

SAF-RC-234
100-IU-2 & 100-IU-6 Remaining
Waste Sites – Other
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

No Distribution Required

KW 5/12/16
INITIAL/DATE

COMMENTS:

SDG D1611947

SAF-RC-234

Rad only

Chem only

Rad & Chem

Complete

Partial

Sample Location: 600-385 In-Process Asbestos



Contact: Kevin Griffiths
Company: ALS Laboratory Group, Inc.
Address: 960 W. LeVoy Dr.,
Salt Lake City, UT 84123

REFERENCE DATA

Project / Location: 1611947

PO Number: 1611947

ALS Work Order: 16041041

TEM Bulk Narrative: Analysis performed on FEI Tecnai TEM with integrated EDXA capabilities. Morphology, EDXA, and SAED measurements used to determine fiber species. Representative EDXA spectra of each asbestos type detected included. Asbestos percentages based on estimates by area in final residue. Collection is performed outside ALS and is the responsibility of the client. Samples disposed after 60 days. TEM grids archived 3 years. Results apply only to portions analyzed. For gravimetrically prepared samples, asbestos reported as "0.00" is equivalent to ND.

TEM Bulk Method Codes: Method EPA/600/R-93/116 specifies preparation procedures according to the type of material being analyzed. "EPA 600" refers to samples directly prepared by grinding with mortar and pestle. Samples that cannot be prepared directly may require ashing in a muffle furnace, acid digestion, or both. "EPA 600 ASH" refers to resinous or flexible samples ashed in a muffle furnace to burn off interfering organics. "EPA 600 ACID" refers to cementitious samples treated with acid to dissolve mineral carbonates. "ELAP 198.4" refers to samples prepared using both ashing and acid due to sample type or client requirements. "ELAP 198.6" refers to samples analyzed by PLM requiring TEM confirmation. "ELAP 198.1" refers to samples analyzed by PLM which do not require TEM analysis. "EPA 600/R-04" refers to a modified version of method EPA 600/R-04/004, known as The Cincinnati Method, for analysis of asbestos in vermiculite by PLM/TEM where fine material remaining from ND PLM analyses may be analyzed by TEM upon request. This qualitative method reports asbestos as PRESENT or ABSENT only; no quantity determined. "ENV 004" refers to the ALS SOP for analysis of asbestos in soil by PLM/TEM in which fines from ND PLM soils may be analyzed by TEM upon request. "+STOP" denotes samples not analyzed since a previous sample in a series was positive.

ALS Environmental Accredited through New York ELAP (Lab #11371)

NOTES: NA=Not Applicable, ND=None Detected, NON-ACM=Weight % of residue <1*,
TRACE=<1% for samples collected in US or <0.1% for samples collected in Canada,
† Act-Tremolite concentrations include Actinolite as well as the Libby Amphiboles;
Tremolite, Winchite, & Richterite.

*All samples analyzed regardless of weight percent of residue.

TEM ANALYSIS DATA

EDXA Resolution: <175 eV
Accelerating Voltage: 100keV
Prep Start Date: 5/3/2016

Calibration Constant (10,000x): 1.02 $\mu\text{m}/\text{cm}$
Camera Constant: 129.25mm-Å
Analysis Start Date: 5/3/2016

Pamela Johnson

Pamela Johnson
ALS TEM Analyst

Shawn Smythe

Shawn Smythe
ALS Project Manager

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SAMPLE IDENTIFICATION

Client Sample ID:	J1V8V3-A	J1V8V4-A
ALS Sample ID:	16041041-01	16041041-02
Method Requested:	EPA 600 ACID	EPA 600 ACID

SAMPLE DESCRIPTION

Homogeneity:	Homogeneous	Homogeneous
Color:	Grey	Grey
Texture:	Crumbly	Crumbly
Description:	Plaster	Plaster

GRAVIMETRIC DATA

Starting Weight (g):	0.5517	0.8291
Final Weight (g):	0.4993	0.6898
Weight % Residue:	90.5021	83.1986

% ASBESTOS IN SAMPLE

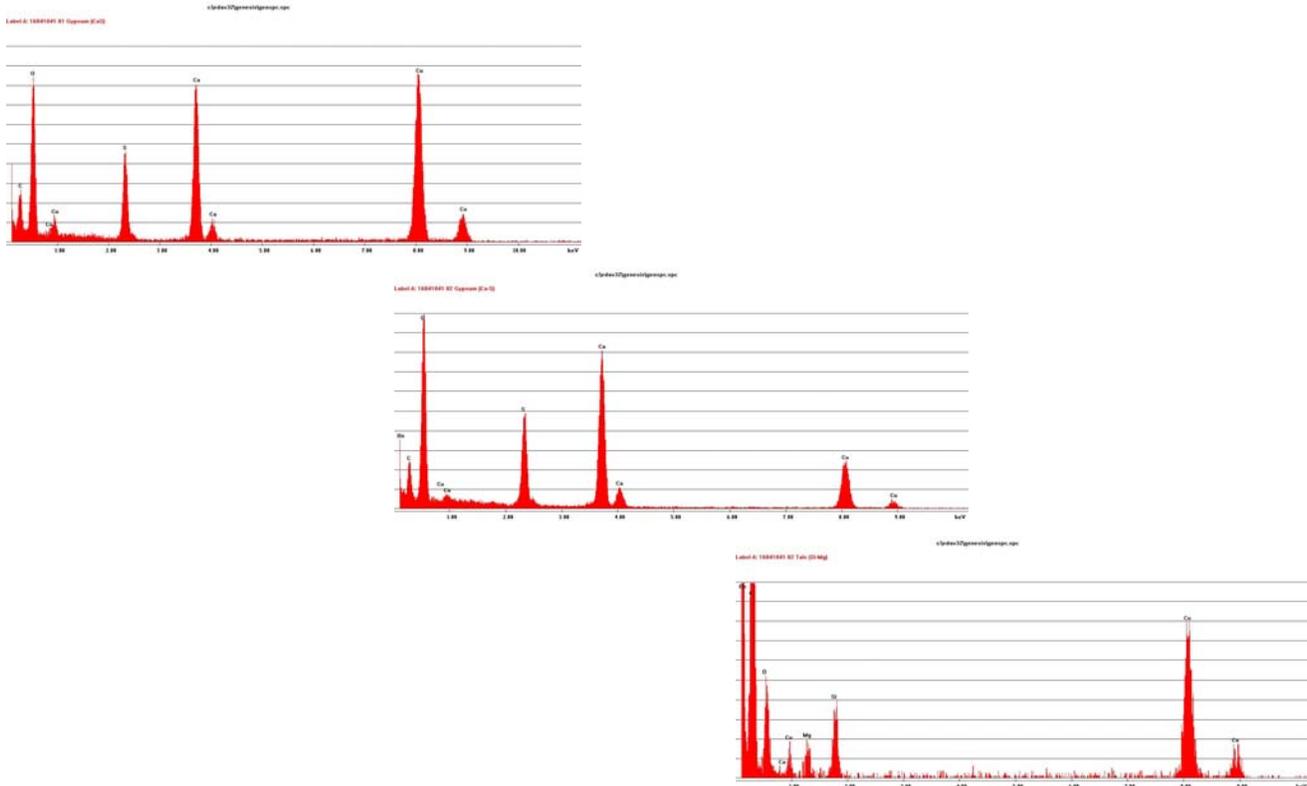
Chrysotile:	0.0000	0.0000
Amosite:	0.0000	0.0000
Crocidolite:	0.0000	0.0000
Act-Tremolite†:	0.0000	0.0000
Anthophyllite:	0.0000	0.0000
Total Asbestos:	0.0000	0.0000

NOTES

Though no asbestos fibers were detected, both samples contained gypsum (Ca-S) a naturally occurring fibrous mineral abundant in drywall. Sample J1V8V4-A also contained some small talc (Si-Mg) fibril bundles whose morphology resembles the serpentine asbestiform mineral, chrysotile.

