

Wednesday, June 24, 2015

Karen Waters-Husted
CH2M HILL Plateau Remediation Company
2420 Stevens Center
Richland, WA 99352

Re: ALS Workorder: 1506041
Project Name: 100NR2, JUNE 2015
Project Number: I15-027

Dear Ms. Waters-Husted:

Two water samples were received from CH2M HILL Plateau Remediation Company, on 6/3/2015. The samples were 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

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
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
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

June 24, 2015

ALS1506041

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1506041

Client Name: CH2M HILL Plateau Remediation Company

Client Project Name: 100NR2, JUNE 2015

Client Project Number: I15-027

Client PO Number: BOA 54854

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B318J6	1506041-1		WATER	02-Jun-15	10:11
B318K2	1506041-2		WATER	02-Jun-15	10:11

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CH2M Hill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C.# **I15-027-001**
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 1506041

Collector: **K.C. Patterson**
 CHPRC
 SAF No. **I15-027**
 Project Title: **100NR2, JUNE 2015**
 Shipped To (Lab): **ALS Environmental Ft. Collins**
 Protocol: **CERCLA**

Contact/Requester: **Karen Waters-Husted**
 Sampling Origin: **Hanford Site**
 Logbook No.: **HNF-N-506 70.95**
 Method of Shipment: **Commercial Carrier**
 Priority: **30 Days**
 Telephone No.: **509-376-4650**
 Purchase Order/Charge Code: **300071**
 Ice Chest No.: **6WS-356**
 Bill of Lading/Air Bill No.: **7737 3710 8932**
 Offsite Property No.: **5600**

PRIORITY
 SPECIAL INSTRUCTIONS: **N/A**
 Hold Time: **30 Days**
 Total Activity Exemption: Yes No

POSSIBLE SAMPLE HAZARDS/REMARKS
 ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B318J6 ①	N	JUN 02 2015	1011	1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B318K2 ②	Y	↓	↓	1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By K.C. Patterson CHPRC	Print 	Sign 	Date/Time JUN 02 2015 1020	Received By F.M. Hall/CHPRC	Print 	Sign 	Date/Time JUN 02 2015 1020	Matrix * S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids T - Tissue WI - Wipe L - Liquid V - Vegetation X - Other
Relinquished By F.M. Hall/CHPRC	Print 	Sign 	Date/Time JUN 02 2015	Received By FEDEX	Print 	Sign 	Date/Time 6/13/15	
Relinquished By FEDEX	Print 	Sign 	Date/Time 6/13/15	Received By Erin Peterson ALS	Print 	Sign 	Date/Time 6/13/15	
Relinquished By 4 of 2	Print 	Sign 	Date/Time 6/13/15	Received By 4 of 2	Print 	Sign 	Date/Time 6/13/15	

FINAL SAMPLE DISPOSITION
 Disposal Method (e.g., Return to customer, per lab procedure, used in process)
 Disposed By
 Date/Time

PRINTED ON 5/7/2015
 A-6004-842 (REV 2)



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC
Project Manager: JME

Workorder No: 1506041
Initials: ECP Date: 6/3/15

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 Amount of sediment: ___ dusting ___ moderate ___ heavy	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		<input checked="" type="radio"/> 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>11</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: [Signature] 6/3/15

June 24, 2015

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1506041

From: (509) 528-9426
Lesly Wall
CH2M
6267 Latah St.
6269 Latah St.
Richland, WA 99354

Origin ID: PSCA



J151215022303uv

Ship Date: 02JUN15
ActWgt: 7.0 LB
CAD: 107066051/NET3610

Delivery Address Bar Code



SHIP TO: (970) 490-1511
Julie Ellingson
ALS Global
225 Commerce Drive

BILL THIRD PARTY

Ref # ptr# 5690
Invoice #
PO #
Dept #

FORT COLLINS, CO 80524

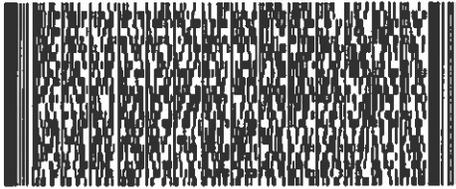
WED - 03 JUN 10:30A
PRIORITY OVERNIGHT

TRK# 7737 3710 8932

0201

DSR
80524
CO-US
DEN

XH FTCA



537J11RA0E/EE4B

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charge your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for a package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claim limits, see current FedEx Service Guide.



