May 28, 2021
Ms. Audra Points
Northern Kentucky University
100 Nunn Drive
Highland Heights, Kentucky 41099

Re: Asbestos and Regulated Materials Surveys Report Addendum
Woodcrest Apartments
10 Campbell Drive
Highland Heights, Kentucky
Geotechnology Project No. J036265.01

Dear Ms. Points:

Pursuant to your May 18, 2021 email, Geotechnology, Inc. (Geotechnology) is pleased to provide this addendum to our May 7, 2021 Asbestos and Regulated Materials Surveys report for the referenced project. Our scope of services for this addendum included laboratory asbestos analysis of six roofing samples collected by Northern Kentucky University (NKU) personnel and a letter report.

NKU personnel provided Geotechnology with one shingle and one shingle underlayment sample reportedly collected from each of the roofs of the Sycamore, Oak and Willow apartment buildings for a total of six samples. Geotechnology was not present during the sample collection and cannot verify sample locations.

Using standard chain-of-custody procedures, Geotechnology submitted the suspect asbestos containing materials (ACM) samples to ALS Environmental laboratory in Cincinnati, Ohio for identification by Polarized Light Microscopy (PLM) coupled with dispersion staining, according to the test method. “Method for Determination of Asbestos in Bulk Building Materials” (EPA/600/R93/116). Based on client provided information, samples were labeled as follows:

Example: 1-S

1 = Building
S = Shingle (U = Underlayment)

Building 1 = Oak
Building 2 = Sycamore
Building 3 = Willow

Laboratory analyses of the submitted samples did not detect the presence of asbestos. A copy of the asbestos laboratory data sheets is provided in Appendix A.

Geotechnology cannot represent that roofing samples were collected from the Sycamore, Oak and Willow apartment building roofs.

* * * * * *

The following appendices are included in and complete this addendum report:

Appendix A - Asbestos Laboratory Data Sheets

* * * * * *

We appreciate the opportunity to provide our professional environmental consulting services to Northern Kentucky University on this project. If you have any questions or comments, please contact me at (513) 373-1721.

Very truly yours,
GEOTECHNOLOGY, INC.

George Hummeldorf
Environmental Group Manager, East Region

RGH/BJL:rgh

Copies emailed: Client

APPENDIX A

ASBESTOS LABORATORY DATA SHEETS

25-May-2021

George Hummeldorf
Geotechnology, Inc.
1398 Cox Avenue
Erlanger, KY 41018

Re: **NKU OAK, SYCAMORE & WILLOW; J036265.01** Work Order: **21051171**

Dear George,

ALS Environmental received 6 samples on 21-May-2021 11:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 10.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Rob Nieman

Electronically approved by: Rob Nieman

Rob Nieman
Project Manager

Report of Laboratory Analysis

ALS Environmental

Date: 25-May-21

Client: Geotechnology, Inc.
Project: NKU OAK, SYCAMORE & WILLOW; J036265.01
Work Order: **21051171**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21051171-01	1-S	Bulk		5/19/2021	5/21/2021 11:00	☐
21051171-02	1-U	Bulk		5/19/2021	5/21/2021 11:00	☐
21051171-03	2-S	Bulk		5/19/2021	5/21/2021 11:00	☐
21051171-04	2-U	Bulk		5/19/2021	5/21/2021 11:00	☐
21051171-05	3-S	Bulk		5/19/2021	5/21/2021 11:00	☐
21051171-06	3-U	Bulk		5/19/2021	5/21/2021 11:00	☐

Client:	Geotechnology, Inc.
Project:	NKU OAK, SYCAMORE & WILLOW; J036265.01
Work Order:	21051171

