

November 6, 2017

Kennewick School District No. 17
Attn: Keith Colee, Maintenance and Operations Manager
1000 West Fourth Avenue
Kennewick, Washington, 99336

**RE: Winter 2016 Drinking Water Sampling Results
Park Middle School, 1011 West 10th Avenue, Kennewick, Washington**

Dear Keith:

On Thursday, December 22, 2016, Fulcrum Environmental Consulting, Inc. (Fulcrum) collected 34 drinking water samples for lead and copper analysis from Park Middle School (School) located at 1011 West 10th Avenue in Kennewick, Washington. Initial sampling identified six fixture locations with copper concentrations above guidance levels. Fulcrum returned to the School on February 25, 2017 to collect samples after remediation of the fixtures and laboratory results found concentrations to be below guidance levels. Sampling was completed as part of a District-wide project and all analysis was completed by Washington State Department of Ecology (Ecology) accredited laboratories.

Summary

The purpose of initial sampling was to evaluate current drinking water quality conditions with respect to lead and copper as a result of the increased national and local interest related to lead in drinking water. The intent of sampling was to meet the requirements of the pending regulations set forth in Washington Administrative Code (WAC) 246-366A-130 and 246-366A-135¹. Consistent with the regulations, Fulcrum completed sampling at the rates of at least 50% of plumbing fixtures used regularly for drinking or cooking in elementary and preschools and at least 25% of drinking or cooking fixtures in middle schools, junior high schools, and high schools. In addition, Fulcrum sampled administrative facilities in the District at the same rate as elementary schools, of at least 50% of drinking and cooking fixtures.

Fulcrum completed initial sampling on December 22, 2016. Initial results identified six samples with copper concentrations above the Environmental Protection Agency (EPA) action level of 1,300 micrograms per liter (µg/L). Upon receipt of results, the District removed the identified fixtures from service pending remediation and further testing.

Copper is not a significant component in fixtures, but is the primary material in the plumbing system. To remediate elevated copper, the District aggressively flushed the fixtures with cold water to clear the plumbing of copper construction debris. Fulcrum returned on February 25, 2017 and collected samples to evaluate the success of the remediation. Follow-up samples yielded results below the EPA action level,

¹ Washington State Department of Health, WAC 246-366A, *The Environmental Health and Safety Standards of Primary and Secondary Schools*, <http://apps.leg.wa.gov/WAC/default.aspx?cite=246-366A>, July 26, 2016

confirming the remediation was successful. Following sampling and review of laboratory results, Fulcrum recommended, and the District elected, to return the fixtures to service.

As all samples now report concentrations below lead and copper action levels, at this time Fulcrum does not recommend any additional sampling. However, consistent with industry practice and the intent of WAC 246-366A, Fulcrum recommends that the District complete re-sampling of the building within the next five years (before December 2021). See Figure 1 in Attachment A for fixture locations and laboratory results.

Sampling Methodology

As a portion of this project, Fulcrum prepared a Sampling and Analysis Plan (SAP) intended to satisfy future initial sampling requirements under pending regulations.

For initial evaluation purposes, Fulcrum collected “first draw” samples. This “first draw” water volume consists of 250 milliliters (mL) and is intended to represent the water quality in the fixture, tubing connecting the fixture to the building piping, and potentially a portion of the building piping. If lead and copper are present, this first-draw sample typically contains the highest lead levels and indicates high copper from the associated building piping.

For most post-remediation evaluation sampling, Fulcrum collected three-part samples consisting of the first draw, “second draw”, and “third draw” water volumes. Second and third draw samples are intended to represent the water quality of building piping and plumbing components behind the fixture and the water entering the building from the water main.

As a quality control measure, Fulcrum also included a laboratory blank of distilled water and a laboratory “spike” sample with known concentrations of lead and copper at the selected action levels for the project during all sampling events. Blank and spike sample results are included in the results tables for reference.

Blank and spike samples were used to evaluate laboratory performance. The reported lead and copper concentrations of quality assurance samples provided a metric to determine accuracy of the analyses. If the reported concentration of the spike sample differed from the action level, then the spike sample concentration was used as the action level.

Field evaluation of pH and temperature of drinking water was completed during the cold water flush and immediately following sample collection on select fixtures during the initial sampling event as a general evaluation of water quality.

Sampling Activities

Fulcrum’s two-part sampling process consisted of an initial site visit the prior afternoon/evening to locate and flush each water sampling location (fixture). Sample collection occurred the following morning, after the fixture sat motionless for more than eight but no less than 18 hours, typically approximately 14 hours.

Initial Sampling

On the initial visit, Fulcrum flushed cold water through each fixture selected for sampling for approximately one minute. Following the flush, each fixture was covered and secured within a plastic bag. The plastic bags were marked with signage indicating testing was in progress and the fixture should not be used. Fulcrum returned to the school eight to 18 hours later to collect the samples. Each sample consisted of the first draw collected into 250-mL unpreserved polyethylene bottles and was immediately placed on ice in a chilled cooler.

Samples collected from the initial sampling event were delivered under chain-of-custody to RJ Lee Group's Columbia Basin Analytical Laboratory (Ecology Lab ID: C859-16) in Pasco, Washington for analysis.

Fixture Replacement and Flushing

Fixtures identified with elevated lead concentrations were replaced and preconditioned by running cold water continuously through the fixture for 24 hours, as outlined in WAC 246-366A-130. Following replacement and preconditioning, Fulcrum collected follow-up samples to confirm the success of fixture replacement.

