ALS Environmental

Ft. Collins, Colorado

LIMS Version: 6.811

Saturday, April 30, 2016

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

Re: ALS Workorder: 1604206
Project Name: 200UP1, APRIL 2016
Project Number: I16-018

Dear Ms. Waters-Husted:

Four water samples were received from CH2M HILL Plateau Remediation Company, on 4/13/2016. 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

ADDRESS 225 Commerce Drive, Fort Collins, Colorado, USA 80524 | PHONE +1 970 490 1511 | FAX +1 970 490 1522
ALS GROUP USA, CORP. Part of the ALS Laboratory Group An ALS Limited Company

Environmental www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1604206
Client Name: CH2M HILL Plateau Remediation Company
Client Project Name: 200UP1, APRIL 2016
Client Project Number: I16-018
Client PO Number: BOA 54854

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B34KC0	1604206-1		WATER	11-Apr-16	12:55
B34KC4	1604206-2		WATER	11-Apr-16	12:55
B34KC5	1604206-3		WATER	11-Apr-16	12:55
B34KC1	1604206-4		WATER	11-Apr-16	12:55

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

1604206

C.O.C. # **I16-018-019**

Collector	Scott King CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	I16-018	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	200UP1, APRIL 2016	**Logbook No.**	HNF-N-506 83/54	**Ice Chest No.**	GWS-4/80
Shipped To (Lab)	ALS Environmental Ft. Collins	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7760 8365 3927
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	6519

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B34KC0 (1)	N	W	APR 11 2016	1755	1x500-mL G/P	6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B34KC4 (2)	Y	W	✓	✓	1x500-mL G/P	6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2

4/30/2016
ALS1604206

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Scott King CHPRC		Scott King	APR 11 2016 1515	SSU-1			APR 11 2016 1515
SSU-1			APR 12 2016 0720	L.D. Wall CHPRC		L.D. Wall	APR 12 2016 0720
L.D. Wall CHPRC		L.D. Wall	APR 12 2016 1400	FEDEX			
FED EX				C Trimble		C Trimble	4-13-16 1000

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

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

3 of 17

PRINTED ON 2/18/2016 FSR ID = FSR25710 A-6004-842 (REV 2)

1604206

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **I16-018-020**

Collector	Scott King CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	I16-018	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	200UP1, APRIL 2016	**Logbook No.**	HNF-N-506 83/54	**Ice Chest No.**	GWS-480
Shipped To (Lab)	ALS Environmental Ft. Collins	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7760 8365 3927
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	6519

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B34KC5 (3)	Y	W	APR 11 2016	1250	1x500-mL G/P	6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B34KC1 (4)	N	W	✓	✓	1x500-mL G/P	6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2

4/30/2016
ALS1604206

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Scott King CHPRC		Scott King	APR 11 2016 1515	SSU-1			APR 11 2016 1515
SSU-1			APR 12 2016 0720	L.D. Wall CHPRC		L.D. Wall	APR 12 2016 0720
L.D. Wall CHPRC		L.D. Wall	APR 12 2016 1400	FEDEX			
FED EX				C Trimble		C Trimble	4-13-16 1000

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

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

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC Workorder No: 1604206

Project Manager: JE Initials: CDT Date: 4-13-16

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	NONE	(YES)	NO
3. Are Custody seals on sample containers intact?	NONE	(YES)	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	(YES)	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(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	(N/A)	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES	(NO)
16. Were the samples shipped on ice?		YES	(NO)
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	RAD ONLY	YES	(NO)

Cooler #:	1							
Temperature (°C):	Amb							
No. of custody seals on cooler:	2							
DOT Survey/ Acceptance Information — External µR/hr reading:	11							
Background µR/hr reading:	11							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (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: 7/13/16

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Form 201r24.xls (06/04/2012)

6 of 17

6 of 17

ORIGIN ID:PSCA (509) 373-7409
BARBARA BRIGGS
CH2M
6267 LATAH ST
RICHLAND, WA 99354
UNITED STATES US

SHIP DATE: 12APR16
ACTWGT: 12.00 LB
CAD: 107066051/INET3730

BILL THIRD PARTY

TO JULIE ELLINGSON
ALS GLOBAL
225 COMMERCE DRIVE

FORT COLLINS CO 80524
(970) 490-1511 REF: GWS-480/PTR 6519
INV:
PO: DEPT:

11
-2

540J1/1042/727F

FedEx Express

J101010020501uv

WED - 13 APR 10:30A
PRIORITY OVERNIGHT
DSR
80524
CO-US DEN

TRK# 0201 7760 8365 3927

XH FTCA

1604206

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 charges, along with the cancellation of 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 any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely 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, income interest, profit, attorney's 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 cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

907409 IS TV

4/30/2016

Metals

Case Narrative

CH2M HILL Plateau Remediation Company

200UP1, APRIL 2016 – I16-018

Work Order Number: 1604363

1. This report consists of 4 water samples for total recoverable or dissolved metals.

2. The samples were received intact at ambient temperature by ALS on 04/13/16.

3. The sampleS for dissolved metals had been filtered prior to receipt. All 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 ICP-MS, the samples were digested following method 3005A and the current revision of SOP 806.

5. 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 time.

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 analyte. Strontium has 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 analyte.
- All initial and continuing calibration verifications were within the acceptance criteria for the requested analyte.
- The interference check samples associated with Method 6020A were analyzed.

9. Matrix specific quality control procedures.

   Sample 1604206-1 was designated as the quality control sample 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 this batch. All acceptance criteria for accuracy were met.
   - A sample duplicate and matrix spike duplicate were digested and analyzed with this batch. All acceptance criteria for precision were met.
   - A serial dilution was analyzed with this 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 Lafelle — 4/27/16
Jill Lafelle — Date
Inorganics Primary Data Reviewer

Julie Ellis — 4/30/16
Inorganics Final Data Reviewer — 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 <=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 ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC
Work Order Number: 1604206
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: 200UP1, APRIL 2016 I16-018

Field ID: B34KC0
Lab ID: 1604206-1

Analysis ReqCode: 6020_METALS_I

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 11-Apr-16
Date Extracted: 24-Apr-16
Date Analyzed: 25-Apr-16
Prep Method: SW3005 Rev A

Prep Batch: IP160424-1
QCBatchID: IP160424-1-2
Run ID: IM160425-10A4
Cleanup: NONE
Basis: As Received
File Name: 042SMPL_

Analyst: Carly D. Ruble
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
7429-90-5	ALUMINUM	10	41	100	14	B	
7440-36-0	ANTIMONY	10	0.09	1	0.084	B	
7440-38-2	ARSENIC	10	3.2	2	0.18		
7440-39-3	BARIUM	10	32	5	0.23		
7440-41-7	BERYLLIUM	10	0.27	0.5	0.27	U	
7440-43-9	CADMIUM	10	0.11	2	0.099	B	
7440-47-3	CHROMIUM	10	140	10	1.1		
7440-48-4	COBALT	10	0.32	5	0.07	B	
7440-50-8	COPPER	10	1.8	8	1.1	B	
7439-92-1	LEAD	10	0.96	2	0.16	B	
7439-96-5	MANGANESE	10	22	5	0.3		
7439-98-7	MOLYBDENUM	10	13	2	0.41		
7440-02-0	NICKEL	10	8.9	20	4.2	B	
7782-49-2	SELENIUM	10	2.6	10	0.66	B	
7440-22-4	SILVER	10	0.039	0.5	0.039	U	
7440-24-6	STRONTIUM	10	160	5	0.31		
7440-28-0	THALLIUM	10	0.014	0.1	0.014	U	
7440-29-1	THORIUM	10	0.04	0.2	0.032	B	
7440-31-5	TIN	10	4.5	10	1.3	B	
7440-61-1	URANIUM	10	2.1	0.1	0.027		
7440-66-6	ZINC	10	9.1	100	9.1	U	

Data Package ID: *im1604206-1*

Dissolved ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC
Work Order Number: 1604206
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: 200UP1, APRIL 2016 I16-018

Field ID: B34KC4
Lab ID: 1604206-2

Analysis ReqCode: 6020_METALS_I

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 11-Apr-16
Date Extracted: 24-Apr-16
Date Analyzed: 25-Apr-16
Prep Method: SW3005 Rev A

Prep Batch: IP160424-1
QCBatchID: IP160424-1-2
Run ID: IM160425-10A4
Cleanup: NONE
Basis: As Received
File Name: 047SMPL_

Analyst: Carly D. Ruble
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
7429-90-5	ALUMINUM	10	19	100	14	B	
7440-36-0	ANTIMONY	10	0.3	1	0.084	B	
7440-38-2	ARSENIC	10	3.3	2	0.18		
7440-39-3	BARIUM	10	29	5	0.23		
7440-41-7	BERYLLIUM	10	0.27	0.5	0.27	U	
7440-43-9	CADMIUM	10	0.1	2	0.099	B	
7440-47-3	CHROMIUM	10	110	10	1.1		
7440-48-4	COBALT	10	0.54	5	0.07	B	
7440-50-8	COPPER	10	1.1	8	1.1	U	
7439-92-1	LEAD	10	0.16	2	0.16	U	
7439-96-5	MANGANESE	10	3.6	5	0.3	B	
7439-98-7	MOLYBDENUM	10	14	2	0.41		
7440-02-0	NICKEL	10	4.2	20	4.2	U	
7782-49-2	SELENIUM	10	2.8	10	0.66	B	
7440-22-4	SILVER	10	0.039	0.5	0.039	U	
7440-24-6	STRONTIUM	10	160	5	0.31		
7440-28-0	THALLIUM	10	0.014	0.1	0.014	U	
7440-29-1	THORIUM	10	0.032	0.2	0.032	U	
7440-31-5	TIN	10	3.9	10	1.3	B	
7440-61-1	URANIUM	10	2	0.1	0.027		
7440-66-6	ZINC	10	9.1	100	9.1	U	

Data Package ID: *im1604206-1*

Dissolved ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC
Work Order Number: 1604206
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: 200UP1, APRIL 2016 I16-018

Field ID: B34KC5
Lab ID: 1604206-3

Analysis ReqCode: 6020_METALS_I

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 11-Apr-16
Date Extracted: 24-Apr-16
Date Analyzed: 25-Apr-16
Prep Method: SW3005 Rev A

Prep Batch: IP160424-1
QCBatchID: IP160424-1-2
Run ID: IM160425-10A4
Cleanup: NONE
Basis: As Received
File Name: 048SMPL_

Analyst: Carly D. Ruble
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
7429-90-5	ALUMINUM	10	16	100	14	B	
7440-36-0	ANTIMONY	10	0.11	1	0.084	B	
7440-38-2	ARSENIC	10	2.7	2	0.18		
7440-39-3	BARIUM	10	30	5	0.23		
7440-41-7	BERYLLIUM	10	0.27	0.5	0.27	U	
7440-43-9	CADMIUM	10	0.099	2	0.099	U	
7440-47-3	CHROMIUM	10	110	10	1.1		
7440-48-4	COBALT	10	0.12	5	0.07	B	
7440-50-8	COPPER	10	1.1	8	1.1	U	
7439-92-1	LEAD	10	0.16	2	0.16	U	
7439-96-5	MANGANESE	10	2.8	5	0.3	B	
7439-98-7	MOLYBDENUM	10	14	2	0.41		
7440-02-0	NICKEL	10	4.2	20	4.2	U	
7782-49-2	SELENIUM	10	3.4	10	0.66	B	
7440-22-4	SILVER	10	0.039	0.5	0.039	U	
7440-24-6	STRONTIUM	10	160	5	0.31		
7440-28-0	THALLIUM	10	0.014	0.1	0.014	U	
7440-29-1	THORIUM	10	0.032	0.2	0.032	U	
7440-31-5	TIN	10	1.3	10	1.3	U	
7440-61-1	URANIUM	10	2	0.1	0.027		
7440-66-6	ZINC	10	9.1	100	9.1	U	

Data Package ID: *im1604206-1*

Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC
Work Order Number: 1604206
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: 200UP1, APRIL 2016 I16-018

Field ID: B34KC1
Lab ID: 1604206-4

Analysis ReqCode: 6020_METALS_I

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 11-Apr-16
Date Extracted: 24-Apr-16
Date Analyzed: 25-Apr-16
Prep Method: SW3005 Rev A

Prep Batch: IP160424-1
QCBatchID: IP160424-1-2
Run ID: IM160425-10A4
Cleanup: NONE
Basis: As Received
File Name: 049SMPL_

Analyst: Carly D. Ruble
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
7429-90-5	ALUMINUM	10	39	100	14	B	
7440-36-0	ANTIMONY	10	0.2	1	0.084	B	
7440-38-2	ARSENIC	10	2.8	2	0.18		
7440-39-3	BARIUM	10	33	5	0.23		
7440-41-7	BERYLLIUM	10	0.27	0.5	0.27	U	
7440-43-9	CADMIUM	10	0.099	2	0.099	U	
7440-47-3	CHROMIUM	10	130	10	1.1		
7440-48-4	COBALT	10	0.3	5	0.07	B	
7440-50-8	COPPER	10	1.2	8	1.1	B	
7439-92-1	LEAD	10	0.73	2	0.16	B	
7439-96-5	MANGANESE	10	19	5	0.3		
7439-98-7	MOLYBDENUM	10	13	2	0.41		
7440-02-0	NICKEL	10	8	20	4.2	B	
7782-49-2	SELENIUM	10	2.8	10	0.66	B	
7440-22-4	SILVER	10	0.039	0.5	0.039	U	
7440-24-6	STRONTIUM	10	160	5	0.31		
7440-28-0	THALLIUM	10	0.014	0.1	0.014	U	
7440-29-1	THORIUM	10	0.032	0.2	0.032	U	
7440-31-5	TIN	10	1.3	10	1.3	U	
7440-61-1	URANIUM	10	2.1	0.1	0.027		
7440-66-6	ZINC	10	9.1	100	9.1	U	

