



July 1, 2015

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

Re: ALS Workorder: 1505215  
Project Name: RCRA, May 2015  
Project Number: W15-005

Dear Ms. Waters-Husted:

Four water samples were received from CH2M HILL Plateau Remediation Company, on 5/12/2015. The samples were scheduled for the following analyses:

Total Organic Carbon

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

This report was originally submitted on 6/1/2015. It is being re-submitted to evaluate the results down to the MDL.

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

Sincerely,

ALS Environmental  
Julie Ellingson  
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

**Problem and Discrepancy Report**

**ALS**

**SDG ALS1505215**

**06/17/15**

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**The data package has the following issues:**

Please re-evaluate the TOC results for non-detects at the MDL instead of the PQL. Please report the corrected hardcopy and electronic results.

**Resolution:**            *Provide correction.*

**Lab Response:** Result have been re-evaluated and re-reported to the MDL.

**Please report and re-submit the hard copy and electronic data package.**

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

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**OrderNum: 1505215****Client Name: CH2M HILL Plateau Remediation Company****Client Project Name: RCRA, MAY 2015****Client Project Number: W15-005****Client PO Number: BOA 54854**

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B314R8	1505215-1		WATER	11-May-15	10:05
B314R9	1505215-2		WATER	11-May-15	10:05
B314T0	1505215-3		WATER	11-May-15	10:05
B314T1	1505215-4		WATER	11-May-15	10:05

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # W15-005-169

Page 1 of 1

Collector: S.W. King/CHPRC  
 SAF No.: W15-005  
 Project Title: RCRA, MAY 2015  
 Shipped To (Lab): ALS Environmental Ft. Collins  
 Protocol: RCRA

Contact/Requester: Karen Waters-Husted  
 Sampling Origin: Hanford Site  
 Logbook No.: HNF-N-506-70/80  
 Method of Shipment: Commercial Carrier  
 Priority: 30 Days

Telephone No.: 509-376-4650  
 Purchase Order/Charge Code: 300071  
 Ice Chest No.: 625-232  
 Bill of Lading/Air Bill No.: 773572987714  
 Offsite Property No.: 5632

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

**SPECIAL INSTRUCTIONS**  
 N/A

Total Activity Exemption: Yes  No

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B314R8 ①	N	MAY 11 2015	1005	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B314R9 ②	N	↓	↓	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B314T0 ③	N	↓	↓	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B314T1 ④	N	MAY 11 2015	1005	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

July 01, 2015

ALS1505215\_R1

Rev. 1

Relinquished By: S.W. King/CHPRC (Signature) Print: S.W. King Sign: S.W. King  
 Date/Time: MAY 11 2015 1005

Received By: M.A. White/CHPRC Print: M.A. White Sign: M.A. White  
 Date/Time: MAY 11 2015 1005

Relinquished By: M.A. White/CHPRC (Signature) Print: M.A. White Sign: M.A. White  
 Date/Time: MAY 11 2015 1400

Received By: FEDEX  
 Date/Time: MAY 11 2015 1400

Relinquished By: M.A. White/CHPRC (Signature) Print: M.A. White Sign: M.A. White  
 Date/Time: MAY 11 2015 1400

Received By: C-Trumble Controls  
 Date/Time: 5-12-15 1000

Relinquished By: M.A. White/CHPRC (Signature) Print: M.A. White Sign: M.A. White  
 Date/Time: MAY 11 2015 1400

Received By: C-Trumble Controls  
 Date/Time: 5-12-15 1000

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

Disposal Method (e.g., Return to customer, per lab procedure, used in process)  
 Disposed By: C-Trumble Controls  
 Date/Time: 5-12-15 1000



ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC

Workorder No: 1505215

Project Manager: JE

Initials: CDJ Date: 5-12-15

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

Cooler #: 1

Temperature (°C): 3.6

No. of custody seals on cooler: 2

External µR/hr reading: 12

Background µR/hr reading: 12

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria?  YES /  NO /  NA (If no, see Form 008.)

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

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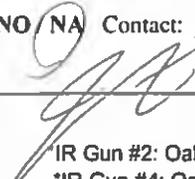


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If applicable, was the client contacted? YES / NO / NA Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager Signature / Date:  5/12/15

1505215 12  
-2

From: (509) 528-0426  
Lesly Wall  
CH2M  
6267 Latah St.  
6269 Latah St.  
Richland, WA 99354

Origin ID: PSCA



Ship Date: 11MAY15  
ActWgt: 17.0 LB  
CAD: 107066051/MNET3810

Delivery Address Bar Code



SHIP TO: (970) 498-1511  
Julie Ellingson  
ALS Global  
225 Commerce Drive

BILL THRD PARTY

Ref # ptr# 5632  
Invoice #  
PO #  
Dept #

3.6'

FORT COLLINS, CO 80524

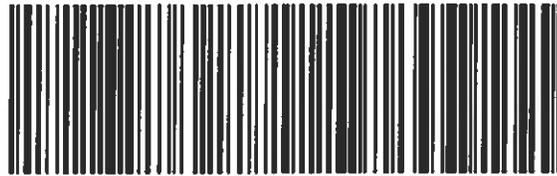
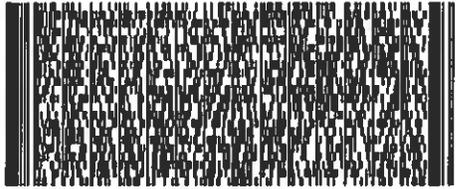
TUE - 12 MAY 10:30A  
PRIORITY OVERNIGHT

TRK# 7735 7298 7714

0281

DSR  
80524  
CO-US  
DEN

XH FTCA



537.J3/C918/EE4B

**After printing this label**

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

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

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## Organic Carbon Case Narrative

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### CH2M HILL Plateau Remediation Company

RCRA, MAY 2015 -- W15-005

Work Order Number: 1505215

1. This report consists of four water samples.
2. The samples were received cool and intact by ALS on 05/12/15.
3. The samples had been correctly preserved for the requested analysis.
4. The samples were prepared for analysis based on SW-846, 3<sup>rd</sup> Edition procedures.
5. The samples were analyzed following SW-846, 3<sup>rd</sup> Edition procedures for the current revision of the following SOP and method:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
TOC (Total Organic Carbon)	9060	670

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

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

8. General quality control procedures.
  - n A preparation (method) blank, laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) 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 analyte.
  - n All laboratory control sample criteria were met.



- n All initial and continuing calibration verifications were within the acceptance criteria for the requested analyte.

9. Matrix specific quality control procedures.

Sample 1505215-4 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.

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

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  
Organics Primary Data Reviewer

7/1/15  
Date

  
\_\_\_\_\_  
Julie Ellinger  
Organics Final Data Reviewer

7/1/15  
Date



### Data Reporting Qualifiers

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

- Result qualifier -- A "B" is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL). If the analyte was analyzed for but not detected a "U" is entered. For samples, negative values are reported as non-detects ("U" flagged). For blanks, if the absolute value of the negative value is above the MDL and below the reporting limit, then the result is "B" flagged.
- QC qualifier -- Specified entries and their meanings are as follows:
  - E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
  - M - Duplicate injection precision was not met.
  - N - Spiked sample recovery not within control limits.
  - 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.
  - 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.

# Organic Carbon

Method SW9060

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1505215

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, MAY 2015 W15-005

Lab ID: MO150513-2MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 13-May-15

Date Analyzed: 13-May-15

Prep Batch: MO150513-2

QCBatchID: MO150513-2-1

Run ID: MO150513-1A2

Cleanup: NONE

Basis: N/A

File Name: 05130906

Sample Aliquot: 40 ml

Final Volume: 40 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
10-35-5	TOTAL ORGANIC CARBON	1	0.3	1	0.3	U	

Data Package ID: MO1505215-1

**TOTAL ORGANIC CARBON****Method SW9060****Sample Results**

**Lab Name:** ALS Environmental -- FC  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** RCRA, MAY 2015 W15-005  
**Work Order Number:** 1505215      **Final Volume:** 40 ml  
**Reporting Basis:** As Received      **Matrix:** WATER  
**Analyst:** Steven D. White      **Result Units:** MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Flag	Sample Aliquot
B314R8	1505215-1	5/11/2015	5/13/2015	05/13/2015	N/A	1	0.3	1	0.3	U	40 ml
B314R9	1505215-2	5/11/2015	5/13/2015	05/13/2015	N/A	1	0.3	1	0.3	U	40 ml
B314T0	1505215-3	5/11/2015	5/13/2015	05/13/2015	N/A	1	0.3	1	0.3	U	40 ml
B314T1	1505215-4	5/11/2015	5/13/2015	05/13/2015	N/A	1	0.3	1	0.3	U	40 ml

**Comments:**

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

**Data Package ID:** *MO1505215-1*

# Organic Carbon

## Method SW9060

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1505215

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, MAY 2015 W15-005

Lab ID: MO150513-2LCS	Sample Matrix: WATER	Prep Batch: MO150513-2	Sample Aliquot: 40 ml
	% Moisture: N/A	QCBatchID: MO150513-2-1	Final Volume: 40 ml
	Date Collected: N/A	Run ID: MO150513-1A2	Result Units: MG/L
	Date Extracted: 05/13/2015	Cleanup: NONE	Clean DF: 1
	Date Analyzed: 05/13/2015	Basis: N/A	
	Prep Method: NONE	File Name: 05130906	

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
10-35-5	TOTAL ORGANIC CARBON	15	15.8	1		105	85 - 115%

Lab ID: MO150513-2LCSD	Sample Matrix: WATER	Prep Batch: MO150513-2	Sample Aliquot: 40 ml
	% Moisture: N/A	QCBatchID: MO150513-2-1	Final Volume: 40 ml
	Date Collected: N/A	Run ID: MO150513-1A2	Result Units: MG/L
	Date Extracted: 05/13/2015	Cleanup: NONE	Clean DF: 1
	Date Analyzed: 05/13/2015	Basis: N/A	
	Prep Method: NONE	File Name: 05130906	

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
10-35-5	TOTAL ORGANIC CARBON	15	15.8	1		105	20	0

Data Package ID: MO1505215-1

# Organic Carbon

Method SW9060

## Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1505215

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, MAY 2015 W15-005

Field ID: B314T1
LabID: 1505215-4MS

**Sample Matrix:** WATER  
**% Moisture:** N/A  
**Date Collected:** 11-May-15  
**Date Extracted:** 13-May-15  
**Date Analyzed:** 13-May-15  
**Prep Method:** NONE  
**Prep Batch:** MO150513-2  
**QCBatchID:** MO150513-2-1  
**Run ID:** MO150513-1A2  
**Cleanup:** NONE  
**Basis:** As Received  
**Sample Aliquot:** 40 ml  
**Final Volume:** 40 ml  
**Result Units:** MG/L  
**File Name:** 05130906

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
10-35-5	TOTAL ORGANIC CARBON	0.3	U	11		1	10	109	80 - 120%

Field ID: B314T1
LabID: 1505215-4MSD

**Sample Matrix:** WATER  
**% Moisture:** N/A  
**Date Collected:** 11-May-15  
**Date Extracted:** 13-May-15  
**Date Analyzed:** 13-May-15  
**Prep Method:** NONE  
**Prep Batch:** MO150513-2  
**QCBatchID:** MO150513-2-1  
**Run ID:** MO150513-1A2  
**Cleanup:** NONE  
**Basis:** As Received  
**Sample Aliquot:** 40 ml  
**Final Volume:** 40 ml  
**Result Units:** MG/L  
**File Name:** 05130906

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
10-35-5	TOTAL ORGANIC CARBON	11.5		10	114	1	20	4

Data Package ID: MO1505215-1