Fixtures producing elevated copper concentrations were generally identified in newer District buildings and were not associated with specific fixture styles. The relationship between building construction age and fixture styles indicates elevated copper concentrations are principally associated with construction debris in the plumbing system.

All fixtures with elevated copper were flushed aggressively by running water through the fixture at high flow with the aerator removed for approximately 30 minutes to clear the plumbing of any debris potentially causing elevated copper concentrations. Following an aggressive flush, fixtures were resampled to evaluate the effectiveness at reducing copper concentrations. The District elected to install filters, install signage indicating the fixtures should be used only for handwashing, or permanently removed from service fixtures that did not respond to an aggressive flush. Filtered fixtures were resampled following filter installation to verify effectiveness of the filter.

Remedial Sampling

Remedial sampling typically consisted of first, second, and third draw samples from the fixture location and plumbing system in question. First draw samples were collected into 250 mL polyethylene bottles preserved with nitric acid. The second draw water volume consists of water collected into a 250 mL unpreserved polyethylene container immediately following the first draw. No water was lost between collection of the first and second draw samples. The third draw water volume is a 1,000 mL sample collected into a one liter unpreserved polyethylene container after the fixture has been flushed for about three to five minutes.

Samples collected following remedial activities were shipped by common carrier under chain of custody to Fremont Analytical Laboratory (Ecology Lab ID: C910-16) in Seattle, Washington for analysis. Fremont was selected based on their availability to complete analysis on an expedited schedule.

Analytical Results

Samples from both initial and remedial sampling events were analyzed for lead and copper in drinking water by EPA Method 200.8.

Initial Sampling

Sample locations from the initial sampling event are presented in Figure 1 in Attachment A of this letter. A site-specific sampling and analysis plan (SSSAP) that provides a building specific summary of the location, number, and sampling frequency of water fixture locations is located in Attachment B. Initial analytical results are summarized in Table 1 located in Attachment C of this letter. Laboratory analytical results from the initial sampling event are located in Attachment D of this letter.

In addition, pH and temperature data from the initial sampling event is presented in Table 2 in Attachment C of this letter.

Remedial Sampling

Sample locations from the remedial sampling event are presented in Figure 1 in Attachment A of this letter. The remedial analytical results from this project are summarized in Table 3 located in Attachment C of this letter. Laboratory analytical results from the remedial sampling event are located in Attachment E of this letter.

Discussion

Initial Sampling

Analytical results identified six samples with a copper concentration above the EPA action level of 1,300 µg/L. No samples were identified with lead concentrations above the EPA action level of 15 µg/L.

Remedial Sampling

Immediately following receipt of initial sampling results, the District removed the identified fixtures from service pending remediation and further testing. To remediate elevated copper concentrations, the District completed an aggressive flush of the fixtures. Fulcrum returned on the morning following the aggressive flush, February 25, 2017, to collect follow-up samples.

Analytical results from remedial sampling indicated the aggressive flush was successful at reducing copper concentrations below the action level for the fixtures in question.

Recommendations

No samples were found to contain lead concentrations above the EPA action level of 15 µg/L. A total of six initial samples contained copper above the EPA action level of 1,300 µg/L. The District completed an aggressive flush to reduce the copper concentration of the fixtures and follow-up samples yielded results below the action level, confirming the remediation was successful. Following sampling and review of laboratory results, Fulcrum recommended, and the District elected, to return the fixtures to service.

As all samples now report concentrations below lead and copper action levels, Fulcrum does not recommend any additional sampling at this time. However, consistent with industry practice and the intent of WAC 246-366A, Fulcrum recommends that the District complete re-sampling of the building within the next five years (before December 2021).

If you have any questions, please feel free to contact me at (509) 574-0839.

