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**Fulcrum Environmental** 

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

RE: Kennewick SD Drinking Water - Eastgate Elem.

Work Order Number: 1703212

March 21, 2017

## **Attention Ryan Mathews:**

Fremont Analytical, Inc. received 9 sample(s) on 3/20/2017 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

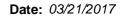
All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward Project Manager CC:

Amanda Enbysk





CLIENT: Fulcrum Environmental Work Order Sample Summary

Project: Kennewick SD Drinking Water - Eastgate El

Work Order: 1703212

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1703212-001	EGE31817-P-NF-12	03/18/2017 7:00 AM	03/20/2017 9:00 AM
1703212-002	EGE31817-P-OF-15	03/18/2017 7:00 AM	03/20/2017 9:00 AM
1703212-003	EGE31817-P-CF-19	03/18/2017 7:00 AM	03/20/2017 9:00 AM
1703212-004	EGE31817-P-CF-20	03/18/2017 7:00 AM	03/20/2017 9:00 AM
1703212-005	EGE31817-P-OF-24	03/18/2017 7:00 AM	03/20/2017 9:00 AM
1703212-006	EGE31817-S-OF-24	03/18/2017 7:00 AM	03/20/2017 9:00 AM
1703212-007	EGE31817-T-OF-24	03/18/2017 7:00 AM	03/20/2017 9:00 AM
1703212-008	EGE31817-P-CF-34	03/18/2017 7:00 AM	03/20/2017 9:00 AM
1703212-009	EGE31817-P-CF-35	03/18/2017 7:00 AM	03/20/2017 9:00 AM



## Case Narrative

WO#: **1703212**Date: **3/21/2017** 

**CLIENT:** Fulcrum Environmental

**Project:** Kennewick SD Drinking Water - Eastgate Elem.

#### 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:**

1703212-001A 211560: Prep Comments for EPA200.8, Sample 1703212-001A: 0.01 NTU 1703212-002A 211561: Prep Comments for EPA200.8, Sample 1703212-002A: 0.10 NTU 1703212-003A 211562: Prep Comments for EPA200.8, Sample 1703212-003A: 0.15 NTU 1703212-004A 211563: Prep Comments for EPA200.8, Sample 1703212-004A: 0.01 NTU 1703212-005A 211564: Prep Comments for EPA200.8, Sample 1703212-005A: 0.02 NTU 1703212-008A 211565: Prep Comments for EPA200.8, Sample 1703212-008A: 0.00 NTU 1703212-009A 211566: Prep Comments for EPA200.8, Sample 1703212-009A: 0.01 NTU

Original



## **Qualifiers & Acronyms**

WO#: **1703212** 

Date Reported: 3/21/2017

## 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



## **Analytical Report**

Work Order: 1703212

Date Reported: 3/21/2017

**CLIENT:** Fulcrum Environmental

Project: Kennewick SD Drinking Water - Eastgate Elem.

**Lab ID:** 1703212-001 **Collection Date:** 3/18/2017 7:00:00 AM

Client Sample ID: EGE31817-P-NF-12 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

<u>Drinking Water Metals by EPA Method 200.8</u>

Batch ID: 16542

Analyst: TN

Copper 797 0.500 µg/L 1 3/21/2017 11:48:22 AM

**Lab ID:** 1703212-002 **Collection Date:** 3/18/2017 7:00:00 AM

Client Sample ID: EGE31817-P-OF-15 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

<u>Drinking Water Metals by EPA Method 200.8</u>
Batch ID: 16542 Analyst: TN

Copper 694 0.500  $\mu g/L$  1 3/21/2017 11:52:23 AM

**Lab ID:** 1703212-003 **Collection Date:** 3/18/2017 7:00:00 AM

Client Sample ID: EGE31817-P-CF-19 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

<u>Drinking Water Metals by EPA Method 200.8</u>

Batch ID: 16542

Analyst: TN

Copper 578 0.500 µg/L 1 3/21/2017 11:56:24 AM



## **Analytical Report**

Work Order: 1703212

Date Reported: 3/21/2017

**CLIENT:** Fulcrum Environmental

**Project:** Kennewick SD Drinking Water - Eastgate Elem.

**Lab ID:** 1703212-004 **Collection Date:** 3/18/2017 7:00:00 AM

Client Sample ID: EGE31817-P-CF-20 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

