



# Native American Youth and Family Center

5135 NE Columbia Blvd, Portland, OR 97218 | p 503.288.8177 | f 503.288.1260 | nayapdx.org

DATE: May 1, 2017

TO: NAYA Community, Board & Staff

FROM: Paul Lumley, NAYA Executive Director

SUBJECT: Results from Soil Testing at the NAYA Family Center

NAYA contracted with Apex Labs to collect soil samples for at the NAYA Family Center, which included the athletics fields, gardens, berry patches and sweat lodge area. The soil testing occurred March 16, 2017. Thirteen metal contaminants were tested: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium silver, thallium and zinc. I received the attached results of the test on March 30, 2017. Unfortunately, Apex Labs did not test the sweat lodge area, so we asked them to come back to test this area. I verbally communicated to NAYA Environmental Study Taskforce members that there was no urgent issue and that I would forward the test results when the sweat lodge soil test results were completed. We received the test results for the sweat lodge area on April 25, 2017.

The U.S. Environmental Protection Agency (EPA) sets a limit on each of these contaminants, which is based on risk-based screening levels. The Oregon Department of Environmental Quality (ODEQ) acknowledges that many metal contaminants are naturally occurring and developed a table to describe these background metals throughout Oregon, including the Portland Basin (attached). Any contaminants above the ODEQ background level could trigger processes for eventual cleanup. Several of the contaminants tested were above the EPA reporting limit, but all were below ODEQ's background levels. The conclusion is that there are no concerns about metal contaminants that would require a cleanup.

I realize that there may be some remaining questions about the soil test results, especially with the garden areas. If requested, I could work towards a guest speaker with expertise in this area.

Please let me know if you have any questions or concerns.

Attachments

# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Wednesday, March 29, 2017

Darla Hilmoie  
Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

RE: Metals / [none]

Enclosed are the results of analyses for work order A7C0531, which was received by the laboratory on 3/16/2017 at 1:50:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [DAuvil@apex-labs.com](mailto:DAuvil@apex-labs.com), or by phone at 503-718-2323.

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Apex Laboratories



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Darrell Auvil, Project Manager

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Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe

**Reported:**  
03/29/17 12:05

## ANALYTICAL REPORT FOR SAMPLES

### SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Main Garden	A7C0531-01	Soil	03/16/17 09:10	03/16/17 13:50
Garden Area	A7C0531-02	Soil	03/16/17 09:20	03/16/17 13:50
Blackberry East	A7C0531-03	Soil	03/16/17 09:25	03/16/17 13:50
Blackberry West	A7C0531-04	Soil	03/16/17 09:35	03/16/17 13:50
Upper Fields	A7C0531-05	Soil	03/16/17 10:45	03/16/17 13:50
Lower Fields	A7C0531-06	Soil	03/16/17 11:15	03/16/17 13:50

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Darrell Auvil, Project Manager

Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe

Reported:  
03/29/17 12:05

## ANALYTICAL SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>Main Garden (A7C0531-01)</b>			<b>Matrix: Soil</b>					
Batch: 7031008								
Antimony	ND	---	2.09	mg/kg dry	10	03/27/17 17:29	EPA 6020A	
<b>Arsenic</b>	<b>4.94</b>	---	2.09	"	"	"	"	
Beryllium	ND	---	0.419	"	"	"	"	
<b>Cadmium</b>	<b>0.503</b>	---	0.419	"	"	"	"	
<b>Chromium</b>	<b>20.1</b>	---	2.09	"	"	"	"	
<b>Copper</b>	<b>32.8</b>	---	2.09	"	"	"	"	
<b>Lead</b>	<b>46.3</b>	---	0.419	"	"	"	"	
Mercury	ND	---	0.168	"	"	"	"	
<b>Nickel</b>	<b>12.5</b>	---	2.09	"	"	"	"	
Selenium	ND	---	2.09	"	"	"	"	
Silver	ND	---	0.419	"	"	"	"	
Thallium	ND	---	0.419	"	"	"	"	
<b>Zinc</b>	<b>147</b>	---	8.38	"	"	"	"	
<b>Garden Area (A7C0531-02)</b>			<b>Matrix: Soil</b>					
Batch: 7031008								
Antimony	ND	---	1.60	mg/kg dry	10	03/27/17 17:32	EPA 6020A	
<b>Arsenic</b>	<b>2.23</b>	---	1.60	"	"	"	"	
Beryllium	ND	---	0.320	"	"	"	"	
Cadmium	ND	---	0.320	"	"	"	"	
<b>Chromium</b>	<b>15.4</b>	---	1.60	"	"	"	"	
<b>Copper</b>	<b>21.7</b>	---	1.60	"	"	"	"	
<b>Lead</b>	<b>14.4</b>	---	0.320	"	"	"	"	
Mercury	ND	---	0.128	"	"	"	"	
<b>Nickel</b>	<b>9.53</b>	---	1.60	"	"	"	"	
Selenium	ND	---	1.60	"	"	"	"	
Silver	ND	---	0.320	"	"	"	"	
Thallium	ND	---	0.320	"	"	"	"	
<b>Zinc</b>	<b>73.3</b>	---	6.41	"	"	"	"	
<b>Blackberry East (A7C0531-03)</b>			<b>Matrix: Soil</b>					
Batch: 7031008								
Antimony	ND	---	1.37	mg/kg dry	10	03/27/17 17:35	EPA 6020A	
<b>Arsenic</b>	<b>3.35</b>	---	1.37	"	"	"	"	
<b>Beryllium</b>	<b>0.371</b>	---	0.275	"	"	"	"	
Cadmium	ND	---	0.275	"	"	"	"	

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Darrell Auvil, Project Manager

Native American Use & Family Center  
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Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe

Reported:  
03/29/17 12:05

## ANALYTICAL SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Blackberry East (A7C0531-03)			Matrix: Soil					
Chromium	13.9	---	1.37	mg/kg dry	10	"	EPA 6020A	
Copper	17.6	---	1.37	"	"	"	"	
Lead	16.5	---	0.275	"	"	"	"	
Mercury	ND	---	0.110	"	"	"	"	
Nickel	13.0	---	1.37	"	"	"	"	
Selenium	ND	---	1.37	"	"	"	"	
Silver	ND	---	0.275	"	"	"	"	
Thallium	ND	---	0.275	"	"	"	"	
Zinc	82.3	---	5.49	"	"	"	"	
Blackberry West (A7C0531-04)			Matrix: Soil					
Batch: 7031008								
Antimony	ND	---	1.33	mg/kg dry	10	03/27/17 18:18	EPA 6020A	
Arsenic	5.35	---	1.33	"	"	"	"	
Beryllium	0.452	---	0.266	"	"	"	"	
Cadmium	0.399	---	0.266	"	"	"	"	
Chromium	18.2	---	1.33	"	"	"	"	
Copper	23.4	---	1.33	"	"	"	"	
Lead	29.4	---	0.266	"	"	"	"	
Mercury	ND	---	0.106	"	"	"	"	
Nickel	17.8	---	1.33	"	"	"	"	
Selenium	ND	---	1.33	"	"	"	"	
Silver	ND	---	0.266	"	"	"	"	
Thallium	ND	---	0.266	"	"	"	"	
Zinc	173	---	5.32	"	"	"	"	
Upper Fields (A7C0531-05)			Matrix: Soil					
Batch: 7031008								
Antimony	ND	---	1.35	mg/kg dry	10	03/27/17 18:21	EPA 6020A	
Arsenic	4.70	---	1.35	"	"	"	"	
Beryllium	0.592	---	0.269	"	"	"	"	
Cadmium	0.310	---	0.269	"	"	"	"	
Chromium	19.8	---	1.35	"	"	"	"	
Copper	18.9	---	1.35	"	"	"	"	
Lead	22.4	---	0.269	"	"	"	"	
Mercury	ND	---	0.108	"	"	"	"	
Nickel	16.7	---	1.35	"	"	"	"	

