



1603520

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
Nitrite as N	300.0 Revision 2.1	1113
Total Nitrates	300.0 Revision 2.1	1113
Orthophosphate as P	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

A matrix spike (MS) and matrix spike duplicate (MSD) were prepared and analyzed with the total phosphorus, bromide, chloride, fluoride, nitrate as N, nitrite as N and sulfate batches. All guidance criteria for precision and accuracy were met with the following exceptions:

<u>Analyte</u>	<u>Sample ID</u>
Fluoride	1603520-1MS & MSD
Nitrite as N	1603520-1MS & MSD

The native sample results are flagged for fluoride and nitrite as N. The laboratory control sample indicates that the procedure was in control.

All remaining acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1603520

Client Name: Western Water and Land, Inc.

Client Project Name: Nolte 14-44 BWQ

Client Project Number:

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Palmer 276703	1603520-1		WATER	29-Mar-16	11:15



2225 Commerce Drive, Fort Collins, Colorado 80524
 TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

[illegible]



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Western Water

Workorder No: 1603520

Project Manager: AW

Initials: CDT

Date: 3-30-16

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<u>NO</u>
2. Are custody seals on shipping containers intact?	NONE	<u>YES</u>	NO
3. Are Custody seals on sample containers intact?	<u>NONE</u>	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<u>YES</u>	NO
5. Are the COC and bottle labels complete and legible?		<u>YES</u>	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<u>YES</u>	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<u>YES</u>	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<u>YES</u>	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<u>YES</u>	NO
10. Is there sufficient sample for the requested analyses?		<u>YES</u>	NO
11. Were all samples placed in the proper containers for the requested analyses?		<u>YES</u>	NO
12. Are all samples within holding times for the requested analyses?		<u>YES</u>	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<u>YES</u>	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: <u> </u> < green pea <u> </u> > green pea	N/A	YES	<u>NO</u>
15. Do any water samples contain sediment? Amount of sediment: <u> </u> dusting <u> </u> moderate <u> </u> heavy	Amount N/A	YES	<u>NO</u>
16. Were the samples shipped on ice?		<u>YES</u>	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: <u>#2</u> #4	RAD ONLY	<u>YES</u>	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>5.8</u>			
No. of custody seals on cooler: <u>1</u>			
External µR/hr reading: <u>8</u>			
Background µR/hr reading: <u> </u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <u>YES</u> NO / NA (If no, see Form 008.)			

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

bottle 1603520-1-3 has headspace < green pea

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

Project Manager Signature / Date:  3/30/16

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

SHIP DATE: 29MAR16
 ACTWGT: 35.00 LB
 CAD: 108058167/NET3730
 DIMS: 24x15x15 IN
 BILL RECIPIENT

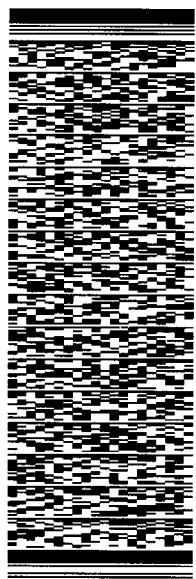
TO SAMPLE RECEIVING

ALS LABORATORY GROUP
 225 COMMERCE DRIVE

8-1

FORT COLLINS CO 80524
 (970) 490-1511 REF 032916-4
 INV DEPT
 PO: PARACHUTE-WVW

540J11CF34727F



J161016020601un

TRK# 7759 8872 9947
 0201
 WED - 30 MAR 3:00P
 STANDARD OVERNIGHT

72 FTCA
 80524
 CO-US DEN



1603520

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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 1603520

ALS Environmental -- FC

SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.

Date: 12-Apr-16

Project: Nolte 14-44 BWQ

Work Order: 1603520

Sample ID: Palmer 276703

Lab ID: 1603520-1

Legal Location:

Matrix: WATER

Collection Date: 3/29/2016 11:15

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE							
			SM2320B		Prep Date: 4/5/2016		PrepBy: CBA
BICARBONATE AS CaCO3	850		20	MG/L	1		4/5/2016
CARBONATE AS CaCO3	ND		20	MG/L	1		4/5/2016
TOTAL ALKALINITY AS CaCO3	850		20	MG/L	1		4/5/2016
BIOLOGICAL ACTIVITY REACTION TEST							
			BART		Prep Date: 3/30/2016		PrepBy: CDR
IRON RELATED BACTERIA	500		1	cfu/ml	1		4/7/2016
SLIME FORMING BACTERIA	ND		1	cfu/ml	1		4/7/2016
SULFATE REDUCING BACTERIA	1200		1	cfu/ml	1		4/7/2016
DIESEL RANGE ORGANICS							
			SW8015M		Prep Date: 4/4/2016		PrepBy: JFN
Diesel Range Organics	ND		0.57	MG/L	1	0.17	4/4/2016 14:41
Surr: O-TERPHENYL	84		63-126	%REC	1		4/4/2016 14:41
DISSOLVED GASSES							
			RSK175		Prep Date: 4/2/2016		PrepBy: JFN
METHANE	30		1	UG/L	1	1	4/2/2016 16:15
ETHANE	ND		2	UG/L	1	2	4/2/2016 16:15
PROPANE	ND		1	UG/L	1	1	4/2/2016 16:15
GC/MS VOLATILES							
			SW8260_25		Prep Date: 4/5/2016		PrepBy: JXK
BENZENE	ND		1	UG/L	1	0.3	4/5/2016 14:35
TOLUENE	ND		1	UG/L	1	0.3	4/5/2016 14:35
ETHYLBENZENE	ND		1	UG/L	1	0.3	4/5/2016 14:35
M+P-XYLENE	ND		1	UG/L	1	0.3	4/5/2016 14:35
O-XYLENE	ND		1	UG/L	1	0.3	4/5/2016 14:35
TOTAL XYLENES	ND		1	UG/L	1		4/5/2016 14:35
Surr: 4-BROMOFLUOROBENZENE	102		85-115	%REC	1		4/5/2016 14:35
Surr: DIBROMOFLUOROMETHANE	100		84-118	%REC	1		4/5/2016 14:35
Surr: TOLUENE-D8	100		85-115	%REC	1		4/5/2016 14:35
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	100	4/5/2016 14:35
ION CHROMATOGRAPHY							
			EPA300.0		Prep Date: 3/30/2016		PrepBy: SDW
BROMIDE	1.3		0.2	MG/L	1	0.06	3/30/2016 18:35
CHLORIDE	280		20	MG/L	100	6	3/31/2016 07:39
FLUORIDE	ND		0.1	MG/L	1	0.03	3/30/2016 18:35
NITRATE/NITRITE AS N	ND		0.1	MG/L	1		3/30/2016 18:35
NITRATE AS N	ND		0.2	MG/L	1	0.06	3/30/2016 18:35
NITRITE AS N	ND		0.1	MG/L	1	0.03	3/30/2016 18:35
SULFATE	2400		100	MG/L	100	30	3/31/2016 07:39
METALS BY 200.8							
			EPA200.8		Prep Date: 3/31/2016		PrepBy: CDR
BARIUM	0.04		0.001	MG/L	10	0.00016	4/4/2016 12:32
BORON	0.34		0.05	MG/L	10	0.012	4/4/2016 12:32
CALCIUM	280		1	MG/L	10	0.068	4/4/2016 12:32
IRON	0.016	J	0.1	MG/L	10	0.0081	4/4/2016 12:32
MAGNESIUM	260		0.1	MG/L	10	0.018	4/4/2016 12:32
MANGANESE	0.41		0.002	MG/L	10	0.00034	4/4/2016 12:32

ALS Environmental -- FC

SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.

Date: 12-Apr-16

Project: Nolte 14-44 BWQ

Work Order: 1603520

Sample ID: Palmer 276703

Lab ID: 1603520-1

Legal Location:

Matrix: WATER

Collection Date: 3/29/2016 11:15

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
POTASSIUM	5.1		1	MG/L	10	0.29	4/4/2016 12:32
SELENIUM	0.0074		0.001	MG/L	10	0.00066	4/4/2016 12:32
SODIUM	860		1	MG/L	10	0.2	4/4/2016 12:32
STRONTIUM	3.1		0.001	MG/L	10	0.0003	4/4/2016 12:32
PH			SM4500-H		Prep Date: 4/1/2016		PrepBy: CBA
PH	7.27		0.1	pH	1		4/1/2016
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 4/1/2016		PrepBy: CBA
SPECIFIC CONDUCTIVITY	5320		1	umhos/cm	1		4/1/2016
TOTAL DISSOLVED SOLIDS			SM2540C		Prep Date: 4/1/2016		PrepBy: CBA
TOTAL DISSOLVED SOLIDS	5100		80	MG/L	1		4/4/2016
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 4/6/2016		PrepBy: TWK
TOTAL PHOSPHORUS	0.042	J	0.05	MG/L	1	0.015	4/6/2016

ALS Environmental -- FC

SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.

