



1512159

GC/MS Volatiles:

The sample was analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The sample was also analyzed for Gasoline Range Organics (GRO).

All acceptance criteria were met.

Dissolved Gasses:

The sample was prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met.

DRO:

The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

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.

Metals:

The sample was analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by ICPMS followed method 200.8 and the current revision of SOP 827.

The sample was to be analyzed for dissolved metals. The sample was filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than 2 prior to analysis.

All acceptance criteria were met.



Inorganics:

The sample was analyzed following MCAWW, EMSL and Standard Method procedures for the current revisions of the following SOPs and methods:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
pH	SM4500-H ⁺ B	1126
Specific conductance	SM2510B	1128
Total phosphorus	365.2	1119
TDS	SM2540C	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Total Nitrates	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1512159

Client Name: Western Water and Land, Inc.

Client Project Name: WPX RU 11-7 BWQ

Client Project Number:

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Beaver Cr 2	1512159-1		WATER	09-Dec-15	11:15



ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
 TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 2026B

PROJECT NAME WPX RD 11-7 BUDQ		SAMPLER Nick Schawler		DATE 12-9-15		TURNAROUND STANDARD		WORKORDER # 1512159
FACILITY NAME		PROJECT NO.		PAGE		DISPOSAL		of
FACILITY ID (API)		EDD FORMAT		DATE		DISPOSAL		1
COMPANY NAME		PURCHASE ORDER		DATE		DISPOSAL		1
SEND REPORT TO		BILL TO COMPANY		DATE		DISPOSAL		1
ADDRESS		INVOICE ATTN TO		DATE		DISPOSAL		1
CITY / STATE / ZIP		ADDRESS		DATE		DISPOSAL		1
PHONE		CITY / STATE / ZIP		DATE		DISPOSAL		1
FAX		PHONE		DATE		DISPOSAL		1
E-MAIL		FAX		DATE		DISPOSAL		1
E-MAIL		E-MAIL		DATE		DISPOSAL		1
Field ID		Matrix		Sample Date		Sample Time		# Bottles
Beaver CR 2		12-9-15 SW		1115		14		1, 3, 14
Temp (°C)		DO (%)		SpC (µS/cm)		Turb (NTUs)		3.02
pH (s.u.)		DO (mg/L)		ORP (mv)		Disch (gpm)		210.4
Temp (°C)		DO (%)		SpC (µS/cm)		Turb (NTUs)		
pH (s.u.)		DO (mg/L)		ORP (mv)		Disch (gpm)		

Field Parameters

Temp (°C)	-0.21	DO (%)	86.5	SpC (µS/cm)	371	Turb (NTUs)	3.02
pH (s.u.)	7.61	DO (mg/L)	12.69	ORP (mv)	210.4	Disch (gpm)	
Temp (°C)		DO (%)		SpC (µS/cm)		Turb (NTUs)	
pH (s.u.)		DO (mg/L)		ORP (mv)		Disch (gpm)	

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)

LEVEL II (Standard QC)

LEVEL III (Std QC + forms)

LEVEL IV (Std QC + forms + raw data)

RELINQUISHED BY: [Signature]

RECEIVED BY: [Signature]

RELINQUISHED BY: [Signature]

RECEIVED BY: [Signature]

RELINQUISHED BY: [Signature]

RECEIVED BY: [Signature]

RELINQUISHED BY	[Signature]	DATE	12-9-15	TIME	1000
RECEIVED BY	[Signature]	DATE	12-9-15	TIME	1600
RELINQUISHED BY	[Signature]	DATE	12-9-15	TIME	1630
RECEIVED BY	[Signature]	DATE	12-10-15	TIME	0940



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Western Water

Workorder No: 151215-9

Project Manager: ARW

Initials: RAM

Date: 12/10/15

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	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?	N/A	<input checked="" type="radio"/> 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	N/A	<input checked="" type="radio"/> 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*: <input checked="" type="radio"/> #2 #4	RAD ONLY	<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>2.6</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.)			