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Darrell Auviel, Project Manager

Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe

Reported:  
03/29/17 12:05

## ANALYTICAL SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Upper Fields (A7C0531-05)			Matrix: Soil					
Selenium	ND	---	1.35	mg/kg dry	10	"	EPA 6020A	
Silver	ND	---	0.269	"	"	"	"	
Thallium	ND	---	0.269	"	"	"	"	
Zinc	86.0	---	5.38	"	"	"	"	
Lower Fields (A7C0531-06)			Matrix: Soil					
Batch: 7031008								
Antimony	ND	---	1.41	mg/kg dry	10	03/27/17 18:25	EPA 6020A	
Arsenic	4.12	---	1.41	"	"	"	"	
Beryllium	0.537	---	0.282	"	"	"	"	
Cadmium	ND	---	0.282	"	"	"	"	
Chromium	17.6	---	1.41	"	"	"	"	
Copper	21.2	---	1.41	"	"	"	"	
Lead	17.1	---	0.282	"	"	"	"	
Mercury	ND	---	0.113	"	"	"	"	
Nickel	16.5	---	1.41	"	"	"	"	
Selenium	ND	---	1.41	"	"	"	"	
Silver	ND	---	0.282	"	"	"	"	
Thallium	ND	---	0.282	"	"	"	"	
Zinc	73.9	---	5.65	"	"	"	"	

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Darrell Auvil, Project Manager

Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218Project: **Metals**  
Project Number: [none]  
Project Manager: Darla HilmoeReported:  
03/29/17 12:05

## ANALYTICAL SAMPLE RESULTS

Percent Dry Weight								
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>Main Garden (A7C0531-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 7030745</b>			
% Solids	51.1	---	1.00	% by Weight	1	03/20/17 07:08	EPA 8000C	
<b>Garden Area (A7C0531-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 7030745</b>			
% Solids	67.0	---	1.00	% by Weight	1	03/20/17 07:08	EPA 8000C	
<b>Blackberry East (A7C0531-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 7030745</b>			
% Solids	73.0	---	1.00	% by Weight	1	03/20/17 07:08	EPA 8000C	
<b>Blackberry West (A7C0531-04)</b>			<b>Matrix: Soil</b>		<b>Batch: 7030745</b>			
% Solids	74.0	---	1.00	% by Weight	1	03/20/17 07:08	EPA 8000C	
<b>Upper Fields (A7C0531-05)</b>			<b>Matrix: Soil</b>		<b>Batch: 7030745</b>			
% Solids	72.1	---	1.00	% by Weight	1	03/20/17 07:08	EPA 8000C	
<b>Lower Fields (A7C0531-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 7030745</b>			
% Solids	68.8	---	1.00	% by Weight	1	03/20/17 07:08	EPA 8000C	

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Native American Use &amp; Family Center

Project: **Metals**5135 NE Columbia Blvd  
Portland, OR 97218Project Number: [none]  
Project Manager: Darla HilmoeReported:  
03/29/17 12:05

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7031008 - EPA 3051A						Soil						
Blank (7031008-BLK1)						Prepared: 03/27/17 12:48		Analyzed: 03/27/17 17:17				
EPA 6020A												
Antimony	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	---	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Copper	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	---	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	---	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	

