

Thursday, February 11, 2016

Bruce Smith  
Western Water and Land, Inc.  
743 Horizon Ct., Suite 330  
Grand Junction, CO 81506

Re: ALS Workorder: 1601317  
Project Name: WPX BWQ: RU 11-7  
Project Number:

Dear Mr. Smith:

One water sample was received from Western Water and Land, Inc., on 1/28/2016. The sample was scheduled for the following analysis:

BART

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  
Amy R. Wolf  
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



**1601317**

**BART:**

The Biological Activity Reaction Test was completed with the Iron-Related Bacteria, Sulfate-Reducing Bacteria, and Slime-Forming Bacteria kit manufactured by Hach Company. The analysis was performed following the manufacturer provided instructions. If the target analyte is not detected (absent), then the sample will be reported with “ND” in the result field. If the target analyte is detected (present), then the sample will be reported with the estimated colony forming units/mL (cfu/mL) as provided by the manufacturer based on the day reaction was observed.

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1601317

**Client Name:** Western Water and Land, Inc.

**Client Project Name:** WPX BWQ: RU 11-7

**Client Project Number:**

**Client PO Number:**

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Yellow Jacket Spg	1601317-1		WATER	27-Jan-16	9:45



# Chain of Custody Form

Cincinnati, OH +1 513 733 5336  
 Fort Collins, CO +1 970 490 1511  
 Houston, TX +1 281 530 5656  
 Spring City, PA +1 610 948 4903  
 South Charleston, WV +1 304 356 3168

Everett, WA +1 425 356 2600  
 Holland, MI +1 616 399 6070  
 Middletown, PA +1 717 944 5541  
 Salt Lake City, UT +1 801 266 7700  
 York, PA +1 717 505 5280

**Environmental** \*send to Fort Collins, Amy Wolff  
 ALS Project Manager: Amy Wolff  
 ALS Work Order #: 1601317

Customer Information  
 Project Information  
 Parameter/Method Request for Analysis

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
1	Yellow Jacket Spg (1)	1-27-16	0945	W	none	1												
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

**Shipments** Please Print & Sign  
 Received by: [Signature]  
 Received by Laboratory: [Signature]  
 Checked by (Laboratory):  
 Date: 1-27-16 Time: 1210  
 Date: 1-27-16 Time: 1340  
 Date: Time:

Required Turnaround Time: (Check Box)  
 STD 10 Wk. Days  5 Wk. Days  2 Wk. Days  24 Hour  Other

Results Due Date:

QC Packages: (Check One Box Below)  
 Level II Std QC  TRRP Checklist  
 Level III Std QC/Raw Date  TRRP Level IV  
 Level IV SW846/CLP  Other

Notes:

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.  
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.  
 3. The Chain of Custody is a legal document. All information must be completed accurately.



ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Western Water

Workorder No: 1601317

Project Manager: AW

Initials: CDT

Date: 1-28-16

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	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"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>3.8</u>			
No. of custody seals on cooler: <u>1</u>			
External µR/hr reading: <u>11</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.)			

DOT Survey  
Acceptance  
Information

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: *AW* 1/28/16

1601317

ORIGIN ID: RILA (616) 298-1033  
NICK MARTINEZ  
ALS ENVIRONMENTAL  
127 E. 1ST STREET

SHIP DATE: 27JAN16  
ACTWGT: 12.00 LB  
CAD: 108058167/NET3730  
DIMS: 9x12x10 IN

PARACHUTE, CO 81635  
UNITED STATES US

BILL RECIPIENT

TO **SAMPLE RECEIVING**  
**ALS LABORATORY GROUP**  
**225 COMMERCE DRIVE**

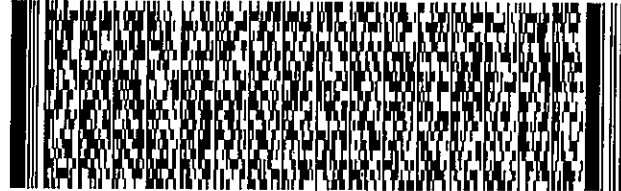
11  
-1

540J10E61727F

**FORT COLLINS CO 80524**

(970) 490-1511 REF: 012716-1  
INV: PO: PARACHUTE DEPT:

FedEx Ship Manager - Print Your Label(s)



FedEx Express



J16101601441ur

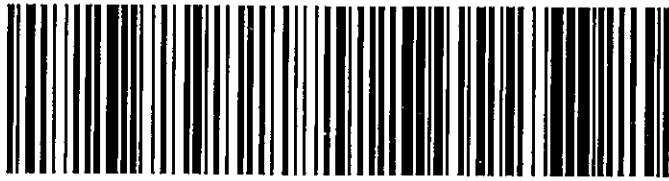
38'

THU - 28 JAN 3:00P  
STANDARD OVERNIGHT

TRK# 7755 1645 9460  
0201

**72 FTCA**

80524  
CO-US DEN



1/27/2016

**Client:** Western Water and Land, Inc.  
**Project:** WPX BWQ: RU 11-7  
**Sample ID:** Yellow Jacket Spg  
**Legal Location:**  
**Collection Date:** 1/27/2016 09:45

**Date:** 11-Feb-16  
**Work Order:** 1601317  
**Lab ID:** 1601317-1  
**Matrix:** WATER  
**Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
<b>BIOLOGICAL ACTIVITY REACTION TEST</b>			<b>BART</b>				
IRON RELATED BACTERIA	35000			1 cfu/ml	1		2/11/2016
SLIME FORMING BACTERIA	350000			1 cfu/ml	1		2/11/2016
SULFATE REDUCING BACTERIA	18000			1 cfu/ml	1		2/11/2016

Prep Date: 2/3/2016      PrepBy: CDR

**Client:** Western Water and Land, Inc.  
**Project:** WPX BWQ: RU 11-7  
**Sample ID:** Yellow Jacket Spg  
**Legal Location:**  
**Collection Date:** 1/27/2016 09:45

**Date:** 11-Feb-16  
**Work Order:** 1601317  
**Lab ID:** 1601317-1  
**Matrix:** WATER  
**Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
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**Explanation of Qualifiers**

**Radiochemistry:**

- U or ND - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- W - DER is greater than Warning Limit of 1.42
- \* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
- # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
- G - Sample density differs by more than 15% of LCS density.
- D - DER is greater than Control Limit
- M - Requested MDC not met.
- LT - Result is less than requested MDC but greater than achieved MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
- P - LCS, Matrix Spike Recovery within control limits.
- N - Matrix Spike Recovery outside control limits
- NC - Not Calculated for duplicate results less than 5 times MDC
- B - Analyte concentration greater than MDC.
- B3 - Analyte concentration greater than MDC but less than Requested MDC.

**Inorganics:**

- B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
- U or ND - Indicates that the compound was analyzed for but not detected.
- 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.

**Organics:**

- U or ND - Indicates that the compound was analyzed for but not detected.
- B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
- E - Analyte concentration exceeds the upper level of the calibration range.
- J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
- A - A tentatively identified compound is a suspected aldol-condensation product.
- X - The analyte was diluted below an accurate quantitation level.
- \* - The spike recovery is equal to or outside the control criteria used.
- + - The relative percent difference (RPD) equals or exceeds the control criteria.
- G - A pattern resembling gasoline was detected in this sample.
- D - A pattern resembling diesel was detected in this sample.
- M - A pattern resembling motor oil was detected in this sample.
- C - A pattern resembling crude oil was detected in this sample.
- 4 - A pattern resembling JP-4 was detected in this sample.
- 5 - A pattern resembling JP-5 was detected in this sample.
- H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
  - gasoline
  - JP-8
  - diesel
  - mineral spirits
  - motor oil
  - Stoddard solvent
  - bunker C