<u>Drinking Water Metals by EPA Method 200.8</u>
Batch ID: 16542 Analyst: TN

Copper 674 0.500 µg/L 1 3/21/2017 12:08:31 PM

**Lab ID:** 1703212-005 **Collection Date:** 3/18/2017 7:00:00 AM

Client Sample ID: EGE31817-P-OF-24 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

<u>Drinking Water Metals by EPA Method 200.8</u>
Batch ID: 16542 Analyst: TN

Copper 821 0.500 μg/L 1 3/21/2017 12:12:32 PM

Client Sample ID: EGE31817-P-CF-34 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

<u>Drinking Water Metals by EPA Method 200.8</u>

Batch ID: 16542

Analyst: TN

Copper 0.760 0.500 µg/L 1 3/21/2017 12:16:33 PM



# **Analytical Report**

Batch ID: 16542

Work Order: **1703212**Date Reported: **3/21/2017** 

Analyst: TN

**CLIENT:** Fulcrum Environmental

Project: Kennewick SD Drinking Water - Eastgate Elem.

**Lab ID:** 1703212-009 **Collection Date:** 3/18/2017 7:00:00 AM

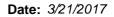
Client Sample ID: EGE31817-P-CF-35 Matrix: Drinking Water

Analyses Result RL Qual Units DF Date Analyzed

**Drinking Water Metals by EPA Method 200.8** 

Copper 1,310 0.500 µg/L 1 3/21/2017 12:20:35 PM

Original





Work Order: 1703212

Copper

**QC SUMMARY REPORT** 

**CLIENT:** Fulcrum Environmental

Project:	Kennewick	SD Drinking Water -	Eastgate	El		Drinking Water Met	als by EPA Method 200.
Sample ID M	IB-16542	SampType: MBLK			Units: µg/L	Prep Date: 3/20/2017	RunNo: <b>35065</b>
Client ID: M	IBLKW	Batch ID: 16542				Analysis Date: 3/21/2017	SeqNo: <b>670309</b>
Analyte		Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Copper		ND	0.500				
Sample ID L	CS-16542	SampType: <b>LCS</b>			Units: µg/L	Prep Date: 3/20/2017	RunNo: <b>35065</b>
Client ID: L	CSW	Batch ID: 16542				Analysis Date: 3/21/2017	SeqNo: <b>670310</b>
Analyte		Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Copper		105	0.500	100.0	0	105 85 115	
Sample ID 1	703211-007ADUP	SampType: <b>DUP</b>			Units: µg/L	Prep Date: 3/20/2017	RunNo: <b>35065</b>
Client ID: B	SATCH	Batch ID: 16542				Analysis Date: 3/21/2017	SeqNo: <b>670312</b>
Analyte		Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Copper		0.689	0.500			0	200 30
Sample ID 1	703211-007AMS	SampType: <b>MS</b>			Units: µg/L	Prep Date: 3/20/2017	RunNo: <b>35065</b>
Client ID: B	SATCH	Batch ID: 16542				Analysis Date: 3/21/2017	SeqNo: <b>670313</b>
Analyte		Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Copper		200	0.500	200.0	0	100 70 130	
Sample ID 1	703211-007AMSD	SampType: MSD			Units: µg/L	Prep Date: 3/20/2017	RunNo: <b>35065</b>
Client ID: B	ВАТСН	Batch ID: 16542				Analysis Date: 3/21/2017	SeqNo: <b>670314</b>
Analyte		Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual

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0

106

70

130

200.1

6.16

30

213

0.500

200.0



# Sample Log-In Check List

C	lient Name:	FE		Work Order Num	nber: <b>1703212</b>	!	
Lo	ogged by:	Clare Grig	gs	Date Received:	3/20/201	7 9:00:00 AM	
<u>Cha</u>	in of Custo	ody					
1.	Is Chain of Cu	ustody com	olete?	Yes 🗸	No 🗌	Not Present	
2.	How was the	sample deli	vered?	<u>FedEx</u>			
<u>Log</u>	ıln						
	Coolers are p	resent?		Yes 🗸	No 🗆	NA $\square$	
Э.	000.0.0 a.o p.						
4.	Shipping conta	ainer/coole	in good condition?	Yes 🗸	No $\square$		
5.			n shipping container/cooler? custody Seals not intact)	Yes	No 🗌	Not Required <b>✓</b>	
6.	Was an attem	pt made to	cool the samples?	Yes 🗸	No 🗌	NA 🗆	
7.	Were all items	s received a	at a temperature of >0°C to 10.0°C*	Yes 🗸	No 🗆	NA $\square$	
8.	Sample(s) in p	oroper cont	ainer(s)?	Yes 🗸	No 🗆		
9.	Sufficient sam	ple volume	for indicated test(s)?	Yes 🗸	No 🗌		
10.	Are samples p	properly pre	served?	Yes 🗸	No 🗌		
11.	Was preserva	tive added	to bottles?	Yes 🗸	No 🗌	NA 🗆	
			V(0.4 · 1.6	,	$\Box$	HNO3	
	Is there heads			Yes ∟ Yes ✔	No □ No □	NA 🔽	
	Does paperwo		s arrive in good condition(unbroken)?	Yes ✔ Yes ✔	No $\square$		
14.	Docs paperwe	ork materi b	ottic labels:	103	140		
15.	Are matrices of	correctly ide	entified on Chain of Custody?	Yes 🗸	No 🗌		
16.	Is it clear wha	t analyses	were requested?	Yes 🗸	No $\square$		
17.	Were all holdi	ng times ab	le to be met?	Yes 🗸	No $\square$		
<u>Spe</u>	cial Handli	ng (if ap)	<u>olicable)</u>				
18.	Was client no	tified of all	discrepancies with this order?	Yes 🗸	No $\square$	NA $\square$	
	Person N	Notified:	Amanda Enbysk Date		3/20/2017		
	By Whor	m:	Clare Griggs Via:	✓ eMail ☐ P	hone  Fax	☐ In Person	
	Regardir	ng:	Confirming samples to be run for anal	vsis.			
	Client Ins	structions:	See revised COC.				
19.	Additional rem	narks:					

**Item Information** 

Item #	Temp ºC
Cooler	2.9
Sample	1.9

Original

<sup>\*</sup> Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

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TAT → SameDay^ NextDay^ 2 Day 3 Day STD	Date/Time	100 100 100 100 100 100 100 100 100 100	Received		Date/Time	D	Relinquished
[ louse trescive all unpreserved)	Date/Time 3/20/78/7 00/00		Received		Date/Time	Boston :	Relinquished  × Onthan
	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.	behalf of the Client named a	Fremont Analytical on reement.	reement with side of this Ag	ter into this Ag front and back	m authorized to en f the terms on the	I represent that I am authorized to enter into this Agreement with Fremont agreement to each of the terms on the front and backside of this Agreement.
AT AAP	on the following business day.	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.)	Disposal by Lab (Samples will be held for 30 day assessed if samples are retained after 30 days.)	Disposal by Lab	lient	Return to Client	Sample Disposal:
Special Remarks:		hate Fluoride Nitrate	Bromide O-Phosphate	Sulfate	Chloride	Nitrate Nitrite	***Anions (Circle):
Sb Se Sr Sn Ti Tl U V Zn	Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb	Ag Al As B Ba Be Ca Cd C	TAL Individual:	Priority Pollutants	RCRA-8 Pr	ircle): MTCA-5	**Metals Analysis (Circle):
3							10
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	X					P-CF-S4	8 1/
Hold Undrestand					-	7-06-24	7 11
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	<i>x</i>					- p-of-24	5E6E31811-P-OF-24
	×	8				-PCF-20	4E6E31817-PCF-20
	X					P-CF-19	3E6E31817-P-CF-19
APPARAMENTAL SERVICES AND APPARAMENTAL SERVI	*			-		61-30-0	2 E66 31817-10-0F-15
			DW	745	3/18/2017	-P-NF-12	1 EGE31817-P-NF-12
Comments	Melas & Say	Page 18 Page 1	Sample Sample States States Sample Sample States St	Sample S	Sample Date		Sample Name
Ground Water, SW = Storm Water, WW = Waste Water	ng Water, GW	SL = Solid, W = Water,	S = Soil, SD = Sediment,	er, P = Product,	B = Bulk, O = Other,	AQ = Aqueous,	*Matrix Codes: A = Air,
fulcrum.net	rmathews@efulcrum.net; cc: aenbysk@efulcrum.net	PM Email:	509.575.8453	Fax: 509	839	509.574.0839	Telephone:
The first first the first section of the first section of the sect		Report To (PM):		1000	Yakima, WA, 98901	Yakima, \	City, State, Zip:
	Enstagate Elem.	Location:		et - sacon	406 North Second Street	406 Nort	Address:
Collected by: Amanda Enbysk		Project No:		onsulting	Fulcrum Environmental Consulting	Fulcrum E	Client:
Drinking later - Easts at one	Kennewick SP Dr	Project Name:		66 0	Tel: 206-352-3790 Fax: 206-352-7178		3600 Fremont Ave N. Seattle, WA 98103
ntory Project No (internal):	Date: 3/18/201/				nalytical	A	
17027/2					OIL	remo	
Chain of Custody Record and Laboratory Services Agreement	stody Record and La	Chain of Cus					A P P