**LCS (7031008-BS1)**

Prepared: 03/27/17 12:48 Analyzed: 03/27/17 17:20

<b>EPA 6020A</b>												
Antimony	24.8	---	1.00	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Arsenic	50.1	---	1.00	"	"	50.0	---	100	"	---	---	
Beryllium	26.3	---	0.200	"	"	25.0	---	105	"	---	---	
Cadmium	53.1	---	0.200	"	"	50.0	---	106	"	---	---	
Chromium	50.6	---	1.00	"	"	"	---	101	"	---	---	
Copper	52.0	---	1.00	"	"	"	---	104	"	---	---	
Lead	55.6	---	0.200	"	"	"	---	111	"	---	---	
Mercury	0.936	---	0.0800	"	"	1.00	---	94	"	---	---	
Nickel	50.8	---	1.00	"	"	50.0	---	102	"	---	---	
Selenium	27.2	---	1.00	"	"	25.0	---	109	"	---	---	
Silver	26.6	---	0.200	"	"	"	---	107	"	---	---	
Thallium	27.0	---	0.200	"	"	"	---	108	"	---	---	
Zinc	52.0	---	4.00	"	"	50.0	---	104	"	---	---	

**Duplicate (7031008-DUP1)**

Prepared: 03/27/17 12:48 Analyzed: 03/27/17 17:39

QC Source Sample: Blackberry East (A7C0531-03)

<b>EPA 6020A</b>												
Antimony	ND	---	1.46	mg/kg dry	10	---	ND	---	---	---	40%	
Arsenic	2.89	---	1.46	"	"	---	3.35	---	---	15	40%	

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Darrell Auvil, Project Manager



Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe**Reported:**  
03/29/17 12:05

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7031008 - EPA 3051A						Soil						
Duplicate (7031008-DUP1)						Prepared: 03/27/17 12:48		Analyzed: 03/27/17 17:39				
QC Source Sample: Blackberry East (A7C0531-03)												
EPA 6020A												
Beryllium	0.307	---	0.292	mg/kg dry	"	---	0.371	---	---	19	40%	
Cadmium	0.307	---	0.292	"	"	---	0.261	---	---	16	40%	
Chromium	12.5	---	1.46	"	"	---	13.9	---	---	11	40%	
Copper	22.6	---	1.46	"	"	---	17.6	---	---	25	40%	
Lead	16.7	---	0.292	"	"	---	16.5	---	---	1	40%	
Mercury	ND	---	0.117	"	"	---	ND	---	---	---	40%	
Nickel	12.5	---	1.46	"	"	---	13.0	---	---	4	40%	
Selenium	ND	---	1.46	"	"	---	ND	---	---	---	40%	
Silver	ND	---	0.292	"	"	---	ND	---	---	---	40%	
Thallium	ND	---	0.292	"	"	---	ND	---	---	---	40%	
Zinc	109	---	5.84	"	"	---	82.3	---	---	28	40%	

**Matrix Spike (7031008-MS1)**

Prepared: 03/27/17 12:48 Analyzed: 03/27/17 18:12

QC Source Sample: Blackberry East (A7C0531-03)

**EPA 6020A**

Antimony	30.2	---	1.45	mg/kg dry	10	36.3	ND	83	75-125%	---	---	
Arsenic	70.1	---	1.45	"	"	72.8	3.35	92	"	---	---	
Beryllium	35.8	---	0.291	"	"	36.3	0.371	98	"	---	---	
Cadmium	69.4	---	0.291	"	"	72.8	0.261	95	"	---	---	
Chromium	79.0	---	1.45	"	"	"	13.9	89	"	---	---	
Copper	88.4	---	1.45	"	"	"	17.6	97	"	---	---	
Lead	87.4	---	0.291	"	"	"	16.5	97	"	---	---	
Mercury	1.28	---	0.116	"	"	1.45	ND	88	"	---	---	
Nickel	78.5	---	1.45	"	"	72.8	13.0	90	"	---	---	
Selenium	35.9	---	1.45	"	"	36.3	ND	99	"	---	---	
Silver	35.1	---	0.291	"	"	"	ND	96	"	---	---	
Thallium	35.4	---	0.291	"	"	"	ND	98	"	---	---	
Zinc	156	---	5.82	"	"	72.8	82.3	101	"	---	---	

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Darrell Auvil, Project Manager

Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe

Reported:  
03/29/17 12:05

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7030745 - Total Solids (Dry Weight)							Soil					
Duplicate (7030745-DUP3)					Prepared: 03/17/17 14:56		Analyzed: 03/20/17 07:08					
QC Source Sample: Main Garden (A7C0531-01)												
EPA 8000C												
% Solids	52.3	---	1.00	% by Weight	1	---	51.1	---	---	2	10%	

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Darrell Auvil, Project Manager

## Native American Use &amp; Family Center

5135 NE Columbia Blvd  
Portland, OR 97218Project: **Metals**

Project Number: [none]

Project Manager: Darla Hilmoe

Reported:

03/29/17 12:05

## SAMPLE PREPARATION INFORMATION

## Total Metals by EPA 6020 (ICPMS)

**Prep: EPA 3051A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7031008							
A7C0531-01	Soil	EPA 6020A	03/16/17 09:10	03/27/17 12:48	0.467g/50mL	0.5g/50mL	1.07
A7C0531-02	Soil	EPA 6020A	03/16/17 09:20	03/27/17 12:48	0.466g/50mL	0.5g/50mL	1.07
A7C0531-03	Soil	EPA 6020A	03/16/17 09:25	03/27/17 12:48	0.499g/50mL	0.5g/50mL	1.00
A7C0531-04	Soil	EPA 6020A	03/16/17 09:35	03/27/17 12:48	0.508g/50mL	0.5g/50mL	0.98
A7C0531-05	Soil	EPA 6020A	03/16/17 10:45	03/27/17 12:48	0.515g/50mL	0.5g/50mL	0.97
A7C0531-06	Soil	EPA 6020A	03/16/17 11:15	03/27/17 12:48	0.515g/50mL	0.5g/50mL	0.97

## Percent Dry Weight

**Prep: Total Solids (Dry Weight)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7030745							
A7C0531-01	Soil	EPA 8000C	03/16/17 09:10	03/17/17 14:56	1N/A/1N/A	1N/A/1N/A	NA
A7C0531-02	Soil	EPA 8000C	03/16/17 09:20	03/17/17 14:56	1N/A/1N/A	1N/A/1N/A	NA
A7C0531-03	Soil	EPA 8000C	03/16/17 09:25	03/17/17 14:56	1N/A/1N/A	1N/A/1N/A	NA
A7C0531-04	Soil	EPA 8000C	03/16/17 09:35	03/17/17 14:56	1N/A/1N/A	1N/A/1N/A	NA
A7C0531-05	Soil	EPA 8000C	03/16/17 10:45	03/17/17 14:56	1N/A/1N/A	1N/A/1N/A	NA
A7C0531-06	Soil	EPA 8000C	03/16/17 11:15	03/17/17 14:56	1N/A/1N/A	1N/A/1N/A	NA

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Darrell Auvil, Project Manager

Native American Use & Family Center

5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**

Project Number: [none]

Project Manager: Darla Hilmoe

Reported:

03/29/17 12:05

## Notes and Definitions

### Qualifiers:

### Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.  For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.  Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

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Darrell Auvil, Project Manager



Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe

Reported:  
03/29/17 12:05

## APEX LABS COOLER RECEIPT FORM

Client: Native American Use & Family Center Element WO#: A7 C0531

Project/Project #: General

### Delivery info:

Date/Time Received: 3/16/17 @ 1350 By: COP

Delivered by: Apex ☐ Client ☐ ESS ☒ FedEx ☐ UPS ☐ Swift ☐ Senvoy ☐ SDS ☐ Other ☐

Cooler Inspection Inspected by: AKK : 3/16/17 @ 1340

Chain of Custody Included? Yes ☒ No ☐ Custody Seals? Yes ☐ No ☒

Signed/Dated by Client? Yes ☒ No ☐

Signed/Dated by Apex? Yes ☒ No ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	<u>4.4</u>						
Received on Ice? (Y/N)	<u>(Y)</u>						
Temp. Blanks? (Y/N)	<u>(N)</u>						
Ice Type: (Gel/Real/Other)	<u>Real</u>						
Condition:	<u>good</u>						