Metals

Case Narrative

CH2M HILL Plateau Remediation Company

100NR2, JUNE 2015 – I15-027

Work Order Number: 1506041

1. This report consists of 2 water samples for total recoverable or dissolved metals.
2. The samples were received intact at ambient temperature by ALS on 06/03/15.
3. The sample for dissolved metals had been filtered prior to receipt. Both 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.

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 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 this digestion batch.
 - The preparation (method) blank associated with this digestion batch was below the reporting limit for the requested analytes. Aluminum, copper, selenium, strontium,



thallium, tin, and vanadium have results above the MDL. 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 with the exception of CCB7 through CCB12 for strontium. The samples bracketed by these CCBs contained more than ten times the concentration of strontium that was detected in the CCBs.
- 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 1506041-1 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 with the following exception:

<u>Analyte</u>	<u>Sample ID</u>
Iron	1506041-1MSD

The native sample result is flagged for matrix spike failure and an analytical post spike was performed. The result of the spike was acceptable indicating that the matrix was not significantly affecting quantitation of this analyte.

- A sample duplicate and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met with the following exception:

<u>Analyte</u>	<u>Sample ID</u>
Iron	1506041-1MSD

Where spike duplicate precision was outside control limits only the duplicate page shows the flag.

- A serial dilution was analyzed with each ICP batch. All acceptance criteria were met with the following exception:

<u>Analyte</u>	<u>Sample ID</u>
Sodium	1506041-1L

The native sample result is flagged for serial dilution failure.

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

6/15/15
Date

April E. Ellis
Inorganics Final Data Reviewer

6/24/15
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.

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Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Field ID:	B318J6
Lab ID:	1506041-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 02-Jun-15
Date Extracted: 05-Jun-15
Date Analyzed: 08-Jun-15
Prep Method: SW3005 Rev A

Prep Batch: IP150605-1
QCBatchID: IP150605-1-1
Run ID: IP150608-1A2
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
7440-70-2	CALCIUM	1	67000	1000	49		
7439-89-6	IRON	1	38	50	38	U	N
7439-95-4	MAGNESIUM	1	11000	750	46		
7440-09-7	POTASSIUM	1	3400	1000	74		
7440-23-5	SODIUM	1	8200	500	84		E

Data Package ID: ip1506041-1

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ALS1506041

Dissolved ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Field ID:	B318K2
Lab ID:	1506041-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 02-Jun-15
Date Extracted: 05-Jun-15
Date Analyzed: 08-Jun-15
Prep Method: SW3005 Rev A

Prep Batch: IP150605-1
QC Batch ID: IP150605-1-1
Run ID: IP150608-1A2
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
7440-70-2	CALCIUM	1	67000	1000	49		
7439-89-6	IRON	1	38	50	38	U	
7439-95-4	MAGNESIUM	1	11000	750	46		
7440-09-7	POTASSIUM	1	2700	1000	74		
7440-23-5	SODIUM	1	6800	500	84		

Data Package ID: ip1506041-1

June 24, 2015

ALS1506041

Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Field ID:	B318J6
Lab ID:	1506041-1

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: 02-Jun-15
 Date Extracted: 05-Jun-15
 Date Analyzed: 08-Jun-15
 Prep Method: SW3005 Rev A

Prep Batch: IP150605-1
 QCBatchID: IP150605-1-5
 Run ID: IM150608-11A7
 Cleanup: NONE
 Basis: As Received
 File Name: 082SMPL_

Analyst: Brent A. Stanfield
 Sample Aliquot: 50 ml
 Final Volume: 50 ml
 Result Units: UG/L
 Clean DF: 1

Analysis ReqCode: 6020_METALS_I

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	43	50	19	B,C	
7440-36-0	ANTIMONY	10	0.47	0.3	0.23		
7440-38-2	ARSENIC	10	1.3	2	0.36	B	
7440-39-3	BARIUM	10	44	1	0.94		
7440-41-7	BERYLLIUM	10	0.14	0.5	0.14	U	
7440-42-8	BORON	10	69	50	6.4		
7440-43-9	CADMIUM	10	0.13	0.3	0.13	U	
7440-47-3	CHROMIUM	10	5.7	10	0.74	B	
7440-48-4	COBALT	10	0.21	1	0.21	U	
7440-50-8	COPPER	10	2	8	2	U	
7439-92-1	LEAD	10	0.2	0.5	0.2	U	
7439-96-5	MANGANESE	10	4.6	5	0.74	B	
7439-98-7	MOLYBDENUM	10	0.95	1	0.44	B	
7440-02-0	NICKEL	10	2.3	5	2.3	U	
7782-49-2	SELENIUM	10	1.3	1	0.42	C	
7440-22-4	SILVER	10	0.05	0.1	0.041	B	
7440-24-6	STRONTIUM	10	320	1	0.38		
7440-28-0	THALLIUM	10	0.034	0.2	0.034	U	
7440-29-1	THORIUM	10	0.094	0.2	0.094	U	
7440-31-5	TIN	10	0.68	5	0.68	U	
7440-61-1	URANIUM	10	0.88	0.1	0.046		
7440-62-2	VANADIUM	10	4.8	1	0.27		
7440-66-6	ZINC	10	92	20	7.1		

Data Package ID: im1506041-1

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ALS1506041

Dissolved ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Field ID:	B318K2
Lab ID:	1506041-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 02-Jun-15

Date Extracted: 05-Jun-15

Date Analyzed: 08-Jun-15

Prep Method: SW3005 Rev A

Prep Batch: IP150605-1

QC Batch ID: IP150605-1-5

Run ID: IM150608-11A7

Cleanup: NONE

Basis: As Received

File Name: 090SMPL_

Analyst: Brent A. Stanfield

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 6020_METALS_I

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	90	50	19	C	
7440-36-0	ANTIMONY	10	0.33	0.3	0.23		
7440-38-2	ARSENIC	10	1.5	2	0.36	B	
7440-39-3	BARIUM	10	52	1	0.94		
7440-41-7	BERYLLIUM	10	0.14	0.5	0.14	U	
7440-42-8	BORON	10	55	50	6.4		
7440-43-9	CADMIUM	10	0.13	0.3	0.13	U	
7440-47-3	CHROMIUM	10	4.5	10	0.74	B	
7440-48-4	COBALT	10	0.21	1	0.21	U	
7440-50-8	COPPER	10	2	8	2	U	
7439-92-1	LEAD	10	0.2	0.5	0.2	U	
7439-96-5	MANGANESE	10	0.74	5	0.74	U	
7439-98-7	MOLYBDENUM	10	0.93	1	0.44	B	
7440-02-0	NICKEL	10	2.3	5	2.3	U	
7782-49-2	SELENIUM	10	2.6	1	0.42	C	
7440-22-4	SILVER	10	0.041	0.1	0.041	U	
7440-24-6	STRONTIUM	10	330	1	0.38		
7440-28-0	THALLIUM	10	0.034	0.2	0.034	U	
7440-29-1	THORIUM	10	0.094	0.2	0.094	U	
7440-31-5	TIN	10	0.68	5	0.68	U	
7440-61-1	URANIUM	10	0.9	0.1	0.046		
7440-62-2	VANADIUM	10	5.1	1	0.27		
7440-66-6	ZINC	10	7.1	20	7.1	U	

Data Package ID: im1506041-1

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ALS1506041

ICP Metals

Method SW6010B

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Lab ID: IP150605-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 05-Jun-15

Date Analyzed: 08-Jun-15

Prep Batch: IP150605-1

QCBatchID: IP150605-1-1

Run ID: IP150608-1A2

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
7440-70-2	CALCIUM	1	49	1000	49	U	
7439-89-6	IRON	1	38	50	38	U	
7439-95-4	MAGNESIUM	1	46	750	46	U	
7440-09-7	POTASSIUM	1	74	1000	74	U	
7440-23-5	SODIUM	1	84	500	84	U	

Data Package ID: ip1506041-1

Date Printed: Monday, June 15, 2015

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ALS1506041

ICP Metals

Method SW6010B

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Lab ID: IP150605-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06/05/2015

Date Analyzed: 06/08/2015

Prep Method: SW3005A

Prep Batch: IP150605-1

QC Batch ID: IP150605-1-1

Run ID: IP150608-1A2

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
7440-70-2	CALCIUM	40000	41500	1000		104	80 - 120%
7439-89-6	IRON	1000	1040	50		104	80 - 120%
7439-95-4	MAGNESIUM	40000	40700	750		102	80 - 120%
7440-09-7	POTASSIUM	40000	40100	1000		100	80 - 120%
7440-23-5	SODIUM	40000	40300	500		101	80 - 120%

Data Package ID: ip1506041-1

Date Printed: Monday, June 15, 2015

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ALS1506041

ICP Metals

Method SW6010B

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Field ID: B318J6
LabID: 1506041-1MS

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: 02-Jun-15
 Date Extracted: 05-Jun-15
 Date Analyzed: 08-Jun-15
 Prep Method: SW3005 Rev A

Prep Batch: IP150605-1
 QCBatchID: IP150605-1-1
 Run ID: IP150608-1A2
 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
7440-70-2	CALCIUM	67000		107000		1000	40000	101	80 - 120%
7439-89-6	IRON	38	U	1080		50	1000	108	80 - 120%
7439-95-4	MAGNESIUM	11000		52100		750	40000	103	80 - 120%
7440-09-7	POTASSIUM	3400		44400		1000	40000	102	80 - 120%
7440-23-5	SODIUM	8200		49000		500	40000	102	80 - 120%

Field ID: B318J6
LabID: 1506041-1MSD

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: 02-Jun-15
 Date Extracted: 05-Jun-15
 Date Analyzed: 08-Jun-15
 Prep Method: SW3005 Rev A

Prep Batch: IP150605-1
 QCBatchID: IP150605-1-1
 Run ID: IP150608-1A2
 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
7440-70-2	CALCIUM	105000		40000	96	1000	20	2
7439-89-6	IRON	2270	N*	1000	227	50	20	71
7439-95-4	MAGNESIUM	51800		40000	102	750	20	1
7440-09-7	POTASSIUM	44400		40000	103	1000	20	0
7440-23-5	SODIUM	49300		40000	103	500	20	1

Data Package ID: ip1506041-1

June 24, 2015

ALS1506041

ICP Metals

Method SW6010

Analytical Spike Sample Recovery

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Field ID:	B318J6
LabID:	1506041-1A

Run ID: IP150608-1A2

Date Analyzed: 6/8/2015

Result Units: ug/l

Target Analyte	Sample Result	Samp Qual	PS Result	PS Qual	Spike Added	PS % Rec.	Control Limits
IRON	0.00669	U	4120		4000	103	75 - 125%

Data Package ID: *ip1506041-1*

Date Printed: Monday, June 15, 2015

ALS Environmental -- FC

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LIMS Version: 6.767

June 24, 2015

ALS1506041

ICPMS Metals

Method SW6020A

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Lab ID: IP150605-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 05-Jun-15

Date Analyzed: 08-Jun-15

Prep Batch: IP150605-1

QCBatchID: IP150605-1-5

Run ID: IM150608-11A7

Cleanup: NONE

Basis: N/A

File Name: 066SMPL_

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	B	
7440-36-0	ANTIMONY	10	0.23	0.3	0.23	U	
7440-38-2	ARSENIC	10	0.36	2	0.36	U	
7440-39-3	BARIUM	10	0.94	1	0.94	U	
7440-41-7	BERYLLIUM	10	0.14	0.5	0.14	U	
7440-42-8	BORON	10	6.4	50	6.4	U	
7440-43-9	CADMIUM	10	0.13	0.3	0.13	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	-3.2	8	2	B	
7439-92-1	LEAD	10	0.2	0.5	0.2	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	0.58	1	0.42	B	
7440-22-4	SILVER	10	0.041	0.1	0.041	U	
7440-24-6	STRONTIUM	10	0.64	1	0.38	B	
7440-28-0	THALLIUM	10	0.04	0.2	0.034	B	
7440-29-1	THORIUM	10	0.094	0.2	0.094	U	
7440-31-5	TIN	10	1.3	5	0.68	B	
7440-61-1	URANIUM	10	0.046	0.1	0.046	U	
7440-62-2	VANADIUM	10	0.86	1	0.27	B	
7440-66-6	ZINC	10	7.1	20	7.1	U	

Data Package ID: im1506041-1

June 24, 2015

ALS1506041

ICPMS Metals

Method SW6020A

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Lab ID: IM150605-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06/05/2015

Date Analyzed: 06/08/2015

Prep Method: SW3005A

Prep Batch: IP150605-1

QCBatchID: IP150605-1-5

Run ID: IM150608-11A7

Cleanup: NONE

Basis: N/A

File Name: 067SMPL_

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	5240	50		105	80 - 120%
7440-36-0	ANTIMONY	30	32.8	0.3		109	80 - 120%
7440-38-2	ARSENIC	100	102	2		102	80 - 120%
7440-39-3	BARIUM	100	110	1		110	80 - 120%
7440-41-7	BERYLLIUM	50	52.2	0.5		104	80 - 120%
7440-42-8	BORON	1000	1040	50		104	80 - 120%
7440-43-9	CADMIUM	30	31.5	0.3		105	80 - 120%
7440-47-3	CHROMIUM	500	528	10		106	80 - 120%
7440-48-4	COBALT	100	108	1		108	80 - 120%
7440-50-8	COPPER	1000	1090	8		109	80 - 120%
7439-92-1	LEAD	50	52.6	0.5		105	80 - 120%
7439-96-5	MANGANESE	100	109	5		109	80 - 120%
7439-98-7	MOLYBDENUM	100	105	1		105	80 - 120%
7440-02-0	NICKEL	500	533	5		107	80 - 120%
7782-49-2	SELENIUM	100	109	1		109	80 - 120%
7440-22-4	SILVER	10	11.2	0.1		112	80 - 120%
7440-24-6	STRONTIUM	100	106	1		106	80 - 120%
7440-28-0	THALLIUM	2	2.21	0.2		111	80 - 120%
7440-29-1	THORIUM	10	10.4	0.2		104	80 - 120%
7440-31-5	TIN	500	534	5		107	80 - 120%
7440-61-1	URANIUM	10	11.3	0.1		113	80 - 120%
7440-62-2	VANADIUM	100	105	1		105	80 - 120%
7440-66-6	ZINC	2000	2130	20		107	80 - 120%

Data Package ID: im1506041-1

June 24, 2015

ALS1506041

ICPMS Metals

Method SW6020A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Field ID: B318J6	Sample Matrix: WATER	Prep Batch: IP150605-1	Sample Aliquot: 50 ml
LabID: 1506041-1MS	% Moisture: N/A	QC BatchID: IP150605-1-5	Final Volume: 50 ml
	Date Collected: 02-Jun-15	Run ID: IM150608-11A7	Result Units: UG/L
	Date Extracted: 05-Jun-15	Cleanup: NONE	File Name: 085SMPL_
	Date Analyzed: 08-Jun-15	Basis: As Received	
	Prep Method: SW3005 Rev A		

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7429-90-5	ALUMINUM	43	B,C	4840		50	5000	96	75 - 125%
7440-36-0	ANTIMONY	0.47		31.5		0.3	30	103	75 - 125%
7440-38-2	ARSENIC	1.3	B	104		2	100	102	75 - 125%
7440-39-3	BARIUM	44		155		1	100	111	75 - 125%
7440-41-7	BERYLLIUM	0.14	U	50.4		0.5	50	101	75 - 125%
7440-42-8	BORON	69		1040		50	1000	97	75 - 125%
7440-43-9	CADMIUM	0.13	U	31.6		0.3	30	105	75 - 125%
7440-47-3	CHROMIUM	5.7	B	520		10	500	103	75 - 125%
7440-48-4	COBALT	0.21	U	104		1	100	104	75 - 125%
7440-50-8	COPPER	2	U	1050		8	1000	105	75 - 125%
7439-92-1	LEAD	0.2	U	51.8		0.5	50	104	75 - 125%
7439-96-5	MANGANESE	4.6	B	109		5	100	105	75 - 125%
7439-98-7	MOLYBDENUM	0.95	B	106		1	100	105	75 - 125%
7440-02-0	NICKEL	2.3	U	519		5	500	104	75 - 125%
7782-49-2	SELENIUM	1.3	C	105		1	100	104	75 - 125%
7440-22-4	SILVER	0.05	B	10.2		0.1	10	101	75 - 125%
7440-24-6	STRONTIUM	320		410		1	100	92	75 - 125%
7440-28-0	THALLIUM	0.034	U	2.22		0.2	2	111	75 - 125%
7440-29-1	THORIUM	0.094	U	10.5		0.2	10	105	75 - 125%
7440-31-5	TIN	0.68	U	532		5	500	106	75 - 125%
7440-61-1	URANIUM	0.88		12.2		0.1	10	114	75 - 125%
7440-62-2	VANADIUM	4.8		106		1	100	101	75 - 125%
7440-66-6	ZINC	92		2060		20	2000	99	75 - 125%

Data Package ID: im1506041-1

June 24, 2015

ALS1506041

ICPMS Metals

Method SW6020A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1506041

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100NR2, JUNE 2015 I15-027

Field ID: B318J6
LabID: 1506041-1MSD

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: 02-Jun-15
 Date Extracted: 05-Jun-15
 Date Analyzed: 08-Jun-15
 Prep Method: SW3005 Rev A

Prep Batch: IP150605-1
 QCBatchID: IP150605-1-5
 Run ID: IM150608-11A7
 Cleanup: NONE
 Basis: As Received

Sample Aliquot: 50 ml
 Final Volume: 50 ml
 Result Units: UG/L
 File Name: 086SMPL_

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7429-90-5	ALUMINUM	5020		5000	99	50	20	3
7440-36-0	ANTIMONY	31.3		30	103	0.3	20	1
7440-38-2	ARSENIC	107		100	106	2	20	3
7440-39-3	BARIUM	151		100	107	1	20	2
7440-41-7	BERYLLIUM	51.2		50	102	0.5	20	2
7440-42-8	BORON	1080		1000	101	50	20	3
7440-43-9	CADMIUM	31.8		30	106	0.3	20	1
7440-47-3	CHROMIUM	532		500	105	10	20	2
7440-48-4	COBALT	108		100	108	1	20	4
7440-50-8	COPPER	1080		1000	108	8	20	3
7439-92-1	LEAD	51.4		50	103	0.5	20	1
7439-96-5	MANGANESE	108		100	103	5	20	1
7439-98-7	MOLYBDENUM	108		100	107	1	20	2
7440-02-0	NICKEL	528		500	106	5	20	2
7782-49-2	SELENIUM	108		100	107	1	20	3
7440-22-4	SILVER	10.9		10	108	0.1	20	7
7440-24-6	STRONTIUM	415		100	97	1	20	1
7440-28-0	THALLIUM	2.29		2	114	0.2	20	3
7440-29-1	THORIUM	10.7		10	107	0.2	20	2
7440-31-5	TIN	537		500	107	5	20	1
7440-61-1	URANIUM	12.1		10	112	0.1	20	1
7440-62-2	VANADIUM	110		100	105	1	20	3
7440-66-6	ZINC	2120		2000	102	20	20	3

Data Package ID: *im1506041-1*