

**Portland Public Schools
Lead Water Sampling Results
Initial Flush Sample Data
Benson Site - Test 1**

Sample Identification #	Location	Date/Time Collected	Date Analyzed	Lab ID	Analyte	Results	Detecti on Limit	PPS Action Level*	Units
DF-7000	HALLWAY H02B	8/13/2024	8/14/2024	A4H1086-01	Lead	ND	0.2	15	ppb
DF-7001	BAND ROOM 009	8/13/2024	8/14/2024	A4H1086-02	Lead	ND	0.2	15	ppb
DF-7002	HALLWAY H04	8/13/2024	8/14/2024	A4H1086-03	Lead	ND	0.2	15	ppb
DF-7005	HALLWAY H06	8/13/2024	8/14/2024	A4H1086-04	Lead	ND	0.2	15	ppb
DF-7006	HALLWAY H05	8/13/2024	8/14/2024	A4H1086-05	Lead	ND	0.2	15	ppb
DF-7007	GIRLS LOCKER ROOM 030	8/13/2024	8/14/2024	A4H1086-06	Lead	ND	0.2	15	ppb
DF-7008	BOYS LOCKER ROOM 034	8/13/2024	8/14/2024	A4H1086-07	Lead	ND	0.2	15	ppb
DF-7009	HALLWAY H12	8/13/2024	8/14/2024	A4H1086-08	Lead	ND	0.2	15	ppb
DF-7010	TEACHER PLANNING RM-130	8/13/2024	8/14/2024	A4H1086-09	Lead	1.89	0.2	15	ppb
DF-7013	STAFF ROOM 114	8/13/2024	8/14/2024	A4H1086-10	Lead	0.694	0.2	15	ppb
DF-7014	MAIL ROOM 103I	8/13/2024	8/14/2024	A4H1086-11	Lead	0.388	0.2	15	ppb
DF-7017	DEMO KITCHEN 160G	8/13/2024	8/14/2024	A4H1086-12RE1	Lead	6.13	0.2	15	ppb
DF-7018	DEMO KITCHEN 160G	8/13/2024	8/14/2024	A4H1086-13RE1	Lead	8.65	0.2	15	ppb
DF-7019	FOOD PREP AREA 160D	8/13/2024	8/14/2024	A4H1086-14	Lead	1.43	0.2	15	ppb
DF-7021	HALLWAY H15	8/13/2024	8/14/2024	A4H1086-15	Lead	ND	0.2	15	ppb
DF-7024	HALLWAY H18 NORTH	8/13/2024	8/14/2024	A4H1086-16	Lead	ND	0.2	15	ppb
DF-7025	TEACHER PLANNING RM 166	8/13/2024	8/14/2024	A4H1086-17	Lead	0.466	0.2	15	ppb
DF-7026	HALLWAY H18 WEST	8/13/2024	8/14/2024	A4H1086-18	Lead	ND	0.2	15	ppb
DF-7027	TEACHER PLANNING RM 183	8/13/2024	8/14/2024	A4H1086-19	Lead	0.848	0.2	15	ppb
DF-7028	RADIO STATION BLDG H19	8/13/2024	8/14/2024	A4H1086-20RE1	Lead	ND	0.2	15	ppb

Analyzed by: Apex Laboratories

*OHA Action Level = 15ppb

Reviewed by: PBS Engineering and Environmental

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DF-7029	RADIO STATION CONF RM 186	8/13/2024	8/14/2024	A4H1086-21RE1	Lead	6.88	0.2	15	ppb
DF-7030	HALLWAY H22 BY STAFF RM 230B	8/13/2024	8/14/2024	A4H1086-22	Lead	ND	0.2	15	ppb
DF-7035	TEACHER PLANNING RM 258	8/13/2024	8/14/2024	A4H1086-23	Lead	0.537	0.2	15	ppb
DF-7037	HALLWAY H28	8/13/2024	8/14/2024	A4H1086-24	Lead	ND	0.2	15	ppb
DF-7038	FLEX H28B	8/13/2024	8/14/2024	A4H1086-25	Lead	ND	0.2	15	ppb
DF-7039	TEACHER PLANNING RM 287	8/13/2024	8/14/2024	A4H1086-26	Lead	0.391	0.2	15	ppb
DF-7041	TEACHER PLANNING RM 223	8/13/2024	8/14/2024	A4H1086-27	Lead	0.895	0.2	15	ppb

Analyzed by: Apex Laboratories

*OHA Action Level = 15ppb

Reviewed by: PBS Engineering and Environmental

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ANALYTICAL REPORT

Apex Laboratories, LLC

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

Friday, August 16, 2024

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

RE: A4H1086 - Portland Public Schools - Benson HS/25000.250

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 A4H1086, which was received by the laboratory on 8/13/2024 at 12:18:00PM.

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			
<u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u>			
(See Cooler Receipt Form for details)			
Default Cooler	21.6	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.



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Jason Woodcock, Project Manager

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062**PBS Engineering and Environmental**4412 S Corbett Ave
Portland, OR 97239Project: **Portland Public Schools**Project Number: **Benson HS/25000.250**Project Manager: **Joel McCarthy****Report ID:****A4H1086 - 08 16 24 1513****ANALYTICAL REPORT FOR SAMPLES****SAMPLE INFORMATION**

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DF-7000	A4H1086-01	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7001	A4H1086-02	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7002	A4H1086-03	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7005	A4H1086-04	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7006	A4H1086-05	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7007	A4H1086-06	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7008	A4H1086-07	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7009	A4H1086-08	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7010	A4H1086-09	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7013	A4H1086-10	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7014	A4H1086-11	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7017	A4H1086-12	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7018	A4H1086-13	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7019	A4H1086-14	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7021	A4H1086-15	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7024	A4H1086-16	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7025	A4H1086-17	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7026	A4H1086-18	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7027	A4H1086-19	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7028	A4H1086-20	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7029	A4H1086-21	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7030	A4H1086-22	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7035	A4H1086-23	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7037	A4H1086-24	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7038	A4H1086-25	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7039	A4H1086-26	Drinking Water	08/13/24 00:00	08/13/24 12:18
DF-7041	A4H1086-27	Drinking Water	08/13/24 00:00	08/13/24 12:18

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4412 S Corbett Ave
Portland, OR 97239Project: **Portland Public Schools**
Project Number: **Benson HS/25000.250**
Project Manager: **Joel McCarthy****Report ID:**
A4H1086 - 08 16 24 1513**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-7000 (A4H1086-01)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 19:35	EPA 200.8	
DF-7001 (A4H1086-02)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 19:40	EPA 200.8	
DF-7002 (A4H1086-03)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 19:41	EPA 200.8	
DF-7005 (A4H1086-04)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 19:43	EPA 200.8	
DF-7006 (A4H1086-05)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 19:45	EPA 200.8	
DF-7007 (A4H1086-06)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 19:46	EPA 200.8	
DF-7008 (A4H1086-07)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 19:51	EPA 200.8	
DF-7009 (A4H1086-08)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 19:53	EPA 200.8	
DF-7010 (A4H1086-09)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	1.89	---	0.200	ug/L	1	08/14/24 19:55	EPA 200.8	

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PBS Engineering and Environmental4412 S Corbett Ave
Portland, OR 97239Project: **Portland Public Schools**Project Number: **Benson HS/25000.250**Project Manager: **Joel McCarthy****Report ID:****A4H1086 - 08 16 24 1513**

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-7013 (A4H1086-10)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	0.694	---	0.200	ug/L	1	08/14/24 19:56	EPA 200.8	
DF-7014 (A4H1086-11)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	0.388	---	0.200	ug/L	1	08/14/24 19:58	EPA 200.8	
DF-7017 (A4H1086-12RE1)				Matrix: Drinking Water				
Batch: 24H0613								
Lead	6.13	---	0.200	ug/L	1	08/16/24 12:12	EPA 200.8	DW-D
DF-7018 (A4H1086-13RE1)				Matrix: Drinking Water				
Batch: 24H0613								
Lead	8.65	---	0.200	ug/L	1	08/16/24 12:18	EPA 200.8	DW-D
DF-7019 (A4H1086-14)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	1.43	---	0.200	ug/L	1	08/14/24 20:00	EPA 200.8	
DF-7021 (A4H1086-15)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 20:01	EPA 200.8	
DF-7024 (A4H1086-16)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 20:03	EPA 200.8	
DF-7025 (A4H1086-17)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	0.466	---	0.200	ug/L	1	08/14/24 20:05	EPA 200.8	
DF-7026 (A4H1086-18)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 20:06	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-7027 (A4H1086-19)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	0.848	---	0.200	ug/L	1	08/14/24 20:11	EPA 200.8	
DF-7028 (A4H1086-20RE1)				Matrix: Drinking Water				
Batch: 24H0613								
Lead	ND	---	0.200	ug/L	1	08/16/24 12:23	EPA 200.8	DW-D
DF-7029 (A4H1086-21RE1)				Matrix: Drinking Water				
Batch: 24H0613								
Lead	6.88	---	0.200	ug/L	1	08/16/24 12:28	EPA 200.8	DW-D
DF-7030 (A4H1086-22)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 20:13	EPA 200.8	
DF-7035 (A4H1086-23)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	0.537	---	0.200	ug/L	1	08/14/24 20:15	EPA 200.8	
DF-7037 (A4H1086-24)				Matrix: Drinking Water				
Batch: 24H0506								
Lead	ND	---	0.200	ug/L	1	08/14/24 20:16	EPA 200.8	
DF-7038 (A4H1086-25)				Matrix: Drinking Water				
Batch: 24H0504								
Lead	ND	---	0.200	ug/L	1	08/14/24 20:23	EPA 200.8	
DF-7039 (A4H1086-26)				Matrix: Drinking Water				
Batch: 24H0504								
Lead	0.391	---	0.200	ug/L	1	08/14/24 20:25	EPA 200.8	
DF-7041 (A4H1086-27)				Matrix: Drinking Water				
Batch: 24H0504								
Lead	0.895	---	0.200	ug/L	1	08/14/24 20:26	EPA 200.8	

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4412 S Corbett Ave
Portland, OR 97239Project: **Portland Public Schools**
Project Number: **Benson HS/25000.250**
Project Manager: **Joel McCarthy****Report ID:**
A4H1086 - 08 16 24 1513**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 24H0504 - EPA 200.8 Direct Analysis							Drinking Water					
Blank (24H0504-BLK1)		Prepared: 08/14/24 08:03		Analyzed: 08/14/24 20:20								
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (24H0504-BS1)		Prepared: 08/14/24 08:03		Analyzed: 08/14/24 20:21								
EPA 200.8												
Lead	16.0	---	0.201	ug/L	1	15.0	---	106	85 - 115%	---	---	
No Client related Batch QC samples analyzed for this batch. See notes page for more information.												
Batch 24H0506 - EPA 200.8 Direct Analysis							Drinking Water					
Blank (24H0506-BLK1)		Prepared: 08/14/24 08:06		Analyzed: 08/14/24 19:31								
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (24H0506-BS1)		Prepared: 08/14/24 08:06		Analyzed: 08/14/24 19:33								
EPA 200.8												
Lead	15.2	---	0.201	ug/L	1	15.0	---	101	85 - 115%	---	---	
Duplicate (24H0506-DUP1)		Prepared: 08/14/24 08:06		Analyzed: 08/14/24 19:36								
QC Source Sample: DF-7000 (A4H1086-01)												
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	ND	---	---	---	20%	
Matrix Spike (24H0506-MS1)		Prepared: 08/14/24 08:06		Analyzed: 08/14/24 19:38								
QC Source Sample: DF-7000 (A4H1086-01)												
EPA 200.8												
Lead	14.9	---	0.201	ug/L	1	15.0	ND	99	70 - 130%	---	---	
Matrix Spike (24H0506-MS2)		Prepared: 08/14/24 08:06		Analyzed: 08/14/24 20:18								
QC Source Sample: DF-7037 (A4H1086-24)												
EPA 200.8												
Lead	15.1	---	0.201	ug/L	1	15.0	ND	100	70 - 130%	---	---	

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ORELAP ID: OR100062

PBS Engineering and Environmental

4412 S Corbett Ave

Portland, OR 97239

Project: **Portland Public Schools**Project Number: **Benson HS/25000.250**Project Manager: **Joel McCarthy****Report ID:****A4H1086 - 08 16 24 1513**

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 24H0613 - EPA 200.2						Drinking Water						
Blank (24H0613-BLK1)		Prepared: 08/16/24 09:44		Analyzed: 08/16/24 12:01								
EPA 200.8												
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (24H0613-BS1)		Prepared: 08/16/24 09:44		Analyzed: 08/16/24 12:07								
EPA 200.8												
Lead	17.4	---	0.200	ug/L	1	16.7	---	105	85 - 115%	---	---	
Duplicate (24H0613-DUP1)		Prepared: 08/16/24 09:44		Analyzed: 08/16/24 12:34								
QC Source Sample: DF-7029 (A4H1086-21RE1)												
EPA 200.8												
Lead	7.25	---	0.200	ug/L	1	---	6.88	---	---	5	20%	DW-D
Matrix Spike (24H0613-MS1)		Prepared: 08/16/24 09:44		Analyzed: 08/16/24 12:39								
QC Source Sample: DF-7029 (A4H1086-21RE1)												
EPA 200.8												
Lead	23.7	---	0.200	ug/L	1	16.7	6.88	101	70 - 130%	---	---	DW-D

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ORELAP ID: OR100062

PBS Engineering and Environmental4412 S Corbett Ave
Portland, OR 97239Project: **Portland Public Schools**Project Number: **Benson HS/25000.250**Project Manager: **Joel McCarthy****Report ID:****A4H1086 - 08 16 24 1513****SAMPLE PREPARATION INFORMATION****Total Metals in Drinking Water by EPA 200.8 (ICPMS)****Prep: EPA 200.2**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24H0613</u>							
A4H1086-12RE1	Drinking Water	EPA 200.8	08/13/24 00:00	08/16/24 09:44	45mL/50mL	45mL/50mL	1.00
A4H1086-13RE1	Drinking Water	EPA 200.8	08/13/24 00:00	08/16/24 09:44	45mL/50mL	45mL/50mL	1.00
A4H1086-20RE1	Drinking Water	EPA 200.8	08/13/24 00:00	08/16/24 09:44	45mL/50mL	45mL/50mL	1.00
A4H1086-21RE1	Drinking Water	EPA 200.8	08/13/24 00:00	08/16/24 09:44	45mL/50mL	45mL/50mL	1.00

Prep: EPA 200.8 Direct Analysis

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24H0504</u>							
A4H1086-25	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:03	10mL/10mL	10mL/10mL	1.00
A4H1086-26	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:03	10mL/10mL	10mL/10mL	1.00
A4H1086-27	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:03	10mL/10mL	10mL/10mL	1.00
<u>Batch: 24H0506</u>							
A4H1086-01	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-02	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-03	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-04	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-05	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-06	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-07	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-08	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-09	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-10	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-11	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-14	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-15	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-16	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-17	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-18	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-19	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-22	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-23	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00
A4H1086-24	Drinking Water	EPA 200.8	08/13/24 00:00	08/14/24 08:06	10mL/10mL	10mL/10mL	1.00

Apex Laboratories

Jason Woodcock, Project Manager

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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: **Benson HS/25000.250**

Project Manager: **Joel McCarthy**

Report ID:

A4H1086 - 08 16 24 1513

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.

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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. 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 one half of the Reporting Limit (RL).
Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.
-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.

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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.

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A4H1086 - 08 16 24 1513

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
--------	----------	--------	---------	--------	---------------

All reported analytes are included in Apex Laboratories' current ORELAP scope.

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

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Project Manager: **Joel McCarthy**

Report ID:

A4H1086 - 08 16 24 1513

6700 SW Sandburg St, Tigard, OR 97223 Ph: 503-718-2323		Project Name: Benson HS		Project #: 25000.250	
Company: PBS Eng + Env		Project Mgr: Joel McCarthy		PO #	
Address:		Email: Joel.McCarthy@PBSD.org		Phone:	
ANALYSIS REQUEST					
Sampled by: OR		Site Location: OR			
State: OR		County:			
DATE		TIME		MATRIX	
8/13/24		14:04		H ₂ O	
SAMPLE ID		# OF CONTAINERS			
1 DF-7000		4			
2 DF-7001					
3 DF-7002					
4 DF-7005					
5 DF-7006					
6 DF-7007					
7 DF-7008					
8 DF-7009					
9 DF-7010					
10 DF-7013					
SPECIAL INSTRUCTIONS:					
Standard Turn Around Time (TAT) = 10 Business Days					
TAT Requested (circle) 1 Day 2 Day 3 Day 5 Day Standard Other:					
SAMPLES ARE HELD FOR 30 DAYS					
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:	
Signature: Joel McCarthy		Signature: Joel McCarthy		Signature:	
Date: 8-13-24		Date: 8/13/24		Date:	
Printed Name: Joel McCarthy		Printed Name: Joel McCarthy		Printed Name:	
Time: 12:18		Time: 12:18		Time:	
Company: PBS		Company: PBS		Company:	

Form Y-002 R-01

Apex Laboratories

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Portland, OR 97239

Project: **Portland Public Schools**

Project Number: **Benson HS/25000.250**

Project Manager: **Joel McCarthy**

Report ID:

A4H1086 - 08 16 24 1513

6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323		Company: PBS ENG + ENV		Project Mgr: JOEL MCCARTHY		Project Name: BENSON HS		Project #: 25000.250	
Address:		Phone:		Email: JOEL.MCCARTHY@PBSUSA.COM		Project #: 25000.250		Project Name: BENSON HS	
Sampled by:		Site Location:		State: OR		County:		Frozen Archive	
DATE		TIME		MATRIX		# OF CONTAINERS		NWTPH-HCID	
SAMPLE ID		DATE		TIME		MATRIX		# OF CONTAINERS	
1 DF-7014		8/13/24		H2O		1		NWTPH-DX	
2 DF-7017								NWTPH-GX	
3 DF-7018								8260 BTEX	
4 DF-7019								8260 RBDV VOCs	
5 DF-7021								8260 Halo VOCs	
6 DF-7024								8260 VOCs Full List	
7 DF-7025								8270 SIM PAHs	
8 DF-7026								8270 Semi-Vols Full List	
9 DF-7027								8082 PCBs	
10 DF-7028								8081 Pesticides	
								RCRA Metals (8)	
								Priority Metals (13)	
								Al, Sb, As, Ba, Be, Cd, Cr, Cs, Co, Cu, Fe, Pb, Hg, Mn, Mo, Ni, K, Se, Ag, Na, TI, V, Zn	
								TOTAL DISS. TCLP	
								TCLP Metals (8)	
								Hold Sample	
								Frozen Archive	
SPECIAL INSTRUCTIONS:									
Standard Turn Around Time (TAT) = 10 Business Days									
TAT Requested (circle) 1 Day 2 Day 3 Day 5 Day Standard Other:									
SAMPLES ARE HELD FOR 30 DAYS									
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		RECEIVED BY:		RECEIVED BY:	
Signature:		Signature:		Signature:		Signature:		Signature:	
Date:		Date:		Date:		Date:		Date:	
Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:	
Company:		Company:		Company:		Company:		Company:	

Form Y-002 R-01

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Project Manager: **Joel McCarthy**

Report ID:

A4H1086 - 08 16 24 1513

6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323		Project Name: BENSON HS		Project #: 25000.250	
Company: PBS ENG + ENV		Project Mgr: JOEL MCCARTHY		Email: JOEL.MCCARTHY@PBSUSA.COM	
Address:		Phone:		ANALYSIS REQUEST	
Sampled by:		DATE		TIME	
Site Location:		MATRIX		# OF CONTAINERS	
State:		DATE		TIME	
County:		DATE		TIME	
SAMPLE ID		DATE		TIME	
1 DF-7029		8-13-24		H20 1	
2 DF-7030					
3 DF-7035					
4 DF-7037					
5 DF-7038					
6 DF-7039					
7 DF-7041					
8					
9					
10					
SPECIAL INSTRUCTIONS:		Standard Turn Around Time (TAT) = 10 Business Days		TAT Requested (circle) 1 Day 2 Day 3 Day 5 Day Other:	
RECEIVED BY: Signature: Date: 9-13-24		RECEIVED BY: Signature: Date: 8/13/24		RECEIVED BY: Signature: Date:	
Printed Name: Joel McCarthy		Printed Name: Kyrina Marquis		Printed Name: Time:	
Company: PBS		Company: PBS		Company: Time:	

Form Y-002 R-01

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Jason Woodcock, Project Manager

PBS Engineering and Environmental

4412 S Corbett Ave

Portland, OR 97239

Project: Portland Public Schools

Project Number: Benson HS/25000.250

Project Manager: Joel McCarthy

Report ID:

A4H1086 - 08 16 24 1513

APEX LABS COOLER RECEIPT FORM

Client: PBS Element WO#: A4H1086

Project/Project #: Benson HS 125000-250

Delivery Info:

Date/time received: 8/13/24 @ 12:18 By: JKM

Delivered by: Apex Client ☒ ESS ☐ FedEx ☐ UPS ☐ Radio ☐ Morgan ☐ SDS ☐ Evergreen ☐ Other

From USDA Regulated Origin? Yes ☐ No ☒

Cooler Inspection Date/time inspected: 8/13/24 @ 12:18 By: JKM

Chain of Custody included? Yes ☒ No ☐

Signed/dated by client? Yes ☒ No ☐

Contains USDA Reg. Soils? Yes ☐ No ☒ Unsure (email RegSoils)

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	21.6						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	N						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	None						
Condition (In/Out):	Out						

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

Green dots applied to out of temperature samples? Yes/No

Out of temperature samples form initiated? Yes/No

Sample Inspection: Date/time inspected: 8/13/24 @ 16:16 By: JKM

All samples intact? Yes ☒ No ☐ Comments:

Bottle labels/COCs agree? Yes ☒ No ☐ Comments:

COC/container discrepancies form initiated? Yes ☐ No ☒

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 ☒ pH ID: A23172

Comments:

Labeled by: JKM

Witness: JKM

Cooler Inspected by: JKM

Form Y-003 R-02

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