EDXA SPECTRA

NOTE: Spurious peaks may originate from low background sample holder, column pole pieces, TEM grids, prep solutions or matrix materials.



**Asbestos PLM
 Cover Sheet**

Sample Date: April 20, 2016
 Receipt Date: April 20, 2016
 Reporting Date: April 25, 2016
 SDG #: MA12310
 SAF#: RC-234
 Sampling Location: 100-IU-2 & 100-IU-6 Remaining Waste
 Data Deliverable: 3 Day Turn

Customer Sample Number	Laboratory Sample Number	Analytical Batch Identification	Sample Matrix
J1V8V3	M8H2X	6116031	OTHER
J1V8V4	M8H20	6116031	OTHER

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Rhonda Wagar
 Rhonda Wagar
 Project Manager

We certify that the following samples were prepared by Polarized Light Microscopy for asbestos and other fibrous constituents using TestAmerica's procedure, RL-ASB-002. The samples were acceptable upon receipt except where noted. Mountings of fibers observed and representative portions of the material were prepared in one or more appropriate refractive index liquids (1.550, 1.605, 1.680) and examined by Polarized Light Microscopy*. Estimates of concentration are made on an area basis. The results of the analysis apply only to the portions of materials analyzed and are summarized on the attached Asbestos PLM analysis data sheet. TestAmerica will dispose of all bulk samples after 60 days unless other arrangements are made.

TestAmerica Richland currently has one qualified analyst for PLM analysis by RL-ASB-002 based on NIOSH 9002. The laboratory prepared duplicate slides of 10% of the samples analyzed; these slides are analyzed by the original analyst and not a second analyst. The duplicate sample slide is analyzed on a different day (where possible) to the original slide and meets acceptance criteria of 80% relative difference between the analyses. If the relative difference is greater than 80%, an additional slide is prepared and the analysis is repeated. *Some samples may contain fibers that are not visible by PLM and can only be discovered by electron microscopy techniques.

TA Richland
Asbestos PLM

Analyst:	R. Clark	SOP Information	Method	Batch #
Analyst Signature:	<i>[Signature]</i>	RL-ASB-002	NIOSH 9002	6116031
Date:	4/25/16	Revision 7		MA12310
Sample ID	M8H2X1AA	M8H201AA		
Client ID	J1V8V3'	J1V8V4'		
Sample Description	Wall	Wall		
Homogeneous Color	N	N		
% Visible Fibers	Off-white, Brown 3	Off-white, Brown 3		
Asbestos Analysis				
% Chrysotile	TRA	1		
% Amosite	TRA	ND		
% Crocidolite	ND	ND		
% Tremolite	ND	ND		
% Actinolite	ND	ND		
% Anthrophyllite	ND	ND		
% Total Asbestos	TRA	1		
Other Materials				
% Cellulose	1	1		
% Glass Fibers	TRA	1		
% Other fibers	ND	ND		
% Non-fibrous	99	97		

Comments:

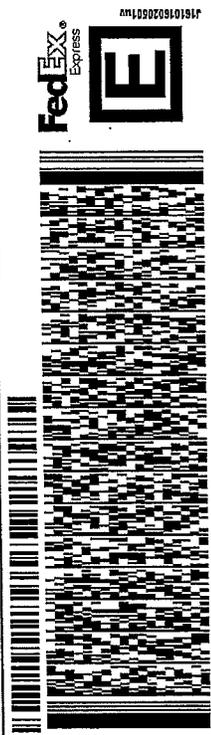
Note: "ND" stands for "None Detected", "TRA" stands for "<1%"

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