



September 5, 2023

Ms. Lori Morris
Memphis Shelby County Airport Authority
2491 Winchester Road, Suite 113
Memphis, TN 38116

**RE: Asbestos Survey
Memphis International Airport
Cargo Building #2 Roof
2 Cargo Road
Memphis, TN 38116**

Dear Ms. Morris,

At your request, Tioga Environmental Consultants, Inc. (Tioga) performed a survey of the above-referenced Property to identify the presence of asbestos. Specifically, a limited asbestos survey was performed to identify asbestos containing materials present on the roof of the Property. The purpose of this survey was to ensure that none of these materials, if present, would have an adverse environmental impact due to renovation activity within the existing facility.

On August 21, 2023, Donald White and Velita Thornton, EPA/AHERA Asbestos Inspectors, surveyed the Property. The findings of the survey are contained in the attached report.

If you have any questions about our report or we may be of further service, please contact me at (901) 791-2432.

Sincerely,
TIOGA ENVIRONMENTAL CONSULTANTS, INC.

A handwritten signature in blue ink that reads "Velita Thornton". The signature is fluid and cursive, written over a white background.

Velita Thornton
Biologist / Environmental Scientist

Down-to-earth partners. Sky's-the-limit solutions.



Asbestos Survey-Cargo Building #2 Roof

**2 Cargo Road
Memphis, Shelby County, Tennessee**

September 2023

Project No. 221424.00

Prepared For:

Memphis Shelby County Airport Authority
2491 Winchester Road, Suite 113
Memphis, TN 38116

Prepared By:



357 North Main St.
Memphis, Tennessee 38103

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1.0 PROJECT SUMMARY

Memphis Shelby County Airport Authority (MSCAA) requested Tioga Environmental Consultants, Inc. (Tioga) prepare a survey to identify Asbestos Containing Materials (ACM) present at the building structure addressed as 2 Cargo Road in Memphis, Shelby County, Tennessee.

The survey was performed on August 21, 2023, by Donald White and Velita Thornton, EPA/AHERA Asbestos Inspectors.

1.1 Facility Description

The property, located at 2 Cargo Road, consists of cargo building #2, occupied by Southwest Cargo, Delaware North Companies Travel Hospitality Services, Hudson News, Anton Airfood, The Paradies Shops, and Blue Note Restaurant, LLC, which functions as a storage facility with some areas utilized as food storage. Cargo building #2 has three different sections of roofing, all divided by 2 parapets. The two end roofing materials were the same.

The building is a one-story brick and concrete structure with a large loading zone on the east and west sides of the building. This building has a silver built-up roofing (BUR) on the north and south ends with a white Thermoplastic Polyolefin (TPO) membrane roofing in the center. The interior of the building was not assessed.

At the time of this survey, the property was being used as a cargo and storage warehouse.

1.2 Scope of Services

Per the authorization of Memphis Shelby County Airport Authority, Tioga conducted a roof survey of 2 Cargo Road in accordance with the following scope of work:

Asbestos Survey

- The roof of the Property was visually surveyed and samples of suspect asbestos containing materials (ACM) were collected by a State of Tennessee Certified Asbestos Inspector.
- A minimum of three samples were collected from each homogenous area. These samples were delivered to a NVLAP certified laboratory for analysis by polarized light microscopy (PLM).
- Existing drawings were used to mark sample locations and the extent of ACM, then converted into digital floor plans and attached to the report.

Reporting

- Tioga has prepared an Asbestos Survey Report containing site observations, chain-of-custody, sample results including types and locations of ACM, a photographic log, and site plans noting sample locations, as well as locations of asbestos containing materials.

1.3 Significant Assumptions

No significant assumptions were made regarding the survey of Cargo Roof #2.

1.4 Deviations

No deviations from the agreed upon scope of services occurred during the performance of this survey.

1.5 Inaccessible Areas

The survey was limited to the roof of Cargo building #2. All areas of the roof were accessible at the time of the survey.

1.6 Limitations and Exceptions of Survey

The scope of this survey was limited to accessible materials only.

This survey report is not intended as an asbestos abatement specification document. Contractors or consultants should independently verify the location, condition and/or estimated quantities of asbestos containing materials as a component of their preparation of remediation bid documents.

2.0 ASBESTOS

The asbestos inspection was performed on August 21, 2023, by Donald White and Velita Thornton of Tioga Environmental Consultants, Inc., State of Tennessee Certified Asbestos Inspectors, Certification Numbers A-I-183409-135425 and A-I-125234-135735, respectively. Copies of these certifications are included in Appendix 1.

Additionally, Tioga Environmental Consultants, Inc. is a State of Tennessee certified Asbestos Activities firm, Certification Number A-F-718-118880. A copy of this certification is also included in Appendix 1.

This survey was requested by Memphis Shelby County Airport Authority for the purpose of having a document that identifies and documents the presence of, and estimates the quantities of, any asbestos-containing materials (ACM) on the roof of Cargo Building #2, located at 2 Cargo Road in Memphis, Tennessee. Additionally, completing this survey provides necessary documentation ensuring compliance with the U.S. Environmental Protection Agency (EPA), Tennessee Department of Environment & Conservation (TDEC), and Occupational Safety and Health Administration (OSHA) regulations. It is also essential information when considering any renovation or demolition activities in areas with identified ACM to ensure compliance with National Emission Standards for Hazardous Air Pollutants (NESHAP) and OSHA regulations.

During the inspection, the inspector collected forty-nine individual samples from fourteen different homogeneous areas and received a result for each individual material sampled. This report documents the findings of this asbestos survey. The details regarding this survey and a list of sampled materials are contained in Section 2.3 of this Report. ACM was identified, and the following summary in Table 1 provides an overview of the findings.

Table 1
2 Cargo Road
CONFIRMED ASBESTOS CONTAINING MATERIALS

Sample Number	Material	Estimated Quantity	Location/Condition
CR2-01	Silver Roofing	27,456 ft ²	Cargo Roof #2 / Good
CR2-02	Black Penetration Caulk	6 ft ²	Cargo Roof #2 / Good
CR2-03	Gray HVAC Caulk	30 Ln. Ft	Cargo Roof #2 / Good
CR2-04	White Skylight Caulk	36 Ln. Ft	Cargo Roof #2 / Good
CR-05	Black Liquid Flashing	73 ft ²	Cargo Roof #2 / Good
CR2-06	Black Fabric Flashing	1,512 ft ²	Cargo Roof #2 / Good
CR2-08	White TPO Roofing	7,863 ft ²	Cargo Roof #2 / Good

2 Cargo Road CONFIRMED ASBESTOS CONTAINING MATERIALS			
Sample Number	Material	Estimated Quantity	Location/Condition
CR2-10	White HVAC Caulk	144 Ln. ft	Cargo Roof #2 / Good

Notes: ft² = Square Feet
Ln. Ft=Linear Feet

2.1 Visual Observations

Tioga personnel conducted an examination of the roof of 2 Cargo Road to identify suspect ACM. Observations included the type, condition, location, and estimated quantity of any suspect ACM.

Additionally, all suspect materials were evaluated for condition and friability, the ease with which the materials can be crushed with hand pressure. Asbestos materials determined to be friable, or that could be rendered friable during renovation activities are considered Regulated Asbestos Containing Materials (RACM) that must be removed prior to renovation or demolition.

2.2 Asbestos Sampling

Asbestos has been a widely used component of building materials throughout history due to its unique physical properties: poor heat and electrical conductor, fire resistance, and high tensile strength and low cost. Unfortunately, asbestos also poses potentially serious health concerns for people exposed to the material. Knowing where and how much ACM is in a building allows for proper managing of site activities and providing appropriate protection for building occupants and workers involved in maintenance, renovation, or demolition of asbestos containing materials.

This survey was conducted in general conformance with Asbestos Hazard Emergency Response Act (AHERA) and ASTM Standard E2356-18. It included a walkthrough of all accessible areas to identify suspect asbestos-containing materials, quantification of material amounts, collection of samples from each homogenous area, and assessment per functional space.

For this facility, homogeneous areas of suspect Asbestos-Containing Materials (ACM) were defined for each material type sampled. A total of nine homogeneous areas were identified and sampled. In each homogeneous area, Tioga identified, differentiated and sampled suspect materials based on color (i.e. color tar or flashing), texture, and apparent application date. For samples with multiple layers (i.e. roofing material, flashing, etc.), the laboratory assigns unique sample numbers designated with an A, B, C, and D to identify each layer.

Having identified the homogeneous areas, samples were collected from each for laboratory analysis. Photographs of each material type sampled are included in the Photographic Log in Appendix 2.

2.3 Asbestos Findings

All samples were transported via FedEx to Eurofins CEI, an NVLAP certified laboratory, for PLM analysis on August 21, 2023. Results were received on August 23, 2023. Materials identified containing greater than one percent (1%) asbestos are considered asbestos containing. A copy of the laboratory report is included in Appendix 4.

The laboratory analysis for samples collected as part of this survey found eight building materials containing greater than one percent (1%) asbestos. Table 2 summarizes the homogenous areas and materials sampled during this inspection as well as the results of the analysis.

Table 2

2 Cargo Road ASBESTOS SAMPLE LOG SUMMARY			
Material	Homogeneous Area Number	Sample Numbers	Results
Silver Roofing	CR2-01	A	Black, Brown BUR - None Detected Tan, Cream Cementitious Material - None Detected
		B	Black, Brown BUR - Chrysotile 2% Tan, Cream Cementitious Material -None Detected
		C	Silver, Black BUR Silver Paint - Chrysotile 2% Tan, Cream Cementitious Material - None Detected
		D	Silver, Black BUR Silver Paint - Chrysotile 2% Tan, Cream Cementitious Material - None Detected
		E	Sample Not Analyzed
		F	Black, Brown BUR - None Detected Tan, Cream Cementitious Material - None Detected
		G	Black, Brown BUR - None Detected Tan, Cream Cementitious Material - None Detected
		H	Black, Brown BUR - None Detected Tan, Cream Cementitious Material - None Detected
		I	Silver, Black BUR Silver Paint - Chrysotile 2% Black, Brown BUR - None Detected Tan, Cream Cementitious Material - None Detected
Black Penetration Caulk	CR2-02	A	Silver, Black Silver Paint - Chrysotile 2% Black Caulking - None Detected
		B	Black, Gray Caulking - Chrysotile 5%
		C	Silver, Black Silver Paint - Chrysotile 2% Black Caulking -None Detected
Gray HVAC Caulk	CR2-03	A	Silver, Black Silver Paint - Chrysotile 2% Black, Gray Caulking - Chrysotile 3%
		B	Silver, Black Silver Paint - Chrysotile 2% Black, Gray Caulking - Chrysotile 3%
		C	Black, Gray Caulking - Chrysotile 3%
White Skylight Caulk	CR2-04	A	White, Off-white Caulking - None Detected
		B	White, Off-White Caulking - None Detected Gray Caulking - Chrysotile 2%
		C	White, Off-white Caulking - None Detected
Black Liquid Flashing	CR2-05	A	Silver Paint - Chrysotile 2% Black, Brown Flashing - Chrysotile 2%
		B	Black, Brown Flashing - None Detected
		C	Silver Paint - Chrysotile 2% Black, Brown Flashing - Chrysotile 2%
Black Fabric Flashing	CR2-06	A	Silver Paint - Chrysotile 2% Black, Brown Flashing - None Detected

2 Cargo Road ASBESTOS SAMPLE LOG SUMMARY			
Material	Homogeneous Area Number	Sample Numbers	Results
		B	Silver Paint - Chrysotile 2% Black, Brown Flashing - None Detected
		C	Silver Paint - Chrysotile 2% Black, Brown Flashing - None Detected
White Parapet Caulk	CR2-07	A	White Caulk - None Detected
		B	White Caulk - None Detected
		C	White Caulk - None Detected
White TPO Roofing	CR2-08	A	Black, White Roof Membrane - None Detected Silver Paint - Chrysotile 3% Black Roofing Core - None Detected Off-White Insulation - None Detected
		B	Black, White Roof Membrane - None Detected Black Roofing Core - None Detected Tan Insulation - None Detected
		C	Black, White Roof Membrane - None Detected Tan Mastic - None Detected Silver Paint - Chrysotile 2% Black Roofing Core - None Detected
		D	Black, White Roof Membrane - None Detected Black Roofing Core - None Detected
		E	Black, White Roof Membrane - None Detected Black Roofing Core - None Detected Tan Insulation - None Detected
White Penetration Caulk	CR2-09	A	White Caulking - None Detected
		B	White Caulking - None Detected
		C	White Caulking - None Detected
White HVAC Caulk	CR2-10	A	White Caulking - None Detected
		B	White Caulking - None Detected
		C	White Caulking - None Detected Black Tar - Chrysotile 2%
Black Access Hatch Caulk	CR2-11	A	Black Caulking - None Detected
		B	Black Caulking - None Detected
		C	Black Caulking - None Detected
Gray Duct Mastic	CR2-12	A	Gray Duct Mastic - None Detected
		B	Gray Duct Mastic - None Detected
		C	Gray Duct Mastic - None Detected
Gray Liquid Flashing	CR2-13	A	Gray Flashing - None Detected
		B	Gray Flashing - None Detected
		C	Gray Flashing - None Detected Black Tar - None Detected Cream Sealant - None Detected
Black Tar Caulk	CR2-14	A	Black Caulking - None Detected
		B	Black Caulking - None Detected
		C	Black Caulking - None Detected

Note: **Green** = Homogenous Areas positive for ACM
Red = Positive ACM samples identified by certified laboratory

Drawings in Appendix 3 show the sample locations and the locations of ACM at the Property.

There are three major categories used to classify asbestos-containing materials (ACM) found in buildings: Surfacing Materials, Thermal System Insulation (TSI), and Miscellaneous Materials. Materials in these broad categories are further classified as

either friable or non-friable. Friable materials are materials that can be reduced to powder from hand pressure and may become an inhalation hazard. Non-friable asbestos materials are classified as either Category I or Category II Material.

Category I material is defined as asbestos-containing resilient floor covering, asphalt roofing products, packings and gaskets. Asbestos-containing mastic is also considered a Category I material (EPA determination – April 9, 1991). Category II material is defined as all remaining types of non-friable ACM not included in Category I that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable asbestos-cement products such as transite are an example of Category II material.

Table 3 below identifies homogenous areas within the Property that are positive for asbestos along with the category and location of each. The summary and recommendations related to these ACM Findings are included in Section 4.1.

Table 3

2 Cargo Road CONFIRMED ASBESTOS CONTAINING MATERIALS					
Sample Number	Material	Estimated Quantity	Category Friable	Location/Condition	Figure
CR2-01	Silver Roofing	27,456 ft ²	Category I Non-Friable	Cargo Roof #2 / Good	1
CR2-02*	Black Penetration Caulk	6 ft ²	Category I Non-Friable	Cargo Roof #2 / Good	1
CR2-03	Gray HVAC Caulk	30 Ln Ft	Category II Non-Friable	Cargo Roof #2 / Good	1
CR2-04*	White Skylight Caulk	36 Ln. Ft	Category I Non-Friable	Cargo Roof #2 / Good	1
CR-05	Black Liquid Flashing	73 ft ²	Category I Non-Friable	Cargo Roof #2 / Good	1
CR2-06	Black Fabric Flashing	1,512 ft ²	Category I Non-Friable	Cargo Roof #2 / Good	1
CR2-08	White TPO Roofing	7,863 ft ²	Category I Non-Friable	Cargo Roof #2 / Good	1
CR2-10	White HVAC Caulk	144 Ln. ft	Category II Non-Friable	Cargo Roof #2 / Good	1

Note: * = In this case the caulks are considered Category I as they are part of the roofing system.

3.0 SUMMARY AND RECOMMENDATIONS

3.1 Asbestos

All materials identified as asbestos containing should be maintained in good condition to avoid potential fiber release due to disturbance. In the event of demolition, the State of Tennessee and NESHAP require that all friable ACM and non-friable ACM that could become friable during renovation or demolition activities must be removed by a certified Asbestos Abatement Contractor prior to disturbance.