Case Narrative

It is the responsibility of the client to notify the lab of any certification requirements in writing via the chain of custody as this may determine the preparation and analytical procedures employed. Laboratory accreditation (NVLAP Lab ID 101917) does not in any way constitute approval or endorsement by any accrediting body or agency of the federal government. This report must not be used to claim endorsement by NVLAP, NIST, or any agency of the U.S. Government. Please contact ALS Cincinnati QA/QC Manager for accreditation identifications and certifications.
All sample collection is performed outside of ALS and is the sole responsibility of the client. Sample condition acceptable upon receipt except where noted. Estimates of concentration are semi-quantitative and are made on an area basis. Results apply only to portions of samples analyzed. Samples disposed after 60 days.
All analytical data (results) and technical content (comments) related to the preparation and analysis of the samples stated herein is the responsibility of the analyst. Raw data is reviewed and validated by a qualified peer analyst and imported into the Laboratory Information Management System (LIMS) where it is formatted by the cover letter signatory charged with compiling and sending the final LIMS generated report to the client.
The reporting limit (RL) for asbestos in bulk materials is 1% and is a function of the quantity of sample analyzed, the nature of any matrix interferences, sample preparation, and fiber size and distribution. Results reported as ND indicate that no asbestos was detected. Results reported as Trace indicate that asbestos was detected at some level confidently determined to be <1% which is considered inconclusive according to New York ELAP.
ALS performs variety of PLM methods for asbestos in bulk building materials including EPA 600/R-93/116, NIOSH 9002, ELAP 198.1, and ELAP 198.6. In addition, we perform a modified uncertified version of EPA 600/R-04/004 for asbestos in vermiculite which reports asbestos as present or absent only, an in-house developed uncertified method ALS SOP ENV 004 for asbestos in soil, and asbestos in soil by ASTM D7521.
Regardless of the method requested, all samples are examined according to mandatory method protocol. Any optional method protocol are eliminated from the initial analysis but may be performed upon client request. These may include; insufficient sample volume rejection*, phase separation of layered or heterogeneous samples, ashing to remove organic interferences, acid dissolution to remove mineral carbonate interferences, point counting**, and analysis by transmission electron microscopy (TEM) is recommended to verify all ND PLM results.
All samples are examined by stereomicroscope for the determination of homogeneity, texture, friability, color, and extent of fibrous components. Non-asbestos materials such as foil, paper, metal, plastic, pebbles, or organic debris are ignored and a subsample of the remaining material homogenized by some means for examination by polarized light microscope (PLM). Information obtained via both stereomicroscope and PLM are used in the final qualitative and quantitative analysis of fibrous components.
NOTE: Any visible building debris in soil samples such as pieces of drywall, roofing material,

insulation, concrete, etc., are not included in the soil analysis. If present, these are considered possible asbestos containing materials (ACM) and may be analyzed as separate samples upon client request.
*Sufficient sample volume is material dependent. For samples such as floor tiles, roofing felts, sheet insulation, etc., three to four square inches of the layered material is preferred. For materials such as ceiling tiles, loose fill insulation, pipe insulation, etc., one cubic inch (~15cc) is preferred. For samples of thin coating materials such as paints, mastics, spray plasters, etc., a smaller sample size may be suitable. For vermiculite analysis, a one gallon ziploc bag full of dry, loose material is acceptable. For ENV 004 soil samples, a 4oz jar is recommended. The ASTM D7521 Soil method requires a minimum of 8oz and a maximum of 16oz of homogeneous soil.
**PLM samples at or near the 1% detection limit may be analyzed by the 400 point count analysis which refers to method EPA 600/M4/82/020, or AHERA method EPA 40 CFR Part 763, Sub. E, App. E as these are synonymous

ALS Environmental

Date: *25-May-21*

Client: Geotechnology, Inc. **Work Order:** 21051171
Project: NKU OAK, SYCAMORE & WILLOW; J036265.01

Lab ID: 21051171-01A **Collection Date:** 5/19/2021
Client Sample ID: 1-S **Matrix:** BULK

Analytical Results

Analyses	Result	Units		
Asbestos by PLM with Ashing				Date Analyzed **5/24/2021**
Macroscopic Examination	Prep Date:	**5/22/2021**	**E600/R-93/116**	Analyst: **MRS**
Color	Black			
Description	Material			
Homogeneity	Homogeneous			
Texture	Resinous			
Asbestiform Minerals			**E600/R-93/116**	
Amosite	ND	%		
Anthophyllite	ND	%		
Chrysotile	ND	%		
Crocidolite	ND	%		
Tremolite - actinolite	ND	%		
Total asbestos	**ND**	**%**		

Lab ID: 21051171-02A **Collection Date:** 5/19/2021
Client Sample ID: 1-U **Matrix:** BULK

Analytical Results

Analyses	Result	Units		
Asbestos by PLM with Ashing				Date Analyzed **5/24/2021**
Macroscopic Examination	Prep Date:	**5/22/2021**	**E600/R-93/116**	Analyst: **MRS**
Color	Black			
Description	Material			
Homogeneity	Homogeneous			
Texture	Resinous			
Asbestiform Minerals			**E600/R-93/116**	
Amosite	ND	%		
Anthophyllite	ND	%		
Chrysotile	ND	%		
Crocidolite	ND	%		
Tremolite - actinolite	ND	%		
Total asbestos	**ND**	**%**		

Note:

ALS Environmental

Date: *25-May-21*

Client: Geotechnology, Inc. **Work Order:** 21051171
Project: NKU OAK, SYCAMORE & WILLOW; J036265.01

Lab ID: 21051171-03A **Collection Date:** 5/19/2021
Client Sample ID: 2-S **Matrix:** BULK

Analytical Results

Analyses	Result	Units		
Asbestos by PLM with Ashing				Date Analyzed **5/24/2021**
Macroscopic Examination	Prep Date:	**5/22/2021**	**E600/R-93/116**	Analyst: **MRS**
Color	Black			
Description	Material			
Homogeneity	Homogeneous			
Texture	Resinous			
Asbestiform Minerals			**E600/R-93/116**	
Amosite	ND	%		
Anthophyllite	ND	%		
Chrysotile	ND	%		
Crocidolite	ND	%		
Tremolite - actinolite	ND	%		
Total asbestos	**ND**	**%**		

Lab ID: 21051171-04A **Collection Date:** 5/19/2021
Client Sample ID: 2-U **Matrix:** BULK

Analytical Results

Analyses	Result	Units		
Asbestos by PLM with Ashing				Date Analyzed **5/24/2021**
Macroscopic Examination	Prep Date:	**5/22/2021**	**E600/R-93/116**	Analyst: **MRS**
Color	Black			
Description	Material			
Homogeneity	Homogeneous			
Texture	Resinous			
Asbestiform Minerals			**E600/R-93/116**	
Amosite	ND	%		
Anthophyllite	ND	%		
Chrysotile	ND	%		
Crocidolite	ND	%		
Tremolite - actinolite	ND	%		
Total asbestos	**ND**	**%**		

Note:

ALS Environmental

Date: *25-May-21*

Client: Geotechnology, Inc. **Work Order:** 21051171
Project: NKU OAK, SYCAMORE & WILLOW; J036265.01

Lab ID: 21051171-05A **Collection Date:** 5/19/2021
Client Sample ID: 3-S **Matrix:** BULK

Analytical Results

Analyses	Result	Units		
Asbestos by PLM with Ashing				Date Analyzed **5/24/2021**
Macroscopic Examination	Prep Date:	**5/22/2021**	**E600/R-93/116**	Analyst: **MRS**
Color	Black			
Description	Material			
Homogeneity	Homogeneous			
Texture	Resinous			
Asbestiform Minerals			**E600/R-93/116**	
Amosite	ND	%		
Anthophyllite	ND	%		
Chrysotile	ND	%		
Crocidolite	ND	%		
Tremolite - actinolite	ND	%		
Total asbestos	**ND**	**%**		