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] 12/10/15

ORIGIN ID: RILA (616) 298-1033
NICK MARTINEZ
ALS ENVIRONMENTAL
127 E. 1ST STREET
PARACHUTE, CO 81635
UNITED STATES US

SHIP DATE: 09DEC15
ACTWGT: 47.00 LB
CAD: 108058167/NET/3670
DIMS: 24x15x15 IN
BILL RECIPIENT

2.60C

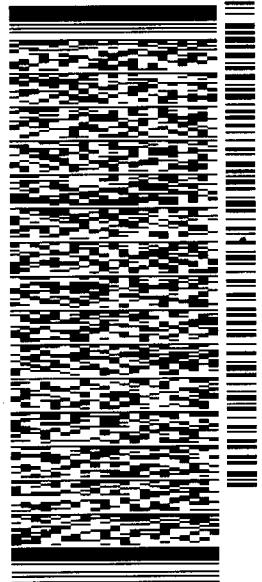
TO **SAMPLE RECEIVING**
ALS LABORATORY GROUP
225 COMMERCE DRIVE

FORT COLLINS CO 80524

(970) 490-1511 REF: 120915-1
INV. PO PARACHUTE DEPT.

11-1

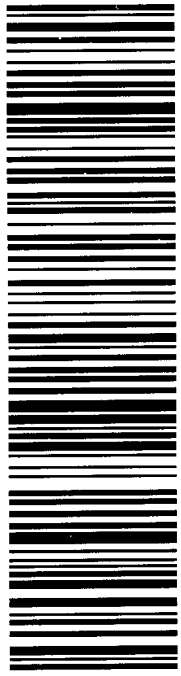
539J11308B1D0



J153015091001uv

TRK# 7751 6602 8842
0207
THU - 10 DEC 3:00P
STANDARD OVERNIGHT

72 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.

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 any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely 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, income interest, profit, attorney's 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 cannot exceed actual documented 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 claims must be filed within strict time limits, see current FedEx Service Guide.

1512159

ALS Environmental -- FC

SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
 Project: WPX RU 11-7 BWQ
 Sample ID: Beaver Cr 2
 Legal Location:
 Collection Date: 12/9/2015 11:15

Date: 29-Dec-15
 Work Order: 1512159
 Lab ID: 1512159-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 12/22/2015 PrepBy: TLB		
BICARBONATE AS CaCO3	170		20	MG/L	1		12/22/2015
CARBONATE AS CaCO3	ND		20	MG/L	1		12/22/2015
TOTAL ALKALINITY AS CaCO3	170		20	MG/L	1		12/22/2015
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 12/13/2015 PrepBy: CDR		
IRON RELATED BACTERIA	9000		1	cfu/ml	1		12/21/2015
SLIME FORMING BACTERIA	66500		1	cfu/ml	1		12/21/2015
SULFATE REDUCING BACTERIA	700000		1	cfu/ml	1		12/21/2015
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 12/16/2015 PrepBy: JFN		
Diesel Range Organics	ND		0.58	MG/L	1	0.17	12/16/2015 17:07
Surr: O-TERPHENYL	101		63-126	%REC	1		12/16/2015 17:07
DISSOLVED GASSES			RSK175		Prep Date: 12/21/2015 PrepBy: JFN		
METHANE	ND		1	UG/L	1	1	12/21/2015 13:30
ETHANE	ND		2	UG/L	1	2	12/21/2015 13:30
PROPANE	ND		1	UG/L	1	1	12/21/2015 13:30
GC/MS VOLATILES			SW8260_25		Prep Date: 12/11/2015 PrepBy: JXK		
BENZENE	ND		1	UG/L	1	0.3	12/11/2015 18:21
TOLUENE	ND		1	UG/L	1	0.3	12/11/2015 18:21
ETHYLBENZENE	ND		1	UG/L	1	0.3	12/11/2015 18:21
M+P-XYLENE	ND		1	UG/L	1	0.3	12/11/2015 18:21
O-XYLENE	ND		1	UG/L	1	0.3	12/11/2015 18:21
TOTAL XYLENES	ND		1	UG/L	1		12/11/2015 18:21
Surr: 4-BROMOFLUOROBENZENE	110		85-115	%REC	1		12/11/2015 18:21
Surr: DIBROMOFLUOROMETHANE	99		84-118	%REC	1		12/11/2015 18:21
Surr: TOLUENE-D8	101		85-115	%REC	1		12/11/2015 18:21
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	100	12/11/2015 18:21
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 12/10/2015 PrepBy: DRH		
BROMIDE	ND		0.2	MG/L	1	0.06	12/10/2015 19:59
CHLORIDE	2.4		0.2	MG/L	1	0.06	12/10/2015 19:59
FLUORIDE	0.057	J	0.1	MG/L	1	0.03	12/10/2015 19:59
NITRATE/NITRITE AS N	0.27		0.1	MG/L	1		12/10/2015 19:59
NITRATE AS N	0.27		0.2	MG/L	1	0.06	12/10/2015 19:59
NITRITE AS N	ND		0.1	MG/L	1	0.03	12/10/2015 19:59
SULFATE	19		1	MG/L	1	0.3	12/10/2015 19:59
METALS BY 200.8			EPA200.8		Prep Date: 12/15/2015 PrepBy: CDR		
BARIUM	0.056		0.001	MG/L	10	0.00058	12/16/2015 22:41
BORON	0.041	J	0.05	MG/L	10	0.0069	12/16/2015 22:41
CALCIUM	49		1	MG/L	10	0.1	12/16/2015 22:41
IRON	0.035	J	0.1	MG/L	10	0.025	12/16/2015 22:41
MAGNESIUM	11		0.1	MG/L	10	0.045	12/16/2015 22:41
MANGANESE	0.0014	J	0.002	MG/L	10	0.0007	12/16/2015 22:41

Client: Western Water and Land, Inc.
Project: WPX RU 11-7 BWQ
Sample ID: Beaver Cr 2
Legal Location:
Collection Date: 12/9/2015 11:15

Date: 29-Dec-15
Work Order: 1512159
Lab ID: 1512159-1
Matrix: WATER

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
POTASSIUM	0.65	J	1	MG/L	10	0.22	12/16/2015 22:41
SELENIUM	ND		0.001	MG/L	10	0.00068	12/16/2015 22:41
SODIUM	15		1	MG/L	10	0.24	12/16/2015 22:41
STRONTIUM	0.33		0.001	MG/L	10	0.00066	12/16/2015 22:41
PH			SM4500-H				Prep Date: 12/12/2015 PrepBy: TLB
PH	8.18		0.1	pH	1		12/12/2015
SPECIFIC CONDUCTANCE IN WATER			SM2510B				Prep Date: 12/12/2015 PrepBy: TLB
SPECIFIC CONDUCTIVITY	344		1	umhos/cm	1		12/12/2015
TOTAL DISSOLVED SOLIDS			SM2540C				Prep Date: 12/16/2015 PrepBy: TLB
TOTAL DISSOLVED SOLIDS	230		20	MG/L	1		12/17/2015
TOTAL PHOSPHORUS AS P			EPA365.2				Prep Date: 12/28/2015 PrepBy: TLB
TOTAL PHOSPHORUS	0.048	J	0.05	MG/L	1	0.015	12/29/2015

Client: Western Water and Land, Inc.
Project: WPX RU 11-7 BWQ
Sample ID: Beaver Cr 2
Legal Location:
Collection Date: 12/9/2015 11:15

Date: 29-Dec-15
Work Order: 1512159
Lab ID: 1512159-1
Matrix: WATER

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
----------	--------	------	--------------	-------	-----------------	-----	---------------

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

ALS Environmental -- FC

Date: 12/29/2015 12:3

Client: Western Water and Land, Inc.

QC BATCH REPORT

Work Order: 1512159

Project: WPX RU 11-7 BWQ

Batch ID: **HC151216-100-1** Instrument ID: **FUELS-1** Method: **SW8015M**

LCS		Sample ID: HC151216-100			Units: MG/L		Analysis Date: 12/16/2015 16:36				
Client ID:		Run ID: HC151216-7A					Prep Date: 12/16/2015		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	8.36	0.576	8		105	36-150				20	
Surr: O-TERPHENYL	0.824		0.8		103	63-126					

MB		Sample ID: HC151216-100			Units: MG/L		Analysis Date: 12/16/2015 15:34				
Client ID:		Run ID: HC151216-7A					Prep Date: 12/16/2015		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	0.58									
Surr: O-TERPHENYL	0.818		0.802		102	63-126					

MS		Sample ID: 1512159-1			Units: MG/L		Analysis Date: 12/16/2015 17:37				
Client ID: Beaver Cr 2		Run ID: HC151216-7A					Prep Date: 12/16/2015		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	6.75	0.573	7.96	0.58	85	36-150				20	
Surr: O-TERPHENYL	0.824		0.796		104	63-126					

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1512159
 Project: WPX RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **HC151221-9-2** Instrument ID: **MEE-1** Method: **RSK175**

LCS		Sample ID: HC151221-9			Units: UG/L		Analysis Date: 12/21/2015 12:38				
Client ID:		Run ID: HC151221-9A			Prep Date: 12/21/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	147	1	142		103	80-120				25	
ETHANE	276	2	267		104	80-120				25	
PROPANE	396	1	391		101	80-120				25	

LCSD		Sample ID: HC151221-9			Units: UG/L		Analysis Date: 12/21/2015 13:24				
Client ID:		Run ID: HC151221-9A			Prep Date: 12/21/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	154	1	142		108	80-120		147	4	25	
ETHANE	291	2	267		109	80-120		276	5	25	
PROPANE	417	1	391		107	80-120		396	5	25	

MB		Sample ID: HC151221-9			Units: UG/L		Analysis Date: 12/21/2015 12:42				
Client ID:		Run ID: HC151221-9A			Prep Date: 12/21/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	ND	1									
ETHANE	ND	2									
PROPANE	ND	1									

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1512159
 Project: WPX RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **IP151215-1-2** Instrument ID: **ICPMS2** Method: **EPA200.8**

LCS		Sample ID: FM151215-1			Units: MG/L		Analysis Date: 12/16/2015 22:37				
Client ID:		Run ID: IM151216-10A2			Prep Date: 12/15/2015		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.105	0.001	0.1		105	85-115				20	
BORON	0.974	0.05	1		97	85-115				20	
CALCIUM	10.7	1	10		107	85-115				20	
IRON	4.98	0.1	5		100	85-115				20	
MAGNESIUM	9.97	0.1	10		100	85-115				20	
MANGANESE	0.103	0.002	0.1		103	85-115				20	
POTASSIUM	4.61	1	5		92	85-115				20	
SELENIUM	0.105	0.001	0.1		105	85-115				20	
SODIUM	10.1	1	10		101	85-115				20	
STRONTIUM	0.11	0.001	0.1		110	85-115				20	

MB		Sample ID: FP151215-1			Units: MG/L		Analysis Date: 12/16/2015 22:30				
Client ID:		Run ID: IM151216-10A2			Prep Date: 12/15/2015		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	ND	0.001									
BORON	0.01	0.05									J
CALCIUM	ND	1									
IRON	ND	0.1									
MAGNESIUM	ND	0.1									
MANGANESE	ND	0.002									
POTASSIUM	ND	1									
SELENIUM	ND	0.001									
SODIUM	ND	1									
STRONTIUM	0.00081	0.001									J

The following samples were analyzed in this batch:

1512159-1

Client: Western Water and Land, Inc.
 Work Order: 1512159
 Project: WPX RU 11-7 BWQ

QC BATCH REPORT

Batch ID: VL151211-3-1 Instrument ID: HPV1 Method: SW8260_25

LCS		Sample ID: VL151211-3			Units: %REC			Analysis Date: 12/11/2015 12:36			
Client ID:		Run ID: VL151211-3A			Prep Date: 12/11/2015			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	26.2		25		105	85-115					
Surr: DIBROMOFLUOROMETHANE	24.7		25		99	84-118					
Surr: TOLUENE-D8	24.7		25		99	85-115					
BENZENE	11	1	10		110	83-117				20	
TOLUENE	10.6	1	10		106	82-113				20	
ETHYLBENZENE	10.1	1	10		101	81-113				20	
M+P-XYLENE	19.7	1	20		98	82-115				20	
O-XYLENE	9.8	1	10		98	81-115				20	

LCSD		Sample ID: VL151211-3			Units: %REC			Analysis Date: 12/11/2015 12:58			
Client ID:		Run ID: VL151211-3A			Prep Date: 12/11/2015			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	26.1		25		105	85-115			0		
Surr: DIBROMOFLUOROMETHANE	24.5		25		98	84-118			1		
Surr: TOLUENE-D8	24.6		25		98	85-115			1		
BENZENE	10.6	1	10		106	83-117		11	4	20	
TOLUENE	10.2	1	10		102	82-113		10.6	4	20	
ETHYLBENZENE	9.91	1	10		99	81-113		10.1	2	20	
M+P-XYLENE	19.1	1	20		95	82-115		19.7	3	20	
O-XYLENE	9.62	1	10		96	81-115		9.8	2	20	

MB		Sample ID: VL151211-3			Units: %REC			Analysis Date: 12/11/2015 15:09			
Client ID:		Run ID: VL151211-3A			Prep Date: 12/11/2015			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	28.1		25		113	85-115					
Surr: DIBROMOFLUOROMETHANE	24.7		25		99	84-118					
Surr: TOLUENE-D8	25.4		25		102	85-115					
BENZENE	ND	1									
TOLUENE	ND	1									
ETHYLBENZENE	ND	1									
M+P-XYLENE	ND	1									
O-XYLENE	ND	1									
TOTAL XYLENES	ND	1									

Client: Western Water and Land, Inc.
 Work Order: 1512159
 Project: WPX RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **VL151211-3-2** Instrument ID: **HPV1** Method: **SW8260_25**

LCS		Sample ID: VL151211-6			Units: UG/L		Analysis Date: 12/11/2015 14:05				
Client ID:		Run ID: VL151211-3A			Prep Date: 12/11/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	904	100	1000		90	80-120				20	

LCSD		Sample ID: VL151211-6			Units: UG/L		Analysis Date: 12/11/2015 14:26				
Client ID:		Run ID: VL151211-3A			Prep Date: 12/11/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	864	100	1000		86	80-120		904	5	20	

MB		Sample ID: VL151211-3			Units: UG/L		Analysis Date: 12/11/2015 15:09				
Client ID:		Run ID: VL151211-3A			Prep Date: 12/11/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	100									

The following samples were analyzed in this batch:

1512159-1

Client: Western Water and Land, Inc.
Work Order: 1512159
Project: WPX RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **AK151222-1-2** Instrument ID: **Balance** Method: **SM2320B**

LCS		Sample ID: AK151222-1			Units: MG/L		Analysis Date: 12/22/2015				
Client ID:		Run ID: AK151222-1A1			Prep Date: 12/22/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	96.7	5	100		97	85-115				15	

MB		Sample ID: AK151222-1			Units: MG/L		Analysis Date: 12/22/2015				
Client ID:		Run ID: AK151222-1A1			Prep Date: 12/22/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BICARBONATE AS CaCO3	ND	5									
CARBONATE AS CaCO3	ND	5									
TOTAL ALKALINITY AS CaCO3	ND	5									

The following samples were analyzed in this batch:

1512159-1

Client: Western Water and Land, Inc.
 Work Order: 1512159
 Project: WPX RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **IC151210-1-3** Instrument ID: **IC-2** Method: **EPA300.0**

LCS		Sample ID: IC151210-1			Units: MG/L		Analysis Date: 12/10/2015 17:58				
Client ID:		Run ID: IC151210-1A5			Prep Date: 12/10/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	4.76	0.2	5		95	90-110				15	
CHLORIDE	4.87	0.2	5		97	90-110				15	
FLUORIDE	1.92	0.1	2		96	90-110				15	
NITRATE AS N	4.83	0.2	5		97	90-110				15	
NITRITE AS N	1.87	0.1	2		94	90-110				15	
SULFATE	19.3	1	20		96	90-110				15	

MB		Sample ID: IC151210-1			Units: MG/L		Analysis Date: 12/10/2015 18:13				
Client ID:		Run ID: IC151210-1A5			Prep Date: 12/10/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	ND	0.2									
CHLORIDE	ND	0.2									
FLUORIDE	ND	0.1									
NITRATE AS N	ND	0.2									
NITRITE AS N	ND	0.1									
SULFATE	ND	1									

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1512159
 Project: WPX RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **PH151212-1-1** Instrument ID: **pH-1** Method: **SM4500-H**

CCV		Sample ID: CCV1			Units: pH		Analysis Date: 12/12/2015				
Client ID:		Run ID: ph151212-1a1			Prep Date: 12/12/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	6.96	0.1	7			6.9-7.1					

CCV		Sample ID: CCV2			Units: pH		Analysis Date: 12/12/2015				
Client ID:		Run ID: ph151212-1a1			Prep Date: 12/12/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	6.95	0.1	7			6.9-7.1					

ICV		Sample ID: ICV			Units: pH		Analysis Date: 12/12/2015				
Client ID:		Run ID: ph151212-1a1			Prep Date: 12/12/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.01	0.1	7			6.95-7.05					

The following samples were analyzed in this batch:

1512159-1

Client: Western Water and Land, Inc.
Work Order: 1512159
Project: WPX RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **SC151212-1-1** Instrument ID: **pH-2** Method: **SM2510B**

CCV	Sample ID: CCV1					Units: umhos/cm	Analysis Date: 12/12/2015			
Client ID:		Run ID: SC151212-1A1				Prep Date: 12/12/2015		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1360	1	1410		96	71.7-1554				

ICV	Sample ID: ICV					Units: umhos/cm	Analysis Date: 12/12/2015			
Client ID:		Run ID: SC151212-1A1				Prep Date: 12/12/2015		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	693	1	718		97	46.2-789.				

The following samples were analyzed in this batch:

1512159-1

Client: Western Water and Land, Inc.
Work Order: 1512159
Project: WPX RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **TD151216-2-1** Instrument ID: **Balance** Method: **SM2540C**

LCS	Sample ID: TD151216-2					Units: MG/L	Analysis Date: 12/17/2015				
Client ID:	Run ID: TD151217-1A1			Prep Date: 12/16/2015			DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	403	20	400		101	85-115				5	

MB	Sample ID: TD151216-2					Units: MG/L	Analysis Date: 12/17/2015				
Client ID:	Run ID: TD151217-1A1			Prep Date: 12/16/2015			DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	ND	20									

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
Work Order: 1512159
Project: WPX RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **TP151228-1-2** Instrument ID: **Spec** Method: **EPA365.2**

LCS	Sample ID: TP151228-1					Units: MG/L	Analysis Date: 12/29/2015				
Client ID:		Run ID: TP151229-1A2					Prep Date: 12/28/2015		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.507	0.05	0.5		101	80-120				20	

MB	Sample ID: TP151228-1					Units: MG/L	Analysis Date: 12/29/2015				
Client ID:		Run ID: TP151229-1A2					Prep Date: 12/28/2015		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	ND	0.05									

The following samples were analyzed in this batch: