



April 15, 2019

Rachel Hopper
Reynolds School District
1204 NE 201st Avenue
Fairview, Oregon 97024
c/o Andrew Lent, Day CPM

Via email: alent@daycpm.com

Regarding: New Bubbler Water Sampling
 Glenfair Elementary School
 15300 NE Glisan Street
 PBS Project 23514.149, Phase 0001

Dear Mr. Lent:

On April 4, 2019, PBS Engineering and Environmental Inc. (PBS) performed drinking water sampling at Glenfair Elementary School located at 15300 NE Glisan Street in Portland, Oregon. The testing was requested by the Reynolds School District after 16 new bubblers were installed. The testing is part of an ongoing effort to ensure that concentrations of lead in drinking water remain below the EPA action limit.

Sampling methodology and the interpretation of laboratory results was based on the Environmental Protection Agency (EPA) guidance document titled *3Ts for Reducing Lead in Drinking Water in Schools* (3Ts). Following this guideline, PBS collected the first 250 milliliters (mL) of water from each test location (first draw). A second sample (flush draw) was taken from each location after the water had been allowed to run for thirty seconds. The evening prior to sampling, PBS ran each fixture for two minutes. Each of the samples were then collected after the water had been sitting stagnant between 8 and 18 hours. This EPA protocol is intended to maximize the likelihood that the highest concentrations of lead are found because the first 250 mL are analyzed for lead after overnight stagnation.

3Ts' sampling protocol specifies 250 mL samples. 250 mL samples are designed to assess worst cases where the outlet is used for consumption. Because 250 mL samples are relatively small and thus undiluted, the action limit set by the EPA is 20 parts per billion (ppb).

All water samples were collected by an Oregon Health Authority certified Lead Risk Assessor. The samples were delivered under chain of custody to Apex Laboratories in Tigard, Oregon, for lead analysis.

Thirty-two drinking water samples were collected. Sampling locations were provided by the district. Concentrations of lead in the samples ranged from none detected (ND) to 0.416 ppb. Laboratory analysis indicates that all of the drinking water samples contained lead at concentrations below the EPA action limit of 20 ppb; consequently, with regards to lead, the drinking water from the newly installed bubblers is safe for consumption.

Note that of the seventeen sampling locations provided by the district, only sixteen were sampled. The new bubbler marked to be in classroom 11 did not exist at the time of sampling.

Rachel Hopper, c/o Andrew Lent
Lead in Water Sampling
April 15, 2019
Page 2 of 2

Please feel free to contact me at 503.349.6861 or sean.grabiner@pbsusa.com with any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Sean Grabiner', with a stylized flourish at the end.

Sean Grabiner
Industrial Hygienist

Attachments: Lab report

SG:mo



Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Thursday, April 11, 2019

Joel McCarthy
PBS Engineering and Environmental
4412 SW Corbett Ave
Portland, OR 97239

RE: A9D0154 - Reynolds School District - Glenfair-23514.149-0001

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 A9D0154, which was received by the laboratory on 4/4/2019 at 3:41:00PM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1 19.9 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

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Lisa Domenighini, Client Services Manager



PBS Engineering and Environmental

4412 SW Corbett Ave
Portland, OR 97239

Project: **Reynolds School District**

Project Number: **Glenfair-23514.149-0001**

Project Manager: **Joel McCarthy**

Report ID:

A9D0154 - 04 11 19 0917

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DF-001-FD	A9D0154-01	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-002-FL	A9D0154-02	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-003-FD	A9D0154-03	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-004-FL	A9D0154-04	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-005-FD	A9D0154-05	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-006-FL	A9D0154-06	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-007-FD	A9D0154-07	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-008-FL	A9D0154-08	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-009-FD	A9D0154-09	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-010-FL	A9D0154-10	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-011-FD	A9D0154-11	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-012-FL	A9D0154-12	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-013-FD	A9D0154-13	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-014-FL	A9D0154-14	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-015-FD	A9D0154-15	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-016-FL	A9D0154-16	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-017-FD	A9D0154-17	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-018-FL	A9D0154-18	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-019-FD	A9D0154-19	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-020-FL	A9D0154-20	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-021-FD	A9D0154-21	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-022-FL	A9D0154-22	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-023-FD	A9D0154-23	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-024-FL	A9D0154-24	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-025-FD	A9D0154-25	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-026-FL	A9D0154-26	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-027-FD	A9D0154-27	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-028-FL	A9D0154-28	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-029-FD	A9D0154-29	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-030-FL	A9D0154-30	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-031-FD	A9D0154-31	Drinking Water	04/04/19 00:00	04/04/19 15:41
DF-032-FL	A9D0154-32	Drinking Water	04/04/19 00:00	04/04/19 15:41

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Lisa Domenighini, Client Services Manager



PBS Engineering and Environmental 4412 SW Corbett Ave Portland, OR 97239	Project: Reynolds School District Project Number: Glenfair-23514.149-0001 Project Manager: Joel McCarthy	Report ID: A9D0154 - 04 11 19 0917
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ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
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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
DF-001-FD (A9D0154-01)				Matrix: Drinking Water				
Batch: 9040585								
Lead	0.224	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-002-FL (A9D0154-02)				Matrix: Drinking Water				
Batch: 9040585								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-003-FD (A9D0154-03)				Matrix: Drinking Water				
Batch: 9040585								
Lead	0.416	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-004-FL (A9D0154-04)				Matrix: Drinking Water				
Batch: 9040585								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-005-FD (A9D0154-05)				Matrix: Drinking Water				
Batch: 9040584								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	DW-D
DF-006-FL (A9D0154-06)				Matrix: Drinking Water				
Batch: 9040585								
Lead	0.216	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-007-FD (A9D0154-07)				Matrix: Drinking Water				
Batch: 9040584								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	DW-D
DF-008-FL (A9D0154-08)				Matrix: Drinking Water				
Batch: 9040585								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	

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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
DF-009-FD (A9D0154-09)				Matrix: Drinking Water				
Batch: 9040584								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	DW-D
DF-010-FL (A9D0154-10)				Matrix: Drinking Water				
Batch: 9040585								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-011-FD (A9D0154-11)				Matrix: Drinking Water				
Batch: 9040585								
Lead	0.263	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-012-FL (A9D0154-12)				Matrix: Drinking Water				
Batch: 9040585								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-013-FD (A9D0154-13RE1)				Matrix: Drinking Water				
Batch: 9040584								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	DW-D
DF-014-FL (A9D0154-14)				Matrix: Drinking Water				
Batch: 9040585								
Lead	0.214	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-015-FD (A9D0154-15RE1)				Matrix: Drinking Water				
Batch: 9040584								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	DW-D
DF-016-FL (A9D0154-16)				Matrix: Drinking Water				
Batch: 9040585								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-017-FD (A9D0154-17RE1)				Matrix: Drinking Water				
Batch: 9040584								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	DW-D

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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
DF-018-FL (A9D0154-18)				Matrix: Drinking Water				
Batch: 9040585								
Lead	0.260	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-019-FD (A9D0154-19)				Matrix: Drinking Water				
Batch: 9040585								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-020-FL (A9D0154-20)				Matrix: Drinking Water				
Batch: 9040585								
Lead	0.366	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-021-FD (A9D0154-21)				Matrix: Drinking Water				
Batch: 9040585								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-022-FL (A9D0154-22)				Matrix: Drinking Water				
Batch: 9040585								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-023-FD (A9D0154-23RE1)				Matrix: Drinking Water				
Batch: 9040584								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	DW-D
DF-024-FL (A9D0154-24)				Matrix: Drinking Water				
Batch: 9040585								
Lead	0.226	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-025-FD (A9D0154-25)				Matrix: Drinking Water				
Batch: 9040585								
Lead	0.236	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-026-FL (A9D0154-26)				Matrix: Drinking Water				
Batch: 9040585								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	

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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
DF-027-FD (A9D0154-27)				Matrix: Drinking Water				
Batch: 9040585								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-028-FL (A9D0154-28)				Matrix: Drinking Water				
Batch: 9040591								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-029-FD (A9D0154-29)				Matrix: Drinking Water				
Batch: 9040591								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-030-FL (A9D0154-30)				Matrix: Drinking Water				
Batch: 9040591								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-031-FD (A9D0154-31)				Matrix: Drinking Water				
Batch: 9040591								
Lead	ND	---	0.200	ug/L	1	04/09/19	EPA 200.8	
DF-032-FL (A9D0154-32)				Matrix: Drinking Water				
Batch: 9040591								
Lead	0.226	---	0.200	ug/L	1	04/09/19	EPA 200.8	



PBS Engineering and Environmental 4412 SW Corbett Ave Portland, OR 97239	Project: Reynolds School District Project Number: Glenfair-23514.149-0001 Project Manager: Joel McCarthy	Report ID: A9D0154 - 04 11 19 0917
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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 9040584 - EPA 3015A						Drinking Water						
Blank (9040584-BLK1)		Prepared: 04/05/19 14:26 Analyzed: 04/09/19 13:49										
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	DW-D
LCS (9040584-BS1)		Prepared: 04/05/19 14:26 Analyzed: 04/09/19 13:51										
EPA 200.8												
Lead	15.8	---	0.200	ug/L	1	16.7	---	95	85-115%	---	---	DW-D
Duplicate (9040584-DUP1)		Prepared: 04/05/19 14:26 Analyzed: 04/09/19 14:01										
QC Source Sample: DF-005-FD (A9D0154-05)												
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	0.120	---	---	***	20%	DW-D, Q-05
Matrix Spike (9040584-MS1)		Prepared: 04/05/19 14:26 Analyzed: 04/09/19 14:03										
QC Source Sample: DF-005-FD (A9D0154-05)												
EPA 200.8												
Lead	15.5	---	0.200	ug/L	1	16.7	0.120	92	70-130%	---	---	DW-D
Batch 9040585 - Matrix Matched Direct Inject						Drinking Water						
Blank (9040585-BLK1)		Prepared: 04/05/19 14:33 Analyzed: 04/09/19 17:09										
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (9040585-BS1)		Prepared: 04/05/19 14:33 Analyzed: 04/09/19 17:15										
EPA 200.8												
Lead	14.5	---	0.200	ug/L	1	16.7	---	87	85-115%	---	---	
Duplicate (9040585-DUP1)		Prepared: 04/05/19 14:33 Analyzed: 04/09/19 17:25										
QC Source Sample: DF-004-FL (A9D0154-04)												
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	ND	---	---	---	20%	
Matrix Spike (9040585-MS1)		Prepared: 04/05/19 14:33 Analyzed: 04/09/19 17:27										
QC Source Sample: DF-004-FL (A9D0154-04)												

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Lisa Domenighini, Client Services Manager



PBS Engineering and Environmental 4412 SW Corbett Ave Portland, OR 97239	Project: Reynolds School District Project Number: Glenfair-23514.149-0001 Project Manager: Joel McCarthy	Report ID: A9D0154 - 04 11 19 0917
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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 9040585 - Matrix Matched Direct Inject						Drinking Water						
Matrix Spike (9040585-MS1)			Prepared: 04/05/19 14:33 Analyzed: 04/09/19 17:27									
<u>QC Source Sample: DF-004-FL (A9D0154-04)</u>												
<u>EPA 200.8</u>												
Lead	15.2	---	0.200	ug/L	1	16.7	ND	91	70-130%	---	---	
Matrix Spike (9040585-MS2)			Prepared: 04/05/19 14:33 Analyzed: 04/09/19 18:15									
<u>QC Source Sample: DF-027-FD (A9D0154-27)</u>												
<u>EPA 200.8</u>												
Lead	15.6	---	0.200	ug/L	1	16.7	ND	93	70-130%	---	---	

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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 9040591 - Matrix Matched Direct Inject						Drinking Water						
Blank (9040591-BLK2)		Prepared: 04/05/19 15:56 Analyzed: 04/09/19 16:09										
<u>EPA 200.8</u>												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	Q-16
LCS (9040591-BS2)		Prepared: 04/05/19 15:56 Analyzed: 04/09/19 16:11										
<u>EPA 200.8</u>												
Lead	15.7	---	0.200	ug/L	1	16.7	---	94	85-115%	---	---	Q-16
Matrix Spike (9040591-MS2)		Prepared: 04/05/19 15:56 Analyzed: 04/09/19 17:07										
<u>QC Source Sample: DF-032-FL (A9D0154-32)</u>												
<u>EPA 200.8</u>												
Lead	15.5	---	0.200	ug/L	1	16.7	0.226	92	70-130%	---	---	



PBS Engineering and Environmental 4412 SW Corbett Ave Portland, OR 97239	Project: Reynolds School District Project Number: Glenfair-23514.149-0001 Project Manager: Joel McCarthy	Report ID: A9D0154 - 04 11 19 0917
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SAMPLE PREPARATION INFORMATION

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 9040584</u>							
A9D0154-05	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:26	45mL/50mL	45mL/50mL	1.00
A9D0154-07	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:26	45mL/50mL	45mL/50mL	1.00
A9D0154-09	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:26	45mL/50mL	45mL/50mL	1.00
A9D0154-13RE1	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:26	45mL/50mL	45mL/50mL	1.00
A9D0154-15RE1	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:26	45mL/50mL	45mL/50mL	1.00
A9D0154-17RE1	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:26	45mL/50mL	45mL/50mL	1.00
A9D0154-23RE1	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:26	45mL/50mL	45mL/50mL	1.00

Prep: Matrix Matched Direct Inject

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 9040585</u>							
A9D0154-01	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-02	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-03	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-04	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-06	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-08	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-10	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-11	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-12	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-14	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-16	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-18	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-19	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-20	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-21	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-22	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-24	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-25	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-26	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
A9D0154-27	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 14:33	45mL/50mL	45mL/50mL	1.00
<u>Batch: 9040591</u>							
A9D0154-28	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 15:56	45mL/50mL	45mL/50mL	1.00
A9D0154-29	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 15:56	45mL/50mL	45mL/50mL	1.00
A9D0154-30	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 15:56	45mL/50mL	45mL/50mL	1.00
A9D0154-31	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 15:56	45mL/50mL	45mL/50mL	1.00

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Lisa Domenighini, Client Services Manager



Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

<u>PBS Engineering and Environmental</u> 4412 SW Corbett Ave Portland, OR 97239	Project: <u>Reynolds School District</u> Project Number: Glenfair-23514.149-0001 Project Manager: Joel McCarthy	Report ID: A9D0154 - 04 11 19 0917
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SAMPLE PREPARATION INFORMATION

Total Metals in Drinking Water by EPA 200.8 (ICPMS)

<u>Prep: Matrix Matched Direct Inject</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A9D0154-32	Drinking Water	EPA 200.8	04/04/19 00:00	04/05/19 15:56	45mL/50mL	45mL/50mL	1.00

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Project Number: Glenfair-23514.149-0001

Project Manager: Joel McCarthy

Report ID:

A9D0154 - 04 11 19 0917

QUALIFIER DEFINITIONS

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

Apex Laboratories

- DW-D** Turbidity greater than 1 NTU. Sample was digested per EPA Method 200.8.
- Q-05** Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
- Q-16** Reanalysis of an original Batch QC sample.

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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

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 1/2 the Reporting Limit (RL).
-For Blank hits falling between 1/2 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.



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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

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Lisa Domenighini, Client Services Manager



<u>PBS Engineering and Environmental</u> 4412 SW Corbett Ave Portland, OR 97239	Project: <u>Reynolds School District</u> Project Number: Glenfair-23514.149-0001 Project Manager: Joel McCarthy	Report ID: A9D0154 - 04 11 19 0917
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LABORATORY ACCREDITATION INFORMATION

TNI 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.

PBS Engineering and Environmental

4412 SW Corbett Ave
Portland, OR 97239

Project: **Reynolds School District**

Project Number: **Glenfair-23514.149-0001**

Project Manager: **Joel McCarthy**

Report ID:

A9D0154 - 04 11 19 0917

A9D0154



SCHOOL NAME: GLENFAIR PROJECT #: 23514.149/0001
 ANALYSIS REQUESTED: LEAD DATE: 4/4/19
 RELINQ'D BY/SIGNATURE: [Signature] DATE/TIME: 4/4/19 12:30
 RECEIVED BY/SIGNATURE: [Signature] Apex Labs DATE/TIME: 4-4-19/1541
 EMAIL RESULTS TO: JOEL.MCCARTHY@PBSUSA.COM TURN AROUND TIME: 5 DAY

SAMPLE DATA FORM					
LAB	SAMPLE #	BUILDING	ROOM	LOCATION IN ROOM	
	DF-001 - FD	MAIN		SHARED SPACE BETWEEN CLR 16 & 15	
	DF-002 - FL		" " " "	" " " "	
	DF-003 - FD		" " " "	" " " "	
	DF-004 - FL				
	DF-005 - FD			CLASSROOM 14	
	DF-006 - FL			" "	
	DF-007 - FD			CLASSROOM 19	
	DF-008 - FL			" "	
	DF-009 - FD			LIBRARY	
	DF-010 - FL			" "	
	DF-011 - FD			CLASSROOM 20	
	DF-012 - FL			" "	
	DF-013 - FD			CLASSROOM 12	
	DF-014 - FL			" "	
	DF-015 - FD			CLASSROOM 10	
	DF-016 - FL			" "	
	DF-017 - FD			CLASSROOM 9	
	DF-018 - FL			" "	
	DF-019 - FD			CLASSROOM 2	
	DF-020 - FL			" "	
	DF-021 - FD			CLASSROOM 8	
	DF-022 - FL			" "	
	DF-023 - FD			CLASSROOM 3	
	DF-024 - FL			" "	
	DF-025 - FD			CLASSROOM 7	
	DF-026 - FL			" "	
	DF-027 - FD			CLASSROOM 4	
	DF-028 - FL			" "	

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(503)-248-1939, Fax: 1 (888)-866-727-0140

Lisa Domenighini

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APEX LABS COOLER RECEIPT FORM

Client: ^{MH/44} Glenfair PDS-PDX Element WO#: A9 DD154

Project/Project #: 23514.149/0001 / Glenfair

Delivery Info:
 Date/time received: 4-4-19 @ 1541 By: MH
 Delivered by: Apex Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Date/time inspected: 4-4-19 @ 1807 By: MH
 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 (°C)	<u>12.9</u>						
Received on ice? (Y/N)	<u>N</u>						
Temp. blanks? (Y/N)	<u>N</u>						
Ice type: (Gel/Real/Other)	<u>N/A</u>						
Condition:	<u>good</u>						

Cooler out of temp? (Y/N) Possible reason why: DW's
 If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/NA NA
 Out of temperature samples form initiated? Yes/No/NA NA
Samples Inspection: Date/time inspected: 4/5/19 @ 8:00 By: MH
 All samples intact? Yes No Comments: _____
 Bottle labels/COCs agree? Yes No Comments: _____
 COC/container discrepancies form initiated? Yes No NA
 Containers/volumes received appropriate for analysis? Yes No Comments: _____
 Do VOA vials have visible headspace? Yes No NA
 Comments: _____
 Water samples: pH checked: Yes No NA pH appropriate? Yes No NA
 Comments: _____
 Additional information: _____
 Labeled by: MH Witness: [Signature] Cooler Inspected by: MH See Project Contact Form: Y

Lisa Domenighini