Date: 12-Apr-16

Project: Nolte 14-44 BWQ

Work Order: 1603520

Sample ID: Palmer 276703

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Legal Location:

Matrix: WATER

Collection Date: 3/29/2016 11:15

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

ALS Environmental -- FC

Date: 4/12/2016 9:28:

Client: Western Water and Land, Inc.

QC BATCH REPORT

Work Order: 1603520

Project: Nolte 14-44 BWQ

Batch ID: **hc160402-9-1**Instrument ID **MEE-1**Method: **RSK175****DUP** Sample ID: **1603520-1** Units: **UG/L** Analysis Date: **4/2/2016 16:19**Client ID: **Palmer 276703**Run ID: **HC160402-9AA**Prep Date: **4/2/2016**DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	30	1						30	2	25	
ETHANE	ND	2						2		25	
PROPANE	ND	1						1		25	

LCS Sample ID: **hc160402-9** Units: **UG/L** Analysis Date: **4/2/2016 16:08**

Client ID:

Run ID: **HC160402-9AA**Prep Date: **4/2/2016**DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	144	1	142		102	80-120				25	
ETHANE	275	2	267		103	80-120				25	
PROPANE	398	1	391		102	80-120				25	

LCSD Sample ID: **hc160402-9** Units: **UG/L** Analysis Date: **4/2/2016 16:51**

Client ID:

Run ID: **HC160402-9AA**Prep Date: **4/2/2016**DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	139	1	142		98	80-120		144	4	25	
ETHANE	261	2	267		98	80-120		275	5	25	
PROPANE	375	1	391		96	80-120		398	6	25	

MB Sample ID: **hc160402-9** Units: **UG/L** Analysis Date: **4/2/2016 16:12**

Client ID:

Run ID: **HC160402-9AA**Prep Date: **4/2/2016**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:

1603520-1

Client: Western Water and Land, Inc.
Work Order: 1603520
Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **HC160404-100-1** Instrument ID **FUELS-1** Method: **SW8015M**

DUP		Sample ID: 1603520-1				Units: MG/L		Analysis Date: 4/4/2016 17:47			
Client ID: Palmer 276703			Run ID: HC160404-7A			Prep Date: 4/4/2016			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	0.57						0.57		30	
Surr: O-TERPHENYL	0.723		0.792		91	63-126					

LCS	Sample ID: HC160404-100				Units: MG/L		Analysis Date: 4/4/2016 18:49				
Client ID:		Run ID: HC160404-7A				Prep Date: 4/4/2016			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	13.4	0.574	16		84	36-150				20	
Surr: O-TERPHENYL	0.75		0.798		94	63-126					

MB		Sample ID: HC160404-100				Units: MG/L		Analysis Date: 4/4/2016 13:33			
Client ID:		Run ID: HC160404-7A				Prep Date: 4/4/2016		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	0.57									
Surr: O-TERPHENYL	0.648		0.798		81	63-126					

The following samples were analyzed in this batch:

1603520-1

Client: Western Water and Land, Inc.
 Work Order: 1603520
 Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **IP160331-3-5** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS	Sample ID: FM160331-3			Units: MG/L			Analysis Date: 4/4/2016 12:08				
Client ID:	Run ID: IM160404-10A7			Prep Date: 3/31/2016			DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.11	0.001	0.1		110	85-115				20	
BORON	0.972	0.05	1		97	85-115				20	
CALCIUM	10.1	1	10		101	85-115				20	
IRON	5.2	0.1	5		104	85-115				20	
MAGNESIUM	10.1	0.1	10		101	85-115				20	
MANGANESE	0.105	0.002	0.1		105	85-115				20	
POTASSIUM	5.24	1	5		105	85-115				20	
SELENIUM	0.105	0.001	0.1		105	85-115				20	
SODIUM	10.5	1	10		105	85-115				20	
STRONTIUM	0.106	0.001	0.1		106	85-115				20	

