | | | 4 | |
| | Method: □ ELAP □ EPA | SCANN | ING OPTI | ON | | Q. | C. 🗆 | | | | | |
| 15 eld Number | Method: ☑ELAP □ EPA Stereoscopic Exam | | | | | ptical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| 15 | | | Extinction | RII | | | operties | ef Sign Oth | ner Identity | | | |
| 15 eld Number | Stereoscopic Exam | | | | | ptical Pr | operties | ef Sign Oth | ner Identity | Results PLM % | PLM % | PLM % Mineral Filler |
| 15 eld Number Gravimetric | Stereoscopic Exam | | | | | ptical Pr | operties | ef Sign Oth | ner Identity | Results PLM % Chrysotile | PLM % Cellulose | PLM % Mineral Filler |
| 15 eld Number Gravimetric Required Ø | Stereoscopic Exam | | | | | ptical Pr | operties | ef Sign Ott | ner Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders |
| 15 eld Number Gravimetric Required Recommended See gravimetric analysis sheet | Stereoscopic Exam Color C C C Exture F Homogeneity Vermiculite | Morph | | | | ptical Pr | operties | ef Sign Oth | ner Identity | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* |
| 15 eld Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color CTexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes | Morph | Extinction | RII | RI D | ptical Pro | operties or, Pleo Bir | | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* |
| 15 eld Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V | Stereoscopic Exam Color C Crexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 | Morph | | | | ptical Pr | operties | ef Sign Oth | | Results PLM % Chrysotile Amosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic | PLM % Mineral Filler Organic Binders Vermiculite* Other |
| 15 eld Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color C Crexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM | Morph | Extinction | RII | RI D | ptical Pro | operties or, Pleo Bir | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| 15 eld Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V See SM-V | Stereoscopic Exam Color CTexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM | Morph | Extinction | RII | RI D | ptical Pro | operties or, Pleo Bir | | | Results PLM % Chrysotile Amosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the |
| Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required | Stereoscopic Exam Color CTexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Morph No Slide 3 | Extinction Slide 4 | RI1 | RI D | ptical Prison Color Colo | operties or, Pleo Bir Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| 15 eld Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color CTexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM | Morph No Slide 3 | Extinction | RI1 | RI D | ptical Prison Color Colo | operties or, Pleo Bir | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| 15 eld Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color CTexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Morph No Slide 3 | Extinction Slide 4 | RI1 | RI DS | ptical Prison Color Colo | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| 15 eld Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color C C C Exture Homogeneity Vermiculite Asbestos Color of Layer Defected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM 9 Comments: Method: ELAP EPA | Morph No Slide 3 | Extinction Slide 4 | RII Slide 5 | RII D: | ptical Pris Scolor Color | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Analysis sheet for results See SM-V Analysis sheet for results SM-V Required □ See SM-V □ Analysis sheet for results SM-V Gravimetric □ Analysis sheet for results | Stereoscopic Exam Color Carture Homogeneity Vermiculite Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM 9 Comments: Method: ELAP EPA Stereoscopic Exam Color Old Carture Elap | Morph No Slide 3 | Extinction Slide 4 | RI1 | RII D: | ptical Pris Scolor Cold | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Binders Vermiculite* Other *If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| 15 eld Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color Clexture Homogeneity Vermiculite Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM P DETECTED EPA Stereoscopic Exam Color Division Vexture Homogeneity Vermiculite | Morph No Slide 3 | Extinction Slide 4 | RI1 | RII D: | ptical Pris Scolor Cold | Slide 8 | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | PLM % Mineral Filler Organic Binders Vermiculite* Other *If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| 15 eld Number Gravimetric Required Recommended analysis sheet for results SM-V Required analysis sheet for results SM-V Gravimetric Analysis sheet for results Gravimetric Required Recommended Recommended | Stereoscopic Exam Color Carture Homogeneity Vermiculite Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM 9 Comments: Method: ELAP EPA Stereoscopic Exam Colo Color of Layer Asbestos Asbestos Asbestos | Morph No Slide 3 | Extinction Slide 4 | RI1 | RII D: | ptical Pris Scolor Cold | Slide 8 | Asb./Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders |
| 15 eld Number Gravimetric Required Recommended See gravimetric analysis sheet for results See SM-V Required See SM-V analysis sheet for results 16 ield Number Gravimetric Required Recommended See gravimetric analysis sheet analysis sheet | Stereoscopic Exam Color Creature Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Of Layers Asbestos Homogeneity Vermiculite # of Layers Asbestos | Morph Slide 3 SCANN Morph | Extinction Slide 4 | RI1 | RII D: | ptical Pris Scolor Cold | Slide 8 | Asb./Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 15 eld Number Gravimetric Required Recommended analysis sheet for results SM-V Required analysis sheet for results SM-V Required Gravimetric Required Recommended Recommended See gravimetric Required analysis sheet for results | Stereoscopic Exam Color Clexture Homogeneity Vermiculite Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Stereoscopic Exam Color of Layer ELAP EPA Stereoscopic Exam Color of Layer Asbestos Color of Layer Detected Yes | Morph No Slide 3 SCANN Morph No | Extinction Slide 4 Extinction | RI1 | RII D | Slide 7 | Slide 8 C. operties or, Pleo Bir | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Agrosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| 15 eld Number Gravimetric Required Recommended See gravimetric analysis sheet for results See SM-V Required See SM-V analysis sheet for results 16 ield Number Gravimetric Required Recommended See gravimetric analysis sheet analysis sheet | Stereoscopic Exam Color Creature Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color Of Layers Asbestos Homogeneity Vermiculite # of Layers Asbestos | Morph Slide 3 SCANN Morph | Extinction Slide 4 | RI1 | RII D: | ptical Pris Scolor Cold | Slide 8 | Asb./Ver. PT | Total PT Total PT Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Aprosite | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |
| 15 eld Number Gravimetric Required Recommended analysis sheet for results SM-V Required analysis sheet for results SM-V Required analysis sheet for results Gravimetric Required Recommended Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color CTexture Homogeneity Vermiculite Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Stereoscopic Exam Color Comments: Method: ELAP EPA Stereoscopic Exam Color Counts Stereoscopic Exam Color Color Cayer Detected Yes Point Counts Side 1 Slide 2 | Morph No Slide 3 SCANN Morph No | Extinction Slide 4 Extinction | RI1 | RII D | Slide 7 | Slide 8 C. operties or, Pleo Bir | Asb./Ver. PT | Total PT | Results PLM % Chrysotile Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile Agrosite Other | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Fiberglass Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| 15 eld Number Gravimetric Required Recommended Analysis sheet for results See SM-V Analysis sheet for results 16 ield Number Gravimetric Recommended Recommended Recommended See gravimetric analysis sheet for results SM-V Required See SM-V See SM-V | Stereoscopic Exam Color Clexture Homogeneity Vermiculite Homogeneity Vermiculite Political State 2 Point Counts Slide 1 Slide 2 PLM NOB PLM POLITICAL State 2 PLM NOB PLM POLITICAL State 2 PLM Stereoscopic Exam Color Counts State 2 Homogeneity Vermiculite Homogeneity Vermiculite Players Asbestos Color of Layer Detected Yes Point Counts State 1 Slide 2 PLM NOB State 2 PLM Stereoscopic Exam Color State | Morph No Slide 3 SCANN Morph No | Extinction Slide 4 Extinction | RI1 | RII D | Slide 7 | Slide 8 C. operties or, Pleo Bir | Asb./Ver. PT | Total PT Total PT Total PT | Asbestos Results PLM % Amosite Other Asbestos Results PLM % Chrysotile Agricultural Agricultu | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Other Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Extinction Fiberglass Cother | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |
| 15 | Stereoscopic Exam Color Clexture Homogeneity Vermiculite Homogeneity Vermiculite Political State 2 Point Counts Slide 1 Slide 2 PLM NOB PLM POLITICAL State 2 PLM NOB PLM POLITICAL State 2 PLM Stereoscopic Exam Color Counts State 2 Homogeneity Vermiculite Homogeneity Vermiculite Players Asbestos Color of Layer Detected Yes Point Counts State 1 Slide 2 PLM NOB State 2 PLM Stereoscopic Exam Color State | Morph No Slide 3 Scann Morph No Slide 3 | Extinction Slide 4 Extinction | RII Slide 5 | RII D | ptical Pr S Color Colo Q. ptical Pr S Color Colo Slide 7 | Slide 8 C. operties or, Pleo Bir | Asb./Ver. PT | Total PT Total PT Total PT | Asbestos Results PLM % Amosite Other Asbestos Results PLM % Chrysotile Agricultural Agricultu | PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Cellulose Fiberglass Other Cellulose Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

ATC - New York

BULK ASBESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Microscopes: OLYMPUS BH-2/

| | Client / Project PANYN | AN LIVES | PRINKL | EK KEF | IAR | | | · | Project | Number 214PN | IPEPJ1 | |
|--|--|------------------------|--------------|---------|---|------------|-----------------------------|--------------|----------------|---|--|---|
| | Analysis Date 4/0 | /2021 | _ Analyst | | | AL | | | Batch N | 34 | 619 | EMPERATURE S |
| 1 17 Field Number | Stereoscopic Exam | \overline{a} | | | PLM O | otical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colol Now Pexture | Morph | Extinction | RII | RI DS | Color Colo | r, Pleo Bin | ef Sign Oth | er Identity | Chrysotile | 95 Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | | | | | | | | | Amosile Other | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | | Oale | Other |
| analysis sheet for results | Color of Layer Detected Yes | s No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Side 1 Slide : | 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required 🛭 | 100 | | | | | | | 0 | <u> 200</u> | 0 | Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| See SM-V 🗆 analysis sheet | NOB PLM Comments: | | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: ELAP EPA | Z SCAN | INING OPTI | ON | | Q. | C. 🗆 | | | | | |
| 2 18 Field Number | ↑ Stereoscopic Exam | | | | PLM O | otical Pro | operties | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Gravimetric | Color Diow, faxture | Morph | Extinction | RII | Ri DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | Chrysotile | 95 Celiulose | Mineral Filler |
| Required 🗆 | | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer Detected Ye | s No | | | | | | | | | ☑ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide : | 2 Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb, Or %Ver. | Extinction Fiberglass Isotopic | |
| Required [| PLM | | | | | | | 0 | 295 | 9 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | LIGHT STATE | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | 10. | ~ <u></u> | | | | Birefringence | |
| | Method: ☐ ELAP ☐ EPA | LG SCAN | INING OPTI | ON | *************************************** | <u> </u> | C. 🗆 | | | | | <u> </u> |
| 3 19 Field Number | Stereoscopic Exam | <u> </u> | - | | | otical Pro | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Hall Latexture | Morpi | Extinction | RII | RI I DS | Color Colo | or, Pied Bir | ef Sign Otl | ner identity | Chrysotile | Cellulose | Mineral Filler |
| | A 4000 C | | | | | | | | | | | |
| Required 🗆 | Homogeneity Vermiculite | - 4 | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🛘 | , | - | | | | | | | MITTER ANDREWS | Anosite | Fiberglass Other | Organic Binders Vermiculite* Other |
| | | s No | | | | | | | | | Other Other | Vermiculite* |
| Recommended See gravimetric analysis sheet | # of Layers Asbestos | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | | Other | Vermiculite* |
| Recommended See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | Other | Other Gellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | Vermiculite*Other * If vermiculite is >10% the |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | | _ | Other | Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | Vermiculite* |
| Recommended See gravimetric D analysis sheet for results SM-V Required | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide: PLM NOB PLM Comments: | 2 Slide 3 | | | Slide 6 | | | | _ | Other | Other Desilulose Ondulose Extinction Defiberglass Isotopic Synthetic High Biretringence | Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide PLM NOB PLM NOB PLM Comments: Method: ELAP EPA | 2 Slide 3 | Slide 4 | | | Q. | С. 🗆 | | _ | Other %Asb. Or %Ver. | Other Sellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide: PLM NOB PLM Comments: | 2 Slide 3 | INING OPTI | ION | PLM O | Q. | C. operties | 0 | 290 | Other | Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Coor | 2 Slide 3 | | ION | PLM O | Q. | C. operties | 0 | _ | %Asb. Or %Ver. Asbestos Results PLM % Chrystile | Other Ot | Vermiculite* Other If vermiculite is >10% the tevel of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| Recommended See gravimetric D analysis sheet for results SM-V Required See SM-V D analysis sheet for results 4 20 Field Number | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide: PLM NOB PLM Comments: Method: ELAP EPA Storeoscopic Exam Color | 2 Slide 3 | INING OPTI | ION | PLM O | Q. | C. operties | 0 | 290 | %Asb. Or %Ver. Asbestos Results PLM % | Other Ot | Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric Required Recommended See gravimetric See gravimetric | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide PLM NOB PLM Comments: Method: ELAP EPA Storeoscopic Exam Color Vermiculite Homogeneity Vermiculite | 2 Slide 3 | INING OPTI | ION | PLM O | Q. | C. operties | 0 | 290 | Asbestos Results PLM % Chrystile Aprosite | Other Other Other Other Other Otherse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric Required Recommended Recommended | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide PLM NOB PLM Comments: Method: ELAP EPA Storeoscopic Exam Color Vermiculite Homogeneity Vermiculite | 2 Slide 3 | INING OPTI | ION | PLM O | Q. | C. operties | 0 | 290 | Asbestos Results PLM % Chrystile Aprosite | Other Other Other Other Other Otherse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass | Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Ciganic Binders Vermiculite* |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | # of Layers Asbestos | 2 Slide 3 SCAN Morph | INING OPTI | ION | PLM O | Q. | C. operties | 0 | 2so | Asbestos Results PLM % Chrystile Aprosite | Other Other Other Other Other Otherse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose 7 Fiberglass Other | Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Ciganic Binders Vermiculite* |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | # of Layers Asbestos Asbestos Color of Layer Detected Ye | 2 Slide 3 SCAN Morph | n Extinction | ION RIT | PLM O | Q. | C. operties or, Pleo Bir | ef Sign Oil | 2so | Asbestos Results PLM % Chrystile Apriosite Other | Other Other Other Other Other Other Other Fibrous PLM % Cellulose Other Othe | Vermiculite* Other If vermiculite is >10% the tevel of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample |
| Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 20 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Ye Point Counts Slide 1 Slide: PLM NOB PLM Comments: Method: ELAP EPA Stereoscopic Exam Color | 2 Slide 3 SCAN Morph | n Extinction | ION RIT | PLM O | Q. | C. operties or, Pleo Bir | ef Sign Oll | 2so | Asbestos Results PLM % Chrystile Apriosite Other | Other Other Other Other Other Other Other Other Fibrous PLM % Cellulose Tiberglass Other | Vermiculite* Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* Other |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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-ATLAS ATC

ATC - New York

Client / Project PANYNJ/ FIRESPRINKLER REHAB

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET

Microscopes: OLYMPUS BH-2 /

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| | Client / Project PANYNJ/ | LIVES | KIINKL | EKKEH | AB | | | | Project | Number 214PN | IPEPJ1 | - / |
|--|---|--------------------------|---------------------|-------------|----------|-------------|---------------------------------|--------------|--------------|--|---|---|
| | Analysis Date 4/9 /2 | 2021 | Analyst | | _ | Dr | - | | Batch N | lumber 21- | 619 _T | EMPERATURE & |
| 1 21 Field Number | Stereoscopic Exam | T | | | PLM Op | otical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous |
| Gravimetric Required Recommended See gravimetric | Cdo Lexture Homogeneity Vermiculite Asbestos | Morph | Extinction | RII | RI II DS | Color Color | r, Pleo Bir | ef Sign Oth | ner Identity | Chrysotile | Cellulose Fiberglass Other | 9 Mineral Filler Organic Binders Vermiculite* Other |
| analysis sheet for results | Color of Layer Detected Yes N | No | | | | | == | == | == | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Fiberglass Isotopic | |
| Required See SM-V | NOB PLM | | | | | | | 0 | 200 | δ | Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| | Method: Æ ELAP □ EPA | SCAN | NING OPTIO | ON | | Q.C | C. 🗆 | | | | | |
| 2 22 Field Number | Stereoscopic Exam | | F-VV | B1 - | | otical Pro | | | 13 0 | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | color hife Texture 5 | Morph | Extinction | RII | RIII DS | Color Colo | r, Pleo Bir | ef Sign Otl | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | 1 | | | | | | | | Anosite | Fiberglass | Organic Binders Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos Color of Layer Detected Yes N | No. | | | = | | == | | | | ☐ Cellulose Ondulose | Other |
| for results SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| Required | PLM O | | | 1 | | | | 0 | 200 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | 1100 | | | | | | , , , | | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet | Comments: | , | | | | | | | | | Direningence | |
| for results | Method: PELAP EPA | SCAN | NING OPTIC | ON | | 0.0 | C. [] | | | | 1 | |
| marchanics | Method: ☐ ELAP ☐ EPA | SCAN | NING OPTIO | ON | | | C. 🗆 | | | Asbestos | Other Fibrous | Non Fibrous |
| 3 23 Field Number | Method: □ ELAP □ EPA Stereoscopic Exam | 1 | | | | otical Pro | operties | ef Sian Ot | her (dentity | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| 3 23 Field Number | | Morph | | RII | | | operties | ef Sign Ot | her Identity | Results PLM %, Chrysotile | PLM % | PLM % Mineral Filler |
| 3 23 Field Number | Stereoscopic Exam Color Texture Homogeneity Vermiculite | 1 | | | | otical Pro | operties | ef Sign Ot | her Identity | Results PLM %, | PLM % | PLM % |
| 3 23 Field Number Gravimetric Required | Stereoscopic Exam Color Texture Hornogeneity Vermiculite # of Layers Asbestos | Morph | | | | otical Pro | operties | ef Sign Ot | her Identity | Results PLM %, Chrysotile Apposite | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color A Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes | Morph | Extinction | RII | RI DS | otical Pro | operties or, Pleo Bir | | | Results PLM %, Chrysotile Agnosite Other | PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 | Morph | | | | otical Pro | operties | Asb,/Ver. PT | | Results PLM %, Chrystille Apposite Other %Asb. Or %Ver. | PLM % Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V See SM-V | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 | Morph | Extinction | RII | RI DS | otical Pro | operties or, Pleo Bir | | Total PT | Chrystille Apposite Other %Asb. Or %Ver. | PLM % Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Morph No Slide 3 | Extinction Slide 4 | RII | RI DS | otical Pro | operties or, Pleo Bir Slide 8 | Asb,/Ver. PT | Total PT | Results PLM %, Chrystille Apposite Other %Asb. Or %Ver. | PLM % Fiberglass Other Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method | Morph No Slide 3 | Extinction | RII | RI DS | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT | Results PLM %, Chrysotile Apriosite Other %Asb. Or %Ver. | PLM % Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color | Morph No Slide 3 | Extinction Slide 4 | RII Slide 5 | RIII DS | otical Pro | Slide 8 | Asb,/Ver. PT | Total PT | Asbestos Results PLM %, Chrysotile Aprosite Other %Asb. Or %Ver. | PLM % Fiberglass Other Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method ELAP EPA Stereoscopic Exam Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Morph No Slide 3 | Slide 4 | RII Slide 5 | RIII DS | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT | Results PLM %, Chrysotile Apriosite Other %Asb. Or %Ver. | PLM % Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 24 Field Number Gravimetric | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Methody ELAP EPA Stereoscopic Exam Color of Layer Vermiculite Homogeneity Vermiculite | Morph No Slide 3 | Slide 4 | RII Slide 5 | RIII DS | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT | Results PLM %, Chrysotile Aprosite Other %Asb. Or %Ver. | PLM % Fiberglass Other Other Difference Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 24 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method ELAP EPA Stereoscopic Exam Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Morph No Slide 3 SCANI | Slide 4 | RII Slide 5 | RIII DS | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT | Asbestos Results PLM %, Chrysotile Other Asbestos Results PLM %, Chrysotile Amosite | PLM % Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 24 Field Number Gravimetric Required Recommended See gravimetric See gravimetric See gravimetric | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Sline 1 Slide 2 PLM NOB PLM Comments: Methody ELAP EPA Stereoscopic Exam Color of Layers Asbestos Asbestos Homogeneity Vermiculite # of Layers Asbestos | Morph No Slide 3 SCANI | Slide 4 | RII Slide 5 | RIII DS | Slide 7 | Slide 8 | Asb,/Ver. PT | Total PT 200 | Asbestos Results PLM %, Chrysotile Other Asbestos Results PLM %, Chrysotile Amosite | PLM % Fiberglass Other Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 24 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method ELAP EPA Stereoscopic Exam Color of Layer Asbestos Color of Layer Slide 1 Slide 2 | Morph Slide 3 SCANI | Slide 4 NING OPTIO | RI1 | RIII DS | Side 7 | Slide 8 | Asb,/Ver. PT | Total PT 200 | Asbestos Results PLM %, Chrysotile Other %Asb. Or %Ver. Chrysotile Aspestos Results PLM %, Chrysotile Other | PLM % Fiberglass Other Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* |
| 3 23 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 24 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color Texture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method ELAP EPA Stereoscopic Exam Color of Layer Asbestos Color of Layer Slide 1 Slide 2 | Morph Slide 3 SCANI | Slide 4 NING OPTIO | RI1 | RIII DS | Side 7 | Slide 8 | Asb,/Ver. PT | Total PT | Asbestos Results PLM %, Chrysotile Other %Asb. Or %Ver. Chrysotile Applosite Other Asbestos Results PLM %, Chrysotile Applosite Other | PLM % Fiberglass Other Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Organic Binders Vermiculite* Other If vermiculite is >10% the |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing s10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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25

analysis sheet

for results

analysis sheet

Method: ZELAP DEPA

SCANNING OPTION

Birefringence

-ATLAS

ATC

DANIVALL / FIDECODINIZIED DELLAD

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| BULK ASBESTOS ANALYSIS SHEET | Microsc |
| | OLYMPUS |
| LED DELLAD | NIKON OPTII |

| | Client / Project PANTIN | / FIRES | PRINK | LEK KER | 1AB | | | | Projec | Number 214PN | NPEPJ1 | _ |
|---|---|---------|------------|---------|----------|-----------|-------------------------|--------------|---------------|---------------------------|--|---|
| | Analysis Date 4/1/ | 2021 | _ Analyst | | ~ | DA | | | Batch | Number 21- | 619 | TEMPERATURE*c |
| 1 29 Field Number | Stereoscopic Exam | | | | PLM O | otical Pr | operties | 88 | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Con Luc Stexage C | Morph | Extinction | RII | RI DS | Color Col | or, Pleo Bi | ref Sign Ot | ther Identity | Chrysofile | 70 Cellulose | 2 Mineral Filler |
| Recommended | # of Layers \(\text{Asbestos} \) | 1_ | | ==: | | | | | | other | Other | |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes | No | = | = | | | | | | | Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P1 | Total PT | %Asb. Or %Ver. | Fiberglass Isotopic | |
| Required See SM-V analysis sheet | 1 | | | | | | | 0 | 200 | 0 | Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. |
| for results | Comments: | SCAN | NING OPT | ION | | Q. | C. 🗆 | | | | Diterringence | |
| 2 30 | | 1 | | | DI M O | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morph | Extinction | RII | | | operties or, Pleo Bi | | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | color-Mitel Assister 1º | | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | 4_ | = | | | | | | | Other | Fiberglass Other | Organic Binde |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes | No _ | | | | = | | | | / | Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| Required | PLM S | | | | | 20000000 | J. September 1 | 0 | 2010 | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V □ | 1100 5111 | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a samp might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | / | - | | | | | | | | Birefringence | See Note #1. |
| | Method: ☐ ELAP ☐ EPA | 1 SCAN | NING OPT | ION | | Q. | c . □ | | | | | |
| 3 31 Field Number | Stereoscopic Exam | | | | | - | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous , PLM % |
| Gravimetric | Cold Could Texture 6 | Morph | Extinction | RII | RI II DS | Color Col | or, Pleo Bi | ref Sign Ot | her Identity | Chp/sotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | / | | | | | | | | Amosite | Fiberglass | 0 |
| Recommended See gravimetric | # of Layers Asbestos | = | | | | | | | | Other | Other | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| Required | PLM O | | | | | | | | 200 | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | | | | | | | | 0 | 200 | O . | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a samp might be underestimated. |
| analysis sheet for results | Comments: | / | | | | | | | | | Birefringence | See Note #1. |
| | Method: ☑ ELAP □ EPA | ☐ SCAN | NING OPT | ION | | Q. | c. 🗆 | | | | | |
| 4 32 Field Number | Stereoscopic Exam | | | | | | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Dow' Nexture C- | Morph | Extinction | RII | RI II DS | Color Col | or, Pleo Bi | ref Sign Ot | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | 1 | | | | | | | | Armosite | Fiberglass | Organic Binde |
| Recommended See gravimetric | # of Lavers Ashestos | | | | | | | | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLMO | | | _ | | | | 0 | 200 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | 4 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: DELAP DEPA | 10000 | NING OPT | | | lo | c. 🗆 | | | | Birefringence | |
| | | | | | | | | | | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing \$10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

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ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 **BULK ASBESTOS ANALYSIS SHEET** Microscopes: OLYMPUS BH-2 / VIKON OPTIPHOT Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number ___ 214PNPEPJ1 TEMPERATURE °C Analysis Date 4/9/2021 Analyst M 21-619 Batch Number Ashestos Non Fibrous Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RI DS Color Color, Pleo Biref Z Cellulose
S Fiberglass Mineral Filler Chryso _ Organic Binde O Vermiculite* Gellulose Ondul Extinction Fiberglass Isotopi Point Counts Stide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver, PT Total PT %Asb. Or %Ver. 200 \mathcal{O} If vermiculite is > 10% the 0 Required [evel of asbestos in a sample l Horse Hair: Scales, might be underestimated. NOB PLM See SM-V Low to Moderate See Note #1

Asbestos Other Fibrous 26 Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Mineral Filler $\mathcal{H}_{\mathsf{Cellulose}}$ Required Fiberglas Organic Binde Vermiculite* See gravimetric [analysis sheet for results Cellulose Ondulos Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V 0 200 PLM If vermiculite is >10% the 0 Required [evel of asbestos in a sample Horse Hair: Scales, might be underestimated. See Note #1, NOB PLM See SM-V Low to Moderate Birefringence analysis sheet for results Method: DELAP DEPA SCANNING OPTION Q.C.

Q.C.

| 3 27 | Stereoscopic Exam | PLMO | otical Properties | Asbestos | Other Fibrous | Non Fibrous |
|-------------------------------|--------------------------------|---------------------------------|---|--|--|---|
| Field Number | | · | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color an Si Vesture | Morph Extinction RI1 RI DS | Color Color, Pleo Biret Sign Other Identity | Chrysotile | Z Cellulose | 20 Mineral Filler |
| Required 🛘 | Homogeneity Vermiculite / | | | Amosite | Fiberglass | Organic Binders |
| Recommended | | <u> </u> | | | Other | Vermiculite* |
| See gravimetric □ | # of Layers N Asbestos N | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 | Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM Th | | 0 200 | J | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | ************************************** | Birefringence | 330 71010 21 71 |
| | Method: ∠ ELAP □ EPA 〔 | SCANNING OPTION | Q.C. □ | | | |

| L | | | | L | |
|-------------------------------|---------------------------------|---|---------------------------|------------------------------------|---|
| 4 28 Field Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Required [7] | COMMINE SHAKERE P | Morph Extinction RI 1 RI DS Color Color, Pleo Birel Sign Oth | er Identity Chrysotile | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended | # of Layers Asbestos | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose Extinction | Ouler |
| SM-V | Point Counts Slide 1 Slide 2 Sl | ide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT | Total PT %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM TUV | | 250 0 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | | | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | Birefringence | oee Mote #1. |
| | Method: ☐ ELAP ☐ EPA ☐ | SCANNING OPTION Q.C. | | | |

Methods:
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116
ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1; ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of ashestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET Microscopes: OLYMPUS BH-2 / Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Date 4 / 0 /2021 Analyst TAN 21-619 Batch Number 33 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RI | DS Color Color, Pleo Biref Sign Other Ident cold in white / W Mineral Filler Gravimetri Cellulose Required [Organic Binder O Vermiculite* # of Lavers See gravimetric Other analysis sheet Color of Layer Cellulose Ondulose Extinction for results Point Counts Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 %Asb. Or %Ver. Fiberglass Isotop SM-V Synthetic High If vermiculite is >10% the 200 Required [evel of asbestos in a sample Horse Hair: Scales NOB PLM night be underestimated. See SM-V [Low to Moderate analysis sheet for results Method: ELAP EPA Q.C. SCANNING OPTION Asbestos Non Fibrous Other Fibrous 34 Stereoscopic Exam **PLM Optical Properties** Results PI M 9 PLM % RI DS Color Color, Pleo Biref Sign Other Mineral Filler Cellulose Chrysotil Required [Amosite Organic Binde Other Other Vermiculite* Other analysis sheet Color of Layer Cellulose Ondu Extinction for results Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Ash Ver PT Total PT Point Counts Slide 1 %Asb. Or %Ver. SM-V Synthetic High If vermiculite is >10% the Birefringence evel of asbestos in a sample Horse Hair: Scales, 0 night be underestimated. NOB PLM See SM-V [Low to Moderate See Note #1. analysis sheet Q.C. Method: ELAP EPA SCANNING OPTION 35 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RIII DS Color Color Pleo Biref Sign Other Gravimetri Cellulose ✓ Mineral Filler Required 8 Fibergla Organic Binder Vermiculite* See gravimetric analysis sheet Color of Laver Cellulose Ondul for results SM-V Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Synthetic High Required [evel of asbestos in a sample 8 NOB PLM night be underestimated. See SM-V [Low to Moderate analysis sheet for results Method: DELAP EPA SCANNING OPTION Q.C. 36 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Cellulose Mineral Filler Chrysoti Required Fiberala Organic Binders Other Other Vermiculite* of Layers Other analysis sheet Color of Laver for results Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Synthetic High If vermiculite is >10% the Required [Birefringence evel of asbestos in a sample Horse Hair: Scales, might be underestimated. NOB PLM See SM-V [analysis sheet for results Method: □ ELAP □ EPA SCANNING OPTION Q.C.

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing ≥10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

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BULK ASBESTOS ANALYSIS SHEET

| | Client / Project_PANYNJ/ | FIRESI | PRINKI | FR RFF | HAR | o ruuru | | | | Number 214PN | IDEDI1 | NIKON OPTIPHOT |
|--|---|--------------|------------|---------|-----------|--|--------------------------|--------------|---|----------------------------|--|---|
| | 0 | 021 | Analyst | LIVINLI | < | NE | | | | Number 214PN Number 21- | 619 | EMPERATURE 2 |
| 1 37 Field Number | Stereoscopic Exam | T | | - | PLM O | otical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required Recommended | Color | Morph | Extinction | RII | RIII DS | S Color Colo | or, Pleo Bir | ef Sign Otl | her Identity | Chrysotile Amosite | Cellulose Fiberglass | Mineral Filler Organic Binder Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes M | lo | | | | | | | | | Cellulose Ondulose Extinction | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required See SM-V analysis sheet | NOB PLM O | | | | | | | 0 | 100 | ٥ | Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | If vermiculite is >10% the level of asbestos in a sampl might be underestimated. See Note #1. |
| for results | Comments: Method: □ ELAP □ EPA | □ SCANN | NING OPTI | ON | | Q. | c. 🗆 | | | | | |
| 2 38 Field Number | Stereoscopic Exam | I | F 4-4- | DI. | | and the same | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required □ | Color Sour Fexture F | Morph | Extinction | RI1 - | RIII DS | S Color Colo | or, Pleo Bir | ef Sign Otl | her Identity | Chrysetile | Cellulose Fiberglass | Mineral Filler Organic Binder |
| Recommended See gravimetric analysis sheet | # of Layers Asbestos Color of Layer Detected Yes N | | _ | | | | | === | | Other | Other | Vermiculite* |
| for results | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| SM-V Required □ See SM-V □ | PLM ON ON ON ON ON ON ON ON ON ON ON ON ON | Olide o | | Oldo o | Side 0 | Olide 7 | Side 0 | 0 | 250 | © | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. |
| analysis sheet for results | | SCAN | NING OPTI | ON | | | C. 🗆 | | | Asbestos | Birefringence Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morph | Extinction | RII | | STREET, STREET, ST | operties or, Pleo Bir | ef Sign Ot | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required | Color Www.Texture Homogeneity Vermiculite | | _ | | | | | | | Chrysotile | Cellulose Fiberglass | Mineral Filler Organic Binde |
| Recommended See gravimetric analysis sheet | # of Layers Asbestos | | \equiv | | | | == | | == | Other | Other | Vermiculite* |
| for results | Color of Layer Detected Yes M | | 084-1 | | T OUT - O | T 004-7 | Lorino | | Ior | %Asb. Or %Ver. | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | 100000000000000000000000000000000000000 | %ASD, Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required See SM-V | NOB PLM | | | | | | | 0 | 200 | O . | Birefringence Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: □ ELAP □ EPA | SCAN | NING OPTI | ION | | lo. | c. 🗆 | | | | Birefringence | |
| 4 40 | Stereoscopic Exam | T | | | PI M O | | operties | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number Gravimetric | Cold Whytevare (7 | Morph | Extinction | RII | | de la constante de la constant | or, Pleo Bir | ef Sign Ot | her Identity | Results PLM % Chrysotile | PLM % | 9 O |
| Required | Homogeneity Y Vermiculite | | | | | | _== | = | === | Chrysotile | Cellulose Fiberglass | Mineral Filler Organic Binde |
| Recommended | # of Layers Asbestos | = | _ | == | | == | | _== | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes N | 10 | _ | : | | | | | | | € Cellulose Ondulose Extinction | Other |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required ☐ | NOB PLM | | | | | | | 0 | 200 | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the level of asbestos in a sampl might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | T/SCAND | UNO ORT | ION | | 10 | сП | | | | Birefringence | enemant in the control (FREST F) |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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| NVLAP 101187-0 |
|----------------|
| ELAP 10879 |
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ee Note #1.

