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Fulcrum Environmental Ryan Mathews 406 N. 2nd Street

Yakima, WA 98901

RE: Kennewick SD Drinking Water - Canyon View

Work Order Number: 1703214

March 21, 2017

#### **Attention Ryan Mathews:**

Fremont Analytical, Inc. received 5 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

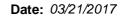
All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

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 - Canyon Vie

Work Order: 1703214

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1703214-001	CVE31817-P-CDF-04	03/20/2017 9:00 AM	03/20/2017 9:00 AM
1703214-002	CVE31817-S-CDF-04	03/20/2017 9:00 AM	03/20/2017 9:00 AM
1703214-003	CVE31817-T-CDF-04	03/20/2017 9:00 AM	03/20/2017 9:00 AM
1703214-004	CVE31817-P-OF-47	03/20/2017 9:00 AM	03/20/2017 9:00 AM
1703214-005	CVE31817-P-CF-48	03/20/2017 9:00 AM	03/20/2017 9:00 AM



### Case Narrative

WO#: **1703214**Date: **3/21/2017** 

**CLIENT:** Fulcrum Environmental

Project: Kennewick SD Drinking Water - Canyon View

#### 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:**

1703214-001A 211571: Prep Comments for EPA200.8, Sample 1703214-001A: 0.01 NTU 1703214-004A 211572: Prep Comments for EPA200.8, Sample 1703214-004A: 0.15 NTU 1703214-005A 211573: Prep Comments for EPA200.8, Sample 1703214-005A: 0.01 NTU



## **Qualifiers & Acronyms**

WO#: 1703214

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: 1703214

Date Reported: 3/21/2017

**CLIENT:** Fulcrum Environmental

Project: Kennewick SD Drinking Water - Canyon View

**Lab ID:** 1703214-001 **Collection Date:** 3/20/2017 9:00:00 AM

Client Sample ID: CVE31817-P-CDF-04 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 972 0.500 µg/L 1 3/21/2017 12:40:41 PM

**Lab ID:** 1703214-004 **Collection Date:** 3/20/2017 9:00:00 AM

Client Sample ID: CVE31817-P-OF-47 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 ND 0.500 μg/L 1 3/21/2017 12:44:42 PM

**Lab ID:** 1703214-005 **Collection Date:** 3/20/2017 9:00:00 AM

Client Sample ID: CVE31817-P-CF-48 Matrix: Drinking Water

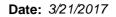
Analyses Result RL Qual Units DF Date Analyzed

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

Batch ID: 16542

Analyst: TN

Copper 1,380 0.500 µg/L 1 3/21/2017 12:56:48 PM





Work Order: 1703214

Copper

**QC SUMMARY REPORT** 

**CLIENT:** Fulcrum Environmental

Project: Kennewick SD Drinking Water - Canyon Vie				Drinking Water Metals by EPA Method 200.8			
Sample ID MB-16542	SampType: MBLK			Units: µg/L	Prep Date: 3/20/2017	RunNo: <b>35065</b>	
Client ID: MBLKW	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 LCS-16542	SampType: <b>LCS</b>			Units: µg/L	Prep Date: 3/20/2017	RunNo: <b>35065</b>	
Client ID: LCSW	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 <b>1703211-007ADUI</b>	SampType: <b>DUP</b>			Units: µg/L	Prep Date: 3/20/2017	RunNo: <b>35065</b>	
Client ID: BATCH	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 1703211-007AMS	SampType: <b>MS</b>			Units: µg/L	Prep Date: 3/20/2017	RunNo: <b>35065</b>	
Client ID: BATCH	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 1703211-007AMS	D SampType: <b>MSD</b>			Units: µg/L	Prep Date: 3/20/2017	RunNo: <b>35065</b>	
Client ID: BATCH	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

CI	ient Name:	FE	Work Order Numb	per: <b>1703214</b>	
Lo	gged by:	Clare Griggs	Date Received:	3/20/2017	7 9:00:00 AM
<u>Cha</u>	in of Custo	<u>ody</u>			
1.	Is Chain of Co	ustody complete?	Yes 🗸	No 🗌	Not Present
2.	How was the	sample delivered?	<u>FedEx</u>		
Log	In				
_	Coolers are p	resent?	Yes 🗹	No 🗌	NA 🗌
4.	Shipping cont	tainer/cooler in good condition?	Yes 🗸	No $\square$	
5.		s present on shipping container/cooler? iments for Custody Seals not intact)	Yes	No 🗌	Not Required ✓
6.	Was an atten	npt made to cool the samples?	Yes 🗸	No $\square$	NA 🗆
7.	Were all item	s received at a temperature of >0°C to 10.0°C*	Yes 🗸	No 🗆	NA 🗆
8.	Sample(s) in	proper container(s)?	Yes 🗸	No $\square$	
9.	Sufficient san	nple volume for indicated test(s)?	Yes 🗹	No $\square$	
10.	Are samples	properly preserved?	Yes 🗸	No $\square$	
11.	Was preserva	ative added to bottles?	Yes 🗹	No $\square$	NA $\square$
			v	$\Box$	HNO3
		space in the VOA vials?	Yes L	No □	NA 🗸
	_	es containers arrive in good condition(unbroken)?	Yes ✓	No □	
14.	Does paperw	ork match bottle labels?	Yes 🗸	No $\square$	
15.	Are matrices	correctly identified on Chain of Custody?	Yes 🗹	No $\square$	
16.	Is it clear wha	at analyses were requested?	Yes 🗸	No 🗌	
17.	Were all hold	ing times able to be met?	Yes 🗹	No 🗌	
<u>Spe</u>	cial Handli	ing (if applicable)			
-		otified of all discrepancies with this order?	Yes	No $\square$	NA 🗸
	Person I	Notified: Date			
	By Who	m: Via:	eMail Ph	one 🗌 Fax	In Person
	Regardi	·			
	_	structions:			
10	Additional ren				
	nformation				

Item #	Temp ⁰C
Cooler	2.9
Sample	1.9

Original

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