MB		Sample ID: FP160331-3				Units: MG/L		Analysis Date: 4/4/2016 12:05			
Client ID:		Run ID: IM160404-10A7				Prep Date: 3/31/2016				DF: 10	
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.00045	0.001									J
BORON	ND	0.05									
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	ND	0.001									

The following samples were analyzed in this batch:

1603520-1

Client: Western Water and Land, Inc.
 Work Order: 1603520
 Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **VL160405-3-2** Instrument ID **HPV1** Method: **SW8260_25**

LCS		Sample ID: VL160405-3			Units: %REC		Analysis Date: 4/5/2016 10:38				
Client ID:		Run ID: VL160405-3A			Prep Date: 4/5/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.3		25		97	85-115					
Surr: DIBROMOFLUOROMETHANE	25.4		25		101	84-118					
Surr: TOLUENE-D8	25		25		100	85-115					
BENZENE	10.5	1	10		105	83-117				20	
TOLUENE	10.1	1	10		101	82-113				20	
ETHYLBENZENE	10.5	1	10		105	81-113				20	
M+P-XYLENE	20.3	1	20		102	82-115				20	
O-XYLENE	10.5	1	10		105	81-115				20	

LCSD	Sample ID: VL160405-3				Units: %REC		Analysis Date: 4/5/2016 10:59				
Client ID:	Run ID: VL160405-3A				Prep Date: 4/5/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.1		25		96	85-115			1		
Surr: DIBROMOFLUOROMETHANE	25.4		25		102	84-118			0		
Surr: TOLUENE-D8	24.8		25		99	85-115			1		
BENZENE	9.98	1	10		100	83-117		10.5	5	20	
TOLUENE	9.55	1	10		96	82-113		10.1	5	20	
ETHYLBENZENE	10	1	10		100	81-113		10.5	5	20	
M+P-XYLENE	19.1	1	20		95	82-115		20.3	6	20	
O-XYLENE	9.95	1	10		99	81-115		10.5	5	20	

MB		Sample ID: VL160405-3				Units: %REC		Analysis Date: 4/5/2016 13:31			
Client ID:		Run ID: VL160405-3A				Prep Date: 4/5/2016		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	25.4		25		102	85-115					
Surr: DIBROMOFLUOROMETHANE	25		25		100	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: 1603520
Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **VL160405-3-4** Instrument ID **HPV1** Method: **SW8260_25**

LCS		Sample ID: VL160405-6			Units: UG/L			Analysis Date: 4/5/2016 12:06			
Client ID:		Run ID: VL160405-3A			Prep Date: 4/5/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1020	100	1000		102	80-120				20	

LCSD		Sample ID: VL160405-6			Units: UG/L			Analysis Date: 4/5/2016 12:27			
Client ID:		Run ID: VL160405-3A			Prep Date: 4/5/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	979	100	1000		98	80-120		1020	4	20	

MB		Sample ID: VL160405-3			Units: UG/L			Analysis Date: 4/5/2016 13:31			
Client ID:		Run ID: VL160405-3A			Prep Date: 4/5/2016			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:

1603520-1

Client: Western Water and Land, Inc.
Work Order: 1603520
Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **AK160405-1-1** Instrument ID **pH-1** Method: **SM2320B**

DUP	Sample ID: 1603520-1				Units: MG/L		Analysis Date: 4/5/2016				
Client ID: Palmer 276703			Run ID: AK160405-1A1			Prep Date: 4/5/2016			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BICARBONATE AS CaCO3	860	20						850	1	15	
CARBONATE AS CaCO3	ND	20						20		15	
TOTAL ALKALINITY AS CaCO3	860	20						850	1	15	

LCS	Sample ID: AK160405-1				Units: MG/L		Analysis Date: 4/5/2016				
Client ID:	Run ID: AK160405-1A1				Prep Date: 4/5/2016			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	101	5	100		101	85-115				15	

LCSD	Sample ID: AK160405-1				Units: MG/L		Analysis Date: 4/5/2016				
Client ID:	Run ID: AK160405-1A1				Prep Date: 4/5/2016			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	99.1	5	100		99	85-115		101	1	15	

MB	Sample ID: AK160405-1				Units: MG/L		Analysis Date: 4/5/2016				
Client ID:			Run ID: AK160405-1A1			Prep Date: 4/5/2016			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:

1603520-1

Client: Western Water and Land, Inc.
 Work Order: 1603520
 Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **IC160330-1-2** Instrument ID **IC-2** Method: **EPA300.0**

LCS	Sample ID: IC160330-1				Units: MG/L		Analysis Date: 3/30/2016 13:48				
Client ID:	Run ID: IC160330-1A5				Prep Date: 3/30/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	5.1	0.2	5		102	90-110				15	
CHLORIDE	5.12	0.2	5		102	90-110				15	
FLUORIDE	2.09	0.1	2		105	90-110				15	
NITRATE AS N	5.07	0.2	5		101	90-110				15	
NITRITE AS N	1.97	0.1	2		99	90-110				15	
SULFATE	20.4	1	20		102	90-110				15	

LCSD	Sample ID: IC160330-1				Units: MG/L		Analysis Date: 3/30/2016 14:03				
Client ID:	Run ID: IC160330-1A5				Prep Date: 3/30/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	5.11	0.2	5		102	90-110		5.1	0	15	
CHLORIDE	5.14	0.2	5		103	90-110		5.12	0	15	
FLUORIDE	2.1	0.1	2		105	90-110		2.09	0	15	
NITRATE AS N	5.09	0.2	5		102	90-110		5.07	0	15	
NITRITE AS N	1.99	0.1	2		99	90-110		1.97	1	15	
SULFATE	20.5	1	20		102	90-110		20.4	0	15	

MB	Sample ID: IC160330-1				Units: MG/L			Analysis Date: 3/30/2016 14:49			
Client ID:	Run ID: IC160330-1A5				Prep Date: 3/30/2016			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/NITRITE AS N	ND	0.1									
NITRATE AS N	ND	0.2									
NITRITE AS N	ND	0.1									
SULFATE	ND	1									

MS				Sample ID: 1603520-1				Units: MG/L				Analysis Date: 3/30/2016 18:50			
Client ID: Palmer 276703				Run ID: IC160330-1A5				Prep Date: 3/30/2016				DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual				
BROMIDE	6.4	0.2	5	1.3	102	85-115				15					
FLUORIDE	0.807	0.1	2	0.1	40	85-115				15	N				
NITRATE AS N	4.98	0.2	5	0.2	100	85-115				15					
NITRITE AS N	1.38	0.1	2	0.1	69	85-115				15	N				

Client: Western Water and Land, Inc.
Work Order: 1603520
Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **IC160330-1-2** Instrument ID **IC-2** Method: **EPA300.0**

MSD Sample ID: **1603520-1** Units: **MG/L** Analysis Date: **3/30/2016 19:06**

Client ID: **Palmer 276703** Run ID: **IC160330-1A5** Prep Date: **3/30/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	6.32	0.2	5	1.3	101	85-115		6.4	1	15	
FLUORIDE	0.852	0.1	2	0.1	43	85-115		0.807	5	15	N
NITRATE AS N	4.93	0.2	5	0.2	99	85-115		4.98	1	15	
NITRITE AS N	1.35	0.1	2	0.1	67	85-115		1.38	3	15	N

The following samples were analyzed in this batch:

1603520-1

Client: Western Water and Land, Inc.
Work Order: 1603520
Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **IC160330-1-2** Instrument ID **IC-2** Method: **EPA300.0**

MS		Sample ID: 1603520-1				Units: MG/L		Analysis Date: 3/31/2016 07:54			
Client ID: Palmer 276703			Run ID: IC160331-1A4				Prep Date: 3/30/2016		DF: 100		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHLORIDE	774	20	500	280	98	85-115				15	
SULFATE	4480	100	2000	2400	103	85-115				15	

MSD		Sample ID: 1603520-1				Units: MG/L		Analysis Date: 3/31/2016 08:10			
Client ID: Palmer 276703		Run ID: IC160331-1A4				Prep Date: 3/30/2016		DF: 100			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHLORIDE	769	20	500	280	97	85-115		774	1	15	
SULFATE	4460	100	2000	2400	101	85-115		4480	1	15	

The following samples were analyzed in this batch:

1603520-1

Client: Western Water and Land, Inc.
Work Order: 1603520
Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **PH160401-1-1** Instrument ID **pH-1** Method: **SM4500-H**

CCV		Sample ID: CCV1			Units: pH			Analysis Date: 4/1/2016			
Client ID:		Run ID: PH160401-1A1			Prep Date: 4/1/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.04	0.1	7			6.9-7.1					

DUP		Sample ID: 1603520-1			Units: pH			Analysis Date: 4/1/2016			
Client ID: Palmer 276703		Run ID: PH160401-1A1			Prep Date: 4/1/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.29	0.1						7.27		0.2	

ICV		Sample ID: ICV			Units: pH			Analysis Date: 4/1/2016			
Client ID:		Run ID: PH160401-1A1			Prep Date: 4/1/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	6.98	0.1	7			6.95-7.05					

The following samples were analyzed in this batch:

1603520-1

Client: Western Water and Land, Inc.
Work Order: 1603520
Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **SC160401-1-1** Instrument ID **pH-2** Method: **SM2510B**

CCV		Sample ID: CCV1		Units: umhos/cm			Analysis Date: 4/1/2016				
Client ID:		Run ID: SC160401-1A1			Prep Date: 4/1/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1550	1	1410		110	71.7-1554					

DUP		Sample ID: 1603520-1		Units: umhos/cm			Analysis Date: 4/1/2016				
Client ID: Palmer 276703		Run ID: SC160401-1A1			Prep Date: 4/1/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	5330	1						5320	0	10	

ICV		Sample ID: ICV		Units: umhos/cm			Analysis Date: 4/1/2016				
Client ID:		Run ID: SC160401-1A1			Prep Date: 4/1/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	660	1	718		92	46.2-789.1					

The following samples were analyzed in this batch:

1603520-1

Client: Western Water and Land, Inc.
Work Order: 1603520
Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **TD160401-1-1** Instrument ID **Balance** Method: **SM2540C**

DUP		Sample ID: 1603520-1				Units: MG/L		Analysis Date: 4/4/2016			
Client ID: Palmer 276703			Run ID: TD160404-1A1			Prep Date: 4/1/2016			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	4950	80						5100	3	5	

LCS	Sample ID: TD160401-1				Units: MG/L		Analysis Date: 4/4/2016				
Client ID:	Run ID: TD160404-1A1				Prep Date: 4/1/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	442	20	400		111	85-115				5	

LCSD	Sample ID: TD160401-1				Units: MG/L		Analysis Date: 4/4/2016				
Client ID:	Run ID: TD160404-1A1				Prep Date: 4/1/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	460	20	400		115	85-115		442	4	5	

MB		Sample ID: TD160401-1				Units: MG/L		Analysis Date: 4/4/2016			
Client ID:		Run ID: TD160404-1A1				Prep Date: 4/1/2016		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:

1603520-1

Client: Western Water and Land, Inc.
Work Order: 1603520
Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **TP160406-1-1** Instrument ID **Spec** Method: **EPA365.2**

LCS	Sample ID: TP160406-1				Units: MG/L		Analysis Date: 4/6/2016				
Client ID:	Run ID: TP160406-1A2				Prep Date: 4/6/2016			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.497	0.05	0.5		99	80-120				20	

MB		Sample ID: TP160406-1				Units: MG/L		Analysis Date: 4/6/2016			
Client ID:		Run ID: TP160406-1A2				Prep Date: 4/6/2016		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									

MS		Sample ID: 1603520-1				Units: MG/L		Analysis Date: 4/6/2016			
Client ID: Palmer 276703		Run ID: TP160406-1A2				Prep Date: 4/6/2016		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.299	0.05	0.25	0.042	103	80-120				20	

MSD		Sample ID: 1603520-1				Units: MG/L		Analysis Date: 4/6/2016			
Client ID: Palmer 276703		Run ID: TP160406-1A2				Prep Date: 4/6/2016		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.305	0.05	0.25	0.042	105	80-120		0.299	2	20	

The following samples were analyzed in this batch:

1603520-1