	remo	ant			C	hain of Cu	_			poratory Services Agreement
		ध्यमध्या					Date:	3/18/2017		Laboratory Project No (Internal): 1703212  Page: of:  in King Lyter - Easts ate ]  cted by: Amanda Enbysk
3600 Fremont Ave	N. Tel: 2	06-352-3790	)							Page: of:
Seattle, WA 9810	3 Fax: 2	206-352-717	8			Project Name:	Kenne	wick SP	$\mathcal{D}_{\Omega}$	inkin lyster = Easternton
Client:	Fulcrum Env	rironmental Co	onsulting			Project No:		•	Colle	cted by: Amanda Enbysk
Address:	406 North S	Second Stree	et .			Location:	Enstad	ate Elem.	Cone	cted by. Amarica Eribysk
City, State, Zip:	Yakima, WA	A, 98901				Report To (PM):	Ryan Mathe			
Telephone:	509.574.083	19	Fax:	509.575.845		PM Email:	rmathews@	efulcrum net; cc: aenb	ysk@ef	ulcrum.net
*Matrix Codes: A = Air,	AQ = Aqueous, B ≠	Bulk, O = Othe	er, P = Prod	uct, S = Soil, S	SD = Sediment, SL = 5	oolid, W⇒Water, DW=	Drinking Water,	GW = Ground Water, S	SW = Sto	rm Water, WW = Waste Water
					/	1////	8/8//	////	//	1//2/
					/20/			/3/3//	//	///3/
					280/61			SS STEEL	//	//3/
			Sample	Sample Type	18/2/	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	\$\\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	J. 3 8 8 /	//	[\$ <sup>5</sup> ]
Sample Name		Sample Date	Time	(Matrix)*	[3] \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	]\$[\$]\$]\$]\$	[ 3 se / 3 ]	\$\  \$\	1	Comments
1 EGE31817 -	P-NF-12	3/18/2017	7AM	DW			K		ゝ	NB 3/20/17
2 EGB 31817-12	-OF-15	1	١	1			*		+	NB 3/20/17
EGE31817-1							*		×	NB 3/20/17
EGE 31817 -							*		$\times$	NK 2/20/17
56631817-							<del> </del>		X	NK 3/20/17
	S-0F-24								+	
, ((	T-0F-24								$\top$	Hold - Unpresend
, W P	-CF-54		$\top$				×		×	NB 3/20/17
م ا	- (F-34	7	1	4			×		7	NR 3/20117
10										
**Metals Analysis (Circ	:ie): MTCA-5 R	CRA-8 Pri	ority Polluta	nts TAL	Individual: Ag Al	As B Ba Be Ca Cd	Co Cr (Cu) Fe H	ig K Mg Mn Mo Na	Ni Pb	Sb Se Sr Sn Ti Tl U V Zn
***Anions (Circle):	Nitrate Nitrite	Chloride	5ulfate	Bromide			te+Nitrite Tu	rn-around times for sam	nples	Special Remarks:
Sample Disposal:	Return to Clie	יחנ 🗀	assessed if s	samples are ret	ained after 30 days.)	unless otherwise noted.	A fee may be	celved after 4:00pm will the following business		TAT ASAP Please Preserve all unpreserved
I represent that I am agreement to each of t					Analytical on beha	f of the Client named	above, that I ha	ive verified Client's		
RelinquisNed	n Date	e/Time	VI (III)3	. agreement	Received	_	Date/Time			Please Preserve all unpreserved
1-1	Sosten 31				8		3/20/	7017 0902	2	
Relinquished	Date	e/Time			Received x		Date/Time			TAT → SameDay^ NextDay^ 2 Day 3 Day STD
					^					*Please coordinate with the lab in advance