In all instances, non-certified personnel should not disturb or attempt removal of any of the asbestos-containing materials identified in this survey. OSHA regulation 29 CFR 1926.1101 requires that a qualified, certified Asbestos Abatement Contractor must be retained to perform abatement of ACM prior to demolition or renovation activities at the Property. At no time are non-certified personnel allowed to disturb or remove ACM.

It is recommended that any Asbestos Abatement Contractor retained to perform abatement activities at the facility should be required to maintain proper engineering control measures prior to and during the disturbance of all ACM to ensure protection of human health and safety for personnel involved with this project. These control measures are also required for the protection of the surrounding environment by preventing the possibility of contamination outside of the abatement areas. Appropriate area air and/or personnel monitoring during the removal of these materials must be conducted as per federal, state, and local regulations.

The following recommendations are based on the findings as identified in Section 2.3 and are in general conformance with the State of Tennessee, EPA, NESHAP and OSHA requirements:

- The asbestos containing Silver Roofing, Black Liquid Flashing, Black Fabric Flashing, and White TPO Roofing are non-friable Category I materials. The State of Tennessee and NESHAP require that non-friable ACM that could become friable during renovation activities must be removed prior to disturbance. Since these materials may be rendered friable during renovation activities, they must be removed by an asbestos abatement contractor prior to being disturbed by renovation activities. These materials can be disposed of at a landfill that accepts asbestos waste. Asbestos waste manifest should be kept for records.
- The asbestos containing White Skylight Caulk and Black Penetration Caulks are non-friable Category I materials as they are considered part of the roofing system. Since these materials may be rendered friable during renovation activities, they must be removed by an asbestos abatement contractor prior to being disturbed by renovation activities. These materials can be disposed of at a landfill that accepts asbestos waste. Asbestos waste manifest should be kept for records.
- The asbestos containing HVAC caulks are non-friable Category II materials as they are limited to the HVAC systems. Since these materials may be rendered friable during renovation activities, they must be removed by an asbestos abatement contractor prior to being disturbed by renovation activities. These materials can be disposed of at a landfill that accepts asbestos waste. Asbestos waste manifest should be kept for records.

- In all instances, non-certified personnel should not disturb or attempt removal of any of the asbestos-containing materials identified in this survey. OSHA regulation 29 CFR 1926.1101 requires that a qualified, certified Asbestos Abatement Contractor must be retained to perform abatement of ACM prior to renovation activities at the Property. At no time are non-certified personnel allowed to disturb or remove ACM.
- Per the EPA *Applicability of The Asbestos NESHAP to Asbestos Roofing Removal Operations Guidance Manual*, dated August 1994, use of removal methods that sand, grind, cut, or abrade ACM are prohibited. Work practices including wet removal methods, manual removal methods, and utilizing modified Rotating Blade (RB) roof cutting machines equipped with spray nozzle and HEPA vacuum systems must be implemented to control and minimize visible dust emissions. Additionally, since power plows and power slicers do not sand, grind, cut, or abrade roofing materials, their use is permitted and not subject to asbestos NESHAP regulations.
- If suspect materials are identified under roofing material, not sampled, or in any other accessible or inaccessible areas during renovation, additional testing should be performed to verify that these materials do not contain asbestos.

Appendix 1
Certifications and Licenses



THE STATE OF TENNESSEE

Department of Environment and Conservation Division of Solid Waste Management
Toxic Substances Program

William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 14th Floor Nashville TN 37243

By virtue of the authority vested by the Division of Solid Waste Management, the
Company named below is hereby accredited to offer and/or conduct Asbestos activities
pursuant to Rule 1200-01-20:

Tioga Environmental Consultants, Inc.

357 N. Main Street Memphis TN, 38103

to conduct ASBESTOS ACTIVITIES in schools or public and commercial buildings in Tennessee.
This firm is responsible for compliance with the applicable requirements of Rule 1200-01-20.

Discipline	Type	Accreditation Number	Effective Date	Expiration Date
Accreditation	Re-Accreditation	A-F-718-131368	October 21, 2022	December 31, 2023



Given under the Seal of the State of Tennessee in Nashville.

This 21st Day of October 2022

Division of Solid Waste Management
Toxic Substance Program

CN-1324 (Rev 6/13)

RDA-3020

THE STATE OF TENNESSEE

Department of Environment and Conservation
Division of Solid Waste Management
Toxic Substances Program

Velita M Thornton

DOB: 18-Feb-1991 Sex: F HGT: 5' 5" WGT: 160

Discipline	Accreditation	Expiration
Inspector	A-I-125234-135735	May-31-2024

116390-79811



Issued: 8/30/2023

Re-Accreditation

Asbestos Accreditation



Is hereby Accredited pursuant to Rule 1200-01-20 Asbestos Accreditation Requirements to perform Asbestos Activities associated with the Discipline(s) listed on the front of this card.

A false statement pertaining to accreditation(s) is subject to the penalties of perjury.

Date Issued: 8/30/2023

Note: In order for this Tennessee issued accreditation to remain valid through the expiration date, the individual must maintain current applicable accredited asbestos refresher training course(s)

THIS CARD IS NOT TO BE USED FOR ANY OTHER IDENTIFICATION PURPOSES. IF FOUND, RETURN TO:

Department of Environment and Conservation
Division of Solid Waste Management
Toxic Substances Program
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 14th Floor
Nashville TN 37243

1796

CN-1324

(Rev 6/13)

RDA-3078

THE STATE OF TENNESSEE

Department of Environment and Conservation
Division of Solid Waste Management
Toxic Substances Program

134443-79325



Initial

Donald L White

DOB	Sex	HGT	WGT
25-May-1990	M	5' 9"	210

Discipline	Accreditation	Expiration
Inspector	A-I-183409-136425	Apr-30-2024
Project Monitor	A-PM-183409-129323	Jun-30-2023

Asbestos Accreditation

Appendix 2
Photographic Log



Tioga

ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: MSCAA

Site Location: Roof of Cargo Building #2, 2 Cargo Road, Memphis, TN

Project No.
221424.00

Photo #

1

Date:

08/21/2023

Description:

Overview of the roof of Cargo Building #2



Photo #

2

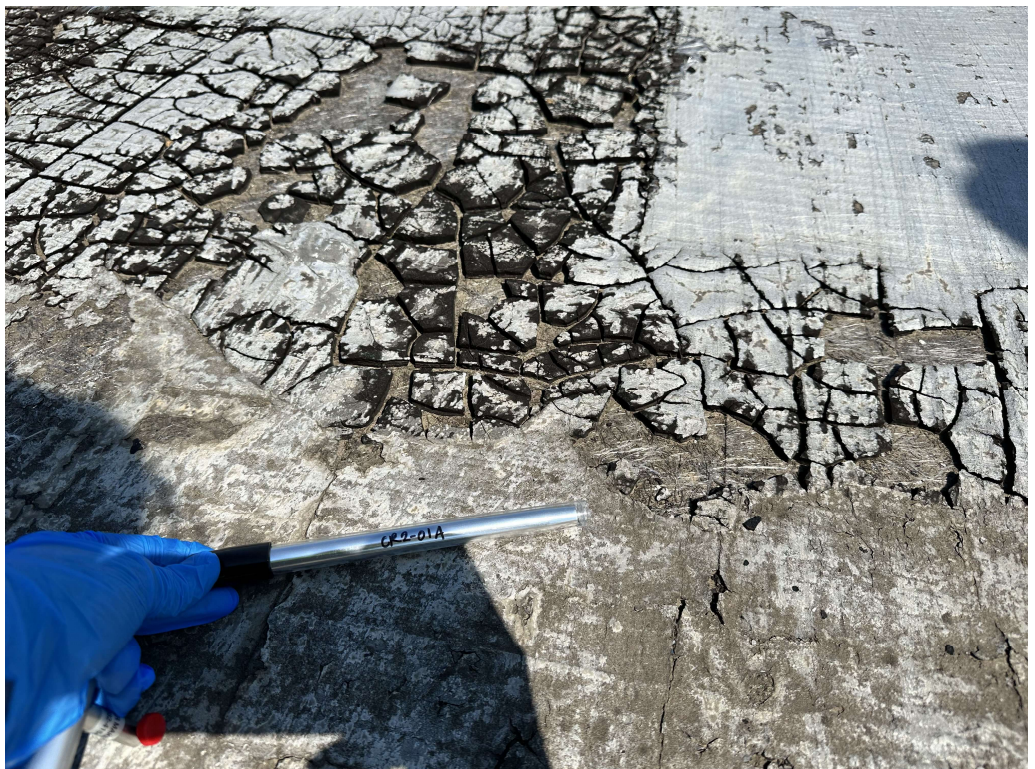
Date:

08/21/2023

Description:

CR2-01: Silver Roofing

Tested Positive for Asbestos





Client Name: MSCAA

Site Location: Roof of Cargo Building #2, 2 Cargo Road, Memphis, TN

Project No.
221424.00

Photo #
3

Date:
08/21/2023

Description:

CR2-02: Black Penetration Caulk

Tested Positive for Asbestos

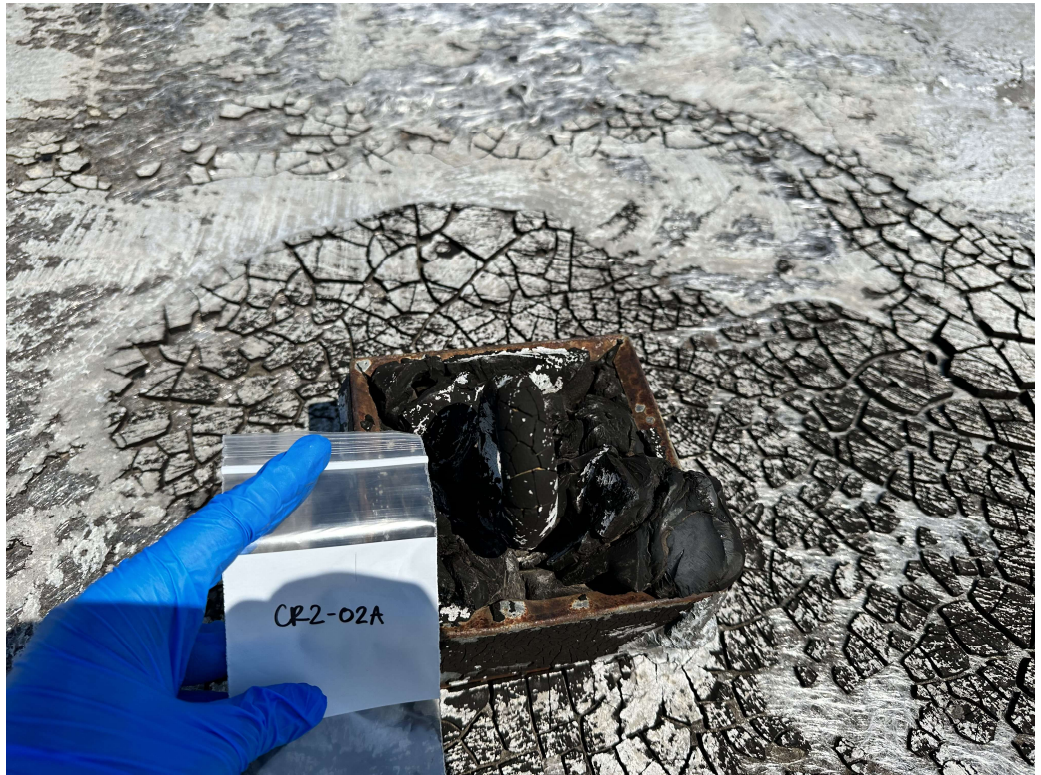


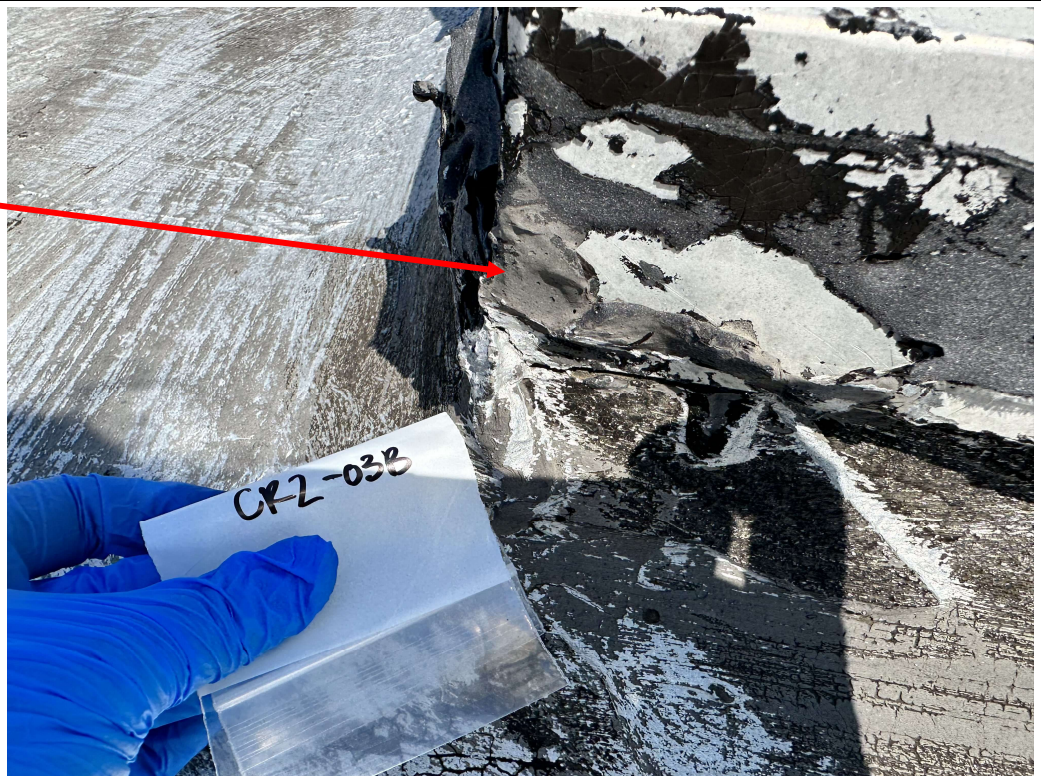
Photo #
4

Date:
08/21/2023

Description:

CR2-03: Gray HVAC Caulk

Tested Positive for Asbestos





Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: MSCAA

Site Location: Roof of Cargo Building #2, 2 Cargo Road, Memphis, TN

Project No.
221424.00

Photo #
5

Date:
08/21/2023

Description:

CR2-04: White Skylight
Caulk

**Tested Positive for
Asbestos**

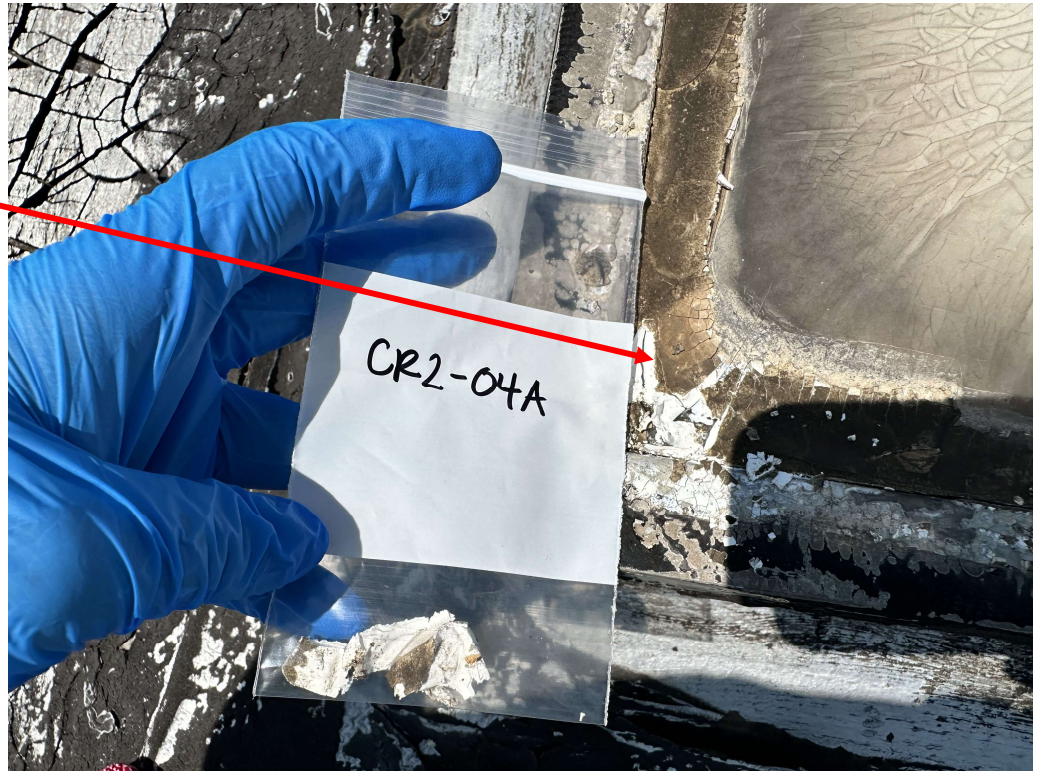


Photo #
6

Date:
08/21/2023

Description:

CR2-05: Black Liquid
Flashing

**Tested Positive for
Asbestos**





Client Name: MSCAA

Site Location: Roof of Cargo Building #2, 2 Cargo Road, Memphis, TN

Project No.
221424.00

Photo #
7

Date:
08/21/2023

Description:

CR2-06: Black Fabric Flashing

Tested Positive for Asbestos



Photo #
8

Date:
08/21/2023

Description:

CR2-07: White Parapet Caulk

Tested Negative for Asbestos





Client Name: MSCAA

Site Location: Roof of Cargo Building #2, 2 Cargo Road, Memphis, TN

Project No.
221424.00

Photo #
9

Date:
08/21/2023

Description:

CR2-08: White TPO Roofing

Tested Positive for Asbestos



Photo #
10

Date:
08/21/2023

Description:

CR2-09: White Penetration Caulk

Tested Negative for Asbestos





Client Name: MSCAA

Site Location: Roof of Cargo Building #2, 2 Cargo Road, Memphis, TN

Project No.
221424.00

Photo #
11

Date:
08/21/2023

Description:

CR2-10: White HVAC Caulk

Tested Positive for Asbestos



Photo #
12

Date:
08/21/2023

Description:

CR2-11: Black Access Hatch Caulk

Tested Negative for Asbestos





Tioga

ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: MSCAA

Site Location: Roof of Cargo Building #2, 2 Cargo Road, Memphis, TN

Project No.
221424.00

Photo #
13

Date:
08/21/2023

Description:

CR2-12: Gray Duct Mastic

Tested Negative for Asbestos



Photo #
14

Date:
08/21/2023

Description:

CR2-13: Gray Liquid Flashing

Tested Negative for Asbestos





Tioga

ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: MSCAA

Site Location: Roof of Cargo Building #2, 2 Cargo Road, Memphis, TN

Project No.
221424.00

Photo #
15

Date:
08/21/2023

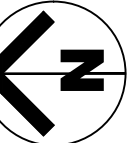
Description:

CR2-14: Black Tar
Caulk

Tested Negative for
Asbestos



Appendix 3 Figures



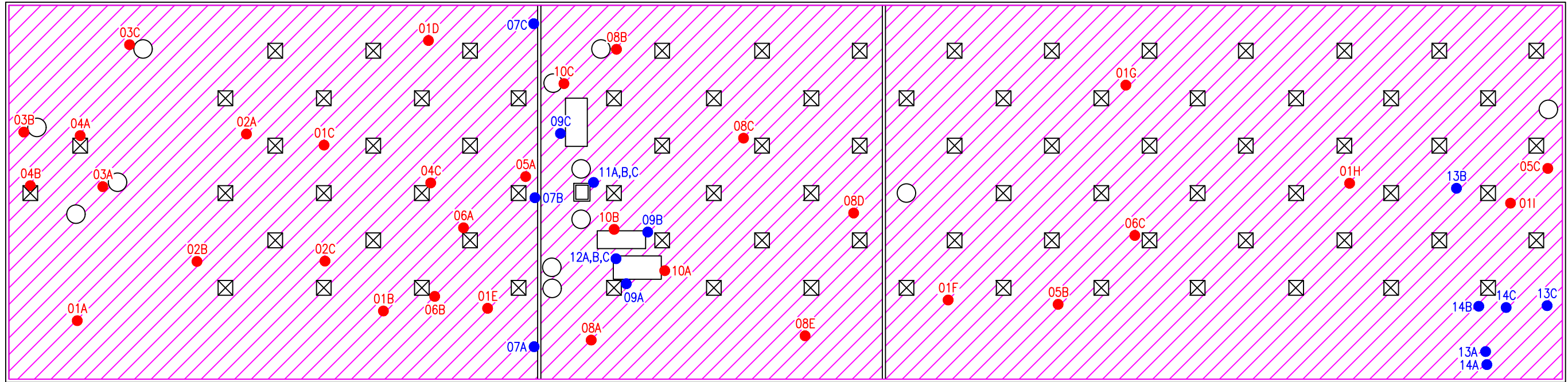
NOT TO SCALE

Tioga
ENVIRONMENTAL CONSULTANTS



MSCAA
CARGO BUILDING #2 ROOF
ACM SURVEY

DESCRIPTION: ACM SAMPLE LOCATIONS
LOCATION: 2 CARGO RD, MEMPHIS, TN 38116
PROJECT #: 221424.00
DATE: SEPTEMBER 2023



SAMPLE SERIES: CR2- LEGEND	
● 01A	= POSITIVE ACM LOCATION
● 01A	= NEGATIVE ACM LOCATION
	= ACM ROOFING MATERIALS (INCLUDING SILVER PAINT, BLACK/GRAY CAULKING, GRAY CAULKING, BLACK/BROWN FLASHING, AND BLACK TAR)

Appendix 4
Asbestos Laboratory Results and Chain of Custody

August 23, 2023

Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

CLIENT PROJECT: MSCAA Cargo 2 Roof, 221424.00
CEI LAB CODE: B2318002

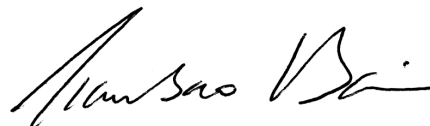
Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on August 22, 2023. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,



Tianbao Bai, Ph.D., CIH
Laboratory Director



CEI

ASBESTOS ANALYTICAL REPORT

By: Polarized Light Microscopy

Prepared for

Tioga Environmental Consultants

CLIENT PROJECT: MSCAA Cargo 2 Roof, 221424.00

LAB CODE: B2318002

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 08/23/23

TOTAL SAMPLES ANALYZED: 49

SAMPLES >1% ASBESTOS: 22



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Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: MSCAA Cargo 2 Roof, 221424.00

LAB CODE: B2318002

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
CR2-01A	Layer 1	B2318002.01	Black,Brown	BUR	None Detected
	Layer 2	B2318002.01	Tan,Cream	Cementitious Material	None Detected
CR2-01B	Layer 1	B2318002.02	Black,Brown	BUR	Chrysotile 2%
	Layer 2	B2318002.02	Tan,Cream	Cementitious Material	None Detected
CR2-01C	Layer 1	B2318002.03	Silver,Black	Bur- Silver Paint	Chrysotile 2%
	Layer 2	B2318002.03	Black,Brown	BUR	None Detected
CR2-01D	Layer 1	B2318002.04	Silver,Black	Bur- Silver Paint	Chrysotile 2%
	Layer 2	B2318002.04	Black,Brown	BUR	None Detected
CR2-01E		B2318002.05		Sample Not Analyzed	
CR2-01F	Layer 1	B2318002.06	Black,Brown	BUR	None Detected
	Layer 2	B2318002.06	Tan,Cream	Cementitious Material	None Detected
CR2-01G	Layer 1	B2318002.07	Black,Brown	BUR	None Detected
	Layer 2	B2318002.07	Tan,Cream	Cementitious Material	None Detected
CR2-01H	Layer 1	B2318002.08	Black,Brown	BUR	None Detected
	Layer 2	B2318002.08	Tan,Cream	Cementitious Material	None Detected
CR2-01I	Layer 1	B2318002.09	Silver,Black	Bur- Silver Paint	Chrysotile 2%
	Layer 2	B2318002.09	Black,Brown	BUR	None Detected
	Layer 3	B2318002.09	Layer 2,Cream	Cementitious Material	None Detected
CR2-02A	Layer 1	B2318002.10	Silver,Black	Silver Paint	Chrysotile 2%
	Layer 2	B2318002.10	Black	Caulking	None Detected
CR2-02B		B2318002.11	Black,Gray	Caulking	Chrysotile 5%
CR2-02C	Layer 1	B2318002.12	Silver,Black	Silver Paint	Chrysotile 2%
	Layer 2	B2318002.12	Black	Caulking	None Detected
CR2-03A	Layer 1	B2318002.13	Silver,Black	Silver Paint	Chrysotile 2%
	Layer 2	B2318002.13	Black,Gray	Caulking	Chrysotile 3%
CR2-03B	Layer 1	B2318002.14	Silver,Black	Silver Paint	Chrysotile 2%
	Layer 2	B2318002.14	Black,Gray	Caulking	Chrysotile 3%
CR2-03C		B2318002.15	Black,Gray	Caulking	Chrysotile 3%
CR2-04A		B2318002.16	White,Off-white	Caulking	None Detected
CR2-04B	Layer 1	B2318002.17	White,Off-white	Caulking	None Detected
	Layer 2	B2318002.17	Gray	Caulking	Chrysotile 2%



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Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: MSCAA Cargo 2 Roof, 221424.00

LAB CODE: B2318002

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
CR2-04C		B2318002.18	White,Gray	Caulking	None Detected
CR2-05A	Layer 1	B2318002.19	Silver	Silver Paint	Chrysotile 2%
	Layer 2	B2318002.19	Black,Brown	Flashing	Chrysotile 2%
CR2-05B		B2318002.20	Black,Brown	Flashing	None Detected
CR2-05C	Layer 1	B2318002.21	Silver	Silver Paint	Chrysotile 2%
	Layer 2	B2318002.21	Black,Brown	Flashing	None Detected
CR2-06A	Layer 1	B2318002.22	Silver	Silver Paint	Chrysotile 2%
	Layer 2	B2318002.22	Black,Brown	Flashing	None Detected
CR2-06B	Layer 1	B2318002.23	Silver	Silver Paint	Chrysotile 2%
	Layer 2	B2318002.23	Black,Brown	Flashing	None Detected
CR2-06C	Layer 1	B2318002.24	Silver	Silver Paint	Chrysotile 2%
	Layer 2	B2318002.24	Black,Brown	Flashing	None Detected
CR2-07A		B2318002.25	White	Caulking	None Detected
CR2-07B		B2318002.26	White	Caulking	None Detected
CR2-07C		B2318002.27	White	Caulking	None Detected
CR2-08A	Layer 1	B2318002.28	Black,White	Roof Membrane	None Detected
	Layer 2	B2318002.28	Silver	Silver Paint	Chrysotile 3%
	Layer 3	B2318002.28	Black	Roofing Core	None Detected
	Layer 4	B2318002.28	Off-white	Insulation	None Detected
CR2-08B	Layer 1	B2318002.29	Black,White	Roof Membrane	None Detected
	Layer 2	B2318002.29	Black	Roofing Core	None Detected
	Layer 3	B2318002.29	Tan	Insulation	None Detected
CR2-08C	Layer 1	B2318002.30	Black,White	Roof Membrane	None Detected
	Layer 2	B2318002.30	Tan	Mastic	None Detected
	Layer 3	B2318002.30	Silver	Silver Paint	Chrysotile 2%
	Layer 4	B2318002.30	Black	Roofing Core	None Detected
CR2-08D	Layer 1	B2318002.31	Black,White	Roof Membrane	None Detected
	Layer 2	B2318002.31	Black	Roofing Core	None Detected
CR2-08E	Layer 1	B2318002.32	Black,White	Roof Membrane	None Detected
	Layer 2	B2318002.32	Black	Roofing Core	None Detected
	Layer 3	B2318002.32	Tan	Insulation	None Detected



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Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: MSCAA Cargo 2 Roof, 221424.00

LAB CODE: B2318002

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
CR2-09A		B2318002.33	White	Caulking	None Detected
CR2-09B		B2318002.34	White	Caulking	None Detected
CR2-09C		B2318002.35	White	Caulking	None Detected
CR2-10A		B2318002.36	White	Caulking	None Detected
CR2-10B		B2318002.37	White	Caulking	None Detected
CR2-10C	Layer 1	B2318002.38	White	Caulking	None Detected
	Layer 2	B2318002.38	Black	Tar	Chrysotile 2%
CR2-11A		B2318002.39	Black	Caulking	None Detected
CR2-11B		B2318002.40	Black	Caulking	None Detected
CR2-11C		B2318002.41	Black	Caulking	None Detected
CR2-12A		B2318002.42	Gray	Duct Mastic	None Detected
CR2-12B		B2318002.43	Gray	Duct Mastic	None Detected
CR2-12C		B2318002.44	Gray	Duct Mastic	None Detected
CR2-13A		B2318002.45	Gray	Flashing	None Detected
CR2-13B		B2318002.46	Gray	Flashing	None Detected
CR2-13C	Layer 1	B2318002.47	Gray	Flashing	None Detected
	Layer 2	B2318002.47	Black	Tar	None Detected
	Layer 3	B2318002.47	Cream	Sealant	None Detected
CR2-14A		B2318002.48	Black	Caulking	None Detected
CR2-14B		B2318002.49	Black	Caulking	None Detected
CR2-14C		B2318002.50	Black	Caulking	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
 357 North Main Street
 Memphis, TN 38103

Lab Code: B2318002
Date Received: 08-22-23
Date Analyzed: 08-23-23
Date Reported: 08-23-23

Project: MSCAA Cargo 2 Roof, 221424.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
CR2-01A Layer 1 B2318002.01	BUR	Heterogeneous	15%	Cellulose	60%	Tar	None Detected
		Black,Brown Fibrous Bound	25%	Fiberglass			
Samples B2318002.01-B2318002.25 analyzed by S.Nicolella							
Layer 2 B2318002.01	Cementitious Material	Heterogeneous	5%	Cellulose	35%	Vermiculite	None Detected
		Tan,Cream Non-fibrous Bound			60%	Binder	
CR2-01B Layer 1 B2318002.02	BUR	Heterogeneous	15%	Cellulose	58%	Tar	2% Chrysotile
		Black,Brown Fibrous Bound	25%	Fiberglass			
Layer 2 B2318002.02	Cementitious Material	Heterogeneous	5%	Cellulose	35%	Vermiculite	None Detected
		Tan,Cream Non-fibrous Bound			60%	Binder	
CR2-01C Layer 1 B2318002.03	Bur- Silver Paint	Homogeneous	3%	Cellulose	95%	Paint	2% Chrysotile
		Silver,Black Non-fibrous Bound					
Layer 2 B2318002.03	BUR	Heterogeneous	15%	Cellulose	60%	Tar	None Detected
		Black,Brown Fibrous Bound	25%	Fiberglass			
CR2-01D Layer 1 B2318002.04	Bur- Silver Paint	Homogeneous	3%	Cellulose	95%	Paint	2% Chrysotile
		Silver,Black Non-fibrous Bound					



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ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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Project: MSCAA Cargo 2 Roof, 221424.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
Layer 2 B2318002.04	BUR	Heterogeneous Black,Brown Fibrous Bound	15% 25%	Cellulose Fiberglass	60%	Tar	None Detected
CR2-01E Sample Not Analyzed B2318002.05 Sample could not be extracted from sampling tube for analysis							
Layer 1 B2318002.06	BUR	Heterogeneous Black,Brown Fibrous Bound	15% 25%	Cellulose Fiberglass	60%	Tar	None Detected
Layer 2 B2318002.06	Cementitious Material	Heterogeneous Tan,Cream Non-fibrous Bound	5%	Cellulose	35% 60%	Vermiculite Binder	None Detected
Layer 1 B2318002.07	BUR	Heterogeneous Black,Brown Fibrous Bound	15% 25%	Cellulose Fiberglass	60%	Tar	None Detected
Layer 2 B2318002.07	Cementitious Material	Heterogeneous Tan,Cream Non-fibrous Bound	5%	Cellulose	35% 60%	Vermiculite Binder	None Detected
Layer 1 B2318002.08	BUR	Heterogeneous Black,Brown Fibrous Bound	15% 25%	Cellulose Fiberglass	60%	Tar	None Detected
Layer 2 B2318002.08	Cementitious Material	Heterogeneous Tan,Cream Non-fibrous Bound	5%	Cellulose	35% 60%	Vermiculite Binder	None Detected

ASBESTOS BULK ANALYSIS

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 357 North Main Street
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Project: MSCAA Cargo 2 Roof, 221424.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
CR2-011 Layer 1 B2318002.09	Bur- Silver Paint	Homogeneous Silver,Black Non-fibrous Bound	3%	Cellulose	95%	Paint	2% Chrysotile
Layer 2 B2318002.09	BUR	Heterogeneous Black,Brown Fibrous Bound	15% 25%	Cellulose Fiberglass	60%	Tar	None Detected
Layer 3 B2318002.09	Cementitious Material	Heterogeneous Layer 2,Cream Non-fibrous Bound	5%	Cellulose	35% 60%	Vermiculite Binder	None Detected
CR2-02A Layer 1 B2318002.10	Silver Paint	Homogeneous Silver,Black Non-fibrous Bound	3%	Cellulose	95%	Paint	2% Chrysotile
Layer 2 B2318002.10	Caulking	Homogeneous Black Non-fibrous Bound	5%	Cellulose	95%	Tar	None Detected
CR2-02B B2318002.11	Caulking	Homogeneous Black,Gray Non-fibrous Bound	5%	Cellulose	90%	Tar	5% Chrysotile
CR2-02C Layer 1 B2318002.12	Silver Paint	Homogeneous Silver,Black Non-fibrous Bound	3%	Cellulose	95%	Paint	2% Chrysotile



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ASBESTOS BULK ANALYSIS

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Client: Tioga Environmental Consultants
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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
Layer 2 B2318002.12	Caulking	Homogeneous Black Non-fibrous Bound	5%	Cellulose	95%	Tar	None Detected
CR2-03A Layer 1 B2318002.13	Silver Paint	Homogeneous Silver,Black Non-fibrous Bound	3%	Cellulose	95%	Paint	2% Chrysotile
Layer 2 B2318002.13	Caulking	Homogeneous Black,Gray Non-fibrous Bound	5%	Cellulose	92%	Tar	3% Chrysotile
CR2-03B Layer 1 B2318002.14	Silver Paint	Homogeneous Silver,Black Non-fibrous Bound	3%	Cellulose	95%	Paint	2% Chrysotile
Layer 2 B2318002.14	Caulking	Homogeneous Black,Gray Non-fibrous Bound	5%	Cellulose	92%	Tar	3% Chrysotile
CR2-03C B2318002.15	Caulking	Homogeneous Black,Gray Non-fibrous Bound	5%	Cellulose	92%	Tar	3% Chrysotile
CR2-04A B2318002.16	Caulking	Homogeneous White,Off-white Non-fibrous Bound	<1%	Cellulose	95%	Caulk 5% Paint	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

Lab Code: B2318002
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Project: MSCAA Cargo 2 Roof, 221424.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous	Cellulose	Non-Fibrous		
CR2-04B Layer 1 B2318002.17	Caulking	Homogeneous	<1%	Cellulose	95%	Caulk	None Detected
		White,Off-white Non-fibrous Bound			5%	Paint	
Layer 2 B2318002.17	Caulking	Homogeneous	10%	Cellulose	88%	Caulk	2% Chrysotile
		Gray Fibrous Bound					
CR2-04C B2318002.18	Caulking	Homogeneous	<1%	Cellulose	73%	Binder	None Detected
		White,Gray	7%	Talc	5%	Paint	
		Fibrous			15%	Silicates	
		Bound					
CR2-05A Layer 1 B2318002.19	Silver Paint	Homogeneous	<1%	Cellulose	98%	Paint	2% Chrysotile
		Silver Non-fibrous Bound					
Layer 2 B2318002.19	Flashing	Homogeneous	20%	Cellulose	78%	Tar	2% Chrysotile
		Black,Brown Fibrous Bound					
CR2-05B B2318002.20	Flashing	Homogeneous	20%	Cellulose	80%	Tar	None Detected
		Black,Brown					
		Fibrous					
		Bound					
CR2-05C Layer 1 B2318002.21	Silver Paint	Homogeneous	<1%	Cellulose	98%	Paint	2% Chrysotile
		Silver Non-fibrous Bound					



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ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
Layer 2 B2318002.21	Flashing	Homogeneous Black,Brown Fibrous Bound	20%	Cellulose	70%	Tar	None Detected
CR2-06A Layer 1 B2318002.22	Silver Paint	Homogeneous Silver Non-fibrous Bound	<1%	Cellulose	98%	Paint	2% Chrysotile
Layer 2 B2318002.22	Flashing	Homogeneous Black,Brown Fibrous Bound	10% 10% 20%	Cellulose Fiberglass Synthetic Fiber	60%	Tar	None Detected
CR2-06B Layer 1 B2318002.23	Silver Paint	Homogeneous Silver Non-fibrous Bound	<1%	Cellulose	98%	Paint	2% Chrysotile
Layer 2 B2318002.23	Flashing	Homogeneous Black,Brown Fibrous Bound	10% 10% 20%	Cellulose Fiberglass Synthetic Fiber	60%	Tar	None Detected
CR2-06C Layer 1 B2318002.24	Silver Paint	Homogeneous Silver Non-fibrous Bound	<1%	Cellulose	98%	Paint	2% Chrysotile
Layer 2 B2318002.24	Flashing	Homogeneous Black,Brown Fibrous Bound	10% 10% 20%	Cellulose Fiberglass Synthetic Fiber	60%	Tar	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %	
			Fibrous		Non-Fibrous		
CR2-07A B2318002.25	Caulking	Homogeneous White Non-fibrous Bound	100%	Caulk		None Detected	
CR2-07B B2318002.26	Caulking	Homogeneous White Non-fibrous Bound	100%	Caulk		None Detected	
Samples B2318002.26 - B2318002.50 analyzed by K. Petry							
CR2-07C B2318002.27	Caulking	Homogeneous White Non-fibrous Bound	100%	Caulk		None Detected	
CR2-08A Layer 1 B2318002.28	Roof Membrane	Homogeneous Black,White Fibrous Bound	20%	Synthetic Fiber	80%	Binder	None Detected
Layer 2 B2318002.28	Silver Paint	Homogeneous Silver Non-fibrous Bound	22%	Paint	75%	Tar	3% Chrysotile
Layer 3 B2318002.28	Roofing Core	Homogeneous Black Fibrous Bound	10%	Fiberglass	90%	Tar	None Detected
Layer 4 B2318002.28	Insulation	Homogeneous Off-white Fibrous Bound	10%	Cellulose	55%	Binder Calc Carb	None Detected



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ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous	Non-Fibrous			
CR2-08B Layer 1 B2318002.29	Roof Membrane	Homogeneous Black,White Fibrous Bound	20%	Synthetic Fiber	80%	Binder	None Detected
Layer 2 B2318002.29	Roofing Core	Homogeneous Black Fibrous Bound	10%	Fiberglass	90%	Tar	None Detected
Layer 3 B2318002.29	Insulation	Homogeneous Tan Fibrous Bound	10%	Cellulose	55%	Binder 35% Calc Carb	None Detected
CR2-08C Layer 1 B2318002.30	Roof Membrane	Homogeneous Black,White Fibrous Bound	20%	Synthetic Fiber	80%	Binder	None Detected
Layer 2 B2318002.30	Mastic	Homogeneous Tan Non-fibrous Bound			100%	Mastic	None Detected
Layer 3 B2318002.30	Silver Paint	Homogeneous Silver Non-fibrous Bound			23%	Paint 75% Tar	2% Chrysotile
Layer 4 B2318002.30	Roofing Core	Homogeneous Black Fibrous Bound	10%	Fiberglass	90%	Tar	None Detected



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ASBESTOS BULK ANALYSIS

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Project: MSCAA Cargo 2 Roof, 221424.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %
			Fibrous	Non-Fibrous		
CR2-08D Layer 1 B2318002.31	Roof Membrane	Homogeneous Black,White Fibrous Bound	20%	Synthetic Fiber 80%	Binder	None Detected
Layer 2 B2318002.31	Roofing Core	Homogeneous Black Fibrous Bound	10%	Fiberglass 90%	Tar	None Detected
CR2-08E Layer 1 B2318002.32	Roof Membrane	Homogeneous Black,White Fibrous Bound	20%	Synthetic Fiber 80%	Binder	None Detected
Layer 2 B2318002.32	Roofing Core	Homogeneous Black Fibrous Bound	10%	Fiberglass 90%	Tar	None Detected
Layer 3 B2318002.32	Insulation	Homogeneous Tan Fibrous Bound	10%	Cellulose 55%	Binder 35%	None Detected
CR2-09A B2318002.33	Caulking	Homogeneous White Non-fibrous Bound		100%	Caulk	None Detected
CR2-09B B2318002.34	Caulking	Homogeneous White Non-fibrous Bound		100%	Caulk	None Detected



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ASBESTOS BULK ANALYSIS

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Project: MSCAA Cargo 2 Roof, 221424.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %
			Fibrous	Non-Fibrous		
CR2-09C B2318002.35	Caulking	Homogeneous White Non-fibrous Bound	100%	Caulk		None Detected
CR2-10A B2318002.36	Caulking	Homogeneous White Non-fibrous Bound	100%	Caulk		None Detected
CR2-10B B2318002.37	Caulking	Homogeneous White Non-fibrous Bound	100%	Caulk		None Detected
CR2-10C Layer 1 B2318002.38	Caulking	Homogeneous White Non-fibrous Bound	100%	Caulk		None Detected
Layer 2 B2318002.38	Tar	Homogeneous Black Non-fibrous Bound	98%	Tar		2% Chrysotile
CR2-11A B2318002.39	Caulking	Homogeneous Black Fibrous Bound	10%	Cellulose	90%	Tar None Detected
CR2-11B B2318002.40	Caulking	Homogeneous Black Fibrous Bound	10%	Cellulose	90%	Tar None Detected



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Project: MSCAA Cargo 2 Roof, 221424.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %	
			Fibrous	Non-Fibrous			
CR2-11C B2318002.41	Caulking	Homogeneous Black Fibrous Bound	10%	Cellulose	90%	Tar	None Detected
CR2-12A B2318002.42	Duct Mastic	Homogeneous Gray Non-fibrous Bound			100%	Binder	None Detected
CR2-12B B2318002.43	Duct Mastic	Homogeneous Gray Non-fibrous Bound			100%	Binder	None Detected
CR2-12C B2318002.44	Duct Mastic	Homogeneous Gray Non-fibrous Bound			100%	Binder	None Detected
CR2-13A B2318002.45	Flashing	Homogeneous Gray Non-fibrous Bound			100%	Caulk	None Detected
CR2-13B B2318002.46	Flashing	Homogeneous Gray Non-fibrous Bound			100%	Caulk	None Detected
CR2-13C Layer 1 B2318002.47	Flashing	Homogeneous Gray Non-fibrous Bound			100%	Caulk	None Detected



CEI

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

Lab Code: B2318002
Date Received: 08-22-23
Date Analyzed: 08-23-23
Date Reported: 08-23-23

Project: MSCAA Cargo 2 Roof, 221424.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
Layer 2 B2318002.47	Tar	Homogeneous Black Fibrous Bound	10%	Cellulose	90%	Tar	None Detected
Layer 3 B2318002.47	Sealant	Homogeneous Cream Non-fibrous Bound			100%	Caulk	None Detected
CR2-14A B2318002.48	Caulking	Homogeneous Black Non-fibrous Bound	10%	Cellulose	80%	Tar 10% Binder	None Detected
CR2-14B B2318002.49	Caulking	Homogeneous Black Non-fibrous Bound	10%	Cellulose	80%	Tar 10% Binder	None Detected
CR2-14C B2318002.50	Caulking	Homogeneous Black Non-fibrous Bound	10%	Cellulose	80%	Tar 10% Binder	None Detected

LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
Non-Trem = Non-Asbestiform Tremolite
Calc Carb = Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. *Estimated measurement of uncertainty is available on request.*


This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Information provided by customer includes customer sample ID and sample description.

ANALYST:


Santi Nicolella

APPROVED BY:


Tianbao Bai, Ph.D., CIH
Laboratory Director



Khrista Petry



CEI

CHAIN OF CUSTODY

50

730 SE Maynard Road, Cary, NC 27511
 Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:	
CEI Lab Code:	B2318002
CEI Lab I.D. Range:	

COMPANY INFORMATION	PROJECT INFORMATION
CEI CLIENT #:	Job Contact: Joe Littlefield
Company: Tioga Environmental	Email / Tel: Jlittlefield@TiogaENV.com
Address: 357 N. Main Street Memphis, TN 38103	Project Name: MSCAA Cargo #2 Roof
	Project ID#: 221424.00
Email: Jlittlefield@TiogaENV.com	PO #:
Tel: 901-791-2432 Fax: 901-791-2442	STATE SAMPLES COLLECTED IN: TN

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	1 DAY	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (400)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (1000)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM GRAV w POINT COUNT	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM BULK	CARB 435	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PCM AIR	NIOSH 7400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	EPA AHERA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	NIOSH 7402	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR (PCME)	ISO 10312	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	ASTM 6281-15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM BULK	CHATFIELD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM DUST WIPE	ASTM D6480-05 (2010)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM DUST MICROVAC	ASTM D5755-09 (2014)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM SOIL	ASTM D7521-16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM VERMICULITE	CINCINNATI METHOD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM QUALITATIVE	IN-HOUSE METHOD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REMARKS / SPECIAL INSTRUCTIONS:		<input checked="" type="checkbox"/> Accept Samples <input type="checkbox"/> Reject Samples	
Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	08-21-2023 16:25	<i>[Signature]</i>	8/22/23 9:30

Samples will be disposed of 30 days after analysis

7731 2192 5769

COMPANY CONTACT INFORMATION	
Company: Tioga Environmental	Job Contact: Joe Littlefield
Project Name: MSC AA Cargo #2 Roof	JLittlefield@TiogaENV.com
Project ID #: 221424.00	Tel: 901-791-2432

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
CR2-01 A	Silver Roofing Core		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ D	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ E	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ F	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ G	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ H	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ I	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-02 A	Black Penetration Caulk		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-03 A	Gray HVAC Caulk		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-04 A	White Skylight Caulk		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-05 A	Black liquid Flashing		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-06 A	Black fabric Flashing		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-07 A	White Parapet Caulk		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-08 A	White TPO Roofing Core		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>

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COMPANY CONTACT INFORMATION	
Company: Tioga Environmental	Job Contact: Joe Littlefield
Project Name: <i>MSCAA Cargo #2 Roof</i>	JLittlefield@TiogaENV.com
Project ID #: <i>221424.00</i>	Tel: 901-791-2432

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
			PLM	TEM
CR2-08B	White TPO Roofing Core		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ D	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ E	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-09A	White Penetration Caulk		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-10A	White HVAC Caulk		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-11A	Black Access Hatch Caulk		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-12A	Gray Duct mastic		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-13A	Gray Liquid Flashing		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
CR2-14A	Black Tar Caulk		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ B	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
↓ C	↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
END	---		PLM <input type="checkbox"/>	TEM <input type="checkbox"/>
			PLM <input type="checkbox"/>	TEM <input type="checkbox"/>
			PLM <input type="checkbox"/>	TEM <input type="checkbox"/>
			PLM <input type="checkbox"/>	TEM <input type="checkbox"/>
			PLM <input type="checkbox"/>	TEM <input type="checkbox"/>
			PLM <input type="checkbox"/>	TEM <input type="checkbox"/>