Hanson
HEIDELBERGCEMENT Group

Sent via Fed-Ex

Hanson Aggregates Pennsylvania LLC
7660 Imperial Way
Allentown, PA 18195-1040
Tel 610-366-4819
Fax 610-871-5994

January 24, 2018

Michael J. Menghini
Pennsylvania Department of Environmental Protection
Pottsville District Mining Office
5 West Laurel Boulevard
Pottsville, PA 17901-2454

Re: Rock Hill Quarry NOA Monitoring Plan
SMP No. 7974SM1
East Rockhill Township
Bucks County, Pennsylvania

Dear Mr. Menghini:

Hanson Aggregates Pennsylvania LLC (Hanson) is submitting this Naturally Occurring Asbestos (NOA) Monitoring Plan (Plan) as requested by the Pottsville District Mining Office. This Plan is a direct follow-up to the January 18, 2018 Asbestos Investigation Results prepared and submitted by EarthRes Group, Inc. (EarthRes). It is important to note that the EarthRes investigation and laboratory analytical analysis did not indicate the presence of asbestos in any of the 13 samples from the area proposed for mining.

Considering the EarthRes investigation has already assessed and cleared the existing exposed highwalls where benching is to be re-established, the below plan will commence once highwalls are re-established.

NOA Monitoring Plan

- One (1) time per calendar quarter, a qualified Professional Geologist will visually inspect exposed highwalls in the direct area of production blasting to assess the presence of potential NOA mineral veining and/or geologic contacts with host sedimentary rocks;

- If potential NOA mineral veining is observed, sampling will be conducted using the same methods described in the Sample Collection and Analysis section (Page 2) of the EarthRes January 18, 2018 investigation report. The number of samples will be determined by the Professional Geologist conducting the visual inspection;

- In addition to the quarterly visual highwall inspection, one (1) composite drill-cuttings sample per active face will be collected each calendar quarter from two (2) drill holes per active bench. The drill holes will be field located approximately 50 feet back from the active face. For example, if there are three (3) active benches, a total of six (6) drill holes will be installed to collect three (3) composite drill-cutting samples for laboratory analysis;

- If laboratory analysis detects NOA to be present above 0.25%, mining in that specific highwall area will be delayed until such time that protective measures are enacted to limit air concentrations below the permissible exposure limit;

- If active mining does not occur for an entire calendar quarter, site monitoring will be postponed to the next calendar quarter that mining occurs; and

- Documentation of the highwall inspections and/or laboratory analysis will be maintained at the site.

Please feel free to contact me at (610) 366-4819 should you wish to discuss the submission or require additional information.

Sincerely,

Andrew J. Gutshall, P.G.
Area Environmental Manager

Mark E. Kendrick
Vice President

encl: EarthRes January 18, 2018 Asbestos Investigation Results report

cc: Michael Kutney, P.G., PADEP (via electronic mail)
John Stefanko, PADEP (via electronic mail)
William Plassio, PADEP (via electronic mail)
Gary Latsha, PADEP (via electronic mail)
Amiee Bollinger, PADEP (via electronic mail)
Ross Klock, PADEP (via electronic mail)
Sachin Shankar, PADEP (via electronic mail)
James Rebarchak, PADEP (via electronic mail)
Marianne Morano, East Rockhill Township (via electronic mail)
Bucks County Chief Clerk, Brian Hessenthaler
Mark E. Kendrick, Hanson – Allentown (via electronic mail)
Timothy J. Poppenberg, Hanson – Allentown (via electronic mail)
Nathan R. Kimball, Hanson – Allentown (via electronic mail)
Environmental File

EarthRes January 18, 2018
Asbestos Investigation Results Report

EarthRes
ENGINEERING AND SCIENCE

PENNSYLVANIA
P.O. Box 468
Pipersville, PA 18947
215.766.1211

WEST VIRGINIA
P.O. Box 794
Morgantown, WV 26505
304.212.6866

800.264.4553

January 18, 2018

Michael J. Menghini, District Mining Manager
Department of Environmental Protection
Pottsville District Mining Office
5 West Laurel Boulevard
Pottsville, PA 17901-2454

SUBJECT: Asbestos Investigation Results
Rock Hill Quarry Operation
SMP No. 7974SM1
East Rockhill Township, Bucks County
EarthRes Project No. 061003.051

Dear Mr. Menghini:

On behalf of Hanson Aggregates Pennsylvania, LLC (Hanson) and pursuant to the Pennsylvania Department of Environmental Protection's (herein referred to as PA DEP or the "Department") letter dated January 4, 2018, please find the following investigation and testing results completed by EarthRes Group, Inc. (EarthRes) at the Hanson Rock Hill Quarry (the "site").

INTRODUCTION

The work completed in the following investigation included geological evaluation through publication review, onsite mapping, and sampling and analysis of the rock in the planned active mining area. The work was completed to determine the potential presence of naturally occurring asbestos (NOA) minerals. The work was performed onsite by EarthRes personnel between January 8 and 11, 2018, under the supervision of a Pennsylvania licensed Professional Geologist (P.G.). A site figure showing the quarry and investigation areas is included in Appendix A.

SITE DESCRIPTION AND CONDITIONS

The site is an existing permitted mine located on the western side of Rock Hill. Currently, the southern portion of the mine is being prepared for additional mining of the diabase bedrock. Site preparations include overburden removal and drilling of test holes for sampling and production blasting. However, per the Department's January 4, 2018 letter and directive, production drilling, blasting, and crushing has ceased.

GEOLOGICAL SETTING AND LITERATURE REVIEW

The diabase of the Haycock-Rock Hill Sill is a light-grey, medium to coarse grained crystalline igneous rock. At the edges of the Sill, the thinner Byram and Clayton diabase sills are dense, fine-grained, and greenish-black. Constituents, however, are the same and consist of plagioclase feldspar and augite being the predominant mineralogical species (Bascom et al., USGS 1931). The referenced USGS report provides no indication of the presence of NOA in the mineralogy of the diabase. The *Mineralogy of Pennsylvania* (Gordon, 1922) similarly does not indicate the presence of NOA in East Rockhill Township nor at the current quarry site. Additionally, a USGS report by Van Gosen (2006) lists and maps NOA occurrences in the eastern United States. The report does not identify NOA occurring at the site or in the area. The closest occurrence is within the serpentine rocks of the Easton, PA area.

The internet site www.mindat.org, which is an "open-source" mineral specimen web based database, lists a potential single occurrence of NOA at the site from a sample collected in the 1970s. The mindat.org posting was completed by a third party (not the collector) and it notes that the sample was previously listed to a locale in Quakertown. The posting does not contain analyses for asbestos, but lists "possibly tremolite" as a description.

SITE SPECIFIC INVESTIGATION

Investigation and Sampling Rationale: Investigation at the quarry was targeted in the following manner: 1) assessing the presence of NOA minerals in the proposed mining area through mapping, and sampling of rock and borehole data; 2) evaluating for the presence of contacts with surrounding sedimentary rocks where metamorphism of the host rock could potentially form NOA minerals, and 3) evaluating and sampling found mineralized veins in the diabase bedrock that could potentially contain NOA minerals.

Site Assessment: EarthRes completed site reconnaissance, mapping and sampling activities between January 8 and 11, 2018. Sampling of subsurface rock was accomplished via drill cuttings from borings installed by Maine Drilling and Blasting on January 8, 2018 in three (3) areas currently being prepared for mining. Sampling for potential NOA minerals was biased to these areas. Field geologists from EarthRes mapped the geology and collected samples from the borings on January 9th. Additionally, hand samples from mineral veining observed on the existing southern highwall were collected on January 11th. A map showing the investigation, drilling and sampling locations is attached in Appendix A. Boring logs are included in Appendix B, and Site and hand sample photographs are included in Appendix C.

Sample Collection and Analysis: Nine (9) composite samples were collected from drill cuttings at each boring location. The boreholes were identified on the laboratory chain-of-custody (COC) as Samples 1 through 9. The corresponding sampling locations are shown on the attached Figure

in Appendix A. The boring samples were collected using a decontaminated steel shovel that was used to mix and collect a composite sample from the drill cuttings. One (1)-gallon Ziplock® bags were filled with approximately 0.5 gallons of drill cuttings from each borehole. The samples were sealed and placed in 5-gallon buckets for transfer to the laboratory for preparation and testing.

Outcrop hand samples of observed mineral veining from the southern highwall were collected and numbered (from north to south): N-1, S-1, S-2 and S-3, as the highwall in the area of the sampling trends approximately north-south. The general sampling location is shown on the attached Figure in Appendix A. Pictures of the highwall, specific sampling locations and the collected sampled are provided in the photographs in Appendix C.

The samples were transported directly to EMSL Laboratory in Cinnaminson, NJ using standard chain-of-custody procedures. Each sample was analyzed using Polarized Light Microscopy (PLM) via EPA 600/R-93/116 Method with preparation using the CARB 435 Method.

Geological Mapping and Assessment: As shown on the attached Figure, the area surrounding the quarry and proposed mining area was assessed to determine the presence of vein infillings and/or sedimentary rock contacts. The diabase described by Bascom, et al. (1931) was similarly observed and was indicated to be massive, fine to medium grained and grey to dark grey in color.

Numerous large boulders were assessed on the southern, northern, and eastern sides of the site. Freshly-broken surfaces were visually inspected to identify the potential presence of naturally occurring asbestos NOA. Each boulder observed consisted of a tightly-massed, fine to medium grained crystalline diabase. Joints were observed to be weathered and typically covered by an oxide, typically manganese or ferric oxide. Mineral veining containing potential NOA was not observed in the examined boulders. Four (4) mineral veins were observed on the southern highwall adjacent to the proposed mining area and were sampled as described in the preceding paragraph.

Sedimentary rocks or features (e.g. bedding, folds, cross-beds, etc.) were not visually observed on the highwalls. Near-vertical jointing was observed along much of the eastern highwall. Contacts with sedimentary host rocks were not indicated in the surrounding outcrops or boulder fields. Several photographs taken onsite are included in Appendix C showing field conditions at the time of mapping. The investigation area is indicated to be wholly within the diabase bedrock.

INVESTIGATION RESULTS AND RECOMMENDATIONS

The geological data collected and presented herein does not indicate areas of contact metamorphism within the diabase that could potentially contain NOA minerals. Mineral veining was observed on the southern highwall, and the mineral veins were sampled for subsequent

laboratory analysis for asbestos. Similarly, the drill cuttings from the adjacent drill holes in the area to be mined were sampled and sent for laboratory analysis.

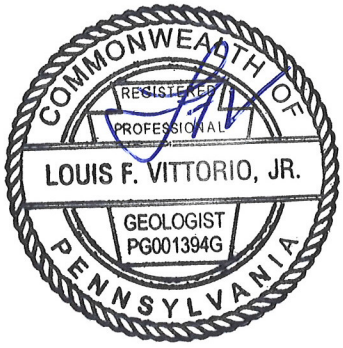
The laboratory testing results determined that the drill cutting samples were homogeneous, brown to grey and 100% non-fibrous. Asbestos was not detected in any of the samples at the lowest PLM CARB 435 detection limit of 0.1% The laboratory testing results from the southern highwall samples were also analyzed and asbestos was similarly not detected at the 0.1% limit in any of the samples. Overall, thirteen (13) samples were collected and analyzed in the area proposed for mining and the results did not indicate the presence NOA. The laboratory data is consistent with the mapping conducted at the site and the geological literature discussed and referenced in this report.

The 0.1% detection limit is 10 times lower than the material definition for ACM by EPA & OSHA and 2.5 times lower than what the California Air Resources Board defines as a "Restricted Material." The data and results indicate that mining at the site can commence upon the Department's approval.

If you have any questions or concerns regarding the presented investigation and results, please feel free to contact me at (215) 766-1211.

Sincerely,
EarthRes Group, Inc.

Louis F. Vittorio, Jr., P.G.
Vice President



Appendices: A – Figure 1
B – Boring Logs
C – Site and Sample Photographs
D – Laboratory Analytical Results

References:

Bascom, F., Wherry, E.T., Stose, G.W., and Jonas, A.I. Geology and Mineral Resources of the Quakertown-Doylestown District Pennsylvania and New Jersey. United States Department of the Interior, Geological Survey Bulletin 828, 1931. https://pubs.usgs.gov/bul/0828/report.pdf

Gordon, Samuel George, The Mineralogy of Pennsylvania, The Academy of Natural Sciences of Philadelphia, Special Publication No. 1, 1922 https://books.google.com/books/about/The_Mineralogy_of_Pennsylvania.html?id=JjsPAAAAYAAJ

Occupational Safety and Health Administration; 29 CFR 1926.1101(b), Safety and Health Regulations for Construction, https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=10862&p_table=standards

State of California, Air Resources Board (CARB), Method 435 Determination of Asbestos Content of Serpentine Aggregate, June 6, 1991. https://www3.epa.gov/ttnemc01/ctm/ctm-029.pdf

State of California, Code of Regulations, 17 CCR Section 93106, Asbestos Airborne Toxic Control for Surfacing Applications, Final Regulation Order. https://www.arb.ca.gov/toxics/atcm/asbeatcm.htm

Van Gosen, Bradley S., Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Natural Asbestos Occurrences in the Eastern United States, 2006 U.S. Department of the Interior, U.S. Geological Survey Open File Report 2005-1189. https://pubs.usgs.gov/of/2005/1189/pdf/Plate.pdf

cc: Mark Kendrick, Hanson*
Andrew Gutshall, Hanson*
Mike Kutney, PA DEP*
John Stefanko, PA DEP*
William Plassio, PA DEP*
Gary Latsha, PA DEP*
Amiee Bollinger, PA DEP*
Ross Klock, PA DEP*
Sachin Shankar, PA DEP SERO*
James Rebarchak, PA DEP Air Quality*
Marianne Morano, East Rockhill Twp.*
Bucks County

(*via electronic mail)

APPENDIX A

FIGURE 1

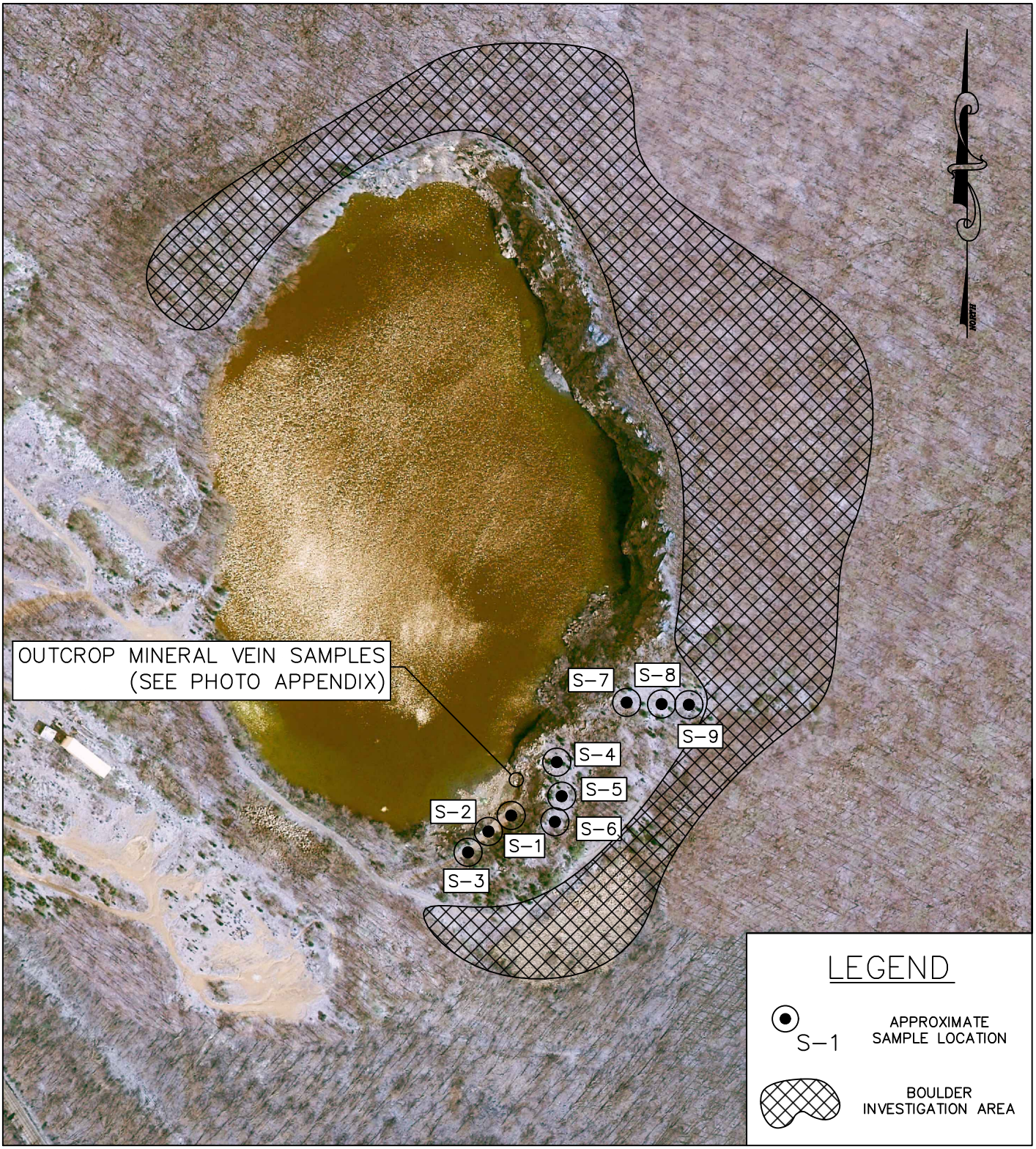


IMAGE SOURCE: PASDA AERIAL IMAGERY SERVICE (2015)

EarthRes
ENGINEERING AND SCIENCE

6912 Old Easton Road
Pipersville, PA 18947 USA

8000 Combs Farm Drive
Morgantown, WV 26508

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DRAWN BY:	CHECKED BY:
JMK	LFV
DATE:	PROJECT NO:
1/16/2018	061003.051

DRAWING SCALE: 1" = 300'

FIGURE 1
SAMPLE LOCATION MAP

ROCK HILL QUARRY
HANSON AGGREGATES PENNSYLVANIA, LLC
EAST ROCKHILL TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

APPENDIX B

BORING LOGS

Location: Rock Hill Quarry
Date: January 8, 2018
Driller/Logged by: Maine Drilling and Blasting

Boring #	Interval	Description:
1	0-4 ft	Soil/overburden
	4-25 ft	Diabase
2	0-4 ft	Soil/overburden
	4-11 ft	Diabase
	11- 13 ft	Weathered rock
	13-19 ft	Diabase
3	0-9 ft	Soil/overburden
	9-10ft	Diabase
4	0-4 ft	Soil/overburden
	4-7 ft	Diabase
	7-10 ft	Weathered rock
	10 -12 ft	Diabase
5	0-4 ft	Soil/overburden
	4-17 ft	Diabase
6	0-4 ft	Soil/overburden
	4-5 ft	Diabase (boulder)
	5-9 ft	Soil/overburden
	9-10 ft	Diabase (boulder)
	10-39 ft	Soil/overburden
7	0-2 ft	Soil/overburden
	2-13 ft	Diabase
	13-15 ft	Weathered rock
	15-39 ft	Diabase
	39-42 ft	Weathered rock
	42-50 ft	Diabase
8	0-6 ft	Soil/overburden
	6-23 ft	Diabase
	23-26 ft	Weathered rock
	26-50 ft	Diabase
9	0-39 ft	Soil/overburden

APPENDIX C

SITE & SAMPLING PHOTOS

SITE PHOTOS

Southern Quarry Working Area

Eastern Hill Top Diabase Outcrop

SITE PHOTOS

Typical Diabase Boulder

Typical Diabase Boulder

SITE PHOTOS

Diabase Boulder Field, south side of southern access road

Eastern Highwall Diabase

LOCATION OF SAMPLING

SAMPLE PHOTOS

SAMPLE N-1

SAMPLE S-1

SAMPLE PHOTOS

SAMPLE S-2

SAMPLE S-3

APPENDIX D

DRILL CUTTING LABORATORY RESULTS and HIGHWALL HAND SAMPLING RESULTS

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order: 041800547
Customer ID: ERG51
Customer PO:
Project ID:

Attention: Louis Vittorio
ERG (EARTHRES GROUP,INC.)
P.O. BOX 468
PIPERSVILLE, PA 18947

Project: 061003.051

Phone: (215) 766-1211
Fax: (215) 766-1245
Received: 01/09/2018 2:20 PM
Analysis Date: 01/09/2018
Collected: 01/09/2018

Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling). Level B for 0.1% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
S-4 *041800547-0001*	Drill Cuttings - Fines	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
S-5 *041800547-0002*	Drill Cuttings - Fines	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
S-6 *041800547-0003*	Drill Cuttings - Fines	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
S-1 *041800547-0004*	Drill Cuttings - Fines	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
S-2 *041800547-0005*	Drill Cuttings - Fines	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
S-3 *041800547-0006*	Drill Cuttings - Fines	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
S-7 *041800547-0007*	Drill Cuttings - Fines	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
S-8 *041800547-0008*	Drill Cuttings - Fines	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
S-9 *041800547-0009*	Drill Cuttings - Fines	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from: 01/09/2018 23:20:39

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	041800547
Customer ID:	ERG51
Customer PO:	
Project ID:	

Attention:	Louis Vittorio ERG (EARTHRES GROUP,INC.) P.O. BOX 468 PIPERSVILLE, PA 18947	**Phone:**	(215) 766-1211
		Fax:	(215) 766-1245
		Received:	01/09/2018 2:20 PM
		Analysis Date:	01/09/2018
		Collected:	01/09/2018
Project:	061003.051		

Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling). Level B for 0.1% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**

Analyst(s)

Will DiBella (9)

Benjamin Ellis, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from: 01/09/2018 23:20:39

OrderID: 041800547

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 041600547

RECEIVED EMSL CINNAMINSON, N.J. 2018 JAN -9 P 2:19

Company Name : Earth Res Group	**EMSL Customer ID:**		
Street: 6912 Old Easton Rd	**City:** Pipersville	**State/Province:** PA	
Zip/Postal Code: 18947	**Country:** USA	**Telephone #:** 215 766 1211	**Fax #:**
Report To (Name): Louis Vittorio	**Please Provide Results:** ☐ Fax ☒ Email		
Email Address: Lvittorio@earthres.com	**Purchase Order:**		
Project Name/Number: 061003.051	**EMSL Project ID** *(Internal Use Only)*:		
U.S. State Samples Taken:	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt		

EMSL-Bill to: ☒ Same ☐ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☒ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 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.