Sincerely,



Amanda Enbysk, GIT
Environmental Geologist



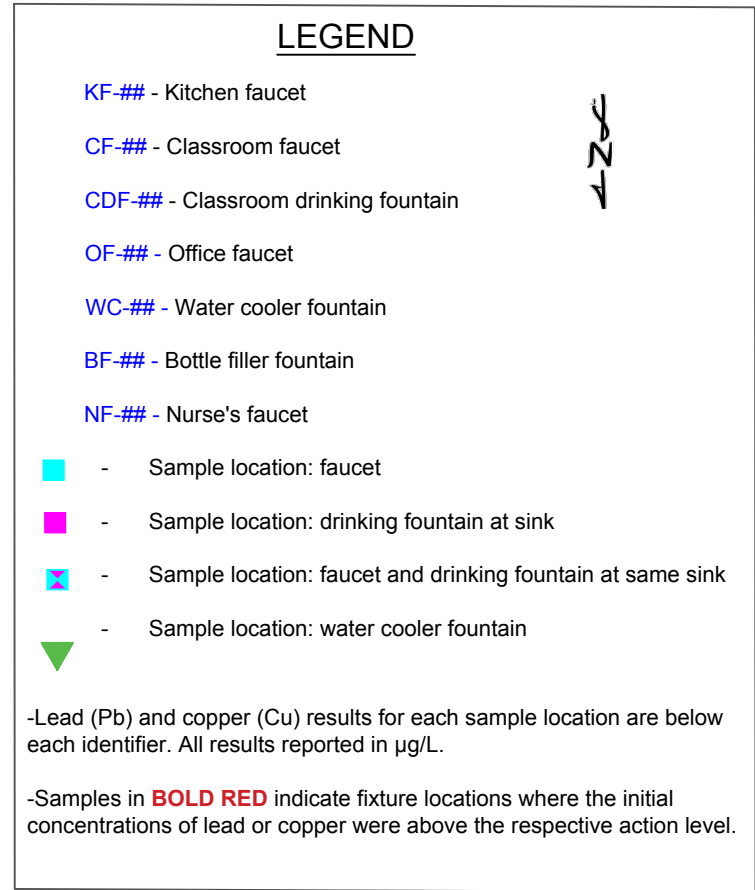
Ryan K. Mathews, CIH, CHMM
Principal



ATTACHMENT A

Figure 1: Sample Location Map





DRAWING PROVIDED BY KENNEWICK SCHOOL DISTRICT

ATTACHMENT B

Site-Specific Sampling and Analysis Plan



Site-Specific Sampling and Analysis Plan

Kennewick School District – Winter 2016 Drinking Water Sampling

Note: This SSSAP has been prepared as a supplement to the project SAP/QAPP and provide a building specific summary of the location, number, and sampling frequency of water fixture locations.

Campus/Building: Park Middle School Address: 1011 West 10th Avenue, Kennewick, WA

☐ Elementary ☒ Middle School ☐ High School ☐ Administration

Date of Construction: 1963 Modernizations: 1999

Fixture Type	Locations	Fixture Styles ¹	Samples	Ratio
Drinking fountain/water cooler (DF/WC)	7	3	5	71%
Kitchen Fixture (KF)	6	6	6	100%
Classroom faucet, including faucets in Food Labs and Life Sciences Classrooms (CF)	39	3	10	26%
Classroom drinking fountain at sink (CDF)	38	3	10	26%
Nurse's Office/Health Room (NF)	1	1	1	100%
Teacher's Lounges/Work Rooms (OF)	3	2	2	67%
TOTALS	94		34	36%

¹ Fixture styles are approximate based on sampler's observations

Lead Sampler: Nathan Bostrom Date: 12/22/2016

Sample Prefix: PMS – 122216 – P (first-draw) – 01-36
School Code Date Sample Type Fixture Type Sample Number

Laboratory: R. J. Lee Group, Columbia Basin Analytical Delivery Date: December 22, 2016

Comments:

ATTACHMENT C

Table 1: Initial Sampling Analytical Results Summary Table

Table 2: pH and Temperature Data Summary Table

Table 3: Remedial Sampling Analytical Results Summary Table

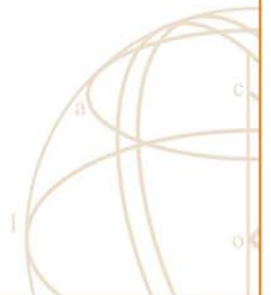


Table 1: Initial Sampling Analytical Results

Sample Identification and Location	Fixture Type	Lead Results (µg/L)	Copper Results (µg/L)
PMS122216-P-KF-01: Kitchen	Kitchen Faucet	11	1,500
PMS122216-P-KF-02: Kitchen	Kitchen Faucet	2	920
PMS122216-P-KF-03: Kitchen	Kitchen Faucet	2	580
PMS122216-P-KF-04: Kitchen	Kitchen Faucet	2	910
PMS122216-P-KF-05: Kitchen	Kitchen Faucet	2	260
PMS122216-P-KF-06: Kitchen	Kitchen Faucet	<1.0	680
PMS122216-P-DF/WC-07: Commons, left	Drinking Fountain/Water Cooler	<1.0	70
PMS122216-P-DF/WC-08: Commons, right	Drinking Fountain/Water Cooler	<1.0	70
PMS122216-P-OF-09: Library Office	Office Faucet	<1.0	1,100
PMS122216-P-OF-10: Staff Lounge	Office Faucet	<1.0	740
PMS122216-P-NF-11: Nurses Office	Nurse's Faucet	<1.0	840
PMS122216-P-CDF-12: Stage drinking fountain	Classroom Drinking Fountain	<1.0	1,200
PMS122216-P-CDF-13: Room 405	Classroom Drinking Fountain	<1.0	930
PMS122216-P-DF-14: Girls locker room	Drinking Fountain	<1.0	1,400
PMS122216-P-DF/WC-15: Room 404, left	Drinking Fountain/Water Cooler	<1.0	550
PMS122216-P-DF/WC-16: Room 404, right	Drinking Fountain/Water Cooler	<1.0	480
PMS122216-P-CDF-17: Room 401	Classroom Drinking Fountain	<1.0	280
PMS122216-P-CF-18: Room 213	Classroom Faucet	<1.0	1,200
PMS122216-P-CDF-19: Room 214	Classroom Drinking Fountain	<1.0	1,500
PMS122216-P-CF-20: Room 212	Classroom Faucet	9	950
PMS122216-P-KF-21: Room 215, left	Kitchen Faucet	<1.0	1,300
PMS122216-P-KF-22: Room 215, right	Kitchen Faucet	<1.0	1,200
PMS122216-P-CF-23: Room 211	Classroom Faucet	<1.0	1,000
PMS122216-P-CDF-24: Room 210	Classroom Drinking Fountain	<1.0	1,300
PMS122216-P-CF-25: Room 318	Classroom Faucet	<1.0	1,300
PMS122216-P-CDF-26: Room 202	Classroom Drinking Fountain	<1.0	1,300
PMS122216-P-CDF-27: Room 316	Classroom Drinking Fountain	<1.0	1,300
PMS122216-P-CDF-28: Room 313	Classroom Drinking Fountain	<1.0	1,200
PMS122216-P-CF-29: Room 315	Classroom Faucet	<1.0	1,100
PMS122216-P-CF-30: Room 314	Classroom Faucet	<1.0	1,400
PMS122216-P-CDF-31: Room 301	Classroom Drinking Fountain	<1.0	1,200
PMS122216-P-CF-32: Room 302	Classroom Faucet	<1.0	1,200
PMS122216-P-CDF-33: Room 303	Classroom Drinking Fountain	<1.0	1,300