Cooler out of temp? (Y/N) Possible reason why: \_\_\_\_\_

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No NA

Samples Inspection: Inspected by: JS : 3/17/17 @ 1050

All Samples Intact? Yes ☒ No ☐ Comments: \_\_\_\_\_

Bottle Labels/COCs agree? Yes ☒ No ☒ Comments: upper fields reads upper

Field, lower fields reads lower field

Containers/Volumes Received Appropriate for Analysis? Yes ☒ No ☐ Comments: \_\_\_\_\_

Do VOA Vials have Visible Headspace? Yes ☐ No ☐ NA ☒

Comments: \_\_\_\_\_

Water Samples: pH Checked and Appropriate (except VOAs): Yes ☐ No ☐ NA ☒

Comments: \_\_\_\_\_

Additional Information: \_\_\_\_\_

Labeled by: JS Witness: AKK Cooler Inspected by: AKK See Project Contact Form: Y



# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Tuesday, April 25, 2017

Darla Hilmoie  
Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

RE: Metals / [none]

Enclosed are the results of analyses for work order A7D0322, which was received by the laboratory on 4/11/2017 at 10:10:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [DAuvil@apex-labs.com](mailto:DAuvil@apex-labs.com), or by phone at 503-718-2323.

---

Apex Laboratories



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Darrell Auvil, Project Manager

Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoie

**Reported:**  
04/25/17 17:51

## ANALYTICAL REPORT FOR SAMPLES

### SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Sweat Lodge	A7D0322-01	Soil	04/10/17 09:40	04/11/17 10:10

Apex Laboratories

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Darrell Auvil, Project Manager



Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe

Reported:  
04/25/17 17:51

## ANALYTICAL SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>Sweat Lodge (A7D0322-01)</b>			<b>Matrix: Soil</b>					
Batch: 7040846								
Antimony	ND	---	1.48	mg/kg dry	10	04/21/17 17:00	EPA 6020A	
Arsenic	5.78	---	1.48	"	"	"	"	
Beryllium	0.414	---	0.296	"	"	"	"	
Cadmium	0.355	---	0.296	"	"	"	"	
Chromium	18.1	---	1.48	"	"	"	"	
Copper	27.7	---	1.48	"	"	"	"	
Lead	25.9	---	0.296	"	"	"	"	
Nickel	15.3	---	1.48	"	"	"	"	
Selenium	ND	---	1.48	"	"	"	"	
Silver	ND	---	0.296	"	"	"	"	
Thallium	ND	---	0.296	"	"	"	"	
Zinc	113	---	5.91	"	"	"	"	
<b>Sweat Lodge (A7D0322-01RE1)</b>			<b>Matrix: Soil</b>					
Batch: 7040846								
Mercury	ND	---	0.118	mg/kg dry	10	04/21/17 18:31	EPA 6020A	

Apex Laboratories



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Darrell Auvil, Project Manager

Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe

Reported:  
04/25/17 17:51

## ANALYTICAL SAMPLE RESULTS

### Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>Sweat Lodge (A7D0322-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 7040566</b>			
% Solids	68.8	---	1.00	% by Weight	1	04/14/17 07:45	EPA 8000C	

Apex Laboratories

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Darrell Auvil, Project Manager

Native American Use &amp; Family Center

Project: Metals

5135 NE Columbia Blvd

Project Number: [none]

Portland, OR 97218

Project Manager: Darla Hilmoe

Reported:

04/25/17 17:51

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7040846 - EPA 3051A						Soil						
Blank (7040846-BLK1)						Prepared: 04/21/17 08:37    Analyzed: 04/21/17 15:58						
EPA 6020A												
Antimony	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	Q-41
Arsenic	ND	---	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	---	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Copper	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	---	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	---	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
LCS (7040846-BS1)						Prepared: 04/21/17 08:37    Analyzed: 04/21/17 16:01						
EPA 6020A												
Antimony	24.5	---	1.00	mg/kg wet	10	25.0	---	98	80-120%	---	---	B-02, Q-41
Arsenic	51.9	---	1.00	"	"	50.0	---	104	"	---	---	
Beryllium	25.0	---	0.200	"	"	25.0	---	100	"	---	---	
Cadmium	51.5	---	0.200	"	"	50.0	---	103	"	---	---	
Chromium	52.3	---	1.00	"	"	"	---	105	"	---	---	
Copper	51.8	---	1.00	"	"	"	---	104	"	---	---	
Lead	52.0	---	0.200	"	"	"	---	104	"	---	---	
Mercury	1.02	---	0.0800	"	"	1.00	---	102	"	---	---	
Nickel	52.3	---	1.00	"	"	50.0	---	105	"	---	---	
Selenium	26.3	---	1.00	"	"	25.0	---	105	"	---	---	
Silver	25.4	---	0.200	"	"	"	---	101	"	---	---	
Thallium	25.6	---	0.200	"	"	"	---	102	"	---	---	
Zinc	51.2	---	4.00	"	"	50.0	---	102	"	---	---	

Apex Laboratories

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Darrell Auvil, Project Manager

Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoie

Reported:  
04/25/17 17:51

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040566 - Total Solids (Dry Weight)</b>							<b>Soil</b>					

Apex Laboratories



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Darrell Auvil, Project Manager

Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe**Reported:**  
04/25/17 17:51

## SAMPLE PREPARATION INFORMATION

## Total Metals by EPA 6020 (ICPMS)

**Prep: EPA 3051A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 7040846</b>							
A7D0322-01	Soil	EPA 6020A	04/10/17 09:40	04/21/17 08:37	0.492g/50mL	0.5g/50mL	1.02
A7D0322-01RE1	Soil	EPA 6020A	04/10/17 09:40	04/21/17 08:37	0.492g/50mL	0.5g/50mL	1.02

## Percent Dry Weight

**Prep: Total Solids (Dry Weight)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 7040566</b>							
A7D0322-01	Soil	EPA 8000C	04/10/17 09:40	04/13/17 13:47	1N/A/1N/A	1N/A/1N/A	NA

Apex Laboratories

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Darrell Auvil, Project Manager

**Native American Use & Family Center**

5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**

Project Number: [none]

Project Manager: Darla Hilmoe

**Reported:**

04/25/17 17:51

## Notes and Definitions

### Qualifiers:

- B-02 Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
- Q-41 Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.

### Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.
- For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.
- Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- \*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe

Reported:  
04/25/17 17:51

Lab # A700322 COC 1 of 1

## CHAIN OF CUSTODY

**APEX LABS**

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: <u>Native American Family Center</u>		Project Mgr: <u>Darla Hilmoe</u>		Project #		Email: <u>H.Hilmoe@cnaydx.org</u>	
Address: <u>5135 NE Columbia Blvd, Portland, OR 97218</u>		Phone:		Project Name: <u>General</u>		Fax:	
Sampled by: <u>Larry Spangler</u>		Matrix: <u>1</u>		ANALYSIS REQUEST			
Site Location: <u>OR</u> <u>WA</u>		TIME		TCLP Metals (8)		<input checked="" type="checkbox"/> AL <input checked="" type="checkbox"/> Cd <input checked="" type="checkbox"/> Cr <input checked="" type="checkbox"/> Cu <input checked="" type="checkbox"/> Fe <input checked="" type="checkbox"/> Pb <input checked="" type="checkbox"/> Mn <input checked="" type="checkbox"/> Ni <input checked="" type="checkbox"/> Zn	
Other:		DATE: <u>04100410S</u>		RCRA Metals (8)		<input checked="" type="checkbox"/> AL <input checked="" type="checkbox"/> Cd <input checked="" type="checkbox"/> Cr <input checked="" type="checkbox"/> Cu <input checked="" type="checkbox"/> Fe <input checked="" type="checkbox"/> Pb <input checked="" type="checkbox"/> Mn <input checked="" type="checkbox"/> Ni <input checked="" type="checkbox"/> Zn	
SAMPLE ID: <u>Sweat Lodge</u>		LAB ID #		600 TTO			
				8082 PCBs			
				8270 SIM PAHs			
				8270 SVOC			
				8260 BTEX VOCs			
				8260 HVOCS			
				8260 RBDN VOCs			
				8260 VOCs Full List			
				NTPH-Gs			
				NTPH-Ds			
				NTPH-HCID			
				# OF CONTAINERS			
				YES		NO	
				Normal Turn Around Time (TAT) = 10 Business Days			
				1 Day		2 Day	
				4 DAY		5 DAY	
				TAT Requested (circle)		Other:	
				SAMPLES ARE HELD FOR 30 DAYS			
RELINQUISHED BY:		RECEIVED BY:		SPECIAL INSTRUCTIONS:			
Signature: <u>[Signature]</u>		Signature: <u>[Signature]</u>					
Date: <u>041117</u>		Date: <u>041117</u>					
Printed Name: <u>Larry Spangler</u>		Printed Name: <u>[Name]</u>					
Time: <u>1010</u>		Time: <u>1010</u>					
Company: <u>ESS</u>		Company: <u>Apex</u>					

Apex Laboratories

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[Signature]

Darrell Auvil, Project Manager

Native American Use & Family Center  
5135 NE Columbia Blvd  
Portland, OR 97218

Project: **Metals**  
Project Number: [none]  
Project Manager: Darla Hilmoe

Reported:  
04/25/17 17:51

## APEX LABS COOLER RECEIPT FORM

Client: Native American Family Center Element WO#: A7 D0322  
Project/Project #: General

### Delivery info:

Date/Time Received: 4/11/17 @ 10:10 By: MS  
Delivered by: Apex Client ☒ ESS ☒ FedEx ☐ UPS ☐ Swift ☐ Senvoy ☐ SDS ☐ Other

**Cooler Inspection** Inspected by: MS : 4/11/17 @ 10:35

Chain of Custody Included? Yes ☒ No ☐ Custody Seals? Yes ☐ No ☒

Signed/Dated by Client? Yes ☒ No ☐

Signed/Dated by Apex? Yes ☒ No ☐

Cooler #1 Cooler #2 Cooler #3 Cooler #4 Cooler #5 Cooler #6 Cooler #7

Temperature (deg. C) 3.8

Received on Ice? ☒ (Y/N)

Temp. Blanks? ☒ (Y/N)

Ice Type: (Gel/Real/Other) Real

Condition: Good

Cooler out of temp? (Y/N) Possible reason why: NA

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No NA

**Samples Inspection:** Inspected by: AKK : 4/11/17 @ 16:35

All Samples Intact? Yes ☒ No ☐ Comments: \_\_\_\_\_

Bottle Labels/COCs agree? Yes ☒ No ☐ Comments: \_\_\_\_\_

Containers/Volumes Received Appropriate for Analysis? Yes ☒ No ☐ Comments: \_\_\_\_\_

Do VOA Vials have Visible Headspace? Yes ☐ No ☐ NA ☒

Comments: \_\_\_\_\_

Water Samples: pH Checked and Appropriate (except VOAs): Yes ☐ No ☐ NA ☒

Comments: \_\_\_\_\_

**Additional Information:** \_\_\_\_\_

Labeled by: \_\_\_\_\_ Witness: \_\_\_\_\_ Cooler Inspected by: \_\_\_\_\_ See Project Contact Form: Y

AKK

MS

MS