PCM - Air ☐ Check if samples are from NY
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
☐ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☐ NYS 198.1 (friable in NY)
☐ NYS 198.6 NOB (non-friable-NY)
☐ NYS 198.8 SOF-V
☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
☐ PLM EPA 600/R-93/116 with milling prep (<1%)
☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM Qualitative via Filtration Prep
☐ TEM Qualitative via Drop Mount Prep
☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM (BC only)

Other:
☒ PLM Carb 435 Level B Reporting Limit (< 0.1%)

☐ Check For Positive Stop – Clearly Identify Homogenous Group

Filter Pore Size (Air Samples): ☐ 0.8µm ☐ 0.45µm

Samplers Name: Jarred Swiontek **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
S-4	Drill Cuttings (Fine)	½ gallon	1/9/18 0917
S-5			1/9/18 0920
S-6			1/9/18 0923
S-1			1/9/18 0928
S-2			1/9/18 0931

Client Sample # (s): - **Total # of Samples:** 9

Relinquished (Client): **Date:** 1/9/17 **Time:** 1420

Received (Lab): **Date:** 1-9-17 **Time:** 2:20pm

Comments/Special Instructions:

Page 1 of 2 pages

Controlled Document – Asbestos COC – R10 – 05/09/2016

OrderID: 041800547

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 041800547

RECEIVED
2018 JAN -9 P 2:14
EMSL
CINNAMINSON, N.J.

PHONE:
FAX:

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

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
S-3	Drill cuttings (Fines)	½ gallon	1/9/18 0935
S-7	Drill cuttings (Fines)	½ gallon	1/9/18 0944
S-8	Drill cuttings (Fines)	½ gallon	1/9/18 0947
S-9	Drill cuttings (Fines	½ gallon	1/9/18 0953

***Comments/Special Instructions:**

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	041800978
Customer ID:	ERG51
Customer PO:	
Project ID:	

Attention:	Louis Vittorio ERG (EARTHRES GROUP,INC.) P.O. BOX 468 PIPERSVILLE, PA 18947
Project:	061003.051

Phone:	(215) 766-1211
Fax:	(215) 766-1245
Received:	01/12/2018 2:05 PM
Analysis Date:	01/15/2018
Collected:	

Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling). Level B for 0.1% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
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S-1 *041800978-0002*	Rock Sample	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
S-2 *041800978-0003*	Rock Sample	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
S-3 *041800978-0004*	Rock Sample	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**

Analyst(s)

Andrew Castellano (4)

Benjamin Ellis, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from: 01/15/2018 16:08:14

OrderID: 041800978

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 041800978

PHONE:
FAX:

Company Name: EarthRes Group, Inc.	**EMSL Customer ID:**
Street: 6912 Old Easton Road	**City:** Pipersville / **State/Province:** PA
Zip/Postal Code: 18947 / **Country:** USA	**Telephone #:** 215-766-1211 / **Fax #:** 215-766-1245
Report To (Name): Louis Vittorio	**Please Provide Results:** ☐ Fax ☑ Email
Email Address: lvittorio@earthres.com	**Purchase Order:**
Project Name/Number: 061003.051	**EMSL Project ID** *(Internal Use Only)*:
U.S. State Samples Taken:	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

EMSL-Bill to: ☑ Same ☐ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☒ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 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.*

PCM - Air ☐ Check if samples are from NY
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
☐ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☐ NYS 198.1 (friable in NY)
☐ NYS 198.6 NOB (non-friable-NY)
☐ NYS 198.8 SOF-V
☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
☐ PLM EPA 600/R-93/116 with milling prep (<1%)
☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM Qualitative via Filtration Prep
☐ TEM Qualitative via Drop Mount Prep
☐ Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only)

Other: ☑ PLM CARB 435 Level B (reporting limit to <0.1%)

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☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Filter Pore Size (Air Samples): ☐ 0.8µm ☐ 0.45µm

Samplers Name: John A. Yenchik **Samplers Signature:** John A Yenchik

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
N-1	Rock Sample	<1 lb.	1/12/18/1200
S-1	Rock Sample	<1 lb.	1/12/18/1200
S-2	Rock Sample	<1 lb.	1/12/18/1200
S-3	Rock Sample	<1 lb.	1/12/18/1200

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): John A Yenchik **Date:** 1/12/18 **Time:** 1405

Received (Lab): **Date:** 1/12/18 **Time:** 205pm

Comments/Special Instructions:

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Controlled Document – Asbestos COC – R10 – 05/09/2016