Sample Identification and Location	Fixture Type	Lead Results (µg/L)	Copper Results (µg/L)
PMS122216-P-CF-34: Room 305	Classroom Faucet	<1.0	1,400
<i>PMS122216-P-CF-35: Laboratory Blank</i>	<i>Distilled Water Blank</i>	<1.0	<10
<i>PMS122216-P-CF-36: Laboratory Spike</i>	<i>Lead and Copper Spike</i>	14	1,400
EPA Action Level		15	1,300

- 1 µg/L means microgram per liter or parts per billion (ppb).
- 2 Action levels based on the U.S. EPA's Lead and Copper Rule.
Results indicated in **bold** indicate concentrations above the action levels of 15 µg/L for lead and 1,300 µg/L for copper
Results indicated in *italics* are quality assurance spike and blank samples.

Table 2: pH and Temperature Data Summary

Sample Number	Fixture Type	pH Flush	pH Sample	Temperature (°C) Flush	Temperature (°C) Sample
PMS122216-P-KF-04: Kitchen, left	Kitchen Faucet	8.03	7.94	15.4	18.2
PMS122216-P-DF/WC-08: Commons, right	Water Cooler Fountain	7.73	7.98	17.0	13.2
PMS122216-P-CDF-12: Stage drinking fountain	Classroom Drinking Fountain	7.84	7.89	19.6	17.9
PMS122216-P-DF/WC-16: Room 404, right	Water Cooler Fountain	7.92	7.99	15.4	15.3
PMS122216-P-CF-20: Room 212	Classroom Faucet	7.8	7.95	19.6	19.7
PMS122216-P-CF-23: Room 211	Classroom Faucet	7.88	-	20.6	-

Table 3: Remedial Sampling Analytical Results

Sampling Event	Sample Identification							
	KF-01	CDF-12	DF-14	CDF-19	CF-30	CF-34	Laboratory Blank (-35)	Laboratory Spike (-36)
Initial (12/22/16)	1,500	1,400	1,400	1,500	1,400	1,400	<10	1,400
Aggressive Flush (2/25/17)	981	822	1,030	926	788	808	3.02	1,200
EPA Action Level	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300

- 1 µg/L means microgram per liter or parts per billion (ppb).
- 2 Action levels based on the U.S. EPA's Lead and Copper Rule.
Results indicated in **bold** indicate concentrations above the action levels of 15 µg/L for lead and 1,300 µg/L for copper
Results indicated in *italics* are quality assurance spike and blank samples.

ATTACHMENT D

Initial Analytical Results



RJ LeeGroup, Inc. | Columbia Basin Analytical Laboratories

2710 North 20th Avenue, Pasco WA 99301

Tel: (509) 545-4989 | Fax: (509) 544-6010

Fulcrum Environmental
406 N. 2nd St.
Yakima, WA 98901

Subject: Chemical Analysis Report

Columbia Basin Analytical Laboratories received 36 sample(s) on 12/22/16 for analysis. These sample(s) have been assigned a login order number of W612122. Enclosed is the final report that consists of a summary report of the sample(s), and a copy of the chain of custody.

General Lab Comments

The results provided in this report relate only to the items tested. Sample(s) were received in acceptable conditions unless otherwise noted in the comments above. Sample(s) have not been field blank corrected unless otherwise noted in the general set comments above. The sample(s) were prepared in accordance with EPA 200.8 and analyzed in compliance with EPA 200.8. This test report shall not be reproduced, except in full, without written approval of Columbia Basin Analytical Laboratories. Any questions, please contact our office.

All samples were diluted 1:10. Samples that exceeded the instrument calibration range were rerun at a 1:100 dilution, necessitating a 10-fold increase in the PQL. Each is noted with an "X" qualifier.

Release of the data contained in the hard copy report has been authorized by the Laboratory Director or a designee as verified by the following signature. This report has been administratively reviewed by the following individual:

A handwritten signature in black ink, appearing to read "Fernanda Pincheira". The signature is stylized with large, flowing letters.

02/10/17

Project Coordinator II, M. Fernanda Pincheira

Date

If you have any questions please feel free to contact Fernanda Pincheira at MPincheira@rjleegroup.com.

Columbia Basin Analytical Laboratories | 2710 North 20th Avenue, Pasco WA 99301 | 509.545.4989

WWW.RJLEEGROUP.COM

Report Template: GenMetalReportFull_v12.rpt

Approved: 02/10/17 16:16
Report Time Stamp: 02/10/17 16:45



Laboratory Report

Ryan Mathews

Fulcrum Environmental
406 N. 2nd St.
Yakima, WA 98901

Client Project:

Fulcrum Kennewick

RJ Lee Group No.: W612122

COC No.: Kennewick

Samples Received: 12/22/16

Analysis/Prep Date: 02/10/17

Report Date: 02/10/17

Sample Name:	PMS122216-P-KF-01	Matrix:	Potable Water	Date Received:	12/22/16
RJ Lee Grp. ID:	W612122-01			Date Analyzed:	02/10/17
Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers	
Copper	EPA 200.8	1.5	0.1	X	
Lead	EPA 200.8	0.011	0.001		

