



March 9, 2016

Mr. Dave Todak
CH2M HILL Plateau Remediation Company
2420 Stevens Center
Richland, WA 99352

Re: ALS Workorder: 1601062
Project Name: 300-FF-5 Post ROD Field Investigation - Soils
Project Number: F15-014

Dear Mr. Todak:

Eight soil samples were received from CH2M HILL Plateau Remediation Company, on 1/8/2016. The samples were scheduled for the following analyses:

Metals
Inorganics

The results for this analysis are contained in the enclosed reports.

This report was originally submitted on 1/12/2016 and again on 1/20/2016. It is being re-submitted to report additional requested metals.

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

Sincerely,

ALS Environmental
Julie Ellingson
Project Manager

SAMPLE ISSUE RESOLUTION	SIR NUM	SIR16-177
	REV NUM	0
	DATE INITIATED	1/14/2016

SAMPLE EVENT INFORMATION

SAF NUM(S) F15-014
OPERABLE UNIT(S) 300-FF-5
PROJECT(S) 300FF5 Post ROD
SAMPLE EVENT TITLE(S) 300-FF-5 Post ROD Field Investigation
LABORATORY ALS Environmental Ft. Collins

SAMPLING INFORMATION

NUMBER OF SAMPLES 8
SAMPLE NUMBERS B347C7, B347C8, B347D3, B347D4, B347D9, B347F4, B347F9, B347H4
SAMPLE MATRIX SOIL
COLLECTION DATE 1/5/2016 - 1/5/2016
SDG NUM ALS1601062

ISSUE BACKGROUND

CLASS Sample Management Issues
TYPE Addition of Analyses
DESCRIPTION The project needs anion results (performed on a 3 day turn around) for the samples listed above.

DISPOSITION

DESCRIPTION Proposed resolution: The lab will run the samples for phosphate, chloride, nitrite, nitrate, sulfate and flouride.
JUSTIFICATION Final disposition: Accept the proposed resolution.

SUBMITTED BY: Scot Fitzgerald DATE: 01/14/2016
 ACCEPTED BY: Amy Wolf DATE: 01/14/2016

SAMPLE ISSUE RESOLUTION

SIR NUM SIR16-218
REV NUM 0
DATE INITIATED 2/9/2016

SAMPLE EVENT INFORMATION

SAF NUM(S) F15-014
OPERABLE UNIT(S) 300-FF-5
PROJECT(S) 300FF5 Post ROD
SAMPLE EVENT TITLE(S) 300-FF-5 Post ROD Field Investigation
LABORATORY ALS Environmental Ft. Collins

SAMPLING INFORMATION

NUMBER OF SAMPLES 8
SAMPLE NUMBERS B347C7, B347C8, B347D3, B347D4, B347D9, B347F4, B347F9, B347H4
SAMPLE MATRIX SOIL
COLLECTION DATE 1/5/2016 - 1/5/2016
SDG NUM ALS1601062

ISSUE BACKGROUND

CLASS Sample Management Issues
TYPE Addition of Analyses
DESCRIPTION The project originally requested Uranium by 6020 for these samples. Subsequently IC analysis was requested. At this time the project has also determined a need for Phosphorous and calcium to be reported on these samples.

DISPOSITION

DESCRIPTION Add phosphorus and calcium analysis to the samples listed above or, if the data are already available, re-report with these constituents added.

JUSTIFICATION Final Disposition:

SUBMITTED BY: Scot Fitzgerald DATE: 02/09/2016
 ACCEPTED BY: Julie Ellingson DATE: 02/22/16

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1601062

Client Name: CH2M HILL Plateau Remediation Company

Client Project Name: 300-FF-5 Post ROD Field Investigation - Soils

Client Project Number: F15-014

Client PO Number: BOA 54854

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B347F9	1601062-1		SOIL	05-Jan-16	14:15
B347H4	1601062-2		SOIL	05-Jan-16	14:40
B347F4	1601062-3		SOIL	05-Jan-16	13:50
B347D9	1601062-4		SOIL	05-Jan-16	13:20
B347D4	1601062-5		SOIL	05-Jan-16	11:00
B347D3	1601062-6		SOIL	05-Jan-16	11:05
B347C8	1601062-7		SOIL	05-Jan-16	10:35
B347C7	1601062-8		SOIL	05-Jan-16	10:35

CH2M Hill Plateau Remediation Company
COLLECTOR J.R. Aquilino/CHPRC
SAMPLING LOCATION C9580, I-006
ICE CHEST NO. GWS-4143
SHIPPED TO ALS Environmental Ft. Collins
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
COMPANY CONTACT TODAK, D
TELEPHONE NO. 376-6427
PROJECT COORDINATOR TODAK, D
PROJECT DESIGNATION 300-FF-5 Post ROD Field Investigation - Soils
FIELD LOGBOOK NO. HNF-2-507-33 / Pg 24
ACTUAL SAMPLE DEPTH 33.00' - 33.50'
OFFSITE PROPERTY NO. 6283
SAF NO. FL5-014
COA 303492
BILL OF LADING / AIR BILL NO. 75364307764
PRICE CODE C13
AIR QUALITY
METHOD OF SHIPMENT FEDERAL EXPRESS
PAGE 1 OF 1
DATA TURNAROUND 3 Days / 3 Days
ORIGINAL

PRESERVATION None
HOLDING TIME 6 Months
TYPE OF CONTAINER G/P
NO. OF CONTAINER(S) 1
VOLUME 60ml
SAMPLE ANALYSIS 6020 METALS, ICP/MS, COPPER (Add-on) (Uranium);
SAMPLE DATE 01-05-16
SAMPLE TIME 1440
MATRIX* SOIL
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. N/A
SPECIAL HANDLING AND/OR STORAGE

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	SIGN/ PRINT NAMES	RECEIVED BY/STORED IN	DATE/TIME
J.R. Aquilino/CHPRC	JAN 05 2016 1540		SSU #1	JAN 05 2016 1540
RELINQUISHED BY/REMOVED FROM	DATE/TIME		RECEIVED BY/STORED IN	DATE/TIME
SSU-1	JAN 07 2016 0830		L.B. Wall	JAN 07 2016 0830
RELINQUISHED BY/REMOVED FROM	DATE/TIME		RECEIVED BY/STORED IN	DATE/TIME
L.B. Wall	JAN 07 2016 1400		CHPRC	JAN 07 2016 1400
RELINQUISHED BY/REMOVED FROM	DATE/TIME		RECEIVED BY/STORED IN	DATE/TIME
Fedex			FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME		RECEIVED BY/STORED IN	DATE/TIME
			M. Rebecca Morales	118116 1005
RELINQUISHED BY/REMOVED FROM	DATE/TIME		RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME		RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME		RECEIVED BY/STORED IN	DATE/TIME

LABORATORY RECEIVED BY
SECTION
FINAL SAMPLE DISPOSITION
DISPOSAL METHOD
LABORATORY RECEIVED BY
SECTION
FINAL SAMPLE DISPOSITION
DISPOSAL METHOD

TRVL NUM TRVL-16-054
FSR ID FSR15655
PRINTED ON 12/29/2015
DATE/TIME
DATE/TIME
 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F15-014-366	PAGE 1 OF 1
COLLECTOR J.R. Aguilera/CHPRC	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE C13	DATA TURNAROUND 3 Days / 3 Days
SAMPLING LOCATION C9580, I-004	PROJECT DESIGNATION 300-FF-5 Post ROD Field Investigation - Soils	FIELD LOGBOOK NO. HNF-N-S-23/ 24	SAF NO. F15-014	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT FEDERAL EXPRESS
ICE CHEST NO. GWS-443	OFFSITE PROPERTY NO. 29,50' - 30.00'	ACTUAL SAMPLE DEPTH 29,50' - 30.00'	COA 303492	BILL OF LADING/AIR BILL NO. 775364307564	
SHIPPED TO ALS Environmental Ft. Collins	PRESERVATION None	HOLDING TIME 6 Months	1601062		
MATRIX* A=Air DL=Drum L=Liquids DS=Drum S=Soil L=Liquid O=Oil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	NO. OF CONTAINER(S) 1	TYPE OF CONTAINER G/P	Sample Taken from Shoe QA 01-05-14		
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. N/A	VOLUME 60mL	SAMPLE ANALYSIS 6020_METALS; ICPMS; COMMON (Add-on) (Uranium);			
SPECIAL HANDLING AND/OR STORAGE	SAMPLE DATE 01-05-14	SAMPLE TIME 1350			
SAMPLE NO. B347F4 (3)	MATRIX* SOIL				

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS PORTION B	
RELINQUISHED BY/REMOVED FROM J.R. Aguilera/CHPRC	DATE/TIME JAN 05 2015 1540	RECEIVED BY/STORED IN SSU #1	DATE/TIME JAN 05 2015 1540		
RELINQUISHED BY/REMOVED FROM SSU-1	DATE/TIME JAN 07 2016 0800	RECEIVED BY/STORED IN L.D. Wall	DATE/TIME JAN 07 2016 0800		
RELINQUISHED BY/REMOVED FROM L.D. Wall	DATE/TIME JAN 07 2016 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME		
RELINQUISHED BY/REMOVED FROM Fedex	DATE/TIME	RECEIVED BY/STORED IN Ms. Rebecca Poole	DATE/TIME 1/8/16 1005		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY RECEIVED BY	TITLE	DISPOSED BY			
SECTION	DISPOSAL METHOD	DATE/TIME			
POSITION	DATE/TIME	DATE/TIME			
PRINTED ON 12/29/2015	FSR ID = FSR15053	TRVL NUM = TRVL16054		A-6003-618 (REV 16-1)	

042

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		PAGE 1 OF 1	
COLLECTOR J.R. Aguilar/CHPRC	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE C13	DATA TURNAROUND 3 Days / 3 Days
SAMPLING LOCATION C9580, I-002	PROJECT DESIGNATION 300-FF-5 Post ROD Field Investigation - Soils	ACTUAL SAMPLE DEPTH 24.00' - 24.50'	SAF NO. F15-014	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT FEDERAL EXPRESS
ICE CHEST NO. CWS-443	FIELD LOGBOOK NO. HNF-N-507-33/Pg 24	OFFSITE PROPERTY NO. 6263	COA 303492	BILL OF LADING/AIR BILL NO. AFS3643087764 1601062	
SHIPPED TO ALS Environmental Ft. Collins	PRESERVATION None	HOLDING TIME 6 Months	NO. OF CONTAINER(S) 1		
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	POSSIBLE SAMPLE HAZARDS/REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A	TYPE OF CONTAINER G/P	VOLUME 60ml		
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS 6020 METALS TCRMS COMMON (Add on) (Uranium);	SAMPLE DATE 01-05-16	SAMPLE TIME 1105		
SAMPLE NO. B347D3	MATRIX* SOIL				

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS PORTION B	
RELINQUISHED BY/REMOVED FROM J.R. Aguilar/CHPRC	DATE/TIME JAN 05 2016 1540	RECEIVED BY/STORED IN SSU #1	DATE/TIME JAN 05 2016 1540		
RELINQUISHED BY/REMOVED FROM SSU-1	DATE/TIME JAN 07 2016 0800	RECEIVED BY/STORED IN L.D. Wall	DATE/TIME JAN 07 2016 0800		
RELINQUISHED BY/REMOVED FROM L.D. Wall	DATE/TIME JAN 07 2016 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME JAN 07 2016 1400		
RELINQUISHED BY/REMOVED FROM Fedex	DATE/TIME	RECEIVED BY/STORED IN Rebecca Neola	DATE/TIME 1/8/16 1005		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY RECEIVED BY	TITLE				
DISPOSAL METHOD	DISPOSED BY				
PRINTED ON 12/29/2015	TRVL NUM = TRVL-16-054	A-6003-618 (REV 2)			

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F15-014-350	PAGE 1 OF 1
COLLECTOR J.R. Aguilar/CHPRC	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE C13	DATA TURNAROUND 3 Days / 3 Days
SAMPLING LOCATION C9580, I-001 Duplicate	PROJECT DESIGNATION 300-FF-5 Post ROD Field Investigation - Soils	SAF NO. F15-014	COA 303492	AIR QUALITY	METHOD OF SHIPMENT FEDERAL EXPRESS
ICE CHEST NO. CWS-443	FIELD LOGBOOK NO. HNF-12-507-33/Pg 24	ACTUAL SAMPLE DEPTH 21.50' - 22.00'	BILL OF LADING/AIR BILL NO. #75364307764		ORIGINAL
SHIPPED TO ALS Environmental Ft. Collins	OFFSITE PROPERTY NO. 663		1601062		

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 None	HOLDING TIME 6 Months	TYPE OF CONTAINER G/P	NO. OF CONTAINER(S) 1	VOLUME 60mL	SAMPLE ANALYSIS 6020_METALS: ICPMS: COMMON (Add-on) (Uranium);
SPECIAL HANDLING AND/OR STORAGE	SAMPLE DATE 01-05-16	SAMPLE TIME 1035				
B347C8 (7)	MATRIX*	SOIL				

Used Liner D. due to 25% recovery
CA 01-05-16

CHAIN OF POSSESSION		SIGN/PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM J.R. Aguilar/CHPRC	DATE/TIME JAN 05 2015 1540	RECEIVED BY/STORED IN SSU # 1	DATE/TIME JAN 05 2015 1540	PORTION B	
RELINQUISHED BY/REMOVED FROM SSU-1	DATE/TIME JAN 07 2016 0800	RECEIVED BY/STORED IN L.D. Wall	DATE/TIME JAN 07 2016 0800		
RELINQUISHED BY/REMOVED FROM L.D. Wall/CHPRC	DATE/TIME JAN 07 2016 1400	RECEIVED BY/STORED IN Fedex	DATE/TIME JAN 07 2016 1400		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN Rebecca Meeks	DATE/TIME 1/8/16 1005		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		
PRINTED ON 12/29/2015	FRSR ID = FSR15649	TRVL NUM = TRVL-16-054	DATE/TIME		



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC

Workorder No: 1601062

Project Manager: JE

Initials: RUR Date: 1/8/16

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	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<input checked="" type="radio"/> N/A	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 <input checked="" type="radio"/> N/A	YES	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 <input checked="" type="radio"/> #4		YES	<input checked="" type="radio"/> NO
Cooler #: <u>1</u>			
Temperature (°C): <u>AM3</u>			
No. of custody seals on cooler: <u>2</u>			
External µR/hr reading: <u>12</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] 1/8/16

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

12-2

1601062

ORIGIN: DPSCA (509) 373-3547
CHRIS FULTON
C/2M
6267 LATAH ST
RICHLAND, WA 99354
UNITED STATES US

SHIP DATE: 07 JAN 16
ACT WGT: 11.00 LB
CAD: 10/0605/INET3670
BILL THIRD PARTY

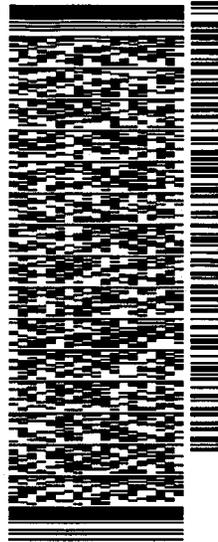
TO JULIE ELLINGSON

225 COMMERCE DRIVE

FORT COLLINS CO 80524

(970) 490-1511 REF: PTR6263
INV/ PO: DEPT:

539J10E61/31D0



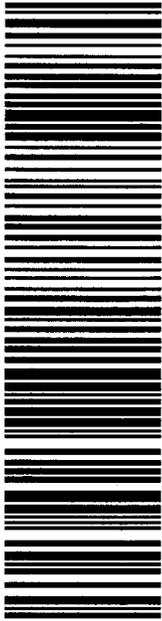
J152015001001uv

TRK# 7753 6430 7764
0201

FRI - 08 JAN 10:30A
PRIORITY OVERNIGHT
DSR

XH FTCA

80524
co-us DEN



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Metals Case Narrative

CH2M HILL Plateau Remediation Company 300-FF-5 Post ROD Field Investigation – Soils – F15-014

Work Order Number: 1601062

1. This report consists of 8 soil samples.
2. The samples were received intact at ambient temperature by ALS on 01/08/16.
3. 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 3050B and the current revision of SOP 806.

4. 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.

5. All standards and solutions are NIST traceable and were used within their recommended shelf life.
6. The samples were prepared and analyzed within the established hold times.

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

7. 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. Phosphorus had 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.



- 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.
8. Matrix specific quality control procedures.

Sample 1601062-1 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>
Uranium	1601062-1MS

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.
 - A serial dilution was analyzed with each ICP batch. All acceptance criteria were met.
9. 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

3/9/16

 Date



 Julie Ellison
 Inorganics Final Data Reviewer

3/9/16

 Date



Inorganic Data Reporting Qualifiers

The following qualifiers are used 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 CALCIUM

Method SW6010B

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: CH2M HILL Plateau Remediation Company
Client Project ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014
Work Order Number: 1601062 **Final Volume:** 100 ml
Reporting Basis: Dry Weight **Matrix:** SOIL
Analyst: Steve Workman **Result Units:** UG/KG

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Flag	Sample Aliquot
B347F9	1601062-1	1/5/2016	3/7/2016	03/07/2016	6.034	1	6400000	100000	4400		1.065 g
B347H4	1601062-2	1/5/2016	3/7/2016	03/07/2016	9.928	1	7000000	110000	4800		1.005 g
B347F4	1601062-3	1/5/2016	3/7/2016	03/07/2016	11.16	1	4600000	110000	4900		1.013 g
B347D9	1601062-4	1/5/2016	3/7/2016	03/07/2016	9.444	1	6100000	100000	4600		1.059 g
B347D4	1601062-5	1/5/2016	3/7/2016	03/07/2016	0.047	1	200000	98000	4300		1.016 g
B347D3	1601062-6	1/5/2016	3/7/2016	03/07/2016	7.613	1	4500000	100000	4500		1.059 g
B347C8	1601062-7	1/5/2016	3/7/2016	03/07/2016	7.725	1	5300000	110000	4600		1.028 g
B347C7	1601062-8	1/5/2016	3/7/2016	03/07/2016	9.692	1	4700000	100000	4600		1.055 g

Comments:

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

Data Package ID: *it1601062-1*

Total PHOSPHORUS

Method SW6010B

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: CH2M HILL Plateau Remediation Company
Client Project ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014
Work Order Number: 1601062 **Final Volume:** 100 ml
Reporting Basis: Dry Weight **Matrix:** SOIL
Analyst: Steve Workman **Result Units:** UG/KG

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Flag	Sample Aliquot
B347F9	1601062-1	1/5/2016	3/7/2016	03/07/2016	6.034	1	1600000	20000	1400		1.065 g
B347H4	1601062-2	1/5/2016	3/7/2016	03/07/2016	9.928	1	1300000	22000	1600		1.005 g
B347F4	1601062-3	1/5/2016	3/7/2016	03/07/2016	11.16	1	1300000	22000	1600		1.013 g
B347D9	1601062-4	1/5/2016	3/7/2016	03/07/2016	9.444	1	1500000	21000	1500		1.059 g
B347D4	1601062-5	1/5/2016	3/7/2016	03/07/2016	0.047	1	12000	20000	1400	B	1.016 g
B347D3	1601062-6	1/5/2016	3/7/2016	03/07/2016	7.613	1	1300000	20000	1500		1.059 g
B347C8	1601062-7	1/5/2016	3/7/2016	03/07/2016	7.725	1	1500000	21000	1500		1.028 g
B347C7	1601062-8	1/5/2016	3/7/2016	03/07/2016	9.692	1	1500000	21000	1500		1.055 g

Comments:

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

Data Package ID: *it1601062-1*

Total URANIUM

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: CH2M HILL Plateau Remediation Company
Client Project ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014
Work Order Number: 1601062 **Final Volume:** 100 ml
Reporting Basis: Dry Weight **Matrix:** SOIL
Analyst: Brent A. Stanfield **Result Units:** UG/KG

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Flag	Sample Aliquot
B347F9	1601062-1	1/5/2016	1/11/2016	01/11/2016	6.034	10	1400	10	5.6	N	1.035 g
B347H4	1601062-2	1/5/2016	1/11/2016	01/11/2016	9.928	10	2600	11	5.7		1.054 g
B347F4	1601062-3	1/5/2016	1/11/2016	01/11/2016	11.16	10	7600	11	5.9		1.041 g
B347D9	1601062-4	1/5/2016	1/11/2016	01/11/2016	9.444	10	3200	11	5.7		1.046 g
B347D4	1601062-5	1/5/2016	1/11/2016	01/11/2016	0.047	10	55	9.5	5.2		1.051 g
B347D3	1601062-6	1/5/2016	1/11/2016	01/11/2016	7.613	10	2000	10	5.6		1.046 g
B347C8	1601062-7	1/5/2016	1/11/2016	01/11/2016	7.725	10	1700	10	5.7		1.036 g
B347C7	1601062-8	1/5/2016	1/11/2016	01/11/2016	9.692	10	2600	11	5.8		1.041 g

Comments:

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

Data Package ID: *im1601062-1*

ICP Metals

Method SW6010B

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Lab ID: IP160307-2MB

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 07-Mar-16

Date Analyzed: 07-Mar-16

Prep Batch: IP160307-2

QCBatchID: IP160307-2-1

Run ID: IT160307-1A2

Cleanup: NONE

Basis: N/A

File Name: 160307A.

Sample Aliquot: 1 g

Final Volume: 100 ml

Result Units: UG/KG

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-70-2	CALCIUM	1	4400	100000	4400	U	
7723-14-0	PHOSPHORUS	1	1700	20000	1400	B	

Data Package ID: it1601062-1

ICP Metals

Method SW6010B

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Lab ID: IP160307-2LCS

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/07/2016

Date Analyzed: 03/07/2016

Prep Method: SW3050B

Prep Batch: IP160307-2

QCBatchID: IP160307-2-1

Run ID: IT160307-1A2

Cleanup: NONE

Basis: N/A

File Name: 160307A.

Sample Aliquot: 1 g

Final Volume: 100 ml

Result Units: UG/KG

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-70-2	CALCIUM	4E+06	3920000	100000		98	80 - 120%
7723-14-0	PHOSPHORUS	1E+06	978000	20000		98	80 - 120%

Data Package ID: *it1601062-1*

ICP Metals

Method SW6010B

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Field ID: B347F9
LabID: 1601062-1MS

Sample Matrix: SOIL
% Moisture: 6.0
Date Collected: 05-Jan-16
Date Extracted: 07-Mar-16
Date Analyzed: 07-Mar-16
Prep Method: SW3050 Rev B

Prep Batch: IP160307-2
QCBatchID: IP160307-2-1
Run ID: IT160307-1A2
Cleanup: NONE
Basis: Dry Weight

Sample Aliquot: 1.06 g
Final Volume: 100 ml
Result Units: UG/KG
File Name: 160307A.

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-70-2	CALCIUM	6400000		10600000		100000	4020000	105	80 - 120%
7723-14-0	PHOSPHORUS	1600000		2460000		20100	1000000	90	80 - 120%

Field ID: B347F9
LabID: 1601062-1MSD

Sample Matrix: SOIL
% Moisture: 6.0
Date Collected: 05-Jan-16
Date Extracted: 07-Mar-16
Date Analyzed: 07-Mar-16
Prep Method: SW3050 Rev B

Prep Batch: IP160307-2
QCBatchID: IP160307-2-1
Run ID: IT160307-1A2
Cleanup: NONE
Basis: Dry Weight

Sample Aliquot: 1.062 g
Final Volume: 100 ml
Result Units: UG/KG
File Name: 160307A.

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-70-2	CALCIUM	10700000		4010000	107	100000	20	1
7723-14-0	PHOSPHORUS	2500000		1000000	94	20000	20	2

Data Package ID: *it1601062-1*

ICPMS Metals

Method SW6020A

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Lab ID: IP160111-3MB

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 11-Jan-16

Date Analyzed: 11-Jan-16

Prep Batch: IP160111-3

QCBatchID: IP160111-3-2

Run ID: IM160111-10A2

Cleanup: NONE

Basis: N/A

File Name: 003SMPL_

Sample Aliquot: 1 g

Final Volume: 100 ml

Result Units: UG/KG

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-61-1	URANIUM	10	5.4	10	5.4	U	

Data Package ID: *im1601062-1*

ICPMS Metals

Method SW6020A

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Lab ID: IM160111-3LCS

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 01/11/2016

Date Analyzed: 01/11/2016

Prep Method: SW3050B

Prep Batch: IP160111-3

QCBatchID: IP160111-3-2

Run ID: IM160111-10A2

Cleanup: NONE

Basis: N/A

File Name: 009SMPL_

Sample Aliquot: 1 g

Final Volume: 100 ml

Result Units: UG/KG

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-61-1	URANIUM	1000	976	10		98	80 - 120%

Data Package ID: im1601062-1

ICPMS Metals

Method SW6020A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Field ID: B347F9
LabID: 1601062-1MS

Sample Matrix: SOIL
% Moisture: 6.0
Date Collected: 05-Jan-16
Date Extracted: 11-Jan-16
Date Analyzed: 11-Jan-16
Prep Method: SW3050 Rev B

Prep Batch: IP160111-3
QCBatchID: IP160111-3-2
Run ID: IM160111-10A2
Cleanup: NONE
Basis: Dry Weight

Sample Aliquot: 1.037 g
Final Volume: 100 ml
Result Units: UG/KG
File Name: 015SMPL_

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-61-1	URANIUM	1400		2680	N	10.3	1030	126	75 - 125%

Field ID: B347F9
LabID: 1601062-1MSD

Sample Matrix: SOIL
% Moisture: 6.0
Date Collected: 05-Jan-16
Date Extracted: 11-Jan-16
Date Analyzed: 11-Jan-16
Prep Method: SW3050 Rev B

Prep Batch: IP160111-3
QCBatchID: IP160111-3-2
Run ID: IM160111-10A2
Cleanup: NONE
Basis: Dry Weight

Sample Aliquot: 1.032 g
Final Volume: 100 ml
Result Units: UG/KG
File Name: 016SMPL_

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-61-1	URANIUM	2380		1030	96	10.3	20	12

Data Package ID: *im1601062-1*



Inorganics Case Narrative

CH2M HILL Plateau Remediation Company 300-FF-5 Post ROD Field Investigation - Soils -- F15-014

Work Order Number: 1601062

1. This report consists of 8 soil samples.
2. The samples were received intact at ambient temperature by ALS on 01/18/2016.
3. The samples were prepared for analysis based on Environmental Monitoring Systems Laboratory (EMSL) Rev 2.1 procedures.
4. The samples were analyzed following EMSL procedures for the current revision of the following SOP and method:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Orthophosphate as P	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

5. All standards and solutions were used within their recommended shelf life.
6. The samples were prepared and analyzed within the established hold time for this analysis.

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

7. General quality control procedures.
 - n A preparation (method) blank and laboratory control sample (LCS) were prepared and analyzed with the samples in this preparation batch.
 - n The method blank associated with this batch was below the reporting limit for the requested analytes.



- n All laboratory control sample criteria were met with the exception of orthophosphate as P. The calibration verifications were within acceptance criteria, so no further action was taken.
- n All initial and continuing calibration blanks were below the reporting limit for the requested analytes.
- n All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes.

8. Matrix specific quality control procedures.

Sample 1601062-8 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.

- n A matrix spike (MS) and matrix spike duplicate (MSD) were prepared and analyzed with this batch. All guidance criteria for precision and accuracy were met with the following exception:

<u>Analyte</u>	<u>Sample ID</u>
Orthophosphate as P	1601062-8RPD

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

- n Matrix spike recoveries could not be evaluated for the following analyte:

<u>Analyte</u>	<u>Sample ID</u>
Orthophosphate as P	1601062-8MS & MSD

The concentration of this analyte in the native sample was greater than four times the concentration of matrix spike added. When sample concentration is that much greater than the spike added, spike recoveries may not be accurate. The calibration verifications indicate that the procedure was in control for orthophosphate as P.

9. Sample dilutions were not required for the requested analysis.

10. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in the current revision of SOP 939.



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.

Megan Johnstone
Megan Johnstone
Inorganics Primary Data Reviewer

1/20/16
Date

Arlie Elljes
Arlie Elljes
Inorganics Final Data Reviewer

1/20/16
Date



Inorganic Data Reporting Qualifiers

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

- Concentration 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 ALS's Method Detection Limit. If the analyte was analyzed for but not detected a "U" is entered.
- 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.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1601062

Client Name: CH2M HILL Plateau Remediation Company

Client Project Name: 300-FF-5 Post ROD Field Investigation - Soils

Client Project Number: F15-014

Client PO Number: BOA 54854

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B347F9	1601062-1		SOIL	05-Jan-16	14:15
B347H4	1601062-2		SOIL	05-Jan-16	14:40
B347F4	1601062-3		SOIL	05-Jan-16	13:50
B347D9	1601062-4		SOIL	05-Jan-16	13:20
B347D4	1601062-5		SOIL	05-Jan-16	11:00
B347D3	1601062-6		SOIL	05-Jan-16	11:05
B347C8	1601062-7		SOIL	05-Jan-16	10:35
B347C7	1601062-8		SOIL	05-Jan-16	10:35

Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Field ID: B347F9	Sample Matrix: SOIL	Prep Batch: IC160118-2	Analyst: Joel F. Nolte
Lab ID: 1601062-1	% Moisture: 6.0	QCBatchID: IC160118-2-1	Sample Aliquot: 4.29 g
	Date Collected: 05-Jan-16	Run ID: IC160118-1A2	Final Volume: 40 ml
	Date Extracted: 18-Jan-16	Cleanup: NONE	Result Units: MG/KG
	Date Analyzed: 18-Jan-16	Basis: Dry Weight	Clean DF: 1
	Prep Method: METHOD	File Name: 60118_067.dxd	

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 23:57	1	1.1	0.99	0.3		
16887-00-6	CHLORIDE AnalysisTime: 23:57	1	3.8	2	0.6		
14797-65-0	NITRITE AS N AnalysisTime: 23:57	1	0.3	0.99	0.3	U	
14797-55-8	NITRATE AS N AnalysisTime: 23:57	1	0.6	2	0.6	U	
14265-44-2	ORTHOPHOSPHATE AS P AnalysisTime:	1	67	5	0.6		
14808-79-8	SULFATE AnalysisTime: 23:57	1	8.3	9.9	3	B	

Data Package ID: *ic1601062-1*

Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Field ID:	B347H4
Lab ID:	1601062-2

Sample Matrix: SOIL
 % Moisture: 9.9
 Date Collected: 05-Jan-16
 Date Extracted: 18-Jan-16
 Date Analyzed: 19-Jan-16
 Prep Method: METHOD

Prep Batch: IC160118-2
 QCBatchID: IC160118-2-1
 Run ID: IC160118-1A2
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 60118_068.dxd

Analyst: Joel F. Nolte
 Sample Aliquot: 4.03 g
 Final Volume: 40 ml
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 00:12	1	0.82	1.1	0.33	B	
16887-00-6	CHLORIDE AnalysisTime: 00:12	1	2.7	2.2	0.66		
14797-65-0	NITRITE AS N AnalysisTime: 00:12	1	0.33	1.1	0.33	U	
14797-55-8	NITRATE AS N AnalysisTime: 00:12	1	0.66	2.2	0.66	U	
14265-44-2	ORTHOPHOSPHATE AS P AnalysisTime:	1	14	5.5	0.66		
14808-79-8	SULFATE AnalysisTime: 00:12	1	8.3	11	3.3	B	

Data Package ID: *ic1601062-1*

Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Field ID:	B347F4
Lab ID:	1601062-3

Sample Matrix: SOIL
 % Moisture: 11.2
 Date Collected: 05-Jan-16
 Date Extracted: 18-Jan-16
 Date Analyzed: 19-Jan-16
 Prep Method: METHOD

Prep Batch: IC160118-2
 QCBatchID: IC160118-2-1
 Run ID: IC160118-1A2
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 60118_069.dxd

Analyst: Joel F. Nolte
 Sample Aliquot: 4.07 g
 Final Volume: 40 ml
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 00:27	1	1.2	1.1	0.33		
16887-00-6	CHLORIDE AnalysisTime: 00:27	1	1.7	2.2	0.66	B	
14797-65-0	NITRITE AS N AnalysisTime: 00:27	1	0.33	1.1	0.33	U	
14797-55-8	NITRATE AS N AnalysisTime: 00:27	1	0.73	2.2	0.66	B	
14265-44-2	ORTHOPHOSPHATE AS P AnalysisTime:	1	30	5.5	0.66		
14808-79-8	SULFATE AnalysisTime: 00:27	1	5	11	3.3	B	

Data Package ID: *ic1601062-1*

Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Field ID:	B347D9
Lab ID:	1601062-4

Sample Matrix: SOIL
 % Moisture: 9.4
 Date Collected: 05-Jan-16
 Date Extracted: 18-Jan-16
 Date Analyzed: 19-Jan-16
 Prep Method: METHOD

Prep Batch: IC160118-2
 QCBatchID: IC160118-2-1
 Run ID: IC160118-1A2
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 60118_070.dxd

Analyst: Joel F. Nolte
 Sample Aliquot: 4.18 g
 Final Volume: 40 ml
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 00:42	1	0.82	1.1	0.32	B	
16887-00-6	CHLORIDE AnalysisTime: 00:42	1	1.6	2.1	0.63	B	
14797-65-0	NITRITE AS N AnalysisTime: 00:42	1	0.32	1.1	0.32	U	
14797-55-8	NITRATE AS N AnalysisTime: 00:42	1	0.63	2.1	0.63	U	
14265-44-2	ORTHOPHOSPHATE AS P AnalysisTime:	1	49	5.3	0.63		
14808-79-8	SULFATE AnalysisTime: 00:42	1	5.7	11	3.2	B	

Data Package ID: *ic1601062-1*

Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Field ID:	B347D4
Lab ID:	1601062-5

Sample Matrix: SOIL
 % Moisture: 0.0
 Date Collected: 05-Jan-16
 Date Extracted: 18-Jan-16
 Date Analyzed: 19-Jan-16
 Prep Method: METHOD

Prep Batch: IC160118-2
 QCBatchID: IC160118-2-1
 Run ID: IC160118-1A2
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 60118_071.dxd

Analyst: Joel F. Nolte
 Sample Aliquot: 4.15 g
 Final Volume: 40 ml
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 00:57	1	0.29	0.96	0.29	U	
16887-00-6	CHLORIDE AnalysisTime: 00:57	1	0.58	1.9	0.58	U	
14797-65-0	NITRITE AS N AnalysisTime: 00:57	1	0.29	0.96	0.29	U	
14797-55-8	NITRATE AS N AnalysisTime: 00:57	1	0.58	1.9	0.58	U	
14265-44-2	ORTHOPHOSPHATE AS P AnalysisTime:	1	2.2	4.8	0.58	B	
14808-79-8	SULFATE AnalysisTime: 00:57	1	3.2	9.6	2.9	B	

Data Package ID: ic1601062-1

Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Field ID: B347D3 Lab ID: 1601062-6	Sample Matrix: SOIL % Moisture: 7.6 Date Collected: 05-Jan-16 Date Extracted: 18-Jan-16 Date Analyzed: 19-Jan-16 Prep Method: METHOD	Prep Batch: IC160118-2 QCBatchID: IC160118-2-1 Run ID: IC160118-1A2 Cleanup: NONE Basis: Dry Weight File Name: 60118_074.dxd	Analyst: Joel F. Nolte Sample Aliquot: 4.32 g Final Volume: 40 ml Result Units: MG/KG Clean DF: 1
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CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 01:42	1	0.93	1	0.3	B	
16887-00-6	CHLORIDE AnalysisTime: 01:42	1	1.4	2	0.6	B	
14797-65-0	NITRITE AS N AnalysisTime: 01:42	1	0.3	1	0.3	U	
14797-55-8	NITRATE AS N AnalysisTime: 01:42	1	0.6	2	0.6	U	
14265-44-2	ORTHOPHOSPHATE AS P AnalysisTime:	1	79	5	0.6		
14808-79-8	SULFATE AnalysisTime: 01:42	1	5.2	10	3	B	

Data Package ID: *ic1601062-1*

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Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Field ID:	B347C8
Lab ID:	1601062-7

Sample Matrix: SOIL
 % Moisture: 7.7
 Date Collected: 05-Jan-16
 Date Extracted: 18-Jan-16
 Date Analyzed: 19-Jan-16
 Prep Method: METHOD

Prep Batch: IC160118-2
 QCBatchID: IC160118-2-1
 Run ID: IC160118-1A2
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 60118_075.dxd

Analyst: Joel F. Nolte
 Sample Aliquot: 4.26 g
 Final Volume: 40 ml
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 01:58	1	0.99	1	0.31	B	
16887-00-6	CHLORIDE AnalysisTime: 01:58	1	2.7	2	0.61		
14797-65-0	NITRITE AS N AnalysisTime: 01:58	1	0.31	1	0.31	U	
14797-55-8	NITRATE AS N AnalysisTime: 01:58	1	0.82	2	0.61	B	
14265-44-2	ORTHOPHOSPHATE AS P AnalysisTime:	1	130	5.1	0.61		
14808-79-8	SULFATE AnalysisTime: 01:58	1	8.2	10	3.1	B	

Data Package ID: *ic1601062-1*

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Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Field ID:	B347C7
Lab ID:	1601062-8

Sample Matrix: SOIL
 % Moisture: 9.7
 Date Collected: 05-Jan-16
 Date Extracted: 18-Jan-16
 Date Analyzed: 19-Jan-16
 Prep Method: METHOD

Prep Batch: IC160118-2
 QCBatchID: IC160118-2-1
 Run ID: IC160118-1A2
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 60118_076.dxd

Analyst: Joel F. Nolte
 Sample Aliquot: 4.36 g
 Final Volume: 40 ml
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 02:13	1	1	1	0.3	B	
16887-00-6	CHLORIDE AnalysisTime: 02:13	1	2.2	2	0.61		
14797-65-0	NITRITE AS N AnalysisTime: 02:13	1	0.3	1	0.3	U	
14797-55-8	NITRATE AS N AnalysisTime: 02:13	1	0.61	2	0.61	U	
14265-44-2	ORTHOPHOSPHATE AS P AnalysisTime:	1	130	5.1	0.61		
14808-79-8	SULFATE AnalysisTime: 02:13	1	6.3	10	3	B	

Data Package ID: *ic1601062-1*

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Method EPA300.0 Revision 2.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Lab ID: IC160118-2MB

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 18-Jan-16

Date Analyzed: 18-Jan-16

Prep Batch: IC160118-2

QCBatchID: IC160118-2-1

Run ID: IC160118-1A2

Cleanup: NONE

Basis: N/A

File Name: 60118_064.dxd

Sample Aliquot: 4 g

Final Volume: 40 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.3	1	0.3	U	
16887-00-6	CHLORIDE	1	0.6	2	0.6	U	
14797-65-0	NITRITE AS N	1	0.3	1	0.3	U	
14797-55-8	NITRATE AS N	1	0.6	2	0.6	U	
14265-44-2	ORTHOPHOSPHATE AS P	1	0.6	5	0.6	U	
14808-79-8	SULFATE	1	3	10	3	U	

Data Package ID: ic1601062-1

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Method EPA300.0 Revision 2.1

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1601062

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Lab ID: IC160118-2LCS

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 01/18/2016

Date Analyzed: 01/18/2016

Prep Method: METHOD

Prep Batch: IC160118-2

QCBatchID: IC160118-2-1

Run ID: IC160118-1A2

Cleanup: NONE

Basis: N/A

File Name: 60118_066.dxd

Sample Aliquot: 4 g

Final Volume: 40 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
16984-48-8	FLUORIDE	20	19	1		95	85 - 115%
16887-00-6	CHLORIDE	50	47.4	2		95	85 - 115%
14797-65-0	NITRITE AS N	20	20.3	1		101	85 - 115%
14797-55-8	NITRATE AS N	50	48.2	2		96	85 - 115%
14265-44-2	ORTHOPHOSPHATE AS P	20	24.6	5	N	123	85 - 115%
14808-79-8	SULFATE	200	185	10		92	85 - 115%

Data Package ID: *ic1601062-1*

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Method EPA300.0 Revision 2.1

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC
Work Order Number: 1601062
Client Name: CH2M HILL Plateau Remediation Company
Client Project ID: 300-FF-5 Post ROD Field Investigation - Soils F15-014

Field ID: B347C7 LabID: 1601062-8MS	Sample Matrix: SOIL % Moisture: 9.7 Date Collected: 05-Jan-16 Date Extracted: 18-Jan-16 Date Analyzed: 19-Jan-16 Prep Method: METHOD	Prep Batch: IC160118-2 QCBatchID: IC160118-2-1 Run ID: IC160118-1A2 Cleanup: NONE Basis: Dry Weight	Sample Aliquot: 4.21 g Final Volume: 40 ml Result Units: MG/KG File Name: 60118_077.dxd
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CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
16984-48-8	FLUORIDE	1	B	19.4		1.05	21	87	85 - 115%
16887-00-6	CHLORIDE	2.2		52.4		2.1	52.6	95	85 - 115%
14797-65-0	NITRITE AS N	0.316	U	21.7		1.05	21.1	103	85 - 115%
14797-55-8	NITRATE AS N	0.631	U	50.8		2.1	52.6	97	85 - 115%
14265-44-2	ORTHOPHOSPHATE AS P	130		165		5.26	21	147	85 - 115%
14808-79-8	SULFATE	6.3	B	198		10.5	210	91	85 - 115%

Field ID: B347C7 LabID: 1601062-8MSD	Sample Matrix: SOIL % Moisture: 9.7 Date Collected: 05-Jan-16 Date Extracted: 18-Jan-16 Date Analyzed: 19-Jan-16 Prep Method: METHOD	Prep Batch: IC160118-2 QCBatchID: IC160118-2-1 Run ID: IC160118-1A2 Cleanup: NONE Basis: Dry Weight	Sample Aliquot: 4.23 g Final Volume: 40 ml Result Units: MG/KG File Name: 60118_078.dxd
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CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
16984-48-8	FLUORIDE	18.8		20.9	85	1.05	30	3
16887-00-6	CHLORIDE	52.9		52.4	97	2.09	30	1
14797-65-0	NITRITE AS N	21.4		21	102	1.05	30	1
14797-55-8	NITRATE AS N	50.4		52.3	96	2.09	30	1
14265-44-2	ORTHOPHOSPHATE AS P	113	*	20.9	-102	5.24	30	38
14808-79-8	SULFATE	198		209	92	10.5	30	0

Data Package ID: ic1601062-1