Data Package ID: *im1604206-1*

ICPMS Metals

Method SW6020A

Method Blank

Lab Name: ALS Environmental -- FC
Work Order Number: 1604206
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: 200UP1, APRIL 2016 I16-018

Lab ID: IP160424-1MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 24-Apr-16
Date Analyzed: 25-Apr-16

Prep Batch: IP160424-1
QCBatchID: IP160424-1-2
Run ID: IM160425-10A4
Cleanup: NONE
Basis: N/A
File Name: 040SMPL_

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	14	100	14	U	
7440-36-0	ANTIMONY	10	0.084	1	0.084	U	
7440-38-2	ARSENIC	10	0.18	2	0.18	U	
7440-39-3	BARIUM	10	0.13	5	0.23	U	
7440-41-7	BERYLLIUM	10	0.27	0.5	0.27	U	
7440-43-9	CADMIUM	10	0.099	2	0.099	U	
7440-47-3	CHROMIUM	10	1.1	10	1.1	U	
7440-48-4	COBALT	10	0.07	5	0.07	U	
7440-50-8	COPPER	10	1.1	8	1.1	U	
7439-92-1	LEAD	10	0.16	2	0.16	U	
7439-96-5	MANGANESE	10	0.3	5	0.3	U	
7439-98-7	MOLYBDENUM	10	0.41	2	0.41	U	
7440-02-0	NICKEL	10	4.2	20	4.2	U	
7782-49-2	SELENIUM	10	0.66	10	0.66	U	
7440-22-4	SILVER	10	0.039	0.5	0.039	U	
7440-24-6	STRONTIUM	10	0.4	5	0.31	B	
7440-28-0	THALLIUM	10	0.014	0.1	0.014	U	
7440-29-1	THORIUM	10	0.032	0.2	0.032	U	
7440-31-5	TIN	10	1.3	10	1.3	U	
7440-61-1	URANIUM	10	0.027	0.1	0.027	U	
7440-66-6	ZINC	10	9.1	100	9.1	U	

Data Package ID: *im1604206-1*

ICPMS Metals

Method SW6020A

Laboratory Control Sample

Lab Name: ALS Environmental -- FC
Work Order Number: 1604206
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: 200UP1, APRIL 2016 I16-018

Lab ID: IM160424-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 04/24/2016
Date Analyzed: 04/25/2016
Prep Method: SW3005A

Prep Batch: IP160424-1
QCBatchID: IP160424-1-2
Run ID: IM160425-10A4
Cleanup: NONE
Basis: N/A
File Name: 041SMPL_

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	4700	100		94	80 - 120%
7440-36-0	ANTIMONY	30	28.8	1		96	80 - 120%
7440-38-2	ARSENIC	100	105	2		105	80 - 120%
7440-39-3	BARIUM	100	100	5		100	80 - 120%
7440-41-7	BERYLLIUM	50	48.6	0.5		97	80 - 120%
7440-43-9	CADMIUM	30	29.1	2		97	80 - 120%
7440-47-3	CHROMIUM	500	473	10		95	80 - 120%
7440-48-4	COBALT	100	94.4	5		94	80 - 120%
7440-50-8	COPPER	1000	977	8		98	80 - 120%
7439-92-1	LEAD	50	47.9	2		96	80 - 120%
7439-96-5	MANGANESE	100	92.7	5		93	80 - 120%
7439-98-7	MOLYBDENUM	100	94.7	2		95	80 - 120%
7440-02-0	NICKEL	500	472	20		94	80 - 120%
7782-49-2	SELENIUM	100	103	10		103	80 - 120%
7440-22-4	SILVER	10	9.79	0.5		98	80 - 120%
7440-24-6	STRONTIUM	100	99.8	5		100	80 - 120%
7440-28-0	THALLIUM	2	1.98	0.1		99	80 - 120%
7440-29-1	THORIUM	10	9.64	0.2		96	80 - 120%
7440-31-5	TIN	500	493	10		99	80 - 120%
7440-61-1	URANIUM	10	9.62	0.1		96	80 - 120%
7440-66-6	ZINC	2000	1960	100		98	80 - 120%

Data Package ID: *im1604206-1*

ICPMS Metals

Method SW6020A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC
Work Order Number: 1604206
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: 200UP1, APRIL 2016 I16-018

Field ID: B34KC0
LabID: 1604206-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 11-Apr-16
Date Extracted: 24-Apr-16
Date Analyzed: 25-Apr-16
Prep Method: SW3005 Rev A

Prep Batch: IP160424-1
QCBatchID: IP160424-1-2
Run ID: IM160425-10A4
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
File Name: 045SMPL_

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7429-90-5	ALUMINUM	41	B	4590		100	5000	91	75 - 125%
7440-36-0	ANTIMONY	0.09	B	27.5		1	30	91	75 - 125%
7440-38-2	ARSENIC	3.2		105		2	100	102	75 - 125%
7440-39-3	BARIUM	32		129		5	100	97	75 - 125%
7440-41-7	BERYLLIUM	0.27	U	47.9		0.5	50	96	75 - 125%
7440-43-9	CADMIUM	0.11	B	29.3		2	30	97	75 - 125%
7440-47-3	CHROMIUM	140		604		10	500	94	75 - 125%
7440-48-4	COBALT	0.32	B	94.4		5	100	94	75 - 125%
7440-50-8	COPPER	1.8	B	974		8	1000	97	75 - 125%
7439-92-1	LEAD	0.96	B	48.3		2	50	95	75 - 125%
7439-96-5	MANGANESE	22		116		5	100	94	75 - 125%
7439-98-7	MOLYBDENUM	13		106		2	100	92	75 - 125%
7440-02-0	NICKEL	8.9	B	479		20	500	94	75 - 125%
7782-49-2	SELENIUM	2.6	B	101		10	100	98	75 - 125%
7440-22-4	SILVER	0.039	U	9.87		0.5	10	99	75 - 125%
7440-24-6	STRONTIUM	160		250		5	100	86	75 - 125%
7440-28-0	THALLIUM	0.014	U	1.96		0.1	2	98	75 - 125%
7440-29-1	THORIUM	0.04	B	9.29		0.2	10	93	75 - 125%
7440-31-5	TIN	4.5	B	482		10	500	96	75 - 125%
7440-61-1	URANIUM	2.1		11.3		0.1	10	93	75 - 125%
7440-66-6	ZINC	9.1	U	1950		100	2000	97	75 - 125%

Data Package ID: *im1604206-1*

ICPMS Metals

Method SW6020A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC
Work Order Number: 1604206
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: 200UP1, APRIL 2016 I16-018

Field ID: B34KC0
LabID: 1604206-1MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 11-Apr-16
Date Extracted: 24-Apr-16
Date Analyzed: 25-Apr-16
Prep Method: SW3005 Rev A

Prep Batch: IP160424-1
QCBatchID: IP160424-1-2
Run ID: IM160425-10A4
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
File Name: 046SMPL_

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7429-90-5	ALUMINUM	4580		5000	91	100	20	0
7440-36-0	ANTIMONY	29		30	96	1	20	5
7440-38-2	ARSENIC	107		100	104	2	20	2
7440-39-3	BARIUM	129		100	97	5	20	0
7440-41-7	BERYLLIUM	46.7		50	93	0.5	20	3
7440-43-9	CADMIUM	29.6		30	98	2	20	1
7440-47-3	CHROMIUM	615		500	96	10	20	2
7440-48-4	COBALT	95.2		100	95	5	20	1
7440-50-8	COPPER	985		1000	98	8	20	1
7439-92-1	LEAD	48.4		50	95	2	20	0
7439-96-5	MANGANESE	115		100	93	5	20	1
7439-98-7	MOLYBDENUM	109		100	95	2	20	3
7440-02-0	NICKEL	486		500	95	20	20	1
7782-49-2	SELENIUM	105		100	102	10	20	4
7440-22-4	SILVER	9.71		10	97	0.5	20	2
7440-24-6	STRONTIUM	260		100	96	5	20	4
7440-28-0	THALLIUM	1.97		2	99	0.1	20	1
7440-29-1	THORIUM	9.63		10	96	0.2	20	4
7440-31-5	TIN	481		500	95	10	20	0
7440-61-1	URANIUM	11.7		10	96	0.1	20	3
7440-66-6	ZINC	1960		2000	98	100	20	1

Data Package ID: *im1604206-1*