

Update to Report of Asbestos-Containing Materials

Former Great Falls Republic Mill #1
South Dearborn Street
Great Falls, Chester County, South Carolina

Prepared for: Town of Great Falls

May 26, 2022



 **Cardno**

now

 **Stantec**

Update to Report of Asbestos-Containing Materials Inspection

Prepared for: Town of Great Falls
810 Dearborn Street
Great Falls, SC 29055



Project Location: Former Great Falls Republic Mill #1
South Dearborn Street
Great Falls, South Carolina 29055

Cardno Project #: PB00359000

Date: May 26, 2022

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Republic Mill #1, Cardno, Inc., May 28, 2019

1 Executive Summary

Cardno completed an update for Asbestos-Containing Materials (ACM) inspection at the Former Great Falls Republic Mill #1, in Great Falls, Chester County, South Carolina (Site). The update was completed to confirm the presence of ACM previously identified in a 2019 Asbestos-Containing Materials (ACM) Report. The Site contains debris piles of the former Republic Mill #1 textile mill. A figure depicting the property boundaries included via **Figure 1**.

This ACM inspection was performed to satisfy the requirements of the Client with respect to potential environmental impairment and liabilities associated with the property due to contamination from potentially hazardous substances. The asbestos assessment was completed in general compliance with guidelines set forth by the Asbestos Hazard Emergency Response Act (AHERA), National Emission Standard for Hazardous Air Pollutants (NESHAP), and South Carolina Regulation 61-86.1, *Standards of Performance for Asbestos Projects*.

Asbestos Findings

During this assessment, overall Site conditions were found to be consistent with previously-reported conditions, as characterized during the Site reconnaissance for the 2019 ACM Report (included via **Appendix B**). No additional ACM was observed in debris piles at the Site. The following ACMs, as generally depicted in **Figure 2**, are known to be variously present in debris piles at the Site:

- Built-Up roofing material along the northern end of the main mill foundation and in the area of the remaining tower;
- Roof flashing and mastic (noted as putty/caulking material in the survey report) along the western end of the main mill foundation;
- Mastic in glass rock / foam glass insulation around piping and building foundation joints; and
- Vinyl floor tile and mastic in the former office area.

Recommendations

- All of the previously-identified ACMs consist of previously non-friable materials; however, due to damage caused by demolition activities, these previously non-friable ACMs have been rendered friable. Per SC R. 61-86.1, since the identified ACMs are located in exterior debris piles, the removal of these materials can be addressed per guidelines for outdoor removal activities.
- Per SC R. 61-86.1, outdoor removal activities do not require air monitoring; however, due to a close proximity to multiple residences, Cardno recommends that the selected asbestos abatement contractor conduct air monitoring during the abatement to ensure that no friable releases, if any, impact neighboring properties.
- The selected asbestos abatement contractor must be licensed by the SCDHEC Asbestos Section to perform the abatement activities with appropriate work procedures for outdoor asbestos removal tasks. Prior to commencing abatement activities, the Contractor must submit written notification to the SCDHEC Asbestos Section regarding the estimated

quantity and type(s) of ACMs scheduled for removal. Additionally, the selected contractor must obtain approval to dispose of ACM waste at a duly permitted landfill.

2 Introduction

2.1 Purpose

The purpose of this report is to identify ACM present in debris piles of former building materials at the Site during the time of the site reconnaissance. The report documents Cardno's findings, opinions, and conclusions. This inspection was conducted at the request of the Town of Great Falls, South Carolina (Client) per the contract signed March 21, 2022.

2.2 Site Background

The Site was previously used as a textile mill until the early 2000s. Since then, the Site has been vacant and abandoned, and the former structures have been demolished with building debris left in place. Two extant structures remain at the Site, the former tower and the former water treatment plant.

2.3 Previous Assessments

Cardno, Asbestos-Containing Materials Survey, May 2019

Cardno completed a report of ACM in debris piles at the Site in May 2019. The following materials were identified as ACM:

- Built-Up roofing material along the northern end of the main mill foundation and in the area of the remaining tower;
- Roof flashing and mastic (noted as putty/caulking material in the survey report) along the western end of the main mill foundation;
- Mastic in glass rock / foam glass insulation around piping and building foundation joints; and
- Vinyl floor tile and mastic in the former office area.

Per SC R. 61-86.1, ACM reports must be updated every three years to confirm the presence and/or absence of ACM impacting Site conditions. This report update is provided in compliance with this requirement.

S&ME, Asbestos Project Design, July 2020

In preparation for potential abatement of identified ACM, and in compliance with SC R. 61-86.1, S&ME completed an Asbestos Project Design for identified ACM at the Site in July 2020.

2.4 Limitation / Exceptions of Assessment

This inspection was conducted to identify potential asbestos in building material piles that will need to be removed or receive special attention prior to initiation of Site redevelopment activities. Site inspection consisted of visual confirmation of previously-identified ACM at the Site.

Any building materials suspected of containing asbestos that were not identified, sampled, and analyzed during this investigation or any previous investigation should be treated as presumed asbestos containing materials (PACM) until sampled by a certified inspector and analysis indicates otherwise.

No other warranty is expressed or implied.

2.5 Special Terms and Conditions (User Reliance)

This report is for the use and benefit of the Client and may be relied upon by this entity as well as any of their respective affiliates, successors, and assigns, in connection with a commercial real estate transaction involving the property, and in accordance with the terms and conditions in place between Cardno and the Client for this project. Any third party agrees by accepting this report that any use or reliance on this report shall be limited by the exceptions and limitations set forth within this report, and with the acknowledgment that actual site conditions may change with time, and that hidden conditions may exist at the property that were not discovered within the authorized scope of the assessment. Any use by or distribution of this report to third parties without the express written consent of Cardno is at the sole risk and expense of such third party.

Cardno makes no other representation to any third party except that it has used the degree of care and skill ordinarily exercised by environmental consultants in the preparation of the report and in the assembling of data and information related thereto. No other warranties are made to any third party, either expressed or implied.

3 Sampling Activities

The inspection was conducted on April 15, 2022, by Cardno's Peter Whitehouse, a licensed and accredited asbestos inspector. The inspector's current license is included as **Appendix A**.

3.1 Asbestos Inspection

The ACM survey included a visual inspection of all accessible debris piles at the Site, and confirmation of the presence and/or absence of previously-identified ACM. This inspection was performed in general compliance with AHERA and ASHARA protocols as a guide and in general compliance with SC R. 61-86.1.

All identified ACMs were classified by the following categories, as denoted by EPA AHERA/ASHARA and OSHA:

- Thermal System Insulation (TSI) – insulation typically over pipes, fittings, elbows, boilers, tanks, ducts, etc.;
- Surfacing material – material that is sprayed, troweled-on, or otherwise applied to surfaces;
- Miscellaneous – All other ACMs;
- Friable – ACM that can be crumbled pulverized or reduced to a powder by hand pressure when dry;
- Category I Non-Friable – ACM consisting of packing material, gaskets, resilient floor covering, and asphalt roofing products;
- Category II Non-Friable – All ACM that is not listed in Category I Non-Friable ACM, and;
- Presumed Asbestos Containing Material (PACM) – all potential ACM not analytically analyzed indicating it is not ACM.

No additional homogeneous areas were identified during the April 2022 Site reconnaissance; as such, no additional samples were collected. All previously-identified ACM were confirmed as still present in debris piles across the Site, as detailed in the May 2019 ACM survey, which is included via **Appendix B**. Known extents of ACM in debris piles are also provided via **Figure 2**.

4 Analytical Results

4.1 Asbestos-Containing Materials

No additional samples were collected during the April 2022 Site reconnaissance. All previously-identified ACM were confirmed as still present in debris piles across the Site, as detailed in the May 2019 ACM survey, which is included via **Appendix B**. Known extents of ACM in debris piles are also provided via **Figure 2**. In summary, the following ACM is known to be variously present in debris piles at the Site:

- Built-Up roofing material along the northern end of the main mill foundation and in the area of the remaining tower;
- Roof flashing and mastic (noted as putty/caulking material in the survey report) along the western end of the main mill foundation;
- Mastic in glass rock insulation around piping and building foundation joints; and
- Vinyl floor tile and mastic in the former office area.

5 Recommendations

Based on the results of this Inspection, Cardno recommends:

- All of the previously-identified ACMs consist of previously non-friable materials; however, due to damage caused by demolition activities, these previously non-friable ACMs have been rendered friable. Per SC R. 61-86.1, since the identified ACMs are located in exterior debris piles, the removal of these materials can be addressed per guidelines for outdoor removal activities.
- Per SC R. 61-86.1, outdoor removal activities do not require air monitoring; however, due to a close proximity to multiple residences, Cardno recommends that the selected asbestos abatement contractor conduct air monitoring during the abatement to ensure that no friable releases, if any, impact neighboring properties.
- The selected asbestos abatement contractor must be licensed by the SCDHEC Asbestos Section to perform the abatement activities with appropriate work procedures for outdoor asbestos removal tasks. Prior to commencing abatement activities, the Contractor must submit written notification to the SCDHEC Asbestos Section regarding the estimated quantity and type(s) of ACMs scheduled for removal. Additionally, the selected contractor must obtain approval to dispose of ACM waste at a duly permitted landfill.



FIGURES

LEGEND



Approximate Property Boundary





Figure 2: ACM Location Map
Republic Mill #1
 Great Falls, SC

Data Source:

7/20/2020 UAS Survey

This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.



534 Industrial Park Road, Bluefield, VA
 Phone (+1) 304-809-0629
www.cardno.com

APPENDIX

A

INSPECTOR ACCREDITATION

SCDHEC ISSUED
Asbestos ID Card

Peter Whitehouse



CONSULTBI

BI-01796

Expiration Date:
01/31/23

APPENDIX

B

Asbestos-Containing Materials
Survey, Former Great Falls Republic
Mill #1, Cardno, Inc., May 28, 2019

Asbestos-Containing Materials Survey

Former Great Falls Republic Mill #1

May 28, 2019



Contact Information

Cardno
1812 Lincoln Street
Suite 301
Columbia, SC, 29201, USA
Telephone: 803.929.6060
www.cardno.com

Document Information



Prepared for

Catawba Regional Council of
Governments (CRCOG)
212 Hampton Street
Rock Hill, SC 29730

Author(s)

A handwritten signature in black ink, appearing to read "Peter A. Whitehouse".

Peter Whitehouse
Geologist I
SC Asbestos Inspector #BI-01796

Project Name

Asbestos-Containing Materials Survey
Former Great Falls Republic Mill #1

File Reference

Republic_Mill_ACM_Survey

Job Reference

PB00268000

Date

May 2019

Version Number

1.1

Effective Date

May 15, 2019

Date Approved

May 28, 2019

Approved By

A handwritten signature in black ink, appearing to read "Conrad Peters".

Conrad Peters
Environmental Scientist II
SC Asbestos Inspector #BI-01810

Document History

Version	Effective Date	Description of Revision	Prepared by	Reviewed by
1.0	05/15/2019	Draft	Peter Whitehouse	Conrad Peters
1.1	05/28/2019	Final	Peter Whitehouse	Gail Jeter

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1 Purpose and Scope of Services

Cardno, Inc. (Cardno) has completed an Asbestos-Containing Materials Survey at the Former Great Falls Republic Mill #1 site to observe the remaining building debris and note and/or sample potential asbestos-containing material (ACM) on the subject property. The identification of ACM and presumed ACM ultimately may make it possible to separate the waste into general construction debris and ACM waste for disposal purposes. Cardno provided the services as outlined below for conducting a representative asbestos survey of identified building materials at the site:

1. Review of existing asbestos reports for any previous building areas, if provided.
2. Survey the specified area to identify homogeneous areas (HAs).
3. Identify accessible suspect ACM following AHERA requirements (which also meets the sampling requirements found in 29 CFR 1926.1101), the National Emission Standards for Hazardous Air Pollutants (NESHAP), and SC R.61-86.1.
4. Collect and analyze bulk samples of suspect friable and non-friable materials to evaluate potential asbestos content.
5. Quantify and qualify ACM, including material condition, location, and potential for disturbance.

2 Assumptions and Limitations

The results, findings, conclusions, and recommendations expressed in the report are based only on conditions that were noted during Cardno's assessment of the Former Great Falls Republic Mill #1 site, located on South Dearborn Street in Great Falls, South Carolina, on April 11, 2019.

The selection of sample locations and frequency of sampling was based on Cardno's observations, the assumption that similar materials in the same area are homogeneous, and applicable regulations. Additional ACM may exist in concealed areas not surveyed or identified.

3 General Site Conditions

The site was previously used as a textile mill, and was destroyed by fire in the early 2000s. Since then, the site has been vacant and abandoned, and the former structures have been demolished with building debris left in place. The survey area was limited to visible materials on the ground. The site is lightly vegetated with approximately 10,000 cubic

yards of building debris present in several distinct piles¹. An aerial layout of the site is included as **Figure 1**, and approximate debris pile extents are shown in **Figure 2**.

4 Previous Reporting

CTC Public Benefit Corporation (CTC) completed a Phase I Environmental Site Assessment (ESA) at the subject property in October 2011. During the course of the Phase I ESA, it was determined that based on the age of the former structures at the site, it is likely that building debris contained ACM. No other previous reporting was provided to Cardno personnel in connection with potential ACM at the site.

5 Asbestos-Containing Material Survey

On April 11, 2019, Mr. Peter Whitehouse (SC Building Inspector # BI-01796) and Mr. Conrad Peters (SC Building Inspector # BI-01810) of Cardno conducted an Asbestos-Containing Materials survey at the Former Great Falls Republic Mill #1, located along South Dearborn St. in Great Falls, SC, to assess the potential presence of ACM in debris piles remaining at the site after a fire destroyed the former main mill structure in the early 2000s. The area was observed to be covered in general construction debris, such as concrete, and wood.

5.1 Homogeneous Areas (HAs)

Prior to collecting samples, HAs were identified to develop a sampling strategy. A homogeneous area can be described as one or more areas of material that are similar in appearance and texture and that have the same known or apparent installation date and function. The number of samples collected from each homogeneous sampling area may vary, based on the type of material and professional judgment.

5.2 Hazard Assessment

A physical assessment was performed for each suspect homogeneous areas, a physical assessment was performed for each material on the list. A physical assessment includes evaluating the condition, assessing the potential for disturbance, and determining the friability of each material (i.e. the potential for a material to be crumbled or reduced to powder by hand pressure when dry). Each material on the list was further classified into one of three categories:

¹ Estimation made with drawn debris pile areas (**Figure 2**), assuming conical volume with an average height of 10 feet.

1. Surfacing Materials: Spray-applied or troweled surfaces such as joint compound, plaster ceilings and walls, fireproofing, textured paints, textured plasters, and spray-applied acoustical surfaces.
2. Thermal System Insulation: Insulation used to inhibit heat gain or loss on pipes, boilers, tanks, ducts, and various other building components.
3. Miscellaneous Materials: Friable and non-friable products and materials that do not fit in any of the above two categories such as resilient floor covering, baseboards, mastics, adhesives, roofing material, caulking, glazing, and siding. This category also contains wallboard and ceiling tile.

Potential ACM were then assessed by their condition as good (intact), fair (damaged) or poor (significantly damaged) per Title 40 Code of Federal Regulations Part 763.

5.3 Sampling Strategy

The asbestos survey was conducted in general accordance with the AHERA requirements (which also meets the sampling requirements found in 29 CFR 1926.1101), the National Emission Standards for Hazardous Air Pollutants (NESHAP), and SC R.61-86.1.

Cardno personnel visually assessed the site for the presence of building materials that are suspected to contain asbestos. Bulk samples of identified suspect ACM were collected by South Carolina licensed asbestos building inspectors (Mr. Peter Whitehouse, # BI-01796 & Mr. Conrad Peters # BI-01810) and placed into individual containers for transport to EMSL, a National Voluntary Laboratory Accreditation Program (NVLAP)/American Industrial Hygiene Association (AIHA)-accredited laboratory, for analysis. Copies of applicable accreditation forms are included in **Appendix A**. Materials visibly identified as non-asbestos (e.g. rubber, wood, vinyl wall panels, foam rubber, etc.) were not sampled. The asbestos survey consisted of three basic procedures:

1. Conducting visual observations of the debris piles;
2. Identifying homogeneous areas (HAs) of suspect surfacing, thermal system insulation, and miscellaneous materials; and
3. Sampling accessible, friable and non-friable suspect ACM.

Collection of bulk asbestos samples involves physically removing a small piece of material and placing it in a marked, airtight container. Sample containers are marked with a unique identification number, which is recorded in the field notes.

5.4 Sampling Activities

On April 11, 2019, Cardno personnel conducted an Asbestos-Containing Materials survey at the Former Great Falls Republic Mill #1. During the course of the site assessment activities, 28 individual bulk samples were collected from across the site. Sample descriptions, locations, and approximate material amounts are included in tabular format as **Table 1**. A sample location map is included as **Figure 3**.

5.5 Sampling Limitations

During the survey, Cardno identified potential ACM in building materials remaining at the site. Though the investigation was conducted to give a representative report of site

conditions, it is possible that additional ACM may be present at the site in inaccessible or concealed spaces, or areas below visible debris. These spaces include, but are not limited to, pipe chases, spaces between wall/ceiling/door/floor cavities, interior of mechanical components such as boiler cavities, interior ducts, beneath foundation pads, etc. If future demolition activities render these areas exposed, Cardno recommends further assessment of these spaces be conducted at that time to identify and confirm the presence or absence of additional ACM. Prior to additional sampling, all such unidentified materials should be treated as Presumed ACM (PACM) in accordance with 29 CFR 1926.1101 and 1910.1001.

6 Results

Bulk samples were analyzed by the EMSL laboratory located in Charlotte, North Carolina using polarized light microscopy (PLM) according to EPA Method 600/M4-82-020. Additionally, per South Carolina Regulation 61-86.1, one of every three non-friable organically bound (NOB) samples were analyzed per homogeneous area via Transmission Electron Microscopy (TEM). EMSL participates in the NVLAP, a quality assurance program for PLM, and is accredited by the National Institute of Standards and Technology (NIST). If multiple components were present within a sample matrix (i.e. floor tile and mastic), each of the components were separated and analyzed individually. Of the 28 bulk samples, a total of 52 individual components were analyzed by EMSL. A summary of the analytical results are included in the EMSL Analytical report as **Appendix B** and are presented in tabular format as **Table 1**.

The following materials were identified as ACM:

- The fibrous layer within built-up roofing material along the northern end of the main mill foundation and in the area of the remaining tower
 - 8% Chrysotile, friable
- White putty/caulking material along the western end of the main mill foundation
 - 60% Chrysotile, NOB
- Black caulking/sealant around piping & building foundation joints
 - 6% Chrysotile, NOB
- Vinyl floor tile and mastic in the former office area
 - 4% - 10% asbestos, NOB

A photographic log of materials identified as containing >1% asbestos by volume is included as **Appendix C**. No other tested materials contained >1% asbestos.

7 Conclusions and Recommendations

General construction debris (e.g., concrete, roofing material, wood) were present in debris piles on the site. These materials were visually assessed to identify potential ACM materials. 28 suspect materials were collected via bulk sample and analyzed for percent asbestos by volume via PLM and/or TEM by EMSL Analytical, Inc., per applicable

regulations. The following materials contained >1% asbestos by volume, and are considered to be ACM:

- Built-up roofing material along the northern end of the main mill foundation and in the area of the remaining tower
 - 8% Chrysotile
- White putty/caulking material along the western end of the main mill foundation
 - 60% Chrysotile, NOB
- Black caulking/sealant around piping & building foundation joints
 - 6% Chrysotile, NOB
- Vinyl floor tile and mastic in the former office area
 - 4% - 10% asbestos, NOB

As shown in **Appendix B**, the fibrous layer within built-up roofing material was always determined to be ACM. Since a fibrous layer is still present within much of the roofing material in the debris piles, and is bound to the rest of the matrix, all roofing material across the site should be considered ACM.

It may be possible for the general debris at the site to be screened by a South Carolina Asbestos Building Inspector during demolition and clean-up activities. Removal of non-ACM debris is possible in certain areas and there is the possibility of separating ACM from non-ACM debris.

There is also the possibility for additional suspect ACM to be present. Any suspect ACM should not be disturbed, and treated as ACM, unless analytical testing proves otherwise. An asbestos project design addressing both general construction debris and ACM debris should be developed by an accredited project designer before work begins. Considerations of the worker training, air monitoring, and a review of disposal facilities should be included in the asbestos project design as well. The South Carolina Department of Health and Environmental Control (SCDHEC) should be consulted about any future disposal plans, necessary permits, and proposed methods.

Contractors and employees working at the site should be made aware of the possibility that concealed ACM may be found during demolition and debris removal and appropriate actions taken (employee training, personal protective equipment, etc.). They should be advised not to disturb known or suspect ACM without owner approval. Any concealed building materials discovered during demolition and disposal activities, which are suspected to contain asbestos, should be sampled and analyzed to confirm the presence of asbestos prior to disturbing. During demolition and excavation, if a material that is a suspect ACM material is observed, the material should be sampled and analyzed to confirm asbestos prior to disturbing.

References

1. 40 Code of Federal Regulations (CFR) Part 763, Subpart E.
2. 40 CFR Part 61, Subpart M – National Emission Standard for Asbestos (NESHAP).
3. CTC Public Benefit Corporation. Former Republic Mill #1 Phase I Environmental Site Assessment. 2011. October.
4. South Carolina Department of Health and Environmental Control, Bureau of Air Quality. 2008. Regulation 61-86.1: Standards of Performance for Asbestos Projects. SC R61-86.1. June.
5. U. S. Department of Labor, Occupational Safety and Health Administration (OSHA). 1986. Asbestos Hazard Emergency Response Act (AHERA) 15 U.S.C. §2651. March.

Former Great Falls
Republic Mill #1

TABLES

Asbestos Inspection Field Sheet

Site Name: Republic Mill #1		Building No.: N/A (debris piles)	Date: 04/11/2019		Inspector: Peter Whitehouse	
Sample #	Sample Description	Locations	Condition/Friable?	Approximate Amount	Asbestos Contents	Comments
RM-01	Built-up roofing	Northern debris pile	Damaged/No	Widespread - all piles	8% Chrysotile (fibrous layer)	When analyzed, fibrous layer always ACM
RM-02	Built-up roofing	Northern debris pile	Damaged/No	Widespread - all piles	Positive stop (fibrous layer)	
RM-03	Putty/flashing, gray	Northern debris pile	Damaged/No	Northernmost piles	60% Chrysotile	
RM-04	Insulation, yellow	Northern debris pile	Damaged/Yes	Widespread - all piles	ND	
RM-05	Reinforced board, silver	Western foundation spine	Damaged/No		ND	
RM-06	Built-up roofing	Western foundation spine	Damaged/No	Widespread - all piles	ND	
RM-07	Built-up roofing	Western foundation spine	Damaged/No	Widespread - all piles	ND	
RM-08	Built-up roofing	Western foundation spine	Damaged/No	Widespread - all piles	ND	
RM-09	Foam glass	Western foundation spine	Damaged/Yes	Widespread - all piles	ND	
RM-10	Fibrous tubing	Western foundation spine	Damaged/No		ND	
RM-11	Foam glass caulking	Western foundation spine	Damaged/No		6% Chrysotile	Seen on multiple piping intake joints
RM-12	Rolled flooring, red	Western foundation spine	Damaged/No		ND	Overlying concrete foundation
RM-13	12"x12" FT w/ mastic, wt.	Former office (SE)	Damaged/No	100 sf	4% Chrysotile (mastic only)	12"x12" atop 9"x9" & additional layer
RM-14	9"x9" FT w/ mastic, brown	Former office (SE)	Damaged/No	100 sf	4-10% Chrysotile (all layers)	12"x12" atop 9"x9" & additional layer
RM-15	3 layers FT	Former office (SE)	Damaged/No	100 sf	Positive stop (all layers)	12"x12" atop 9"x9" & additional layer
RM-16	Built-up roofing	Western foundation spine	Damaged/No	Widespread - all piles	ND	
RM-17	Reinforced cloth	Western foundation spine	Damaged/No		ND	
RM-18	Insulation, yellow	Central piles	Damaged/Yes	Widespread - all piles	ND	
Notes: FT: floor tile; sf: square feet; wt.: white; ND: non-detect						

Asbestos Inspection Field Sheet

Site Name: Republic Mill #1		Building No.: N/A (debris piles)	Date: 04/11/2019		Inspector: Peter Whitehouse	
Sample #	Sample Description	Locations	Condition/Friable?	Approximate Amount	Asbestos Contents	Comments
RM-19	Insulation w/ metallic back	SW piles	Damaged/Yes	Widespread - all piles	ND	
RM-20	Reinforced cloth	SW piles	Damaged/No		ND	
RM-21	Built-up roofing	South central piles	Damaged/No	Widespread - all piles	ND	
RM-22	Bolted-down cloth	South central piles	Damaged/No		ND	
RM-23	Built-up roofing	SE piles	Damaged/No	Widespread - all piles	ND	
RM-24	Built-up roofing	SE piles	Damaged/No	Widespread - all piles	ND	
RM-25	Built-up roofing	Eastern spine piles	Damaged/No	Widespread - all piles	ND	
RM-26	Built-up roofing	Eastern spine piles	Damaged/No	Widespread - all piles	ND	
RM-27	Built-up roofing	Eastern spine piles	Damaged/No	Widespread - all piles	Positive stop (fibrous layer)	
RM-28	Built-up roofing	Eastern pile	Damaged/No	Widespread - all piles	ND	
Notes: FT: floor tile; sf: square feet; wt.: white; ND: non-detect; w/: with						

Former Great Falls
Republic Mill #1

FIGURES





Notes: Imagery from Google Earth

FIGURE 2: APPROXIMATE DEBRIS PILE EXTENTS

Former Great Falls Republic Mill #1
Great Falls, SC



1812 Lincoln St., Suite 301
Columbia, SC 29201
803-929-6060



Former Great Falls
Republic Mill #1

APPENDIX

A

RECORDS OF ACCREDITATION

SCDHEC ISSUED
Asbestos ID Card

Peter Whitehouse



CONSULTBI

BI-01796

Expiration Date:

02/21/20

SCDHEC ISSUED

Asbestos ID Card

Conrad L Peters



CONSULTBI BI-01810

Expiration Date:
12/06/19



AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

10801 Southern Loops Blvd., Pineville, NC 28134

Laboratory ID: 192283

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

LABORATORY ACCREDITATION PROGRAMS

- ✓ **INDUSTRIAL HYGIENE**
- ✓ **ENVIRONMENTAL LEAD**
- ✓ **ENVIRONMENTAL MICROBIOLOGY**
- ☐ **FOOD**
- ☐ **UNIQUE SCOPES**

Accreditation Expires: September 01, 2020

Accreditation Expires: September 01, 2020

Accreditation Expires: September 01, 2020

Accreditation Expires:

Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Elizabeth Bair

Elizabeth Bair
Chairperson, Analytical Accreditation Board

Cheryl O. Morton

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC



AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

EMSL Analytical, Inc.

10801 Southern Loops Blvd., Pineville, NC 28134

Laboratory ID: **192283**

Issue Date: 08/31/2018

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: 10/01/2014

IHLAP Scope Category	Field of Testing (FoT) (FoTs cover all relevant IH matrices)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte (for internal methods only)
Chromatography Core	Gas Chromatography	GC/FID	NIOSH 1003 Modified	
			NIOSH 1500 Modified	
			NIOSH 1501 Modified	
	GC/MS		EPA TO-15	
	Ion Chromatography (IC)		NIOSH 7903	
			OSHA ID-165SG	
Spectrometry Core	Atomic Absorption	HPLC/UV	NIOSH 2016 Modified	
		CVAA	NIOSH 6009 Modified	
	Inductively-Coupled Plasma	ICP/AES	NIOSH 7082	
			NIOSH 7300 Modified	
			NIOSH 7303	
	Infrared		NIOSH 7602	
Asbestos/Fiber Microscopy Core	Phase Contrast Microscopy (PCM)		NIOSH 7400	
Miscellaneous Core	Gravimetric		NIOSH 0500	
			NIOSH 0600	
			NIOSH 5000	

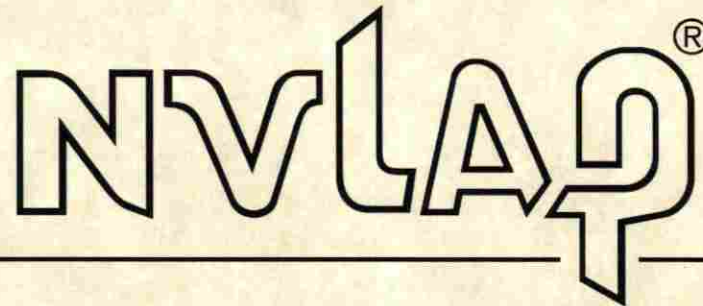
A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>

Effective: 04/10/2015

192283_Scope_IHLAP_2018_08_31

Page 1 of 1

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200841-0

EMSL Analytical, Inc.
Pineville, NC

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

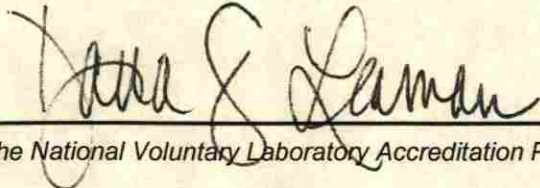
Asbestos Fiber Analysis

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2018-07-01 through 2019-06-30

Effective Dates




For the National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
10801 Southern Loop Blvd.
Pineville, NC 28134
Mr. Lee Plumley
Phone: 704-525-2205 Fax: 704-525-2382
Email: lplumley@emsl.com
<http://www.emsl.com>

ASBESTOS FIBER ANALYSIS

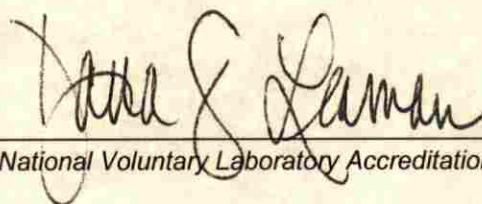
NVLAP LAB CODE 200841-0

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

<u>Code</u>	<u>Description</u>
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, Subpart E, Appendix A.



For the National Voluntary Laboratory Accreditation Program

Former Great Falls
Republic Mill #1

APPENDIX

B

EMSL ANALYTICAL REPORT



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 411903481

Customer ID: CARN75

Customer PO:

Project ID:

Attention: Peter Whitehouse.

Cardno

1812 Lincoln St

Ste 301

Columbia, SC 29201

Project: Republic Mill #1

Phone: (803) 929-6060

Fax:

Received Date: 04/16/2019 12:00 PM

Analysis Date: 04/19/2019 - 04/23/2019

Collected Date: 04/11/2019

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
RM-01-Fibrous Layer 411903481-0001	Debris Pile atop Foundation - Roofing Material, Black	Black Fibrous Homogeneous		92% Non-fibrous (Other)	8% Chrysotile
RM-01-Tar 411903481-0001A	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
RM-01-Cellulose Layer 411903481-0001B	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	15% Cellulose	5% Ca Carbonate 80% Non-fibrous (Other)	None Detected
RM-01-Insulation 411903481-0001C	Debris Pile atop Foundation - Roofing Material, Black	Brown/White Fibrous Homogeneous	60% Cellulose	15% Perlite 25% Non-fibrous (Other)	None Detected
RM-02-Fibrous Layer 411903481-0002	Debris Pile atop Foundation - Roofing Material, Black				Positive Stop (Not Analyzed)
RM-02-Tar 411903481-0002A	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
RM-02-Cellulose Layer 411903481-0002B	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
RM-02-Insulation 411903481-0002C	Debris Pile atop Foundation - Roofing Material, Black	Gray Non-Fibrous Homogeneous		15% Perlite 85% Non-fibrous (Other)	None Detected
RM-03 411903481-0003	Debris Pile atop Foundation - Putty Material	Gray/White Fibrous Homogeneous		40% Non-fibrous (Other)	60% Chrysotile
RM-04 411903481-0004	Debris Pile atop Foundation - Insulation (Yellow)	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
RM-05 411903481-0005	Debris Pile atop Foundation - Fibrous Metallic Material	White/Silver Fibrous Homogeneous	80% Glass	20% Non-fibrous (Other)	None Detected
RM-06-Cellulose Layer 411903481-0006	Debris Pile atop Foundation - Roofing Material (Black)	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
RM-06-Tar 411903481-0006A	Debris Pile atop Foundation - Roofing Material (Black)	Black Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
RM-06-Insulation 411903481-0006B	Debris Pile atop Foundation - Roofing Material (Black)	Brown Fibrous Homogeneous	50% Min. Wool	30% Ca Carbonate 20% Non-fibrous (Other)	None Detected
RM-07 411903481-0007	Debris Pile atop Foundation - Roofing Material (Black)	Black Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
RM-08 411903481-0008	Debris Pile atop Foundation - Roofing Material (Black)	Black Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected

Initial report from: 04/23/2019 11:13:12



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 411903481

Customer ID: CARN75

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
RM-09 411903481-0009	Debris Pile atop Foundation - Foam Glass	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
RM-10 411903481-0010	Debris Pile on Western Building Spine - Fibrous Tubing	Brown/Black Fibrous Homogeneous	20% Fibrous (Other)	80% Non-fibrous (Other)	None Detected
RM-11 411903481-0011	Debris Pile atop Foundation - Foam Glass Caulking	Gray/Black Fibrous Homogeneous		5% Ca Carbonate 89% Non-fibrous (Other)	6% Chrysotile
RM-12 411903481-0012	Flooring on Foundation - Trowelled-On Flooring (Red)	Tan/Red Non-Fibrous Homogeneous		25% Quartz 20% Ca Carbonate 55% Non-fibrous (Other)	None Detected
RM-13-Floor Tile 411903481-0013	Flooring on Foundation - 12"x12" Floor Tile (White) & Mastic	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
RM-13-Mastic 411903481-0013A	Flooring on Foundation - 12"x12" Floor Tile (White) & Mastic	Black Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
RM-14-Top Mastic 411903481-0014	Flooring on Foundation - 9"x9" Floor Tile (Brown) & Mastic	Black Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
RM-14-Floor Tile 411903481-0014A	Flooring on Foundation - 9"x9" Floor Tile (Brown) & Mastic	Brown Non-Fibrous Homogeneous		20% Ca Carbonate 70% Non-fibrous (Other)	10% Chrysotile
RM-14-Bottom Mastic 411903481-0014B	Flooring on Foundation - 9"x9" Floor Tile (Brown) & Mastic	Black Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
RM-15-Top Mastic 411903481-0015 Sample bag labeled RM-14	Flooring on Foundation - Rm-13 & Rm-14 Third Layer				Positive Stop (Not Analyzed)
RM-15-Floor Tile 411903481-0015A	Flooring on Foundation - Rm-13 & Rm-14 Third Layer				Positive Stop (Not Analyzed)
RM-15-Bottom Mastic 411903481-0015B	Flooring on Foundation - Rm-13 & Rm-14 Third Layer				Positive Stop (Not Analyzed)
RM-16-Tar 411903481-0016	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
RM-16-Cellulose Layer 411903481-0016A	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
RM-17 411903481-0017	Debris Pile atop Foundation - Reinforced Cloth	Gray Non-Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
RM-18 411903481-0018	Debris Pile atop Foundation - Insulation (Yellow)	Brown/Tan Fibrous Homogeneous	98% Min. Wool	2% Non-fibrous (Other)	None Detected

Initial report from: 04/23/2019 11:13:12



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 411903481

Customer ID: CARN75

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
RM-19-Mastic 411903481-0019	Debris Pile atop Foundation - Insulation w/ Metallic Backing	Black/Silver Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
RM-19-Insulation 411903481-0019A	Debris Pile atop Foundation - Insulation w/ Metallic Backing	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
RM-20 411903481-0020	Debris Pile atop Foundation - Reinforced Cloth	Brown/Tan Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
RM-21 411903481-0021	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	20% Cellulose	2% Ca Carbonate 78% Non-fibrous (Other)	None Detected
RM-22-White Layer 411903481-0022	Debris Pile atop Foundation - Bolted Cloth & Line	White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
RM-22-Brown Layer 411903481-0022A	Debris Pile atop Foundation - Bolted Cloth & Line	Brown Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
RM-23-Tar 411903481-0023	Debris Pile atop Foundation - Roofing Material, Black	Black Fibrous Homogeneous	4% Cellulose	2% Quartz 94% Non-fibrous (Other)	None Detected
RM-23-Cellulose Layer 411903481-0023A	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
RM-24-Tar 411903481-0024	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
RM-24-Cellulose Layer 411903481-0024A	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
RM-25-Tar 411903481-0025	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
RM-25-Cellulose Layer 411903481-0025A	Debris Pile atop Foundation - Roofing Material, Black	Black Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
RM-26-Tar 411903481-0026	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
RM-26-Cellulose Layer 411903481-0026A	Debris Pile atop Foundation - Roofing Material, Black	Brown/Black Fibrous Homogeneous	30% Cellulose	5% Quartz 8% Ca Carbonate 57% Non-fibrous (Other)	None Detected
RM-27-Fibrous Layer 411903481-0027	Debris Pile atop Foundation - Roofing Material, Black				Positive Stop (Not Analyzed)
RM-27-Tar 411903481-0027A	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
RM-27-Cellulose Layer 411903481-0027B	Debris Pile atop Foundation - Roofing Material, Black	Black Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
RM-27-Insulation 411903481-0027C	Debris Pile atop Foundation - Roofing Material, Black	Brown Fibrous Homogeneous	3% Cellulose 60% Min. Wool	37% Non-fibrous (Other)	None Detected

Initial report from: 04/23/2019 11:13:12



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 411903481

Customer ID: CARN75

Customer PO:

Project ID:

Analyst(s)

Katherine Sluder (4)

Lacy Searcy (12)

Matthew McDonald (6)

Sarah Breneman (23)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 04/23/2019 11:13:12



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 411903481

Customer ID: CARN75

Customer PO:

Project ID:

Attention: Peter Whitehouse.
Cardno
1812 Lincoln St
Ste 301
Columbia, SC 29201
Project: Republic Mill #1

Phone: (803) 929-6060
Fax:
Received Date: 04/16/2019 12:00 PM
Analysis Date: 04/25/2019
Collected Date: 04/11/2019

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
RM-28-Tar 411903481-0028	Debris Pile atop Foundation - Roofing Material, Black	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
RM-28-Cellulose Layer 411903481-0029	Debris Pile atop Foundation - Roofing Material, Black	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Aaron Hartley (2)

Lee Plumley, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 04/25/2019 11:01:38

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

411903481

Pineville, NC 28134

PHONE: (704) 525-2205

FAX: (704) 525-2382

Company: Cardno		EMSL-Bill to: <input type="checkbox"/> Same <input checked="" type="checkbox"/> Different If Bill to is Different note instructions in Comments**	
Street: 1812 Lincoln St. Suite 301		Third Party Billing requires written authorization from third party	
City: Columbia	State/Province: SC	Zip/Postal Code: 29201	Country: US
Report To (Name): Peter Whitehouse		Telephone #: 8039296060	
Email Address: peter.whitehouse@cardno.com		Fax #:	Purchase Order:
Project Name/Number: Republic Mill #1		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email <input type="checkbox"/> Mail	
U.S. State Samples Taken: SC		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input checked="" type="checkbox"/> 2 Week			
*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.			
PLM - Bulk (reporting limit)		TEM - Bulk	
<input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NIOSH 9002 (<1%) <input type="checkbox"/> NY ELAP Method 198.1 (friable in NY) <input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY) <input type="checkbox"/> OSHA ID-191 Modified <input type="checkbox"/> Standard Addition Method		<input type="checkbox"/> TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1 <input type="checkbox"/> NY ELAP Method 198.4 (TEM) <input type="checkbox"/> Chatfield Protocol (semi-quantitative) <input type="checkbox"/> TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2 <input type="checkbox"/> TEM Qualitative via Filtration Prep Technique <input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique	
		Other	
		<input checked="" type="checkbox"/> IF NOB, 2 PLM + 1 TEM, if PLM we non-detect	
<input checked="" type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group		Date Sampled: 4/11/19	
Samplers Name: Peter Whitehouse		Samplers Signature: Peter A. Whitehouse	
Sample #	HA #	Sample Location	Material Description
RM-01	1	debris pile atop foundation	roofing material, black
RM-02	1	"	"
RM-03	2	"	putty material
RM-04	3	"	insulation (yellow)
RM-05	4	"	fibrous metallic material
RM-06	1	"	roofing material (black)
RM-07	1	"	"
RM-08	1	"	"
RM-09	5	"	foam glass
RM-10	6	debris pile on western building pipe	fibrous tubing
Client Sample # (s): RM-01 through RM-28		Total # of Samples: 28	
Relinquished (Client): Peter Whitehouse		Date: 4/11/19	Time: 17:00
Received (Lab): Kyle Nelson		Date: 4/16/19	Time: 12pm UPS
Comments/Special Instructions:			
Bill To: Cardno, 1812 Lincoln St., Suite 301, Columbia, SC, 29201, US Attention: Peter Whitehouse Phone: 9105807901 Email: peter.whitehouse@cardno.com Purchase Order: stop positive per material layer			



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

411903481

Pineville, NC 28134
PHONE: (704) 525-2205
FAX: (704) 525-2382

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
RM-11	7	debris pile atop foundation	foam glass caulking
RM-12	8	flooring on foundation	traveled-on flooring (red)
RM-13	9	"	12" x 12" floor tile (white) ^{+ mastic}
RM-14	10	"	9" x 9" floor tile (brown) ^{+ mastic}
RM-15	11	"	RM-13 + RM-14 + third layer ^{+ mastic}
RM-16	1	debris pile atop foundation	roofing material, black
RM-17	12	"	reinforced cloth
RM-18	3	"	insulation (yellow)
RM-19	13	"	insulation w/ metallic backing
RM-20	12	"	reinforced cloth
RM-21	1	"	roofing material, black
RM-22	14	"	bolting cloth + line
RM-23	1	"	roofing material, black
RM-24	1	"	"
RM-25	1	"	"
RM-26	1	"	"
RM-27	1	"	"
RM-28	1	"	"

***Comments/Special Instructions:**

Bill To: Cardno, 1812 Lincoln St., Suite 301, Columbia, SC, 29201, US

Attention: Peter Whitehouse Phone: 9105807901 Email: peter.whitehouse@cardno.com Purchase Order:

Former Great Falls
Republic Mill #1

APPENDIX

C

PHOTOGRAPHIC LOG

Site Location:

Former Great Falls Republic Mill #1
Dearborn St., Great Falls, Chester County, South Carolina 29055

Project

PB00268000

Photo No.**1****Date:****04/11/2019****Direction Photo****Taken:**

SE

Description:

The fibrous layer of the black built up roofing found across the site was identified as ACM (8% chrysotile).

**Photo No.****2****Date:****04/11/2019****Direction Photo****Taken:**

E

Description:

A white putty material along the northern spine of the main mill was found to be ACM (60% Chrysotile).



Site Location:

Former Great Falls Republic Mill #1
Dearborn St., Great Falls, Chester County, South Carolina 29055

Project

PB00268000

Photo No.**3****Date:****02/28/2019****Direction Photo
Taken:****N****Description:**

A view of the former office area where 12" x 12" vinyl floor tile was present atop 9" x 9" vinyl floor tile. The 9" x 9" vinyl floor tile and all mastic were found to be ACM.

**Photo No.****4****Date:****04/11/2019****Direction Photo
Taken:****N****Description:**

A black caulking material attaching foam glass to utility piping along foundational walls was found to be ACM.



About Cardno

Cardno is an ASX-200 professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage, and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

Cardno Zero Harm

Cardno
ZERO
HARM
EVERY JOB. EVERY DAY.

At Cardno, our primary concern is to develop and maintain safe and healthy conditions for anyone involved at our project worksites. We require full compliance with our Health and Safety Policy Manual and established work procedures and expect the same protocol from our subcontractors. We are committed to achieving our Zero Harm goal by continually improving our safety systems, education, and vigilance at the workplace and in the field. Safety is a Cardno core value and through strong leadership and active employee participation, we seek to implement and reinforce these leading actions on every job, every day.