

**Portland Public Schools
Lead Water Sampling Results
Initial Flush Sample Data
Terwilliger Site - Test 5**

Sample Identification #	Location	Date/Time Collected	Date Analyzed	Lab ID	Analyte	Results	Detecti on Limit	PPS Action Level*	Units
366-DF-6445-NA-006-A	Kitchen 19	4/25/2023	4/26/2023	A3D1571-01	Lead	0.686	0.2	15	ppb
366-DF-6446-NA-006-A	Health Room 6B	4/25/2023	4/26/2023	A3D1571-02	Lead	ND	0.2	15	ppb

Analyzed by: Apex Laboratories

Reviewed by: PBS Engineering and Environmental

*OHA Action Level = 15ppb

Page 1 of 1



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Monday, May 1, 2023

Joel McCarthy

PBS Engineering and Environmental

4412 S Corbett Ave

Portland, OR 97239

RE: A3D1571 - Portland Public Schools - Terwilliger/25000.219

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

Enclosed are the results of analyses for work order A3D1571, which was received by the laboratory on 4/25/2023 at 1:13:00PM.

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

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Default Cooler

18.3 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jason Woodcock, Project Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

PBS Engineering and Environmental

4412 S Corbett Ave
Portland, OR 97239

Project: **Portland Public Schools**

Project Number: **Terwilliger/25000.219**

Project Manager: **Joel McCarthy**

Report ID:

A3D1571 - 05 01 23 1508

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
366-DF-6445-NA-006-A	A3D1571-01	Drinking Water	04/25/23 00:00	04/25/23 13:13
366-DF-6446-NA-006-A	A3D1571-02	Drinking Water	04/25/23 00:00	04/25/23 13:13

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jason Woodcock, Project Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

PBS Engineering and Environmental

4412 S Corbett Ave

Portland, OR 97239

Project: **Portland Public Schools**

Project Number: **Terwilliger/25000.219**

Project Manager: **Joel McCarthy**

Report ID:

A3D1571 - 05 01 23 1508

ANALYTICAL SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
366-DF-6445-NA-006-A (A3D1571-01)				Matrix: Drinking Water				
Batch: 23D1033								
Lead	0.686	---	0.200	ug/L	1	04/26/23 14:01	EPA 200.8	
366-DF-6446-NA-006-A (A3D1571-02)				Matrix: Drinking Water				
Batch: 23D1033								
Lead	ND	---	0.200	ug/L	1	04/26/23 14:02	EPA 200.8	

Apex Laboratories

Jason Woodcock, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

PBS Engineering and Environmental
4412 S Corbett Ave
Portland, OR 97239

Project: **Portland Public Schools**
Project Number: **Terwilliger/25000.219**
Project Manager: **Joel McCarthy**

Report ID:
A3D1571 - 05 01 23 1508

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23D1033 - EPA 200.8 Direct Analysis							Drinking Water					
Blank (23D1033-BLK1)		Prepared: 04/26/23 09:08		Analyzed: 04/26/23 13:31								
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (23D1033-BS1)		Prepared: 04/26/23 09:08		Analyzed: 04/26/23 13:32								
EPA 200.8												
Lead	13.8	---	0.201	ug/L	1	15.0	---	92	85 - 115%	---	---	
Matrix Spike (23D1033-MS2)		Prepared: 04/26/23 09:08		Analyzed: 04/26/23 14:03								
QC Source Sample: 366-DF-6446-NA-006-A (A3D1571-02)												
EPA 200.8												
Lead	13.6	---	0.201	ug/L	1	15.0	ND	90	70 - 130%	---	---	

Apex Laboratories

Jason Woodcock, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

PBS Engineering and Environmental

4412 S Corbett Ave
Portland, OR 97239

Project: **Portland Public Schools**

Project Number: **Terwilliger/25000.219**

Project Manager: **Joel McCarthy**

Report ID:

A3D1571 - 05 01 23 1508

SAMPLE PREPARATION INFORMATION

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Prep: EPA 200.8 Direct Analysis

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 23D1033</u>							
A3D1571-01	Drinking Water	EPA 200.8	04/25/23 00:00	04/26/23 09:08	10mL/10mL	10mL/10mL	1.00
A3D1571-02	Drinking Water	EPA 200.8	04/25/23 00:00	04/26/23 09:08	10mL/10mL	10mL/10mL	1.00

Apex Laboratories

Jason Woodcock, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

PBS Engineering and Environmental

4412 S Corbett Ave
Portland, OR 97239

Project: Portland Public Schools

Project Number: Terwilliger/25000.219

Project Manager: Joel McCarthy

Report ID:

A3D1571 - 05 01 23 1508

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

There are No Qualifiers on Sample or QC Data for this report

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jason Woodcock, Project Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

PBS Engineering and Environmental

4412 S Corbett Ave
Portland, OR 97239

Project: **Portland Public Schools**

Project Number: **Terwilliger/25000.219**
Project Manager: **Joel McCarthy**

Report ID:

A3D1571 - 05 01 23 1508

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported.
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " 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).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jason Woodcock, Project Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

PBS Engineering and Environmental

4412 S Corbett Ave
Portland, OR 97239

Project: **Portland Public Schools**

Project Number: **Terwilliger/25000.219**
Project Manager: **Joel McCarthy**

Report ID:
A3D1571 - 05 01 23 1508

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results 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.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jason Woodcock, Project Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

PBS Engineering and Environmental
4412 S Corbett Ave
Portland, OR 97239

Project: **Portland Public Schools**
Project Number: **Terwilliger/25000.219**
Project Manager: **Joel McCarthy**

Report ID:
A3D1571 - 05 01 23 1508

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation)

EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
<u>All reported analytes are included in Apex Laboratories' current ORELAP scope.</u>					

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Jason Woodcock, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

PBS Engineering and Environmental

4412 S Corbett Ave

Portland, OR 97239

Project: Portland Public SchoolsProject Number: Terwilliger/25000.219Project Manager: Joel McCarthy

Report ID:

A3D1571 - 05 01 23 1508

APEX LABS COOLER RECEIPT FORM

Client: PBS Element WO#: A3 D1571Project/Project #: Terwilliger 25000.219 / 25000.219

Delivery Info:

Date/time received: 4/25/23 @ 1313 By: AJMDelivered by: Apex ☒ Client ☐ ESS ☐ FedEx ☐ UPS ☐ Radio ☐ Morgan ☐ SDS ☐ Evergreen ☐ Other ☐Cooler Inspection Date/time inspected: 4/25/23 @ 1343 By: AJMChain of Custody included? Yes ☒ No ☐Signed/dated by client? Yes ☒ No ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>18.3</u>						
Custody seals? (Y/N)	<u>N</u>						
Received on ice? (Y/N)	<u>N</u>						
Temp. blanks? (Y/N)	<u>N</u>						
Ice type: (Gel/Real/Other)	<u>None</u>						
Condition (In/Out)	<u>Out</u>						

Cooler out of temp? (Y/N) Possible reason why: Drinking WaterGreen dots applied to out of temperature samples? Yes ☒ No ☐Out of temperature samples form initiated? Yes ☒ No ☐Sample Inspection: Date/time inspected: 4/25/23 @ 16:50 By: AJFAll samples intact? Yes ☒ No ☐ Comments: IDS missingBottle labels/COCs agree? Yes ☐ No ☒ Comments: prefix and suffix containersCOC/container discrepancies form initiated? Yes ☐ No ☒Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments: IDS missingDo VOA vials have visible headspace? Yes ☐ No ☐ NA ☒Comments: IDS missingWater samples: pH checked: Yes ☒ No ☐ NA ☐ pH appropriate? Yes ☒ No ☐ NA ☐Comments: IDS missing

Additional information:

Labeled by:

Witness:

Cooler Inspected by:

Form Y-003 R-00

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jason Woodcock, Project Manager

Page 12 of 12