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|--|----------------|------------|-------------------------|
| BULK ASBESTOS ANALYSIS SHEET | | | Microscop OLYMPUS 81 |
| LER REHAB | Project Number | 214PNPEPJ1 | NIKON OPTIPI |

| | Client / Project PANYNJ | / FIRES | PRINKL | ER REF | IAB | | | | Project | Number 214PN | IPEPJ1 | -/ |
|---------------------------------|---|-----------|--------------|--------------|-------------|------------|-------------|--------------|---------------|---------------------------|---|---|
| | Analysis Date 4/2 | 2021 | _ Analyst | | < | M | | | Batch N | lumber 21-6 | 619 _{TI} | EMPERATURE O |
| 1 45 Field Number | Stereoscopic Exam | | | | | tical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Cold Cold Cold Cold Cold Cold Cold Cold | Morph | Extinction | | RIII DS | Color Colo | r, Pleo Bir | ef Sign Oth | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | _{ | | | | | | | | Annosite Other | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric 🗆 | # of Layers Asbestos | -/- | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondutose Extinction | |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass isotopic ☐ Synthetic High | |
| Required 🗆 | PLM | | | | | | | 0 | ৴৶৽ | 9 | Birefringence | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | NOB PLM Comments: | | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: ZELAP DEPA | Z SCAN | NING OPTI | ON | | Q.0 | . 🗆 | | | | | |
| ² 46 | Stereoscopic Exam | | | | PLM Or | tical Pro | perties | | • | Asbestos | Other Fibrous | Non Fibrous |
| Field Number Gravimetric | | Morph | Extinction | RI 1 | | Color Colo | | ef Sign Ot | her Identity | Results PLM % Chrysgtile | PLM % | PLM % Mineral Filler |
| Required [| 1 | | | | | | | | | Ampsite | Fiberglass | Organic Binders |
| Recommended | # of Layers/ Asbestos | 1 | | | ········· | | | | | Sther | Other | Vermiculite* |
| See gravimetric analysis sheet | Color of Layer Detected Yes | No. | | | | | | | | | Cellulose Ondulose | Other |
| for results | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb, Or %Ver. | Fitinction Fiberglass Isotopic | |
| SM-V Required □ | PLM D STATE | - Cindo o | O, do 4 | Çildə ü | Ollad 5 | Çiidə i | 0 | 0 | 7.32 | | Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V 🗆 | NOB PLM | | | | | | | | 12.00 | 0 | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated, See Note #1. |
| analysis sheet for results | Comments: | | | <u> </u> | ! | · | | | | | Birefringence | 000 14018 #1. |
| | Method: ☑ ELAP □ EPA | [] SCAN | NING OPTI | ON | | Q.0 | c. 🗆 | | | | | |
| 3 47 Field Number | Stereoscopic Exam | | | | | otical Pro | · | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Cun St. Vocature | Morpi | Extinction | RIT | RII DS | Calor Calo | r, Pleo Bir | ref Sign Ot | her identity | Chrysotile | 2 Cellutose | 20 Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended See gravimetric | # of Layers Asbestos | | | | | | | | | Other | Other | Vermiculite* Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Fiberglass Isotopic | |
| Required □ | PLM S | | | | | | | 9 | 200 | O | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V ☐ analysis sheet | NOB PLM | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate Bire!ringence | might be underestimated. See Note #1. |
| for results | Comments: Method: ☐ ELAP ☐ EPA | SCAN | INING OPT | ION | | Q. | c. 🗆 | | | | | |
| 4 48 | | 1 | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morp | h Extinction | RII | | ptical Pre | - | | ther Identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required □ | Color Tan Festive | | | | | | | | | Chrysotile Amosite/ | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended | Homogeneity Vermiculite | | | | | | | | | Olber | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | 1 | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Extinction | |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | Manufacture to a 1007 to |
| Required 🗆 | I | + | ļ | | | <u> </u> | | | 200 | <u> </u> | Birefringence ☐ Horse Hair: Scales, | If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| See SM-V | NOB PLM | | : | 1 | : | t | ; | | | | Low to Moderate | See Note #1 |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Method: GELAP EPA

analysis sheet for results

D SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Q.C.

BULK ASBESTOS ANALYSIS SHEET

Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number __214PNPEPJ1 Analysis Date 4 / 9 /2021 Analyst 21-619 Batch Number

Non Fibrous Asbestos Other Fibrous 41 **PLM Optical Properties** Results PLM % PLM % Rt | DS Color Color, Pieo Biref Sign Other Identit Gravimetrio Cellulose Mineral Filler Vermiculite* See gravimetric l analysis sheet for results SM-V %Asb. Or %Ver Synthetic High If vermiculite is > 10% the evel of asbestos in a sample NOB PLM See SM-V ... Low to Moderate See Note #1. analysis sheet for results Method: Z ELAP D EPA SCANNING OPTION Q.C. 🗆

Asbestos Non Fibrous Other Fibrous 42 **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % PLM % Gravimetri 7_ Fibergk Required [Organic Binde Vermiculite* See gravimetric E analysis sheet Cellulose Ondulos for results Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver, PT Total PT %Asb. Or %Ver. SM-V If vermiculite is >10% the PLM evel of asbestos in a sample l Horse Hair: Scale NOB PLA might be underestimated. See SM-V Low to Moderate See Note #1. analysis sheet for results Q.C. 🗆 Method: ☑ ELAP ☐ EPA SCANNING OPTION

| 3 43 Field Number | Stereos | copic E | xam | | | | PLM C | Optical P | ropertie | 3 | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|-------------------------------|----------------|-----------------|----------------|----------|-------------------------|--|-------------|-------------|--------------|----------|--------|-------------|---------------------------------------|--|--|
| Gravimetric | colorby | C Textur | · (_ | Morph | Extinction | RII | RI I | OS Color Co | olor, Pleo E | iref Sig | n Oth | er Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity | Vermi | iculite | / | | | | | | | | | Annosite | Fiberglass | Organic Binders |
| Recommended 🗆 | | Γ | | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric L | # of Layers | Asbes | stos | /_ | | | | | | | | | | AL ALL ALL ALL ALL ALL ALL ALL ALL ALL | Other |
| analysis sheet for results | Color of Layer | Detec | ted Yes N | lo | | | | | | | | | | O Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slice 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./V | ег. РТ | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM & | SA | | | | | | | | | 0 | 209 | ٥ | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | [, , | | | | | | | | 1 | | | | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | ************** | / | Combi Anno Almaha and A | en americano de la constante de la constante de la constante de la constante de la constante de la constante d | | | | | | | · · · · · · · · · · · · · · · · · · · | Birefringence | |
| | Method: Z EL | AP [| EPA | SCAN | NING OPTI | NC | | Q | .c. 🗆 | | | | | | |

| iui results | | | WT-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7 | | | |
|--|--|-------------------------------|--|---------------------------|------------------------|---|
| | Method: ZELAP 🗆 EPA | SCANNING OPTION | Q.C. 🗆 | | | |
| 4 44 Field Number | Stereoscopic Exam | PLM | 1 Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colo Marta C | Morph Extinction RI1 RI | DS Color Calor, Pleo Biref Sign Other Identity | Chrysolile | Cellulose | 100 Mineral Filler |
| Required [| Homogeneity 😽 Vermiculite | / | | Amesite | Fiberglass | Organic Binder |
| Recommended \square | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos/ Color of Layer Detected Yes No | | | | ⊕€eliulose Ondulose | Other |
| TOF TESURS | | | | | Extinction | |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide | e 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM (S) | | Cos(S) | | | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | | ~ | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | Birefringence | |
| | Method: ☑ ELAP ☐ EPA | SCANNING OPTION | Q.C. □ | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Microscopes: OLYMPUS BH-2 /

| | Client / Project PANYNJ, | | BULK ASBEST | OS ANALY | /SIS SH | EET | | Number 214PN | IDEDI1 | Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT |
|---|---|-------------------|-----------------|----------------|-----------------|--------------|--------------------|---------------------------|---|---|
| | ~ | 2021 Analyst _ | < | M | | | Project Batch N | 24 | 619 | EMPERATURE C |
| 1 49 Field Number | Stereoscopic Exam | | PLM C | Optical Pro | perties | - | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color La Texture | Morph Extinction | RI1 RII I | OS Color Color | , Pleo Bire | f Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🖵 | Homogeneity Vermiculite | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended See gravimetric | # of Layers Asbestos | | | | | | | Other | Other | Vermiculite* |
| analysis sheet | Color of Layer Detected Yes | No | | | | | | | ☐ Cellulose Ondulose | Otrica |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| Required | PLM | | | | I I | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V □ | 110001111111111111111111111111111111111 | -7 | | | | 0 | 200 | J | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: D ELAP D EPA | SCANNING OPTIO | W. | lq.c | | | | | Birefringence | |
| 2 50 | | SCANNING OF TIC | | 1.00000 | 90.1100 | | 1 | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morph Extinction | | Optical Pro | • | ef Sign Oth | ner Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color MulteTexture | | KIT KIT | | , ried bile | a sign Oil | er identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗹 | Homogeneity 4 Vermiculite | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Layers Asbestos | | | | | | _ | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes | No | | | | | == | | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| Required | PLM / | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | ^ | | | 0 | 2~ | U | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: ☑ ELAP □ EPA | SCANNING OPTIO | ON . | Q.0 | ;. _□ | | | | Ditentingence | |
| 3 51 | Stereoscopic Exam | / | DI M (| Optical Pro | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | 1.016.1 | Morph Extinction | | DS Color Color | | ef Sign Oth | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required | Color Color CTexture | | | | | | | Chrysotile Amosite | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended | Homogeneity Vermiculite | 4 | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | A = = : | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | == | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM P | 7 | | | | 0 | h | ,) | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: DELAP DEPA | SCANNING OPTIC | ON. | loc | D. 🗆 | | | | Diemigenee | |
| | mediod, great in the | I SCANNING OF THE | , i | 14.0 | ,. L | | | Ashartas | 04 - 54 | l New Fiberra |
| 4 52 Field Number | ↑ Stereoscopic Exam | | | Optical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colo Drawtexture G | Morph Extinction | RI1 RI | DS Color Color | r, Pleo Bin | ef Sign Ott | her Identity | Chrysotile | Cellulose | 100 Mineral Filler |
| Required | Homogeneity Vermiculite | /= =: | | | | | == | Amosite | Fiberglass | 0 |
| Recommended | # of Lavers Ashestos | / | | | | | | Other | Other | |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 | Slide 8 | Asb./Ver, PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| | DI W (2) | 3.35.3 | | | | G | Ces | <u>ک</u> | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| Required See SM-V | 1 | | | | | | 200 | V | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | Birefringence | 535 HOIS #1. |
| | Method: FLAP DEPA | SCANNING OPTIC | ON | Q.C | : [] | | | | 1 | |

Methods:
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116
ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Microscopes:

BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ | / FIRESF | PRINKLI | ER REH | IAB | | | - | Drainet | Number 214PN | IPFP11 | NIKON OPTIPHOT |
|---|--|-------------|--------------|-------------|---|--|-------------|--------------|--------------|------------------------------|---|--|
| | | 2021 | Analyst | | | 7/4 | | | | Number 21- | | 20 |
| 1 50 | Ψ | -021 | Allalyst_ | | | 786 | | | Batch i | Asbestos | Other Fibrous | Non Fibrous |
| 1 53 Field Nurriber | Stereoscopic Exam | | | | | tical Pr | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Cold NOW Nexture 5 | Morph | Extinction | RI1 | RI DS | Color Colo | r, Pleo Bir | ef Sign Ot | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required [| Homogeneity Y Vermiculite | | | | | | | | | Annosite | Fiberglass | Organic Binders |
| Recommended | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | <i>u</i> | | | | | | | | | *************************************** | Other |
| analysis sheet for results | Color of Layer Detected Yes ! | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, P1 | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [| PLM O / | Ann | - | | | | | 0 | 300 | 0 | Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM | | | | | | | - G/- | | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| analysis sheet | Comments: | | | | I | <i>,</i> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | <u> </u> | <u> </u> | | Birefringence | See Note #1, |
| for results | Method: ZELAP DEPA | SCANN | ING OPTIO | N | | Q. | c. 🗆 | • | | LANGE COLOR | | |
| 2 54 | | | ************ | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | <u> </u> | | ~~~ | PLM Op | | - | | | Results PLM %/ | PLM % | PLM % |
| Gravimetric | Color Drawfaxture 5 | - Iviorph | Extinction | RIT | RI DS | Color Colo | r, Pleo Bir | er sign Ot | her Identity | Chp/sotile | Cellulose | Mineral Filler |
| Required [] | Homogeneity Vermiculite | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | | 7 | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | | | | | | | | | | | Other |
| for results | Color of Layer Detected Yes I | No | | | | | | | | 1 | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM O | | | <u>.</u> | | | | 0 | 200 | 8 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| analysis sheet for results | Comments: | 7 | ! | | 1 | | <u> </u> | 1 | .1 | | Birefringence | See Note #1, |
| | Method: ☑ ELAP ☐ EPA | SCANN | ING OPTIC | ON | | Q. | c. 🗆 | | | | | |
| ³ 55 | Stereoscopic Exam | | | | PI M Or | tical Pr | onerties | | . | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | | Morph | Extinction | RII | | Color Colo | - | ef Sign OI | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Cotol Characture | | | | *************************************** | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required [| Homogeneity Y Vermiculite | / | | | | | | | | Afnosite | Fiberglass | Organic Binders |
| Recommended | # of Layers Asbestos | 1 | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | |] | | | | | | | | | | Other |
| for results | Color of Layer Petected Yes I | No | | | | | | | | 1 | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P3 | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗌 | PLM O / J | | | | | | | 0 | 200 | 6 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V 🗆 | NOB PLM | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | 1 | | | Birefringence | Dec Note #1. |
| | Method: ☑ ELAP □ EPA | SCANN | IING OPTIO |)N | | Q. | C. 🗆 | | | | | |
| 4 56 | Stereoscopic Exam | | | | PLM Op | tical Pr | operties | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Δ | Morph | Extinction | RI± | | | r, Pleo Bir | ef Sign Ot | her Identity | Results PLM % | PLM % | PLM % |
| | | WOIDH | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Gravimetric | Color By Dwinexture F | - Worpii | | | | | | | | 1 / | | |
| Required [] | Homogeneity Vermiculite | Morph | | | | | | | | Amosite | Fiberglass | 1 –) |
| Required Recommended | Homogeneity Vermiculite | Worph | | | | | | | | 1 / | Fiberglass Other | Vermiculite* |
| Required ☐ Recommended ☐ See gravimetric ☐ analysis sheet | Homogeneity Vermiculite Asbestos | | | | | | | | | Amosite | Other | 1 –) |
| Required Recommended See gravimetric analysis sheet for results | Homogeneity Vermiculite 4 of Layers Asbestos Color of Layer Detected Yes | No | | | | | | | | Aynosite | Other Cellulose Ondulose Extinction | Vermiculite* |
| Required ☐ Recommended ☐ See gravimetric ☐ analysis sheet | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P7 | Total PT | Amosite | Other Cellutose Ondulose Extinction Fiberglass Isotopic | Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results | Homogeneity Vermiculite 4 of Layers Asbestos Color of Layer Detected Yes 1 Point Counts Side 1 Slide 2 | No | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | Aynosite | Other Cellutose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V | Homogeneity Vermiculite 4 of Layers Asbestos Color of Layer Detected Yes 1 Point Counts Side 1 Slide 2 PLM | No | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | | <u> </u> | Amosite Other %Asb. Or %Ver. | Other Cellutose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | Vermiculite* Other If vermiculite is >10% the |
| Required Recommended See gravimetric analysis sheet for results SM-V Required | Homogeneity Vermiculite 4 of Layers Asbestos Color of Layer Detected Yes 1 Point Counts Side 1 Slide 2 PLM | No Slide 3 | Siide 4 | | Slide 6 | ALLEXALIST MALES | Slide 8 | | <u> </u> | Amosite Other %Asb. Or %Ver. | Other ☐ Cellutose Ondulose Extinction ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | Other * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8 Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BUL

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

-ATLAS ATC

See SM-V □

for results

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010

| 01187 |
|--------|
| P 1087 |
| |

See Note #1.

| | | Phon | e. (212) 333 | 6-6260, Fax. (2 | 12) 353-3 | 299 01 8306 |) | | | ELAP 1087 |
|-------------------------------|---------------------------------|------------------------|--|------------------|---------------|---------------|----------|--|-------------------------------------|--|
| | | | BULK ASE | ESTOS ANAL | YSIS SH | EET | | | | Microscopes OLYMPUS BH-2 |
| | Client / Project PANYNJ/ | FIRESPRINK | ER REHA | В | | | Project | Number 214PN | IPEPJ1 | NIKON OPTIPHO |
| | Analysis Date 4/9/2 | 2021 Analyst | | SM | | | Batch N | Number21- | 619 | TEMPERATURE C |
| 1 61 | Stereoscopic Exam | | P | LM Optical Pr | operties | 1 | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Field Number Gravimetric | Coldry half Texture C- | Morph Extinction | RI1 R | II DS Color Col | or, Pleo Bire | of Sign Other | dentity | Chrysotile | PLM % Cellulose | PLM % Mineral Filler |
| Required | | | | | | | | Ampsite | Fiberglass | 1 |
| Recommended | Homogeneity Vermiculite | 1 | | | | | | other | Other | O Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes N | 10 | | | | | | | Gellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 S | Slide 6 Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| 107400000 | PLM | | | | 27//(5/2020) | | 200 | | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | NOB PLM | | | | - | 0 | 100 | 0 | Birefringence Horse Hair: Scales, | level of asbestos in a sampl might be underestimated. |
| See SM-V analysis sheet | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: Method: ☑ ELAP □ EPA | 1 | | - 10 | C. 🗆 | | | | | |
| | Method: ☑ ELAP □ EPA | SCANNING OPTI | ON | JQ. | C. 🗆 | | | | L | L |
| 2 62 Field Number | Stereoscopic Exam | | | LM Optical Pr | | | | Asbestos Results PLM %/ | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Cololula Texture 6 | Morph Extinction | RI1 R | III DS Color Col | or, Pleo Bire | f Sign Other | dentity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity 4 Vermiculite | | | | | | | Amosite | Fiberglass | The second secon |
| Recommended | | 1== | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | / | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes N | 10 | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| 558-01034 | PLM O Oo | | | | | 0 | 200 | _ | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | NOB PLM | | | | | 0 | | 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sampl might be underestimated. |
| See SM-V analysis sheet | Comments: | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | | SCANNING OPTI | ON | In | C. 🗆 | | | | | |
| | method: to ELAT 13 ETA | ZI SCANNING OF T | | | 0. 🗆 | | | | | , |
| 3 63 Field Number | Stereoscopic Exam | | P | LM Optical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colpry La Texture | Morph Extinction | RI1 R | III DS Color Col | or, Pleo Bire | ef Sign Other | dentity | Chp/sotile | Cellulose | Mineral Filler |
| Required | Homogeneity 4 Vermiculite | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended | Tromogenery | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | 7.5 | Other |
| analysis sheet for results | Color of Layer Detected Yes N | lo | | | | | | / | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 S | Slide 6 Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| | PLMO | Production (Septembly) | Company of the Compan | | germinote | | \ | - Committee of the Comm | ☐ Synthetic High | * If vermiculite is >10% the |
| Required 🗆 | NOB BLM | | | 2 | | | 100 | 0 | Birefringence Horse Hair: Scales, | level of asbestos in a sample |

| for results | Methody ELAP | □ EPA | SCAN | NING OPTI | ION | | Q. | c. 🗆 | | | | | |
|-------------------------------|----------------------|----------|---------|------------|---------|----------|-------------|-------------|--------------|--------------|---------------------------|--|---|
| 4 64 Field Number | Stereoscopic | | | | | PLM O | ptical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | color ack Brain | | Morph | Extinction | | RI II DS | S Color Col | or, Pleo Bi | ref Sign Ot | her Identity | Chrysotile | Cellulose | Mineral Filler Organic Binde |
| Recommended See gravimetric | # of Layers Asbe | | 1 | \equiv | | | == | | === | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Dete | cted Yes | No | _ | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | -0 | | | + | | | | 0 | h | U | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | | | | Birefringence | |
| | Method: ZELAP | □ EPA | SCAN | NING OPTI | ION | | Q. | c. 🗆 | | | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

NOB PLM

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:\LAB_FORMS_DOCUMENTS AND RECORDS\OPTICAL\MSBESTOS_BULK\ASBESTOS_BULK\GORMS_220\BULK\GORMS_220\BULK\GORMS_220\BULK\GORMS_220\BULK\GORMS_220\BULK\GORMS_220\BULK\GORMS_221\RUSION #33 BY MEI WANG FORM #82

| | Client / Project PANYNJ/ | / FIRESI | | | | S ANAL | YSIS SH | EET | Project | Number 214PN | IPEPJ1 | Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT |
|--|--|----------------|--------------------|---------|---------------|------------------|-----------------------|---|--------------|---|---|--|
| | Analysis Date 4/9 /2 | 2021 | Analyst | | | | | | | Number 21- | 619 | EMPERATURE C |
| 1 57 Field Number | Stereoscopic Exam | | ., ., | | PLM O | otical Pr | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Cold Dr.O. Wexture | Morph | Extinction | RII | RI II DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | Chrysotile | Cellulose | / O Mineral Filler |
| Required | | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | Homogeneity Vermiculite | 4 | | | | · | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | 1_ | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb.Ner. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [| | | | | | | | Θ | ces | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | | | \sim | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| analysis sheet for results | Comments: | | | | L., | I | And the second second | | | <u> </u> | Birefringence | See Note #1. |
| 101 7000110 | Method: ZELAP DEPA | SCAN | ING OPTI | ON | | Q. | C. □ | | | | | |
| 2 58 | Stereoscopic Exam | | | | PIM O | otical Pr | nortice | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | The state of the s | Morph | Extinction | RII | | Color Colo | · | ef Sign Oth | er Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Collect Law texture | | | | | | | | | Chrysotile | Cellulose | 12 Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | / | | | | | | | | Amosite | Fiberglass | Organic Binders |
| See gravimetric | # of Layers Asbestos | | | | | | | | | Other | Other | Vermiculite* Other |
| analysis sheet | Color of Layer Detected Yes | / Vo | | | | | | | | | ☑ Ćellulose Ondulose | Other |
| for results | | | Cliste 4 | Ctia. F | 054- 0 | L 014-7 | 0:4-0 | I A DE | T DT | / NA++ 0-211- | Extinction Fiberglass Isotopic | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | ☐ Synthetic High | 15 |
| Required 🛘 | | | | | | | | 0 | <u>200</u> | 0 | Birefringence ☐ Horse Hair: Scales, | If vermiculite is >10% the level of asbestos in a sample |
| See SM-V analysis sheet | NOB PLM ' | | | | | | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Comments: Method: ☑ ELAP □ EPA | -/ | | | | 10. | C. 🗆 | | | | Diennigation | |
| | Method: ☑ ELAP ☐ EPA | □ SCANI | ING OPTI | UN | | 10. | ٠. [_] | P. COMPANIE AND A TOTAL AND A | | , | | |
| 3 59 Field Number | Stereoscopic Exam | | | | PLM O | otical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| | | | | | | Calaa Cala | | | | | | |
| Gravimetric | color that texture | Morph | Extinction | Riı | RI DS | S COIOF COIC | r, Pleo Bír | ef Sign Oth | er Identity | Chrysonie | - | 176 Mineral Filler |
| Gravimetric Required □ | | Morph | Extinction | RI1 | RI DS | S Color Colo | ır, Pleo Bir | ef Sign Off | er Identity | Chrysotle | 2 Ceilulose 7 Fiberglass | Mineral Filler Organic Binders |
| 1 | Homogeneity \(\int \) Vermiculite \(\) | Morph | Extinction | Ri1 | RI DS | S COIOT COIC | r, Pleo Bir | ef Sign Oth | er Identily | · / | Ceilulose | |
| Required Recommended See gravimetric | | Morph | Extinction | RII | RI DS | S COIOT COIC | r, Pleo Bir | ef Sign Oth | er Identity | Amosite | Ceilulose Fiberglass | Organic Binders |
| Required Recommended | Homogeneity \(\int \) Vermiculite \(\) | | Extinction | RII | RI DS | S COOF COR | r, Pleo Bir | ef Sign Oth | ler Identity | Amosite | Cellulose Cother | Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results | Homogeneity Vermiculite 4 of Layers Asbestos | | Extinction | RI1 | RI DS | Slide 7 | r, Pleo Bir | ef Sign Oth | | Amosite | Ceilulose Fiberglass Other | Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes ! Point Counts Slide 1 Slide 2 | No | | | | | | | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose Z Fiberglass Other Cellulose Ondutose Extinction D Fiberglass Isotopic | Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V Required | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM | No | | | | | | | | Amosite Other | Cellulose Diberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefingence | Organic Binders Vermiculite* Other |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM | No | | | | | | | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose Tiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM | Slide 3 | | Slide 5 | | Slide 7 | | | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose Z Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: □ ELAP □ EPA | Slide 3 | Siide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose Z Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose — Therglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: □ ELAP □ EPA | Slide 3 | Siide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose Z Fiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: □ ELAP □ EPA Steraoscopic Exam Color Manure Homogeneity Vermiculite | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Aniosite | Ceilulose — Tiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | Organic Binders Vermiculite* Other "If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required Recommended | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Steraoscopic Exam Color Number Vermiculite Elan Vermiculite Elan Elan Elan Elan Elan Elan Elan Elan | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile | Ceilulose Ceilulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stefaoscopic Exam Color Annure Homogeneity Vermiculite # of Layers Asbestos | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Aniosite | Ceilulose — Tiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Tiberglass Other | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required Recommended See gravimetric See gravimetric | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Steraoscopic Exam Color Number Vermiculite Elan Vermiculite Elan Elan Elan Elan Elan Elan Elan Elan | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Aniosite | Ceikulose Z Fiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Z Fiberglass Other | Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stefaoscopic Exam Color Annure Homogeneity Vermiculite # of Layers Asbestos | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Aniosite | Ceikulose Z Fiberglass Other Cellulose Ondutose Extinction Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Z Fiberglass Other | Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Steffooscopic Exam Color Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 | Slide 3 SCANI | Slide 4 NING OPTI | Slide 5 | Slide 6 PLM O | Q. Q. Otical Pro | Slide 8 | Asb./Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Aniosite Other | Ceikulose Tiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Tiberglass Other Craftulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence | Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Steraoscopic Exam Color Manure Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM Steraoscopic Exam | Slide 3 SCANI | Slide 4 NING OPTI | Slide 5 | Slide 6 PLM O | Q. Q. Otical Pro | Slide 8 | Asb./Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Anosite Other | Ceilulose Ceilulose Cother Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Tiberglass Other Cellulose Fiberglass Isotopic Synthetic High | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☑ ELAP ☐ EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #B2

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104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Date 4/9 /2021 Analyst 21-619 65 Asbestos Non Fibrous Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Stack Brown N/ Gravimetri _Mineral Filler Cellulose Amosite Fiberala Organic Binder 0 Vermiculite* See gravimetric analysis sheet for results Cellulose Ondulo Fiberglass Isotop Slide 2 Slide 6 Slide 7 %Asb. Or %Ver. Slide 8 Asb.Ner. PT Total P1 SM-V PLM If vermiculite is >10% the Required [evel of asbestos in a sample Horse Hair: Scales NOB PLM night be underestimated. See SM-V [Low to Moderate See Note #1. analysis sheet for results Q.C. Method: ☐ ELAP ☐ EPA SCANNING OPTION 66 Asbestos Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Caele Bushin Gravimetr Cellulos Mineral Filler Fiberglas Organic Binder Vermiculite* Other Other analysis sheet color of Laver Detected Yes for results Slide 2 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopi SM-V Required [Birefringence evel of asbestos in a sample NOB PLM Horse Hair: Scales night be underestimated. See SM-V Low to Moderate analysis sheet Comments: for results Method: Ø ELAP □ EPA Q.C. SCANNING OPTION 67 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Mineral Filler Gravimet Chrysotil Cellulose 3 Sibergla Required Organic Binder Vermiculite* Other Other analysis sheet for results Extinction Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V If vermiculite is >10% the 19 Required [evel of asbestos in a sample Horse Hair: Scales. NOB PLM night be underestimated. See SM-V [Low to Moderate See Note #1. analysis sheet for results Method: DELAP EPA Q.C. ☐ SCANNING OPTION 68 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Chrysoti Cellulose Mineral Filler Required [Organic Binde Other Other See gravimetric analysis sheet Extinction Slide 4 Fiberglass Isotop Point Counts Slide 1 Slide 2 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver SM-V PIM If vermiculite is >10% the Required [Birefringence evel of asbestos in a sample Horse Hair: Scales night be underestimated. NOB PLM See SM-V [Low to Moderate see Note #1.

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☐ ELAP ☐ EPA

☐ SCANNING OPTION

analysis sheet for results

> Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing 10% vermiculitie ELAP requires methods ELAP 198.16 followed by ELAP 198.6. This method has limitations for identification and quantificat of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite." Note #2: ELAP requires method 19.8 for the analysis of surfacing material containing verticalities (SM-V) and it utilizes a 400 point count method.
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ATC - New York

104 East 25th Street, 8th FL. New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | Client / C | trainat P | PANYNJ | / FIRES | | | SBESTO | S ANAL | .YSIS SH | HEET | Danie -4 | Number 214PI | JPFPI1 | <u>Microscopes:</u> OLYMPUS BH-2 / NIKON OPTIPHOT |
|---|---------------------------------|-----------|----------|---------|------------|---------|--|----------------|----------|--|--------------|---------------------------|--|---|
| | | | 19 1 | | _ Analyst | | \leq | M | | | | | 619 | EMPERATURE |
| 1 69 Field Number | Stere | oscopic E | Exam | | | | | otical Pr | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required □ Recommended □ | Color Homogeneity _ | | | | Extinction | | | | | ref Sign OI | | Chrysotile | Cellulose Fiberglass | |
| See gravimetric analysis sheet for results | # of Layers Color of Layer _ | | | | | | | | | | | Other | Other | Vermiculite* |
| SM-V Required ☐ See SM-V ☐ | Point Counts PLM NOB PLM | | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P1 | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | LAP 🗆 | EPA | SCAN | NING OPTI | ON | DIRA | | c. 🗆 | | | Asbestos | Birefringence Other Fibrous | Non Fibrous |
| Field Number | Stere | oscopic E | =xam | Morph | Extinction | RII | | otical Process | • | | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required □ Recommended □ | Color | | | | | | | | | | | Chrysotile Amosite Olher | Cellulose Fiberglass Other | Mineral Filler Organic Binder Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers | | | | | | | | | | | Other | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P1 | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| Required ☐ See SM-V ☐ | PLM NOB PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% lhe level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | LAP 🗆 | EPA | ☐ SCAN | NING OPTI | ON | ······································ | Q. | c. 🗆 | | | | Birefringence | |
| 3 | | | | | | | | | | THE PERSON NAMED AND ADDRESS OF THE PERSON NAMED AND ADDRESS O | | Achaetne | Other Fibrage | Non Eibrous |

| | | | ~~~~ | | | | | _ | | ******** | *************************************** | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | | · | |
|--------------------------------------|------------------|----------|---------|---------|-------------|---------|---------|-----------|-------------|----------|---|---|---------------------------|------------------------------------|---|
| ield Number | Sterec | scopic E | xam | | | | | ptical | | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color | Textur | 9 | Morph | Extinction | RIT | RI I | S Color C | color, Pleo | Biref | Sign (| Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗌 | Homogeneity | Vermi | culite | | | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended 🗌 | | | | | | | | | | | | | Other | Other | Vermiculite* |
| iee gravimetric 🗀 | # of Layers | Asbes | tos | | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer _ | Detect | ed Yes | No | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | 7 Slid | e 8 | Asb./Ver. F | PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🛘 | PLM | | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | | | | | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results Comments: | | | | | | | | | | | | | | | |

| / | <u> </u> | | | | | | | <u>f</u> | | | ~~~ | | | L | L |
|---|----------------------------------|-----------|-----------|---------|-------------|---------|---------|------------|------------|-------|-------------|-------------|--------------------------------|--|---|
| 4 Field Number | Stered | oscopic E | xam | | | | PLM C | ptical F | roperti | es | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required □ Recommended □ See gravimetric □ | Homogeneity_ | | culite | Morph | Extinction | Riı | RIII C | OS Cotor C | olor, Pleo | Biref | Sign Oth | er Identity | Chrysotile Amosite Other | Cellulose Fiberglass Other | Mineral Filler Organic Binders Vermiculite* |
| analysis sheet for results SM-V | Color of Layer _ Point Counts | | ted Yes N | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | ' Slide | 8 A | sb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | |
| Required 🗆 | 1000011 | | | | | | | | | | | | | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | LAP 🗆 | EPA | ☐ SCAN | VING OPTION | ON | l | <u> </u> | .c. □ | | | | | Bitefringence | See Note #1. |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Client/Project: PANYNJ | PANYNJ | RUSH | | PLM Batch# | 21-619 | TEM Batch # 122927 | 122927 | Start Date: 04/09/21 | 04/09/2 |
|------------------------|-------------|------------------|----------------------------|---------------|--------|---------------------|--------------------|--------------------------|----------|
| NOB PLM PREP: | MG/EV | NOB PLM Analyst: | MW | NOB TEM PREP: | SH | NOB TEM Analyst: | FG | Date Completed: 04/09/21 | 04/09/21 |
| 9 | | 2 | 13 | | | Met | spou | ı | |
| | Non Asb | Asbestos | % Total | | | 2 | 90 | | |
| Field # Ornanic | Residue % % | Types | Asbestos or Vermiculite | | Antes | PREI | TEI PLI PREI | | |

· orbodillo

| g | (45) (3) | TEM | > | > | > | > | > | > | > | > | > | > |
|---------|----------------|----------------------------|------|------|------|------|------|------|------|------|------|------|
| Methods | NOB | PLM | > | > | > | > | > | > | > | > | > | > |
| Σ | enide asiri | PREP | > | > | - > | > | > | > | > | > | > | > |
| | | Notes | | | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | | | |
| 6 | Asbestos | Types or Vermiculite | QN | QN | ND | QN | QN | QN | QN | QN | ΩN | ND |
| 12 | | % Carbonate | 25.4 | 31.8 | 33.1 | 23.7 | 22.8 | 23.8 | 44.6 | 58.6 | 68.9 | 13.9 |
| -11 | Non Asb | Residue % NFr | 52.8 | 44.7 | 42.0 | 47.7 | 47.4 | 45.6 | 31.4 | 20.7 | 12.6 | 4.7 |
| 2 | | % Organic | 21.8 | 23.5 | 24.9 | 28.6 | 29.8 | 9.08 | 24.0 | 20.7 | 18.5 | 81.4 |
| | | Field # | က္ | 14 | 15 | 34 | 35 | 36 | 49 | 50 | 51 | 64 |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

Page 1

Client Copy

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

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| Start Date: 04/09/21 | Date Completed: 04/09/21 | | | | | | | | | |
|----------------------|--------------------------|---------|----------|----------------------------|------|------|--|--|-----------------------------|---|
| Start Date | Date Completed | | | | | | | | | |
| 122927 | FG | Methods | NOB | TEA | | > | | | | I |
| TEM Batch # | NOB TEM Analyst: | Met | SK | PLM PREI | | > | | | | |
| 21-619 | SH | | | Notes | | | | The state of the s | mand john mingrapa menangan | |
| PLM Batch # | NOB TEM PREP. | | | | | | | | | |
| | MW | 13 | % Total | Asbestos or Vermiculite | | | | | | |
| RUSH | NOB PLM Analyst: | 6 | Asbestos | Types or Vermiculite | QN | Q. | | | | |
| 8 | MG/EV | 12 | | % Carbonate | 6.7 | 6.0 | | | | |
| PANYNJ | MG | - 11 | Non Asb | Residue % | 13.7 | 10.2 | | | | |
| Client/Project: | NOB PLM PREP: | 2 | | % Organic | 78.4 | 88.9 | | | | |
| Client/ | NOB PL | | | Fletd # | 65 | 99 | | | | |

1. Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

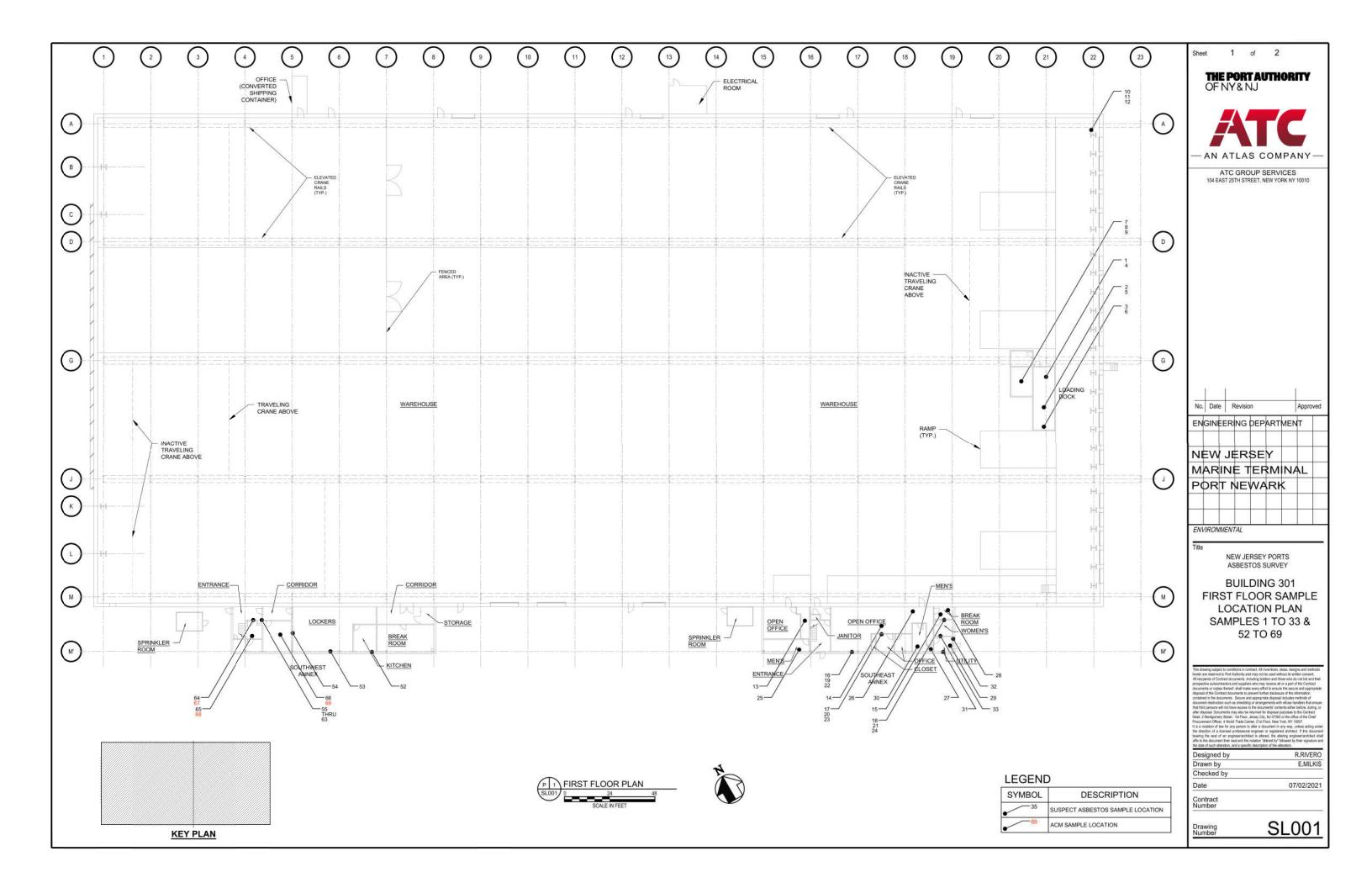
3. Vermiculite not reported = not detected.

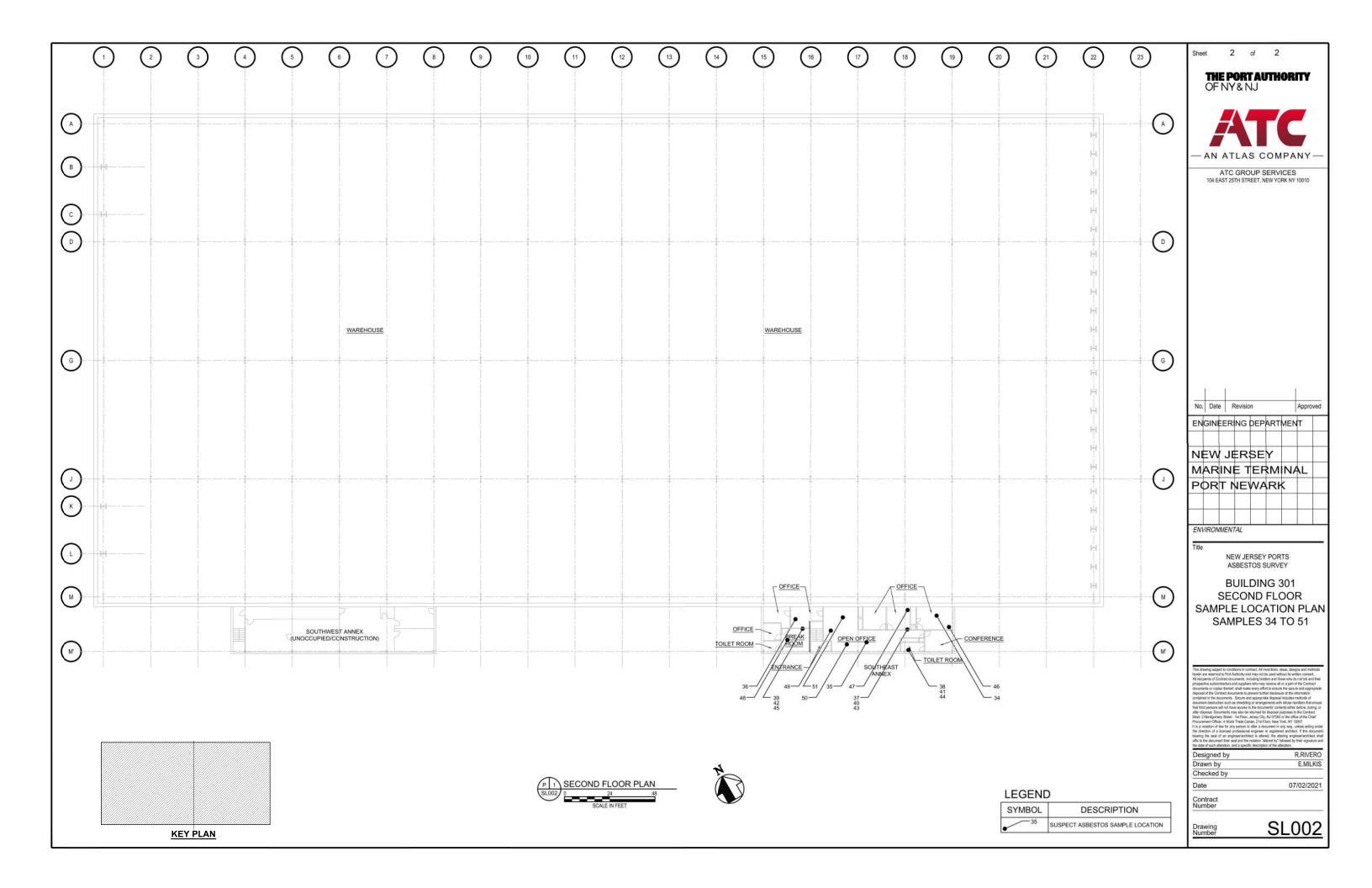
Page 2

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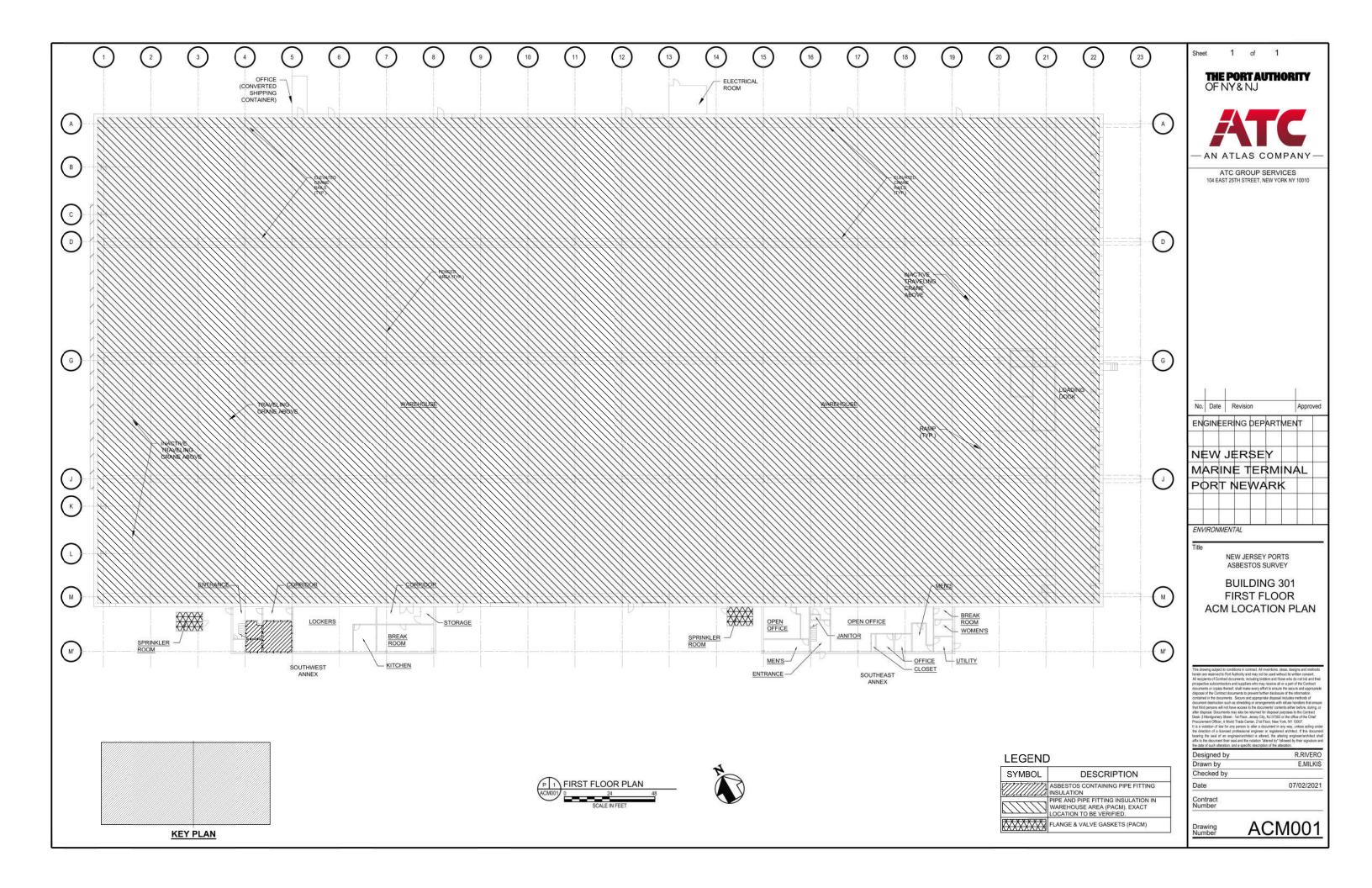
APPENDIX B
ASBESTOS SAMPLE LOCATION DRAWINGS





APPENDIX C
ASBESTOS LOCATION DRAWINGS

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APPENDIX D

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

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New York State – Department of Labor Division of Safety and Health

Division of Safety and Health License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative - Kevin Hamilton:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
SH 432 (8/12)
For the Commissioner of Labor

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI
ATC GROUP SERVICES LLC
104 EAST 25TH STREET 8TH FLOOR
NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below:

Miscellaneous

Ashestos

PA 100.2

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

age 1 of 1



NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual

EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

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Page 1 of 1

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

Fibers

NIOSH 7400 A RULES

Department of Health

Serial No.: 61223

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

age 1 of 1

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

MS. MILENA BONEZZI COPY

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2016) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

Asbestos

EPA 100.2

Serial No.: 62824

Property of the New York State Department of Health. Certificates are valid only at the address shown must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 17.0 PY A 407 A 400



NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI
ATC GROUP SERVICES LLC
104 EAST 25TH STREET 8TH FLOOR
NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below.

Miscellaneous

Asbestos in Friable Material Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM Item 198.4 of Manual Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 62825

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Page 1 of 1

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER

Expires 12:01 AM April 01, 2022 Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

MISCELIANEOUS

Asbestos

40 CFR 763 APX A No. III NIOSH 7402

ribers

NIOSH 7400 A RULES

Serial No.: 62826

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

United States Department of Commerce National Institute of Standards and Technology



20 7025 O/IE S **2** ccreditation 4 of ertificate

NVLAP LAB CODE: 101187-0

TC Group Services L New York, NY

for accredited by the National Voluntary Laboratory Accreditation Program listed on the Scope of Accreditation, for:

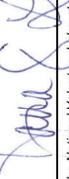
Asbestos Fiber Analysis

I the operation of a laboratory quality dated January 2009). Standard ISO/IEC ance with the recal competence for a r to joint ISO-ILAC This laboratory is accrec This accreditation demonst

2020-07-01 through 2021-06-30

Effective Dates





For the National Voluntary Laboratory Accreditation Prog

National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor
New York, NY 10010
Ms. Milena Bonezzi
Phone: 212-353-8280 x247 Fax: 212-353-8306
Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

<u>Code</u> <u>Description</u>

18/A01 EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of

Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code18/A02

Description
U.S. EPA's "Inte

U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40

CER Part 763 Subnart F Annendix A

For the National Voluntary Laboratory Accreditation Program



AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

Effective: 04/10/2015

Revision: 8 Page 1 of 1

104 East 25th St 8th Flr New York, NY 10010

Laboratory ID: LAP-100229

Issue Date: 08/30/2019

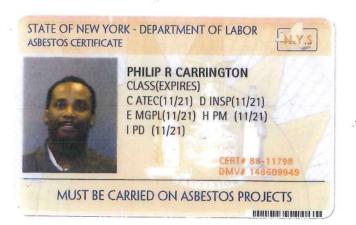
The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 06/12/1995

| IHLAP Scope Category | Field of Testing (FOT) | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested |
|-----------------------------------|------------------------------------|----------------------------------|---|---|
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | • |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org





EYES

07 HAIR

HGT

HGT

EYES BRO
HAIR BLK —
HGT 5! 09"

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240 STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





NANCY B GUEVARA CLASS(EXPIRES) C ATEC(05/21) D INSP(05/21) H PM (05/21) I PD (05/21)

> CERT# 14-00412 DMV# 234032668

MUST BE CARRIED ON ASBESTOS PROJECTS



01213 005585171 14

EYES BRO
HAIR BRO
HGT 5' 06"

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240 STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





RONEY D RIVERO CLASS(EXPIRES) C ATEC(08/21) D INSP(08/21) E MGPL(08/21) H PM (08/21) I PD (08/21)

RT# 88-06348

MUST BE CARRIED ON ASBESTOS PROJECTS

URITED STORES



01213 00581057 61

EYES BRO

IF FOUND RETURN TO:
NYSDOL - LEC UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240



NJMT REHABILITATION OF FIRE PROTECTION SYSTEMS PN, EP, & PJ

REVISED ASBESTOS INSPECTION REPORT PORT NEWARK, BUILDING #301

Performed for:

PORT NEWARK NEWARK, NEW JERSEY

Prepared for:



Prepared by:

ATC GROUP SERVICES LLC 104 EAST 25TH STREET NEW YORK, NEW YORK 10010 (212) 353-8280

ATC Project No: 214PNPEPJ1

December 17, 2021



104 East 25th Street 8th Floor New York, New York 10010 Telephone 212-353-8280 Fax 212-353-8306

December 17, 2021

Robert Pruno, P.E. Chief Environmental Engineer Port Authority of New York & New Jersey Engineering Design Division 4 World Trade Center, Floor 20 New York, NY, 10006

Subject: Revised Inspection Report for Asbestos-Containing Materials

Re: Port Newark, Building #301

301 Craneway Street Newark, NJ 07114

NJMT Rehabilitation of Fire Protection Systems

Dear Mr. Pruno:

ATC Group Services LLC (ATC) has completed the inspection for Asbestos-Containing Materials (ACM) for the proposed work at the above referenced site. The inspection included visual observation, material sampling, laboratory analysis and development of asbestos abatement plans. The attached report presents our inspection procedures, findings, assessments and recommendations along with the pertinent appendices.

ATC appreciates this opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further assistance to you, please contact us.

Sincerely,



Paney D. Pivero

Roney D. Rivero
Senior Project Manager
for ATC Group Services LLC
Direct Line +1 212 284 0614
Email: roney.rivero@atcgs.com

Attachments

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

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| 3.0 | FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS | 2 |
| 4.0 | ACM INSPECTION SCOPE | 3 |
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| 7.0 | UNIVERSAL WASTE OBSERVATION | 6 |
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APPENDICES

Appendix A: ACM Laboratory Results and Chain of Custodies

Appendix B: Asbestos Sample Location Drawings

Appendix C: ACM Location Drawings

Appendix D: Lab Certifications / Accreditations, Company and Personnel Certifications

ATC Project No. 214PANEWR1 Page 1

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

EXECUTIVE SUMMARY

On February 26, 2021 and April 8, 2021, ATC completed the inspection for ACM at Port Newark, Building #301 (the Site). Additionally, on November 5, 2021 a supplemental limited survey was perform in response to the Scope of Work changes and recommendations as indicated in the Stage 1 Report dated July 12, 2021 (50% submission). The Architectural team recommended surveying both Sprinkler Valve Rooms (sheds) corrugated exterior wall and roof. The survey was conducted at the request of Port Authority of New York and New Jersey (PANYNJ) in preparation for the Rehabilitation of Fire Protection Systems Project. ATC utilized drawings provided by PANYNJ delineating the areas that will be impacted by the renovation project.

ATC collected eighty-one (81) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, one (1) sampled homogeneous area was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content).

The material that tested positive for asbestos is:

• Pipe Fitting Insulation associated with Fiberglass Pipe Insulation

These materials are tabulated in Section 4.0.

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

1.0 INTRODUCTION

The intent of this survey was to locate and identify all accessible ACM, and PCBs in caulking within the referenced structure that could potentially be impacted by the proposed Fire Sprinkler Rehabilitation Project.

The environmental survey was conducted by the following personnel who hold certifications from the New York State Department of Labor as Asbestos Inspectors, and the Environmental Protection Agency as Lead Risk Assessors.

| Inspector's Name | Certification Number | ACM/LCP |
|----------------------|----------------------|---------|
| Philip R. Carrington | AH-88-11798 | ACM |
| Nancy Guevara | AH-14-00412 | ACM |
| Roney D. Rivero | AH-88-06348 | ACM |

2.0 BUILDING DESCRIPTION

The New Jersey Port Newark Building 301, Harbor Freight Transport Building, was constructed within the facility located northeast of the Port Newark Marine Terminal and is accessible via Navy Street. The building is currently occupied by Harbor Freight Transport and used for storage of general cargo. The building is a one-story steel framed structure, measuring 255 ft. by 528 ft. in plan. The building height varies from 38'-7" at the eave to 40'-9" at the ridge. The steel framing consists of five rows of columns with 22 cross beams spaced at 25 ft. The cross beams support 41 roof purlins, which in turn supporting the gypsum roof panel covered with rubber roofing in a single gable shape. The exterior wall consists of concrete grade beam supported CMU wall brick wall with corrugated metal siding or Plexiglas window panels on top. The ground floor is bituminous concrete pavement on grade. There is an office located in the middle of the east side of the building and two office annexes along south side of building. The suspended acoustical ceilings are present at both office annexes.

3.0 FIELD SURVEY PROCEDURES AND SAMPLE ANALYSIS METHODS

Guidelines used for the inspection were established by the Environmental Protection Agency (EPA) in the Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024, and 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA).

Field information was organized in accordance with the AHERA methodology of homogeneous area (HA). During the survey, reasonable effort was made to identify all locations and types of ACM materials associated with the scope of work. Sampling has included multiple samples of the

ATC Project No. 214PANEWR1 Page 2

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor's installation methods, materials of similar construction may contain various amounts of asbestos.

Bulk samples of suspect ACM were analyzed using Polarized Light Microscopy (PLM) in accordance with New York State Department of Health Methods 198.1 and 198.6 as specified in the Environmental Laboratory Approval Program (ELAP) Certification Manual. Method 198.1 is used for friable ACM and Method 198.6 is used for non-friable ACM.

For non-friable materials such as mastic, caulking, etc., Method 198.6 requires that any result of 1-percent or less be reanalyzed by Method 198.4. This Method utilizes Transmission Electron Microscopy (TEM) to determine asbestos content. ELAP certified laboratories must include the following statement with their PLM analysis results for each "negative" (1-percent or less asbestos) Non-friable Organically Bound (NOB) sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

The laboratory performing both these analysis procedures was ATC, located at 104 East 25th Street, New York, New York. The laboratory has received accreditation from the following agencies:

- National Voluntary Laboratory Accreditation Program (Lab Code 101187-0)
- New York State Environmental Laboratory Approval Program (Lab No. 10879)
- American Industrial Hygiene Association Accredited Laboratory (Lab No. 100229)

4.0 ACM INSPECTION SCOPE

ATC conducted the walkthrough of Port Newark building 260 on August 11, 2020 to understand typical building layouts and systems on buildings that are similar in lay out and use. Based on the findings of the walkthrough, ATC conducted an asbestos inspection of Port Newark Building 301 on February 26, 2021, April 8, 2021 and November 5, 2021 and collected eighty-one (81) bulk samples from all suspect asbestos-containing material. The areas inspected included only areas that may be impacted by the proposed Fire Sprinkler Rehabilitation Project at this location and recommendations as indicated in the Stage 1 Report dated July 12, 2021 (50% submission). The intent of this survey was to locate and identify all accessible ACM.

The following twenty-seven (27) homogeneous materials inspected and sampled for ACM during the inspections were:

| Suspect Material | Location |
|--|--|
| 2'X4' Ceiling Tile Type I | 1 st Floor – Warehouse Area, Lunch Room 1 |
| Paper Backing on Ceiling Fiberglass Insulation | 1 st Floor – Warehouse Area, Lunch Room 1 |

ATC Project No. 214PANEWR1 Page 3

| Textured Plaster (One Coat) on Plywood Ceiling | 1 st Floor – Warehouse Area, Lunch Room 1, Gym Room |
|---|--|
| Brick Wall Mortar | 1 st Floor – Warehouse Area Northeast Corner |
| 2' X 2' & 2' X 4' Ceiling Tile - Fissured | 1 st Floor – Office space |
| Gypsum Board Paper - Wall | 1 st Floor – Office space |
| Gypsum Board - Wall | 1 st Floor – Office space |
| Joint Compound – Wall | 1 st Floor – Office space |
| HVAC Duct Insulation Cover | 1 st Floor – Office space |
| Fiberglass Pipe Insulation Cover 3" OD | 1 st Floor – Office space |
| CMU Mortar Wall | 1st Floor – Office space Electric Room |
| 2' X 4' Ceiling Tile Type I - Fissured | 2 nd Floor – Office space |
| Gypsum Board Paper - Wall | 2 nd Floor – Office space |
| Gypsum Board - Wall | 2 nd Floor – Office space |
| Joint Compound – Wall | 2 nd Floor – Office space |
| HVAC Duct Insulation Cover | 2 nd Floor – Office space |
| 2' X 4' Ceiling Tile Type II | 2 nd Floor – By Entrance to Office space |
| CMU Wall Mortar | 1 st Floor – (Abandoned Building) – Locker Room & Lunch Room |
| Gypsum Board Paper - Wall | 1 st Floor – (Abandoned Building) – Lobby |
| Gypsum Board - Wall | 1 st Floor – (Abandoned Building) – Lobby |
| Joint Compound - Wall | 1st Floor – (Abandoned Building) – Lobby |
| Fiberglass Pipe Insulation Cover 3" OD | 1 st Floor – (Abandoned Building) – Men's & Women's Bathrooms |
| Pipe Fitting Insulation associated with F/G Pipe Insulation | 1 st Floor – (Abandoned Building) – Men's & Women's Bathrooms |

| November 5, 20 | 021 Sampling |
|-----------------------------------|---|
| Tar Weatherproofing Strip | South West Shed – Under Wall Metal Framing |
| Weather Proofing Corrugated Wedge | South West Shed – Under Roof Panel at Wall |
| Tar Weatherproofing Strip | South East Shed – Under Wall Metal Framing |
| Weather Proofing Corrugated Wedge | South East Shed – Under Roof Panel at Wall |

5.0 ACM INSPECTION RESULTS

Based upon visual inspection and analytical results of bulk samples collected, the following material is asbestos-containing (> 1%):

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) | | | | | | |
|---|---|---------------------|-------------------------|-----------------------|--|--|--|--|--|--|
| | Pipe Fitting Insulation associated with F/G Pipe Insulation | 10% Chrysotile | 25 LF | ACM001 | | | | | | |
| No ACM was found as a result of the ADDITIONAL survey performed on November 5, 2021 | | | | | | | | | | |

The following materials are presumed to be asbestos-containing material (PACM)

| ATC Sample Number(s) | Material Description & Location | Asbestos Content | Approximate Quantity | ACM Drawing Number(s) |
|-------------------------|---|---------------------|----------------------|-----------------------|
| N/A | Pipe and Pipe Fitting Insulation - Warehouse Area | PACM | 2,200 L.F. | ACM001 |
| N/A | Flange & Valve Gaskets - 2 Sprinkler Rooms (Sheds) | PACM | 50 Units | ACM001 |
| PACM found a | as a result of the ADDITIONAL survey | y performed | d on November | <u>5, 2021</u> |
| N/A | South West Sprinkler Shed Entrance Door | PACM | 1 Unit | ACM001 |
| N/A | South East Sprinkler Shed Entrance Door | PACM | 1 Unit | ACM001 |

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

ACM laboratory results are included in Appendix A. Asbestos Sample Location Plans are included in Appendix B. Asbestos Location Plans are included in Appendix C.

6.0 PCB-IN-CAULKING INSPECTION FINDINGS

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection

7.0 UNIVERSAL WASTE INVENTORY

ATC conducted a visual inspection of the light fixtures at the site to document Universal Waste, defined in Title 40, CFR Part 273. During the inspection at the site, it was observed the presence of fluorescent lamps, high intensity discharge (HID) lamps and ballasts.

It was assumed that lamp ballasts/capacitors contain PCBs and/or Di-Ethylhexyl Phthalate (DEHP); therefore, if removal is necessary it should be disposed of as PCB wastes as per 40 CFR Part 761.

8.0 CONCLUSIONS AND RECOMMENDATIONS

ATC collected sixty-nine (69) asbestos bulk samples from all suspect asbestos-containing material on all accessible areas. Based upon review of the analytical results of bulk samples collected, one (1) sampled homogeneous area was found to be an Asbestos-Containing Material (ACM - greater than 1% asbestos content).

The material that tested positive for asbestos at Building 301 include the following:

• Pipe Fitting Insulation associated with F/G Pipe Insulation

ATC did not observed or sampled any suspect PCB-containing Caulking at the time of the inspection.

Various types of painted surfaces such as sprinkler pipes, gypsum board ceilings and walls, CMU walls, and roof decking have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 301, located in Newark, New Jersey.

Various types of light fixtures (fluorescent lamps, high intensity discharge (HID) lamps and ballasts) have been observed during the visual inspection of the site that may be impacted as part of the proposed Rehabilitation of Fire Protection Systems Project for Port Newark building 301 located in Newark, New Jersey.

The materials reported in Section 5.0 of this report would require abatement, removal and disposal

ATC Project No. 214PANEWR1 Page 6

Inspection Report for ACM Port Newark, Building 301, Newark, NJ

prior to sprinkler system renovation due to the proximity to the sprinkle pipe system.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were noted at the time of the inspection. The valve gaskets inside the pipe flanges could not be tested since the sprinkler system is still operational. It is assumed, based on the number of flanges observed, that there are approximately 25 gaskets in each sprinkler room. There are 2 sprinkler rooms in this building, so it is assumed there are 50 gaskets that are presumed to be asbestos containing. The pipes in the warehouse area below the roof deck with suspected asbestos- containing insulation were not sampled due to access restrictions (height and electric hazard) at the time of the survey. Based on visual inspection and assumptions, we estimate 2,200 linear feet of pipe insulation presumed to be asbestos containing. This quantity should be verified with destructive sampling if abatement is planned prior to any renovation work.

If questions arise regarding asbestos content in building materials that were not tested by ATC, additional testing services should be procured to test those areas.

This report is intended for the sole use of the PANYNJ. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document or the findings, conclusions, or recommendations contained herein is at the risk of said user.

END OF REPORT

ATC Project No. 214PANEWR1 Page 7

APPENDIX A

ACM LABORATORY RESULTS AND CHAIN OF CUSTODIES

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4 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

104 EAST 25TH STREET NEW YORK , NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Sample Date: 2/26/2021

Date Received: 3/1/2021

Date Analyzed: 3/2/2021

ATC Batch # 21-225

Methods: ELAP 198.1, 198.6, 198.4

Location: PN 301

Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>Noi</u> | ı-Asbestos | NOB | Asbestos |
|--------------|--|--|-----------|------------------|-------------------------|----------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | ₩ Type | % Type |
| 1 | 1ST FLOOR WAREHOUSE AREA LUNCH ROOM 1 | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 21.9% Organic 58.3% Residue | |
| 21-225 -1 | , we continued in the | | | | | 19.8% Carbonate | NONE DETECTED |
| | | Color: Tan | | Comments: NOB PL | M Inconclusive | | |
| Analyzed By: | Michael Gittings | Second Analyst: Feyza G | ungor | Comments. NOD1 L | W Inconclusive | | |
| 2 | 1ST FLOOR LUNCH ROOM 1 | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 26.3% Organic 48.8% Residue | |
| 21-225 -2 | | | | | | 24.9% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Tan Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive | | |
| 3 | 1ST FLOOR LUNCH ROOM 1 | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 25.8% Organic | |
| 21-225 -3 | | | | | 0.0% Vermiculite | 38.1% Residue 36.1% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Tan Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive | | |
| 4 | 1ST FLOOR LUNCH ROOM 1 | PAPER BACKING ON CEILING F/G INSULATION | G NOB-TEM | | | 96.1% Organic 1.1% Residue | |
| 21-225 -4 | | | | | 0.0% Vermiculite | 2.8% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Blac Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. HAS TAR | | |
| 5 | 1ST FLOOR LUNCH ROOM 1 | PAPER BACKING ON CEILING | G NOB-TEM | | | 92.9% Organic 1.1% Residue | |
| 21-225 -5 | | | | | 0.0% Vermiculite | 6% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Tan Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. HAS TAR | | |
| 6 | 1ST FLOOR LUNCH ROOM 1 | PAPER BACKING ON CEILING F/G INSULATION | G NOB-TEM | | | 98.9% Organic 1% Residue | |
| 21-225 -6 | | | | | 0.0% Vermiculite | 0.1% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Tan Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. HAS TAR | | |
| 7 | 1ST FLOOR LUNCH ROOM 1 (GYM ROOM) | TEXTURED PLASTER (ONE COAT) ON CEILING PLYWOO | NOB-TEM | | | 43.8% Residue | |
| 21-225 -7 | | | | | | 41.7% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: Tan Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive. Paint | | |

Report Prepared By: Grace Chan Page 1 of 3 Batch # 21-225



ATC Group Services LLC 104 E. 25th Street, 8th Floor

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>No</u> | n-Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|-------------------------------|--|--|------------|-----------------|------------------------|--------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 8 | 1ST FLOOR LUNCH ROOM 1 (GYM ROOM) | TEXTURED PLASTER (ON COAT) ON CEILING PLYW | | | | 13.1% Organic 47.6% Residue | |
| 21-225 -8 | | | | | 0.0% Vermiculite | 39.3% Carbonate | NONE DETECTED |
| Analyzed By: | Michael Gittings | Color: [*] Second Analyst: Feyza | | Comments: NOB P | LM Inconclusive. Paint | | |
| 9 | 1ST FLOOR LUNCH ROOM 1 | TEXTURED PLASTER (C | NE NOB-TEM | | | 13.5% | |
| Organic 21-225 -9 | (GYM ROOM) | COAT) ON CEILING PLYW | /OOD | | 0.0% Vermiculite | 38.4% Restindunate | NONE DETECTED |
| Analyzed By: Michael Gittings | | Color: Color: Second Analyst: Feyza | | Comments: NOB P | | | |
| 10 | 1ST FLOOR WAREHOUSE AREA N/E CORNER | BRICK MORTAR | PLM | | 100% Mineral Filler | | |
| 21-225 -10 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: | Гаn | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 11 | 1ST FLOOR WAREHOUSE AREA N/E CORNER | BRICK MORTAR | PLM | | 100% Mineral Filler | | |
| 21-225 -11 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: | Tan | | | | |
| Analyzed By: | Michael Gittings | | | | | | |
| 12 | 1ST FLOOR WAREHOUSE AREA N/E CORNER | BRICK MORTAR | PLM | | 100% Mineral Filler | | |
| 21-225 -12 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: | Tan | | | | |
| Analyzed By: | : Michael Gittings | | | | | | |

Report Prepared By: Grace Chan Page 2 of 3 Batch # 21-225



11) Supplement to test report batch #

12) PLM Letter is attached on this report.

ATC Group Services LLC

104 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Non-Asbestos <u>NOB</u> **Asbestos** Type of Material Sample # Location Method % Fibrous % Non-Fibrous % Type % Type NOTES: 1) The Limit of Detection is the same as the Reporting Limit for these results 2) The Reporting Limit (RL) is the Limit of Quantitation. For point counts the limit of quantitation of 0.25%; based on one asbestos point counter over 400 non-empty points. 3) Asbestos Containing Material (ACM) Definition: > 1% asbestos by weight is considered an ACM 4) Disclaimer: The laboratory, is not responsible for sample collection. Please refer to enclosed letter. This report may not be reproduced, except in full, without written approval by ATC Group Services. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This report relates only to the samples reported above as described in the chain of custody. Quality control data is available upon request 5) Accredited by NVLAP #101187-0 and by NY State ELAP #10879 6) Confidentiality Notice: The document(s) contained herein are confidential and privileged information, intended for the exclusive use of the individual or entity named above. 7) Liability Notice: ATC Group Services and its personnel shall not be liable for any misinformation provided to us by the client regarding these samples. This report relates only to samples submitted and analy 8) Asbestos results are reliable to 2 significant figures. The condition of all samples was acceptable upon receipt. 10) The laboratory certifies that the test results meet all requirements of NELAC.

13) TRACE: The result is reported as Trace when No points are counted and asbestos is identified. For ELAP Trace is < 1%.
14) ATC Group Services certifies that this report is an accurate and authentic report of the results obtained from the laboratory analysis
15) The uncertainty for these test results is available upon request.

. Amendments: . Amendment Dates:

16) ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite. For samples containing > 10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

. Amended by:

Mei Wang

Approved by Quality Manager:

| Michael Gittings | | |
|------------------|-------|--|
| Analyst: | wy | |
| Feyza Gungor | Flyly | |
| Analyst: | ' 1 | |

Report Prepared By: Grace Chan Page 3 of 3 Batch # 21-225



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely,

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiley Bourson

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Page 1 of 1 DOCUMENT #DB4A



BATCH NO.

BUILK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Clien | PANYN | IJ | | NKLER RE | State of the state of the state of | TION | | t No.: NPEPJ1 | 31.0331.11.033 | 4a. Project Manager: R. Rivero | | | |
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| | | | 2a. Project A | ddress: (Ci N PE | rcle One) PJ | | 3b. Task No.: | 001 | 4b. Inspector: PHILIP CARRINGTON | | | | |
| 5. Date: | 71 | JILDING NUMB mpling Areas: | | | 8. Turnaro o STAT o | . Turnaround Time: STAT o 24 HRS o 72 HRS o OTHER 6 HRS o 48 HRS o NORMAL RUSH_X 9. Comment s (Fie NOB→ TEM Stop @ 1st Positiv | | | | | | | |
| ULK S | AMPLE L | OCATION |) | | | | | | | | | | |
| | 11. Bulk Sample ID | 12. | Material | | 13. Thermal | 14. | 0 | 1 1 1 | | 15. | 16. | | |
| Area No. | No. | | Material | | System | Floor | 0.001101 | ple Location mple Coordinates | | Material Total Qty. (LF, SF, PCS) | Asbestos Content (Type & % | | |
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ATLAS_ ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET

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Methods:
EPA Interim Method of the Determination of Asbestos In Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763

EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

ATC - New York

BULK ASBESTOS ANALYSIS SHEET

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Microscopes: OLYMPUS BH-2/

ATLAS_ ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010

| Phon | ie: (212 | 2) 353-82 | 280, Fa | ax: (212) | 353-359 | 9 or 8 |
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| | Analysis Date $3/2/2021$ | L Analyst <u> </u> | Number 21- | 225 | EMPERATURE® 23 | : | Analysis Date <u>3/7/2</u> | 2021 Analyst <u>Y</u> (- Batch | Number 21- | 225 , | TEMPERATURE C 7 |
| 5 d Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | 1 9 | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
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| e gravimetric 🗸 analysis sheet | Color of Layer Delected Yes No | | | _ | Other | See gravimetric | Color of Layer Detected Yes N | | | _ | Other Other |
| for results | | | | Cellulose Ondulose Extinction | | for results | - | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | | SM-V | | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver, | ☐ Fiberglass (sotopic ☐ Synthetic High | |
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| See SM-V analysis sheet | | | | Low to Moderate Birefringence | might be underestimated. See Note #1, | See SM-V ☐ analysis sheet | NOB PLM | 0 20 | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Comments: Method: DELAP DEPA DESC | Høy Tøy ANNING OPTION Q.C. □ | | | | for results | Comments: Method: DELAP EPA | Pacit □SCANNING OPTION Q.C. □ | | | |
| 6 | | | Asbestos | Other Fibrous | Non Fibrous | 2 10 | <i></i> | | Asbestos | Other Fibrous | Non Fibrous |
| ld Number | Stereoscopic Exam | PLM Optical Properties | Results PLM % | PLM % | PLM % | Field Number | Stereoscopic Exam | PLM Optical Properties Morph Extinction RI1 RI DS Color Color Pleo Biref Sign Other Identify | Results PLM % | PLM % | PLM % |
| Gravimetric | Color M/B/4(Texture Nt M | - Sunday At Mr. 50 doler cool, the block sign of the literature | Chrysotile | Cellulose | Mineral Filler | Gravimetric | Color Th Texture G | Maryon Extraction At 12 At 18 DO Color Color, Field Date: Sign Office substitute | Chrysotile | Cellulose | 100 Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders | Required Recommended | Homogeneity Vermiculite | 7 | Amosite | Fiberglass | Organic Binders |
| e gravimetric 🗹 | # of Layers Asbestos | | Other | Other | Vermiculite* | See gravimetric □ | # of Layers Asbestos | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | 0000 | analysis sheet for results | Color of Layer Detected Yes N | 10 | | ☐ Cellulose Ondulose | Curier |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | | SM-V | Point Counts Slide 1 Slide 2 | Silde 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ver.PT Total 97 | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| Required 🛘 | PLM | | | ☐ Synthetic High | * If vermiculite is >10% the | Required □ | PLM % | 2 700 | 3 | ☐ Synthetic High | * If vermiculite is >10% the |
| See SM-V 🗇 | NOB PLM 1/2 | 100 | 2 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | See SM-V | NOB PLM | | | Birefringence G Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | Hor Tay | | Low to Moderate Birefringence | See Note #1. | analysis sheet for results | Comments: | | | Low to Moderate Birefringence | See Note #1. |
| to, results | Method; □ ELAP □ EPA □ SC | ANNING OPTION Q.C. | | | | TO TO TO | Method: D'ELAP DEPA | D.SCÁNNING OPTION Q.C. DAY | | | |
| 7 d Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | 3 11 | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color To Texture 47 Mi | orph Extinction RL1 Rt DS Color Color, Pieo Biref Sign Other Identity | Chrysotile | Cellulose | (D) Mineral Filler | 4 : | Color TM Texture | Morph Extinction R11 R1 DS Color Color, Pleo Biref Sign Other Identity | Chrysotile | , PLNI 76 Cellulose | / Mineral Filter |
| Required Z | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders | Required 🗆 | Homogenelty Vermiculite | | Agrosite | Fiberglass | Organic Binders |
| ecommended 🗆 |) T | | Other | Other | Vermiculite* | Recommended 🗆 | 7 | | Other | Other | Vermiculite* |
| e gravimetric 🛭 analysis sheet | # of Layers Asbestos | | - | | Other | See gravimetric ☐ analysis sheet | # of Layers Asbestos | | | | Other |
| for results | Color of Layer Detected Yes No | | *************************************** | ☐ Cellulose Ondutose Extinction | | for results | Color of Layer Detected Yes N | 10 | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | | SM-V | | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb.Ner. PT Total PT | %Asb. Or %Ver. | □ Fiberglass Isotopic | |
| Required 🗌 | PLM , | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample | Required | PLM 2/8 | 0 200 | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM /S | 1 0 20 | \bigcirc | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. | See SM-V □ | NOB PLM | | | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: ZELAP DEPA DSC | ANNING OPTION Q.C. | | Distribute | | analysis sheet for results | Comments: | Øscanning option Q.C. □ | | Direit (fig.)ce | Table to the second sec |
| | I WELHOU, ELAF CIEFA 350 | Artifice Of For | A.L | 041 53 | | | Methody LI ELAP LI EPA | | | | |
| 8 d Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % | 4 12 Field Number | Stereoscopic Exam | PLM Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color 1/11 Texture 15 | proph Extinction RL1 RLII DS Color Color, Pleo Biref Sign Other Identity | Chrysotile | Cellulose | 100 Mineral Filler | Gravimetric | Color TA Texture | Morph Extinction RII RI B DS Color Color, Pleo Biref Sign Offer Identity | Chrysotile | Cellulose | Mineral Filler |
| Required D | Homogeneity Vermiculite! | | Amosite | Fiberglass | Organic Binders | Required 🗆 | Homogeneity Vermiculite | | Amosite | Fiberglass | Organic Binders |
| ecommended 🗆 | # of Layers Asbestos | | Other | Other | verniculte- | Recommended | # of Layers Asbestos | | Other | Olher | Vermiculite* |
| e gravimetric L/ analysis sheet/ | Color of Layer Detected Yes No | | | ☐ Cellulose Ondulose | Other | See gravimetric analysis sheet | Color of Layer Detected Yes N | | | ☐ Celiulose Ondulose | Other |
| for results | | 2 Cide 4 Cide 5 Cide 5 Cide 5 Cide 7 Cide 6 | Pro T. C. | Extinction ☐ Fiberglass Isotopic | | for results | | State 2 Class 4 Class 5 State 5 Con 2 Con | | Extinction Fiberglass Isotopic | |
| SM-V | Point Counts Slide 1 Slide 2 Slide | 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./ver. PT Total PT | %Asb. Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the | SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required 🗆 | | | | Birefringence Horse Hair: Scales, | level of asbestos in a sample might be underestimated. | Required 🗆 | | 0 700 | - | Birefringence | level of asbestos in a sample might be underestimated. |
| See SM-V 🔲 analysis sheet | NOB PLM S | Parnt 0 20 | | Low to Moderate Birefringence | See Note #1. | See SM-V analysis sheet | NOB PLM Comments; | | | Low to Moderate Birefringence | See Note #1. |
| for results | <u> </u> | ANNING OPTION Q.C. | | | | for results | | □ SCANNING OPTION Q.C. □ | | | |
| | ······································ | | | | <u> </u> | | | | | | <u> </u> |

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V), and it utilizes a 400 point count method.

L*LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BULK/FORMS 2021/BULK/ASBESTOS ANALYSIS SHEET_FORM #B2.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by FLAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.6 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L¹LAB_FORMS,DOCUMENTS AND RECORDS:OPTICAL/ASBESTOS_BULK/ASBESTOS_BUL

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

03/02/21

Start Date:

NOB TEM

21-225

Batch #

RUSH

PANYNJ

Client/Project:

03/02/21

| Date Comple | | | | | | | | | | | | | |
|---------------------|---------|----------|----------------------------|----------|------|------|------|--------------|------|------|------|------|--|
| FG | sp | | TEM | > | > | > | > | > | > | > | > | > | |
| _ | Methods | NOB | PLM | > | > | > | > | > | > | > | > | > | |
| NOB TEM Analyst: | W | | PREP | > | > | > | > | > | > | > | > | > | |
| HS | | | Notes | | | | | | | | | | |
| NOB TEM PREP: | | | | | | | | | | | | | |
| MJG | 13 | % Total | Asbestos or Vermiculite | | | | | | | | | | |
| NOB PLM Analyst: | 6 | Asbestos | Types or Vermicuilte | QN | QN | QN | QV | QN | ND | Q | ND | QN | |
| MG/EV | 12 | | % Carbonate | 19.8 | 24.9 | 36.1 | 2.8 | 6.0 | 0.1 | 41.7 | 39.3 | 38.1 | |
| MG | 44 | Non Asb | Residue % NFr | 58.3 | 48.8 | 38.1 | Υ. | - | 1.0 | 43.8 | 47.6 | 48.4 | |
| NOB PLM PREP: | 2 | | % Organic | 21.9 | 26.3 | 25.8 | 96.1 | 92.9 | 6'86 | 14.5 | 13.1 | 13.5 | |
| NOB PL | | | Field# | 4 | 2 | ဗ | 4 | 5 | 9 | 7 | 8 | 6 | |

1. Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not detected.

Client Copy

ATC Group Services LLC 104 E. 25th Street, 8th Floor

New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

Client: ATC - NEW YORK

Sample Date: 4/8/2021

104 EAST 25TH STREET

Date Received: 4/8/2021

NEW YORK, NY 10010

Date Analyzed: 4/9/2021

Fax: (212) 353-3599

Phone: (212) 353-8280

ATC Batch # 21-619

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING #301 **Project** # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | | <u>Noi</u> | n-Asbestos | NOB_ | Asbestos |
|--------------|------------------------|--|----------|------------------|--------------------|----------------------------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 13 | 1ST FLOOR OFFICE SPACE | 2' X 2' & 2' X 4" CEILING TILE | NOB-TEM | | | 21.8% Organic | |
| 21-619 -1 | | FISSURED | | | 0.0% Vermiculite | 52.8% Residue 25.4% Carbonate | NONE DETECTED |
| 21010 1 | | Color: White | 1 | | | | |
| Analyzed By | : Mei Wang | Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive | | |
| 14 | 1ST FLOOR OFFICE SPACE | 2' X 2' & 2' X 4" CEILING TILE FISSURED | NOB-TEM | | | 23.5% Organic 44.7% Residue | |
| 21-619 -2 | | | | | 0.0% Vermiculite | 31.8% Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: White Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive | | |
| 15 | 1ST FLOOR OFFICE SPACE | 2' X 2' & 2' X 4" CEILING TILE FISSURED | NOB-TEM | | | 24.9% Organic 42% Residue | |
| 21-619 -3 | | | | | 0.0% Vermiculite | 33.1% Carbonate | NONE DETECTED |
| Analyzed By | : Mei Wang | Color: White Second Analyst: Feyza G | | Comments: NOB PL | M Inconclusive | | |
| 16 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WA | LLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -4 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | · Ivan Povos | Color: Brow | 'n | | | | |
| | | | | | | | |
| 17 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WA | LLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -5 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | 'n | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 18 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WA | LLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -6 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Brow | 'n | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 19 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 4% Cellulose | 94% Mineral Filler | | |
| 21-619 -7 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By | · Ivan Reves | Color: Off W | /hite | | | | |
| - maryzeu by | . Ivan Neyes | | | | | | |

Batch # 21-619 Page 1 of 7 Report Prepared By: Grace Chan



04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | Non | -Asbestos | <u>NOB</u> | Asbestos |
|--------------|------------------------|---|----------------|---|---------------------|------------|---------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 20 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-619 -8 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: Off Wh | nite | | | | |
| 21 | 1ST FLOOR OFFICE SPACE | GYPSUM BOARD WALL | PLM | 4% Cellulose | 94% Mineral Filler | | |
| | | | . _ | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -9 | | Color: Off Wh | nite | | 0.0% verificulte | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 22 | 1ST FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -10 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: White | | | | | |
| 23 | 1ST FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | - - | 7, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -11 | | Color: White | | | 0.070 Verifficulte | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 24 | 1ST FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -12 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: White | | | | | |
| 25 | 1ST FLOOR OFFICE SPACE | HVAC DUCT INSULATION | PLM | 75% Cellulose | 17% Mineral Filler | | |
| 24.640 42 | | COVER | | 8% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -13 | | Color: Tan/Si | ilver | | oro /o v orrinounio | | |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 26 | 1ST FLOOR OFFICE SPACE | HVAC DUCT INSULATION COVER | PLM | 75% Cellulose | 20% Mineral Filler | | |
| 21-619 -14 | | | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: Tan/Si | ilver | | | | |
| 27 | 1ST FLOOR OFFICE SPACE | HVAC DUCT INSULATION | PLM | 75% Cellulose | 20% Mineral Filler | | |
| | | COVER | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -15 | | Color: Tan/Si | ilver | | 0.070 Verimounte | | NONE BETEOTEB |
| Analyzed By: | : Ivan Reyes | | | | | | |
| 28 | 1ST FLOOR OFFICE SPACE | F/G PIPE INSULATION COVER 3" | PLM | 70% Cellulose | 25% Mineral Filler | | |
| 21-619 -16 | | | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Reves | Color: White/ | Silver | | | | |
| 29 | 1ST FLOOR OFFICE SPACE | F/G PIPE INSULATION COVER | PLM | 70% Cellulose | 25% Mineral Filler | | |
| | | 3" | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -17 | | Color: White/ | Silver | | 5.370 T 511110WIIIO | | 52120120 |
| Analyzed By: | : Ivan Reyes | 100000000000000000000000000000000000000 | | | | | |
| | | | | | | | |
| | | | | | | | |

Report Prepared By: Grace Chan Page 2 of 7 Batch # 21-619



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | <u>Nor</u> | ı-Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|--------------|-------------------------------------|--|---------|------------------|----------------------|----------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 30 | 1ST FLOOR OFFICE SPACE | F/G PIPE INSULATION COVER 3" | PLM | 70% Cellulose | 25% Mineral Filler | | |
| 21-619 -18 | | 3 | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTE |
| A l D | han Davis | Color: White/ | Silver | | | | |
| Analyzed By: | 1ST FLOOR OFFICE SPACE | CMU MORTAR WALL | DLM | | 1000/ Minoral Filler | | |
| 31 | ELEC ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-619 -19 | | 0.1 0 | | | 0.0% Vermiculite | | NONE DETECTI |
| Analyzed By: | Ivan Reyes | Color: Brown | | | | | |
| 32 | 1ST FLOOR OFFICE SPACE | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-619 -20 | ELEC ROOM | | | | 0.0% Vermiculite | | NONE DETECT |
| | | Color: Brown | | | | | |
| Analyzed By: | - | | | | | | |
| 33 | 1ST FLOOR OFFICE SPACE ELEC ROOM | CMU MORTAR WALL | PLM | | 100% Mineral Filler | | |
| 21-619 -21 | | | | | 0.0% Vermiculite | | NONE DETECTI |
| Analyzed By: | Ivan Reyes | Color: Brown | | | | | |
| 34 | 2ND FLOOR OFFICE SPACE | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 28.6% Organic | |
| 21-619 -22 | | FISSURED | | | 0.0% Vermiculite | 47.7% Residue 23.7% Carbonate | NONE DETECT |
| 21-019 -22 | | Color: White | | | | 2017/0 0412011410 | |
| Analyzed By: | Mei Wang | Second Analyst: Feyza Gu | ngor | Comments: NOB PL | M Inconclusive | | |
| 35 | 2ND FLOOR OFFICE SPACE | 2' X 4' CEILING TILE TYPE I FISSURED | NOB-TEM | | | 29.8% Organic 47.4% Residue | |
| 21-619 -23 | | | | | 0.0% Vermiculite | 22.8% Carbonate | NONE DETECT |
| Analyzed By: | Moi Wang | Color: White Second Analyst: Feyza Gu | ngor | Comments: NOB PL | M Inconclusive | | |
| 36 | 2ND FLOOR OFFICE SPACE | 2' X 4' CEILING TILE TYPE I | NOB-TEM | | | 30.6% Organic | |
| | 21.5 1 25 511 51 1152 51 1152 | FISSURED | NOD-ILW | | 0.00()/ | 45.6% Residue | NONE DETECT |
| 21-619 -24 | | Color: White | | | 0.0% Vermiculite | 23.8% Carbonate | NONE DETECT |
| Analyzed By: | Mei Wang | Second Analyst: Feyza Gu | ngor | Comments: NOB PL | M Inconclusive | | |
| 37 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WAL | LPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -25 | | | | | 0.0% Vermiculite | | NONE DETECT |
| | | Color: Brown | | | | | |
| Analyzed By: | • | 0//00114 004 55 54 555 | 15114 | 050/ 0 :: : | 50/ 11/ | | |
| 38 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD PAPER WAL | LPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -26 | | | | | 0.0% Vermiculite | | NONE DETECT |
| Analyzed By: | Ivan Reyes | Color: Brown | | | | | |
| 39 | • | GYPSUM BOARD PAPER WAL | LPLM | 95% Cellulose | 5% Mineral Filler | | |
| | | | | | 0.0% Vermiculite | | NONE DETECT |
| 21-619 -27 | | | | | | | |

Report Prepared By: Grace Chan Page 3 of 7 Batch # 21-619



04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | Non | - <u>Asbestos</u> | <u>NOB</u> | <u>Asbestos</u> |
|--------------|-------------------------|----------------------------|----------|--------------------------------|---------------------|----------------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 40 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 3% Cellulose | 95% Mineral Filler | | |
| 21-619 -28 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Off V | Vhite | | | | |
| Analyzed By: | • | | | | | | |
| 41 | 2ND FLOOR OFFICE SPACE | GYPSUM BOARD | PLM | 6% Cellulose | 92% Mineral Filler | | |
| 21-619 -29 | | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Payas | Color: Off V | Vhite | | | | |
| | 2ND FLOOR OFFICE SPACE | CVDCIIM BOARD | DLM | 40/ Callulana | O40/ Minaral Filler | | |
| 42 | 2ND FLOOR OFFICE SPACE | GYPSUM BUARD | PLM | 4% Cellulose 2% FiberGlass | 94% Mineral Filler | | |
| 21-619 -30 | | | | 270 1 10 01 01 000 | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reves | Color: Off V | Vhite | | | | |
| 43 | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 01.010.01 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -31 | | Color: Whit | 4 | | 0.070 Verrilledite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Odor. Will | | | | | |
| 44 | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -32 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 27 070 02 | | Color: Whit | e | | | | |
| Analyzed By: | Ivan Reyes | | | | | | |
| 45 | 2ND FLOOR OFFICE SPACE | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| 21-619 -33 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| | | Color: Whit | e | | | | |
| Analyzed By: | | | | | | | |
| 46 | 2ND FLOOR OFFICE SPACE | HVAC DUCT COVER | PLM | 75% Cellulose 7% FiberGlass | 18% Mineral Filler | | |
| 21-619 -34 | | | | 7% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Payas | Color: Tan | 'Silver | | | | |
| 47 | 2ND FLOOR OFFICE SPACE | HVAC DUCT COVER | PLM | 75% Cellulose | 20% Mineral Filler | | |
| 41 | ZND I LOOK OFFICE SPACE | TIVAC DOCT COVER | PLIVI | 5% FiberGlass | | | |
| 21-619 -35 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | Ivan Reyes | Color: Tan | Silver | | | | |
| 48 | 2ND FLOOR OFFICE SPACE | HVAC DUCT COVER | PLM | 75% Cellulose | 20% Mineral Filler | | |
| | | | | 5% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| 21-619 -36 | | Color: Tan | /Silver | | 0.0 /0 VEITHCUIRE | | NONE DETECTEL |
| Analyzed By: | Ivan Reyes | COIOI. I di l | J.1701 | | | | |
| 49 | 2ND FLOOR BY ENTRANCE | 2 X 4 CEILING TILE TYPE II | NOB-TEM | | | 24% Organic | |
| 21-619 -37 | TO OFFICE SPACE | | | | 0.0% Vermiculite | 31.4% Residue 44.6% Carbonate | NONE DETECTED |
| _, 0,0 01 | | Color: Whit | ie | | | | |
| | | Second Analyst: Feyza C | | Comments: NOB PLN | Inconclusive | | |

Report Prepared By: Grace Chan Page 4 of 7 Batch # 21-619



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floo New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | No | n-Asbestos | <u>NOB</u> | <u>Asbestos</u> |
|--------------|--|----------------------------|----------|-------------------------------|---------------------|---|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 50 | 2ND FLOOR BY ENTRANCE | 2 X 4 CEILING TILE TYPE II | NOB-TEM | | | 20.7% Organic | |
| 21-619 -38 | TO OFFICE SPACE | | | | 0.0% Vermiculite | 20.7% Residue 58.6% Carbonate | NONE DETECTED |
| | | Color: Whi | | Comments: NOB PL | M Incorphysics | | |
| Analyzed By: | - | Second Analyst: Feyza (| | Commens, NOB PL | ivi inconclusive | | |
| 51 | 2ND FLOOR BY ENTRANCE TO OFFICE SPACE | 2 X 4 CEILING TILE TYPE II | NOB-TEM | | 0.0% Vermiculite | 18.5% Organic 12.6% Residue 68.9% Carbonate | NONE DETECTED |
| 21-619 -39 | | Color: Whi | te | | 0.0% verificante | 00.9 % Calbonate | NONE DETECTE |
| Analyzed By: | : Mei Wang | Second Analyst: Feyza | | Comments: NOB PL | .M Inconclusive | | |
| 52 | 1ST FLOOR ABANDONED BLDG | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-619 -40 | BEDG | | | | 0.0% Vermiculite | | NONE DETECTED |
| | . 5 | Color: Bro | wn | | | | |
| Analyzed By: | | OMILIWALI MODTAD | D. 14 | | 1000/ 14/ 15/ | | |
| 53 | 1ST FLOOR LOCKER ROOM & LUNCH ROOM | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-619 -41 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reves | Color: Bro | wn | | | | |
| 54 | 1ST FLOOR LOCKER ROOM | CMU WALL MORTAR | PLM | | 100% Mineral Filler | | |
| 21-619 -42 | & LUNCH ROOM | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21-019 -42 | | Color: Bro | wn | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 55 | 1ST FLOOR LOBBY | GYPSUM BOARD PAPER W | ALLPLM | 95% Cellulose | 5% Mineral Filler | | |
| 21-619 -43 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | · Ivan Payas | Color: Bro | wn | | | | |
| 56 | 1ST FLOOR LOBBY | GYPSUM BOARD PAPER W | ALI DI M | 95% Cellulose | 5% Mineral Filler | | |
| 50 | 131 I LOOK LOBB I | OTI SOM BOARDT AF ER W | VEELEINI | 95% Cellulose | | | NONE DETECTED |
| 21-619 -44 | | Calan Bra | | | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reyes | Color: Bro | wn | | | | |
| 57 | 1ST FLOOR LOBBY | GYPSUM BOARD PAPER W | ALLPLM | | 100% Mineral Filler | | |
| 21-619 -45 | | | | | 0.0% Vermiculite | | NONE DETECTED |
| 21010 10 | | Color: Bro | wn | | | | |
| Analyzed By | : Ivan Reyes | | | | | | |
| 58 | 1ST FLOOR LOBBY | GYPSUM BOARD | PLM | 3% Cellulose 2% FiberGlass | 95% Mineral Filler | | |
| 21-619 -46 | | | | 270 FINEIGIASS | 0.0% Vermiculite | | NONE DETECTED |
| Analyzed By: | : Ivan Reves | Color: Off | Vhite | | | | |
| 59 | 1ST FLOOR LOBBY | GYPSUM BOARD | PLM | 2% Cellulose | 96% Mineral Filler | | |
| | | | . = | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTE |
| 21-619 -47 | | Color: Off | Mhito. | | 0.0% verificulte | | NONE DETECTED |
| Analyzed By | : Ivan Reyes | Color: Off | VIIIIE | | | | |

Report Prepared By: Grace Chan Page 5 of 7 Batch # 21-619



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| Location | Type of Material | Madad | | | NOB | Asbestos |
|--------------------------------------|---|---|---|---|--|---|
| | VF - J | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 1ST FLOOR LOBBY | GYPSUM BOARD | PLM | 3% Cellulose | 95% Mineral Filler | | |
| | | | 2% FiberGlass | 0.0% Vermiculite | | NONE DETECTED |
| an Reves | Color: Of | f White | | | | |
| 1ST FLOOR LOBBY | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | | | | NONE DETECTED |
| | Color: W | hite | | 0.0 % VOITHIOGHIO | | NONE BETEGTED |
| an Reyes | | | | | | |
| 1ST FLOOR LOBBY | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | | 0.0% Vermiculite | | NONE DETECTED |
| ran Reves | Color: W | hite | | | | |
| 1ST FLOOR LOBBY | JOINT COMPOUND | PLM | Trace% Cellulose | 100% Mineral Filler | | |
| | | | | 0.0% Vermiculite | | NONE DETECTED |
| | Color: W | hite | | | | |
| an Reyes | | | | | | |
| 1ST FLOOR BATHROOMS | F/G PIPE INSULATION COV 3" | ER NOB-TEM | | | 81.4% Organic 4.7% Residue | |
| | | | | 0.0% Vermiculite | 13.9% Carbonate | NONE DETECTED |
| lei Wang | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR BATHROOMS | | ER NOB-TEM | | | 78.4% Organic | |
| | 3 | | | 0.0% Vermiculite | 13.7% Residue 7.9% Carbonate | NONE DETECTED |
| | | | Comments: NOB PLM | A Inconclusive | | |
| | | | | | 00.00/ 0 | |
| 151 FLOOR BATHROOMS | 3" | EK NOR-IEM | | | 10.2% Residue | |
| | Color: Pl | ook/Prown | | 0.0% Vermiculite | 0.9% Carbonate | NONE DETECTED |
| lei Wang | | | Comments: NOB PLM | 1 Inconclusive | | |
| 1ST FLOOR ABADONED | PIPE FITTINGS INSULATIO | N PLM | | 55% Mineral Filler | | 10% Chrysotile |
| BEB B ATTINGO MO | | | 35% FiberGlass | 0.0% Vermiculite | | |
| ran Bayyaa | Color: Of | fWhite | | | | |
| | PIPE FITTINGS INSULATIO | N | | | | Total Asbestos: 10 % |
| BLDG BATHROOMS | | | | | | NOT ANALYZED |
| | | | | | | NOT ANALTZED |
| | | | Comments: Positive st | top, see #67 | | |
| 1ST FLOOR ABADONED BLDG BATHROOMS | PIPE FITTINGS INSULATIO | N | | | | |
| | | | | | | NOT ANALYZED |
| | | | Comments: Positive st | top, see #67 | | |
| 1 | an Reyes 1ST FLOOR LOBBY an Reyes 1ST FLOOR LOBBY an Reyes 1ST FLOOR BATHROOMS ei Wang 1ST FLOOR BATHROOMS ei Wang 1ST FLOOR BATHROOMS an Reyes 1ST FLOOR ABADONED BLDG BATHROOMS 1ST FLOOR ABADONED BLDG BATHROOMS | an Reyes 1ST FLOOR LOBBY Color: Wan Reyes 1ST FLOOR LOBBY JOINT COMPOUND Color: Wan Reyes 1ST FLOOR LOBBY JOINT COMPOUND Color: Wan Reyes 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Second Analyst: Feyza 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Color: Blace i Wang Second Analyst: Feyza 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Color: Blace i Wang Second Analyst: Feyza 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVATE Color: Blace i Wang Second Analyst: Feyza 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION Color: Of an Reyes 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS INSULATION ST FLOOR ABADONED PIPE FITTINGS 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Color: White Color: White Color: White Color: White Color: White Color: White Color: White Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR BATHROOMS F/G PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION Color: Off White 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION ST FLOOR ABADONED Color: Off White 1ST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION PLM | AND REYES IST FLOOR LOBBY JOINT COMPOUND Color: White AND REYES COLOR: White AND REYES IST FLOOR LOBBY JOINT COMPOUND Color: White Color: White AND REYES IST FLOOR LOBBY JOINT COMPOUND PLM Trace% Cellulose Color: White AND REYES Color: White AND REYES IST FLOOR BATHROOMS FIG PIPE INSULATION COVER NOB-TEM 3" Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLM 3" Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLM Second Analyst: Feyza Gungor Comments: NOB PLM Second Analyst: Feyza Gungor Comments: NOB PLM Second Analyst: Feyza Gungor Comments: NOB PLM 3" Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLM 3" Color: Black/Brown Second Analyst: Feyza Gungor Comments: NOB PLM 35% FiberGlass Color: Off White AND REYES Color: Off White AND REYES Comments: Positive si IST FLOOR ABADONED BLDG BATHROOMS PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION PIPE FITTINGS INSULATION Comments: Positive si | Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: White 1 Trace% Cellulose 100% Mineral Filler 0.0% Vermiculite Color: Black/Brown Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza Gungor Comments: NOB PLM Inconclusive El Wang Second Aralyst: Feyza 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White Cobr. White Cobr. White |

Report Prepared By: Grace Chan Page 6 of 7 Batch # 21-619



ATC Group Services LLC 104 E. 25th Street, 8th Floor

04 E. 25th Street, 8th Floor New York, NY 10010 Tel. 212-353-8280 Fax: 212-353-8306

| | | | | No | n-Asbestos | <i>NOB</i> | <u>Asbestos</u> |
|----------------|------------------------------------|--|---------------------------|-------------------------------|--|----------------------------|-----------------|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| NOTES: | | | | | | | |
| 1) The Limi | it of Detection is the same as | the Reporting Limit for these results. | | | | | |
| 2) The Rep | oorting Limit (RL) is the Limit o | of Quantitation. For point counts the limit of | quantitation of 0.25%; | based on one asbestos | point counter over 400 non-empty poi | nts. | |
| 3) Asbesto | s Containing Material (ACM) | Definition: > 1% asbestos by weight is o | onsidered an ACM | | | | |
| report may | | ponsible for sample collection. Please refit t endorsement by NVLAP or any other ag quest. | | | | | |
| 5) Accredi | ited by NVLAP #101187-0 ar | nd by NY State ELAP #10879 | | | | | |
| 6) Confiden | ntiality Notice: The document(| s) contained herein are confidential and pr | rivileged information, i | ntended for the exclusive of | use of the individual or entity named al | pove. | |
| 7) Liability N | Notice: ATC Group Services | and its personnel shall not be liable for an | y misinformation prov | rided to us by the client req | garding these samples. This report re | lates only to samples subm | itted and analy |
| 8) Asbesto | s results are reliable to 2 sign | nificant figures. | | | | | |
| 9) The con- | dition of all samples was acc | eptable upon receipt | | | | | |
| 10) The lab | ooratory certifies that the test r | esults meetall requirements of NELAC. | | | | | |
| 11) Supple | ment to test report batch # | Amendments: Ame | endment Dates: | Amended by: | | | |
| 12) PLM Le | etter is attached on this repor | t | | | | | |
| 13) TRACE | E: The result is reported as T | race when No points are counted and ast | oestos is identified. Fo | r ELAP Trace is < 1%. | | | |
| 14) ATC G | roup Services certifies that th | is report is an accurate and authentic rep | ort of the results obtain | ned from the laboratory an | alysis | | |
| 15) The un | certainty for these test results | is available upon request. | | | | | |
| | | 1 for the analysis of samples containing ≤ lite and may underestimate the level of as | | | | ds ELAP 198.1 followed by | ELAP 1986. |
| Ivan Rey | es 🚺 | van Regu | | | Mei Wan | g Meih | اسم |
| Analyst: | | Y | | | Approved Quality M | 3 | |
| Mei Wan | ng M | illong | | | | | |
| Analyst: | | | | | | | |
| Feyza Gu | ungor | terly | | | | | |
| Analyst: | | | | | | | |

Report Prepared By: Grace Chan Page 7 of 7 Batch # 21-619



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired.

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely.

Milena Bonezzi
ATC Group Services LLC
Director of Laboratory Services

Wiley Bourson

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ATC EFFECTIVE DATE 01/18/2021 REVISION #32

BY MEI WANG

Page 1 of 1

DOCUMENT #DE



BATCH NO. 21-6(9) Page of

| 1. Clien | PANY | J.J | Project Na FIRESPRI | ime: INKLER RE | HABILITA | TION | 3a. ATC P | roject No.: 4PNPE I | | 4a. Proje | ect Manager: R. Rivero | 0 |
|-----------|-----------------------|--|------------------------|-------------------|-----------------|--------|---------------------------------|-------------------------------|------------|-----------|---------------------------------|--------------------|
| | 1231411 | 10 | 2a. Project | ddress: (Ci | rcle One) PJ | | 3b. Task N | | | 4b. Inspe | | |
| 5. Date: | 121 | UILDING NUME | 30) | | | 24 HR | ne: IS o 72 HRS RS o NORM | | | NOB→ | ment s (Field) TEM 1st Positive | |
| | | OCATION | | | | | | | | | | |
| omogenous | 11. Bulk Sample ID | 12. | Material | | 13. Thermal | 14. | | Sample Loc | ation | | 15. Material Total | 16. Asbesto |
| Area No. | No. | 4- 1- | | , | System | Floor | | Sample C | oordinates | | Qty. (LF, SF, PCS) | Content (Type & |
| 51 | 13 | 2X2 3 | 1 ZX | 1 | | 1 | 077 | CF 5 | PACE | | | |
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| 7. Relino | quished By | | 18. Date | 19. Time | 20. R | eceive | ed Bv | | 21. Date | 22. Ti | | Method ubmittal |
| Ph | de C | No. | 4/8/21 | 3:200 | | ilel. | | () | 4/8/2021 | | Field | ł |
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| II. | | | | | GO | | | | | | | |

24. Name and Signature:

24. Name and Signature:

25. Date

26 Time

27. Comments (Lab)

24a. Analyzed By:

24b. Analyzed By:

24c. QC By:

12m: Fanza Gunga Tuy & 4/9/21 H: 47



| | 7 900 |
|-------|-------|
| I NO. | of |
| | |

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| PROJECT INF | ORMATION | | | | | |
|-------------|----------------------------------|---------------------|-------|---|---|---|
| 1. Client | NYNJ | Project I FIRESP | | ER REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero |
| | | 2a. Project | Addre | ess: <mark>(Circle One)</mark> PE PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON |
| 5. Date: | BUILDING NUM Sampling Areas: | 201 | | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH X | 9. Comment s (Field) NOB→ TEM Stop @ 1st Positive |

|). omogenous | 11. Bulk Sample ID | 12. Material | 13. Thermal | 14. | Sample Location | 15. Material Total | 16. Asbestos |
|-----------------|-----------------------|-----------------|----------------|-------|--------------------|-----------------------|-----------------|
| Area No. | No. | (1000MMHH 3000) | System | Floor | Sample Coordinates | Qty. (LF, SF, PCS) | Content |
| 11 | 31 | CHU DIOIZPAIL | | 1 | OFFICE SPORE | | |
| 11 | 32 | W AZY | | | FUEL ROOM | | |
| 1) | 33 | 1) | | 7 | | | |
| 12 | 34 | ZYY CENCINC | | 2 | OPPICE SPACE | | |
| 13 | 35 | TILE SHIPE I | | 1 | 11 | | |
| 12 | 36 | FISSORED | | | | | |
| 13 | 37 | GYPSUN BOARD | | | | | |
| 13 | 38 | PAPER | | | | | |
| 13 | 39 | WALL | | | | | |
| 14 | 40 | GYPSUM BOARD | | | | | |
| 14 | 41 | '// | | | | | |
| 14 | 42 | /1 | | | | | |
| 15 | 43 | JOINT COMPOUN | | | | | |
| 15 | 44 | 11 | | | | | |
| 15 | 45 | /ì | | | | | |
| 16 | 46 | HVAC DUGT | | | | | |
| ib | 47 | COURR | | 10 | | | |
| 16 | 48 | // | | 1 | | | |

| 17, Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
|---------------------|----------|----------|-----------------|----------|----------|-------------------------|
| 14:10 | 11011 | 210.00 | -1 0 0 . | .// | 15 / | Field |
| Mulif Com | 41814 | 2,50hr | Eleler | 4/8/2011 | 15:25 | Walk In |
| | 11 . 1 | | 0 | | | US Mail |
| I | | | | | | Fed-Ex |
| | | | GALE. | | | Other |
| III. | | | | | | |

| 24. Name and Signature: | 25. Date | 26 Time | 27. Comments (Lab) |
|---------------------------------------|----------|---------|--------------------|
| 24a. Analyzed By: Ivan Reyer Strantes | 4 9/2021 | 9:58am | |
| 24b. Analyzed By: (ME) Who G | 4(5127 | (f w | |
| 24c. QC By: | | | |
| TEM: Feyza Gungs Zen | 4/9/20 | 14:47 | |



BATCH NO. 21-619

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

| 1. Client PANYNJ | | Project Name: FIRESPRINKLER | REHABILITATION | 3a. ATC Project No.: 214PNPEPJ1 | 4a. Project Manager: R. Rivero | |
|------------------|-----------------------------------|--------------------------------|---|--|---|--|
| | | 2a. Project Address: PN P | (Circle One) E PJ | 3b. Task No.: 0001 | 4b. Inspector: PHILIP CARRINGTON | |
| 5. Date: 4/8/21 | BUILDING NUMB Sampling Areas: | BER 20 / | [1] : [| ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | 9. Comment s (Field) NOB→ TEM Stop @ 1 st Positive | |

| | | OCATION | · | | | | |
|------------|----------------|-------------------|----------------|-------|--------------------|-----------------------|----------------------------|
| Homogenous | Bulk Sample ID | 12. Material | 13. Thermal | 14. | | Material Total | Asbestos |
| Area No. | No. | | System | Floor | Sample Coordinates | Qty. (LF, SF, PCS) | Content (Type & % |
| 17 | 49 | 2X4 chiere pich | | 2 | 134 GUPPARCE 10 | | |
| 117 | 56 | type It | | 1 | OFFICE TABLE | | |
| 17 | 51 | 11 | | - [| 11 | | |
| 118 | 23 | CTU WAY | | ¥ | ABANDUNED 13 COS | | |
| 118 | 53 | HORME | | 1 | The floor LOCKER | | |
| 118 | 54 | () | | | TUDA & LONGHT 1206 | 27 | |
| 19 | 75 | GYPSUY RUMEN | | | 1st FLOUR LOBB | 4 | |
| 119 | 56 | PANZA | | | | / | |
| 19 | 57 | WAL | | | | | |
| 10 | 58 | CHIPS UN BOSIN | | | | | |
| 120 | 59 | 11 | | | | | |
| 20 | 60 | (1 | | 4 | | | |
| 21 | al | JOINT COMFORNO | | | 4 | | |
| 21 | 62 | 1/ | | | | | |
| 21 | 63 | . P | | | | | |
| 22 | 64 | F/G P. DE INSUDIU | R | | BARA RODAS | | |
| 28 | 65 | LOVER 3" | | | 101 | | |
| 22 | 66 | 11 | | | | | |

| 17 Relinquished By | 18. Date | 19. Time | 20. Received By | 21. Date | 22. Time | 23. Method of Submittal |
|--------------------|----------|----------|-----------------|----------|----------|-------------------------|
| Ma / A | ul-la | 2000 | -1 1 E | 10/06 | 7/202 | Field |
| 7 Vily | 41X121 | 3(20pm | bleter V | 4/8/2021 | 16:25 | Walk In |
| | 11011 | | U | | | US Mail |
| I. | | | | | | Fed-Ex |
| III. | | | | | | Other |

| LABORATORY INFORMATION | | |
|--|---------------------|--------------------|
| 24. Name and Signature: | 25, Date 26, Time 2 | 27. Comments (Lab) |
| 24a. Analyzed By: Dran Keyer a frankly | 49/2021 9:58am | |
| 24b. Analyzed By: With whom te | 412/21/14 | |
| 24c. QC By: | | |
| TOW King Course CO. O | 11/0/0. 11/1/17 | |



| | | | 11 11 |
|-----------|----------|-------|--------|
| BATCH NO. | 2,1.19 | Page(| 1 of 4 |
| | 61-101-1 | | |

| I. Client | PANY | NJ | Project Name: FIRESPRINKLE 2a. Project Addres PN | | | TION | 3a. ATC Project No.: 214PNPEPJ1 3b. Task No.: 0001 | | 4a. Project Manager: R. Rivero 4b. Inspector: PHILIP CARRINGTON | | |
|-------------------|---------------------|-----------------|---|------|----------------|--------|---|-------------|---|-----------------------|--------------------|
| 5. Date: | 7/ | Sampling Areas: | 30 / | o ST | | | ne: S o 72 HRS o OTHER RS o NORMAL RUSH_X_ | | 9. Comment s (Field) NOB→ TEM Stop @ 1 st Positive | | |
| | | LOCATION | | | | | | | | | |
| . 1 mogenous E | 1. Bulk Sample I | 12. | Material | | 13. Thermal | 14. | Sample Loc | ation | | 15. Material Total | 16. Asbesto |
| Area No. | No. | | That of the | | System | Floor | | coordinates | | Qty. (LF, SF, PCS) | Conter |
| 23 | 67 | PIPE 4 | iTDa16 | | | 1 | ARMONUED | 8605 | | (27,01,1100) | Пурса |
| 23 | 68 | 115 | Limon |) | | i | ABANDUNED BAJA | 20)4 | | | |
| 23 | 69 | 1,27 | 1, | | | | 12/25/1933 | 1) | | | |
| 70) | | | | | | _ | | | | | |
| 1/41) | | | | | | | | | | | |
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| HAIN O | F CUSTO | NDV | | | | | | | | | |
| | uished By | | 18. Date 19. | Time | 20 B | eceive | d By | 21. Date | 22. Tim | | Method ubmittal |
| 1. Kening | LISTIEG BY | A | 1 1 | | | 7.0 | 0 1 | 21. Date | 18 | Field | |
| the | Uf C | 39 | 4/8/2/3 | (20P |)//\ | Ele | ler CV | 48001 | 160 | | |
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| I. | | | | | | | | | | Othe | |
| | ORY IN | FORMATION | | | | | | | 1 | | |
| | and Signa | | \cap | 0 | | 2 | 25. Date 26 Tir | ne 27. | Commen | ts (Lab) | |
| 4a. Analy | | Dran Le | sec who | 160 | , , | , | 497071 9:0 | 8 ann | | , | |
| | zed By: | | 1 | 100 | V | r | 011 1731 17 | 2 | | | |

ATLAS ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306 Accreditations: NVLAP 101187-0 ELAP 10879

Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT

| | BULK ASBEST | TOS ANALYSIS SHEET | | |
|------------------|-----------------------------|--------------------|----------------|------------|
| Client / Project | PANYNJ/ FIRESPRINKLER REHAB | | Project Number | 214PNPEPJ1 |
| | 4 / Q /2021 Analyst | M | Batch Number | 21-619 |

| | Analysis Date 4 / 0 /2 | 2021 Anal | yst | | T | | | Batch N | Number 21-6 | 519 _T | EMPERATURE & |
|--|--|---------------|-------------|----------|----------------|-------------|--------------|---------------|---|--|--|
| 1 13 Field Number | Stereoscopic Exam | | | PLM Op | | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Unit Texture | | | | Mineral Filler | | | | | | |
| Required Recommended | Homogeneity Vermiculite | | | | | | | | Amosite Other | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric panalysis sheet | # of Layers Asbestos Color of Layer Detected Yes M | No | | | | | | | | ☐ Cellulose Ondulose | Other |
| for results | Point Counts Slide 1 Slide 2 | Slide 3 Slide | 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| SM-V | BI M | Silde 3 Silde | 4 Silde 5 | Silde 0 | Slide / | Silde o | ASD./VEI. FI | TOTALE | MASS. OF MASS. | Synthetic High | * If vermiculite is >10% the |
| Required See SM-V | NOB PLMO | | 1 | | | | 9 | 21 | J | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | | Birefringence | |
| | Method: ∠ ELAP □ EPA | SCANNING C | PTION | | Q.C | c. 🗆 | | | | | |
| 2 14 Field Number | Stereoscopic Exam | | | | otical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Li CTexture | Morph Extino | tion RI1 | RI II DS | Color Colo | r, Pleo Bir | ef Sign Ot | her Identity | Chrysotile | Cellulose | (|
| Required Ø | Homogeneity Vermiculite | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Layers Asbestos | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 2 analysis sheet | Color of Layer Detected Yes 1 | No — — | | | | | | | | ☐ Cellulose Ondulose | Other |
| for results | Point Counts Slide 1 Slide 2 | Slide 3 Slide | 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| SM-V | DIM | Olide o Olide | - Olide D | Olide 0 | Olido r | Ondo o | Trops vor. 1 | Total 1 1 | 7.7.027.07.77 | ☐ Synthetic High | * If vermiculite is >10% the |
| Required See SM-V | you a set to | | , | | | | D | 2 | J | Birefringence Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| analysis sheet | Comments: | | | | | | L | | l . | Birefringence | See Note #1. |
| for results | Method: □ ELAP □ EPA | SCANNING O | PTION | | Q. | C. 🗆 | | | | | |
| 3 15 Field Number | Stereoscopic Exam | | | | otical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Mc Crexture | Morph Extin | tion RI1 | RII DS | Color Colo | r, Pleo Bi | ref Sign O | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| Required. | Homogeneity Vermiculite | <u> </u> | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | | / | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | 1 | | | | | | | | | | Other |
| for results | Color of Layer Detected Yes | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide | e 4 Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | * If vermiculite is >10% the |
| Required | [7] (0] | | | - | | | 0 | 7 | | Birefringence Horse Hair: Scales, | level of asbestos in a sample might be underestimated. |
| See SM-V □ | NOB PLM | -(| | | | | 1 | Zw | 1.0 | Low to Moderate | See Note #1. |
| I analysis sheet | | | | | | | | | 1.0 | Birefringence | The state of the s |
| analysis sheet for results | Comments:/ | SCANNING | OPTION | | lq. | C. 🗆 | | | | Birefringence | 1 |
| for results | Method: ELAP □ EPA | SCANNING | OPTION | | | c. 🗆 | | | Asbestos | Birefringence Other Fibrous | Non Fibrous |
| | | / | | | ptical Pr | operties | | | Results PLM % | | Non Fibrous PLM % |
| for results | Method: ELAP EPA Stereoscopic Exam | SCANNING O | | | | operties | | ther Identity | Results PLM % Chrysotile | Other Fibrous PLM % Cellulose | PLM % Mineral Filler |
| for results 4 16 Field Number Gravimetric Required | Method: ELAP EPA Stereoscopic Exam Colo Vexture Homogeneity Vermiculite | / | | | ptical Pr | operties | | | Results PLM % Chrysotile Apriosite | Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders |
| for results 4 16 Field Number Gravimetric Required Recommended | Method: ELAP EPA Stereoscopic Exam Colo Vexture Homogeneity Vermiculite | / | | | ptical Pr | operties | | | Results PLM % Chrysotile | Other Fibrous PLM % Cellulose | PLM % Mineral Filler Organic Binders Vermiculite* |
| for results 4 16 Field Number Gravimetric Required | Stereoscopic Exam Colo Colo Verture Homogeneity Vermiculite | Morph Extin | | | ptical Pr | operties | | | Results PLM % Chrysotile Apriosite | Other Fibrous PLM % Cellulose Fiberglass | PLM % Mineral Filler Organic Binders |
| for results 4 16 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Stereoscopic Exam Color VOA V (exture Homogeneity Vermiculite Asbestos Asbestos | Morph Extin | ction RI 1 | RI II DS | ptical Pr | operties | | ther Identity | Results PLM % Chrysotile Apriosite | Other Fibrous PLM % Cellulose Fiberglass Other | PLM % Mineral Filler Organic Binders Vermiculite* |
| 4 16 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Stereoscopic Exam Color | Morph Extin | ction RI 1 | RI DS | ptical Pr | operties | ref Sign O | ther Identity | Results PLM % Chrysotile Aprosite Other | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | PLM % Mineral Filler Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| for results 4 16 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V | Method: ELAP EPA Stereoscopic Exam Colo Vexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 PLM | Morph Extin | ction RI 1 | RI DS | ptical Pr | operties | Asb./Ver. P | T Total PT | Results PLM % Chrysotile Agriculture Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | PLM % Mineral Filler Organic Binders Vermiculite* Other |
| for results 4 16 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results SM-V Required Required | Method: ELAP EPA Stereoscopic Exam Colo Vexture Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 PLM | Morph Extin | e 4 Slide 5 | RI DS | ptical Pr | operties | Asb./Ver. P | T Total PT | Results PLM % Chrysotile Agriculture Other %Asb. Or %Ver. | Other Fibrous PLM % Cellulose Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, | PLM % Mineral Filler Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing ≥10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:\LAB_FORMS,DOCUMENTS AND RECORDS\OPTICAL\ASBESTOS_BULK\ASBESTOS BULK\FORMS 2020BULK\ASBESTOS ANAL\YSIS SHEET_FORM #82.doc

ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Date 4/9 /2021 Analyst 21-619 Batch Number Non Fibrous Asbestos 17 Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RI I DS Color Color Pleo Biref 1'S Cellulose Mineral Filler Organic Binde Vermiculite* analysis sheet Color of Layer Detected Yes SM-V Slide 6 Slide 7 %Asb, Or %Ver Synthetic High If vermiculite is >10% the Required evel of asbestos in a sample Horse Hair: Scale: night be underestimated. NOB PLM See SM-V Low to Moderate See Note #1. analysis sheet for results Method: ELAP | EPA Q.C. SCANNING OPTION Asbestos Non Fibrous Other Fibrous 18 Stereoscopic Exam **PLM Optical Properties** Results PLM % PIM % PLM % color <u>Avo</u> faxture Celiulos 🚣 _ Mineral Filler Organic Binder: Required مت omogeneity Vermiculite Other analysis sheet Cellulose Ondui Color of Layer for results] Fiberglass isot Şlide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb, Or %Ver. Point Counts Slide 5 SM-V Slide 2 Slide 3 If vermiculite is >10% the PLM \bigcirc evel of asbestos in a samp Horse Hair: Scales NOB PLM might be underestimated See SM-V [Low to Moderate analysis sheet for results Q.C. 🗆 Method: ELAP EPA TO SCANNING OPTION Asbestos Non Fibrous Other Fibrous 19 **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % PLM % Cellulose 1 Mineral Filler Gravimet Organic Binde Required Vermiculite* Other See gravimetric [analysis sheet Color of Laver for results %Ash, Or %Ver Point Counts Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total P7 SM-V 0 /90 If vermiculite is >10% the Required I evel of asbestos in a sample Horse Hair: Scales might be underestimated NOB PLI See SM-V [Low to Moderate See Note #1. analysis sheet for results Method: LAP DEPA Q.C. SCANNING OPTION Ashestos Non Fibrous 20 Other Fibrous **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % PLM % Gravimetri Cellulos Mineral Filler 2 Required Organic Bin Vermiculite* Other analysis sheet Color of Laver Detected for results Point Counts Slide 2 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V If vermiculite is >10% the 0 200 Required [evel of asbestos in a sampl might be underestima NOB PLM See SM-V Low to Moderate See Note #1. analysis sheet

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: d☐ ELAP ☐ EPA

SCANNING OPTION

for results

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing £10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing ±10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC EFFECTIVE DATE 01/18/2021 REVISION #33 BY MEI WANG FORM #82

Q.C.

ATEAS ATC

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

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ight be underestimated.

Extinction Fiberglass Isotopi

Birefringence

Low to Moderate

Horse Hair: Scales

%Asb. Or %Ver.

| | DANVAL | | BULK ASBEST | TOS ANAI | YSIS SH | IEET · | | 21404 | IDEDI4 | Microscop OLYMPUS BH NIKON OPTIPH |
|---------------------------------|--|-------------------|-------------------|--------------|---------------|--------------|--------------|---------------------------|--|---|
| | Client / Project PANYNJ Analysis Date 4 / 1 | 2024 | EN NEHAD | M | | | | Number 214PN 21- | ALCOHOL TO THE REAL PROPERTY. | 20 |
| 1 04 | | ZUZI Analyst | | DI | | | Batch I | Number 21- | Other Fibrous | Non Fibrous |
| 1 21 Field Number | Stereoscopic Exam | | | Optical Pr | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | color than texture | Morph Extinction | RI1 RI | DS Color Col | lor, Pleo Bir | ref Sign Oti | her Identity | Chrysotile | Cellulose | 9 Mineral Filler |
| Required 🗆 | Homogeneity 4 Vermiculite | | | | | | | Anosite | 2 Fiberglass | Organic Bind |
| Recommended | # of Layers Asbestos | / | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | Maria Maria Panya | 1 | | | | | | | | Other |
| for results | Color of Layer Detected Yes | No | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Fiberglass Isotopic | |
| Required | PLMD O | | | | | 0 | 200 | O | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a same |
| See SM-V | NOB PLM | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| analysis sheet | Comments: | | | | | | | L | Birefringence | See Note #1. |
| for results | Method: √ ELAP □ EPA | SCANNING OPTI | ON | l Q | .c. 🗆 | | | | 1 | |
| 2 00 | | | S(HS) | | | | | Asbestos | Other Fibrous | Non Fibrous |
| 2 22 Field Number | Stereoscopic Exam | | | Optical Pr | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | cold hite Texture G | Morph Extinction | RI1 RI | DS Color Co | lor, Pleo Bir | ref Sign Ot | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity Vermiculite | / | | | | | | Apriosite | Fiberglass | Organic Bind |
| Recommended | Homogenety Vermicule | -1 = 1 | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | = | | | | | ☐ Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide | 6 Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| | PLM O | | | | | | 100 | | ☐ Synthetic High | * If vermiculite is >10% th |
| Required | NOB PLM | | | + | - | 0 | 200 | 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sam might be underestimated. |
| See SM-V analysis sheet | -110 F (2001) Park - 1 Prop () | | | | 1 | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: | SCANNING OPTI | ON | 10 | .c. 🗆 | | | | 1 | |
| | Wiethod: 2 ELAP EPA | LI SCANNING OF TH | ON | Į G | .с. 🗆 | | | | | |
| 3 23 Field Number | Stereoscopic Exam | | PLM | Optical P | roperties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color huly Texture | Morph Extinction | RI1 RI | DS Color Co | lor, Pleo Bi | ref Sign Ot | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required | Comp. SVATE TOXING | | | | | | | Apposite | Fiberglass | · · · · · · · · · · · · · · · · · · · |
| Recommended | Homogeneity Vermiculite | 4 | | | | | | Other | Other | O Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | 7 | | Other |
| analysis sheet | Color of Layer Detected Yes | No | | | | | | | ☐ Cellulose Ondulose | |
| for results | | | | | | | | 1 | Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide | 6 Slide 7 | Slide 8 | Asb,/Ver. PT | 1 0 | %Asb. Or %Ver. | ☐ Fiberglass isotopic ☐ Synthetic High | |
| Required | PLM C | | - | | | 0 | 200 | 0 | Birefringence | If vermiculite is >10% the level of asbestos in a same |
| See SM-V □ | NOB PLM | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | / | | | | | | | Birefringence | |
| | Method: ELAP EPA | SCANNING OPTI | ON | Q | .c. 🗆 | | | | | |
| 4 24 | Stereoscopic Exam _ | | PLM | Optical P | roperties | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | John C | Morph Extinction | Continue Continue | DS Color Co | | | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Colo Colo Colo Colo Colo Colo Colo Colo | | | | | | | Chrysotile | | Mineral Filler |
| Required | Homogeneity Yermiculite | 4== | | | | | | Aprosite | Fiberglass | |
| Recommended | 1 | | | | | | | Other | Other | Vermiculite* |

| Methods: |
|--|
| EPA Interim Method of the Determination of |
| Asbestos in Bulk Insulation Samples - 40 CFR |
| Appendix E to Subpart E of Part 763 |
| EPA 600/R-93/116 |
| ELAP Items 198.1, 198.4, 198.6, 198.8 |

of Layers

Point Counts

NOB PLM

Comments:

PLM

Method: ELAP

EPA

See gravimetric [

analysis sheet

for results

SM-V

Required [

See SM-V

analysis sheet

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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0 200

Slide 8 Asb, Ver. PT Total PT

Q.C. 🗆

Slide 4

Z SCANNING OPTION

Slide 5 Slide 6 Slide 7

Slide 2

See gravimetric [analysis sheet for results

SM-V

Required [

See SM-V

analysis sheet for results

NOB PLM

ATC - New York

(FCellulose Ondulos

Synthetic High

Horse Hair: Scales,

Low to Moderate Birefringence

If vermiculite is >10% the

level of asbestos in a sample

might be underestimated. See Note #1.

%Asb. Or %Ver.

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| ELAP 1 | 087 |
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| Microsco | nes |

| (a 12) 000 0200, 1 an (2 12) 000 0000 01 0000 | ELAF |
|---|-------------|
| BULK ASBESTOS ANALYSIS SHEET | Microsc |
| | OLYMPUS |
| LED DELLAD | NIKON OPTII |

| | Client / Project PANYNJ/ | / FIRESPI | RINKLER | REF | IAB | | | | Project | Number 214PN | IPFPI1 | NIKON OPTIPHO |
|---|--|-----------|--------------|----------|----------|------------|--------------|--------------|--------------|---------------------------|--|--|
| | . 9 | 2024 | Analyst | | ~ | DA | | | | Number 21- | 619 | EMPERATURE*c2 |
| 1 29 Field Number | Stereoscopic Exam | | | | PLM Op | tical Pro | operties | 65 | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required Recommended | Colon Land Colon C | Morph E | Extinction F | RI 1 | RI DS | Color Colo | or, Pleo Bir | ref Sign Otl | her Identity | Chrysotile | 70 Cellulose S Fiberglass Other | Mineral Filler Organic Binde |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes N | No | | | | | | | | | Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 S | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required See SM-V analysis sheet for results | 1 | | _ | | | | | 0 | 200 | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. |
| | Method: ELAP EPA | SCANNIN | NG OPTION | | | Q. | C. 🗆 | | | | | |
| 2 30 Field Number | Stereoscopic Exam | | | | | tical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required Recommended See gravimetric | ColorMute Shifted ColorMute Shifted ColorMute Shifted ColorMute Co | Morph E | Extinction F | | RI DS | Color Colo | r, Pleo Bir | ef Sign Otl | her Identity | Chn/sotile | Cellulose Fiberglass Other | Mineral Filler Organic Binde Vermiculite* Other |
| analysis sheet for results | Color of Layer Detected Yes N | No : | | | | | | | | / | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 S | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required ☐ See SM-V ☐ | NOR BLM | | Ì | b | | | | 0 | 200 | 0 | Birefringence Horse Hair: Scales, Low to Moderate | If vermiculite is >10% the level of asbestos in a samp might be underestimated. |
| analysis sheet for results | Comments: | 1 | | | | la. | | | | | Birefringence | See Note #1. |
| | Method: ☐ ELAP ☐ EPA | SCANNIN | NG OPTION | | | JQ. | C. 🗆 | | | | | |
| 3 31 Field Number | Stereoscopic Exam | Morph E | Extinction E | रा 1 | | Color Colo | operties | el Sice Off | her Identity | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Cold WOWN Texture 6 | | - Amicuon P | | | | i, rieo bii | — — — | - Identity | Chp/sotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | 4- | | | | | | | | Other | Fiberglass Other | Organic Binde Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | = | | | | | | | | | | Other |
| for results | Color of Layer Detected Yes N | No = | | | | | | | | 1 | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 S | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required See SM-V | 100 | | | _ | | | | 0 | 200 | 0 | Birefringence ☐ Horse Hair: Scales, Low to Moderate | If vermiculite is >10% the level of asbestos in a samp might be underestimated. |
| analysis sheet for results | Comments: | / | | | | - | | | | | Birefringence | See Note #1. |
| 10) Tesulis | Method: ☑ ELAP □ EPA | 6 SCANNIN | NG OPTION | | | Q.0 | C. 🗆 | | | | | |
| 4 32 Field Number | Stereoscopic Exam | | - | nuico: | PLM Op | tical Pro | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Draw Vexture C- | Morph E | Extinction F | | RI DS | Color Colo | r, Pleo Bir | ref Sign Oth | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | 4=: | | | | | | | | Amosite | Fiberglass | Organic Binde |
| See gravimetric | # of Layers Asbestos | /=: | | | | | | | | Other | Other | Other |
| analysis sheet for results | Color of Layer Detected Yes N | No = = | | | | | | === | == | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 S | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLMD | | | | | | | 0 | 200 | 0 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: ELAP EPA | SCANNIN | NG OPTION | | | lq.d | c. 🗆 | | | | Sireningence | |
| | The state of the s | | | | | | POT 1807 TO | | | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing \$10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

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| 7,116 | | | 353-8280, Fax: (212) 353-3 | | | | NVLAP 10118 ELAP 101 |
|---|--|-------------------------|--|------------------------|--|--|---|
| | Client / Project PANYNJ/ Analysis Date 4 / 7/2 | | SBESTOS ANALYSIS SH IAB | Project | Number <u>214PN</u> Number <u>21</u> -6 | 519 | Microscop OLYMPUS BH NIKON OPTIPH |
| 1 25 Field Number | Stereoscopic Exam | <u> </u> | PLM Optical Properties | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Coloran St tregure 2 | Morph Extinction RLI | RI DS Color Color, Pleo Bir | ef Sign Other Identity | Chrysofile | 75 Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity 🔼 Vermiculite | | | | Amosite | | Organic Bind |
| Recommended | # of Layers Asbestos | | | | Øther | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes No | | | | | (T Cellulose Ondulose Extinction | Other |
| SM-V | | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 Slide 8 | Asb./Ver, PT Total PT | %Asb. Or %Ver. | □ Fiberglass Isotopic | - |
| Required 🗆 | PLM O J) | | | 0 200 | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a same |
| See SM-V | NOB PLM V | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | / | the second secon | | 4 | Birefringence | out (tale #). |
| | Method: ☑ ELAP □ EPA | SCANNING OPTION | Q.C. □ | | | | |
| 2 26 | Stereoscopic Exam | | PLM Optical Properties | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | | Moret Endington DL | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Color GM SI WESTER | Morph Extinction RI1 | RI DS Color Color, Pleo Bir | ef Sign Other Identity | Chrysptile | Z Cellulose | Mineral Filter |
| Required 🗆 | Homogeneity Vermiculite | <u> </u> | | | Armosite | SFiberglass | Organic Bind |

| <u> </u> | MICHIOU. LI ELAP LI EPA ALI SCANNING OPTION Q.C. LI | | | |
|-------------------------------|--|---------------------------|--|--|
| 3 27 Field Number | Stereoscopic Exam PLM Optical Properties | Res | sbestos Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color Color, Pleo Birel | Sign Other Identity | Chrysolije ZCellulose | 20 Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | | ArnositeFiberglass | Organic Binders |
| Recommended [| | | OtherOther | Vermiculite* |
| See gravimetric 🗆 | # of Layers N Asbestos 2 | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 / | Asb./Ver. PT Total PT %As | b. Or %Ver. | |
| Required 🗆 | PLM The second s | 0 200 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales. | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | Birefringence | |

Slide 4

Slide 5 Slide 6 Slide 7

Slide 8 Asb./Ver. PT Total PT

0 200 0

| | Method./ DELA | D SCAMERO OF HOM | G.O. L. | | | |
|-------------------------------|--------------------------------|-------------------------------------|--|---------------------------|------------------------------------|---|
| 4 28 Field Number | Sterepscopic Exam | · · | l Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | CANNIE SHEKKE P | Morph Extinction RI1 RI DS Colo | Color, Pleo Biref Sign Other Identity | Chrysotile | TQ Cellulose | 25 Mineral Filler |
| Required 🗆 | Homogeneity (1) Vermiculite | / | | mmosite | Fiberglass | Organic Binde |
| Recommended D | | | | Other | Other | Vermiculite* |
| See gravimetric 🛘 | # of Layers Asbestos | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | l l <u></u> f f | Slide 3 Slide 4 Slide 5 Slide 6 Sli | de 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM TJV | | 0 2.0 | 0 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | / | Andrew Control of the | · | Birefringence | |
| | Method: Z ELAP □ EPA | SCANNING OPTION | Q.C. □ | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of ashestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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BULK ASBESTOS ANALYSIS SHEET Microscopes: OLYMPUS BH-2 / Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Date 4 / 0 /2021 Analyst TAN 21-619 Batch Number 33 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RI | DS Color Color, Pleo Biref Sign Other Ident cold in white / W Mineral Filler Gravimetri Cellulose Required [Organic Binder O Vermiculite* # of Lavers See gravimetric Other analysis sheet Color of Layer Cellulose Ondulose Extinction for results Point Counts Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 %Asb. Or %Ver. Fiberglass Isotop SM-V Synthetic High If vermiculite is >10% the 200 Required [evel of asbestos in a sample Horse Hair: Scales NOB PLM night be underestimated. See SM-V [Low to Moderate analysis sheet for results Method: ELAP EPA Q.C. SCANNING OPTION Asbestos Non Fibrous Other Fibrous 34 Stereoscopic Exam **PLM Optical Properties** Results PI M 9 PLM % RI DS Color Color, Pleo Biref Sign Other Mineral Filler Cellulose Chrysotil Required [Amosite Organic Binde Other Other Vermiculite* Other analysis sheet Color of Layer Cellulose Ondu Extinction for results Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Ash Ver PT Total PT Point Counts Slide 1 %Asb. Or %Ver. SM-V Synthetic High If vermiculite is >10% the Birefringence evel of asbestos in a sample Horse Hair: Scales, 0 night be underestimated. NOB PLM See SM-V [Low to Moderate See Note #1. analysis sheet Q.C. Method: ELAP EPA SCANNING OPTION 35 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % RIII DS Color Color Pleo Biref Sign Other Gravimetri Cellulose ✓ Mineral Filler Required 8 Fibergla Organic Binder Vermiculite* See gravimetric analysis sheet Color of Laver Cellulose Ondul for results SM-V Point Counts Slide 1 Slide 2 Slide 3 Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Synthetic High Required [evel of asbestos in a sample 8 NOB PLM night be underestimated. See SM-V [Low to Moderate analysis sheet for results Method: DELAP EPA SCANNING OPTION Q.C. 36 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Cellulose Mineral Filler Chrysoti Required Fiberala Organic Binders Other Other Vermiculite* of Layers Other analysis sheet Color of Laver for results Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT SM-V Synthetic High If vermiculite is >10% the Required [Birefringence evel of asbestos in a sample Horse Hair: Scales, might be underestimated. NOB PLM See SM-V [analysis sheet for results Method: □ ELAP □ EPA SCANNING OPTION Q.C.

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing ≥10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point court method.

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BULK ASBESTOS ANALYSIS SHEET

| | Client / Project_PANYNJ/ | FIRESI | PRINKI | FR RFF | AAR | o ruuru | | | | Number 214PN | IDEDI1 | NIKON OPTIPHOT |
|--|---|--------------|------------|---------|-----------|--|--------------------------|--------------|---|----------------------------|--|--|
| | 0 | 021 | Analyst | LIVINLI | < | NE | | | | Number 214PN Number 21- | 619 | EMPERATURE 2 |
| 1 37 Field Number | Stereoscopic Exam | T | | - | PLM O | otical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required Recommended | Color | Morph | Extinction | RII | RIII DS | S Color Colo | or, Pleo Bir | ef Sign Otl | her Identity | Chrysotile Amosite | Cellulose Fiberglass Other | Mineral Filler Organic Binder Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos Color of Layer Detected Yes M | lo | | | | | | | | | Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | |
| Required See SM-V analysis sheet | NOB PLM O | | | | | | | 0 | 100 | ٥ | Birefringence ☐ Horse Hair: Scales, Low to Moderate Birefringence | If vermiculite is >10% the level of asbestos in a sampl might be underestimated. See Note #1. |
| for results | Comments: Method: □ ELAP □ EPA | □ SCANN | NING OPTI | ON | | Q. | c. 🗆 | | | | | |
| 2 38 Field Number | Stereoscopic Exam | I | F 4-4- | DI. | | and the same | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required □ | Color Sour Fexture F | Morph | Extinction | RI1 - | RIII DS | S Color Colo | or, Pleo Bir | ef Sign Otl | her Identity | Chrysetile | Cellulose Fiberglass | Mineral Filler Organic Binder |
| Recommended See gravimetric analysis sheet | # of Layers Asbestos Color of Layer Detected Yes N | | _ | | | | | === | | Other | Other | Vermiculite* |
| for results | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| SM-V Required □ See SM-V □ | PLM ON ON ON ON ON ON ON ON ON ON ON ON ON | Olide o | | Oldo o | Side 0 | Olide 7 | Side 0 | 0 | 250 | © | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the level of asbestos in a samp might be underestimated. See Note #1. |
| analysis sheet for results | | SCAN | NING OPTI | ON | | | c. □ | | | Asbestos | Birefringence Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morph | Extinction | RII | | STREET, STREET, ST | operties or, Pleo Bir | ef Sign Ot | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required | Color Www.Texture Homogeneity Vermiculite | | _ | | | | | | | Chrysotile | Cellulose Fiberglass | Mineral Filler Organic Binde |
| Recommended See gravimetric analysis sheet | # of Layers Asbestos | | \equiv | | | | == | | == | Other | Other | Vermiculite* |
| for results | Color of Layer Detected Yes M | | 084-1 | | T OUT - O | T 004-7 | Lorino | | Ior | %Asb. Or %Ver. | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | 100000000000000000000000000000000000000 | %ASD, Or %Ver. | ☐ Synthetic High | * If vermiculite is >10% the |
| Required See SM-V | NOB PLM | | | | | | | 0 | 200 | O . | Birefringence Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: □ ELAP □ EPA | SCAN | NING OPTI | ION | | lo. | c. 🗆 | | | | Birefringence | |
| 4 40 | Stereoscopic Exam | T | | (FECO. | PI M O | | operties | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number Gravimetric | Cold Whytevare (7 | Morph | Extinction | RII | | de la constante de la constant | or, Plea Bir | ef Sign Ot | her Identity | Results PLM % Chrysotile | PLM % | 9 O |
| Required | Homogeneity Y Vermiculite | | | | | | _== | = | === | Chrysotile | Cellulose Fiberglass | Mineral Filler Organic Binde |
| Recommended | # of Layers Asbestos | = | _ | == | | == | | _== | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes N | 10 | _ | : | | | | | | | € Cellulose Ondulose Extinction | Other |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required ☐ | NOB PLM | | | | | | | 0 | 200 | 0 | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the level of asbestos in a sampl might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | T/SCAND | UNO ORT | ION | | 10 | сП | | | | Birefringence | enemant in the content of the Conten |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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| NVLAP 101187-0 |
|----------------|
| ELAP 10879 |
| |

ee Note #1.

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|--|----------------|------------|-------------------------|
| BULK ASBESTOS ANALYSIS SHEET | | | Microscop OLYMPUS 81 |
| LER REHAB | Project Number | 214PNPEPJ1 | NIKON OPTIPI |

| | Client / Project PANYNJ | / FIRES | PRINKL | ER REF | IAB | | | | Project | Number 214PN | IPEPJ1 | -/ |
|---------------------------------|---|-----------|--------------|--------------|-------------|------------|-------------|--------------|---------------|---------------------------|---|---|
| | Analysis Date 4/2 | 2021 | _ Analyst | | < | M | | | Batch N | lumber 21-6 | 619 _{TI} | EMPERATURE O |
| 1 45 Field Number | Stereoscopic Exam | | | | | tical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Cold Cold Cold Cold Cold Cold Cold Cold | Morph | Extinction | | RIII DS | Color Colo | r, Pleo Bir | ef Sign Oth | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | _{ | | | | | | | | Annosite Other | Fiberglass Other | Organic Binders Vermiculite* |
| See gravimetric 🗆 | # of Layers Asbestos | -/- | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondutose Extinction | |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass isotopic ☐ Synthetic High | |
| Required 🗆 | PLM | | | | | | | 0 | ৴৶৽ | 9 | Birefringence | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| See SM-V analysis sheet | NOB PLM Comments: | | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Method: ZELAP DEPA | Z SCAN | NING OPTI | ON | | Q.0 | . 🗆 | | | | | |
| ² 46 | Stereoscopic Exam | | | | PLM Or | tical Pro | perties | | • | Asbestos | Other Fibrous | Non Fibrous |
| Field Number Gravimetric | | Morph | Extinction | RI 1 | | Color Colo | | ef Sign Ot | her Identity | Results PLM % Chrysgtile | PLM % | PLM % Mineral Filler |
| Required [| 1 | | | | | | | | | Ampsite | Fiberglass | Organic Binders |
| Recommended | # of Layers/ Asbestos | 1 | | | ········· | | | | | Sther | Other | Vermiculite* |
| See gravimetric analysis sheet | Color of Layer Detected Yes | No. | | | | | | | | | Cellulose Ondulose | Other |
| for results | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb, Or %Ver. | Fitinction Fiberglass Isotopic | |
| SM-V Required □ | PLM D | - Cindo o | O, do 4 | Çildə ü | Ollad 5 | Çiidə i | 0 | 0 | 7.32 | | Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM | | | | | | | | 12.00 | 0 | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated, See Note #1. |
| analysis sheet for results | Comments: | | | <u> </u> | ! | I | | | | | Birefringence | 000 14018 #1. |
| | Method: ☑ ELAP □ EPA | [] SCAN | NING OPTI | ON | | Q.0 | c. 🗆 | | | | | |
| 3 47 Field Number | Stereoscopic Exam | | | | | otical Pro | · | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color Cun St. Vocature | Morpi | Extinction | RIT | RII DS | Calor Calo | r, Pleo Bir | ref Sign Ot | her identity | Chrysotile | 2 Cellutose | 20 Mineral Filler |
| Required 🗆 | Homogeneity Vermiculite | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended See gravimetric | # of Layers Asbestos | | | | | | | | | Other | Other | Vermiculite* Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Fiberglass Isotopic | ************************************** |
| Required □ | PLM S | | | | | | | 9 | 200 | O | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V ☐ analysis sheet | NOB PLM | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate Bire!ringence | might be underestimated. See Note #1. |
| for results | Comments: Method: ☐ ELAP ☐ EPA | SCAN | INING OPT | ION | | Q. | c. 🗆 | | | | | |
| 4 48 | | 1 | | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morp | h Extinction | RII | | ptical Pre | - | | ther Identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required □ | Color Tan Festive | | | | | | | | | Chrysotile Amosite/ | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended | Homogeneity Vermiculite | | | | | | | | | Olber | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | 1 | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Extinction | |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High | Manufacture to a 1007 to |
| Required 🗆 | I | + | ļ | | | <u> </u> | | | 200 | <u>ರ</u> | Birefringence ☐ Horse Hair: Scales, | If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| See SM-V | NOB PLM | | : | 1 | | t | ; | | | | Low to Moderate | See Note #1 |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

Method: GELAP EPA

analysis sheet for results

D SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Q.C.

BULK ASBESTOS ANALYSIS SHEET

Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number __214PNPEPJ1 Analysis Date 4 / 9 /2021 Analyst 21-619 Batch Number

Non Fibrous Asbestos Other Fibrous 41 **PLM Optical Properties** Results PLM % PLM % Rt | DS Color Color, Pieo Biref Sign Other Identit Gravimetrio Cellulose Mineral Filler Vermiculite* See gravimetric l analysis sheet for results SM-V %Asb. Or %Ver Synthetic High If vermiculite is > 10% the evel of asbestos in a sample NOB PLM See SM-V ... Low to Moderate See Note #1. analysis sheet for results Method: Z ELAP D EPA SCANNING OPTION Q.C. 🗆

Asbestos Non Fibrous Other Fibrous 42 **PLM Optical Properties** Stereoscopic Exam Results PLM % PLM % PLM % Gravimetri 7_ Fibergk Required [Organic Binde Vermiculite* See gravimetric [analysis sheet Cellulose Ondulos for results Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver, PT Total PT %Asb. Or %Ver. SM-V If vermiculite is >10% the PLM evel of asbestos in a sample l Horse Hair: Scale NOB PLA might be underestimated. See SM-V Low to Moderate See Note #1. analysis sheet for results Q.C. 🗆 Method: ☑ ELAP ☐ EPA SCANNING OPTION

| 3 43 Field Number | Stereos | copic E | xam | | | | PLM C | Optical P | ropertie | 3 | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|-------------------------------|----------------|-----------------|-----------|------------|-------------------------|--|-------------|-------------|--------------|----------|--------|-------------|---------------------------------------|--|--|
| Gravimetric | colorby | C Textur | · (_ | Morph | Extinction | RII | RI I | OS Color Co | olor, Pleo E | iref Sig | n Oth | er Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneity | Vermi | iculite | / - | | | | | | | | | Annosite | Fiberglass | Organic Binders |
| Recommended 🗆 | | Γ | | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric L | # of Layers | Asbes | stos | /_ | | | | | | | | | | AL ALL ALL ALL ALL ALL ALL ALL ALL ALL | Other |
| analysis sheet for results | Color of Layer | Detec | ted Yes N | lo | | | | | | | | | | O Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slice 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./V | ег. РТ | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM & | SA | | | | | | | | | 0 | 209 | ٥ | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | [, , | | | | | | | | 1 | | | | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | ****** | / | Combi Anno Almaha and A | en americano de la constante de la constante de la constante de la constante de la constante de la constante d | | | | | | | · · · · · · · · · · · · · · · · · · · | Birefringence | |
| | Method: Z EL | AP [| EPA | SCAN | NING OPTI | NC | | Q | .c. 🗆 | | | | | | |

| iui results | | | WT-7-7-7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1- | | | |
|--|--|-------------------------------|--|---------------------------|------------------------|---|
| | Method: ZELAP 🗆 EPA | SCANNING OPTION | Q.C. 🗆 | | | |
| 4 44 Field Number | Stereoscopic Exam | PLM | 1 Optical Properties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colo Marta C | Morph Extinction RI1 RI | DS Color Calor, Pleo Biref Sign Other Identity | Chrysolile | Cellulose | 100 Mineral Filler |
| Required [| Homogeneity 😽 Vermiculite | / | | Amesite | Fiberglass | Organic Binder |
| Recommended [| | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers Asbestos/ Color of Layer Detected Yes No | | | | ⊕€eliulose Ondulose | Other |
| TOF TESURS | | | | | Extinction | |
| SM-V | Point Counts Side 1 Slide 2 | Slide 3 Slide 4 Slide 5 Slide | e 6 Slide 7 Slide 8 Asb./Ver. PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM (S) | | Cos(S) | | | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | | | ~ | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | Birefringence | |
| | Method: ☑ ELAP ☐ EPA | SCANNING OPTION | Q.C. □ | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Microscopes: OLYMPUS BH-2 /

| | Client / Project PANYNJ, | | BULK ASBEST | OS ANALY | /SIS SH | EET | | Number 214PN | IDEDI1 | Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT |
|---|---|-------------------|-----------------|----------------|-----------------|--------------|--------------------|---------------------------|---|---|
| | ~ | 2021 Analyst _ | < | M | | | Project Batch N | 24 | 619 | EMPERATURE C |
| 1 49 Field Number | Stereoscopic Exam | | PLM C | Optical Pro | perties | - | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color La Texture | Morph Extinction | RI1 RII I | OS Color Color | , Pleo Bire | f Sign Oth | ner Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🖵 | Homogeneity Vermiculite | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended See gravimetric | # of Layers Asbestos | | | | | | | Other | Other | Vermiculite* |
| analysis sheet | Color of Layer Detected Yes | No | | | | | | | ☐ Cellulose Ondulose | Otrica |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| Required | PLM | | | | I I | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V □ | 110001111111111111111111111111111111111 | -7 | | | | 0 | 200 | J | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: D ELAP D EPA | SCANNING OPTIO | W. | lq.c | | | | | Birefringence | |
| 2 50 | | SCANNING OF TIC | | 1.00000 | 90.1100 | | 1 | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | Morph Extinction | | Optical Pro | • | ef Sign Oth | ner Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Color MulteTexture | | KIT KIT | | , ried bile | a sign on | er identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗹 | Homogeneity 4 Vermiculite | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended | # of Layers Asbestos | | | | | | _ | Other | Other | Vermiculite* |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes | No | | | | | == | | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| Required | PLM / | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | ^ | | | 0 | 2~ | U | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: ☑ ELAP □ EPA | SCANNING OPTIO | ON . | Q.0 | ;. _□ | | | | Ditentingence | |
| 3 51 | Stereoscopic Exam | / | DI M (| Optical Pro | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | 1.016.1 | Morph Extinction | | DS Color Color | | ef Sign Oth | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required | Color Color CTexture | | | | | | | Chrysotile Amosite | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended | Homogeneity Vermiculite | 4 | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | A = = : | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | == | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM P | 7 | | | | 0 | h | ,) | ☐ Horse Hair: Scales, Low to Moderate Birefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: Method: DELAP DEPA | SCANNING OPTIC | ON. | loc | D. 🗆 | | | | Diemigenee | |
| | mediod, ELEAT LI ETA | I SCANNING OF THE | , i | 14.0 | ,. L | | | Ashartas | 04 - 54 | l New Fiberra |
| 4 52 Field Number | ↑ Stereoscopic Exam | | | Optical Pro | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colo Drawtexture G | Morph Extinction | RI1 RI | DS Color Color | r, Pleo Bin | ef Sign Ott | her Identity | Chrysotile | Cellulose | 100 Mineral Filler |
| Required | Homogeneity Vermiculite | /= =: | | | | | == | Amosite | Fiberglass | 0 |
| Recommended | # of Lavers Ashestos | / | | | | | | Other | Other | |
| See gravimetric analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 Slide 6 | Slide 7 | Slide 8 | Asb./Ver, PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| | DI W (2) | 3.35.3 | | | | G | Ces | <u>ک</u> | ☐ Synthetic High Birefringence | * If vermiculite is >10% the |
| Required See SM-V | 1 | | | | | | 200 | V | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | Birefringence | 535 HOIS #1. |
| | Method: FLAP DEPA | SCANNING OPTIC | ON | Q.C | : [] | | | | 1 | |

Methods:
EPA Interim Method of the Determination of
Asbestos in Bulk Insulation Samples - 40 CFR
Appendix E to Subpart E of Part 763
EPA 600/R-93/116
ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Microscopes:

BULK ASBESTOS ANALYSIS SHEET

| | Client / Project PANYNJ | / FIRESF | PRINKLI | ER REH | IAB | | | - | Drainet | Number 214PN | IPFP11 | NIKON OPTIPHOT |
|---|--|-------------|--------------|-------------|---|--|-------------|--------------|--------------|------------------------------|---|---|
| | | 2021 | Analyst | | | 7/4 | | | | Number 21- | | 20 |
| 1 50 | Ψ | -021 | Allalyst_ | | | 786 | | | Batch i | Asbestos | Other Fibrous | Non Fibrous |
| 1 53 Field Number | Stereoscopic Exam | | | | | tical Pr | | | | Results PLM % | PLM % | PLM % |
| Gravimetric | Cold NOW Nexture 5 | Morph | Extinction | RI1 | RI DS | Color Colo | r, Pleo Bir | ef Sign Ot | her Identity | Chrysotile | Cellulose | Mineral Filler |
| Required [| Homogeneity Y Vermiculite | | | | | | | | | Annosite | Fiberglass | Organic Binders |
| Recommended | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | <i>u</i> | | | | | | | | | *************************************** | Other |
| analysis sheet for results | Color of Layer Detected Yes ! | No | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver, P1 | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [| PLM O / | Ann | - | | | | | 0 | 300 | 0 | Synthetic High Birefringence | * If vermiculite is >10% the |
| See SM-V | NOB PLM | | | | | | | - G/- | | | ☐ Horse Hair: Scales, Low to Moderate | level of asbestos in a sample might be underestimated. |
| analysis sheet | Comments: | | | | I | <i>,</i> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | <u> </u> | <u> </u> | | Birefringence | See Note #1, |
| for results | Method: ZELAP DEPA | SCANN | ING OPTIO | N | | Q. | c. 🗆 | • | | LANGE COLOR | | |
| 2 54 | | | ************ | | | | | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Stereoscopic Exam | <u> </u> | | ~~~ | PLM Op | | - | | | Results PLM %/ | PLM % | PLM % |
| Gravimetric | Color Drawfaxture 5 | - Iviorph | Extinction | RIT | RI DS | Color Colo | r, Pleo Bir | er sign Ot | her Identity | Chp/sotile | Cellulose | Mineral Filler |
| Required [] | Homogeneity Vermiculite | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | | 7 | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | # of Layers Asbestos | | | | | | | | | | | Other |
| for results | Color of Layer Detected Yes I | No | | | | | | | | 1 | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM O | | | <u>.</u> | | | | 0 | 200 | 8 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| analysis sheet for results | Comments: | 7 | ! | | 1 | | <u> </u> | | .1 | <u> </u> | Birefringence | See Note #1, |
| | Method: ☑ ELAP ☐ EPA | SCANN | ING OPTIC | ON | | Q. | c. 🗆 | | | | | |
| ³ 55 | Stereoscopic Exam | | | | PI M Or | tical Pr | onerties | | . | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | | Morph | Extinction | RII | | Color Colo | - | ef Sign OI | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Cotol Characture | | | | *************************************** | | | | | Chrysotile | Cellulose | Mineral Filler |
| Required [| Homogeneity Y Vermiculite | / | | | | | | | | Afnosite | Fiberglass | Organic Binders |
| Recommended | # of Layers Asbestos | 1 | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric analysis sheet | |] | | | | | | | | | | Other |
| for results | Color of Layer Petected Yes I | No | | | | | | | | 1 | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P3 | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗌 | PLM O / J | | | | | | | 0 | 200 | 6 | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V 🗆 | NOB PLM | | | | | | | | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | 1 | | | Birefringence | Dec Note #1. |
| | Method: ☑ ELAP □ EPA | SCANN | IING OPTIO |)N | | Q. | C. 🗆 | | | | | |
| 4 56 | Stereoscopic Exam | | | | PLM Op | tical Pr | operties | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Δ | Morph | Extinction | RI± | | | r, Pleo Bir | ef Sign Ot | her Identity | Results PLM % | PLM % | PLM % |
| | | WOIDH | | | | | | | | Chrysotile | Cellulose | Mineral Filler |
| Gravimetric | Color By Dwinexture F | - Worpii | | | | | | | | 1 / | | |
| Required [] | Homogeneity Vermiculite | Morph | | | | | | | | Amosite | Fiberglass | 1 –) |
| Required Recommended | Homogeneity Vermiculite | Worph | | | | | | | | 1 / | Fiberglass Other | Vermiculite* |
| Required ☐ Recommended ☐ See gravimetric ☐ analysis sheet | Homogeneity Vermiculite Asbestos | | | | | | | | | Amosite | Other | 1 –) |
| Required Recommended See gravimetric analysis sheet for results | Homogeneity Vermiculite 4 of Layers Asbestos Color of Layer Detected Yes | No | | | | | | | | Aynosite | Other Cellulose Ondulose Extinction | Vermiculite* |
| Required ☐ Recommended ☐ See gravimetric ☐ analysis sheet | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 | | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P7 | Total PT | Amosite | Other Cellutose Ondulose Extinction Fiberglass Isotopic | Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results | Homogeneity Vermiculite 4 of Layers Asbestos Color of Layer Detected Yes 1 Point Counts Side 1 Slide 2 | No | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | Aynosite | Other Cellutose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V | Homogeneity Vermiculite 4 of Layers Asbestos Color of Layer Detected Yes 1 Point Counts Side 1 Slide 2 PLM | No | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | | <u> </u> | Amosite Other %Asb. Or %Ver. | Other Cellutose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | Vermiculite* Other If vermiculite is >10% the |
| Required Recommended See gravimetric analysis sheet for results SM-V Required | Homogeneity Vermiculite 4 of Layers Asbestos Color of Layer Detected Yes Point Counts Side 1 Slide 2 PLM | No Slide 3 | Siide 4 | | Slide 6 | ALLEXALIST MALES | Slide 8 | | <u> </u> | Amosite Other %Asb. Or %Ver. | Other ☐ Cellutose Ondulose Extinction ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, | Other * If vermiculite is > 10% the level of asbestos in a sample might be underestimated. |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8 Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:LAB_FORMS,DOCUMENTS AND RECORDS/OPTICAL/ASBESTOS_BULK/ASBESTOS_BUL

104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

-ATLAS ATC

See SM-V □

for results

ATC - New York

104 East 25th Street, 8th FL, New York, NY 10010

| 01187 |
|--------|
| P 1087 |
| |

See Note #1.

| | | Phon | e. (212) 333 | 6-6260, Fax. (2 | 12) 353-3 | 299 01 8306 |) | | | ELAP 1087 |
|-------------------------------|---------------------------------|------------------------|--|------------------|---------------|---------------|----------|--|-------------------------------------|--|
| | | | BULK ASE | ESTOS ANAL | YSIS SH | EET | | | | Microscopes OLYMPUS BH-2 |
| | Client / Project PANYNJ/ | FIRESPRINK | ER REHA | В | | | Project | Number 214PN | IPEPJ1 | NIKON OPTIPHO |
| | Analysis Date 4/9/2 | 2021 Analyst | | SM | | | Batch N | Number 21- | 619 | TEMPERATURE C |
| 1 61 | Stereoscopic Exam | | P | LM Optical Pr | operties | 1 | | Asbestos Results PLM % | Other Fibrous | Non Fibrous |
| Field Number Gravimetric | Coldry half Texture C- | Morph Extinction | RI1 R | II DS Color Col | or, Pleo Bire | of Sign Other | dentity | Chrysotile | PLM % Cellulose | PLM % Mineral Filler |
| Required | | | | | | | | Ampsite | Fiberglass | 1 |
| Recommended | Homogeneity Vermiculite | 1 | | | | | | other | Other | O Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes N | 10 | | | | | | | Gellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 S | Slide 6 Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | Extinction ☐ Fiberglass Isotopic | |
| 105400000 | PLM | | | | 27//(5/2020) | | 200 | | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | NOB PLM | | | | - | 0 | 100 | 0 | Birefringence | level of asbestos in a sampl might be underestimated. |
| See SM-V analysis sheet | | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | Comments: Method: Ø ELAP □ EPA | 1 | | - 10 | C. 🗆 | | | | | |
| | Method: ☑ ELAP □ EPA | SCANNING OPTI | ON | JQ. | C. 🗆 | | | | L | L |
| 2 62 Field Number | Stereoscopic Exam | | | LM Optical Pr | | | | Asbestos Results PLM %/ | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Cololula Texture 6 | Morph Extinction | RI1 R | III DS Color Col | or, Pleo Bire | f Sign Other | dentity | Chrysotile | Cellulose | Mineral Filler |
| Required | Homogeneity 4 Vermiculite | | | | | | | Amosite | Fiberglass | The second secon |
| Recommended | | 1== | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | / | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes N | 10 | | | | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| 558-01034 | PLM O Oo | | | | | 0 | 200 | _ | ☐ Synthetic High | * If vermiculite is >10% the |
| Required | NOB PLM | | | | | 0 | | 0 | Birefringence ☐ Horse Hair: Scales, | level of asbestos in a sampl might be underestimated. |
| See SM-V analysis sheet | Comments: | | | | | | | | Low to Moderate Birefringence | See Note #1. |
| for results | | SCANNING OPTI | ON | In | C. 🗆 | | | | | |
| | method: ta ELAF LI EFA | ZI SCANNING OF T | | | 0. 🗆 | | | | | , |
| 3 63 Field Number | Stereoscopic Exam | | P | LM Optical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Colpry La Texture | Morph Extinction | RI1 R | III DS Color Col | or, Pleo Bire | ef Sign Other | dentity | Chp/sotile | Cellulose | Mineral Filler |
| Required | Homogeneity 4 Vermiculite | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended | Tromogenery | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | | | 7.5 | Other |
| analysis sheet for results | Color of Layer Detected Yes N | lo | | | | | | / | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 Slide 4 | Slide 5 | Slide 6 Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| | PLMO | Production (Septembly) | Company of the Compan | | germinote | | \ | A STATE OF THE PARTY OF THE PAR | ☐ Synthetic High | * If vermiculite is >10% the |
| Required 🗆 | NOB BLM | | | 2 | | | 100 | 0 | Birefringence Horse Hair: Scales, | level of asbestos in a sample |

| for results | Methody ELAP | □ EPA | SCAN | NING OPTI | ION | | Q. | c. 🗆 | | | | | |
|-------------------------------|----------------------|----------|---------|------------|---------|----------|-------------|-------------|--------------|--------------|---------------------------|--|---|
| 4 64 Field Number | Stereoscopic | | | | | PLM O | ptical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | color ack Brain | | Morph | Extinction | | RI II DS | S Color Col | or, Pleo Bi | ref Sign Ot | her Identity | Chrysotile | Cellulose | Mineral Filler Organic Binde |
| Recommended See gravimetric | # of Layers Asbe | | 1 | \equiv | | | == | | === | | Other | Other | Vermiculite* |
| analysis sheet for results | Color of Layer Dete | cted Yes | No | _ | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | -0 | | | + | | | | 0 | h | U | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | | | | Birefringence | |
| | Method: ZELAP | □ EPA | SCAN | NING OPTI | ION | | Q. | c. 🗆 | | | | | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116

ELAP Items 198.1, 198.4, 198.6, 198.8

NOB PLM

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:\LAB_FORMS_DOCUMENTS AND RECORDS\OPTICAL\MSBESTOS_BULK\ASBESTOS_BULK\GORMS_220\BULK\GORMS_220\BULK\GORMS_220\BULK\GORMS_220\BULK\GORMS_220\BULK\GORMS_220\BULK\GORMS_221\RUSION #33 BY MEI WANG FORM #82

| | Client / Project PANYNJ/ | / FIRESI | | | | S ANAL | YSIS SH | EET | Project | Number 214PN | IPEPJ1 | Microscopes: OLYMPUS BH-2 / NIKON OPTIPHOT |
|--|--|----------------|--------------------|---------|---------------|------------------|--|---|-------------|---|---|--|
| | Analysis Date 4/9 /2 | 2021 | Analyst | | | | | | | Number 21- | 619 | EMPERATURE C |
| 1 57 Field Number | Stereoscopic Exam | | ., ., | | PLM O | otical Pr | perties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Cold Dr.O. Wexture | Morph | Extinction | RII | RI II DS | Color Colo | r, Pleo Bir | ef Sign Oth | er Identity | Chrysotile | Cellulose | / O Mineral Filler |
| Required | | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | Homogeneity Vermiculite | 4 | | | | · | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | 1_ | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer Detected Yes | No | | | | | | | | | Cellulose Ondulose | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb.Ner. PT | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required [| | | | | | | | Θ | ces | 0 | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | | | | | \sim | | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. |
| analysis sheet for results | Comments: | | | | L., | I | Source Control of the | | | <u> </u> | Birefringence | See Note #1. |
| 101 7000110 | Method: ZELAP DEPA | SCAN | ING OPTI | ON | | Q. | C. □ | | | | | |
| 2 58 | Stereoscopic Exam | | | | PIM O | otical Pr | nortice | | | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | The state of the s | Morph | Extinction | RII | | Color Colo | · | ef Sign Oth | er Identity | Results PLM % | PLM % | PLM % |
| Gravimetric | Collect Law texture | | | | | | | | | Chrysotile | Cellulose | 12 Mineral Filler |
| Required Recommended | Homogeneity Vermiculite | / | | | | | | | | Amosite | Fiberglass | Organic Binders |
| See gravimetric | # of Layers Asbestos | | | | | | | | | Other | Other | Vermiculite* Other |
| analysis sheet | Color of Layer Detected Yes | / Vo | | | | | | | | | ☑ Ćellulose Ondulose | Other |
| for results | | | Cliste 4 | Ctia. F | 054- 0 | L 014-7 | 0:4-0 | I A DE | T DT | / NA++ 0-211- | Extinction Fiberglass Isotopic | |
| SM-V | Point Counts Slide 1 Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb,/Ver, PT | Total PT | %Asb. Or %Ver. | ☐ Synthetic High | 15 |
| Required 🛘 | | | | | | | | 0 | <u>200</u> | 0 | Birefringence ☐ Horse Hair: Scales, | If vermiculite is >10% the level of asbestos in a sample |
| See SM-V analysis sheet | NOB PLM ' | | | | | | | | | | Low to Moderate Birefringence | might be underestimated. See Note #1. |
| for results | Comments: Method: ☑ ELAP □ EPA | -/ | | | | 10. | C. 🗆 | | | | Diennigation | |
| | Method: ☑ ELAP ☐ EPA | □ SCANI | ING OPTI | UN | | 10. | ٠. [_] | P. COMPANIE AND A TOTAL AND A | | , | | |
| 3 59 Field Number | Stereoscopic Exam | | | | PLM O | otical Pr | operties | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| | | | | | | Calaa Cala | | | | | | |
| Gravimetric | color that texture | Morph | Extinction | Riı | RI DS | S COIOF COIC | r, Pleo Bír | ef Sign Oth | er Identity | Chrysotle | - | 176 Mineral Filler |
| Gravimetric Required □ | | Morph | Extinction | RI1 | RI DS | S Color Colo | ır, Pleo Bir | ef Sign Off | er Identity | Chrysotle | 2 Ceilulose 7 Fiberglass | Mineral Filler Organic Binders |
| 1 | Homogeneity \(\int \) Vermiculite \(\) | Morph | Extinction | Ri1 | RI DS | S Color Colo | r, Pleo Bir | ef Sign Oth | er Identily | · / | Ceilulose | |
| Required Recommended See gravimetric | | Morph | Extinction | RII | RI DS | S COIOT COIC | r, Pleo Bir | ef Sign Oth | er Identity | Amosite | Ceilulose Fiberglass | Organic Binders |
| Required Recommended | Homogeneity \(\int \) Vermiculite \(\) | | Extinction | RII | RI DS | S COOF COR | r, Pleo Bir | ef Sign Oth | er Identity | Amosite | Cellulose Cother | Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results | Homogeneity Vermiculite 4 of Layers Asbestos | | Extinction | RI1 | RI DS | Slide 7 | r, Pleo Bir | ef Sign Oth | | Amosite | Ceilulose Fiberglass Other | Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes ! Point Counts Slide 1 Slide 2 | No | | | | | | | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose Z Fiberglass Other Cellulose Ondutose Extinction D Fiberglass Isotopic Synthetic High | Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V Required | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM | No | | | | | | | | Amosite Other | Cellulose Diberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefingence | Organic Binders Vermiculite* Other |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM | No | | | | | | | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose Tiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence | Organic Binders Vermiculite* Other * If vermiculite is >10% the level of asbestos in a sample |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM | Slide 3 | | Slide 5 | | Slide 7 | | | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose Z Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: □ ELAP □ EPA | Slide 3 | Siide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose Z Fiberglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose — Therglass Other Cellulose Ondulose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: □ ELAP □ EPA | Slide 3 | Siide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Amosite Other %Asb. Or %Ver. | Ceikulose Z Fiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: □ ELAP □ EPA Steraoscopic Exam Color Manure Homogeneity Vermiculite | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Aniosite | Ceilulose — Tiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % | Organic Binders Vermiculite* Other "If vermiculite is > 10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required Recommended | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Steraoscopic Exam Color Number Vermiculite Elan Vermiculite Elan Elan Elan Elan Elan Elan Elan Elan | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Amosite Other %Asb. Or %Ver. Asbestos Results PLM % Chrysotile | Ceilulose Ceilulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose | Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stefaoscopic Exam Color Annure Homogeneity Vermiculite # of Layers Asbestos | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Aniosite | Ceilulose — Tiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Tiberglass Other | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required Recommended See gravimetric See gravimetric | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes I Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Steraoscopic Exam Color Number Vermiculite Elan Vermiculite Elan Elan Elan Elan Elan Elan Elan Elan | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Aniosite | Ceikulose Z Fiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Z Fiberglass Other | Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required Recommended See gravimetric analysis sheet | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Stefaoscopic Exam Color Annure Homogeneity Vermiculite # of Layers Asbestos | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb /Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Aniosite | Ceikulose Z Fiberglass Other Cellulose Ondutose Extinction Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Z Fiberglass Other | Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Steffooscopic Exam Color Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 | Slide 3 SCANI | Slide 4 NING OPTI | Slide 5 | Slide 6 PLM O | Q. Q. Otical Pro | Slide 8 | Asb./Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Aniosite Other | Ceikulose Tiberglass Other Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Tiberglass Other Craftulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence | Organic Binders Vermiculite* Other "If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* |
| Required Recommended See gravimetric analysis sheet for results SM-V Required See SM-V analysis sheet for results 4 60 Field Number Gravimetric Required Recommended See gravimetric analysis sheet for results | Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM NOB PLM Comments: Method: ELAP EPA Steraoscopic Exam Color Manure Homogeneity Vermiculite # of Layers Asbestos Color of Layer Detected Yes Point Counts Slide 1 Slide 2 PLM Steraoscopic Exam | Slide 3 SCANI | Slide 4 NING OPTI | Slide 5 | Slide 6 PLM O | Q. Q. Otical Pro | Slide 8 | Asb./Ver. PT | Total PT | Asbestos Results PLM % Chrysotile Anosite Other | Ceilulose Ceilulose Cother Cellulose Ondutose Extinction Fiberglass Isotopic Synthetic High Birefringence Horse Hair: Scales, Low to Moderate Birefringence Other Fibrous PLM % Cellulose Tiberglass Other Cellulose Fiberglass Isotopic Synthetic High | Organic Binders Vermiculite* Other If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. Non Fibrous PLM % Mineral Filler Organic Binders Vermiculite* Other |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☑ ELAP ☐ EPA

SCANNING OPTION

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing <10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Page _____ of ____

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BULK ASBESTOS ANALYSIS SHEET Client / Project PANYNJ/ FIRESPRINKLER REHAB Project Number 214PNPEPJ1 Analysis Date 4/9 /2021 Analyst 21-619 65 Asbestos Non Fibrous Other Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Stack Brown N/ Gravimetri _Mineral Filler Cellulose Amosite Fiberala Organic Binder 0 Vermiculite* See gravimetric analysis sheet for results Cellulose Ondulo Fiberglass Isotop Slide 2 Slide 6 Slide 7 %Asb. Or %Ver. Slide 8 Asb.Ner. PT Total P1 SM-V PLM If vermiculite is >10% the Required [evel of asbestos in a sample Horse Hair: Scales NOB PLM night be underestimated. See SM-V [Low to Moderate See Note #1. analysis sheet for results Q.C. 🗆 Method: ☐ ELAP ☐ EPA SCANNING OPTION 66 Asbestos Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Caele Bushin Gravimetr Cellulos Mineral Filler Fiberglas Organic Binder Vermiculite* Other Other analysis sheet color of Laver Detected Yes for results Slide 2 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. Fiberglass Isotopi SM-V Required [Birefringence evel of asbestos in a sample NOB PLM Horse Hair: Scales night be underestimated. See SM-V Low to Moderate analysis sheet Comments: for results Method: Ø ELAP □ EPA Q.C. SCANNING OPTION 67 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Mineral Filler Gravimet Chrysotil Cellulose 3 Sibergla Required Organic Binder Vermiculite* Other Other analysis sheet for results Extinction Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver. SM-V If vermiculite is >10% the 19 Required [evel of asbestos in a sample Horse Hair: Scales. NOB PLM night be underestimated. See SM-V [Low to Moderate See Note #1. analysis sheet for results Method: DELAP EPA Q.C. ☐ SCANNING OPTION 68 Asbestos Other Fibrous Non Fibrous Stereoscopic Exam **PLM Optical Properties** Results PLM % PLM % PLM % Gravimetri Chrysoti Cellulose Mineral Filler Required [Organic Binde Other Other See gravimetric analysis sheet Extinction Slide 4 Fiberglass Isotop Point Counts Slide 1 Slide 2 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT %Asb. Or %Ver SM-V PIM If vermiculite is >10% the Required [Birefringence evel of asbestos in a sample Horse Hair: Scales night be underestimated. NOB PLM See SM-V [Low to Moderate see Note #1.

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Method: ☐ ELAP ☐ EPA

☐ SCANNING OPTION

analysis sheet for results

> Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing 10% vermiculitie ELAP requires methods ELAP 198.16 followed by ELAP 198.6. This method has limitations for identification and quantificat of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite." Note #2: ELAP requires method 19.8 for the analysis of surfacing material containing verticalities (SM-V) and it utilizes a 400 point count method.
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| | Client / C | trainat P | PANYNJ | / FIRES | | | SBESTO | S ANAL | .YSIS SH | HEET | Danie -4 | Number 214PI | JPFPI1 | <u>Microscopes:</u> OLYMPUS BH-2 / NIKON OPTIPHOT |
|---|---------------------------------|-----------|----------|---------|------------|---------|--|----------------|----------|--|--------------|---------------------------|--|---|
| | | | 19 1 | | _ Analyst | | \leq | M | | | | | 619 | EMPERATURE |
| 1 69 Field Number | Stere | oscopic E | Exam | | | | | otical Pr | • | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required □ Recommended □ | Color Homogeneity _ | | | | Extinction | | | | | ref Sign OI | | Chrysotile | Cellulose Fiberglass | |
| See gravimetric analysis sheet for results | # of Layers Color of Layer _ | | | | | | | | | | | Other | Other | Vermiculite* |
| SM-V Required ☐ See SM-V ☐ | Point Counts PLM NOB PLM | | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P1 | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | LAP 🗆 | EPA | SCAN | NING OPTI | ON | DIRA | | c. 🗆 | | | Asbestos | Birefringence Other Fibrous | Non Fibrous |
| Field Number | Stere | oscopic E | =xam | Morph | Extinction | RII | | otical Process | • | | her Identity | Results PLM % | PLM % | PLM % |
| Gravimetric Required □ Recommended □ | Color | | | | | | | | | | | Chrysotile Amosite Olher | Cellulose Fiberglass Other | Mineral Filler Organic Binder Vermiculite* |
| See gravimetric analysis sheet for results | # of Layers | | | | | | | | | | | Other | ☐ Cellulose Ondulose | Other |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide 8 | Asb./Ver. P1 | Total PT | %Asb. Or %Ver. | Extinction Fiberglass Isotopic | |
| Required ☐ | PLM NOB PLM | | | | | | | | | | | | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% lhe level of asbestos in a sample might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | LAP 🗆 | EPA | ☐ SCAN | NING OPTI | ON | ······································ | Q. | c. 🗆 | | | | Birefringence | |
| 3 | | | | | | | | | | THE PERSON NAMED AND ADDRESS OF THE PERSON NAMED AND ADDRESS O | | Achaetne | Other Fibrage | Non Eibrous |

| | | | ~~~~ | | | | | _ | | ******** | *************************************** | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | | · | |
|-------------------------------|------------------|----------|---------|---------|-------------|---------|---------|-----------|-------------|----------|---|---|---------------------------|------------------------------------|---|
| ield Number | Sterec | scopic E | xam | | | | | ptical | | | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color | Textur | 9 | Morph | Extinction | RII | RI I | S Color C | color, Pleo | Biref | Sign (| Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗌 | Homogeneity | Vermi | culite | | | | | | | | | | Amosite | Fiberglass | Organic Binde |
| Recommended 🗌 | | | | ļ | | | | | | | | | Other | Other | Vermiculite* |
| iee gravimetric 🗀 | # of Layers | Asbes | tos | | | | | | | | | | | | Other |
| analysis sheet for results | Color of Layer _ | Detect | ed Yes | No | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | 7 Slid | e 8 | Asb./Ver. F | PT Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🛘 | PLM | | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a samp |
| See SM-V □ | NOB PLM | | | | | | | | | | | | | Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet | Comments: | | | | | • | J | | | | | | h | Birefringence | |

| / | <u> </u> | | | | | | | <u>f</u> | | | ~~~ | | | L | L |
|---|------------------|-----------|-----------|---------|-------------|---------|---------|------------|------------|-------|-------------|-------------|--------------------------------|--|---|
| 4 Field Number | Stered | oscopic E | xam | | | | PLM C | ptical F | roperti | es | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric Required Recommended See gravimetric | Homogeneity_ | | culite | Morph | Extinction | Riı | RIII C | OS Cotor C | olor, Pleo | Biref | Sign Oth | er Identity | Chrysotile Amosite Other | Cellulose Fiberglass Other | Mineral Filler Organic Binders Vermiculite* |
| analysis sheet for results SM-V | Color of Layer _ | | ted Yes N | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | ' Slide | 8 A | sb./Ver. PT | Total PT | %Asb. Or %Ver. | ☐ Cellulose Ondulose Extinction ☐ Fiberglass Isotopic | |
| Required 🗆 | 1000011 | | | | | | | | | | | | | ☐ Synthetic High Birefringence ☐ Horse Hair: Scales, Low to Moderate | * If vermiculite is >10% the level of asbestos in a sample might be underestimated. |
| analysis sheet for results | Comments: | LAP 🗆 | EPA | ☐ SCAN | VING OPTION | ON | l | <u> </u> | .c. □ | | | | | Bitefringence | See Note #1. |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing \$10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Client/Project: PANYNJ | PANYNJ | RUSH | | PLM Batch# | 21-619 | TEM Batch # 122927 | 122927 | Start Date: 04/09/21 | 04/09/2 |
|------------------------|-------------|------------------|----------------------------|---------------|--------|---------------------|--------------------|--------------------------|----------|
| NOB PLM PREP: | MG/EV | NOB PLM Analyst: | MW | NOB TEM PREP: | SH | NOB TEM Analyst: | FG | Date Completed: 04/09/21 | 04/09/21 |
| 9 | | 2 | 13 | | | Met | spou | ı | |
| | Non Asb | Asbestos | % Total | | | 2 | 90 | | |
| Field # Ornanic | Residue % % | Types | Asbestos or Vermiculite | | Antes | PREI | TEI PLI PREI | | |

· orbodillo

| g | (45) (3) | TEM | > | > | > | > | > | > | > | > | > | > |
|---------|----------------|----------------------------|------|------|------|------|------|------|------|------|------|------|
| Methods | NOB | PLM | > | > | > | > | > | > | > | > | > | > |
| Σ | enide asiri | PREP | > | > | - > | > | > | > | > | > | > | > |
| | | Notes | | | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | | | |
| 6 | Asbestos | Types or Vermiculite | QN | QN | ND | QN | QN | QN | QN | QN | ΩN | ND |
| 12 | | % Carbonate | 25.4 | 31.8 | 33.1 | 23.7 | 22.8 | 23.8 | 44.6 | 58.6 | 68.9 | 13.9 |
| -11 | Non Asb | Residue % NFr | 52.8 | 44.7 | 42.0 | 47.7 | 47.4 | 45.6 | 31.4 | 20.7 | 12.6 | 4.7 |
| 2 | | % Organic | 21.8 | 23.5 | 24.9 | 28.6 | 29.8 | 9.08 | 24.0 | 20.7 | 18.5 | 81.4 |
| | | Field # | က္ | 14 | 15 | 34 | 35 | 36 | 49 | 50 | 51 | 64 |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

Page 1

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ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

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| Start Date: 04/09/21 | Date Completed: 04/09/21 | | | | | | | | | |
|----------------------|--------------------------|---------|----------|----------------------------|------|------|--|--|-----------------------------|---|
| Start Date | Date Completed | | | | | | | | | |
| 122927 | FG | Methods | NOB | TEA | | > | | | | I |
| TEM Batch # | NOB TEM Analyst: | Met | SK | PLM PREI | | > | | | | |
| 21-619 | SH | | | Notes | | | | The state of the s | mand john mingrapa menangan | |
| PLM Batch # | NOB TEM PREP. | | | | | | | | | |
| | MW | 13 | % Total | Asbestos or Vermiculite | | | | | | |
| RUSH | NOB PLM Analyst: | 6 | Asbestos | Types or Vermiculite | QN | Q. | | | | |
| 8 | MG/EV | 12 | | % Carbonate | 6.7 | 6.0 | | | | |
| PANYNJ | MG | - 11 | Non Asb | Residue % | 13.7 | 10.2 | | | | |
| Client/Project: | NOB PLM PREP: | 2 | | % Organic | 78.4 | 88.9 | | | | |
| Client/ | NOB PL | | | Fletd # | 65 | 99 | | | | |

1. Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.

2. Refer to PLM analysis sheet for NOB results and/or point count data.

3. Vermiculite not reported = not detected.

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Fax: 212-353-8306

Client: ATC - NEW YORK 104 EAST 25TH STREET

NEW YORK, NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: PANYNJ / FIRESPRINKLER REHABILITATION

Sample Date: 11/5/2021

Date Received: 11/5/2021

Date Analyzed: 11/8/2021

ATC Batch # 21-1750

Methods: ELAP 198.1, 198.6, 198.4

Location: PN / BUILDING NUMBER 301 / SHEDS

Project # 214PNPEPJ1/TASK0001

Bulk Asbestos Analysis Results

| | | | Method | <u>No</u> | n-Asbestos | NOB | <u>Asbestos</u> | |
|-----------------------|--|--------------------------------------|---------|-----------------|------------------|---|-----------------|--|
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | √ Typ e | % Type | |
| 70 21-1750 -1 | 1ST FLOOR S.W. SHED UNDER WALL METAL FRAMING | TAR WEATERPROOFING STRIP | NOB-TEM | | 0.0% Vermiculite | 60.8% Organic 23.9% Residue 15.3% Carbonate | NONE DETECTED | |
| Analyzed By: | Mei Wang | Color: Bla Second Analyst: Roman | | Comments: NOB P | LM Inconclusive | | | |
| 71 21-1750 -2 | 1ST FLOOR S.W. SHED UNDER WALL METAL FRAMING | TAR WEATERPROOFING STRIP | NOB-TEM | | 0.0% Vermiculite | 61.3% Organic 27.5% Residue 11.2% Carbonate | NONE DETECTED | |
| Analyzed By: | Mei Wang | Color: Bla Second Analyst: Roman | | Comments: NOB P | LM Inconclusive | | | |
| 72 21-1750 -3 | 1ST FLOOR S.W. SHED UNDER WALL METAL FRAMING | TAR WEATERPROOFING STRIP | NOB-TEM | | 0.0% Vermiculite | 67.9% Organic 17.7% Residue 14.4% Carbonate | NONE DETECTED | |
| Analyzed By: Mei Wang | | Color: Bla Second Analyst: Roman | | Comments: NOB P | LM Inconclusive | | | |
| 73 21-1750 -4 | 1ST FLOOR S.W. SHED UNDER ROOF PANELS @ WALL | WEATER PROOFING CORRUGRATED WEDGE | NOB-TEM | | 0.0% Vermiculite | 57.3% Organic 33.1% Residue 9.6% Carbonate | NONE DETECTED | |
| Analyzed By: | Mei Wang | Color: Bla Second Analyst: Roman | | Comments: NOB P | LM Inconclusive | | | |
| 74 21-1750 -5 | 1ST FLOOR S.W. SHED UNDER ROOF PANELS @ WALL | WEATER PROOFING CORRUGRATED WEDGE | NOB-TEM | | 0.0% Vermiculite | 55.6% Organic 33.3% Residue 11.1% Carbonate | NONE DETECTED | |
| Analyzed By: | Mei Wang | Color: Bla Second Analyst: Roman | | Comments: NOB P | LM Inconclusive | | | |
| 75 21-1750 -6 | 1ST FLOOR S.W. SHED UNDER ROOF PANELS @ WALL | WEATER PROOFING CORRUGRATED WEDGE | NOB-TEM | | 0.0% Vermiculite | 60.7% Organic 30.2% Residue 9.1% Carbonate | NONE DETECTED | |
| Analyzed By: | Mei Wang | Color: Bla Second Analyst: Roman | | Comments: NOB P | LM Inconclusive | | | |
| 76 21-1750 -7 | 1ST FLOOR S.E. SHED UNDER WALL METAL FRAMING | TAR WEATHER PROOFING STRIP | NOB-TEM | | 0.0% Vermiculite | 64.4% Organic 25.5% Residue 10.1% Carbonate | NONE DETECTED | |
| Analyzed By: | Mei Wang | Color: Bla Second Analyst: Roman | | Comments: NOB P | LM Inconclusive | | | |

Report Prepared By: Grace Chan Page 1 of 3 Batch # 21-1750



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| | | | 1 421. 21 | - 000 0000 | | | |
|-----------------------|--|--|-----------|-----------------|------------------|---|---------------|
| | | | | <u>Na</u> | on-Asbestos | NOB | Asbestos |
| Sample # | Location | Type of Material | Method | % Fibrous | % Non-Fibrous | % Type | % Type |
| 77 21-1750 -8 | 1ST FLOOR S.E. SHED UNDER WALL METAL FRAMING | TAR WEATHER PROOFING STRIP | NOB-TEM | | 0.0% Vermiculite | 68.5% Organic 16.4% Residue 15.1% Carbonate | NONE DETECTED |
| Analyzed By: Mei Wang | | Color: Blac Second Analyst: Roman F | | Comments: NOB F | PLM Inconclusive | | |
| 78 21-1750 -9 | 1ST FLOOR S.E. SHED UNDER WALL METAL FRAMING | TAR WEATHER PROOFING STRIP | NOB-TEM | | 0.0% Vermiculite | 60.5% Organic 25.2% Residue 14.3% Carbonate | NONE DETECTED |
| Analyzed By: Mei Wang | | Color: Blac Second Analyst: Roman F | | Comments: NOB F | PLM Inconclusive | | |
| 79 21-1750 -10 | 1ST FLOOR S.E SHED UNDER ROOF PANELS @ WALL | WEATHER PROOFING CORRUGATED WEDGE | NOB-TEM | | 0.0% Vermiculite | 58.4% Organic 33.9% Residue 7.7% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Blac Second Analyst: Roman F | | Comments: NOB P | PLM Inconclusive | | |
| 80 21-1750 -11 | 1ST FLOOR S.E SHED UNDER ROOF PANELS @ WALL | WEATHER PROOFING CORRUGATED WEDGE | NOB-TEM | | 0.0% Vermiculite | 57.9% Organic 32.3% Residue 9.8% Carbonate | NONE DETECTED |
| Analyzed By: Mei Wang | | Color: Blac Second Analyst: Roman F | | Comments: NOB P | PLM Inconclusive | | |
| 81 21-1750 -12 | 1ST FLOOR S.E SHED UNDER ROOF PANELS @ WALL | WEATHER PROOFING CORRUGATED WEDGE | NOB-TEM | | 0.0% Vermiculite | 58% Organic 37.6% Residue 4.4% Carbonate | NONE DETECTED |
| Analyzed By: | Mei Wang | Color: Blac Second Analyst: Roman F | | Comments: NOB F | | , Suissilais | |

Report Prepared By: Grace Chan Page 2 of 3 Batch # 21-1750



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Sample # Location Type of Material Method % Fibrous % Non-Fibrous % Type % Type

| | | % Fibrous | % Non-Pibrous | 70 Type | % Type |
|--|--|---|---|------------------------------|----------------------|
| IOTES: | | | | | |
| 1) The Limit of Detection is the s | same as the Reporting Limit for these results. | | | | |
| 2) The Reporting Limit (RL) is the | e Limit of Quantitation. For point counts the limit | of quantitation of 0.25%; based on one a | sbestos point counter over 400 non- | empty points. | |
| 3) Asbestos Containing Material | (ACM) Definition: > 1% asbestos by weight is co | onsidered an ACM | | | |
| report may not be used to claim Quality control data is available | | | | | |
| ' ' | 87-0 and by NY State ELAP #10879 | | | | |
| 6) Confidentiality Notice: The do | cument(s) contained herein are confidential and p | privileged information, intended for the ex | clusive use of the individual or entity | named above. | |
| 7) Liability Notice: ATC Group Se | ervices and its personnel shall not be liable for an | y misinformation provided to us by the cl | ient regarding these samples. This r | eport relates only to sample | es submitted and ana |
| 8) Asbestos results are reliable t | to 2 significant figures. | | | | |
| 9) The condition of all samples w | vas acceptable upon receipt. | | | | |
| 10) The laboratory certifies that t | the test results meet all requirements of NELAC. | | | | |
| 11) Supplement to test report ba | atch # Amendments: Amer | ndment Dates: Amended by | ; | | |
| 12) PLM Letter is attached on thi | is report. | | | | |
| 13) TRACE: The result is reported | ed as Trace when No points are counted and asbe | estos is identified. For ELAP Trace is < 1 | %. | | |
| 14) ATC Group Services certifies | s that this report is an accurate and authentic repo | ort of the results obtained from the labora | tory analysis | | |
| 15) The uncertainty for these tes | st results is available upon request. | | | | |
| | P 198.1 for the analysis of samples containing ≤ remiculite and may underestimate the level of asl | | | ethods ELAP 198.1 followe | ed by ELAP 198.6. |

Mei Wang

Approved by Quality Manager:

| Analyst: | DDay | |
|-----------------|--------|--|
| Roman Peysakhov | , proq | |
| Analyst: | | |

Report Prepared By: Grace Chan Page 3 of 3 Batch # 21-1750



ELAP BULK ASBESTOS ANALYSIS RESULTS

PLM Analysis Methodology

The samples were analyzed by industry accepted methods in accordance with ELAP¹ using Polarized Light Microscopy (PLM) with dispersion staining in conjunction with stereoscopical analysis. Point counts are performed on samples regulated by this agency. The Environmental Laboratory Approval Program (ELAP) has determined that analysis of non-friable organically bound materials (i.e. floor tile, roofing, etc.) and ceiling tiles with cellulose is not reliable when performed by Polarized Light Microscopy (PLM) method. Therefore, if this analysis included that of non-friable materials or ceiling tiles with cellulose under PLM and the results were negative, ATC must add this disclaimer to maintain ELAP accreditation:

"Polarized light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing".

Non-friable samples that contained *Trace* or *No* PLM detectable asbestos are classified as Inconclusive. Layered samples should be separated and analyzed individually and the analysis of each layer should be reported. Joint compound is the only exception.

ELAP requires method ELAP 198.1 for the analysis of samples containing ≤ 10% vermiculite with the exception of surfacing material containing vermiculite (SM-V). For samples containing >10% vermiculite ELAP requires methods ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. "This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite."

Surfacing material that contains vermiculite (SM-V) are analyzed by ELAP method 198.8. Sample results for SM-V tested by other methods upon client requests are inconclusive.

ATC has the capability of performing TEM confirmation if so desired

Bulk sample reports are checked and reviewed two times. Unused portions of samples are archived for two months unless client requests special handling. This report must not be used by the client to claim product endorsement by NIST or any agency of the U.S. government.

ATC is not responsible for sample collection and analytical procedures not performed by our laboratory. This report may not be reproduced in part without the laboratory permission.

ATC will not be liable for analytical results from samples that are not prepared according to the standard methods used by the laboratory (e.g. composite samples from different locations, samples with insufficient volumes, straight TEM samples without gravimetric procedures, dust samples, non-friable samples by PLM only).

Laboratory Equipment

Laboratory analyses were accomplished utilizing Olympus BH-2 Microscopes for PLM analyses and the JEOL Model JEM-100CXII-2 for TEM analyses.

Quality Control

ATC is accredited by NY State DOH ELAP (Lab ID 10879) for bulk and air fiber analyses. ATC participates in the Bulk Asbestos Sample Quality Assurance Programs for ELAP and maintains an in-house QC/QA program for bulk samples whereby 10% of all submitted samples are reanalyzed and results are documented. ATC also participates in a quarterly round robin QC/QA program for bulk samples with several accredited laboratories throughout the United States. Current and past QC/QA program results are available in the laboratory for inspection.

Accuracy and Precision

The phase abundances provided by point count may be considered within the limits of variability inherent in the method employed. For point counts the detection limit of 0.25% is based on one asbestos point counted over 400 non-empty points. If no points are counted and asbestos is identified, the result will be reported as trace. For ELAP trace is < 1%.

The analyses were supervised by Milena Bonezzi, Director of Laboratory Services, who has extensive experience in asbestos analysis by PLM and other methods. Please contact me regarding any questions relating to these materials at 212-353-8280.

Methods

1. ELAP 4088 Items 198.1 and 198.4 and 198.6 and 198.8

Sincerely

Milena Bonezzi ATC Group Services LLC Director of Laboratory Services

Wiley Bourson

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Page 1 of 1 DOCUMENT #DB4A



24c. QC By:

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-AFEAS. ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010 Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

Microscopes: OLYMPUS BH-2 /

BULK ASBESTOS ANALYSIS SHEET

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analysis sheet

for results

Methods:
EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763
EPA 600/R-93/116
ELAP Items 198.1, 198.4, 198.6, 198.8

Comments;

Method: DELAP DEPA

SCANNING OPTION

C.C. ☐

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Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing >10% vermiculite ELAP 198.1 followed by ELAP 198.6. This method has limitations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the led of asbestos present in a sample containing greater than 10% vermiculite."

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

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Q.C. 🗆

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Required

Point Counts Slide 1

NOB PLM

Slide 2 Slide 3

See gravimetric analysis sheet for results

SM-V

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might be underestimated.

See Note #1,

ATTAS ATC

ATC - New York 104 East 25th Street, 8th FL, New York, NY 10010

Phone: (212) 353-8280, Fax: (212) 353-3599 or 8306

| | Client / Project PANYNJ/ I | | SBESTOS ANAL' HAB | | ect Number214PN | IPEPJ1 | <u>Microscopes:</u> OLYMPUS BH-2 / NIKON OPTIPHOT |
|-------------------------------|--------------------------------|-------------------------|----------------------|--|---------------------------|--|--|
| | Analysis Date 11/ 7/2 | | <u>u</u> | and the second s | | 1750 | EMPERATURE°C 23 |
| 1 78 Field Number | Stereoscopic Exam | | PLM Optical Pro | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color 2/0 Texture i | Morph Extinction RI1 | RI DS Color Colo | r, Pleo Biref Sign Other Identi | y Chrysotile | Cellulose | (Mineral Filler |
| Required A | Homogeneity | | | | Amosite | Fiberglass | Organic Binders |
| See gravimetric U | # of Layers Asbestos | | | | Other | Other | |
| analysis sheet for results | Color of Layer Detected Yes No | | | | _ | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total P1 | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗌 | PLM / 10 | | | | | ☐ Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | | | 0/2- | - 6 | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | Birefringence | |
| | Method: DELAP □ EPA /□ | 3 SCANNING OPTION | Q.0 | C. 🗆 | | | |
| 2 79 Field Number | Stereoscopic Exam | | PLM Optical Pr | operties | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color IM Texture | Morph Extinction RI1 | RI DS Color Colo | r, Pleo Biref Sign Other Identi | | Cellulose | Mineral Filler |
| Required 📮 | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended D | Homogeneity Vermiculite | | | - CONTRACTOR - CONTRACTOR | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | | | Other |
| for results | Color of Layer Detected Yes No | · | | | | Cellulose Ondulose Extinction | |
| SM-V | Point Counts Slide 1 Slide 2 S | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb,/Ver, PT Total P | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM | | | | | Synthetic High Birefringence | * If vermiculite is > 10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM 7 | | | 0 2- | - U | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | Birefringence | |
| | Method: □ ELAP □ EPA | SCANNING OPTION | Q.0 | C. [] | | | |
| 3 80 | Stereoscopic Exam | | PLM Optical Pr | operties | Asbestos | Other Fibrous | Non Fibrous |
| Field Number | Color Color Texture | Morph Extinction Rt 1 | RI DS Color Colo | r, Pieco Biref Sign Other identi | | PLM % | PLM % |
| Gravimetric Required □ | | | | | ChrysotileAmosite | Cellulose Fiberglass | Mineral Filler Organic Binders |
| Recommended | Homogeneity / Vermiculite / | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers Asbestos | | | | _ | | Other |
| analysis sheet for results | Color of Layer Detected Yes No | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts Stide 1 Slide 2 S | Slide 3 Slide 4 Slide 5 | Slide 6 Slide 7 | Slide 8 Asb./Ver. PT Total P | MAsb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗆 | PLM | | | | | ☐ Synthetic High Birefringence | * If vermiculite is > 10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM O P | | | 0 24 | U | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | SCANNING OFFICE | 10/ | | | Birefringence | |

| TO: Tesuis | Method: 🗀 E | LAP 🗀 | EPA | SCAN | NING OPTI | ON | | | Q.C. 🗆 | | | | | | | |
|---------------------------------|------------------|-----------|----------|--------------|------------------------|---------|---------------------------|---------------|-------------|-------|-------------|-------------|------------------------|------------------------|--|---|
| 4 81 Field Number | Stered | oscopic E | Exam | | PLM Optical Properties | | | | | | | - 1 | Asbestos ults PLM % | Other Fibrous PLM % | Non Fibrous PLM % | |
| Gravimetric | Color 6 | Textur | e [] | Morph | Extinction | RII | Ril | DS Color | Color, Pleo | Birel | f Sign | Other Ident | ity | Chrysofile | Cellulose | Mineral Filler |
| Required 🗸 | Homogeneity: | Vermi | culite | / | | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗅 | To | | | 7 | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers | Asbes | itos — / | 4 | | | | | | | | | | | | Other |
| analysis sheel (for results | Color of Layer _ | Detec | ted Yes | No | | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | 7 Slide | 8 A | Asb./Ver. I | PT Total P | T %A: | sb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗀 | PLM | | | | | | | | | | | | | | ☐ Synthetic High Birefringence | " If vermiculite is >10% the level of asbestos in a sample |
| See SM-V □ | NOB PLM | 0/2 | <u> </u> | | -4 | | | | | | 0 | 22 | . し | | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated, See Note #1, |
| analysis sheet for results | Comments | | | Λ | | | MISTER PONTAGE / MARIE CO | no recommenda | | | | | | | Birefringence | |
| | Method: 🗆 E | LAP 🗆 | EPA | , | VING OPTI | ON | | 1 | Q.C. □ | | | | | |] | |

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

| _ | Page | ef |
|---|------|----|
| | | |

| | ATC - New York Street, 8 th FL, New York, 53-8280, Fax: (212) 353-3 | |
|------------------|---|----------------------|
| BULK AS | BESTOS ANALYSIS SH | EET |
| ESPRINKLER REH | AB | Proje |
| 1 Analyst | 4 | Batc |
| | PLM Optical Properties | NON-ROLL CO. |
| mh Evipelios OLI | Dill De Color Color Glos Bire | of Cinn Other Identi |

Slide 4 Slide 5 Slide 6 Slide 7 Slide 8 Asb./Ver. PT Total PT

| | | | et, 8" FL, New York, r 280, Fax: (212) 353-35 | | 6 | | | NVLAP 101187- ELAP 1087 |
|------------------------------|------------------|--------|--|------------|------------|---------------------------|------------------------|---|
| Client / Project PANYNJ/ I | _ | | TOS ANALYSIS SHE | ET | _ Project | Number 214PN | IPEPJ1 | <u>Microscopes</u> OLYMPUS BH-2 NIKON OPTIPHO |
| Analysis Date <u>11/ 7/2</u> | 2021_ Analyst_ | t | ~~ | | _ Batch I | Number 21- | 1750 | TEMPERATURE C 23 |
| Stereoscopic Exam | | PLM | l Optical Properties | | · | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Color BU Texture <u>(</u> | Morph Extinction | Ri1 Ri | DS Color Color, Pleo Biref | Sign Other | r Identity | Chrysotile | Cellulose | |
| Homogeneity 📉 Vermiculite | | | | | | Amosite | Fiberglass | Organic Binder |
| | | | | | | Other | Other | Vermiculite* |
| # of Layers Asbestos / | | | | | | | | Other |

0

22

%Asb. Or %Ver.

()

Fiberglass isotopi

Birefringence

Low to Moderate Birefringence

Horse Hair: Scales,

| | Method: 🗹 | ELAP [|] EPA | SCAN | NNG OPTI | ON | | | Q.C. □ | | | | | | |
|---------------------------------|----------------|----------|----------|--|------------|---------|---------|-----------|-------------|-------|----------|---------------|---------------------------|--|---|
| 75 Id Number | Stere | oscopic | Exam / | / | | | PLM C | Optical | Propert | ies | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
| Gravimetric | Color b | Textu | ire [| Morph | Extinction | KIT | RII E | S Color C | Color, Pleo | Biref | Sign C | ther Identity | Chrysotile | Cellulose | |
| Required 🏻 | Homogeneity | C / Verm | niculite | / | | | | | | | | | Amosite | Fiberglass | Organic Binder |
| Recommended 🗓 | | 4 | | | | | | | | | | | Olher | Other | Vermiculite* |
| ee gravimetric 🗖 | # of Layers | Asbe | stos | / | | | | | | | | | • | 1 | Other |
| analysis sheet (for results | Color of Layer | Deter | cted Yes | No | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide | 7 Slide | 8 Ast | ./Ver. P | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required | PLM | | | | | | | | | | | | | ☐ Synthetic High Birefringence | * If vermiculite is > 10% the level of asbestos in a sample |
| See SM-V | NOB PLM | V | ψ | Annual of the Confession of th | _ | | | - | | | Ć |) | U | ☐ Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments:/ | | | - 25 | | | | | | | | | | Birefringence | |
| | Method: | ELAP [|] EPA | SCAN | VING OPTI | ON | | 10 | a.c. 🗆 | | | | |] | |

| 3 76 Field Number | Ste | ereos | copic E | xam | | | | PLM (| Optical | Propert | ies | | | Asbestos Results PLM % | Other Fibrous PLM % | Non Fibrous PLM % |
|-------------------------------|---|-------|---------|---------|---------|------------|---------|---------|----------|-------------|--|---------------|----------------|---------------------------|--|--|
| Gravimetric | Cotor | , l(| Texture | • M | Morph | Extinction | RII | RI | DS Color | Color, Pleo | Biref | Sign (| Other Identity | Chrysotile | Cellulose | Mineral Filler |
| Required 🗆 | Homogeneit | ıv V | Vermio | u lite | 1 | | | | | | | | | Amosite | Fiberglass | Organic Binders |
| Recommended 🗆 | | 7 | | | + | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric | # of Layers | | Asbes | tos | /- | | | | | | | | | | - | Other |
| analysis sheet | Color of Lay | ·ег | Detect | ed Yes | No | | | | | | | | | | ☐ Cellulose Ondulose Extinction | |
| SM-V | Point Cou | nts : | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Stide 5 | Slide 6 | Slide | 7 Slide | 8 A | sb./Ver. F | Total PT | %Asb. Or %Ver. | ☐ Fiberglass Isotopic | |
| Required 🗀 | Р | LM | | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is > 10% the level of asbestos in a sample |
| See SM-V □ | NOB P | LM (| 0/~ | | | / | | | | | | فتاحت | 2- | ں | U Horse Hair: Scales, Low to Moderate | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | | | Logoration of the second secon | Birefringence | | | | |
| 121 1 9 9 9 10 | Method: ☐ ELAP ☐ EPA ☐ SCANNING OPTION Q.C. ☐ | | | | | | | | | | | | | | | |

| | Method:/L.J E | LAP U | EPA | / SCANI | CANNING OPTION Q.C. L.J | | | | | | | | | | |
|---------------------------------|--------------------------------|---|----------|---------|-------------------------|---------|-------------|-------------|------------|------------------------------------|----------|---------------|---------------------------|---|---|
| 4 77 Field Number | Stere | oscopic E | Exam | | | | PLM C | Optical F | ropert | ies | | | Asbestos Results PLM % | Other Fibrous | Non Fibrous PLM % |
| Gravimetric | Color V | Textu | re | Morph | Extinction | RI ± | RII C | OS Color Co | lor, Pieo | Biref | Sign O | ther Identity | Chrysotile | Cellulose | Mineral Filler |
| Required [] | Homogeneity Vermiculite 1 | | | | | | | Amosite | Fiberglass | Organic Binders | | | | | |
| Recommended 🗆 | riomogenery | 7 | | | | | | | | | | | Other | Other | Vermiculite* |
| See gravimetric 🖵 | # of Layers | Asbes | stos | ⊬ | | | | | | | | | | • | Other |
| analysis sheet (for results | Color of Layer Detected Yes No | | | | | | | | | ☐ Ceilulose Onduiose Extinction | | | | | |
| SM-V | Point Counts | Slide 1 | Slide 2 | Slide 3 | Slide 4 | Slide 5 | Slide 6 | Slide 7 | Slide | 8 As | b.Ner. P | Total PT | %Asb. Or %Ver. | □ Fiberglass Isotopic | |
| Required [| PLM | | | | | | | | | | | | | Synthetic High Birefringence | * If vermiculite is >10% the level of asbestos in a sample |
| See SM-V | NOB PLM | V)V | 3 | | 7 | | | | | | 0 | 2- | J | ☐ Horse Hair: Scates, Low to Moderate Sirefringence | might be underestimated. See Note #1. |
| analysis sheet for results | Comments: | | | | | | | | | | | Breirnigence | | | |
| | Method: ⊅ E | Method: ☐ ELAP ☐ EPA ☐ SCANNING OPTION Q.C. ☐ | | | | | | | | | | | | | |

EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples - 40 CFR Appendix E to Subpart E of Part 763 EPA 600/R-93/116 ELAP Items 198.1, 198.4, 198.6, 198.8

THIS DOCUMENT OR FORM IS UNCONTROLLED WHEN PRINTED

Note #1: ELAP requires method ELAP 198.1 for the analysis of samples containing ≤10% vermiculite, with the exception of surfacing material that contains vermiculite (SM-V). For samples containing ≥10% vermiculite ELAP 198.1 followed by ELAP 198.6. This method has similations for identification and quantification of vermiculite. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

Note #2: ELAP requires method 198.8 for the analysis of surfacing material containing vermiculite (SM-V) and it utilizes a 400 point count method.

L:\(\text{LAB}\)_FORMS,DOCUMENTS AND RECORDS\(\text{OPTICAL\}\)ASBESTOS_BULK\(\text{ASBESTOS}\) BULK\(\text{ASBESTOS}\) BULK\(\text{ASBESTOS}\) ANALYSIS SHEET_FORM #82.doc

Page ____ of ________ ATC EFFECTIVE DATE 06/24/2021 REVISION #34 BY MEI WANG FORM #82

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| Client/Project: | PANYNJ / Bidg # 301 | | | PLM Batch# | 21-1750 | TEM Batch # 125126 | # 125126 | Start Date: 11/07/21 | 11/ |
|-----------------|---------------------|----------|----|---------------|---------|---------------------|----------|--------------------------|----------|
| NOB PLM PREP: | Z.ANSARI | Analyst: | MW | NOB TEM PREP: | SH | NOB TEM Analyst: | RP | Date Completed: 11/08/21 | 11/08/21 |

| qs | | TEM | > | > | > | > | > | > | > | > | > | > |
|---------|----------|----------------------------|------|----------|---------|------|------|------|------|------|---------|------|
| Methods | NOB | PLM | | > | > | > | > | > | > | > | > | > |
| | | PREP | > | > | > | > | > | > | > | > | > | > |
| | | Notes | | | | | | | | | | |
| 13 | % Total | Asbestos or Vermiculite | | | | | | | | | | |
| 6 | Asbestos | Types or Vermiculite | ND | QN ON | N QN | QN | N | QN. | QN | QN | N ON | ND |
| 12 | | % Carbonate | 15.3 | 11.2 | 14.4 | 9.6 | 1.1 | 9.1 | 10.1 | 15.1 | 14.3 | 7.7 |
| - 44 | Non Asb | Residue % NFr | 23.9 | 27.5 | 17.7 | 33.1 | 33.3 | 30.2 | 25.5 | 16.4 | 25.2 | 33.9 |
| 2 | | % Organic | 60.8 | 61.3 | 67.9 | 57.3 | 55.6 | 2.09 | 64.4 | 68.5 | 60.5 | 58.4 |
| | | Field# | 70 | 71 | 72 | 73 | 74 | 75 | 92 | 77 | 78 | 79 |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

Client Copy

Page 1

ATC Group Services LLC GRAVIMETRIC (NOB) ANALYSIS SHEET

| 11/07/21 | 11/08/21 | | | | | | | | | | |
|----------------------|--------------------------|---------|----------|----------------------------|------|---------|---|--|--|--|--|
| Start Date: 11/07/21 | Date Completed: 11/08/21 | | | | | | | | | | |
| 125126 | RP | spo | | TEM | | > | , | | | | |
| TEM Batch # | NOB TEM Analyst: | Methods | NOB | PLM PREP | | > | | | | | |
| 21-1750 | SH | | | Notes | | | | | | | |
| PLM Batch# | NOB TEM PREP: | | | | | | | | | | |
| | MW | 13 | % Total | Asbestos or Vermiculite | | | | | | | |
| | NOB PLM Analyst: | 6 | Asbestos | Types or Vermiculite | QN | N | | | | | American residence in the contract of the cont |
| 3ldg # 301 | Z.ANSARI | 12 | | % Carbonate | 8.0 | 4 4. | | | | | |
| PANYNJ / Bldg # 301 | Z.AN | 11 | Non Asb | Residue % NFr | 32.3 | 37.6 | | | | | Valuation of the state of the s |
| Client/Project: | NOB PLM PREP: | 2 | | % Organic | 57.9 | 58.0 | | | | | |
| Client/ | NOB PL | | | Field # | 80 | 81 | | | | | |

Methods: ELAP 198.6 198.4, EPA 40CFR App. E to Subpt. E of Part 763, EPA 600/R-93/116.
 Refer to PLM analysis sheet for NOB results and/or point count data.
 Vermiculite not reported = not detected.

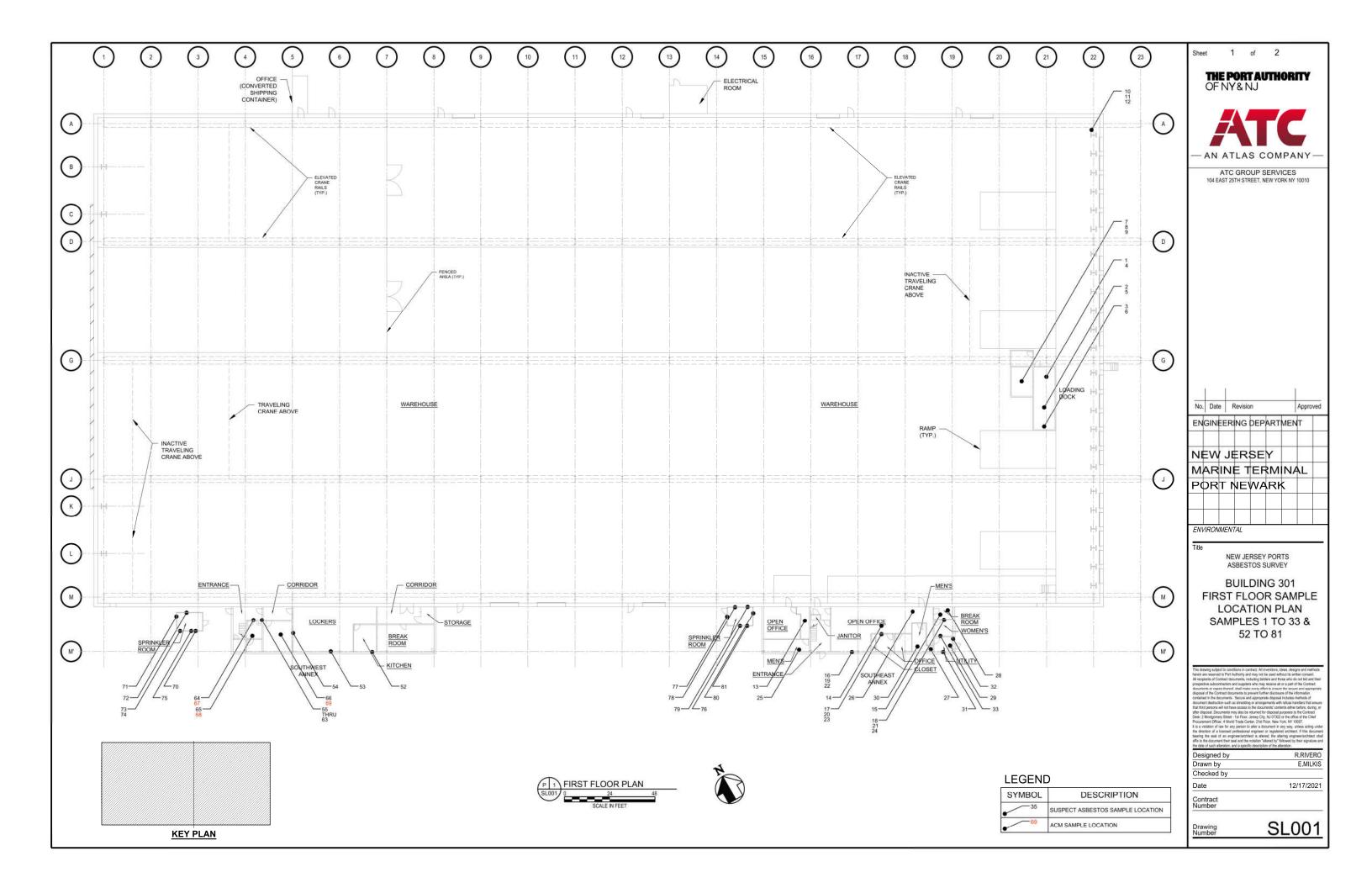
Page 2

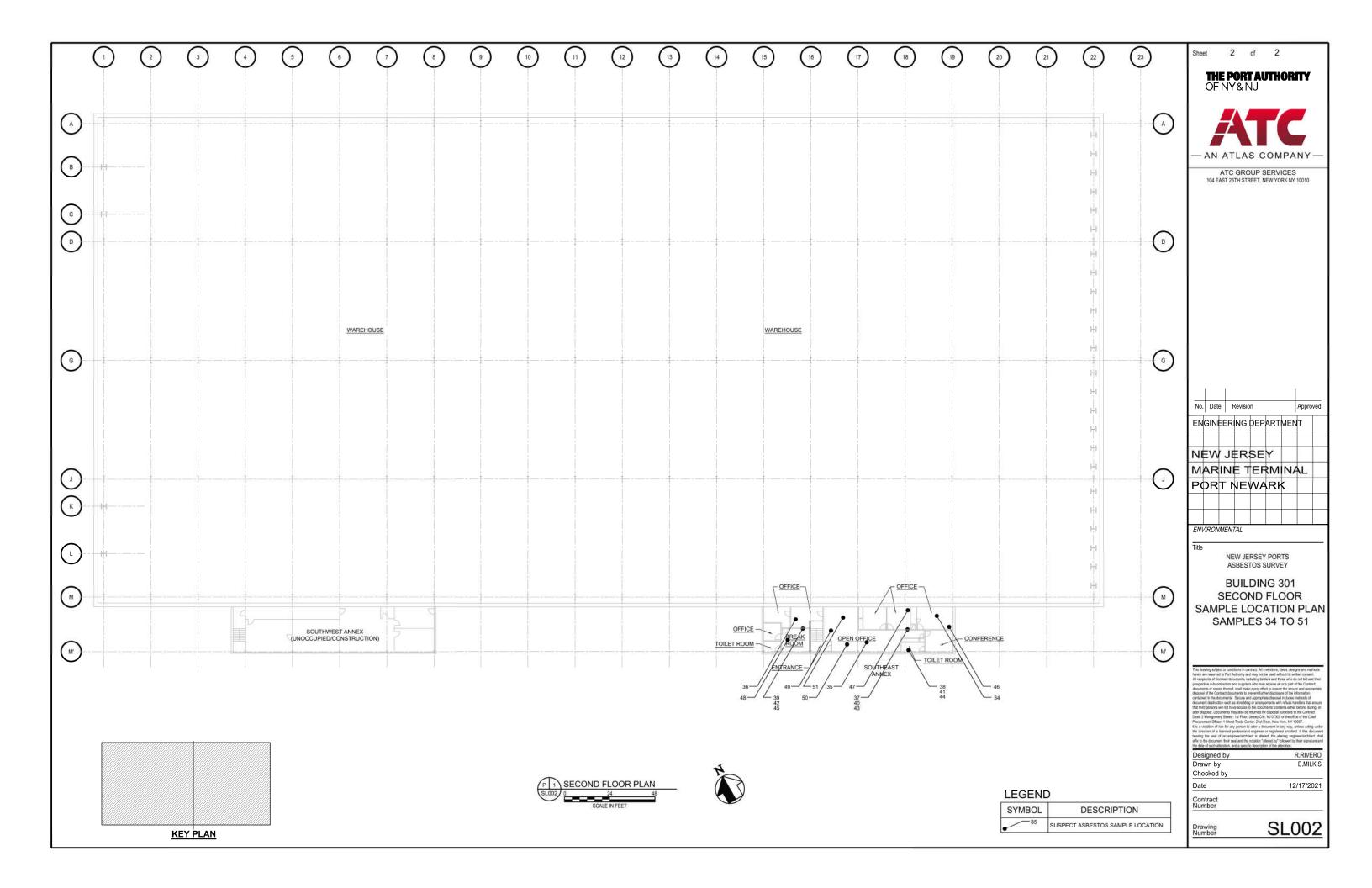
Client Copy

APPENDIX B

ASBESTOS SAMPLE LOCATION DRAWINGS

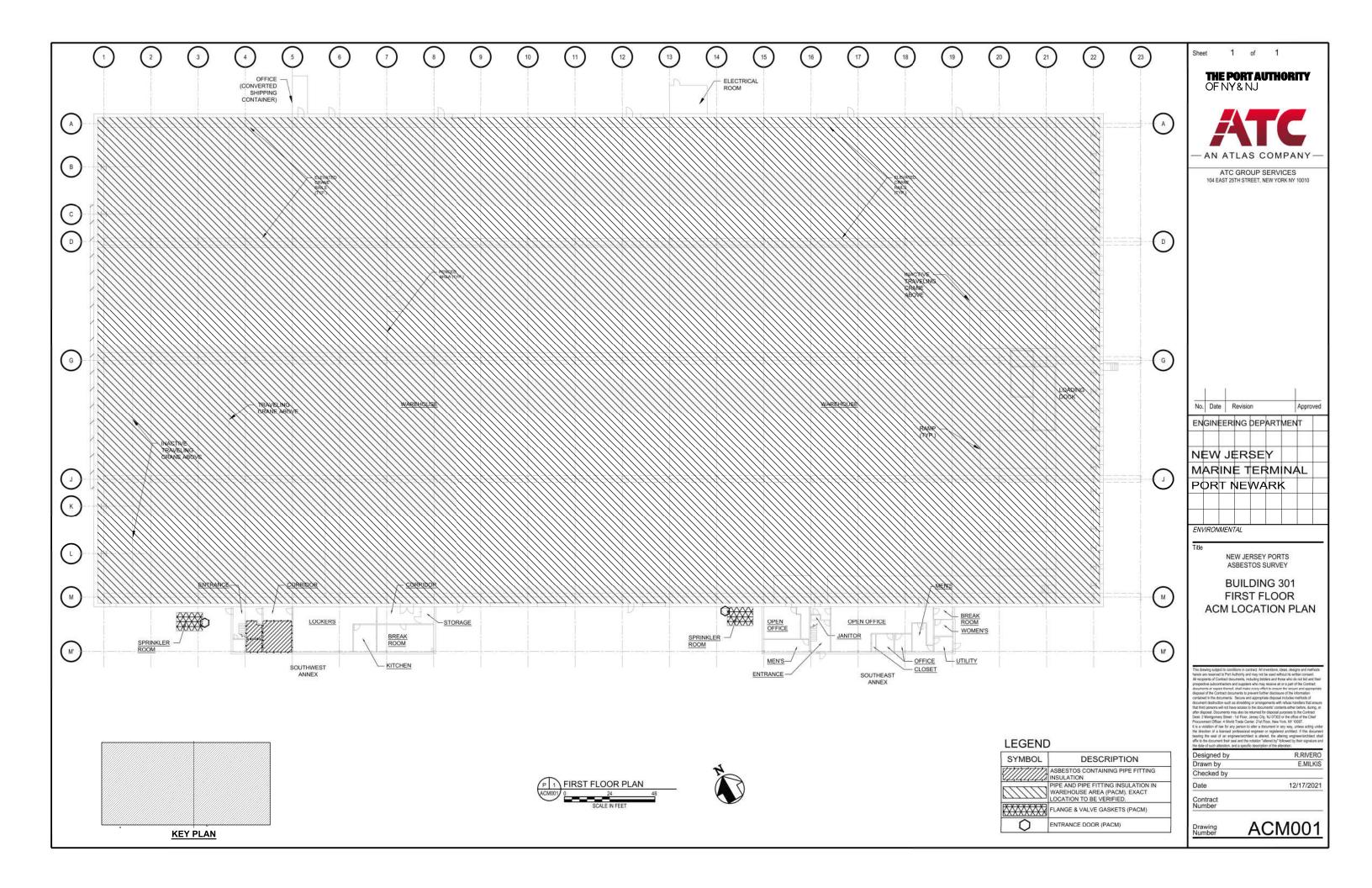
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APPENDIX C
ASBESTOS LOCATION DRAWINGS

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APPENDIX D

LAB CERTIFICATIONS AND ACCREDITATIONS, COMPANY AND PERSONNEL CERTIFICATIONS

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New York State – Department of Labor Division of Safety and Health

Division of Safety and Health License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

ATC Group Services LLC 10th Floor 104 East 25th Street

New York, NY 10010

FILE NUMBER: 99-0121 LICENSE NUMBER: 29902 LICENSE CLASS: RESTRICTED DATE OF ISSUE: 03/24/2021 EXPIRATION DATE: 03/31/2022

Duly Authorized Representative - Kevin Hamilton:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving a sbestos or a sbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
SH 432 (8/12)
For the Commissioner of Labor

NEW YORK STATE DEPARTMENT OF HEALTH WADSWORTH CENTER



Expires 12:01 AM April 01, 2021 Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. MILENA BONEZZI
ATC GROUP SERVICES LLC
104 EAST 25TH STREET 8TH FLOOR
NEW YORK, NY 10010

NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below:

Miscellaneous

Ashestos

PA 100.2

Serial No.: 61221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

age 1 of 1



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MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material

Item 198.1 of Manual

EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM

Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM

Item 198.4 of Manual

Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 61222

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MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010 NY Lab Id No: 10879

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos

40 CFR 763 APX A No. III

NIOSH 7402

Fibers

NIOSH 7400 A RULES

Department of Health

Serial No.: 61223

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NY Lab Id No: 10879

ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

MS. MILENA BONEZZI COPY

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2016) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Miscellaneous

Asbestos

EPA 100.2

Serial No.: 62824

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Page 1 of 17.0 PY A 407 A 400



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WADSWORTH CENTER

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NY Lab Id No: 10879

MS. MILENA BONEZZI
ATC GROUP SERVICES LLC
104 EAST 25TH STREET 8TH FLOOR
NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE All approved subcategories and/or analytes are listed below.

Miscellaneous

Asbestos in Friable Material Item 198.1 of Manual EPA 600/M4/82/020

Asbestos in Non-Friable Material-PLM Item 198.6 of Manual (NOB by PLM)

Asbestos in Non-Friable Material-TEM Item 198.4 of Manual Asbestos-Vermiculite-Containing Material Item 198.8 of Manual

Serial No.: 62825

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Issued in accordance with and pursuant to section 502 Public Health Law of New York State

NY Lab Id No: 10879

MS. MILENA BONEZZI ATC GROUP SERVICES LLC 104 EAST 25TH STREET 8TH FLOOR NEW YORK, NY 10010

is hereby APPROVED as an Environmental Laboratory for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS All approved subcategories and/or analytes are listed below:

MISCELIANEOUS

Asbestos

40 CFR 763 APX A No. III NIOSH 7402

ribers

NIOSH 7400 A RULES

Serial No.: 62826

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

United States Department of Commerce National Institute of Standards and Technology



20 7025 O/IE S **2** ccreditation 4 of ertificate

NVLAP LAB CODE: 101187-0

TC Group Services L New York, NY

for accredited by the National Voluntary Laboratory Accreditation Program listed on the Scope of Accreditation, for:

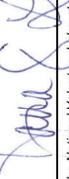
Asbestos Fiber Analysis

I the operation of a laboratory quality dated January 2009). Standard ISO/IEC ance with the recal competence for a r to joint ISO-ILAC This laboratory is accrec This accreditation demonst

2020-07-01 through 2021-06-30

Effective Dates





For the National Voluntary Laboratory Accreditation Prog

National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ATC Group Services LLC

104 E. 25th Street 8th Floor New York, NY 10010 Ms. Milena Bonezzi Phone: 212-353-8280 x247 Fax: 212-353-8306 Email: milena.bonezzi@atcgs.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101187-0

Bulk Asbestos Analysis

Code **Description**

EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of 18/A01

Asbestos in Bulk Insulation Samples

18/A03EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code **Description**

18/A02 U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and

Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40

CFR Part 763 Subnart F Annendix A

For the National Voluntary Laboratory Accreditation Program



AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

ATC Group Services LLC

Effective: 04/10/2015

Revision: 8 Page 1 of 1

104 East 25th St 8th Flr New York, NY 10010

Laboratory ID: LAP-100229

Issue Date: 08/30/2019

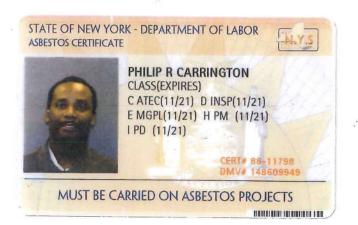
The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 06/12/1995

| IHLAP Scope Categ | ory Field of Testing (FC | Technology sub- type/Detector | Published Reference Method/Title of In-house Method | Component, parameter or characteristic tested |
|-----------------------------------|------------------------------------|----------------------------------|---|---|
| Asbestos/Fiber Microscopy Core | Phase Contrast Microscopy (PCM) | - | NIOSH 7400 Modified | - |

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org





EYES BRO

64 HAIR BLK

100 HGT 5.1 091

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240 STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





NANCY B GUEVARA CLASS(EXPIRES) C ATEC(05/21) D INSP(05/21) H PM (05/21) I PD (05/21)

MUST BE CARRIED ON ASBESTOS PROJECTS



01213 005585171 14

EYES BRO HAIR BRO HGT 5' 06"

IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





RONEY D RIVERO CLASS(EXPIRES) C ATEC(08/21) D INSP(08/21) E MGPL(08/21) H PM (08/21) IPD (08/21)

MUST BE CARRIED ON ASBESTOS PROJECTS

01213 00581057 61

EYES BRO HAIR GRY IF FOUND RETURN TO: NYSDOL - LEC UNIT ROOM 161A BUILDING 12 STATE OFFICE CAMPUS ALBANY NY 12240