



U.S. Environmental Protection Agency
Region 8
Technical and Management Services

Laboratory Services Program

Certificate of Analysis

Ref: 8TMS-L

MEMORANDUM

Date: 08/07/15

Subject: Analytical Results--- **Upper Animas_Surface Water_AUG 2015_A096 / A-098**

From: Don Goodrich; EPA Region 8 Analytical Chemistry WAM

To: Paula Schmittiel
Superfund
8 EPR-SR

Received Sample Set(s), [Work Order : Date Received]:
[C150801 : 08/06/2015]

Attached are the analytical results for the samples received from the Upper Animas_Surface Water_AUG 2015_A096 sampling event, according to TDF A-098. All analyses were performed within their method specified holding times unless otherwise noted in the following narrative.

These samples were prepared, analyzed, and verified by the Environmental Services Assistance Team Laboratory (ESAT) according to the requirements of the Technical Direction Form (TDF).

Note: The laboratory herewith transmits this deliverable to the program/project partner for determination of "final data usability" which may include data validation and data quality assessment per and in accordance with EPA QA/G-8, *Guidance on Environmental Data Verification and Data Validation*, November 2002, EPA/240/R-02/004. Laboratory data qualifiers are applied based on the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004, referred to as "NFGI".

Laboratory policy is to dispose of any remaining sample 60 days after data analysis packages are delivered to EPA. If you would like the laboratory to retain the samples for a period longer than 60 days, please contact Don Goodrich within the 60 day period at (303) 312-6687.

TDF #: A-098

Case Narrative

C150801

Quality Assessment: Unless indicated by exception, the QA/QC associated with this sample set produced data within the TDF-specified criteria.

Holding Times: All samples were analyzed within their method-specified technical holding time(s).

1. Initial and Continuing calibration blanks (ICBs and CCBs).
Exceptions: None.
2. Preparation (PB) / Method blanks (MB)
Exceptions: None.
3. Interference Checks (ICSA / ICSAB) for ICP-MS and ICP-OE analyses only.
Exceptions: None.
4. Initial and Continuing calibration verification analyses (ICVs, SCVs and CCVs).
Exceptions: None.
5. Laboratory Control Sample (LCS) or second source analysis or SRM.
Exceptions: None.
6. Laboratory Fortified blank (LFB) / Blank spike (BS), same source as used for the matrix spikes. PBS performed with analyses/methods requiring preparation or digestion prior to analysis.
Exceptions: None.
7. Contract Reporting Detection Limit Standard, labeled as CRA, CRDL or CRL.
Exceptions: None.
8. Laboratory Duplicate (DUP). "Source" identifies field sample duplicated in the laboratory. If either the "source" or the duplicate result is <5X the reporting limit, the %D limit of 20% does not apply.
Exceptions: In ICP-MS batch 1508028, lead recovered high in the DUP. As a result, the source sample was qualified "J" as estimated for lead.
9. Laboratory Matrix Spike (MS) and spike duplicate (MSD). "Source" defines original field sample fortified prior to analysis. Percent recovery (%R) limits do not apply when sample concentration(s) exceed the corresponding analyte spike level by a factor of 4 or greater.
Exceptions: None.
10. Serial Dilution sample analysis (SRD). "Source" is parent field sample diluted 1:5 in the laboratory. Performed for ICP-OE and ICP-MS metals analyses. Percent difference (%D) limits do not apply when analyte concentration(s) are below 50x the source sample's MDL (or 10x it's PQL).
Exceptions: None.
11. Internal standards, criteria specified for ICP-MS analyses only, monitored at the instrument.
Exceptions: None.
12. Any calibration using more than two-points produced a correlation coefficient equal to or greater than 0.995.
Exceptions: None.

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Acronyms and Definitions:

ESAT	Environmental Services Assistance Team
J	Data Estimated qualifier (also applied to all data less than PQL, greater than or equal to MDL)
MDL	Method Detection Limit
PQL	Practical Quantitation Limit, also known as reporting limit.
RPD	Relative Percent Difference (difference divided by the mean)
%D	Percent difference, serial dilution criteria unit, difference divided by the original result.
%R	Percent recovery, analyzed (less sample contribution) divided by true value
<	Analyte NOT DETECTED at or above the Method Detection Limit (MDL)
mg/L	Parts per million (milligrams per liter). Solids equivalent = mg/Kg.
ug/L	Parts per billion (micrograms per liter). Solids equivalent = ug/Kg.
NR	No Recovery (matrix spike) - Often seen for calcium/magnesium when their concentration exceeds the spike level by > 4x.
NFGI	USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
RE	Sample Re-analysis. Usually seen on raw data and sequences for required sample dilutions due to over-range analytes.
U	Analyte not detected at or above MDL qualifier
D	Diluted value qualifier.

Method(s) Summary:

As defined in the Technical Direction Form (TDF), some or all of the methods listed below were used for the determination of the reported target analytes.

From EPA's *Methods for the Determination of Metals in Environmental Samples*, Supplement I, May 1994, dissolved, total, and/or total recoverable metals were determined by:

- Method 200.7 / 6010B using a PE Optima ICP -OE (ICP).
- Method 200.8 / 6020 using a Perkin -Elmer Elan 6000 ICP -MS.
- Method 200.2 for total recoverable metals (only) digestion.
- Method 245.1 using a Perkin -Elmer FIMS CVAA (aqueous mercury only).

From *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 1992, Method 2340B was used for the calculated hardness determination. Hardness is reported as mg (milligram) equivalent CaCO₃ per liter (L) determined as follows:

$$\text{Calculated hardness} = 2.497 * (\text{Calcium, mg/L}) + 4.118 * (\text{Magnesium, mg/L}).$$

From EPA's *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW -846*,

- Method 3015A was used for microwave assisted total metals digestion.
- Method 7473 was used for mercury in solids.

From EPA's *Determination of Inorganic Anions by Ion Chromatography*, Revision 2.1, 1993, Method 300.0 was used to determine the anions.

From EPA's *Methods for Chemical Analysis of Water and Wastes*, March 1983:

- Method 310.1 was followed for the alkalinity determination.
- Method 160.1 was followed for gravimetric total dissolved solids (TDS) determination.
- Method 160.2 was used for gravimetric total suspended solids (TSS) determination.
- Method 415.3 was used for total organic carbon (TOC) determination using either an Apollo 9000 or Phoenix 8000 Non-Dispersive IR (NDIR) system. Also known as dissolved organic carbon (DOC) when performed on the dissolved sample fraction.

The quality control procedures listed in the TDF request were utilized by ESAT to verify accuracy of the results and to evaluate any matrix interferences.

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Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: 32nd St Bridge
EPA Tag No.:Date / Time Sampled: 08/06/15 09:45
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-02 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	52200		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	< 250	U	ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	7120		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	97.8		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	1890		ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	11000		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	49.1		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	45.7		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	0.190	J	ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	2.47		ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	0.307		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	1.62		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	0.115	J	ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	160		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: 32nd St Bridge
EPA Tag No.:Date / Time Sampled: 08/05/15 20:50
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-04 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	51200		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	< 250	U	ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	7280		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	105		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	1960		ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	11400		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	43.5		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	0.628	J	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	48.2		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	0.178	J	ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	3.06		ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	0.321		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	1.70		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	0.240		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	158		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: 32nd St Bridge
EPA Tag No.:Date / Time Sampled: 08/06/15 00:40
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-06 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	51400		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	< 250	U	ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	7350		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	105		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	2020		ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	11600		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	37.8		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	0.603	J	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	49.3		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	0.160	J	ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	3.00		ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	0.332		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	1.56		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	159		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: A68

Date / Time Sampled: 08/05/15 16:00

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-08 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	55.1		ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	36400		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	< 250	U	ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	2580		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	737		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	535	J	ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	1750		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	199		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	21.3		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	0.828		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	1.08	J	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	0.340		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	3.45		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	0.232		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	1.51		ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	101		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: A68

Date / Time Sampled: 08/06/15 06:15

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-10 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	30.5	J	ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	36900		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	< 250	U	ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	2610		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	817		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	514	J	ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	1720		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	326		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	21.8		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	0.850		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	0.405		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	3.26		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	0.329		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	1.40		ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	103		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: A68

Date / Time Sampled: 08/05/15 19:15

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-12 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	45.6	J	ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	37200		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	< 250	U	ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	2560		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	727		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	530	J	ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	1720		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	238		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	21.9		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	0.815		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	0.371		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	3.16		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	0.283		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	1.44		ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	103		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: A68

Date / Time Sampled: 08/05/15 23:30

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-14 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	31.0	J	ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	36700		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	< 250	U	ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	2580		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	757		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	515	J	ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	1740		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	324		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	22.5		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	0.974		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	1.23	J	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	0.375		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	3.52		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	0.820		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	1.48		ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	102		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: A72
EPA Tag No.:Date / Time Sampled: 08/05/15 16:15
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-16 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	12000		ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	4.50	J	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	95400		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	5840		ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	8030		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	6650		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	1520		ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	2600		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	4020		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	0.797	J	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	22.6		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	15.2		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	32.1		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	1410		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	50.7		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	13.8		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	1.14	J	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	271		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: A72

Date / Time Sampled: 08/05/15 13:45

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-18 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	513		ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	61300		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	< 250	U	ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	4590		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	1370		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	691	J	ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	2400		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	699		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	20.2		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	1.81		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	5.75		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	9.27		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	0.225		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	2.87		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	172		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: A72

Date / Time Sampled: 08/06/15 06:30

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-20 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	50700		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	1980		ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	4030		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	1160		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	605	J	ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	2310		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	609		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	21.5		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	2.11		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	4.69		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	7.63		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	2.72		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	143		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: A72
EPA Tag No.:Date / Time Sampled: 08/05/15 20:10
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-22 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	1370		ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	55700		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	3170		ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	4650		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	1810		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	721	J	ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	2310		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	1210		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	21.6		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	4.29		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	7.98		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	205		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	3.12		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	4.04		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	158		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: A72

Date / Time Sampled: 08/05/15 23:50

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-24 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	59.1		ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	51000		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	2090		ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	4170		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	1320		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	631	J	ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	2330		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	733		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	20.8		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	2.59		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	5.40		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	11.4		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	0.118	J	ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	2.69		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	144		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: Bakers Bridge
EPA Tag No.:Date / Time Sampled: 08/06/15 00:00
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-26 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	43.9	J	ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	32600		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	< 250	U	ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	3920		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	296		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	646	J	ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	1790		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	110		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	29.9		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	0.336		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	1.08		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	1.88		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	0.788	J	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	98		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: Bakers Bridge
EPA Tag No.:Date / Time Sampled: 08/06/15 09:00
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-28 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	904		ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	46500		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	189	J	ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	5300		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	2090		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	912	J	ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	1960		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	1700		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	30.3		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	5.32		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	9.32		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	189		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	1.56		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	5.39		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	138		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: Bakers Bridge
EPA Tag No.:Date / Time Sampled: 08/05/15 20:05
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-30 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	52.3		ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	32600		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	< 250	U	ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	3990		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	306		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	631	J	ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	1790		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	85.8		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Barium	29.8		ug/L	5.00	1	08/07/2015	SV	1508027
200.8	Cadmium	0.353		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Cobalt	1.02		ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Copper	2.28		ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/07/2015	SV	1508027
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Nickel	0.646	J	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/07/2015	SV	1508027
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/07/2015	SV	1508027
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/07/2015	SV	1508027
2340B	Hardness	98		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: CC48

Date / Time Sampled: 08/06/15 06:00

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-32 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	10100		ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	2.65	J	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	156000		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	20000		ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	10900		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	6720		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	1410		ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	3690		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	4650		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/07/2015	SV	1508027
200.8	Cadmium	14.2		ug/L	0.500	5	08/07/2015	SV	1508027
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508027
200.8	Cobalt	30.7		ug/L	0.500	5	08/07/2015	SV	1508027
200.8	Copper	786		ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Lead	30.0		ug/L	0.500	5	08/07/2015	SV	1508027
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508027
200.8	Nickel	15.8		ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508027
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508027
2340B	Hardness	433		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: CC48	Date / Time Sampled: 08/05/15 23:00	Workorder: C150801
EPA Tag No.:	Matrix: Surface Water	Lab Number: C150801-34 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	14400		ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	4.31	J	ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	167000		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	21300		ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	12300		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	8020		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	1600		ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	3660		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	5820		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/07/2015	SV	1508027
200.8	Cadmium	19.1		ug/L	0.500	5	08/07/2015	SV	1508027
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508027
200.8	Cobalt	36.2		ug/L	0.500	5	08/07/2015	SV	1508027
200.8	Copper	1130		ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Lead	54.1		ug/L	0.500	5	08/07/2015	SV	1508027
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508027
200.8	Nickel	18.2		ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508027
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508027
2340B	Hardness	467		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: CC48

Date / Time Sampled: 08/05/15 19:25

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-36 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	23900		ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	9.29		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	190000		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	27000		ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	15400		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	10900		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	2160		ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	3930		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	8540		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Barium	25.7	J	ug/L	25.0	5	08/07/2015	SV	1508027
200.8	Cadmium	30.6		ug/L	0.500	5	08/07/2015	SV	1508027
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508027
200.8	Cobalt	54.4		ug/L	0.500	5	08/07/2015	SV	1508027
200.8	Copper	2260		ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Lead	73.9		ug/L	0.500	5	08/07/2015	SV	1508027
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508027
200.8	Nickel	28.8		ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508027
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508027
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508027
2340B	Hardness	537		mg/L	2	1	08/07/2015	SV	1508026

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: Cement Creek 14th St Bridge
EPA Tag No.:Date / Time Sampled: 08/05/15 16:00
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-38 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	91900		ug/L	20.0	1	08/07/2015	SV	1508026
200.7	Beryllium	34.8		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Calcium	461000		ug/L	100	1	08/07/2015	SV	1508026
200.7	Iron	49500		ug/L	100	1	08/07/2015	SV	1508026
200.7	Magnesium	36500		ug/L	100	1	08/07/2015	SV	1508026
200.7	Manganese	37100		ug/L	2.00	1	08/07/2015	SV	1508026
200.7	Potassium	6630		ug/L	250	1	08/07/2015	SV	1508026
200.7	Sodium	4960		ug/L	250	1	08/07/2015	SV	1508026
200.7	Zinc	26800		ug/L	10.0	1	08/07/2015	SV	1508026
200.8	Antimony	< 10.0	U	ug/L	5.00	10	08/07/2015	SV	1508027
200.8	Arsenic	< 20.0	U	ug/L	5.00	10	08/07/2015	SV	1508027
200.8	Barium	< 100	U	ug/L	50.0	10	08/07/2015	SV	1508027
200.8	Cadmium	98.3		ug/L	1.00	10	08/07/2015	SV	1508027
200.8	Chromium	< 20.0	U	ug/L	10.0	10	08/07/2015	SV	1508027
200.8	Cobalt	204		ug/L	1.00	10	08/07/2015	SV	1508027
200.8	Copper	10400		ug/L	5.00	10	08/07/2015	SV	1508027
200.8	Lead	150		ug/L	1.00	10	08/07/2015	SV	1508027
200.8	Molybdenum	< 10.0	U	ug/L	10.0	10	08/07/2015	SV	1508027
200.8	Nickel	91.5		ug/L	5.00	10	08/07/2015	SV	1508027
200.8	Selenium	< 20.0	U	ug/L	10.0	10	08/07/2015	SV	1508027
200.8	Silver	< 10.0	U	ug/L	5.00	10	08/07/2015	SV	1508027
200.8	Thallium	< 10.0	U	ug/L	5.00	10	08/07/2015	SV	1508027
200.8	Vanadium	< 30.0	U	ug/L	20.0	10	08/07/2015	SV	1508027
2340B	Hardness	1300		mg/L	2	1	08/07/2015	SV	1508026

"J" Qualifier indicates an estimated value

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: 32nd St Bridge
EPA Tag No.:Date / Time Sampled: 08/06/15 09:45
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-01 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	220		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	51600		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	371		ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	7050		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	120		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	2050		ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	10900		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	79.8		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	46.8	J	ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	3.31	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	3.46	J	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: 32nd St Bridge
EPA Tag No.:Date / Time Sampled: 08/05/15 20:50
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-03 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	176		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	52000		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	331		ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	7140		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	118		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	2050		ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	11100		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	71.9		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	49.9	J	ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	2.70	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	2.56		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	12.0		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: 32nd St Bridge
EPA Tag No.:Date / Time Sampled: 08/06/15 00:40
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-05 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	171		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	52200		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	295		ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	7160		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	113		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	2110		ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	11300		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	67.7		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	48.8	J	ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	1.80		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	13.2		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: A68
EPA Tag No.:Date / Time Sampled: 08/05/15 16:00
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-07 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	111		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	37600		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	165	J	ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	2560		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	729		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	636	J	ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	1680		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	222		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	0.724	J	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	6.15		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	1.77		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: A68
EPA Tag No.:Date / Time Sampled: 08/06/15 06:15
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-09 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	90.9		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	38300		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	143	J	ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	2590		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	793		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	578	J	ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	1690		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	321		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	0.703	J	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	4.63	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	1.55		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: A68

Date / Time Sampled: 08/05/15 19:15

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-11 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	103		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	37700		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	132	J	ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	2540		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	711		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	644	J	ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	1710		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	248		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	0.652	J	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	4.14	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	1.54		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: A68

Date / Time Sampled: 08/05/15 23:30

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-13 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	88.3		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	38500		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	138	J	ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	2590		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	750		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	616	J	ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	1710		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	316		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	0.717	J	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	4.89	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	2.18		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: A72

Date / Time Sampled: 08/05/15 16:15

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-15 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	126000		ug/L	100	5	08/07/2015	SV	1508028
200.7	Beryllium	18.4	J	ug/L	10.0	5	08/07/2015	SV	1508028
200.7	Calcium	98400		ug/L	500	5	08/07/2015	SV	1508028
200.7	Iron	1250000		ug/L	500	5	08/07/2015	SV	1508028
200.7	Magnesium	41800		ug/L	500	5	08/07/2015	SV	1508028
200.7	Manganese	12200		ug/L	10.0	5	08/07/2015	SV	1508028
200.7	Potassium	28600		ug/L	1250	5	08/07/2015	SV	1508028
200.7	Sodium	4750	J	ug/L	1250	5	08/07/2015	SV	1508028
200.7	Zinc	6840		ug/L	50.0	5	08/07/2015	SV	1508028
200.8	Antimony	< 100	U	ug/L	50.0	100	08/07/2015	SV	1508028
200.8	Arsenic	1080		ug/L	50.0	100	08/07/2015	SV	1508028
200.8	Barium	1410		ug/L	500	100	08/07/2015	SV	1508028
200.8	Cadmium	28.3		ug/L	10.0	100	08/07/2015	SV	1508028
200.8	Chromium	< 200	U	ug/L	100	100	08/07/2015	SV	1508028
200.8	Cobalt	54.1		ug/L	10.0	100	08/07/2015	SV	1508028
200.8	Copper	4820		ug/L	50.0	100	08/07/2015	SV	1508028
200.8	Lead	25600		ug/L	10.0	100	08/07/2015	SV	1508028
200.8	Molybdenum	268		ug/L	100	100	08/07/2015	SV	1508028
200.8	Nickel	< 100	U	ug/L	50.0	100	08/07/2015	SV	1508028
200.8	Selenium	< 200	U	ug/L	100	100	08/07/2015	SV	1508028
200.8	Silver	149		ug/L	50.0	100	08/07/2015	SV	1508028
200.8	Thallium	< 100	U	ug/L	50.0	100	08/07/2015	SV	1508028
200.8	Vanadium	677		ug/L	200	100	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: A72

Date / Time Sampled: 08/05/15 13:45

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-17 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	5970		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	61700		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	66300		ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	5600		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	1480		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	2380		ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	2470		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	731		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	6.17		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	28.9		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	168		ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	2.27		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	7.04		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	49.3		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	214		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	4.33	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	18.3		ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: A72
EPA Tag No.:Date / Time Sampled: 08/06/15 06:30
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-19 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	2780		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	50300		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	18400		ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	4120		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	1170		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	940	J	ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	2250		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	672		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	15.7		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	31.2	J	ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	2.34		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	5.24		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	113		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	88.3		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	3.54	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	12.4	J	ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: A72	Date / Time Sampled: 08/05/15 20:10	Workorder: C150801
EPA Tag No.:	Matrix: Surface Water	Lab Number: C150801-21 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	12800		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	2.06	J	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	55100		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	164000		ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	6490		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	2020		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	3030		ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	2460		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	1250		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	10.2		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	116		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	111		ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	4.69		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	10.6		ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	9.51		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	542		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	1390		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	23.2		ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	6.61		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	8.25		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	80.7		ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: A72
 EPA Tag No.:

Date / Time Sampled: 08/05/15 23:50
 Matrix: Surface Water

Workorder: C150801
 Lab Number: C150801-23 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	4470		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	51100		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	35700		ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	4640		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	1350		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	1480		ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	2310		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	806		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	2.66	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	27.1		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	47.6	J	ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	3.23		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	5.92		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	180		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	301		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	5.89		ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	3.75	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	18.7		ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: Bakers Bridge
EPA Tag No.:Date / Time Sampled: 08/06/15 00:00
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-25 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	375		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	32400		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	412		ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	3920		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	295		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	748	J	ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	1820		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	137		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	30.7	J	ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	1.12		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	4.15	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	1.50		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: Bakers Bridge	Date / Time Sampled: 08/06/15 09:00	Workorder: C150801
EPA Tag No.:	Matrix: Surface Water	Lab Number: C150801-27 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	31400		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	4.73	J	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	48500		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	326000		ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	12100		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	3040		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	8400		ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	2710		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	1860		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	19.9	J	ug/L	12.5	25	08/07/2015	SV	1508028
200.8	Arsenic	264		ug/L	12.5	25	08/07/2015	SV	1508028
200.8	Barium	341		ug/L	125	25	08/07/2015	SV	1508028
200.8	Cadmium	6.13		ug/L	2.50	25	08/07/2015	SV	1508028
200.8	Chromium	< 50.0	U	ug/L	25.0	25	08/07/2015	SV	1508028
200.8	Cobalt	12.8		ug/L	2.50	25	08/07/2015	SV	1508028
200.8	Copper	1120		ug/L	12.5	25	08/07/2015	SV	1508028
200.8	Lead	5720		ug/L	2.50	25	08/07/2015	SV	1508028
200.8	Molybdenum	66.9		ug/L	25.0	25	08/07/2015	SV	1508028
200.8	Nickel	< 25.0	U	ug/L	12.5	25	08/07/2015	SV	1508028
200.8	Selenium	< 50.0	U	ug/L	25.0	25	08/07/2015	SV	1508028
200.8	Silver	37.8		ug/L	12.5	25	08/07/2015	SV	1508028
200.8	Thallium	< 25.0	U	ug/L	12.5	25	08/07/2015	SV	1508028
200.8	Vanadium	172		ug/L	50.0	25	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: Bakers Bridge Date / Time Sampled: 08/05/15 20:05 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-29 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	363		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	33000		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	421		ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	4110		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	302		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	751	J	ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	1870		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	129		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	29.9	J	ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	0.975	J	ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	4.03	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	3.45		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: CC48

Date / Time Sampled: 08/06/15 06:00

Workorder: C150801

EPA Tag No.:

Matrix: Surface Water

Lab Number: C150801-31 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	16400		ug/L	20.0	1	08/07/2015	SV	1508028
200.7	Beryllium	3.55	J	ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Calcium	146000		ug/L	100	1	08/07/2015	SV	1508028
200.7	Iron	130000		ug/L	100	1	08/07/2015	SV	1508028
200.7	Magnesium	11300		ug/L	100	1	08/07/2015	SV	1508028
200.7	Manganese	6540		ug/L	2.00	1	08/07/2015	SV	1508028
200.7	Potassium	2470		ug/L	250	1	08/07/2015	SV	1508028
200.7	Sodium	3730		ug/L	250	1	08/07/2015	SV	1508028
200.7	Zinc	4160		ug/L	10.0	1	08/07/2015	SV	1508028
200.8	Antimony	6.79		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Arsenic	98.5		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Barium	52.3		ug/L	25.0	5	08/07/2015	SV	1508028
200.8	Cadmium	14.5		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Chromium	6.62	J	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Cobalt	29.8		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Copper	909		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Lead	536		ug/L	0.500	5	08/07/2015	SV	1508028
200.8	Molybdenum	14.3		ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Nickel	14.8		ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/07/2015	SV	1508028
200.8	Silver	2.53	J	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/07/2015	SV	1508028
200.8	Vanadium	67.3		ug/L	10.0	5	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: CC48	Date / Time Sampled: 08/05/15 23:00	Workorder: C150801
EPA Tag No.:	Matrix: Surface Water	Lab Number: C150801-33 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	28700		ug/L	100	5	08/07/2015	SV	1508028
200.7	Beryllium	< 25.0	U	ug/L	10.0	5	08/07/2015	SV	1508028
200.7	Calcium	154000		ug/L	500	5	08/07/2015	SV	1508028
200.7	Iron	276000		ug/L	500	5	08/07/2015	SV	1508028
200.7	Magnesium	15000		ug/L	500	5	08/07/2015	SV	1508028
200.7	Manganese	8270		ug/L	10.0	5	08/07/2015	SV	1508028
200.7	Potassium	5220		ug/L	1250	5	08/07/2015	SV	1508028
200.7	Sodium	3940	J	ug/L	1250	5	08/07/2015	SV	1508028
200.7	Zinc	5400		ug/L	50.0	5	08/07/2015	SV	1508028
200.8	Antimony	14.1		ug/L	5.00	10	08/07/2015	SV	1508028
200.8	Arsenic	203		ug/L	5.00	10	08/07/2015	SV	1508028
200.8	Barium	159		ug/L	50.0	10	08/07/2015	SV	1508028
200.8	Cadmium	18.5		ug/L	1.00	10	08/07/2015	SV	1508028
200.8	Chromium	17.2	J	ug/L	10.0	10	08/07/2015	SV	1508028
200.8	Cobalt	39.1		ug/L	1.00	10	08/07/2015	SV	1508028
200.8	Copper	1480		ug/L	5.00	10	08/07/2015	SV	1508028
200.8	Lead	2010		ug/L	1.00	10	08/07/2015	SV	1508028
200.8	Molybdenum	36.5		ug/L	10.0	10	08/07/2015	SV	1508028
200.8	Nickel	20.8		ug/L	5.00	10	08/07/2015	SV	1508028
200.8	Selenium	10.1	J	ug/L	10.0	10	08/07/2015	SV	1508028
200.8	Silver	10.8		ug/L	5.00	10	08/07/2015	SV	1508028
200.8	Thallium	< 10.0	U	ug/L	5.00	10	08/07/2015	SV	1508028
200.8	Vanadium	131		ug/L	20.0	10	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: CC48	Date / Time Sampled: 08/05/15 19:25	Workorder: C150801
EPA Tag No.:	Matrix: Surface Water	Lab Number: C150801-35 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	69000		ug/L	100	5	08/07/2015	SV	1508028
200.7	Beryllium	13.1	J	ug/L	10.0	5	08/07/2015	SV	1508028
200.7	Calcium	171000		ug/L	500	5	08/07/2015	SV	1508028
200.7	Iron	896000		ug/L	500	5	08/07/2015	SV	1508028
200.7	Magnesium	23400		ug/L	500	5	08/07/2015	SV	1508028
200.7	Manganese	11900		ug/L	10.0	5	08/07/2015	SV	1508028
200.7	Potassium	11300		ug/L	1250	5	08/07/2015	SV	1508028
200.7	Sodium	4450	J	ug/L	1250	5	08/07/2015	SV	1508028
200.7	Zinc	8060		ug/L	50.0	5	08/07/2015	SV	1508028
200.8	Antimony	35.1	J	ug/L	25.0	50	08/07/2015	SV	1508028
200.8	Arsenic	732		ug/L	25.0	50	08/07/2015	SV	1508028
200.8	Barium	439	J	ug/L	250	50	08/07/2015	SV	1508028
200.8	Cadmium	30.6		ug/L	5.00	50	08/07/2015	SV	1508028
200.8	Chromium	< 100	U	ug/L	50.0	50	08/07/2015	SV	1508028
200.8	Cobalt	59.8		ug/L	5.00	50	08/07/2015	SV	1508028
200.8	Copper	3620		ug/L	25.0	50	08/07/2015	SV	1508028
200.8	Lead	7530		ug/L	5.00	50	08/07/2015	SV	1508028
200.8	Molybdenum	138		ug/L	50.0	50	08/07/2015	SV	1508028
200.8	Nickel	36.0	J	ug/L	25.0	50	08/07/2015	SV	1508028
200.8	Selenium	< 100	U	ug/L	50.0	50	08/07/2015	SV	1508028
200.8	Silver	45.7	J	ug/L	25.0	50	08/07/2015	SV	1508028
200.8	Thallium	< 50.0	U	ug/L	25.0	50	08/07/2015	SV	1508028
200.8	Vanadium	455		ug/L	100	50	08/07/2015	SV	1508028

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: Cement Creek 14th St Bridge
EPA Tag No.:Date / Time Sampled: 08/05/15 16:00
Matrix: Surface WaterWorkorder: C150801
Lab Number: C150801-37 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	945000		ug/L	1000	5	08/07/2015	SV	1508028
200.7	Beryllium	135	J	ug/L	100	5	08/07/2015	SV	1508028
200.7	Calcium	454000		ug/L	5000	5	08/07/2015	SV	1508028
200.7	Iron	9930000		ug/L	5000	5	08/07/2015	SV	1508028
200.7	Magnesium	279000		ug/L	5000	5	08/07/2015	SV	1508028
200.7	Manganese	78000		ug/L	100	5	08/07/2015	SV	1508028
200.7	Potassium	212000		ug/L	12500	5	08/07/2015	SV	1508028
200.7	Sodium	23400	J	ug/L	12500	5	08/07/2015	SV	1508028
200.7	Zinc	44000		ug/L	500	5	08/07/2015	SV	1508028
200.8	Antimony	321	J	ug/L	250	50	08/07/2015	SV	1508028
200.8	Arsenic	8230		ug/L	250	50	08/07/2015	SV	1508028
200.8	Barium	9730		ug/L	2500	50	08/07/2015	SV	1508028
200.8	Cadmium	165		ug/L	50.0	50	08/07/2015	SV	1508028
200.8	Chromium	706	J	ug/L	500	50	08/07/2015	SV	1508028
200.8	Cobalt	384		ug/L	50.0	50	08/07/2015	SV	1508028
200.8	Copper	36700		ug/L	250	50	08/07/2015	SV	1508028
200.8	Lead	179000		ug/L	50.0	50	08/07/2015	SV	1508028
200.8	Molybdenum	2010		ug/L	500	50	08/07/2015	SV	1508028
200.8	Nickel	276	J	ug/L	250	50	08/07/2015	SV	1508028
200.8	Selenium	< 1000	U	ug/L	500	50	08/07/2015	SV	1508028
200.8	Silver	1110		ug/L	250	50	08/07/2015	SV	1508028
200.8	Thallium	< 500	U	ug/L	250	50	08/07/2015	SV	1508028
200.8	Vanadium	5470		ug/L	1000	50	08/07/2015	SV	1508028

"J" Qualifier indicates an estimated value

TDF #: A-098

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: 32nd St Bridge Date / Time Sampled: 08/06/15 09:45 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-01 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: 32nd St Bridge Date / Time Sampled: 08/05/15 20:50 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-03 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: 32nd St Bridge Date / Time Sampled: 08/06/15 00:40 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-05 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: A68 Date / Time Sampled: 08/05/15 16:00 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-07 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

TDF #: A-098

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: A68 Date / Time Sampled: 08/06/15 06:15 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-09 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: A68 Date / Time Sampled: 08/05/15 19:15 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-11 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: A68 Date / Time Sampled: 08/05/15 23:30 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-13 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: A72 Date / Time Sampled: 08/05/15 16:15 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-15 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	0.418		ug/L	0.0500	1	08/07/2015	NP	1508029

TDF #: A-098

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: A72 Date / Time Sampled: 08/05/15 13:45 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-17 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: A72 Date / Time Sampled: 08/06/15 06:30 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-19 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: A72 Date / Time Sampled: 08/05/15 20:10 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-21 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	0.0650	J	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: A72 Date / Time Sampled: 08/05/15 23:50 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-23 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

TDF #: A-098

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: Bakers Bridge Date / Time Sampled: 08/06/15 00:00 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-25 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: Bakers Bridge Date / Time Sampled: 08/06/15 09:00 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-27 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	0.152		ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: Bakers Bridge Date / Time Sampled: 08/05/15 20:05 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-29 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: CC48 Date / Time Sampled: 08/06/15 06:00 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-31 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	0.0520	J	ug/L	0.0500	1	08/07/2015	NP	1508029

TDF #: A-098

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: CC48 Date / Time Sampled: 08/05/15 23:00 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-33 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	0.0770	J	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: CC48 Date / Time Sampled: 08/05/15 19:25 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-35 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	0.0780	J	ug/L	0.0500	1	08/07/2015	NP	1508029

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: Cement Creek 14th St Bridge Date / Time Sampled: 08/05/15 16:00 Workorder: C150801
 EPA Tag No.: Matrix: Surface Water Lab Number: C150801-37 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	19.2		ug/L	0.250	5	08/07/2015	NP	1508029

"J" Qualifier indicates an estimated value

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
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ICPMS-PE DRC-II

Batch 1508027 - No Lab Prep Req'd

Water

ICPMS-PE DRC-II

Method Blank (1508027-BLK1)

Dilution Factor: 1

Prepared & Analyzed: 08/07/15

Vanadium	< 2.00	3.00	ug/L						
Chromium	< 1.00	2.00	"						
Cobalt	< 0.100	0.200	"						
Nickel	< 0.500	1.00	"						
Copper	< 0.500	1.00	"						
Arsenic	< 0.500	2.00	"						
Selenium	< 1.00	2.00	"						
Molybdenum	< 1.00	1.00	"						
Silver	< 0.500	1.00	"						
Cadmium	< 0.100	0.200	"						
Antimony	< 0.500	1.00	"						
Barium	< 5.00	10.0	"						
Thallium	< 0.500	1.00	"						
Lead	< 0.100	0.200	"						

Method Blank Spike (1508027-BS1)

Dilution Factor: 1

Prepared & Analyzed: 08/07/15

Vanadium	93.1	3.00	ug/L	100		93	85-115		
Chromium	93.3	2.00	"	100		93	85-115		
Cobalt	94.7	0.200	"	100		95	85-115		
Nickel	93.1	1.00	"	100		93	85-115		
Copper	93.0	1.00	"	100		93	85-115		
Arsenic	99.8	2.00	"	100		100	85-115		
Selenium	520	2.00	"	500		104	85-115		
Molybdenum	94.4	1.00	"	100		94	85-115		
Silver	93.5	1.00	"	100		93	85-115		
Cadmium	95.8	0.200	"	100		96	85-115		
Antimony	98.1	1.00	"	100		98	85-115		
Barium	97.1	10.0	"	100		97	85-115		
Thallium	97.6	1.00	"	100		98	85-115		
Lead	97.2	0.200	"	100		97	85-115		

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1508027 - No Lab Prep Req'd			<i>Water</i>			ICPMS-PE DRC-II			
Duplicate (1508027-DUP1)		Dilution Factor: 1		Source: C150801-02		Prepared & Analyzed: 08/07/15			
Vanadium	< 2.00	3.00	ug/L		< 2.00				20
Chromium	2.67	2.00	"		2.47			8	20
Cobalt	0.286	0.200	"		0.307			7	20
Nickel	< 0.500	1.00	"		< 0.500				20
Copper	1.70	1.00	"		1.62			5	20
Arsenic	< 0.500	2.00	"		< 0.500				20
Selenium	< 1.00	2.00	"		< 1.00				20
Molybdenum	< 1.00	1.00	"		< 1.00				20
Silver	< 0.500	1.00	"		< 0.500				20
Cadmium	0.169	0.200	"		0.190			11	20
Antimony	< 0.500	1.00	"		< 0.500				20
Barium	46.6	10.0	"		45.7			2	20
Thallium	< 0.500	1.00	"		< 0.500				20
Lead	0.104	0.200	"		0.115			10	20
Matrix Spike (1508027-MS1)		Dilution Factor: 1		Source: C150801-02		Prepared & Analyzed: 08/07/15			
Vanadium	90.5	3.00	ug/L	100	< 2.00	91	70-130		
Chromium	90.4	2.00	"	100	2.47	88	70-130		
Cobalt	92.2	0.200	"	100	0.307	92	70-130		
Nickel	87.6	1.00	"	100	< 0.500	88	70-130		
Copper	89.9	1.00	"	100	1.62	88	70-130		
Arsenic	104	2.00	"	100	< 0.500	104	70-130		
Selenium	570	2.00	"	500	< 1.00	114	70-130		
Molybdenum	98.0	1.00	"	100	< 1.00	98	70-130		
Silver	86.1	1.00	"	100	< 0.500	86	70-130		
Cadmium	98.7	0.200	"	100	0.190	98	70-130		
Antimony	101	1.00	"	100	< 0.500	101	70-130		
Barium	141	10.0	"	100	45.7	95	70-130		
Thallium	96.9	1.00	"	100	< 0.500	97	70-130		
Lead	95.8	0.200	"	100	0.115	96	70-130		

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
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Batch 1508027 - No Lab Prep Req'd *Water* ICPMS-PE DRC-II

Matrix Spike (1508027-MS2) Dilution Factor: 1 Source: C150801-04 Prepared & Analyzed: 08/07/15

Vanadium	90.7	3.00	ug/L	100	< 2.00	91	70-130		
Chromium	90.6	2.00	"	100	3.06	88	70-130		
Cobalt	90.2	0.200	"	100	0.321	90	70-130		
Nickel	88.2	1.00	"	100	< 0.500	88	70-130		
Copper	89.8	1.00	"	100	1.70	88	70-130		
Arsenic	103	2.00	"	100	0.628	102	70-130		
Selenium	577	2.00	"	500	< 1.00	115	70-130		
Molybdenum	97.4	1.00	"	100	< 1.00	97	70-130		
Silver	87.5	1.00	"	100	< 0.500	87	70-130		
Cadmium	101	0.200	"	100	0.178	101	70-130		
Antimony	100	1.00	"	100	< 0.500	100	70-130		
Barium	141	10.0	"	100	48.2	93	70-130		
Thallium	96.4	1.00	"	100	< 0.500	96	70-130		
Lead	93.8	0.200	"	100	0.240	94	70-130		

Batch 1508031 - 1508027 *Water* ICPMS-PE DRC-II

Serial Dilution (1508031-SRD1) Dilution Factor: 5 Source: C150801-02 Prepared & Analyzed: 08/07/15

Vanadium	< 10.0	15.0	ug/L		< 2.00				10
Chromium	< 5.00	10.0	"		2.47				10
Cobalt	< 0.500	1.00	"		0.307				10
Nickel	< 2.50	5.00	"		< 0.50				10
Copper	< 2.50	5.00	"		1.62				10
Arsenic	< 2.50	10.0	"		< 0.50				10
Selenium	< 5.00	10.0	"		< 1.00				10
Molybdenum	< 5.00	5.00	"		< 1.00				10
Silver	< 2.50	5.00	"		< 0.50				10
Cadmium	< 0.500	1.00	"		0.190				10
Antimony	< 2.50	5.00	"		< 0.50				10
Barium	46.1	50.0	"		45.7			0.8	10
Thallium	< 2.50	5.00	"		< 0.50				10
Lead	< 0.500	1.00	"		0.115				10

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
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ICPOE - PE Optima

Batch 1508026 - No Lab Prep Req'd

Water

ICPOE - PE Optima

Method Blank (1508026-BLK1) Dilution Factor: 1 Prepared & Analyzed: 08/07/15

Aluminum	< 20.0	50.0	ug/L						
Beryllium	< 2.00	5.00	"						
Calcium	< 100	250	"						
Iron	< 100	250	"						
Potassium	< 250	1000	"						
Magnesium	< 100	250	"						
Manganese	< 2.00	5.00	"						
Sodium	< 250	1000	"						
Zinc	< 10.0	20.0	"						

Method Blank Spike (1508026-BS1) Dilution Factor: 1 Prepared & Analyzed: 08/07/15

Aluminum	10430	50.0	ug/L	10100	103	85-115			
Beryllium	100.4	5.00	"	100	100	85-115			
Calcium	10010	250	"	10100	99	85-115			
Iron	10300	250	"	10100	102	85-115			
Potassium	10790	1000	"	10100	107	85-115			
Magnesium	10420	250	"	10100	103	85-115			
Manganese	101.9	5.00	"	100	102	85-115			
Sodium	10660	1000	"	10100	106	85-115			
Zinc	110.2	20.0	"	100	110	85-115			

Duplicate (1508026-DUP1) Dilution Factor: 1 Source: C150801-02 Prepared & Analyzed: 08/07/15

Aluminum	< 20.0	50.0	ug/L	< 20.0					20
Beryllium	< 2.00	5.00	"	< 2.00					20
Calcium	51500	250	"	52200			1		20
Iron	< 100	250	"	< 100					20
Potassium	1907	1000	"	1895			0.6		20
Magnesium	7154	250	"	7120			0.5		20
Manganese	97.91	5.00	"	97.78			0.1		20
Sodium	11170	1000	"	10980			2		20
Zinc	42.91	20.0	"	49.13			14		20

TDF #: A-098

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
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Batch 1508026 - No Lab Prep Req'd *Water* ICPOE - PE Optima

Matrix Spike (1508026-MS1) Dilution Factor: 1 Source: C150801-02 Prepared & Analyzed: 08/07/15

Aluminum	10590	50.0	ug/L	10100	< 20.0	105	70-130		
Beryllium	101.4	5.00	"	100	< 2.00	101	70-130		
Calcium	60670	250	"	10100	52200	84	70-130		
Iron	10400	250	"	10100	< 100	103	70-130		
Potassium	12860	1000	"	10100	1895	109	70-130		
Magnesium	17840	250	"	10100	7120	106	70-130		
Manganese	199.1	5.00	"	100	97.78	101	70-130		
Sodium	22020	1000	"	10100	10980	109	70-130		
Zinc	156.3	20.0	"	100	49.13	107	70-130		

Matrix Spike (1508026-MS2) Dilution Factor: 1 Source: C150801-04 Prepared & Analyzed: 08/07/15

Aluminum	10880	50.0	ug/L	10100	< 20.0	108	70-130		
Beryllium	103.5	5.00	"	100	< 2.00	104	70-130		
Calcium	61880	250	"	10100	51170	106	70-130		
Iron	10450	250	"	10100	< 100	103	70-130		
Potassium	13010	1000	"	10100	1960	109	70-130		
Magnesium	18120	250	"	10100	7281	107	70-130		
Manganese	209.5	5.00	"	100	105.3	104	70-130		
Sodium	22080	1000	"	10100	11430	105	70-130		
Zinc	150.9	20.0	"	100	43.50	107	70-130		

Batch 1508030 - 1508026 *Water* ICPOE - PE Optima

Serial Dilution (1508030-SRD1) Dilution Factor: 5 Source: C150801-02 Prepared & Analyzed: 08/07/15

Aluminum	< 100	250	ug/L		< 20.00				10
Beryllium	< 10.0	25.0	"		< 2.00				10
Calcium	49280	1250	"		52200			6	10
Iron	< 500	1250	"		< 100.00				10
Potassium	1898	5000	"		1895			0.2	10
Magnesium	6847	1250	"		7120			4	10
Manganese	96.79	25.0	"		97.78			1	10
Sodium	10950	5000	"		10980			0.3	10
Zinc	< 50.0	100	"		49.13				10

NOTE: %R = % Recovery, %R limits do not apply when sample levels exceed 4x the spike level.
 RPD = Relative Percent Difference, %D = % Difference, DL = Detection Limit for OC sample

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
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ICPMS-PE DRC-II

Batch 1508028 - 200.2 - TR Metals

Water

ICPMS-PE DRC-II

Method Blank (1508028-BLK2)

Dilution Factor: 5

Prepared & Analyzed: 08/07/15

Vanadium	< 10.0	15.0	ug/L						
Chromium	< 5.00	10.0	"						
Cobalt	< 0.500	1.00	"						
Nickel	< 2.50	5.00	"						
Copper	< 2.50	5.00	"						
Arsenic	< 2.50	10.0	"						
Selenium	< 5.00	10.0	"						
Molybdenum	< 5.00	5.00	"						
Silver	< 2.50	5.00	"						
Cadmium	< 0.500	1.00	"						
Antimony	< 2.50	5.00	"						
Barium	< 25.0	50.0	"						
Thallium	< 2.50	5.00	"						
Lead	< 0.500	1.00	"						

Duplicate (1508028-DUP2)

Dilution Factor: 5

Source: C150801-01

Prepared & Analyzed: 08/07/15

Vanadium	< 10.0	15.0	ug/L	< 10.0				20
Chromium	< 5.00	10.0	"	< 5.00				20
Cobalt	< 0.500	1.00	"	< 0.500				20
Nickel	< 2.50	5.00	"	< 2.50				20
Copper	8.535	5.00	"	3.309			88	20
Arsenic	< 2.50	10.0	"	< 2.50				20
Selenium	< 5.00	10.0	"	< 5.00				20
Molybdenum	< 5.00	5.00	"	< 5.00				20
Silver	< 2.50	5.00	"	< 2.50				20
Cadmium	< 0.500	1.00	"	< 0.500				20
Antimony	< 2.50	5.00	"	< 2.50				20
Barium	48.88	50.0	"	46.77			4	20
Thallium	< 2.50	5.00	"	< 2.50				20
Lead	46.84	1.00	"	3.461			172	20

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1508028 - 200.2 - TR Metals			<i>Water</i>			ICPMS-PE DRC-II			
Matrix Spike (1508028-MS2)		Dilution Factor: 5		Source: C150801-01		Prepared & Analyzed: 08/07/15			
Vanadium	288.1	15.0	ug/L	300	< 10.0	96	70-130		
Chromium	381.1	10.0	"	400	< 5.00	95	70-130		
Cobalt	190.2	1.00	"	200	< 0.500	95	70-130		
Nickel	463.4	5.00	"	500	< 2.50	93	70-130		
Copper	283.0	5.00	"	300	3.309	93	70-130		
Arsenic	815.5	10.0	"	800	< 2.50	102	70-130		
Selenium	2056	10.0	"	2000	< 5.00	103	70-130		
Molybdenum	399.6	5.00	"	400	< 5.00	100	70-130		
Silver	72.71	5.00	"	75.0	< 2.50	97	70-130		
Cadmium	205.8	1.00	"	200	< 0.500	103	70-130		
Antimony	802.5	5.00	"	800	< 2.50	100	70-130		
Barium	247.2	50.0	"	200	46.77	100	70-130		
Thallium	1916	5.00	"	2000	< 2.50	96	70-130		
Lead	974.1	1.00	"	1000	3.461	97	70-130		
Matrix Spike (1508028-MS4)		Dilution Factor: 5		Source: C150801-03		Prepared & Analyzed: 08/07/15			
Vanadium	276.5	15.0	ug/L	300	< 10.0	92	70-130		
Chromium	381.7	10.0	"	400	< 5.00	95	70-130		
Cobalt	193.2	1.00	"	200	< 0.500	97	70-130		
Nickel	469.8	5.00	"	500	< 2.50	94	70-130		
Copper	287.7	5.00	"	300	2.702	95	70-130		
Arsenic	800.9	10.0	"	800	< 2.50	100	70-130		
Selenium	2015	10.0	"	2000	< 5.00	101	70-130		
Molybdenum	389.7	5.00	"	400	< 5.00	97	70-130		
Silver	69.86	5.00	"	75.0	< 2.50	93	70-130		
Cadmium	199.5	1.00	"	200	< 0.500	100	70-130		
Antimony	807.1	5.00	"	800	< 2.50	101	70-130		
Barium	246.7	50.0	"	200	49.88	98	70-130		
Thallium	1935	5.00	"	2000	12.03	96	70-130		
Lead	985.1	1.00	"	1000	2.561	98	70-130		

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
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Batch 1508028 - 200.2 - TR Metals *Water* **ICPMS-PE DRC-II**

Reference (1508028-SRM2) Dilution Factor: 2 Prepared & Analyzed: 08/07/15

Vanadium	935.8	60.0	ug/L	1000		94	85-115		
Chromium	952.8	40.0	"	1000		95	85-115		
Cobalt	980.1	4.00	"	1000		98	85-115		
Nickel	954.4	20.0	"	1000		95	85-115		
Copper	961.2	20.0	"	1000		96	85-115		
Arsenic	2105	40.0	"	2000		105	85-115		
Selenium	1056	40.0	"	1000		106	85-115		
Molybdenum	1028	20.0	"	1000		103	85-115		
Silver	249.4	20.0	"	250		100	85-115		
Cadmium	993.8	4.00	"	1000		99	85-115		
Antimony	2053	20.0	"	2000		103	85-115		
Barium	993.4	200	"	1000		99	85-115		
Thallium	4826	20.0	"	5000		97	85-115		
Lead	1939	4.00	"	2000		97	85-115		

Batch 1508033 - 1508028 *Water* **ICPMS-PE DRC-II**

Serial Dilution (1508033-SRD1) Dilution Factor: 2 **Source: C150801-01** Prepared & Analyzed: 08/07/15

Vanadium	< 50.0	75.0	ug/L	< 10.00					10
Chromium	< 25.0	50.0	"	< 5.00					10
Cobalt	< 2.50	5.00	"	< 0.50					10
Nickel	< 12.5	25.0	"	< 2.50					10
Copper	< 12.5	25.0	"	3.309					10
Arsenic	< 12.5	50.0	"	< 2.50					10
Selenium	< 25.0	50.0	"	< 5.00					10
Molybdenum	< 25.0	25.0	"	< 5.00					200
Silver	< 12.5	25.0	"	< 2.50					10
Cadmium	< 2.50	5.00	"	< 0.50					10
Antimony	< 12.5	25.0	"	< 2.50					10
Barium	< 125	250	"	46.77					10
Thallium	< 12.5	25.0	"	< 2.50					10
Lead	3.217	5.00	"	3.461				7	10

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
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ICPOE - PE Optima

Batch 1508028 - 200.2 - TR Metals

Water

ICPOE - PE Optima

Method Blank (1508028-BLK1) Dilution Factor: 1 Prepared & Analyzed: 08/07/15

Aluminum	< 20.0	50.0	ug/L						
Beryllium	< 2.00	5.00	"						
Calcium	< 100	250	"						
Iron	< 100	250	"						
Potassium	< 250	1000	"						
Magnesium	< 100	250	"						
Manganese	< 2.00	5.00	"						
Sodium	< 250	1000	"						
Zinc	11.00	20.0	"						

Duplicate (1508028-DUP1) Dilution Factor: 1 Source: C150801-01 Prepared & Analyzed: 08/07/15

Aluminum	204.0	50.0	ug/L		219.9			8	20
Beryllium	< 2.00	5.00	"		< 2.00				20
Calcium	51590	250	"		51560			0.05	20
Iron	354.2	250	"		371.5			5	20
Potassium	2045	1000	"		2051			0.3	20
Magnesium	7042	250	"		7046			0.06	20
Manganese	119.7	5.00	"		120.0			0.3	20
Sodium	10980	1000	"		10900			0.7	20
Zinc	79.70	20.0	"		79.76			0.07	20

Matrix Spike (1508028-MS1) Dilution Factor: 1 Source: C150801-01 Prepared & Analyzed: 08/07/15

Aluminum	2189	50.0	ug/L	2000	219.9	98	70-130		
Beryllium	205.4	5.00	"	200	< 2.00	103	70-130		
Calcium	52590	250	"	1000	51560	102	70-130		
Iron	3399	250	"	3000	371.5	101	70-130		
Potassium	11820	1000	"	10000	2051	98	70-130		
Magnesium	8931	250	"	2000	7046	94	70-130		
Manganese	321.9	5.00	"	200	120.0	101	70-130		
Sodium	13820	1000	"	3000	10900	97	70-130		
Zinc	278.6	20.0	"	200	79.76	99	70-130		

TDF #: A-098

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1508028 - 200.2 - TR Metals			<i>Water</i>			ICPOE - PE Optima			
Matrix Spike (1508028-MS3)		Dilution Factor: 1		Source: C150801-03		Prepared & Analyzed: 08/07/15			
Aluminum	2152	50.0	ug/L	2000	175.9	99	70-130		
Beryllium	206.0	5.00	"	200	< 2.00	103	70-130		
Calcium	52970	250	"	1000	52050	92	70-130		
Iron	3315	250	"	3000	330.7	99	70-130		
Potassium	11920	1000	"	10000	2055	99	70-130		
Magnesium	9122	250	"	2000	7138	99	70-130		
Manganese	320.8	5.00	"	200	117.6	102	70-130		
Sodium	14140	1000	"	3000	11120	101	70-130		
Zinc	277.4	20.0	"	200	71.92	103	70-130		
Reference (1508028-SRM1)		Dilution Factor: 1				Prepared & Analyzed: 08/07/15			
Aluminum	992.5	50.0	ug/L	1000		99	85-115		
Beryllium	1004	5.00	"	1000		100	85-115		
Calcium	1000	250	"	1000		100	85-115		
Iron	1070	250	"	1000		107	85-115		
Potassium	5061	1000	"	5000		101	85-115		
Magnesium	1006	250	"	1000		101	85-115		
Manganese	1015	5.00	"	1000		102	85-115		
Sodium	1034	1000	"	1000		103	85-115		
Zinc	1041	20.0	"	1000		104	85-115		
Batch 1508034 - 1508028			<i>Water</i>			ICPOE - PE Optima			
Serial Dilution (1508034-SRD1)		Dilution Factor: 5		Source: C150801-01		Prepared & Analyzed: 08/07/15			
Aluminum	179.5	250	ug/L		219.9			20	10
Beryllium	< 10.0	25.0	"		< 2.00				10
Calcium	50510	1250	"		51560			2	10
Iron	664.1	1250	"		371.5			57	10
Potassium	2365	5000	"		2051			14	10
Magnesium	6855	1250	"		7046			3	10
Manganese	119.9	25.0	"		120.0			0.1	10
Sodium	10750	5000	"		10900			1	10
Zinc	89.17	100	"		79.76			11	10

NOTE: %R = % Recovery, %R limits do not apply when sample levels exceed 4x the spike level.
 RPD = Relative Percent Difference, %D = % Difference, DL = Detection Limit for OC sample

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Mercury only (Total) by EPA 245.1 / 7470A Method - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit	
CVAA FIMS - PE										
Batch 1508029 - EPA 245.1/245.2 Prep			<i>Water</i>				CVAA FIMS - PE			
Method Blank (1508029-BLK1)		Dilution Factor: 1			Prepared & Analyzed: 08/07/15					
Mercury	< 0.0500	0.100	ug/L							
Method Blank Spike (1508029-BS1)		Dilution Factor: 1			Prepared & Analyzed: 08/07/15					
Mercury	7.61	0.100	ug/L	7.50		101	85-115			
Duplicate (1508029-DUP1)		Dilution Factor: 1			Source: C150801-01		Prepared & Analyzed: 08/07/15			
Mercury	< 0.0500	0.100	ug/L		< 0.0500				20	
Matrix Spike (1508029-MS1)		Dilution Factor: 1			Source: C150801-01		Prepared & Analyzed: 08/07/15			
Mercury	7.61	0.100	ug/L	7.50	< 0.0500	101	75-125			
Matrix Spike (1508029-MS2)		Dilution Factor: 1			Source: C150801-21		Prepared & Analyzed: 08/07/15			
Mercury	3.80	0.100	ug/L	7.50	0.0650	50	75-125			
Batch 1508032 - 1508029			<i>Water</i>				CVAA FIMS - PE			
Instrument Blank (1508032-IBL1)		Dilution Factor: 1			Prepared & Analyzed: 08/07/15					
Mercury	< 0.0500	0.100	ug/L							

NOTE: %R = % Recovery, %R limits do not apply when sample levels exceed 4x the spike level.
 RPD = Relative Percent Difference, %D = % Difference, DL = Detection Limit for QC sample

TDF #: A-098

TechLaw Inc., ESAT Region 8
INORGANIC ANALYSES DATA SHEET
Initial and Continuing Calibration Blanks

Analytical Method: 200.7

Analysis Name: ICPOE Diss. Metals

Instrument: ICPOE - PE Optima

Work Order: Nu C150801

Analytical Sequence: 1508030 Dissolved

Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4			
Aluminum	0.42	1	2	3	4	1508026-BLK1	NA	50.00
		1.22	0.08	-1.46		-2.08	NA	
	5	6	7	8				
Beryllium	-0.16	1	2	3	4	1508026-BLK1	NA	5.00
		-0.41	-0.27	-0.37		-0.29	NA	
	5	6	7	8				
Calcium	8.16	1	2	3	4	1508026-BLK1	NA	250.00
		7.79	7.01	6.13		-5.41	NA	
	5	6	7	8				
Iron	-1.01	1	2	3	4	1508026-BLK1	NA	250.00
		0.24	-0.07	-0.60		-1.09	NA	
	5	6	7	8				
Potassium	8.90	1	2	3	4	1508026-BLK1	NA	1,000.00
		9.87	9.09	3.57		3.39	NA	
	5	6	7	8				
Magnesium	-0.37	1	2	3	4	1508026-BLK1	NA	250.00
		-0.68	-1.00	-0.77		-1.77	NA	
	5	6	7	8				
Manganese	0.16	1	2	3	4	1508026-BLK1	NA	5.00
		0.04	0.11	0.43		0.08	NA	
	5	6	7	8				
Sodium	-4.94	1	2	3	4	1508026-BLK1	NA	1,000.00
		-3.34	-2.43	0.33		-11.08	NA	
	5	6	7	8				

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TechLaw Inc., ESAT Region 8
INORGANIC ANALYSES DATA SHEET
Initial and Continuing Calibration Blanks

Analytical Method: 200.7 Analysis Name: ICPOE Diss. Metals

Instrument: ICPOE - PE Optima Work Order: Nu C150801

Analytical Sequence: 1508030 Dissolved Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4			
Zinc	-14.62					1508026-BLK1	NA	20.00
		-12.81	-7.42	-4.57		-3.75	NA	

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TechLaw Inc., ESAT Region 8
INORGANIC ANALYSES DATA SHEET
Intial and Continuing Calibration Blanks

Analytical Method: 200.8

Analysis Name: ICPMS Diss. Metals

Instrument: ICPMS-PE DRC-II

Work Order: Nu C150801

Analytical Sequence: 1508031 Dissolved

Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4			
Vanadium	0.04	1	2	3	4	1508027-BLK1	NA	3.00
		0.07	0.19	0.10		0.00	NA	
	5	6	7	8				
Chromium	-0.02	1	2	3	4	1508027-BLK1	NA	2.00
		0.05	0.00	0.04		0.02	NA	
	5	6	7	8				
Cobalt	0.01	1	2	3	4	1508027-BLK1	NA	0.20
		0.01	0.01	0.02		-0.01	NA	
	5	6	7	8				
Nickel	0.01	1	2	3	4	1508027-BLK1	NA	1.00
		0.02	0.03	0.02		-0.01	NA	
	5	6	7	8				
Copper	-0.03	1	2	3	4	1508027-BLK1	NA	1.00
		-0.03	0.00	0.01		-0.09	NA	
	5	6	7	8				
Arsenic	0.06	1	2	3	4	1508027-BLK1	NA	2.00
		-0.01	0.07	-0.03		0.02	NA	
	5	6	7	8				
Selenium	0.15	1	2	3	4	1508027-BLK1	NA	2.00
		-0.18	0.11	-0.06		0.12	NA	
	5	6	7	8				
Molybdenum	0.03	1	2	3	4	1508027-BLK1	NA	1.00
		0.05	0.04	0.05		0.09	NA	
	5	6	7	8				

TDF #: A-098

TechLaw Inc., ESAT Region 8
INORGANIC ANALYSES DATA SHEET
Initial and Continuing Calibration Blanks

Analytical Method: 200.8 Analysis Name: ICPMS Diss. Metals

Instrument: ICPMS-PE DRC-II Work Order: Nu C150801

Analytical Sequence: 1508031 Dissolved Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4			
Silver	0.02	1	2	3	4	1508027-BLK1	NA	1.00
		0.03	0.03	0.03		0.00	NA	
		5	6	7	8			
Cadmium	0.01	1	2	3	4	1508027-BLK1	NA	0.20
		0.00	0.03	0.03		-0.02	NA	
		5	6	7	8			
Antimony	0.08	1	2	3	4	1508027-BLK1	NA	1.00
		0.17	0.20	0.20		0.13	NA	
		5	6	7	8			
Barium	0.01	1	2	3	4	1508027-BLK1	NA	10.00
		0.00	0.02	0.01		-0.02	NA	
		5	6	7	8			
Thallium	0.01	1	2	3	4	1508027-BLK1	NA	1.00
		0.00	0.00	0.00		-0.06	NA	
		5	6	7	8			
Lead	0.01	1	2	3	4	1508027-BLK1	NA	0.20
		0.01	0.02	0.02		-0.01	NA	
		5	6	7	8			

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TechLaw Inc., ESAT Region 8
INORGANIC ANALYSES DATA SHEET
Initial and Continuing Calibration Blanks

Analytical Method: 245.1 Analysis Name: TM_Mercury 245.1

Instrument: CVAA FIMS - PE Work Order: Nu C150801

Analytical Sequence: 1508032 Total Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4			
Mercury	0.01					1508029-BLK1	NA	0.10
		0.01	0.01	0.01		0.01	NA	

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TechLaw Inc., ESAT Region 8
INORGANIC ANALYSES DATA SHEET
Initial and Continuing Calibration Blanks

Analytical Method: 200.8

Analysis Name: ICPMS Tot. Rec. Metals

Instrument: ICPMS-PE DRC-II

Work Order: Nu C150801

Analytical Sequence: 1508033 **Total Recoverable**

Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4			
Vanadium	0.04	1	2	3	4	NA	1508028-BLK2	3.00
		0.07	0.19	0.10	0.06	NA	-0.53	
	5	6	7	8				
	0.22	0.15	0.02					
Chromium	-0.02	1	2	3	4	NA	1508028-BLK2	2.00
		0.05	0.00	0.04	0.00	NA	0.44	
	5	6	7	8				
	-0.02	0.01	-0.02					
Cobalt	0.01	1	2	3	4	NA	1508028-BLK2	0.20
		0.01	0.01	0.02	0.01	NA	-0.02	
	5	6	7	8				
	0.04	0.07	0.03					
Nickel	0.01	1	2	3	4	NA	1508028-BLK2	1.00
		0.02	0.03	0.02	0.06	NA	-0.01	
	5	6	7	8				
	0.07	0.12	0.09					
Copper	-0.03	1	2	3	4	NA	1508028-BLK2	1.00
		-0.03	0.00	0.01	-0.01	NA	0.00	
	5	6	7	8				
	0.01	0.05	0.00					
Arsenic	0.06	1	2	3	4	NA	1508028-BLK2	2.00
		-0.01	0.07	-0.03	0.05	NA	-0.15	
	5	6	7	8				
	-0.01	0.01	0.04					
Selenium	0.15	1	2	3	4	NA	1508028-BLK2	2.00
		-0.18	0.11	-0.06	0.39	NA	0.02	
	5	6	7	8				
	-0.13	0.03	0.17					
Molybdenum	0.03	1	2	3	4	NA	1508028-BLK2	1.00
		0.05	0.04	0.05	0.04	NA	-0.01	
	5	6	7	8				
	0.05	0.09	0.06					

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TechLaw Inc., ESAT Region 8
INORGANIC ANALYSES DATA SHEET
Initial and Continuing Calibration Blanks

Analytical Method: 200.8

Analysis Name: ICPMS Tot. Rec. Metals

Instrument: ICPMS-PE DRC-II

Work Order: Nu C150801

Analytical Sequence: 1508033 **Total Recoverable**

Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4			
Silver	0.02	1	2	3	4	NA	1508028-BLK2	1.00
		0.03	0.03	0.03	0.01	NA	-0.01	
	5	6	7	8				
	0.04	0.08	0.04					
Cadmium	0.01	1	2	3	4	NA	1508028-BLK2	0.20
		0.00	0.03	0.03	0.01	NA	-0.01	
	5	6	7	8				
	0.06	0.06	0.06					
Antimony	0.08	1	2	3	4	NA	1508028-BLK2	1.00
		0.17	0.20	0.20	0.17	NA	-0.02	
	5	6	7	8				
	0.22	0.20	0.21					
Barium	0.01	1	2	3	4	NA	1508028-BLK2	10.00
		0.00	0.02	0.01	0.03	NA	-0.02	
	5	6	7	8				
	0.05	0.05	0.05					
Thallium	0.01	1	2	3	4	NA	1508028-BLK2	1.00
		0.00	0.00	0.00	0.26	NA	-0.07	
	5	6	7	8				
	0.10	0.10	0.06					
Lead	0.01	1	2	3	4	NA	1508028-BLK2	0.20
		0.01	0.02	0.02	0.02	NA	-0.01	
	5	6	7	8				
	0.07	0.11	0.07					

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TechLaw Inc., ESAT Region 8
INORGANIC ANALYSES DATA SHEET
Intial and Continuing Calibration Blanks

Analytical Method: 200.7 Analysis Name: ICPOE Tot. Rec. Metals
 Instrument: ICPOE - PE Optima Work Order: Nu C150801
 Analytical Sequence: 1508034 **Total Recoverable** Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4			
Aluminum	-2.12	1	2	3	4	1508028-BLK1	NA	50.00
		-7.34	-5.35	-0.20		-1.23	NA	
	5	6	7	8				
Beryllium	0.11	1	2	3	4	1508028-BLK1	NA	5.00
		0.05	0.02	0.06		-0.04	NA	
	5	6	7	8				
Calcium	-3.27	1	2	3	4	1508028-BLK1	NA	250.00
		-3.13	-3.99	-3.28		18.86	NA	
	5	6	7	8				
Iron	30.55	1	2	3	4	1508028-BLK1	NA	250.00
		61.09	54.22	43.05		79.09	NA	
	5	6	7	8				
Potassium	92.11	1	2	3	4	1508028-BLK1	NA	1,000.00
		76.42	116.42	116.40		132.92	NA	
	5	6	7	8				
Magnesium	-0.28	1	2	3	4	1508028-BLK1	NA	250.00
		1.64	0.18	1.55		0.37	NA	
	5	6	7	8				
Manganese	0.14	1	2	3	4	1508028-BLK1	NA	5.00
		0.12	0.12	0.14		0.41	NA	
	5	6	7	8				
Sodium	1.37	1	2	3	4	1508028-BLK1	NA	1,000.00
		20.07	1.67	4.73		43.75	NA	
	5	6	7	8				

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TechLaw Inc., ESAT Region 8
INORGANIC ANALYSES DATA SHEET
Initial and Continuing Calibration Blanks

Analytical Method: 200.7

Analysis Name: ICPOE Tot. Rec. Metals

Instrument: ICPOE - PE Optima

Work Order: Nu C150801

Analytical Sequence: 1508034 Total Recoverable

Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4			
Zinc	0.60					1508028-BLK1	NA	20.00
		0.92	1.22	0.34		11.00	NA	

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TechLaw, Inc. - ESAT Region 8															
Initial and Continuing Calibration Verification Results															
ICPOE - PE Optima			Method: 200.7			Analysis Name: ICPOE Diss. Metals									
Sequence: 1508030			Work Order: C150801			Units: ug/L									
Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)											
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R			
Aluminum	12500	12530	100.2	1	2	3	12500	13080	104.6	12500	13210	105.7	12500	13040	104.3
				4	5	6									
				7	8	9									
Beryllium	500	513.8	102.8	1	2	3	500	517.7	103.5	500	526.8	105.4	500	517.1	103.4
				4	5	6									
				7	8	9									
Calcium	12500	12360	98.9	1	2	3	12500	12420	99.4	12500	12360	98.9	12500	12410	99.3
				4	5	6									
				7	8	9									
Iron	12500	12510	100.1	1	2	3	12500	12710	101.7	12500	12740	101.9	12500	13120	105.0
				4	5	6									
				7	8	9									
Magnesium	12500	12670	101.4	1	2	3	12500	13020	104.2	12500	13060	104.5	12500	12850	102.8
				4	5	6									
				7	8	9									
Manganese	1000	1010	101.0	1	2	3	1000	1042	104.2	1000	1071	107.1	1000	1063	106.3
				4	5	6									
				7	8	9									

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TechLaw, Inc. - ESAT Region 8															
Initial and Continuing Calibration Verification Results															
ICPOE - PE Optima			Method: 200.7			Analysis Name: ICPOE Diss. Metals									
Sequence: 1508030			Work Order: C150801			Units: ug/L									
Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)											
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R			
Potassium	25000	25620	102.5	1	2	3	25000	26440	105.8	25000	26150	104.6	25000	25750	103.0
				4	5	6									
				7	8	9									
Sodium	12500	12900	103.2	1	2	3	12500	13240	105.9	12500	13280	106.2	12500	12960	103.7
				4	5	6									
				7	8	9									
Zinc	2500	2593	103.7	1	2	3	2500	2641	105.6	2500	2741	109.6	2500	2746	109.8
				4	5	6									
				7	8	9									

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

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TechLaw, Inc. - ESAT Region 8															
Initial and Continuing Calibration Verification Results															
ICPMS-PE DRC-II			Method: 200.8			Analysis Name: ICPMS Diss. Metals									
Sequence: 1508031			Work Order: C150801			Units: ug/L									
Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)											
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R			
Antimony	50.0	50.1	100.2	1	2	3	50.0	48.6	97.2	50.0	49.3	98.6	50.0	49.6	99.2
				4	5	6									
				7	8	9									
Arsenic	50.0	51.5	103.0	1	2	3	50.0	51.1	102.2	50.0	52.1	104.2	50.0	50.5	101.0
				4	5	6									
				7	8	9									
Barium	50.0	49.8	99.6	1	2	3	50.0	50.2	100.4	50.0	50.0	100.0	50.0	52.1	104.2
				4	5	6									
				7	8	9									
Cadmium	50.0	49.5	99.0	1	2	3	50.0	51.1	102.2	50.0	51.6	103.2	50.0	50.6	101.2
				4	5	6									
				7	8	9									
Chromium	50.0	48.4	96.8	1	2	3	50.0	48.4	96.8	50.0	47.7	95.4	50.0	48.0	96.0
				4	5	6									
				7	8	9									
Cobalt	50.0	50.0	100.0	1	2	3	50.0	48.8	97.6	50.0	49.0	98.0	50.0	50.4	100.8
				4	5	6									
				7	8	9									

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TechLaw, Inc. - ESAT Region 8																
Initial and Continuing Calibration Verification Results																
ICPMS-PE DRC-II			Method: 200.8			Analysis Name: ICPMS Diss. Metals										
Sequence: 1508031			Work Order: C150801			Units: ug/L										
Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)												
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R				
Copper	50.0	48.9	97.8	1	2	3	50.0	46.5	93.0	50.0	47.4	94.8	50.0	48.5	97.0	
				4	5	6										
				7	8	9										
Lead	50.0	49.2	98.4	1	2	3	50.0	50.2	100.4	50.0	50.2	100.4	50.0	49.5	99.0	
				4	5	6										
				7	8	9										
Molybdenum	50.0	49.3	98.6	1	2	3	50.0	50.8	101.6	50.0	51.0	102.0	50.0	51.9	103.8	
				4	5	6										
				7	8	9										
Nickel	50.0	48.5	97.0	1	2	3	50.0	47.4	94.8	50.0	48.7	97.4	50.0	49.2	98.4	
				4	5	6										
				7	8	9										
Selenium	50.0	53.0	106.0	1	2	3	50.0	52.0	104.0	50.0	51.4	102.8	50.0	52.0	104.0	
				4	5	6										
				7	8	9										
Silver	50.0	48.9	97.8	1	2	3	50.0	50.0	100.0	50.0	49.9	99.8	50.0	50.3	100.6	
				4	5	6										
				7	8	9										

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TechLaw, Inc. - ESAT Region 8												
Initial and Continuing Calibration Verification Results												
ICPMS-PE DRC-II			Method: 200.8			Analysis Name: ICPMS Diss. Metals						
Sequence: 1508031			Work Order: C150801			Units: ug/L						
Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Thallium	50.0	49.8	99.6	1			2			3		
				50.0	49.8	99.6	50.0	49.3	98.6	50.0	50.1	100.2
				4			5			6		
				7			8			9		
Vanadium	50.0	48.5	97.0	1			2			3		
				50.0	48.7	97.4	50.0	48.4	96.8	50.0	48.3	96.6
				4			5			6		
				7			8			9		

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

TDF #: A-098

TechLaw, Inc. - ESAT Region 8												
Initial and Continuing Calibration Verification Results												
CVAA FIMS - PE			Method: 245.1			Analysis Name: TM_Mercury 245.1						
Sequence: 1508032			Work Order: C150801			Units: ug/L						
Total Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Mercury	5.00	5.24	104.8	1			2			3		
				5.00	5.22	104.4	5.00	5.11	102.2	5.00	5.06	101.2
				4			5			6		
				7			8			9		

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

TDF #: A-098

TechLaw, Inc. - ESAT Region 8																
Initial and Continuing Calibration Verification Results																
ICPMS-PE DRC-II			Method: 200.8			Analysis Name: ICPMS Tot. Rec. Metals										
Sequence: 1508033			Work Order: C150801			Units: ug/L										
Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)												
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R				
Antimony	50.0	50.08	100.2	1	2	3	50.0	48.59	97.2	50.0	49.32	98.6	50.0	49.60	99.2	
				4	5	6	50.0	50.57	101.1	50.0	49.53	99.1	50.0	50.52	101.0	
				7	8	9	50.0	50.97	101.9							
Arsenic	50.0	51.52	103.0	1	2	3	50.0	51.09	102.2	50.0	52.06	104.1	50.0	50.51	101.0	
				4	5	6	50.0	52.05	104.1	50.0	51.55	103.1	50.0	52.37	104.7	
				7	8	9	50.0	51.87	103.7							
Barium	50.0	49.79	99.6	1	2	3	50.0	50.15	100.3	50.0	50.02	100.0	50.0	52.12	104.2	
				4	5	6	50.0	52.06	104.1	50.0	51.73	103.5	50.0	52.77	105.5	
				7	8	9	50.0	51.02	102.0							
Cadmium	50.0	49.47	98.9	1	2	3	50.0	51.10	102.2	50.0	51.55	103.1	50.0	50.62	101.2	
				4	5	6	50.0	49.78	99.6	50.0	52.17	104.3	50.0	52.97	105.9	
				7	8	9	50.0	52.12	104.2							
Chromium	50.0	48.42	96.8	1	2	3	50.0	48.45	96.9	50.0	47.74	95.5	50.0	47.97	95.9	
				4	5	6	50.0	49.17	98.3	50.0	47.44	94.9	50.0	51.45	102.9	
				7	8	9	50.0	49.01	98.0							
Cobalt	50.0	49.98	100.0	1	2	3	50.0	48.81	97.6	50.0	49.02	98.0	50.0	50.40	100.8	
				4	5	6	50.0	50.92	101.8	50.0	48.74	97.5	50.0	53.58	107.2	
				7	8	9	50.0	50.39	100.8							

TDF #: A-098

TechLaw, Inc. - ESAT Region 8													
Initial and Continuing Calibration Verification Results													
ICPMS-PE DRC-II			Method: 200.8			Analysis Name: ICPMS Tot. Rec. Metals							
Sequence: 1508033			Work Order: C150801			Units: ug/L							
Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)									
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R	
Copper	50.0	48.85	97.7	1			2			3			
				50.0	46.46	92.9	50.0	47.39	94.8	50.0	48.54	97.1	
				4			5			6			
					50.0	50.58	101.2	50.0	48.57	97.1	50.0	51.09	102.2
					7			8			9		
					50.0	48.50	97.0						
Lead	50.0	49.25	98.5	1			2			3			
				50.0	50.15	100.3	50.0	50.24	100.5	50.0	49.53	99.1	
				4			5			6			
					50.0	50.17	100.3	50.0	51.12	102.2	50.0	52.74	105.5
					7			8			9		
					50.0	53.04	106.1						
Molybdenum	50.0	49.33	98.7	1			2			3			
				50.0	50.76	101.5	50.0	50.99	102.0	50.0	51.86	103.7	
				4			5			6			
					50.0	53.13	106.3	50.0	53.26	106.5	50.0	52.91	105.8
					7			8			9		
					50.0	53.41	106.8						
Nickel	50.0	48.45	96.9	1			2			3			
				50.0	47.43	94.9	50.0	48.71	97.4	50.0	49.25	98.5	
				4			5			6			
					50.0	49.68	99.4	50.0	48.80	97.6	50.0	52.24	104.5
					7			8			9		
					50.0	49.15	98.3						
Selenium	50.0	53.05	106.1	1			2			3			
				50.0	52.02	104.0	50.0	51.36	102.7	50.0	52.00	104.0	
				4			5			6			
					50.0	51.94	103.9	50.0	52.26	104.5	50.0	52.52	105.0
					7			8			9		
					50.0	51.76	103.5						
Silver	50.0	48.89	97.8	1			2			3			
				50.0	50.00	100.0	50.0	49.91	99.8	50.0	50.30	100.6	
				4			5			6			
					50.0	50.40	100.8	50.0	50.03	100.1	50.0	50.95	101.9
					7			8			9		
					50.0	51.36	102.7						

TDF #: A-098

TechLaw, Inc. - ESAT Region 8												
Initial and Continuing Calibration Verification Results												
ICPMS-PE DRC-II			Method: 200.8			Analysis Name: ICPMS Tot. Rec. Metals						
Sequence: 1508033			Work Order: C150801			Units: ug/L						
Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Thallium	50.0	49.76	99.5	1			2			3		
				50.0	49.82	99.6	50.0	49.30	98.6	50.0	50.10	100.2
				4			5			6		
				50.0	50.19	100.4	50.0	50.62	101.2	50.0	52.71	105.4
				7			8			9		
Vanadium	50.0	48.49	97.0	1			2			3		
				50.0	48.70	97.4	50.0	48.43	96.9	50.0	48.29	96.6
				4			5			6		
				50.0	48.95	97.9	50.0	48.71	97.4	50.0	49.88	99.8
				7			8			9		
				50.0	50.05	100.1						

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

TDF #: A-098

TechLaw, Inc. - ESAT Region 8															
Initial and Continuing Calibration Verification Results															
ICPOE - PE Optima			Method: 200.7			Analysis Name: ICPOE Tot. Rec. Metals									
Sequence: 1508034			Work Order: C150801			Units: ug/L									
Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)											
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R			
Aluminum	12500	12620	101.0	1	2	3	12500	12490	99.9	12500	12430	99.4	12500	12410	99.3
				4	5	6									
				7	8	9									
Beryllium	500	506.7	101.3	1	2	3	500	505.3	101.1	500	500.6	100.1	500	498.3	99.7
				4	5	6									
				7	8	9									
Calcium	12500	12690	101.5	1	2	3	12500	12810	102.5	12500	12480	99.8	12500	12430	99.4
				4	5	6									
				7	8	9									
Iron	12500	12670	101.4	1	2	3	12500	12750	102.0	12500	12410	99.3	12500	12560	100.5
				4	5	6									
				7	8	9									
Magnesium	12500	12690	101.5	1	2	3	12500	12680	101.4	12500	12560	100.5	12500	12560	100.5
				4	5	6									
				7	8	9									
Manganese	1000	1015	101.5	1	2	3	1000	1007	100.7	1000	997.9	99.8	1000	996.3	99.6
				4	5	6									
				7	8	9									

TDF #: A-098

TechLaw, Inc. - ESAT Region 8												
Initial and Continuing Calibration Verification Results												
ICPOE - PE Optima			Method: 200.7			Analysis Name: ICPOE Tot. Rec. Metals						
Sequence: 1508034			Work Order: C150801			Units: ug/L						
Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Potassium	25000	25300	101.2	1			2			3		
				25000	25060	100.2	25000	24970	99.9	25000	25050	100.2
				4			5			6		
				7			8			9		
Sodium	12500	12660	101.3	1			2			3		
				12500	12570	100.6	12500	12710	101.7	12500	12860	102.9
				4			5			6		
				7			8			9		
Zinc	2500	2580	103.2	1			2			3		
				2500	2599	104.0	2500	2474	99.0	2500	2458	98.3
				4			5			6		
				7			8			9		

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

TDF #: A-098

TechLaw, Inc. - ESAT Region 8
ICP Interference Check Sample
ICPMS-PE DRC-II

<u>Analyte</u>	<u>Check Sample</u>	<u>Result*</u>	<u>Units</u>	<u>True</u>	<u>%R</u>	<u>PQL</u>
Sequence: 1508031	Analysis: ICPMS Diss. Metals					
Antimony	IFA1	0.0	ug/L			1.00
	IFB1	0.0	ug/L			1.00
Arsenic	IFA1	0.0	ug/L			2.00
	IFB1	19.9	ug/L	20	100	2.00
Barium	IFA1	0.0	ug/L			10.0
	IFB1	0.1	ug/L			10.0
Cadmium	IFA1	0.0	ug/L			0.200
	IFB1	20.3	ug/L	20	101	0.200
Chromium	IFA1	0.2	ug/L			2.00
	IFB1	20.1	ug/L	20	101	2.00
Cobalt	IFA1	0.0	ug/L			0.200
	IFB1	20.4	ug/L	20	102	0.200
Copper	IFA1	0.5	ug/L			1.00
	IFB1	20.7	ug/L	20	103	1.00
Lead	IFA1	0.0	ug/L			0.200
	IFB1	0.0	ug/L			0.200
Molybdenum	IFA1	197.6	ug/L	200	99	1.00
	IFB1	198.9	ug/L	200	99	1.00
Nickel	IFA1	0.0	ug/L			1.00
	IFB1	20.2	ug/L	20	101	1.00
Selenium	IFA1	0.2	ug/L			2.00
	IFB1	-0.4	ug/L			2.00
Silver	IFA1	0.0	ug/L			1.00
	IFB1	19.1	ug/L	20	96	1.00
Thallium	IFA1	-0.1	ug/L			1.00
	IFB1	-0.1	ug/L			1.00
Vanadium	IFA1	0.2	ug/L			3.00
	IFB1	0.1	ug/L			3.00

*Criteria = 80-120%R of True Value or +/- PQL
 See raw data for complete analyte list and results.

TDF #:

A-098

TechLaw, Inc. - ESAT Region 8
ICP Interference Check Sample
ICPMS-PE DRC-II

<u>Analyte</u>	<u>Check Sample</u>	<u>Result*</u>	<u>Units</u>	<u>True</u>	<u>%R</u>	<u>PQL</u>
Sequence: 1508033	Analysis: ICPMS Tot. Rec. Metals					
Antimony	IFA1	0.0	ug/L			1.00
	IFB1	0.0	ug/L			1.00
Arsenic	IFA1	0.0	ug/L			2.00
	IFB1	19.9	ug/L	20	100	2.00
Barium	IFA1	0.0	ug/L			10.0
	IFB1	0.1	ug/L			10.0
Cadmium	IFA1	0.0	ug/L			0.200
	IFB1	20.3	ug/L	20	101	0.200
Chromium	IFA1	0.2	ug/L			2.00
	IFB1	20.1	ug/L	20	101	2.00
Cobalt	IFA1	0.0	ug/L			0.200
	IFB1	20.4	ug/L	20	102	0.200
Copper	IFA1	0.5	ug/L			1.00
	IFB1	20.7	ug/L	20	103	1.00
Lead	IFA1	0.0	ug/L			0.200
	IFB1	0.0	ug/L			0.200
Molybdenum	IFA1	197.6	ug/L	200	99	1.00
	IFB1	198.9	ug/L	200	99	1.00
Nickel	IFA1	0.0	ug/L			1.00
	IFB1	20.2	ug/L	20	101	1.00
Selenium	IFA1	0.2	ug/L			2.00
	IFB1	-0.4	ug/L			2.00
Silver	IFA1	0.0	ug/L			1.00
	IFB1	19.1	ug/L	20	96	1.00
Thallium	IFA1	-0.1	ug/L			1.00
	IFB1	-0.1	ug/L			1.00
Vanadium	IFA1	0.2	ug/L			3.00
	IFB1	0.1	ug/L			3.00

*Criteria = 80-120%R of True Value or +/- PQL
 See raw data for complete analyte list and results.

TDF #: A-098

TechLaw, Inc. - ESAT Region 8
ICP Interference Check Sample
ICPOE - PE Optima

<u>Analyte</u>	<u>Check Sample</u>	<u>Result*</u>	<u>Units</u>	<u>True</u>	<u>%R</u>	<u>PQL</u>
Sequence: 1508030	Analysis: ICPOE Diss. Metals					
Aluminum	IFA1	62,740.4	ug/L	60,000	105	50.0
	IFB1	64,156.3	ug/L	60,000	107	50.0
Beryllium	IFA1	0.2	ug/L			5.00
	IFB1	100.7	ug/L	100	101	5.00
Calcium	IFA1	313,635.0	ug/L	300,000	105	250
	IFB1	316,600.2	ug/L	300,000	106	250
Iron	IFA1	238,165.8	ug/L	250,000	95	250
	IFB1	241,023.9	ug/L	250,000	96	250
Magnesium	IFA1	146,621.4	ug/L	150,000	98	250
	IFB1	149,278.3	ug/L	150,000	100	250
Manganese	IFA1	-0.3	ug/L			5.00
	IFB1	196.6	ug/L	200	98	5.00
Potassium	IFA1	-445.9	ug/L			1000
	IFB1	21,071.8	ug/L	20,000	105	1000
Sodium	IFA1	52,186.3	ug/L	50,000	104	1000
	IFB1	53,093.3	ug/L	50,000	106	1000
Zinc	IFA1	-17.8	ug/L			20.0
	IFB1	265.9	ug/L	300	89	20.0

*Criteria = 80-120%R of True Value or +/- PQL
 See raw data for complete analyte list and results.

TDF #: A-098

TechLaw, Inc. - ESAT Region 8
ICP Interference Check Sample
ICPOE - PE Optima

<u>Analyte</u>	<u>Check Sample</u>	<u>Result*</u>	<u>Units</u>	<u>True</u>	<u>%R</u>	<u>PQL</u>
Sequence: 1508034	Analysis: ICPOE Tot. Rec. Metals					
Aluminum	IFA1	59,751.4	ug/L	60,000	100	50.0
	IFB1	58,440.8	ug/L	60,000	97	50.0
Beryllium	IFA1	-0.5	ug/L			5.00
	IFB1	99.4	ug/L	100	99	5.00
Calcium	IFA1	287,173.4	ug/L	300,000	96	250
	IFB1	279,542.4	ug/L	300,000	93	250
Iron	IFA1	235,077.2	ug/L	250,000	94	250
	IFB1	231,242.4	ug/L	250,000	92	250
Magnesium	IFA1	141,412.3	ug/L	150,000	94	250
	IFB1	138,644.2	ug/L	150,000	92	250
Manganese	IFA1	0.9	ug/L			5.00
	IFB1	194.6	ug/L	200	97	5.00
Potassium	IFA1	-236.5	ug/L			1000
	IFB1	20,427.5	ug/L	20,000	102	1000
Sodium	IFA1	50,900.9	ug/L	50,000	102	1000
	IFB1	49,562.7	ug/L	50,000	99	1000
Zinc	IFA1	-2.2	ug/L			20.0
	IFB1	287.9	ug/L	300	96	20.0

*Criteria = 80-120%R of True Value or +/- PQL
 See raw data for complete analyte list and results.

TDF #: A-098

TechLaw, Inc. - ESAT Region 8 Detection Limit (PQL) Standard ICPMS-PE DRC-II				
Metals (Dissolved) by EPA 200/7000 Series Methods				
Sequence: 1508031				
<u>Analyte</u>	<u>True</u>	<u>Found</u>	<u>%R</u>	<u>Units</u>
Antimony	1.00	1.03	103	ug/L
Arsenic	2.00	2.04	102	ug/L
Barium	10.0	9.75	97	ug/L
Cadmium	0.200	0.164	82	ug/L
Chromium	2.00	1.82	91	ug/L
Cobalt	0.200	0.190	95	ug/L
Copper	1.00	0.799	80	ug/L
Lead	0.200	0.186	93	ug/L
Molybdenum	1.00	0.935	94	ug/L
Nickel	1.00	0.976	98	ug/L
Selenium	2.00	1.96	98	ug/L
Silver	1.00	0.957	96	ug/L
Thallium	1.00	0.892	89	ug/L
Vanadium	2.00	1.99	99	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, & Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg & Na.

TDF #: A-098

TechLaw, Inc. - ESAT Region 8 Detection Limit (PQL) Standard ICPOE - PE Optima				
Metals (Dissolved) by EPA 200/7000 Series Methods				
Sequence: 1508030				
<u>Analyte</u>	<u>True</u>	<u>Found</u>	<u>%R</u>	<u>Units</u>
Aluminum	100	100.6	101	ug/L
Beryllium	5.00	4.710	94	ug/L
Calcium	250	239.5	96	ug/L
Iron	100	99.97	100	ug/L
Magnesium	1000	1009	101	ug/L
Manganese	10.0	10.71	107	ug/L
Potassium	1000	1048	105	ug/L
Sodium	1000	1034	103	ug/L
Zinc	50.0	54.25	109	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, & Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg & Na.

TDF #: A-098

TechLaw, Inc. - ESAT Region 8 Detection Limit (PQL) Standard ICPMS-PE DRC-II				
Metals (Total Recov) by EPA 200/7000 Series Methods				
Sequence: 1508033				
<u>Analyte</u>	<u>True</u>	<u>Found</u>	<u>%R</u>	<u>Units</u>
Antimony	1.00	1.034	103	ug/L
Arsenic	2.00	2.045	102	ug/L
Barium	10.0	9.749	97	ug/L
Cadmium	0.200	0.1641	82	ug/L
Chromium	2.00	1.816	91	ug/L
Cobalt	0.200	0.1900	95	ug/L
Copper	1.00	0.7994	80	ug/L
Lead	0.200	0.1862	93	ug/L
Molybdenum	1.00	0.9353	94	ug/L
Nickel	1.00	0.9756	98	ug/L
Selenium	2.00	1.964	98	ug/L
Silver	1.00	0.9570	96	ug/L
Thallium	1.00	0.8921	89	ug/L
Vanadium	2.00	1.989	99	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, & Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg & Na.

TDF #: A-098

TechLaw, Inc. - ESAT Region 8 Detection Limit (PQL) Standard ICPOE - PE Optima				
Metals (Total Recov) by EPA 200/7000 Series Methods				
Sequence: 1508034				
<u>Analyte</u>	<u>True</u>	<u>Found</u>	<u>%R</u>	<u>Units</u>
Aluminum	100	93.48	93	ug/L
Beryllium	5.00	5.200	104	ug/L
Calcium	250	249.5	100	ug/L
Iron	100	129.4	129	ug/L
Magnesium	1000	1036	104	ug/L
Manganese	10.0	10.66	107	ug/L
Potassium	1000	1099	110	ug/L
Sodium	1000	1045	105	ug/L
Zinc	50.0	56.12	112	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, & Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg & Na.

TDF #: A-098

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.7

Dissolved

Sequence ID#: 1508030

Instrument ID #: ICPOE - PE Optima

Water

LSR #: A-096

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508030-ICV1	Initial Cal Check	08/07/15	07:49
1508030-SCV1	Secondary Cal Check	08/07/15	07:52
1508030-ICB1	Initial Cal Blank	08/07/15	07:55
1508030-CRL1	Instrument RL Check	08/07/15	07:58
1508030-IFA1	Interference Check A	08/07/15	08:02
1508030-IFB1	Interference Check B	08/07/15	08:06
1508026-BLK1	Blank	08/07/15	08:10
1508026-BS1	Blank Spike	08/07/15	08:13
C150801-02	32nd St Bridge	08/07/15	08:17
1508026-DUP1	Duplicate	08/07/15	08:20
1508030-SRD1	Serial Dilution	08/07/15	08:23
1508026-MS1	Matrix Spike	08/07/15	08:26
C150801-04	32nd St Bridge	08/07/15	08:29
1508026-MS2	Matrix Spike	08/07/15	08:33
C150801-06	32nd St Bridge	08/07/15	08:36
1508030-CCV1	Calibration Check	08/07/15	08:42
1508030-CCB1	Calibration Blank	08/07/15	08:46
C150801-08	A68	08/07/15	08:49
C150801-10	A68	08/07/15	08:52
C150801-12	A68	08/07/15	08:55
C150801-14	A68	08/07/15	08:59
C150801-16	A72	08/07/15	09:02
C150801-18	A72	08/07/15	09:05
C150801-20	A72	08/07/15	09:09
C150801-22	A72	08/07/15	09:12
C150801-24	A72	08/07/15	09:15
1508030-CCV2	Calibration Check	08/07/15	09:22
1508030-CCB2	Calibration Blank	08/07/15	09:25
C150801-26	Bakers Bridge	08/07/15	09:28
C150801-28	Bakers Bridge	08/07/15	09:31
C150801-30	Bakers Bridge	08/07/15	09:34
C150801-32	CC48	08/07/15	09:38
C150801-34	CC48	08/07/15	09:41
C150801-36	CC48	08/07/15	09:44
C150801-38	Cement Creek 14th St Bridge	08/07/15	09:48
1508030-CCV3	Calibration Check	08/07/15	09:55
1508030-CCB3	Calibration Blank	08/07/15	09:58

TDF #: A-098

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.8

Dissolved

Sequence ID#: 1508031

Instrument ID #: ICPMS-PE DRC-II

Water

LSR #: A-096

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508031-ICV1	Initial Cal Check	08/07/15	08:33
1508031-SCV1	Secondary Cal Check	08/07/15	08:37
1508031-ICB1	Initial Cal Blank	08/07/15	08:40
1508031-CRL1	Instrument RL Check	08/07/15	08:43
1508031-IFA1	Interference Check A	08/07/15	08:47
1508031-IFB1	Interference Check B	08/07/15	08:50
1508027-BLK1	Blank	08/07/15	08:53
1508027-BS1	Blank Spike	08/07/15	08:56
C150801-02	32nd St Bridge	08/07/15	08:59
1508027-DUP1	Duplicate	08/07/15	09:03
1508031-SRD1	Serial Dilution	08/07/15	09:06
1508027-MS1	Matrix Spike	08/07/15	09:09
C150801-04	32nd St Bridge	08/07/15	09:12
1508027-MS2	Matrix Spike	08/07/15	09:15
C150801-06	32nd St Bridge	08/07/15	09:18
1508031-CCV1	Calibration Check	08/07/15	09:24
1508031-CCB1	Calibration Blank	08/07/15	09:27
C150801-08	A68	08/07/15	09:31
C150801-10	A68	08/07/15	09:34
C150801-12	A68	08/07/15	09:37
C150801-14	A68	08/07/15	09:40
C150801-16	A72	08/07/15	09:43
C150801-18	A72	08/07/15	09:46
C150801-20	A72	08/07/15	09:49
C150801-22	A72	08/07/15	09:52
C150801-24	A72	08/07/15	09:55
1508031-CCV2	Calibration Check	08/07/15	10:02
1508031-CCB2	Calibration Blank	08/07/15	10:05
C150801-26	Bakers Bridge	08/07/15	10:08
C150801-28	Bakers Bridge	08/07/15	10:11
C150801-30	Bakers Bridge	08/07/15	10:14
C150801-32	CC48	08/07/15	10:18
C150801-34	CC48	08/07/15	10:21
C150801-36	CC48	08/07/15	10:24
C150801-38	Cement Creek 14th St Bridge	08/07/15	10:27
1508031-CCV3	Calibration Check	08/07/15	10:33
1508031-CCB3	Calibration Blank	08/07/15	10:36

TDF #: A-098

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 245.1

Total

Sequence ID#: 1508032

Instrument ID #: CVAA FIMS - PE

Water

LSR #: A-096

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508032-ICV1	Initial Cal Check	08/07/15	15:04
1508032-ICB1	Initial Cal Blank	08/07/15	15:04
1508032-SCV1	Secondary Cal Check	08/07/15	15:04
1508032-IBL1	Instrument Blank	08/07/15	15:04
1508029-BS1	Blank Spike	08/07/15	15:04
1508029-BLK1	Blank	08/07/15	15:04
C150801-01	32nd St Bridge	08/07/15	15:04
1508029-DUP1	Duplicate	08/07/15	15:04
1508029-MS1	Matrix Spike	08/07/15	15:04
C150801-03	32nd St Bridge	08/07/15	15:04
C150801-05	32nd St Bridge	08/07/15	15:04
C150801-07	A68	08/07/15	15:04
1508032-CCV1	Calibration Check	08/07/15	15:04
1508032-CCB1	Calibration Blank	08/07/15	15:04
C150801-09	A68	08/07/15	15:04
C150801-11	A68	08/07/15	15:04
C150801-13	A68	08/07/15	15:04
C150801-15	A72	08/07/15	15:04
C150801-17	A72	08/07/15	15:04
C150801-19	A72	08/07/15	15:04
C150801-21	A72	08/07/15	15:04
1508029-MS2	Matrix Spike	08/07/15	15:04
C150801-23	A72	08/07/15	15:04
C150801-25	Bakers Bridge	08/07/15	15:04
1508032-CCV2	Calibration Check	08/07/15	15:04
1508032-CCB2	Calibration Blank	08/07/15	15:04
C150801-27	Bakers Bridge	08/07/15	15:04
C150801-29	Bakers Bridge	08/07/15	15:04
C150801-31	CC48	08/07/15	15:04
C150801-33	CC48	08/07/15	15:04
C150801-35	CC48	08/07/15	15:04
C150801-37	Cement Creek 14th St Bridge	08/07/15	15:04
1508032-CCV3	Calibration Check	08/07/15	15:04
1508032-CCB3	Calibration Blank	08/07/15	15:04

TDF #: A-098

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.8

Total Recoverable

Sequence ID#: 1508033

Instrument ID #: ICPMS-PE DRC-II

Water

LSR #: A-096

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508033-ICV1	Initial Cal Check	08/07/15	08:33
1508033-SCV1	Secondary Cal Check	08/07/15	08:37
1508033-ICB1	Initial Cal Blank	08/07/15	08:40
1508033-CRL1	Instrument RL Check	08/07/15	08:43
1508033-IFA1	Interference Check A	08/07/15	08:47
1508033-IFB1	Interference Check B	08/07/15	08:50
1508033-CCV1	Calibration Check	08/07/15	09:24
1508033-CCB1	Calibration Blank	08/07/15	09:27
1508033-CCV2	Calibration Check	08/07/15	10:02
1508033-CCB2	Calibration Blank	08/07/15	10:05
1508033-CCV3	Calibration Check	08/07/15	10:33
1508033-CCB3	Calibration Blank	08/07/15	10:36
1508028-BLK2	Blank	08/07/15	13:15
C150801-01	32nd St Bridge	08/07/15	13:18
1508028-DUP2	Duplicate	08/07/15	13:21
1508033-SRD1	Serial Dilution	08/07/15	13:24
1508028-SRM2	Reference	08/07/15	13:27
1508028-MS2	Matrix Spike	08/07/15	13:30
C150801-03	32nd St Bridge	08/07/15	13:33
1508028-MS4	Matrix Spike	08/07/15	13:36
C150801-05	32nd St Bridge	08/07/15	13:39
1508033-CCV4	Calibration Check	08/07/15	13:46
1508033-CCB4	Calibration Blank	08/07/15	13:49
C150801-07	A68	08/07/15	13:52
C150801-09	A68	08/07/15	13:55
C150801-11	A68	08/07/15	13:58
C150801-13	A68	08/07/15	14:01
C150801-17	A72	08/07/15	14:08
C150801-19	A72	08/07/15	14:11
C150801-21	A72	08/07/15	14:14
C150801-23	A72	08/07/15	14:17
1508033-CCV5	Calibration Check	08/07/15	14:23
1508033-CCB5	Calibration Blank	08/07/15	14:26
C150801-25	Bakers Bridge	08/07/15	14:30
C150801-29	Bakers Bridge	08/07/15	14:36
C150801-31	CC48	08/07/15	14:39
C150801-33	CC48	08/07/15	14:42
C150801-15	A72	08/07/15	14:54

TDF #: A-098

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.8 Total Recoverable Sequence ID#: 1508033

Instrument ID #: ICPMS-PE DRC-II Water LSR #: A-096

Analysis ID	Sample Name	Analysis Date	Analysis Time
C150801-27	Bakers Bridge	08/07/15	14:57
1508033-CCV6	Calibration Check	08/07/15	15:00
1508033-CCB6	Calibration Blank	08/07/15	15:04
C150801-35	CC48	08/07/15	15:07
C150801-37	Cement Creek 14th St Bridge	08/07/15	15:10
1508033-CCV7	Calibration Check	08/07/15	15:13
1508033-CCB7	Calibration Blank	08/07/15	15:17

TDF #: A-098

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.7

Total Recoverable

Sequence ID#: 1508034

Instrument ID #: ICPOE - PE Optima

Water

LSR #: A-096

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508034-ICV1	Initial Cal Check	08/07/15	15:59
1508034-SCV1	Secondary Cal Check	08/07/15	16:03
1508034-ICB1	Initial Cal Blank	08/07/15	16:06
1508034-CRL1	Instrument RL Check	08/07/15	16:09
1508034-IFA1	Interference Check A	08/07/15	16:12
1508034-IFB1	Interference Check B	08/07/15	16:15
1508028-BLK1	Blank	08/07/15	16:20
1508028-SRM1	Reference	08/07/15	16:23
C150801-01	32nd St Bridge	08/07/15	16:26
1508028-DUP1	Duplicate	08/07/15	16:29
1508034-SRD1	Serial Dilution	08/07/15	16:32
1508028-MS1	Matrix Spike	08/07/15	16:35
C150801-03	32nd St Bridge	08/07/15	16:38
1508028-MS3	Matrix Spike	08/07/15	16:42
C150801-05	32nd St Bridge	08/07/15	16:45
1508034-CCV1	Calibration Check	08/07/15	16:51
1508034-CCB1	Calibration Blank	08/07/15	16:54
C150801-07	A68	08/07/15	16:57
C150801-09	A68	08/07/15	17:00
C150801-11	A68	08/07/15	17:03
C150801-13	A68	08/07/15	17:07
C150801-15	A72	08/07/15	17:09
C150801-17	A72	08/07/15	17:13
C150801-19	A72	08/07/15	17:16
C150801-21	A72	08/07/15	17:19
C150801-23	A72	08/07/15	17:22
1508034-CCV2	Calibration Check	08/07/15	17:28
1508034-CCB2	Calibration Blank	08/07/15	17:31
C150801-25	Bakers Bridge	08/07/15	17:34
C150801-27	Bakers Bridge	08/07/15	17:37
C150801-29	Bakers Bridge	08/07/15	17:41
C150801-31	CC48	08/07/15	17:44
C150801-33	CC48	08/07/15	17:46
C150801-35	CC48	08/07/15	17:49
C150801-37	Cement Creek 14th St Bridge	08/07/15	17:52
1508034-CCV3	Calibration Check	08/07/15	17:58
1508034-CCB3	Calibration Blank	08/07/15	18:01