Lab ID: 21051171-06A **Collection Date:** 5/19/2021
Client Sample ID: 3-U **Matrix:** BULK

Analytical Results

Analyses	Result	Units		
Asbestos by PLM with Ashing				Date Analyzed **5/24/2021**
Macroscopic Examination	Prep Date:	**5/22/2021**	**E600/R-93/116**	Analyst: **MRS**
Color	Black			
Description	Material			
Homogeneity	Homogeneous			
Texture	Resinous			
Asbestiform Minerals			**E600/R-93/116**	
Amosite	ND	%		
Anthophyllite	ND	%		
Chrysotile	ND	%		
Crocidolite	ND	%		
Tremolite - actinolite	ND	%		
Total asbestos	**ND**	**%**		

Note:

ALS Environmental

Date: 25-May-21

Client: Geotechnology, Inc.
Project: NKU OAK, SYCAMORE & WILLOW; J036265.01
WorkOrder: **21051171**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
E	EPA Method
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SDL	Sample Detection Limit
SW	SW-846 Method

Units Reported	Description
%	

ALS Environmental

Sample Receipt Checklist

Client Name: **GEOTECHNOLOGY-ERLANGER** Date/Time Received: **21-May-21 11:00**

Work Order: **21051171** Received by: **SNH**

Checklist completed by: Stephanie Harrington 21-May-21 Reviewed by: Rob Nieman 25-May-21

eSignature / Date / eSignature / Date

Matrices:

Carrier name: Client

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☐	No ☑	
Temperature(s)/Thermometer(s):			
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:			
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ANALYTICAL REQUEST FORM

49598

ALS | Environmental
4388 Glendale Milford Rd.
Cincinnati, Ohio 45242
Phone: (800) 458-1493 or (513) 733-5336
Fax: (513) 733-5347

Page 1 of 1

☐ **REGULAR Status** 2105171

☐ **RUSH Status Required - ADDITIONAL CHARGE**

RESULTS REQUIRED BY TUESDAY 5/25/2021 (DATE)

CONTACT ALS LABORATORY GROUP PRIOR TO SENDING SAMPLES

Date 5/21/2021 Purchase Order No. SAME AS FOR WORK ORDER 21041096

Company Name GEOTECHNOLOGY

Address 1398 COX AVENUE

ERLANGER (City) KY (State) 41018 (Zip)

Send Report To GEORGE HUMMELDORF

Email Address ghummeldorf@geotechnology.com

Telephone (513) 373-4721 CELL

Alt. Contact Name JACOB WALKER

Alt. Contact Info JWALKER@GEOTECHNOLOGY.COM

Quote No.

Sampling Site NKU OAK, SYCAMORE & WILLOW

Date/Time of Collection 5/19/2021

Project No. J036265.01

Billing Address (if different)

Lab Use Only	Client Sample Number	Media Type	Sample Volume (L)	Sample Time (min.)	ANALYSES REQUESTED - Use Method Number if Known
	1-S	SHINGLE			ASBESTOS PLM
	1-U	UNDER-LAYMENT			
	2-S	SHINGLE			
	2-U	UNDER-LAYMENT			
	3-S	SHINGLE			
	3-U	UNDER-LAYMENT			

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

Relinquished by: (Signature)	Date / Time 5/24/21 11:00 AM	Received by: (Signature)	Date / Time 5/01/21 11:00
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time

ALS LAB USE ONLY

COOLER TEMP: °C Taken with IR#:

COOLING METHOD: NONE COOLER WET ICE DRY ICE ICE PACK

DELIVERY METHOD: CLIENT DROP BOX FEDEX UPS
STD MAIL PRTY MAIL ALS COURIER OTHER:

CUSTODY SEALS: COOLER PACKAGE SAMPLES NOT REQUIRED

EQUIP. RETURNED: