

Tuesday, March 31, 2015

Bob Evans  
CH2M HILL Plateau Remediation Company  
2420 Stevens Center  
Richland, WA 99352

Re: ALS Workorder: 1503223  
Project Name: 200W Pump & Treat - Treatment Plant Water Sampling  
Project Number: F15-005

Dear Mr. Evans:

One water sample was received from CH2M HILL Plateau Remediation Company, on 3/12/2015. The sample was scheduled for the following analysis:

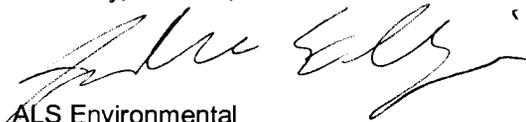
Metals

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

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.

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

Sincerely,



ALS Environmental  
Julie Ellingson  
Project Manager

JME/jme  
Enclosure(s):

ALS 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 Laboratory Certifications	
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
Maryland (MD)	285
Missouri	175
Nebraska	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
North Dakota (ND)	R-057
Oklahoma	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington	C1280

Revised 8/15/2013

**ALS Environmental -- FC****Sample Number(s) Cross-Reference Table**

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**OrderNum:** 1503223**Client Name:** CH2M HILL Plateau Remediation Company**Client Project Name:** 200W Pump & Treat - Treatment Plant Water Sampling**Client Project Number:** F15-005**Client PO Number:** BOA 54854

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B30K35	1503223-1		WATER	10-Mar-15	11:00

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F15-005-104	PAGE 1 OF 1
COLLECTOR <i>D. Floyd</i>	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION 289-T, Effluent Tank, Valve V07-Y80D -- DUP	PROJECT DESIGNATION 200W Pump & Treat - Treatment Plant Water Sampling	FIELD LOGBOOK NO. <i>HNF-N 451-8/127</i>	SAF NO. F15-005	AIR QUALITY	METHOD OF SHIPMENT FEDERAL EXPRESS
ICE CHEST NO. <i>GWS-ALB</i>	ACTUAL SAMPLE DEPTH N/A	OFFSITE PROPERTY NO. <i>5474</i>	COA 303110		<b>ORIGINAL</b>
SHIPPED TO ALS Environmental Ft. Collins	BILL OF LADING/AIR BILL NO. <i>7731 0100 1732</i>				

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	PRESCRIPTION HN03 to pH <2	HOLDING TIME 6 Months	TYPE OF CONTAINER G/P	NO. OF CONTAINER(S) 1	VOLUME 500mL	SAMPLE ANALYSIS SEE ITEM (1) IN SPECIAL INSTRUCTIONS
POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	SPECIAL HANDLING AND/OR STORAGE					
SAMPLE NO. B30K35	MATRIX* WATER	SAMPLE DATE MAR 10 2015	SAMPLE TIME 1100			

*1503223*

*1*

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>D. Floyd</i>	DATE/TIME MAR 10 2015 1115	RECEIVED BY/STORED IN K.C. Patterson/CHPRC	DATE/TIME MAR 10 2015 1115	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-15-034	
RELINQUISHED BY/REMOVED FROM K.C. Patterson/CHPRC	DATE/TIME MAR 10 2015 1147	RECEIVED BY/STORED IN SSU-1	DATE/TIME MAR 10 2015 1147	(1) 6020_METALS_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Manganese, Nickel, Uranium, Zinc}; 6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium, Potassium, Sodium}; 6010_METALS_ICP: COMMON (Add-on) {Boron};	
RELINQUISHED BY/REMOVED FROM M.A. White/CHPRC	DATE/TIME MAR 11 2015 0900	RECEIVED BY/STORED IN M.A. White/CHPRC	DATE/TIME MAR 11 2015 0900	TRVL 15- 034	
RELINQUISHED BY/REMOVED FROM <i>FED FE</i>	DATE/TIME MAR 11 2015 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME MAR 11 2015 1400		
RELINQUISHED BY/REMOVED FROM <i>4</i>	DATE/TIME	RECEIVED BY/STORED IN <i>Chumbley C Trinkle</i>	DATE/TIME 3-2-15 1000		
RELINQUISHED BY/REMOVED FROM <i>18</i>	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	



ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC

Workorder No: 1503223

Project Manager: JE

Initials: CDT Date: 3-12-15

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	<input checked="" type="radio"/> YES	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>11</u>			
Background µR/hr reading: <u>12</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES <input type="radio"/> NO / NA (If no, see Form 008.)			

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

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

Project Manager Signature / Date: [Signature] 3/12/15

Form 201r24.xls (06/04/2012)  
\*IR Gun #2: Oakton, SN 29922500201-0066  
\*IR Gun #4: Oakton, SN 2372220101-0002

15 03 2 23

From: (509) 528-9426  
Lesly Wall  
CH2M  
8267 Latah St.  
8269 Latah St.  
Richland, WA 99354

Origin ID: PSCA



Ship Date: 11MAR15  
ActWgt: 16.0 LB  
CAD: 107066051/NET3810

Delivery Address Bar Code



Ref # ptr# 5474  
Invoice #  
PO #  
Dept #

SHIP TO: (970) 490-1511

BILL THIRD PARTY

Julie Ellingson  
ALS Global  
225 Commerce Drive

FORT COLLINS, CO 80524

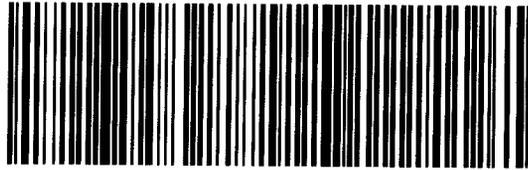
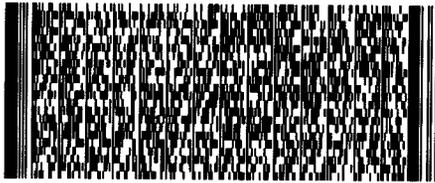
THU - 12 MAR 10:30A  
PRIORITY OVERNIGHT

TRK# 7731 0100 1732

0201

DSR  
80524  
CO-US  
DEN

**XH FTCA**



537 J11879AEE4E

11  
-2



# Metals

## Case Narrative

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### **CH2M HILL Plateau Remediation Company**

200W Pump & Treat – Treatment Plant Water Sampling – F15-005

Work Order Number: 1503223

1. This report consists of 1 water sample.
2. The sample was received intact at ambient temperature by ALS on 03/12/15.
3. The sample had a pH less than 2 upon receipt.
4. The sample was prepared and analyzed based on SW-846, 3<sup>rd</sup> Edition procedures.

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

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.

6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The sample was 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 sample in this digestion batch.
  - The preparation (method) blank associated with this 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 1503223-1 was designated as the quality control sample for each 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 each batch. All acceptance criteria for accuracy were met.
  - A sample duplicate and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
  - A serial dilution was analyzed with each 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  
Inorganics Primary Data Reviewer

3/25/15  
Date

  
\_\_\_\_\_  
Audie Ellinger  
Inorganics Final Data Reviewer

3/30/15  
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: 1503223

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump &amp; Treat - Treatment Plant Water Sampling F15-005

Field ID: B30K35

Lab ID: 1503223-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 10-Mar-15

Date Extracted: 17-Mar-15

Date Analyzed: 19-Mar-15

Prep Method: SW3005 Rev A

Prep Batch: IP150317-2

QCBatchID: IP150317-2-5

Run ID: IT150319-1A3

Cleanup: NONE

Basis: As Received

File Name: 150319A.

Analyst: Steve Workman

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 6010:Add on B

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	53	30	6.8		
7440-70-2	CALCIUM	1	58000	1000	18		
7439-89-6	IRON	1	16	50	16	U	
7439-95-4	MAGNESIUM	1	21000	750	22		
7440-09-7	POTASSIUM	1	5000	1000	190		
7440-23-5	SODIUM	1	21000	500	49		

Data Package ID: IT1503223-1

**Total Recoverable ICPMS Metals****Method SW6020A****Sample Results****Lab Name:** ALS Environmental -- FC**Work Order Number:** 1503223**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 200W Pump & Treat - Treatment Plant Water Sampling F15-005

<b>Field ID:</b>	B30K35
<b>Lab ID:</b>	1503223-1

**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** 10-Mar-15**Date Extracted:** 17-Mar-15**Date Analyzed:** 19-Mar-15**Prep Method:** SW3005 Rev A**Prep Batch:** IP150317-2**QCBatchID:** IP150317-2-3**Run ID:** IM150319-11A4**Cleanup:** NONE**Basis:** As Received**File Name:** 026SMPL\_**Analyst:** Brent A. Stanfield**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**Clean DF:** 1**Analysis ReqCode:** 6020:Common

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	21	50	19	B	
7440-47-3	CHROMIUM	10	1.9	10	0.74	B	
7440-48-4	COBALT	10	8.4	1	0.21		
7440-50-8	COPPER	10	14	8	2		
7439-96-5	MANGANESE	10	43	5	0.74		
7439-98-7	MOLYBDENUM	10	33	1	0.44		
7440-02-0	NICKEL	10	13	5	2.3		
7782-49-2	SELENIUM	10	2.6	1	0.42		
7440-61-1	URANIUM	10	1.1	0.1	0.046		
7440-66-6	ZINC	10	9.9	20	7.1	B	

**Data Package ID:** IM1503223-1

ALS1503223  
**ICP Metals**

March 31, 2015

**Method SW6010B**  
**Method Blank**

Lab Name: ALS Environmental -- FC

Work Order Number: 1503223

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Treatment Plant Water Sampling F15-005

Lab ID: IP150317-2MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Mar-15

Date Analyzed: 19-Mar-15

Prep Batch: IP150317-2

QCBatchID: IP150317-2-5

Run ID: IT150319-1A3

Cleanup: NONE

Basis: N/A

File Name: 150319A.

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
7440-42-8	BORON	1	-7.5	30	6.8	B	
7440-70-2	CALCIUM	1	18	1000	18	U	
7439-89-6	IRON	1	16	50	16	U	
7439-95-4	MAGNESIUM	1	22	750	22	U	
7440-09-7	POTASSIUM	1	190	1000	190	U	
7440-23-5	SODIUM	1	49	500	49	U	

Data Package ID: IT1503223-1

Date Printed: Tuesday, March 24, 2015

ALS Environmental -- FC

Page 1 of 1

LIMS Version: 6.754

**ICP Metals****Method SW6010B****Laboratory Control Sample**

Lab Name: ALS Environmental -- FC

Work Order Number: 1503223

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump &amp; Treat - Treatment Plant Water Sampling F15-005

Lab ID: IP150317-2LCS

Sample Matrix: WATER

Prep Batch: IP150317-2

Sample Aliquot: 50 ml

% Moisture: N/A

QCBatchID: IP150317-2-5

Final Volume: 50 ml

Date Collected: N/A

Run ID: IT150319-1A3

Result Units: UG/L

Date Extracted: 03/17/2015

Cleanup: NONE

Clean DF: 1

Date Analyzed: 03/19/2015

Basis: N/A

Prep Method: SW3005A

File Name: 150319A.

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-42-8	BORON	1000	1060	30		106	80 - 120%
7440-70-2	CALCIUM	40000	40200	1000		100	80 - 120%
7439-89-6	IRON	1000	944	50		94	80 - 120%
7439-95-4	MAGNESIUM	40000	42300	750		106	80 - 120%
7440-09-7	POTASSIUM	40000	39600	1000		99	80 - 120%
7440-23-5	SODIUM	40000	41600	500		104	80 - 120%

Data Package ID: IT1503223-1

## ICP Metals

Method SW6010B

## Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1503223

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump &amp; Treat - Treatment Plant Water Sampling F15-

Field ID: B30K35

LabID: 1503223-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 10-Mar-15

Date Extracted: 17-Mar-15

Date Analyzed: 19-Mar-15

Prep Method: SW3005 Rev A

Prep Batch: IP150317-2

QCBatchID: IP150317-2-5

Run ID: IT150319-1A3

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name: 150319A.

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-42-8	BORON	53		1090		30	1000	104	80 - 120%
7440-70-2	CALCIUM	58000		97400		1000	40000	98	80 - 120%
7439-89-6	IRON	16	U	920		50	1000	92	80 - 120%
7439-95-4	MAGNESIUM	21000		62100		750	40000	102	80 - 120%
7440-09-7	POTASSIUM	5000		46100		1000	40000	103	80 - 120%
7440-23-5	SODIUM	21000		64800		500	40000	108	80 - 120%

Field ID: B30K35

LabID: 1503223-1MSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 10-Mar-15

Date Extracted: 17-Mar-15

Date Analyzed: 19-Mar-15

Prep Method: SW3005 Rev A

Prep Batch: IP150317-2

QCBatchID: IP150317-2-5

Run ID: IT150319-1A3

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name: 150319A.

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-42-8	BORON	1100		1000	105	30	20	1
7440-70-2	CALCIUM	97700		40000	99	1000	20	0
7439-89-6	IRON	923		1000	92	50	20	0
7439-95-4	MAGNESIUM	62200		40000	103	750	20	0
7440-09-7	POTASSIUM	45900		40000	102	1000	20	0
7440-23-5	SODIUM	64300		40000	107	500	20	1

Data Package ID: IT1503223-1

## ICPMS Metals

Method SW6020A

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1503223

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump &amp; Treat - Treatment Plant Water Sampling F15-005

Lab ID: IP150317-2MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Mar-15

Date Analyzed: 19-Mar-15

Prep Batch: IP150317-2

QCBatchID: IP150317-2-3

Run ID: IM150319-11A4

Cleanup: NONE

Basis: N/A

File Name: 018SMPL\_

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
7429-90-5	ALUMINUM	10	19	50	19	U	
7440-47-3	CHROMIUM	10	0.74	10	0.74	U	
7440-48-4	COBALT	10	0.21	1	0.21	U	
7440-50-8	COPPER	10	2	8	2	U	
7439-96-5	MANGANESE	10	0.74	5	0.74	U	
7439-98-7	MOLYBDENUM	10	0.44	1	0.44	U	
7440-02-0	NICKEL	10	2.3	5	2.3	U	
7782-49-2	SELENIUM	10	0.42	1	0.42	U	
7440-61-1	URANIUM	10	0.046	0.1	0.046	U	
7440-66-6	ZINC	10	7.1	20	7.1	U	

Data Package ID: IM1503223-1

**ICPMS Metals**  
**Method SW6020A**  
**Laboratory Control Sample**

Lab Name: ALS Environmental -- FC

Work Order Number: 1503223

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump &amp; Treat - Treatment Plant Water Sampling F15-005

Lab ID: IM150317-2LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/17/2015

Date Analyzed: 03/19/2015

Prep Method: SW3005A

Prep Batch: IP150317-2

QCBatchID: IP150317-2-3

Run ID: IM150319-11A4

Cleanup: NONE

Basis: N/A

File Name: 019SMPL\_

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
7429-90-5	ALUMINUM	5000	4830	50		97	80 - 120%
7440-47-3	CHROMIUM	500	483	10		97	80 - 120%
7440-48-4	COBALT	100	101	1		101	80 - 120%
7440-50-8	COPPER	1000	999	8		100	80 - 120%
7439-96-5	MANGANESE	100	100	5		100	80 - 120%
7439-98-7	MOLYBDENUM	100	97.9	1		98	80 - 120%
7440-02-0	NICKEL	500	506	5		101	80 - 120%
7782-49-2	SELENIUM	100	98.7	1		99	80 - 120%
7440-61-1	URANIUM	10	10.1	0.1		101	80 - 120%
7440-66-6	ZINC	2000	1990	20		100	80 - 120%

Data Package ID: IM1503223-1

**ICPMS Metals**

Method SW6020A

**Matrix Spike And Matrix Spike Duplicate**

Lab Name: ALS Environmental -- FC

Work Order Number: 1503223

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump &amp; Treat - Treatment Plant Water Sampling F15-

Field ID: B30K35

LabID: 1503223-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 10-Mar-15

Date Extracted: 17-Mar-15

Date Analyzed: 19-Mar-15

Prep Method: SW3005 Rev A

Prep Batch: IP150317-2

QC BatchID: IP150317-2-3

Run ID: IM150319-11A4

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name: 032SMPL\_

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7429-90-5	ALUMINUM	21	B	4870		50	5000	97	75 - 125%
7440-47-3	CHROMIUM	1.9	B	478		10	500	95	75 - 125%
7440-48-4	COBALT	8.4		106		1	100	98	75 - 125%
7440-50-8	COPPER	14		992		8	1000	98	75 - 125%
7439-96-5	MANGANESE	43		143		5	100	100	75 - 125%
7439-98-7	MOLYBDENUM	33		129		1	100	96	75 - 125%
7440-02-0	NICKEL	13		499		5	500	97	75 - 125%
7782-49-2	SELENIUM	2.6		105		1	100	103	75 - 125%
7440-61-1	URANIUM	1.1		11.2		0.1	10	101	75 - 125%
7440-66-6	ZINC	9.9	B	1970		20	2000	98	75 - 125%

Data Package ID: *IM1503223-1*

**ICPMS Metals**

Method SW6020A

**Matrix Spike And Matrix Spike Duplicate**

Lab Name: ALS Environmental -- FC

Work Order Number: 1503223

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump &amp; Treat - Treatment Plant Water Sampling F15-

Field ID: B30K35
LabID: 1503223-1MSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 10-Mar-15

Date Extracted: 17-Mar-15

Date Analyzed: 19-Mar-15

Prep Method: SW3005 Rev A

Prep Batch: IP150317-2

QCBatchID: IP150317-2-3

Run ID: IM150319-11A4

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name: 033SMPL\_

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7429-90-5	ALUMINUM	4760		5000	95	50	20	2
7440-47-3	CHROMIUM	482		500	96	10	20	1
7440-48-4	COBALT	104		100	96	1	20	2
7440-50-8	COPPER	981		1000	97	8	20	1
7439-96-5	MANGANESE	142		100	99	5	20	1
7439-98-7	MOLYBDENUM	133		100	99	1	20	3
7440-02-0	NICKEL	495		500	96	5	20	1
7782-49-2	SELENIUM	105		100	102	1	20	0
7440-61-1	URANIUM	11.2		10	101	0.1	20	0
7440-66-6	ZINC	1970		2000	98	20	20	0

Data Package ID: *IM1503223-1*