Sample Name:	PMS122216-P-KF-02	Matrix:	Potable Water	Date Received:	12/22/16
RJ Lee Grp. ID:	W612122-02			Date Analyzed:	02/09/17
Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers	
Copper	EPA 200.8	0.92	0.01		
Lead	EPA 200.8	0.002	0.001		

Sample Name:	PMS122216-P-KF-03	Matrix:	Potable Water	Date Received:	12/22/16
RJ Lee Grp. ID:	W612122-03			Date Analyzed:	02/09/17
Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers	
Copper	EPA 200.8	0.58	0.01		
Lead	EPA 200.8	0.002	0.001		

Sample Name:	PMS122216-P-KF-04	Matrix:	Potable Water	Date Received:	12/22/16
RJ Lee Grp. ID:	W612122-04			Date Analyzed:	02/09/17
Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers	
Copper	EPA 200.8	0.91	0.01		
Lead	EPA 200.8	0.002	0.001		

Sample Name:	PMS122216-P-KF-05	Matrix:	Potable Water	Date Received:	12/22/16
RJ Lee Grp. ID:	W612122-05			Date Analyzed:	02/09/17
Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers	
Copper	EPA 200.8	0.26	0.01		
Lead	EPA 200.8	0.002	0.001		

Columbia Basin Analytical Laboratories | 2710 North 20th Avenue, Pasco WA 93301 | 509.545.4989

WWW.RJLEEGROUP.COM

Report Template: GenMetalReportFull_v12.rpt

Approved: 02/10/17 16:16
Report Time Stamp: 02/10/17 16:45

**Sample Name:** PMS122216-P-KF-06**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-06**Date Analyzed:** 02/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.68	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-DF/WC-07**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-07**Date Analyzed:** 02/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.07	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-DF/WC-08**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-08**Date Analyzed:** 02/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.07	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-OF-09**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-09**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.1	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-OF-10**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-10**Date Analyzed:** 02/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.74	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-NF-11**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-11**Date Analyzed:** 02/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.84	0.01	
Lead	EPA 200.8	< 0.0010	0.001	



Sample Name: PMS122216-P-CDF-12 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-12

Date Received: 12/22/16
Date Analyzed: 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.4	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CDF-13 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-13

Date Received: 12/22/16
Date Analyzed: 02/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.93	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-DF-14 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-14

Date Received: 12/22/16
Date Analyzed: 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.4	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-DF/WC-15 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-15

Date Received: 12/22/16
Date Analyzed: 02/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.55	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-DF/WC-16 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-16

Date Received: 12/22/16
Date Analyzed: 02/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.48	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CDF-17 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-17

Date Received: 12/22/16
Date Analyzed: 02/09/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.28	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** PMS122216-P-CF-18**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-18**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.2	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CDF-19**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-19**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.5	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CF-20**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-20**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	0.95	0.01	
Lead	EPA 200.8	0.009	0.001	

Sample Name: PMS122216-P-KF-21**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-21**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.3	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-KF-22**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-22**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.2	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CF-23**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-23**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.0	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	



Sample Name: PMS122216-P-CDF-24 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-24

Date Received: 12/22/16
Date Analyzed: 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.3	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CF-25 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-25

Date Received: 12/22/16
Date Analyzed: 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.3	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CDF-26 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-26

Date Received: 12/22/16
Date Analyzed: 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.3	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CDF-27 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-27

Date Received: 12/22/16
Date Analyzed: 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.3	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CDF-28 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-28

Date Received: 12/22/16
Date Analyzed: 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.2	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CF-29 **Matrix:** Potable Water
RJ Lee Grp. ID: W612122-29

Date Received: 12/22/16
Date Analyzed: 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.1	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** PMS122216-P-CF-30**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-30**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.4	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CDF-31**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-31**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.2	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CF-32**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-32**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.2	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CDF-33**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-33**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.3	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CF-34**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-34**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.4	0.1	X
Lead	EPA 200.8	< 0.0010	0.001	

Sample Name: PMS122216-P-CF-35**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-35**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	< 0.010	0.01	
Lead	EPA 200.8	< 0.0010	0.001	

**Sample Name:** PMS122216-P-CF-36**Matrix:** Potable Water**Date Received:** 12/22/16**RJ Lee Grp. ID:** W612122-36**Date Analyzed:** 02/10/17

Analyte	Method	Result (mg/L)	PQL (mg/L)	Qualifiers
Copper	EPA 200.8	1.4	0.1	X
Lead	EPA 200.8	0.014	0.001	

Report Qualifiers:*A = Target Analyte media breakthrough suspect, see analytical report**D = Analyte analyzed in a dilution**E = Report concentration was above the instrument calibration range**J = Analyte detected below quantitation limits, concentration is estimated**P = Library spectrum match, rsd >90% w RT match**Q = Result out of method specific acceptance QC criteria**S = Spike Recovery outside accepted recovery limits**Z = Not ELAP accredited analyte**ND = Not Detected**B = Analyte detected in the associated blank**d = Data that exceeds the RSD criteria set by the SOP**H = Holding times for preparation or analysis exceeded**L = Sample condition at receipt out of compliance with method defined conditions**R = RPD (relative percent difference) outside accepted recovery limits**U = Analyte analyzed for but not detected**N/A = Not Applicable*
Scientist II DeNomy Dage

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, RJ Lee Group will store the samples for a period of ninety (90) days before discarding. A shipping and handling fee will be assessed for the return of any samples. Unless otherwise noted, samples were received in an acceptable condition. This laboratory operates in accordance with ISO 17025 guidelines, and holds limited scopes of accreditation under ORELAP Lab Code 4061 AIHA-LAP, LLC Lab ID 178656 EPA ID WA01195 and WA DOE Lab ID C859. This report may not be used to claim product endorsement by any laboratory accrediting agency. The results contained in this report relate only to the items tested or to the sample(s) as received by the laboratory. Any reproduction of this document must be in full for the report to be valid. Quality control data is available upon request.

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14 or

RYAN MATHEWS

15.4
15.9
15.0
15.9
15.9
14.6
14.0
15.7
15.6
15.6

R4_12032015

Page 2 of 4

[illegible]

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15.8	16.4	15.4	16.1	15.9	15.8	15.4	14.0	15.5	16.1
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R4-12032015

Page 1 of 1

01

W612122, Page 12 of 12

ATTENTION TO: RYAN MATTHEWS				Purchase Order No.:		Client Job No.:		162017			
Lab Use Only		Project No.:		Client No.:		Turnaround Request		Standard: Yes No		If 'No,' No. of Business Days:	
Date Logged In:		Logged In By:		Sample Purpose: Information X Regulatory		Accreditation (please list below):					
Report Results To		Name: Amanda Enbysk, Ryan Matthews		Company: Fulcrum Environmental Consulting		Address: 406 North 2nd Street		City, State, Zip: Yakima, WA, 98901		Phone: (509) 574-0839 Fax: (509) 575-8453	
Send Invoice To		Call with Verbal Results:		Email Results To: aenbysk@fulcrum.net, CC: rmatthews@fulcrum.net		Fax Results To:		Name: Lorrie Boutillier		Company: Fulcrum Environmental	
Special Instructions		Address: 406 North 2nd Street		Email: lboutillier@fulcrum.net		City, State, Zip: Yakima, WA, 98901		Phone: (509) 574-0839 Fax: (509) 575-8453		EPA 200.8: Pb, Cu	
Client Sample ID		Sample Description		Sample Date		Sample Time		Wipe Area / Air Volume		Pres. Upon Receipt (Y/N)	
PM512216-P-CF-34 Room 305		12-22-16								UNPL	
PM512216-P-CF-35 Room 806										DW	
PM512216-P-CF-36 Room 807										p	
Chain of Custody		Relinquished By (Signature): Nathan H...		Date: 12-22-16 Time: 7:00		Relinquished To:		Method of Shipment:		Chain of Custody	
Relinquished By (Print Name): Nathan H...		Date:		Time:		Relinquished To:		Method of Shipment:		Chain of Custody	
Company Name: Fulcrum		Date:		Time:		Relinquished To:		Method of Shipment:		Chain of Custody	
Relinquished By (Signature):		Date:		Time:		Relinquished To:		Method of Shipment:		Chain of Custody	
Relinquished By (Print Name):		Date:		Time:		Relinquished To:		Method of Shipment:		Chain of Custody	
Company Name:		Date:		Time:		Relinquished To:		Method of Shipment:		Chain of Custody	
Received By (Signature):		Date:		Time:		Relinquished To:		Method of Shipment:		Chain of Custody	
Received By (Print Name):		Date:		Time:		Relinquished To:		Method of Shipment:		Chain of Custody	
Company Name:		Date:		Time:		Relinquished To:		Method of Shipment:		Chain of Custody	

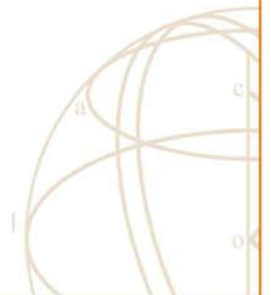
Washington
Columbia Basin Analytical Laboratories
2710 North 20th Avenue
Pasco, WA 99301
509.545.4989 **Phone**
509.544.6010 **Fax**



RJ LEE GROUP
DELIVERING SCIENTIFIC RESOLUTION

ATTACHMENT E

Remedial Analytical Results





Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Fulcrum Environmental

Ryan Mathews
406 N. 2nd Street
Yakima, WA 98901

RE: Kennewick SD Drinking Water - Park Middle School
Work Order Number: 1702287

February 27, 2017

Attention Ryan Mathews:

Fremont Analytical, Inc. received 20 sample(s) on 2/27/2017 for the analyses presented in the following report.

Drinking Water Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward
Project Manager

CC:
Amanda Enbysk

CLIENT: Fulcrum Environmental
Project: Kennewick SD Drinking Water - Park Middle
Work Order: 1702287

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1702287-001	PMS22517-P-KF-01	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-002	PMS22517-S-KF-01	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-003	PMS22517-T-KF-01	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-004	PMS22517-P-CDF-12	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-005	PMS22517-S-CDF-12	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-006	PMS22517-T-CDF-12	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-007	PMS22517-P-CDF-19	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-008	PMS22517-S-CDF-19	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-009	PMS22517-T-CDF-19	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-010	PMS22517-P-CF-30	02/25/2017 9:00 AM	02/27/2017 9:20 AM
1702287-011	PMS22517-S-CF-30	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-012	PMS22517-T-CF-30	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-013	PMS22517-P-CF-34	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-014	PMS22517-S-CF-34	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-015	PMS22517-T-CF-34	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-016	PMS22517-P-CF-35	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-017	PMS22517-P-CF-36	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-018	PMS22517-P-DF-14	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-019	PMS22517-S-DF-14	02/25/2017 9:30 AM	02/27/2017 9:20 AM
1702287-020	PMS22517-T-DF-14	02/25/2017 9:30 AM	02/27/2017 9:20 AM

