



Wednesday, January 20, 2016

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

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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

<b>SAMPLE ISSUE RESOLUTION</b>	<b>SIR NUM</b>	SIR16-177
	<b>REV NUM</b>	0
	<b>DATE INITIATED</b>	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

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

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**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

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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		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F15-014-371	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-005	PROJECT DESIGNATION 300-FF-5 Post ROD Field Investigation - Soils	FIELD LOGBOOK NO. HNF-N-507-33 / P24	ACTUAL SAMPLE DEPTH 30.50' - 31.00'	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT FEDERAL EXPRESS
ICE CHEST NO. CWS-443	OFFSITE PROPERTY NO. 6263	COA 303492	BILL OF LADING/AIR BILL NO. 775364307964	ORIGINAL	
SHIPPED TO ALS Environmental Ft. Collins					

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/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A	PRESERVATION 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);	SAMPLE DATE 01-05-16	SAMPLE TIME 1415	MATRIX* SOIL
SPECIAL HANDLING AND/OR STORAGE										

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS PORTION B	
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		
RELINQUISHED BY/REMOVED FROM SSU-1	DATE/TIME JAN 07 2016 0800	RECEIVED BY/STORED IN L.D. Wall	DATE/TIME JAN 07 2016		
RELINQUISHED BY/REMOVED FROM L.D. Wall	DATE/TIME JAN 07 2016 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME JAN 07 2016		
RELINQUISHED BY/REMOVED FROM Fedex	DATE/TIME	RECEIVED BY/STORED IN Rebecca Perole	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	
DISPOSAL METHOD	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	
PRINTED ON 12/29/2015	FRS ID = FSR15654	TRVL NUM = TRVL-16-054		A-6003-618 (REV 2)	

**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** TODAY, D  
**TELEPHONE NO.** 376-6427  
**PROJECT COORDINATOR** TODAY, D  
**SAF NO.** FL5-014  
**COA** 303492  
**PRICE CODE** C13  
**AIR QUALITY**   
**METHOD OF SHIPMENT** FEDERAL EXPRESS  
**PAGE 1 OF 1**  
**DATA TURNAROUND** 3 Days / 3 Days  
**ORIGINAL**

**FIELD LOGBOOK NO.** HNF-2-507-33 / Pg 24  
**ACTUAL SAMPLE DEPTH** 33.00' - 33.50'  
**OFFSITE PROPERTY NO.** 6283  
**BILL OF LADING / AIR BILL NO.** 75364307764  
**1601062**

<b>PRESERVATION</b>	None
<b>HOLDING TIME</b>	6 Months
<b>TYPE OF CONTAINER</b>	G/P
<b>NO. OF CONTAINER(S)</b>	1
<b>VOLUME</b>	60ml
<b>SAMPLE ANALYSIS</b>	6020 METALS, ICP/MS, COPPER, CHROMIUM (Add only) (Uranium);
<b>SAMPLE DATE</b>	01-05-16
<b>SAMPLE TIME</b>	1440

**SPECIAL HANDLING AND/OR STORAGE**

**SAMPLE NO.** B347H4 (2) **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 INSTRUCTIONS**  
 PORTION B

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. 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 SECTION** RECEIVED BY  
**FINAL SAMPLE DISPOSITION** DISPOSAL METHOD

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

CH2M Hill 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-233 / 24	ACTUAL SAMPLE DEPTH 29.50' - 30.00'	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT FEDERAL EXPRESS
ICE CHEST NO. GWS-443	OFFSITE PROPERTY NO. 275364307564	COA 303492	BILL OF LADING/AIR BILL NO. 1601062	<b>ORIGINAL</b>	

MATRIX* A=Air DL=Drum L=Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	PRESERVATION 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 NO. B347F4 (3)	MATRIX* SOIL	SAMPLE DATE 01-05-16	SAMPLE TIME 1350	CHECKED BY: [Signature]		
	Sample Taken from Shoe CA 01-05-14						

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM J.R. Aguilera/CHPRC	RECEIVED BY/STORED IN SSU #1	PORTION B
DATE/TIME JAN 05 2015 1540	DATE/TIME JAN 05 2015 1540	
RELINQUISHED BY/REMOVED FROM SSU-1	RECEIVED BY/STORED IN L.D. Wall	
DATE/TIME JAN 07 2016 0800	DATE/TIME JAN 07 2016 0800	
RELINQUISHED BY/REMOVED FROM L.D. Wall	RECEIVED BY/STORED IN FEDEX	
DATE/TIME JAN 07 2016 1400	DATE/TIME JAN 07 2016 1400	
RELINQUISHED BY/REMOVED FROM Fedex	RECEIVED BY/STORED IN Ms. Rebecca Poole	
DATE/TIME JAN 07 2016 1816	DATE/TIME JAN 07 2016 1816	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
LABORATORY RECEIVED BY	TITLE	DATE/TIME
SECTION	DISPOSED BY	DATE/TIME
FINAL SAMPLE POSITION		
DISPOSAL METHOD		
PRINTED ON 12/29/2015	FSR ID = FSR15053	TRVL NUM = TRVL16054
		A-6003-618 (REV 16-1)



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F15-014-356	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 EB	PROJECT DESIGNATION 300-FE-5 Post ROD Field Investigation - Soils		SAF NO. F15-014	AIR QUALITY	
ICE CHEST NO. GWS-443	FIELD LOGBOOK NO. 14 NF-N-507-33/Ry 24	ACTUAL SAMPLE DEPTH N/A	COA 303492	METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO ALS Environmental Ft. Collins	OFFSITE PROPERTY NO. 6063		BILL OF LADING/AIR BILL NO. 775364307264 1601062		

MATRIX*	PRESERVATION	None
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other	HOLDING TIME	6 Months
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	TYPE OF CONTAINER	G/P
SPECIAL HANDLING AND/OR STORAGE	NO. OF CONTAINER(S)	1
	VOLUME	60mL
	SAMPLE ANALYSIS	6020_METALS, ICPMS, COMMON (Add-on) (Uranium);
SAMPLE NO. B347D4 (5)	MATRIX*	SOIL
	SAMPLE DATE	01-05-16
	SAMPLE TIME	1100

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
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	DATE/TIME	RECEIVED BY/STORED IN FEDEX	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN Mr. Rebecca Norek	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		
DISPOSAL METHOD	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		
PRINTED ON 12/29/2015	FSR ID# FSR15651	TRVL NUM# TRVL-16-054	A-6003-6 (REV 2)		

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F15-014-355	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 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				
SECTION	DISPOSED BY				
FINAL SAMPLE DISPOSITION	DATE/TIME				
PRINTED ON 12/29/2015		FSR ID = FSR15650		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	ACTUAL SAMPLE DEPTH 21.50' - 22.00'	SAF NO. F15-014	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT FEDERAL EXPRESS
ICE CHEST NO. CWS-443	FIELD LOGBOOK NO. HNF-12-507-33/Pg 24	OFFSITE PROPERTY NO. 663	COA 303492	ORIGINAL	
SHIPPED TO ALS Environmental Ft. Collins					

B347C8	MATRIX* SOIL	SAMPLE NO.	MATRIX*	DATE/TIME
7				JAN 05 2015 1540
				JAN 07 2016 0800
				JAN 07 2016 1400

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

SIGN/PRINT NAMES		SPECIAL INSTRUCTIONS	
RECEIVED BY/STORED IN SSU # 1	DATE/TIME JAN 05 2015 1540	PORTION B	
RECEIVED BY/STORED IN L.D. Wall	DATE/TIME JAN 07 2016 0800		
RECEIVED BY/STORED IN FEDEX	DATE/TIME JAN 07 2016 1816 1005		
RECEIVED BY/STORED IN	DATE/TIME		
RECEIVED BY/STORED IN	DATE/TIME		
RECEIVED BY/STORED IN	DATE/TIME		
RECEIVED BY/STORED IN	DATE/TIME		
RECEIVED BY	TITLE	DISPOSED BY	
LABORATORY SECTION	RECEIVED BY	DISPOSAL METHOD	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	TRVL NUM = TRVL-16-054	
PRINTED ON 12/29/2015	FRSR ID = FSR15649	REV 1A-6003-618 (REV 2)	

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

FLS-014-349 PAGE 1 OF 1

PRICE CODE C13 DATA TURNAROUND 3 Days / 3 Days

AIR QUALITY  METHOD OF SHIPMENT ORIGINAL FEDERAL EXPRESS

COMPANY CONTACT: TODAY, D TELEPHONE NO. 376-6427 PROJECT COORDINATOR: TODAY, D

PROJECT DESIGNATION: 300-FF-5 Post-ROD Field Investigation - Soils SAF NO. FLS-014 COA 303492

FIELD LOGBOOK NO. ACTUAL SAMPLE DEPTH: 21.50' - 22.00'

OFFSITE PROPERTY NO. 14NF-P-S07-33/1824 BILL OF LADING/AIR BILL NO. 775364307764

ICE CHEST NO. 625-443

SHIPPED TO: ALS Environmental Ft. Collins 1601062

<b>PRESERVATION</b>	None
<b>HOLDING TIME</b>	6 Months
<b>TYPE OF CONTAINER</b>	G/P
<b>NO. OF CONTAINER(S)</b>	1
<b>VOLUME</b>	60ml
<b>SAMPLE ANALYSIS</b>	6070, METALS, ICPMS, COMBON (Add on) (Uranium);
<b>SAMPLE DATE</b>	01-05-14
<b>SAMPLE TIME</b>	1035
<b>MATRIX*</b>	SOIL

Used Liner is due to 25% Recovery  
CA 01-05-14

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	RECEIVED BY/STORED IN	DATE/TIME	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM J.R. Aguilar/CHPRC	SSU #1	JAN 05 2015	1540	PORTION B
RELINQUISHED BY/REMOVED FROM SSU-1	L.B. Wall	JAN 07 2016	0800	
RELINQUISHED BY/REMOVED FROM CHPRC	CHPRC	JAN 07 2016	1400	
RELINQUISHED BY/REMOVED FROM Fedex	FEDEX			
RELINQUISHED BY/REMOVED FROM	My Mtr Rebecca Neale	1/11/16	1005	
RELINQUISHED BY/REMOVED FROM				
RELINQUISHED BY/REMOVED FROM				
RELINQUISHED BY/REMOVED FROM				
RELINQUISHED BY/REMOVED FROM				



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 Amount of sediment: ___ dusting ___ moderate ___ heavy	<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>AMB</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/NET3670  
BILL THIRD PARTY

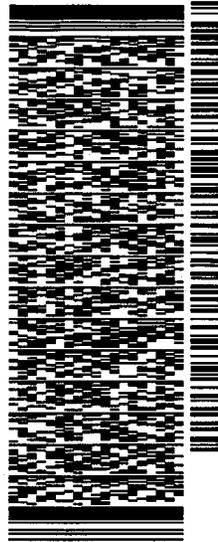
TO JULIE ELLINGSON

225 COMMERCE DRIVE

FORT COLLINS CO 80524

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

539J10E61/31D0



J152015001001ur

TRK# 7753 6430 7764  
0201

FRI - 08 JAN 10:30A  
PRIORITY OVERNIGHT  
DSR

XH FTCA

80524  
co-us DEN



**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.

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## Metals Case Narrative

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### **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, 3<sup>rd</sup> Edition procedures.

For analysis by ICP-MS, the samples were digested following method 3050B and the current revision of SOP 806.

4. 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 this digestion batch.
  - The preparation (method) blank associated with this digestion batch was below the reporting limit for the requested analyte. 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.

8. Matrix specific quality control procedures.

Sample 1601062-1 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 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.

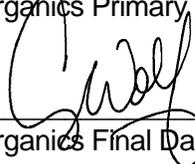
- A sample duplicate and matrix spike duplicate were digested and analyzed with this batch. All acceptance criteria for precision were met.
- A serial dilution was analyzed with this ICP batch. All acceptance criteria were met.

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

1/12/16  
 \_\_\_\_\_  
 Date

  
 \_\_\_\_\_  
 Inorganics Final Data Reviewer

1/12/16  
 \_\_\_\_\_  
 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 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*

# 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_
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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_
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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

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### 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

Julie Elliza  
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

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**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

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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
Lab ID:	1601062-1

Sample Matrix: SOIL  
 % Moisture: 6.0  
 Date Collected: 05-Jan-16  
 Date Extracted: 18-Jan-16  
 Date Analyzed: 18-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\_067.dxd

Analyst: Joel F. Nolte  
 Sample Aliquot: 4.29 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: 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	<b>Sample Matrix:</b> SOIL	<b>Prep Batch:</b> IC160118-2	<b>Analyst:</b> Joel F. Nolte
Lab ID: 1601062-3	% Moisture: 11.2	<b>QCBatchID:</b> IC160118-2-1	<b>Sample Aliquot:</b> 4.07 g
	<b>Date Collected:</b> 05-Jan-16	<b>Run ID:</b> IC160118-1A2	<b>Final Volume:</b> 40 ml
	<b>Date Extracted:</b> 18-Jan-16	<b>Cleanup:</b> NONE	<b>Result Units:</b> MG/KG
	<b>Date Analyzed:</b> 19-Jan-16	<b>Basis:</b> Dry Weight	<b>Clean DF:</b> 1
	<b>Prep Method:</b> METHOD	<b>File Name:</b> 60118_069.dxd	

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

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*

# 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:	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*

# 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:	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*

# Ion Chromatography

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

# Ion Chromatography

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*

# Ion Chromatography

## 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

<b>Field ID:</b> B347C7
<b>LabID:</b> 1601062-8MS

<b>Sample Matrix:</b> SOIL	<b>Prep Batch:</b> IC160118-2	<b>Sample Aliquot:</b> 4.21 g
<b>% Moisture:</b> 9.7	<b>QCBatchID:</b> IC160118-2-1	<b>Final Volume:</b> 40 ml
<b>Date Collected:</b> 05-Jan-16	<b>Run ID:</b> IC160118-1A2	<b>Result Units:</b> MG/KG
<b>Date Extracted:</b> 18-Jan-16	<b>Cleanup:</b> NONE	<b>File Name:</b> 60118_077.dxd
<b>Date Analyzed:</b> 19-Jan-16	<b>Basis:</b> Dry Weight	
<b>Prep Method:</b> METHOD		

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%

<b>Field ID:</b> B347C7
<b>LabID:</b> 1601062-8MSD

<b>Sample Matrix:</b> SOIL	<b>Prep Batch:</b> IC160118-2	<b>Sample Aliquot:</b> 4.23 g
<b>% Moisture:</b> 9.7	<b>QCBatchID:</b> IC160118-2-1	<b>Final Volume:</b> 40 ml
<b>Date Collected:</b> 05-Jan-16	<b>Run ID:</b> IC160118-1A2	<b>Result Units:</b> MG/KG
<b>Date Extracted:</b> 18-Jan-16	<b>Cleanup:</b> NONE	<b>File Name:</b> 60118_078.dxd
<b>Date Analyzed:</b> 19-Jan-16	<b>Basis:</b> Dry Weight	
<b>Prep Method:</b> METHOD		

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