

May 9, 2016

Ms. Laine Sumner
CH2M HILL Plateau Remediation Company
2420 Stevens Center
Richland, WA 99352

Re: ALS Workorder: 1603558
Project Name: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water
Project Number: F11-002

Dear Ms. Sumner:

Three water samples were received from CH2M HILL Plateau Remediation Company, on 3/31/2016. The samples were scheduled for the following analyses:

Metals

The results for these analyses are contained in the enclosed reports.

This report was originally submitted on 4/26/2016. It is being re-submitted to include beryllium on samples B34TM4 and B34TM1.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,



ALS Environmental
Julie Ellingson
Project Manager

The data package has the following issues:

Beryllium was not reported from the 6010_METALS_ICP: COMMON (Add-on) list for the following Sample's: B34TM4, B34TM1

Resolution: *Provide correction.*

Lab Response: Send revised report and EDD.

Please correct the issue and resubmit the hard copy and electronic data packages.

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Louisiana (LA)	05057
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1603558

Client Name: CH2M HILL Plateau Remediation Company

Client Project Name: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water

Client Project Number: F11-002

Client PO Number: BOA 54854

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B34TM4	1603558-1		WATER	30-Mar-16	9:20
B34TM1	1603558-2		WATER	30-Mar-16	9:20
B34TL8	1603558-3		WATER	30-Mar-16	9:05



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC

Workorder No: 1603558

Project Manager: JE

Initials: REN Date: 3/13/16

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on sample containers intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	YES	<input checked="" type="radio"/> NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<input checked="" type="radio"/> N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	<input checked="" type="radio"/> N/A	YES	NO
15. Do any water samples contain sediment? Amount of sediment: ___ dusting ___ moderate ___ heavy	Amount N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		YES	<input checked="" type="radio"/> NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	RAD ONLY	YES	<input checked="" type="radio"/> NO
Cooler #: <u>1</u>			
Temperature (°C): <u>AMB</u>			
No. of custody seals on cooler: <u>2</u>			
External µR/hr reading: <u>10</u>			
Background µR/hr reading: <u>9</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO / NA Contact: _____ Date/Time: _____

Project Manager Signature / Date: _____

160355-8

TRK#

7759 9534 8049

THU - 31 MAR 10:30A

PRIORITY OVERNIGHT

XH FTGA - 10

DSR 80524
CO-US
DEN



438031 31MAR 02:12 MEMH S12C1/CF34/CF60



Resubmission Metals Case Narrative

CH2M HILL Plateau Remediation Company

100-KR-4 Pump and Treat Influent & Effluent Tanks - Water – F11-002

Work Order Number: 1603558

1. This report consists of 3 water samples. This report is resubmitted for the addition of beryllium by Trace ICP for samples 1603558-1 and -2.
2. The samples were received intact at ambient temperature by ALS on 03/31/16.
3. The samples had a pH less than 2 upon receipt.
4. The samples were prepared and analyzed based on SW-846, 3rd Edition procedures.

For analysis by Trace ICP and ICP-MS, the samples were digested following method 3005A and the current revision of SOP 806.

For analysis by Cold Vapor AA (CVAA), the samples were digested following method 7470A and the current revision of SOP 812.

5. Analysis by Trace ICP followed method 6010B and the current revision of SOP 834.
Analysis by ICP-MS followed method 6020A and the current revision of SOP 827.
Analysis by CVAA followed method 7470A and the current revision of SOP 812.
6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times.

All in house quality control procedures were followed, as described below.

8. General quality control procedures.



- A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- The preparation (method) blank associated with each digestion batch was below the reporting limit for the requested analytes. Sample results have been compared to the blank results.
- All laboratory control sample criteria were met.
- All initial and continuing calibration blanks were below the reporting limit for the requested analytes.
- All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes.
- The interference check samples and high standard readbacks associated with Method 6010B were within acceptance criteria.
- The interference check samples associated with Method 6020A were analyzed.

9. Matrix specific quality control procedures.

Sample 1603558-1 was designated as the quality control sample for each analysis. Matrix QC results were not included with this report for the ICP-MS due to the sample not being logged in for this analysis.

Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with the mercury batch and the Trace ICP batch. All acceptance criteria for accuracy were met.
- A sample duplicate and matrix spike duplicate were digested and analyzed with the mercury batch and the Trace ICP batch. All acceptance criteria for precision were met.
- A serial dilution was analyzed with the Trace ICP batch. All acceptance criteria were met.

10. It is a standard practice that samples for ICP-MS are analyzed at a dilution. The 10X factor can be considered an artifact of the prep and does not indicate a secondary dilution and is therefore not flagged as a dilution.



The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Jill Latelle
Jill Latelle
Inorganics Primary Data Reviewer

5/4/16
Date

April Ely
Inorganics Final Data Reviewer

5/9/16
Date



Inorganic Data Reporting Qualifiers

The following qualifiers are used as needed by the laboratory when reporting results of inorganic analyses.

- Result qualifier -- A "B" is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL). If the analyte was analyzed for but not detected a "U" is entered. For samples, negative values are reported as non-detects ("U" flagged). For blanks, if the absolute value of the negative value is above the MDL and below the reporting limit, then the result is "B" flagged.
- QC qualifier -- Specified entries and their meanings are as follows:
 - E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
 - M - Duplicate injection precision was not met.
 - N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
 - Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
 - * - Duplicate analysis (relative percent difference) not within control limits.
 - S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.
 - C - The analyte was detected in both the sample and the associated QC blank, and the sample concentration was $\leq 5X$ the blank concentration.
 - D - Analyte was reported at a secondary dilution factor, typically $DF > 1$ (i.e., the primary preparation required dilution to either bring the analyte within the calibration range or to minimize interference). Required for organics/wetchem if the sample was diluted.

Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water F11-

Field ID: B34TM4

Lab ID: 1603558-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 30-Mar-16

Date Extracted: 11-Apr-16

Date Analyzed: 12-Apr-16

Prep Method: SW3005 Rev A

Prep Batch: IP160411-1

QCBatchID: IP160411-1-6

Run ID: IP160412-1A4

Cleanup: NONE

Basis: As Received

File Name:

Analyst: Nathan A. Quatier

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	1	5.6	20	5.6	U	
7440-38-2	ARSENIC	1	4.7	10	4.7	U	
7440-39-3	BARIUM	1	26	20	1.5		
7440-41-7	BERYLLIUM	1	0.44	4	0.44	U	
7440-69-9	BISMUTH	1	4.6	20	4.6	U	
7440-43-9	CADMIUM	1	0.39	5	0.39	U	
7440-70-2	CALCIUM	1	40000	1000	51		
7440-47-3	CHROMIUM	1	1.7	10	1.4	B	
7440-48-4	COBALT	1	1.6	10	1.6	U	
7440-50-8	COPPER	1	24	8	2.2		
7439-89-6	IRON	1	42	50	16	B	
7439-92-1	LEAD	1	4.2	3	2.8		
7439-95-4	MAGNESIUM	1	9600	750	58		
7439-96-5	MANGANESE	1	0.86	5	0.86	U	
7440-02-0	NICKEL	1	22	20	1.6		
7440-09-7	POTASSIUM	1	3700	1000	86		
7782-49-2	SELENIUM	1	4.7	5	4.7	U	
7440-22-4	SILVER	1	3	10	3	U	
7440-23-5	SODIUM	1	8300	500	61		
7440-62-2	VANADIUM	1	2	10	2	U	
7440-66-6	ZINC	1	25	20	4.6		

Data Package ID: *ip1603558-1*

Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water F11-

Field ID: B34TM1

Lab ID: 1603558-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 30-Mar-16

Date Extracted: 11-Apr-16

Date Analyzed: 12-Apr-16

Prep Method: SW3005 Rev A

Prep Batch: IP160411-1

QCBatchID: IP160411-1-6

Run ID: IP160412-1A4

Cleanup: NONE

Basis: As Received

File Name:

Analyst: Nathan A. Quatier

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	1	5.6	20	5.6	U	
7440-38-2	ARSENIC	1	6.5	10	4.7	B	
7440-39-3	BARIUM	1	26	20	1.5		
7440-41-7	BERYLLIUM	1	0.44	4	0.44	U	
7440-69-9	BISMUTH	1	4.6	20	4.6	U	
7440-43-9	CADMIUM	1	0.39	5	0.39	U	
7440-70-2	CALCIUM	1	41000	1000	51		
7440-47-3	CHROMIUM	1	1.4	10	1.4	U	
7440-48-4	COBALT	1	1.6	10	1.6	U	
7440-50-8	COPPER	1	17	8	2.2		
7439-89-6	IRON	1	88	50	16		
7439-92-1	LEAD	1	2.8	3	2.8	U	
7439-95-4	MAGNESIUM	1	9500	750	58		
7439-96-5	MANGANESE	1	0.86	5	0.86	U	
7440-02-0	NICKEL	1	14	20	1.6	B	
7440-09-7	POTASSIUM	1	3500	1000	86		
7782-49-2	SELENIUM	1	4.7	5	4.7	U	
7440-22-4	SILVER	1	3	10	3	U	
7440-23-5	SODIUM	1	7800	500	61		
7440-62-2	VANADIUM	1	2	10	2	U	
7440-66-6	ZINC	1	20	20	4.6		

Data Package ID: *ip1603558-1*

Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water F11-

Field ID:	B34TL8
Lab ID:	1603558-3

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 30-Mar-16

Date Extracted: 11-Apr-16

Date Analyzed: 14-Apr-16

Prep Method: SW3005 Rev A

Prep Batch: IP160411-1

QC Batch ID: IP160411-1-4

Run ID: IM160413-11A8

Cleanup: NONE

Basis: As Received

File Name: 234SMPL_

Analyst: Brent A. Stanfield

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 6020_Metals_IC

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-47-3	CHROMIUM	10	5.2	10	1.1	B	

Data Package ID: *im1603558-1*

Total MERCURY**Method SW7470A****Sample Results****Lab Name:** ALS Environmental -- FC**Client Name:** CH2M HILL Plateau Remediation Company**Client Project ID:** 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water F11-002**Work Order Number:** 1603558**Final Volume:** 10 ml**Reporting Basis:** As Received**Matrix:** WATER**Analyst:** Nathan A. Quatier**Result Units:** UG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Flag	Sample Aliquot
B34TM4	1603558-1	3/30/2016	4/7/2016	04/08/2016	N/A	1	0.06	0.2	0.06	U	10 ml
B34TM1	1603558-2	3/30/2016	4/7/2016	04/08/2016	N/A	1	0.06	0.2	0.06	U	10 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: hg1603558-1

ICP Metals

Method SW6010B

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water F11-

Lab ID: IP160411-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 11-Apr-16

Date Analyzed: 12-Apr-16

Prep Batch: IP160411-1

QCBatchID: IP160411-1-6

Run ID: IP160412-1A4

Cleanup: NONE

Basis: N/A

File Name:

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	1	5.6	20	5.6	U	
7440-38-2	ARSENIC	1	4.7	10	4.7	U	
7440-39-3	BARIUM	1	1.5	20	1.5	U	
7440-41-7	BERYLLIUM	1	0.44	4	0.44	U	
7440-69-9	BISMUTH	1	4.6	20	4.6	U	
7440-43-9	CADMIUM	1	0.39	5	0.39	U	
7440-70-2	CALCIUM	1	51	1000	51	U	
7440-47-3	CHROMIUM	1	1.4	10	1.4	U	
7440-48-4	COBALT	1	1.6	10	1.6	U	
7440-50-8	COPPER	1	2.2	8	2.2	U	
7439-89-6	IRON	1	16	50	16	U	
7439-92-1	LEAD	1	2.8	3	2.8	U	
7439-95-4	MAGNESIUM	1	58	750	58	U	
7439-96-5	MANGANESE	1	0.86	5	0.86	U	
7440-02-0	NICKEL	1	1.6	20	1.6	U	
7440-09-7	POTASSIUM	1	86	1000	86	U	
7782-49-2	SELENIUM	1	4.7	5	4.7	U	
7440-22-4	SILVER	1	3	10	3	U	
7440-23-5	SODIUM	1	61	500	61	U	
7440-62-2	VANADIUM	1	2	10	2	U	
7440-66-6	ZINC	1	4.6	20	4.6	U	

Data Package ID: ip1603558-1

ICP Metals

Method SW6010B

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water F11-

Lab ID: IP160411-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/11/2016

Date Analyzed: 04/12/2016

Prep Method: SW3005A

Prep Batch: IP160411-1

QCBatchID: IP160411-1-6

Run ID: IP160412-1A4

Cleanup: NONE

Basis: N/A

File Name:

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-36-0	ANTIMONY	500	507	20		101	80 - 120%
7440-38-2	ARSENIC	1000	1000	10		100	80 - 120%
7440-39-3	BARIUM	1000	997	20		100	80 - 120%
7440-41-7	BERYLLIUM	50	52.9	4		106	80 - 120%
7440-69-9	BISMUTH	500	516	20		103	80 - 120%
7440-43-9	CADMIUM	50	51.4	5		103	80 - 120%
7440-70-2	CALCIUM	40000	40700	1000		102	80 - 120%
7440-47-3	CHROMIUM	200	206	10		103	80 - 120%
7440-48-4	COBALT	500	501	10		100	80 - 120%
7440-50-8	COPPER	250	255	8		102	80 - 120%
7439-89-6	IRON	1000	985	50		98	80 - 120%
7439-92-1	LEAD	500	500	3		100	80 - 120%
7439-95-4	MAGNESIUM	40000	41100	750		103	80 - 120%
7439-96-5	MANGANESE	500	518	5		104	80 - 120%
7440-02-0	NICKEL	500	511	20		102	80 - 120%
7440-09-7	POTASSIUM	40000	41200	1000		103	80 - 120%
7782-49-2	SELENIUM	2000	2020	5		101	80 - 120%
7440-22-4	SILVER	100	92.6	10		93	80 - 120%
7440-23-5	SODIUM	40000	42100	500		105	80 - 120%
7440-62-2	VANADIUM	500	517	10		103	80 - 120%
7440-66-6	ZINC	500	521	20		104	80 - 120%

Data Package ID: *ip1603558-1*

ICP Metals

Method SW6010B

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water

Field ID: B34TM4

LabID: 1603558-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 30-Mar-16

Date Extracted: 11-Apr-16

Date Analyzed: 12-Apr-16

Prep Method: SW3005 Rev A

Prep Batch: IP160411-1

QCBatchID: IP160411-1-6

Run ID: IP160412-1A4

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name:

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-36-0	ANTIMONY	5.6	U	506		20	500	101	80 - 120%
7440-38-2	ARSENIC	4.7	U	1010		10	1000	101	80 - 120%
7440-39-3	BARIUM	26		1030		20	1000	100	80 - 120%
7440-41-7	BERYLLIUM	0.44	U	52.9		4	50	106	80 - 120%
7440-69-9	BISMUTH	4.6	U	518		20	500	104	80 - 120%
7440-43-9	CADMIUM	0.39	U	51.5		5	50	103	80 - 120%
7440-70-2	CALCIUM	40000		79300		1000	40000	98	80 - 120%
7440-47-3	CHROMIUM	1.7	B	204		10	200	101	80 - 120%
7440-48-4	COBALT	1.6	U	496		10	500	99	80 - 120%
7440-50-8	COPPER	24		278		8	250	102	80 - 120%
7439-89-6	IRON	42	B	1040		50	1000	99	80 - 120%
7439-92-1	LEAD	4.2		496		3	500	98	80 - 120%
7439-95-4	MAGNESIUM	9600		50500		750	40000	102	80 - 120%
7439-96-5	MANGANESE	0.86	U	506		5	500	101	80 - 120%
7440-02-0	NICKEL	22		536		20	500	103	80 - 120%
7440-09-7	POTASSIUM	3700		46800		1000	40000	108	80 - 120%
7782-49-2	SELENIUM	4.7	U	2030		5	2000	101	80 - 120%
7440-22-4	SILVER	3	U	93.5		10	100	93	80 - 120%
7440-23-5	SODIUM	8300		52300		500	40000	110	80 - 120%
7440-62-2	VANADIUM	2	U	513		10	500	103	80 - 120%
7440-66-6	ZINC	25		542		20	500	103	80 - 120%

Data Package ID: ip1603558-1

ICP Metals

Method SW6010B

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water

Field ID: B34TM4

LabID: 1603558-1MSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 30-Mar-16

Date Extracted: 11-Apr-16

Date Analyzed: 12-Apr-16

Prep Method: SW3005 Rev A

Prep Batch: IP160411-1

QCBatchID: IP160411-1-6

Run ID: IP160412-1A4

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name:

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-36-0	ANTIMONY	509		500	102	20	20	1
7440-38-2	ARSENIC	1010		1000	101	10	20	0
7440-39-3	BARIUM	1030		1000	100	20	20	0
7440-41-7	BERYLLIUM	52.7		50	105	4	20	0
7440-69-9	BISMUTH	520		500	104	20	20	0
7440-43-9	CADMIUM	52		50	104	5	20	1
7440-70-2	CALCIUM	80500		40000	101	1000	20	1
7440-47-3	CHROMIUM	203		200	101	10	20	1
7440-48-4	COBALT	499		500	100	10	20	1
7440-50-8	COPPER	281		250	103	8	20	1
7439-89-6	IRON	1000		1000	96	50	20	3
7439-92-1	LEAD	505		500	100	3	20	2
7439-95-4	MAGNESIUM	50600		40000	102	750	20	0
7439-96-5	MANGANESE	502		500	100	5	20	1
7440-02-0	NICKEL	537		500	103	20	20	0
7440-09-7	POTASSIUM	45900		40000	106	1000	20	2
7782-49-2	SELENIUM	2030		2000	101	5	20	0
7440-22-4	SILVER	92		100	92	10	20	2
7440-23-5	SODIUM	51200		40000	107	500	20	2
7440-62-2	VANADIUM	507		500	101	10	20	1
7440-66-6	ZINC	548		500	105	20	20	1

Data Package ID: ip1603558-1

ICPMS Metals

Method SW6020A

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water F11-

Lab ID: IP160411-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 11-Apr-16

Date Analyzed: 14-Apr-16

Prep Batch: IP160411-1

QCBatchID: IP160411-1-4

Run ID: IM160413-11A8

Cleanup: NONE

Basis: N/A

File Name: 208SMPL_

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-47-3	CHROMIUM	10	1.1	10	1.1	U	

Data Package ID: *im1603558-1*

ICPMS Metals

Method SW6020A

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water F11-

Lab ID: IM160411-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/11/2016

Date Analyzed: 04/14/2016

Prep Method: SW3005A

Prep Batch: IP160411-1

QCBatchID: IP160411-1-4

Run ID: IM160413-11A8

Cleanup: NONE

Basis: N/A

File Name: 210SMPL_

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-47-3	CHROMIUM	500	522	10		104	80 - 120%

Data Package ID: *im1603558-1*

Mercury

Method SW7470A

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water F11-

Lab ID: HG160407-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 07-Apr-16

Date Analyzed: 08-Apr-16

Prep Batch: HG160407-1

QCBatchID: HG160407-1-1

Run ID: HG160408-1A3

Cleanup: NONE

Basis: N/A

File Name: HG160408-1

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7439-97-6	MERCURY	1	0.06	0.2	0.06	U	

Data Package ID: hg1603558-1

Mercury

Method SW7470A

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water F11-

Lab ID: HG160407-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/07/2016

Date Analyzed: 04/08/2016

Prep Method: METHOD

Prep Batch: HG160407-1

QCBatchID: HG160407-1-1

Run ID: HG160408-1A3

Cleanup: NONE

Basis: N/A

File Name: HG160408-1

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7439-97-6	MERCURY	1	0.99	0.2		99	80 - 120%

Data Package ID: *hg1603558-1*

Mercury

Method SW7470A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1603558

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Pump and Treat Influent & Effluent Tanks - Water

Field ID: B34TM4
LabID: 1603558-1MS

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: 30-Mar-16
 Date Extracted: 07-Apr-16
 Date Analyzed: 08-Apr-16
 Prep Method: METHOD

Prep Batch: HG160407-1
 QCBatchID: HG160407-1-1
 Run ID: HG160408-1A3
 Cleanup: NONE
 Basis: As Received

Sample Aliquot: 10 ml
 Final Volume: 10 ml
 Result Units: UG/L
 File Name: HG160408-1

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7439-97-6	MERCURY	0.06	U	2.27		0.2	2	114	80 - 120%

Field ID: B34TM4
LabID: 1603558-1MSD

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: 30-Mar-16
 Date Extracted: 07-Apr-16
 Date Analyzed: 08-Apr-16
 Prep Method: METHOD

Prep Batch: HG160407-1
 QCBatchID: HG160407-1-1
 Run ID: HG160408-1A3
 Cleanup: NONE
 Basis: As Received

Sample Aliquot: 10 ml
 Final Volume: 10 ml
 Result Units: UG/L
 File Name: HG160408-1

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7439-97-6	MERCURY	2.03		2	102	0.2	20	11

Data Package ID: hg1603558-1