CLIENT: Fulcrum Environmental
Project: Kennewick SD Drinking Water - Park Middle School

WorkOrder Narrative:

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Prep Sample Comments:

1702287-010A 208794: Prep Comments for EPA200.8, Sample 1702287-010A: Turbidity: 0.00 NTU
1702287-001A 208791: Prep Comments for EPA200.8, Sample 1702287-001A: Turbidity: 0.01 NTU
1702287-016A 208796: Prep Comments for EPA200.8, Sample 1702287-016A: Turbidity: 0.00 NTU
1702287-007A 208793: Prep Comments for EPA200.8, Sample 1702287-007A: Turbidity: 0.00 NTU
1702287-013A 208795: Prep Comments for EPA200.8, Sample 1702287-013A: Turbidity: 0.00 NTU
1702287-017A 208797: Prep Comments for EPA200.8, Sample 1702287-017A: Turbidity: 0.00 NTU
1702287-004A 208792: Prep Comments for EPA200.8, Sample 1702287-004A: Turbidity: 0.06 NTU
1702287-018A 208849: Prep Comments for EPA200.8, Sample 1702287-018A: Turbidity: 0.00 NTU

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Work Order: 1702287
Date Reported: 2/27/2017

CLIENT: Fulcrum Environmental
Project: Kennewick SD Drinking Water - Park Middle School

Lab ID: 1702287-001
Client Sample ID: PMS22517-P-KF-01
Collection Date: 2/25/2017 9:00:00 AM
Matrix: Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Drinking Water Metals by EPA Method 200.8</u>				Batch ID: 16360		Analyst: TN
Copper	981	0.500		µg/L	1	2/27/2017 4:15:23 PM

Lab ID: 1702287-004
Client Sample ID: PMS22517-P-CDF-12
Collection Date: 2/25/2017 9:00:00 AM
Matrix: Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Drinking Water Metals by EPA Method 200.8</u>				Batch ID: 16360		Analyst: TN
Copper	822	0.500		µg/L	1	2/27/2017 4:19:00 PM

Lab ID: 1702287-007
Client Sample ID: PMS22517-P-CDF-19
Collection Date: 2/25/2017 9:00:00 AM
Matrix: Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Drinking Water Metals by EPA Method 200.8</u>				Batch ID: 16360		Analyst: TN
Copper	926	0.500		µg/L	1	2/27/2017 4:29:51 PM



Analytical Report

Work Order: 1702287
Date Reported: 2/27/2017

CLIENT: Fulcrum Environmental
Project: Kennewick SD Drinking Water - Park Middle School

Lab ID: 1702287-010 **Collection Date:** 2/25/2017 9:00:00 AM
Client Sample ID: PMS22517-P-CF-30 **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Drinking Water Metals by EPA Method 200.8

Batch ID: 16360 Analyst: TN

Copper	788	0.500		µg/L	1	2/27/2017 4:33:27 PM
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Lab ID: 1702287-013 **Collection Date:** 2/25/2017 9:30:00 AM
Client Sample ID: PMS22517-P-CF-34 **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Drinking Water Metals by EPA Method 200.8

Batch ID: 16360 Analyst: TN

Copper	808	0.500		µg/L	1	2/27/2017 4:37:03 PM
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Lab ID: 1702287-016 **Collection Date:** 2/25/2017 9:30:00 AM
Client Sample ID: PMS22517-P-CF-35 **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Drinking Water Metals by EPA Method 200.8

Batch ID: 16360 Analyst: TN

Copper	3.02	0.500		µg/L	1	2/27/2017 4:40:39 PM
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Analytical Report

Work Order: 1702287
Date Reported: 2/27/2017

CLIENT: Fulcrum Environmental
Project: Kennewick SD Drinking Water - Park Middle School

Lab ID: 1702287-017

Client Sample ID: PMS22517-P-CF-36

Collection Date: 2/25/2017 9:30:00 AM

Matrix: Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Drinking Water Metals by EPA Method 200.8

Batch ID: 16360 Analyst: TN

Copper	1,200	0.500		µg/L	1	2/27/2017 4:44:16 PM
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Lab ID: 1702287-018

Client Sample ID: PMS22517-P-DF-14

Collection Date: 2/25/2017 9:30:00 AM

Matrix: Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Drinking Water Metals by EPA Method 200.8

Batch ID: 16360 Analyst: TN

Copper	1,030	0.500		µg/L	1	2/27/2017 5:20:20 PM
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Work Order: 1702287
CLIENT: Fulcrum Environmental
Project: Kennewick SD Drinking Water - Park Middle

