



**Fulcrum Environmental**

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

**RE: Kennewick SD Drinking Water - Kamiakin Elementary**  
**Work Order Number: 1701237**

January 24, 2017

**Attention Ryan Mathews:**

Fremont Analytical, Inc. received 17 sample(s) on 1/23/2017 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



**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Kamiakin EI  
**Work Order:** 1701237

**Work Order Sample Summary**

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Date/Time Collected</b>	<b>Date/Time Received</b>
1701237-001	KMH12117-P-NF-01	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-002	KMH12117-S-NF-01	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-003	KMH12117-T-NF-01	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-004	KMH12117-P-WC-06	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-005	KMH12117-P-KF-13	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-006	KMH12117-P-DF-14	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-007	KMH12117-S-DF-14	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-008	KMH12117-T-DF-14	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-009	KMH12117-P-DF-15	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-010	KMH12117-P-CDF-21	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-011	KMH12117-P-DF-30	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-012	KMH12117-P-DF-31	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-013	KMH12117-P-DF-32	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-014	KMH12117-P-KF-35	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-015	KMH12117-S-KF-35	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-016	KMH12117-T-KF-35	01/21/2017 10:00 AM	01/23/2017 12:25 PM
1701237-017	KMH12117-P-CF-39	01/21/2017 10:00 AM	01/23/2017 12:25 PM

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**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Kamiakin Elementary

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## 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:

1701237-001A 202837: Prep Comments for EPA200.8, Sample 1701237-001A: Turbidity: 0.01 NTU  
1701237-004A 202838: Prep Comments for EPA200.8, Sample 1701237-004A: Turbidity: 0.01 NTU  
1701237-005A 202839: Prep Comments for EPA200.8, Sample 1701237-005A: Turbidity: 0.08 NTU  
1701237-006A 202840: Prep Comments for EPA200.8, Sample 1701237-006A: Turbidity: 0.03 NTU  
1701237-009A 202841: Prep Comments for EPA200.8, Sample 1701237-009A: Turbidity: 0.01 NTU  
1701237-010A 202842: Prep Comments for EPA200.8, Sample 1701237-010A: Turbidity: 0.01 NTU  
1701237-011A 202843: Prep Comments for EPA200.8, Sample 1701237-011A: Turbidity: 0.08 NTU  
1701237-012A 202844: Prep Comments for EPA200.8, Sample 1701237-012A: Turbidity: 0.19 NTU  
1701237-013A 202845: Prep Comments for EPA200.8, Sample 1701237-013A: Turbidity: 0.05 NTU  
1701237-014A 202846: Prep Comments for EPA200.8, Sample 1701237-014A: Turbidity: 0.10 NTU  
1701237-017A 202847: Prep Comments for EPA200.8, Sample 1701237-017A: Turbidity: 0.02 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



**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Kamiakin Elementary

**Lab ID:** 1701237-001      **Collection Date:** 1/21/2017 10:00:00 AM  
**Client Sample ID:** KMH12117-P-NF-01      **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: 15999      Analyst: TN

Copper	932	0.500		µg/L	1	1/23/2017 10:40:48 PM
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**Lab ID:** 1701237-004      **Collection Date:** 1/21/2017 10:00:00 AM  
**Client Sample ID:** KMH12117-P-WC-06      **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: 15999      Analyst: TN

Copper	1,100	0.500		µg/L	1	1/23/2017 10:44:24 PM
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**Lab ID:** 1701237-005      **Collection Date:** 1/21/2017 10:00:00 AM  
**Client Sample ID:** KMH12117-P-KF-13      **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: 15999      Analyst: TN

Copper	1,150	0.500		µg/L	1	1/23/2017 10:48:00 PM
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**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Kamiakin Elementary

**Lab ID:** 1701237-006      **Collection Date:** 1/21/2017 10:00:00 AM  
**Client Sample ID:** KMH12117-P-DF-14      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	1,200	0.500		µg/L	1	1/23/2017 10:51:37 PM

**Lab ID:** 1701237-009      **Collection Date:** 1/21/2017 10:00:00 AM  
**Client Sample ID:** KMH12117-P-DF-15      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	1,200	0.500		µg/L	1	1/23/2017 10:55:13 PM

**Lab ID:** 1701237-010      **Collection Date:** 1/21/2017 10:00:00 AM  
**Client Sample ID:** KMH12117-P-CDF-21      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	1,140	0.500		µg/L	1	1/23/2017 10:58:50 PM



**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Kamiakin Elementary

**Lab ID:** 1701237-011      **Collection Date:** 1/21/2017 10:00:00 AM  
**Client Sample ID:** KMH12117-P-DF-30      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	1,190	0.500		µg/L	1	1/23/2017 11:02:26 PM

**Lab ID:** 1701237-012      **Collection Date:** 1/21/2017 10:00:00 AM  
**Client Sample ID:** KMH12117-P-DF-31      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	1,080	0.500		µg/L	1	1/23/2017 11:06:03 PM

**Lab ID:** 1701237-013      **Collection Date:** 1/21/2017 10:00:00 AM  
**Client Sample ID:** KMH12117-P-DF-32      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	1,180	0.500		µg/L	1	1/23/2017 11:09:39 PM



**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Kamiakin Elementary

**Lab ID:** 1701237-014      **Collection Date:** 1/21/2017 10:00:00 AM  
**Client Sample ID:** KMH12117-P-KF-35      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	1,130	0.500		µg/L	1	1/23/2017 11:13:15 PM

**Lab ID:** 1701237-017      **Collection Date:** 1/21/2017 10:00:00 AM  
**Client Sample ID:** KMH12117-P-CF-39      **Matrix:** Drinking Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b><u>Drinking Water Metals by EPA Method 200.8</u></b>				Batch ID: 15999		Analyst: TN
Copper	ND	0.500		µg/L	1	1/23/2017 11:24:05 PM



**Work Order:** 1701237  
**CLIENT:** Fulcrum Environmental  
**Project:** Kennewick SD Drinking Water - Kamiakin EI

**QC SUMMARY REPORT**  
**Drinking Water Metals by EPA Method 200.8**

Sample ID <b>MB-15999</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>1/23/2017</b>	RunNo: <b>34026</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>15999</b>		Analysis Date: <b>1/23/2017</b>	SeqNo: <b>647576</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper ND 0.500

Sample ID <b>LCS-15999</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>1/23/2017</b>	RunNo: <b>34026</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>15999</b>		Analysis Date: <b>1/23/2017</b>	SeqNo: <b>647577</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 93.6 0.500 100.0 0 93.6 85 115

Sample ID <b>1701236-014ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>1/23/2017</b>	RunNo: <b>34026</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>15999</b>		Analysis Date: <b>1/23/2017</b>	SeqNo: <b>647579</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 1,730 0.500 1,728 0.181 30

Sample ID <b>1701236-014AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>1/23/2017</b>	RunNo: <b>34026</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>15999</b>		Analysis Date: <b>1/23/2017</b>	SeqNo: <b>647580</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 1,910 0.500 200.0 1,728 91.9 70 130

Sample ID <b>1701236-014AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>1/23/2017</b>	RunNo: <b>34026</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>15999</b>		Analysis Date: <b>1/23/2017</b>	SeqNo: <b>647581</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 1,960 0.500 200.0 1,728 115 70 130 1,912 2.39 30

Client Name: <b>FE</b>	Work Order Number: <b>1701237</b>
Logged by: <b>Clare Griggs</b>	Date Received: <b>1/23/2017 12:25:00 PM</b>

**Chain of Custody**

1. Is Chain of Custody complete?      Yes       No       Not Present
2. How was the sample delivered?      Client

**Log In**

3. Coolers are present?      Yes       No       NA
4. Shipping container/cooler in good condition?      Yes       No
5. Custody Seals present on shipping container/cooler?  
(Refer to comments for Custody Seals not intact)      Yes       No       Not Required
6. Was an attempt made to cool the samples?      Yes       No       NA
7. Were all items received at a temperature of >0°C to 10.0°C\*      Yes       No       NA

**Samples received at appropriate temperature**

8. Sample(s) in proper container(s)?      Yes       No
9. Sufficient sample volume for indicated test(s)?      Yes       No
10. Are samples properly preserved?      Yes       No
11. Was preservative added to bottles?      Yes       No       NA
- HNO3
12. Is there headspace in the VOA vials?      Yes       No       NA
13. Did all samples containers arrive in good condition(unbroken)?      Yes       No
14. Does paperwork match bottle labels?      Yes       No
15. Are matrices correctly identified on Chain of Custody?      Yes       No
16. Is it clear what analyses were requested?      Yes       No
17. Were all holding times able to be met?      Yes       No

**Special Handling (if applicable)**

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

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

**Item Information**

Item #	Temp °C
Cooler	10.3
Sample	1.2

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



3600 Fremont Ave N.  
Seattle, WA 98103

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

# Chain of Custody Record and Laboratory Services Agreement

Client: Fulcrum Environmental Consulting

Address: 406 North Second Street  
Yakima, WA 98901

City, State, Zip: 509.574.0839

Fax: 509.545.8453

Project Name: Kennewick SD Drinking Water - Kamiakin High School

Project No: 162017  
Location: Kamiakin High School, Kennewick, WA

Report To (PM): Ryan Matthews  
PM Email: rmathews@fulcrum.net; cc: aenbysk@fulcrum.net

Date: 1/21/2017

Laboratory Project No (Internal): 1701237

Collected by: Camanda Ebylsk + Nathan Boctron

Page: 1 of 2

\*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)*	Analytes											Comments				
				VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DH)	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)		
KMH12117-P-NF-01	1/21/17	1050	DW																H <sub>2</sub> O; pres.
KMH12117-S-NF-01																			H <sub>2</sub> O; impr.
KMH12117-T-NF-01																			H <sub>2</sub> O; impr.
KMH12117-P-W-06																			H <sub>2</sub> O; pres.
KMH12117-P-KF-13																			H <sub>2</sub> O; impr.
KMH12117-P-DF-14																			H <sub>2</sub> O; impr.
KMH12117-S-DF-14																			H <sub>2</sub> O; impr.
KMH12117-P-DF-15																			H <sub>2</sub> O; impr.
KMH12117-P-DF-21																			H <sub>2</sub> O; impr.

\*\*\*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.)  
 Turn-around times for samples received after 4:00pm will begin on the following business day.  
 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**  
Analytical

3600 Fremont Ave N.  
Seattle, WA 98103

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

**Chain of Custody Record and Laboratory Services Agreement**

Date: 1/21/2017

Laboratory Project No (Internal):

Page: 2 of 2

Project Name: Kennewick SD Drinking Water - Kamiakin High School

Project No: 162017  
Location: Kamiakin High School, Kennewick, WA

Client: Fulcrum Environmental Consulting  
Address: 406 North Second Street  
City, State, Zip: Yakima, WA 98901  
Telephone: 509.574.0839 Fax: 509.545.8453

Report To (PM): Ryan Mathews  
Email: rmathews@fulcrum.net; cc: aenbysk@fulcrum.net

\*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 (HX)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 - SIM)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T)   Dissolved (D)	Anions (IC)**	EDB (8011)	Comments
KM+H2117-P-OE-3D	1/21/17	1000	DW										☒				HNO <sub>3</sub> preserved
KM+H2117-P-OE-31													☒				HNO <sub>3</sub> preserved
KM+H2117-P-OE-32													☒				HNO <sub>3</sub> preserved
KM+H2117-P-KF-35													☒				HNO <sub>3</sub> preserved
KM+H2117-T-KF-36													☒				HNO <sub>3</sub> preserved
KM+H2117-P-OE-39													☒				HNO <sub>3</sub> 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 Tl U V Zn

\*\*\*Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite Turn-around times for samples received after 4:00pm will begin on the following business day.

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 <i>[Signature]</i> Date/Time 1/21/2017 14:00	Received <i>[Signature]</i> Date/Time 1/23/17 12:25
<i>[Signature]</i> Date/Time 1/23/2017, 10:25	<i>[Signature]</i> Date/Time 1/23/17 12:25