



July 1, 2015

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

Re: ALS Workorder: 1504576  
Project Name: 200ZP1, APRIL 2015  
Project Number: 115-021

Dear Ms. Waters-Husted:

One water sample was received from CH2M HILL Plateau Remediation Company, on 4/29/2015. The sample was scheduled for the following analyses:

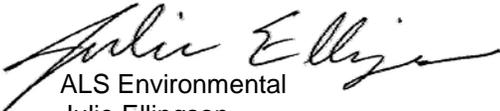
Total Organic Carbon

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

This report was originally submitted on 5/19/2015. 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 ALS1504576**

**06/10/15**

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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:** 1504576

**Client Name:** CH2M HILL Plateau Remediation Company

**Client Project Name:** 200ZP1, APRIL 2015

**Client Project Number:** I15-021

**Client PO Number:** BOA 54854

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B313Y5	1504576-1		WATER	27-Apr-15	12:25

10 lbs  
15045 ft  
C.O.C.#

July 01, 2015

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Rev. 1

**CH2MHill Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

I15-021-031  
Page 1 of 1

Collector **K.C. Patterson**      Contact/Requester **Karen Waters-Husted**      Telephone No. **509-376-4650**

SAF No. **I15-021**      Sampling Origin **Hanford Site**      Purchase Order/Charge Code **300071**

Project Title **200ZPI, APRIL 2015**      Logbook No. **HNF-N-506 (70/87)**      Ice Chest No. **6WS-247**

Shipped To (Lab) **ALS Environmental Ft. Collins**      Method of Shipment **Commercial Carrier**      Bill of Lading/Air Bill No. **7734 85238037**

Protocol **CERCLA**      Priority: **30 Days**      Hold Time **PRIORITY**      Offsite Property No. **5603**

**POSSIBLE SAMPLE HAZARDS/REMARKS**

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

SPECIAL INSTRUCTIONS      Hold Time      Total Activity Exemption: Yes  No

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B313Y5	N	W APR 27 2015	1225	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Relinquished By	Date/Time	Received By	Date/Time	Print	Sign	Date/Time	Matrix *
K.C. Patterson CHPRC	SSU-1	APR 27 2015 1300	SSU-1	APR 27 2015 1300				S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air
W.A. White CHPRC	CHPRC	APR 29 2015 0700	W.A. White CHPRC	APR 29 2015 0700				DS - Drum Solids DL - Drum Liquids T - Tissue WJ - Wipe L - Liquid V - Vegetation X - Other
W.A. White CHPRC	FEDEX	APR 29 2015 1400	FEDEX					
Final Sample Disposition	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Date/Time	Disposed By	Date/Time				
4		04-30-15 0930						



ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CH2MHill (CHPRC)

Workorder No: 1504576

Project Manager: JE

Initials: SDM

Date: 04-30-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on sample containers intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<input checked="" type="radio"/> N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	<input checked="" type="radio"/> N/A	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <input checked="" type="radio"/> #4 <input checked="" type="radio"/> RAD ONLY		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>4.2</u>			
No. of custody seals on cooler: <u>2</u>			
External µR/hr reading: <u>17</u>			
Background µR/hr reading: <u>12</u>			
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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If applicable, was the client contacted? YES / NO  NA Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 5/1/15

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Rev. 1

17  
-2

From: (509) 430-9727  
Mizi White  
CH2M  
6267 Latah St.  
Richland, WA 99354

Origin ID: PSCA

FedEx  
Express



J151215022303uv

Ship Date: 29APR15  
ActWgt: 10.0 LB  
CAD: 107066051/NET3610

Delivery Address Bar Code



SHIP TO: (987) 498-1511  
ALS GLOBAL

BILL THIRD PARTY

Ref # GWS-247 (5603)  
Invoice #  
PO #  
Dept #

4.2%

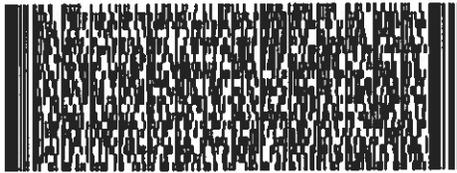
225 COMMERCE DRIVE

FORT COLLINS, CO 80524

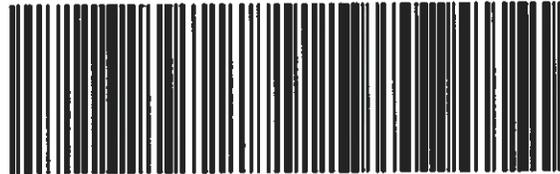
THU - 30 APR 10:30A  
PRIORITY OVERNIGHT

TRK# 7734 8523 8037  
0261

DSR  
80524  
CO-US  
DEN



XH FTCA



537J1Z5E2EE4B

1504576

**After printing this label**

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

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

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



## Organic Carbon Case Narrative

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### CH2M HILL Plateau Remediation Company

200ZP1, APRIL 2015 -- I15-021

Work Order Number: 1504576

1. This report consists of one water sample.
2. The sample was received cool and intact by ALS on 04/30/15.
3. The sample had been correctly preserved for the requested analysis.
4. The sample was prepared for analysis based on SW-846, 3<sup>rd</sup> Edition procedures.
5. The sample was 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 sample was 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 1504558-1 was designated as the quality control sample for this analysis. Results for the shared quality control samples are included at the client's request.

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: 1504576

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200ZP1, APRIL 2015 I15-021

Lab ID: MO150506-2MB

Sample Matrix: WATER  
 % Moisture: N/A  
 Date Collected: N/A  
 Date Extracted: 06-May-15  
 Date Analyzed: 06-May-15

Prep Batch: MO150506-2  
 QCBatchID: MO150506-2-1  
 Run ID: MO150506-1A2  
 Cleanup: NONE  
 Basis: N/A  
 File Name: 05061017

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: MO1504576-1

# TOTAL ORGANIC CARBON

## Method SW9060

### Sample Results

**Lab Name:** ALS Environmental -- FC  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** 200ZP1, APRIL 2015 I15-021  
**Work Order Number:** 1504576      **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
B313Y5	1504576-1	4/27/2015	5/6/2015	05/06/2015	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:** *MO1504576-1*

# Organic Carbon

## Method SW9060

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1504576

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200ZP1, APRIL 2015 I15-021

Lab ID: MO150506-2LCS	<b>Sample Matrix:</b> WATER % Moisture: N/A <b>Date Collected:</b> N/A <b>Date Extracted:</b> 05/06/2015 <b>Date Analyzed:</b> 05/06/2015 <b>Prep Method:</b> NONE	<b>Prep Batch:</b> MO150506-2 <b>QCBatchID:</b> MO150506-2-1 <b>Run ID:</b> MO150506-1A2 <b>Cleanup:</b> NONE <b>Basis:</b> N/A <b>File Name:</b> 05061017	<b>Sample Aliquot:</b> 40 ml <b>Final Volume:</b> 40 ml <b>Result Units:</b> MG/L <b>Clean DF:</b> 1
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CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
10-35-5	TOTAL ORGANIC CARBON	15	15.5	1		103	85 - 115%

Lab ID: MO150506-2LCSD	<b>Sample Matrix:</b> WATER % Moisture: N/A <b>Date Collected:</b> N/A <b>Date Extracted:</b> 05/06/2015 <b>Date Analyzed:</b> 05/06/2015 <b>Prep Method:</b> NONE	<b>Prep Batch:</b> MO150506-2 <b>QCBatchID:</b> MO150506-2-1 <b>Run ID:</b> MO150506-1A2 <b>Cleanup:</b> NONE <b>Basis:</b> N/A <b>File Name:</b> 05061017	<b>Sample Aliquot:</b> 40 ml <b>Final Volume:</b> 40 ml <b>Result Units:</b> MG/L <b>Clean DF:</b> 1
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CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
10-35-5	TOTAL ORGANIC CARBON	15	15.5	1		103	20	0

Data Package ID: *MO1504576-1*

# Organic Carbon

Method SW9060

## Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1504576

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200ZP1, APRIL 2015 I15-021

Field ID: SHARED QC
LabID: 1504558-1MS

Sample Matrix: WATER  
 % Moisture: N/A  
 Date Collected: 24-Apr-15  
 Date Extracted: 06-May-15  
 Date Analyzed: 06-May-15  
 Prep Method: NONE

Prep Batch: MO150506-2  
 QCBatchID: MO150506-2-1  
 Run ID: MO150506-1A2  
 Cleanup: NONE  
 Basis: As Received

Sample Aliquot: 40 ml  
 Final Volume: 40 ml  
 Result Units: MG/L  
 File Name: 05061017

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	1.5		11.6		1	10	100	80 - 120%

Field ID: SHARED QC
LabID: 1504558-1MSD

Sample Matrix: WATER  
 % Moisture: N/A  
 Date Collected: 24-Apr-15  
 Date Extracted: 06-May-15  
 Date Analyzed: 06-May-15  
 Prep Method: NONE

Prep Batch: MO150506-2  
 QCBatchID: MO150506-2-1  
 Run ID: MO150506-1A2  
 Cleanup: NONE  
 Basis: As Received

Sample Aliquot: 40 ml  
 Final Volume: 40 ml  
 Result Units: MG/L  
 File Name: 05061017

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	99	1	20	1

Data Package ID: MO1504576-1