QC SUMMARY REPORT

Drinking Water Metals by EPA Method 200.8

Sample ID	MB-16360	SampType:	MBLK	Units:	µg/L	Prep Date:	2/27/2017	RunNo:	34678		
Client ID:	MBLKW	Batch ID:	16360			Analysis Date:	2/27/2017	SeqNo:	662272		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	ND	0.500									
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Sample ID	LCS-16360	SampType:	LCS	Units:	µg/L	Prep Date:	2/27/2017	RunNo:	34678		
Client ID:	LCSW	Batch ID:	16360			Analysis Date:	2/27/2017	SeqNo:	662273		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	95.8	0.500	100.0	0	95.8	85	115				
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Sample ID	1702286-001ADUP	SampType:	DUP	Units:	µg/L	Prep Date:	2/27/2017	RunNo:	34678		
Client ID:	BATCH	Batch ID:	16360			Analysis Date:	2/27/2017	SeqNo:	662277		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	521	0.500						546.9	4.82	30	
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Sample ID	1702286-001AMS	SampType:	MS	Units:	µg/L	Prep Date:	2/27/2017	RunNo:	34678		
Client ID:	BATCH	Batch ID:	16360			Analysis Date:	2/27/2017	SeqNo:	662278		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	728	0.500	200.0	546.9	90.5	70	130				
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Sample ID	1702286-001AMSD	SampType:	MSD	Units:	µg/L	Prep Date:	2/27/2017	RunNo:	34678		
Client ID:	BATCH	Batch ID:	16360	Analysis Date:				2/27/2017	SeqNo:	662279	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	737	0.500	200.0	546.9	94.9	70	130	727.8	1.21	30	
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Work Order Number: **1702287**
Date Received: **2/27/2017 9:20:00 AM**

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐

2. How was the sample delivered? FedEx

3. Coolers are present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
4. Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Required <input type="checkbox"/>
6. Was an attempt made to cool the samples?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
7. Were all items received at a temperature of $>0^{\circ}\text{C}$ to 10.0°C^{*}	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
8. Sample(s) in proper container(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sufficient sample volume for indicated test(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Are samples properly preserved?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. Was preservative added to bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
			HNO ₃
12. Is there headspace in the VOA vials?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
13. Did all samples containers arrive in good condition(unbroken)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
14. Does paperwork match bottle labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
15. Are matrices correctly identified on Chain of Custody?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
16. Is it clear what analyses were requested?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
17. Were all holding times able to be met?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

18. Was client notified of all discrepancies with this order? Yes ☒ No ☐ NA ☐

Person Notified:	Amanda Enbysk	Date	2/27/2017
By Whom:	Erica Silva	Via:	<input checked="" type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	"DF-14" bottles received, not on COC		
Client Instructions:	Add and analyze "P", preserve "S" and "T"		

HNO₃ added to 002A, 003A, 005A, 006A, 008A, 009A, 011A, 012A, 014A, 015A, 019A, 020A

Item #	Temp °C
Cooler 1	1.8
Cooler 2	0.9
Sample 1	1.2
Sample 2	1.5

Original



1702287

COC 1.1-4.5.16 - 1 of 2



Fremont
Analytical

3600 Fremont Ave N.
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Client: Fulcrum Environmental Consulting, Inc.

Address: 406 North Second Street
Yakima, WA 98901

City, State, Zip:

Telephone: 509.574.0839 Fax: 509.575.8453

Project Name: Kennewick SD Drinking Water - Park Middle School

Project No: 162017.22

Location: Park Middle School, Kennewick, WA

Report To (PM): Ryan Matthews

PM Email: rmatthews@fulcrum.net; cc: aenbysk@fulcrum.net

Date: 2/25/2017

Laboratory Project No (Internal): 1702287

Page: 1 of 2

Collected by: Amanda Enbysk

Chain of Custody Record and Laboratory Services Agreement

Page 12 of 13

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GV/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	SVOCS (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) Dissolved (D)	Anions (IC)***	EDB (801.1)	Comments
PM522517-P-KF-01	2/25/2017	0900	DW													HNO3 preserved
PM522517-S-KF-01																HOLD; unpreserved
PM522517-T-KF-01																HOLD; unpreserved
PM522517-P-CDF-12																HOLD; unpreserved
PM522517-S-CDF-12																HOLD; unpreserved
PM522517-T-CDF-12																HOLD; unpreserved
PM522517-P-CDF-19																HOLD; unpreserved
PM522517-S-CDF-19																HOLD; unpreserved
PM522517-T-CDF-19																HOLD; unpreserved
PM522517-P-CF-30																HNO3 preserved

***Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished Date/Time: 2/25/2017, 1300 Received Date/Time: 2/27/17 0920

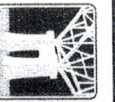
Relinquished Date/Time: Received Date/Time:

Special Remarks: Please preserve all unpreserved samples

TAT: ASAP

TAT -> SameDay NextDay 2 Day 3 Day STD

*Please coordinate with the lab in advance



Fremont

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Chain of Custody Record and Laboratory Services Agreement

Date: 2/25/2017

Laboratory Project No (Internal): 17020887

Page: 2 of 2

Project Name: Kennewick SD Drinking Water - Park Middle School

Project No: 162017.22

Location: Park Middle School, Kennewick, WA

Report To (PM): Ryan Matthews

PM Email: rmatthews@fulcrum.net, cc:aenbysk@fulcrum.net

Collected by: Amanda Enbysk

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Comments
PM522517-T-S-CF-30	2/25/2017	0930	DW														HOLD; upr.
PM522517-T-CF-30																	HOLD; preserved
PM522517-T-E-CF-34																	HOLD; unpreserved
PM522517-T-CF-34																	HOLD; preserved
PM522517-T-CF-35																	↓
PM522517-T-CF-36																	
PM522517-T-P-DE-14																	HOLD
PM522517-T-S-DE-14																	HOLD
PM522517-T-T-DE-14																	HOLD

Relinquished: 2/25/2017, 1300 Date/Time
Received: 2/27/17 Date/Time
Relinquished: 0920 Date/Time
Received: 0920 Date/Time

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