



1707153

GC/MS Volatiles:

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

All acceptance criteria were met.

GC/MS Semivolatiles:

The sample was analyzed using GC/MS following the current revision of SOP 506 based on SW-846 Method 8270D.

All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria with the following exceptions:

Spiked Compound	QC Sample	Direction
2-methylnaphthalene	LCS	Low
2-methylnaphthalene	LCS/LCSD	RPD
Anthracene	LCSD	Low
Benzo(G,H,I)perylene	LCSD	High
Benzo(G,H,I)perylene	LCS/LCSD	RPD

Because of the large number of target analytes reported by this method, the lab allows for sporadic marginal exceedances. There were no target compounds detected in the sample. No further action was taken.

All surrogate recoveries were within acceptance criteria with the following exception:

Surrogate	Sample	Direction
2-Fluorobiphenyl	MB	High

No target compounds were detected in the sample. No further action was taken.

All remaining 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.

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 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
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
Sulfate	300.0 Revision 2.1	1113

The sample was prepared and analyzed within the established hold time for each analysis with the exception of nitrate as N and nitrite as N. Due to instrumentation issues, the sample was analyzed outside of the 48 hour hold time.

All remaining acceptance criteria were met.

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Sample Number(s) Cross-Reference Table

OrderNum: 1707153

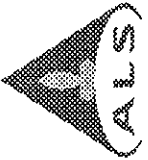
Client Name: Western Water and Land, Inc.

Client Project Name: TEP 317B RU 11-7 & SR 43-12 Pads

Client Project Number:

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Beaver Cr 2	1707153-1		WATER	12-Jul-17	11:15
Trip Blank	1707153-2		WATER	12-Jul-17	



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 20218

PROJECT NAME TEP 3176 RW 11-7 #		SAMPLER Shelby		DATE 7-12-17		PAGE 1 of 1			
FACILITY NAME SR 43-12 Pads		PROJECT NO.		TURNAROUND Standard		DISPOSAL By Lab or Return to Client			
FACILITY ID (API)		EDD FORMAT							
COMPANY NAME Western Water & Land, Inc.		PURCHASE ORDER							
SEND REPORT TO Bruce Smith		BILL TO COMPANY TEP Rocky Mtn LLC							
ADDRESS 743 Horizon Court, Suite 330		INVOICE ATTN TO Mike Gardner							
CITY / STATE / ZIP Grand Junction, CO 81506		ADDRESS 1058 CR 215							
PHONE (970) 242-0170		CITY / STATE / ZIP Parachute, CO 81635							
FAX		PHONE (970) 250-5778							
E-MAIL bsmith@westernwaterandland.com		E-MAIL mgardner@terraep.com							
Lab ID (1)	Field ID Beaver Cr 2	Matrix SW	Sample Date 7-12-17	Sample Time 11:15	# Bottles 9	Pres. 1	QC IV		
Field Parameters									
Temp (°C)		12.2	DO (%)	89.8	SpC (µS/cm)	222.4	Turb (NTUs)	11.09	
pH (s.u.)		8.51	DO (mg/L)	9.164	ORP (mv)	123.0	Disch (gpm)		
Temp (°C)			DO (%)		SpC (µS/cm)		Turb (NTUs)		
pH (s.u.)			DO (mg/L)		ORP (mv)		Disch (gpm)		
Comments: RW 11-7 Pad, well; RW 11-7 SR 43-12 Pad, well; SR 333-12									
RELINQUISHED BY		SIGNATURE		PRINTED NAME		DATE		TIME	
RECEIVED BY		[Signature]		Shelby Goodwin		7-12-17		12:30	
RELINQUISHED BY		[Signature]		M. Gardner		7-12-17		12:30	
RECEIVED BY		[Signature]		C. Trimble		7-12-17		14:30	
RELINQUISHED BY		[Signature]		C. Trimble		7-13-17		8:00	
RECEIVED BY		[Signature]							

*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.

QC PACKAGE (check below)	
LEVEL II (Standard QC)	
LEVEL III (Std QC + forms)	
LEVEL IV (Std QC + forms + raw data)	X
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035	

1707153

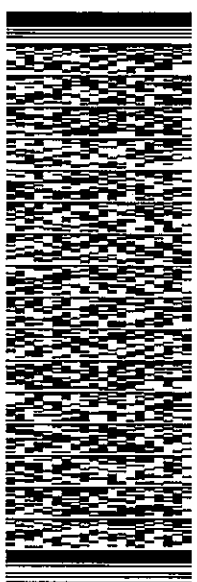
ORIGIN ID: RILA (616) 298-1033
NICK MARTINEZ
ALS ENVIRONMENTAL
127 E 1ST STREET
PARAGHUTE CO 81635
UNITED STATES US

SHIP DATE: 12 JUL 17
ACTWGT: 48.00 LB
CAD: 108058167/NET3850
DIM5: 13x20x14 IN
BILL RECIPIENT

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

FORT COLLINS CO 80524
(970) 490-1511 REF: 071217-1

NO. PO: PARAGHUTE DEPT:

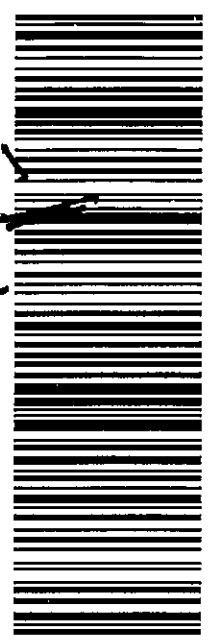


J171117021401v2

546J1/C0C263C1

THU - 13 JUL 3:00P
STANDARD OVERNIGHT
TRK# 7796 1820 0761
0201

XH FTCA
CO-US **DEN**
80524



Q1 1770

After printing this label:

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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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SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
 Project: TEP 317B RU 11-7 & SR 43-12 Pads
 Sample ID: Beaver Cr 2
 Legal Location:
 Collection Date: 7/12/2017 11:15

Date: 27-Jul-17
 Work Order: 1707153
 Lab ID: 1707153-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 7/18/2017		PrepBy: AMG
BICARBONATE AS CaCO3	110		20	MG/L	1		7/18/2017
CARBONATE AS CaCO3	ND		20	MG/L	1		7/18/2017
TOTAL ALKALINITY AS CaCO3	110		20	MG/L	1		7/18/2017
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 7/19/2017		PrepBy: JFN
Diesel Range Organics	ND		0.6	MG/L	1	0.17	7/19/2017 18:23
Surr: O-TERPHENYL	95		63-126	%REC	1		7/19/2017 18:23
GC/MS SEMI-VOLATILES			SW8270		Prep Date: 7/14/2017		PrepBy: BCH
NAPHTHALENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
2-METHYLNAPHTHALENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
ACENAPHTHYLENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
ACENAPHTHENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
FLUORENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
PHENANTHRENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
ANTHRACENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
FLUORANTHENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
PYRENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
BENZO(A)ANTHRACENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
CHRYSENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
BENZO(B)FLUORANTHENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
BENZO(K)FLUORANTHENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
BENZO(A)PYRENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
INDENO(1,2,3-CD)PYRENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
DIBENZO(A,H)ANTHRACENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
BENZO(G,H,I)PERYLENE	ND		9.6	UG/L	1	2.9	7/20/2017 20:41
Surr: NITROBENZENE-D5	76		53-111	%REC	1		7/20/2017 20:41
Surr: 2-FLUOROBIPHENYL	77		55-108	%REC	1		7/20/2017 20:41
Surr: TERPHENYL-D14	49		34-139	%REC	1		7/20/2017 20:41
GC/MS VOLATILES			SW8260_25		Prep Date: 7/14/2017		PrepBy: JXK
BENZENE	ND		1	UG/L	1	0.32	7/14/2017 16:39
TOLUENE	ND		1	UG/L	1	0.31	7/14/2017 16:39
ETHYLBENZENE	ND		1	UG/L	1	0.31	7/14/2017 16:39
M+P-XYLENE	ND		1	UG/L	1	0.31	7/14/2017 16:39
O-XYLENE	ND		1	UG/L	1	0.31	7/14/2017 16:39
TOTAL XYLENES	ND		1	UG/L	1		7/14/2017 16:39
Surr: 4-BROMOFLUOROBENZENE	100		85-115	%REC	1		7/14/2017 16:39
Surr: DIBROMOFLUOROMETHANE	102		84-118	%REC	1		7/14/2017 16:39
Surr: TOLUENE-D8	98		85-115	%REC	1		7/14/2017 16:39
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	47	7/14/2017 16:39
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 7/14/2017		PrepBy: AMG
BROMIDE	ND		0.2	MG/L	1	0.06	7/18/2017 16:20
CHLORIDE	0.74		0.2	MG/L	1	0.06	7/18/2017 16:20

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SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
Project: TEP 317B RU 11-7 & SR 43-12 Pads
Sample ID: Beaver Cr 2
Legal Location:
Collection Date: 7/12/2017 11:15

Date: 27-Jul-17
Work Order: 1707153
Lab ID: 1707153-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
FLUORIDE	0.08	J	0.1	MG/L	1	0.03	7/18/2017 16:20
NITRATE/NITRITE AS N	0.072	J	0.1	MG/L	1		7/18/2017 16:20
NITRATE AS N	0.072	J	0.2	MG/L	1	0.06	7/18/2017 16:20
NITRITE AS N	ND		0.1	MG/L	1	0.03	7/18/2017 16:20
SULFATE	9.5		1	MG/L	1	0.15	7/18/2017 16:20
METALS BY 200.8			EPA200.8				Prep Date: 7/18/2017 PrepBy: JML
BARIUM	0.036		0.001	MG/L	10	0.0006	7/25/2017 12:56
BORON	0.017	J	0.05	MG/L	10	0.015	7/25/2017 12:56
CALCIUM	29		1	MG/L	10	0.3	7/25/2017 12:56
IRON	ND		0.1	MG/L	10	0.044	7/25/2017 12:56
MAGNESIUM	5.8		0.1	MG/L	10	0.03	7/25/2017 12:56
MANGANESE	0.0036		0.002	MG/L	10	0.0006	7/25/2017 12:56
POTASSIUM	0.74	J	1	MG/L	10	0.3	7/25/2017 12:56
SELENIUM	ND		0.001	MG/L	10	0.0003	7/25/2017 12:56
SODIUM	10		1	MG/L	10	0.3	7/25/2017 12:56
STRONTIUM	0.19		0.001	MG/L	10	0.00049	7/25/2017 12:56
PH			SM4500-H				Prep Date: 7/14/2017 PrepBy: SKC
PH	8.1		0.1	pH	1		7/14/2017
SPECIFIC CONDUCTANCE IN WATER			SM2510B				Prep Date: 7/14/2017 PrepBy: SKC
SPECIFIC CONDUCTIVITY	225		1	umhos/cm	1		7/14/2017
TOTAL DISSOLVED SOLIDS			SM2540C				Prep Date: 7/18/2017 PrepBy: SKC
TOTAL DISSOLVED SOLIDS	150		20	MG/L	1		7/19/2017

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SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
Project: TEP 317B RU 11-7 & SR 43-12 Pads
Sample ID: Trip Blank
Legal Location:
Collection Date: 7/12/2017

Date: 27-Jul-17
Work Order: 1707153
Lab ID: 1707153-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
GC/MS VOLATILES			SW8260_25				
					Prep Date: 7/14/2017		PrepBy: JJK
BENZENE	ND		1	UG/L	1	0.32	7/14/2017 17:02
TOLUENE	ND		1	UG/L	1	0.31	7/14/2017 17:02
ETHYLBENZENE	ND		1	UG/L	1	0.31	7/14/2017 17:02
M+P-XYLENE	ND		1	UG/L	1	0.31	7/14/2017 17:02
O-XYLENE	ND		1	UG/L	1	0.31	7/14/2017 17:02
TOTAL XYLENES	ND		1	UG/L	1		7/14/2017 17:02
Surr: 4-BROMOFLUOROBENZENE	97		85-115	%REC	1		7/14/2017 17:02
Surr: DIBROMOFLUOROMETHANE	100		84-118	%REC	1		7/14/2017 17:02
Surr: TOLUENE-D8	96		85-115	%REC	1		7/14/2017 17:02
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	47	7/14/2017 17:02

Client: Western Water and Land, Inc.
Project: TEP 317B RU 11-7 & SR 43-12 Pads
Sample ID: Trip Blank
Legal Location:
Collection Date: 7/12/2017

Date: 27-Jul-17
Work Order: 1707153
Lab ID: 1707153-2
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

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Date: 7/27/2017 1:14:

Client: Western Water and Land, Inc.
 Work Order: 1707153
 Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: **HC170719-100-1** Instrument ID: **FUELS-1** Method: **SW8015M**

LCS		Sample ID: HC170719-100			Units: MG/L		Analysis Date: 7/19/2017 21:24				
Client ID:		Run ID: HC170719-8A					Prep Date: 7/19/2017		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	17.2	0.602	16.7		103	36-150				20	
Surr: O-TERPHENYL	0.856		0.836		102	63-126					

LCSD		Sample ID: HC170719-100			Units: MG/L		Analysis Date: 7/19/2017 21:49				
Client ID:		Run ID: HC170719-8A					Prep Date: 7/19/2017		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	18.2	0.587	16.3		112	36-150		17.2	6	20	
Surr: O-TERPHENYL	0.887		0.816		109	63-126			4		

MB		Sample ID: HC170719-100			Units: MG/L		Analysis Date: 7/19/2017 16:40				
Client ID:		Run ID: HC170719-8A					Prep Date: 7/19/2017		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	0.61									
Surr: O-TERPHENYL	0.725		0.842		86	63-126					

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1707153
 Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: **IP170718-2-4** Instrument ID: **ICPMS2** Method: **EPA200.8**

LCS		Sample ID: IM170718-2			Units: MG/L		Analysis Date: 7/25/2017 12:27				
Client ID:		Run ID: IM170725-10A17			Prep Date: 7/18/2017		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.101	0.001	0.1		101	85-115				20	
BORON	0.958	0.05	1		96	85-115				20	
CALCIUM	9.75	1	10		97	85-115				20	
IRON	4.72	0.1	5		94	85-115				20	
MAGNESIUM	9.79	0.1	10		98	85-115				20	
MANGANESE	0.0991	0.002	0.1		99	85-115				20	
POTASSIUM	4.81	1	5		96	85-115				20	
SELENIUM	0.101	0.001	0.1		101	85-115				20	
SODIUM	10	1	10		100	85-115				20	
STRONTIUM	0.0957	0.001	0.1		96	85-115				20	

LCSD		Sample ID: IM170718-2			Units: MG/L		Analysis Date: 7/25/2017 12:29				
Client ID:		Run ID: IM170725-10A17			Prep Date: 7/18/2017		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.1	0.001	0.1		100	85-115		0.101	1	20	
BORON	0.961	0.05	1		96	85-115		0.958	0	20	
CALCIUM	9.84	1	10		98	85-115		9.75	1	20	
IRON	4.61	0.1	5		92	85-115		4.72	2	20	
MAGNESIUM	9.85	0.1	10		98	85-115		9.79	1	20	
MANGANESE	0.0988	0.002	0.1		99	85-115		0.0991	0	20	
POTASSIUM	4.76	1	5		95	85-115		4.81	1	20	
SELENIUM	0.0996	0.001	0.1		100	85-115		0.101	2	20	
SODIUM	10	1	10		100	85-115		10	0	20	
STRONTIUM	0.0962	0.001	0.1		96	85-115		0.0957	1	20	

MB		Sample ID: FP170714-1			Units: MG/L		Analysis Date: 7/25/2017 12:21				
Client ID:		Run ID: IM170725-10A17			Prep Date: 7/18/2017		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	ND	0.05									
CALCIUM	ND	1									
IRON	ND	0.1									
MAGNESIUM	ND	0.1									
MANGANESE	0.00068	0.002									J
POTASSIUM	ND	1									
SELENIUM	ND	0.001									
SODIUM	ND	1									
STRONTIUM	ND	0.001									

Client: Western Water and Land, Inc.
Work Order: 1707153
Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: **IP170718-2-4** Instrument ID: **ICPMS2** Method: **EPA200.8**

The following samples were analyzed in this batch:

1707153-1

Client: Western Water and Land, Inc.
 Work Order: 1707153
 Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: **EX170714-1-1** Instrument ID: **HPSV4** Method: **SW8270**

LCS Sample ID: **EX170714-1** Units: **UG/L** Analysis Date: **7/20/2017 20:02**
 Client ID: Run ID: **SV170720-4** Prep Date: **7/14/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
NAPHTHALENE	42	10	60		70	60-100				20	
2-METHYLNAPHTHALENE	33.3	10	60		55	62-100				20	*
ACENAPHTHYLENE	45.5	10	60		76	67-108				20	
ACENAPHTHENE	43.7	10	60		73	60-108				20	
FLUORENE	47.5	10	60		79	64-116				20	
PHENANTHRENE	49.5	10	60		82	64-113				20	
ANTHRACENE	43.5	10	60		72	72-108				20	
FLUORANTHENE	52.5	10	60		87	63-122				20	
PYRENE	44.5	10	60		74	60-113				20	
BENZO(A)ANTHRACENE	45.1	10	60		75	69-107				20	
CHRYSENE	50	10	60		83	68-114				20	
BENZO(B)FLUORANTHENE	49.2	10	60		82	67-111				20	
BENZO(K)FLUORANTHENE	46.1	10	60		77	65-118				20	
BENZO(A)PYRENE	46.8	10	60		78	62-104				20	
INDENO(1,2,3-CD)PYRENE	49.6	10	60		83	54-124				20	
DIBENZO(A,H)ANTHRACENE	50.2	10	60		84	57-126				20	
BENZO(G,H,I)PERYLENE	50.8	10	60		85	52-124				20	
Surr: NITROBENZENE-D5	35.9		50		72	53-111					
Surr: 2-FLUOROBIPHENYL	38.3		50		77	55-108					
Surr: TERPHENYL-D14	41		50		82	34-139					

Client: Western Water and Land, Inc.
 Work Order: 1707153
 Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: EX170714-1 Instrument ID: HPSV4 Method: SW8270

LCSD Sample ID: EX170714-1 Units: UG/L Analysis Date: 7/20/2017 20:21
 Client ID: Run ID: SV170720-4 Prep Date: 7/14/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
NAPHTHALENE	43.8	10	60		73	60-100		42	4	20	
2-METHYLNAPHTHALENE	45.1	10	60		75	62-100		33.3	30	20	+
ACENAPHTHYLENE	46.4	10	60		77	67-108		45.5	2	20	
ACENAPHTHENE	45.6	10	60		76	60-108		43.7	4	20	
FLUORENE	48	10	60		80	64-116		47.5	1	20	
PHENANTHRENE	50.2	10	60		84	64-113		49.5	1	20	
ANTHRACENE	42.1	10	60		70	72-108		43.5	3	20	*
FLUORANTHENE	54.1	10	60		90	63-122		52.5	3	20	
PYRENE	45.4	10	60		76	60-113		44.5	2	20	
BENZO(A)ANTHRACENE	45.7	10	60		76	69-107		45.1	1	20	
CHRYSENE	52.2	10	60		87	68-114		50	4	20	
BENZO(B)FLUORANTHENE	49.7	10	60		83	67-111		49.2	1	20	
BENZO(K)FLUORANTHENE	48.6	10	60		81	65-118		46.1	5	20	
BENZO(A)PYRENE	47.5	10	60		79	62-104		46.8	2	20	
INDENO(1,2,3-CD)PYRENE	51	10	60		85	54-124		49.6	3	20	
DIBENZO(A,H)ANTHRACENE	51.4	10	60		86	57-126		50.2	2	20	
BENZO(G,H,I)PERYLENE	80.6	10	60		134	52-124		50.8	45	20	*+
Surr: NITROBENZENE-D5	38.6		50		77	53-111				7	
Surr: 2-FLUOROBIPHENYL	38.3		50		77	55-108				0	
Surr: TERPHENYL-D14	40.3		50		81	34-139				2	

Client: Western Water and Land, Inc.
 Work Order: 1707153
 Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: **EX170714-1-1** Instrument ID: **HPSV4** Method: **SW8270**

MB Sample ID: **EX170714-1** Units: **UG/L** Analysis Date: **7/20/2017 19:42**
 Client ID: Run ID: **SV170720-4** Prep Date: **7/14/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
NAPHTHALENE	ND	10									
2-METHYLNAPHTHALENE	ND	10									
ACENAPHTHYLENE	ND	10									
ACENAPHTHENE	ND	10									
FLUORENE	ND	10									
PHENANTHRENE	ND	10									
ANTHRACENE	ND	10									
FLUORANTHENE	ND	10									
PYRENE	ND	10									
BENZO(A)ANTHRACENE	ND	10									
CHRYSENE	ND	10									
BENZO(B)FLUORANTHENE	ND	10									
BENZO(K)FLUORANTHENE	ND	10									
BENZO(A)PYRENE	ND	10									
INDENO(1,2,3-CD)PYRENE	ND	10									
DIBENZO(A,H)ANTHRACENE	ND	10									
BENZO(G,H,I)PERYLENE	ND	10									
Surr: NITROBENZENE-D5	33.4		50		67	53-111					
Surr: 2-FLUOROBIPHENYL	57.2		50		114	55-108					*
Surr: TERPHENYL-D14	39.7		50		79	34-139					

The following samples were analyzed in this batch:

1707153-1

Client: Western Water and Land, Inc.
 Work Order: 1707153
 Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: VL170714-4-3 Instrument ID: HPV4 Method: SW8260_25

LCS		Sample ID: VL170714-4			Units: %REC		Analysis Date: 7/14/2017 11:05				
Client ID:		Run ID: VL170714-4A			Prep Date: 7/14/2017		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		25		100	85-115					
Surr: DIBROMOFLUOROMETHANE	25.3		25		101	84-118					
Surr: TOLUENE-D8	24.5		25		98	85-115					
BENZENE	10.7	1	10		107	83-117				20	
TOLUENE	9.51	1	10		95	82-113				20	
ETHYLBENZENE	9.62	1	10		96	81-113				20	
M+P-XYLENE	19	1	20		95	82-115				20	
O-XYLENE	9.22	1	10		92	81-115				20	

LCSD		Sample ID: VL170714-4			Units: %REC		Analysis Date: 7/14/2017 11:29				
Client ID:		Run ID: VL170714-4A			Prep Date: 7/14/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.8		25		99	85-115			1		
Surr: DIBROMOFLUOROMETHANE	25.4		25		102	84-118			0		
Surr: TOLUENE-D8	23.7		25		95	85-115			3		
BENZENE	9.93	1	10		99	83-117		10.7	7	20	
TOLUENE	8.68	1	10		87	82-113		9.51	9	20	
ETHYLBENZENE	8.58	1	10		86	81-113		9.62	11	20	
M+P-XYLENE	16.8	1	20		84	82-115		19	12	20	
O-XYLENE	8.31	1	10		83	81-115		9.22	10	20	

MB		Sample ID: VL170714-4			Units: %REC		Analysis Date: 7/14/2017 13:53				
Client ID:		Run ID: VL170714-4A			Prep Date: 7/14/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.8		25		99	85-115					
Surr: DIBROMOFLUOROMETHANE	25.4		25		101	84-118					
Surr: TOLUENE-D8	24.2		25		97	85-115					
BENZENE	ND	1									
TOLUENE	ND	1									
ETHYLBENZENE	ND	1									
M+P-XYLENE	ND	1									
O-XYLENE	ND	1									
TOTAL XYLENES	ND	1									

The following samples were analyzed in this batch: 1707153-1 1707153-2

Client: Western Water and Land, Inc.
 Work Order: 1707153
 Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: **VL170714-4-5** Instrument ID: **HPV4** Method: **SW8260_25**

LCS		Sample ID: VL170714-8			Units: UG/L		Analysis Date: 7/14/2017 12:18				
Client ID:		Run ID: VL170714-4A			Prep Date: 7/14/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1040	100	1000		104	80-120				20	

LCSD		Sample ID: VL170714-8			Units: UG/L		Analysis Date: 7/14/2017 12:42				
Client ID:		Run ID: VL170714-4A			Prep Date: 7/14/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1100	100	1000		110	80-120		1040	6	20	

MB		Sample ID: VL170714-4			Units: UG/L		Analysis Date: 7/14/2017 13:53				
Client ID:		Run ID: VL170714-4A			Prep Date: 7/14/2017		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:

1707153-1	1707153-2
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Client: Western Water and Land, Inc.
 Work Order: 1707153
 Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: **AK170718-1-2** Instrument ID: **NONE** Method: **SM2320B**

LCS		Sample ID: AK170718-1			Units: MG/L		Analysis Date: 7/18/2017				
Client ID:		Run ID: AK170718-1a1			Prep Date: 7/18/2017		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	97.2	5	100		97	85-115				15	

LCSD		Sample ID: AK170718-1			Units: MG/L		Analysis Date: 7/18/2017				
Client ID:		Run ID: AK170718-1a1			Prep Date: 7/18/2017		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	98.7	5	100		99	85-115		97.2	1	15	

MB		Sample ID: AK170718-1			Units: MG/L		Analysis Date: 7/18/2017				
Client ID:		Run ID: AK170718-1a1			Prep Date: 7/18/2017		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:

1707153-1

Client: Western Water and Land, Inc.
 Work Order: 1707153
 Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: **IC170714-1-2** Instrument ID: **IC-2** Method: **EPA300.0**

LCS		Sample ID: IC170714-1			Units: MG/L		Analysis Date: 7/14/2017 10:08				
Client ID:		Run ID: IC170714-1A10			Prep Date: 7/14/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	5.35	0.2	5		107	90-110				15	
CHLORIDE	5.36	0.2	5		107	90-110				15	
FLUORIDE	2.07	0.1	2		104	90-110				15	
NITRATE AS N	5.38	0.2	5		108	90-110				15	
NITRITE AS N	2.1	0.1	2		105	90-110				15	
SULFATE	21.3	1	20		107	90-110				15	

LCSD		Sample ID: IC170714-1			Units: MG/L		Analysis Date: 7/14/2017 10:23				
Client ID:		Run ID: IC170714-1A10			Prep Date: 7/14/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	5.18	0.2	5		104	90-110		5.35	3	15	
CHLORIDE	5.1	0.2	5		102	90-110		5.36	5	15	
FLUORIDE	2	0.1	2		100	90-110		2.07	3	15	
NITRATE AS N	5.17	0.2	5		104	90-110		5.38	4	15	
NITRITE AS N	1.98	0.1	2		99	90-110		2.1	6	15	
SULFATE	20.4	1	20		102	90-110		21.3	4	15	

MB		Sample ID: IC170714-1			Units: MG/L		Analysis Date: 7/14/2017 09:53				
Client ID:		Run ID: IC170714-1A10			Prep Date: 7/14/2017		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	-0.13	0.2									J
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: 1707153
Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: **PH170714-1-2** Instrument ID: **pH-1** Method: **SM4500-H**

CCV		Sample ID: CCV1			Units: pH		Analysis Date: 7/14/2017				
Client ID:		Run ID: PH170714-1a1			Prep Date: 7/14/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.05	0.1	7			6.9-7.1					

CCV		Sample ID: CCV2			Units: pH		Analysis Date: 7/14/2017				
Client ID:		Run ID: PH170714-1a1			Prep Date: 7/14/2017		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					

ICV		Sample ID: ICV			Units: pH		Analysis Date: 7/14/2017				
Client ID:		Run ID: PH170714-1a1			Prep Date: 7/14/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.05	0.1	7			6.95-7.05					

The following samples were analyzed in this batch:

1707153-1

Client: Western Water and Land, Inc.
 Work Order: 1707153
 Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: **SC170714-1-2** Instrument ID: **pH-2** Method: **SM2510B**

CCV	Sample ID: CCV1				Units: umhos/cm	Analysis Date: 7/14/2017					
Client ID:		Run ID: SC170714-1A1				Prep Date: 7/14/2017			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1420	1	1410		100		71.7-1554				

CCV	Sample ID: CCV2				Units: umhos/cm	Analysis Date: 7/14/2017					
Client ID:		Run ID: SC170714-1A1				Prep Date: 7/14/2017			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1410	1	1410		100		71.7-1554				

ICV	Sample ID: ICV				Units: umhos/cm	Analysis Date: 7/14/2017					
Client ID:		Run ID: SC170714-1A1				Prep Date: 7/14/2017			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	718	1	718		100		46.2-789.1				

The following samples were analyzed in this batch:

1707153-1

Client: Western Water and Land, Inc.
Work Order: 1707153
Project: TEP 317B RU 11-7 & SR 43-12 Pads

QC BATCH REPORT

Batch ID: **TD170718-2-1** Instrument ID: **Balance** Method: **SM2540C**

LCS	Sample ID: TD170718-2			Units: MG/L			Analysis Date: 7/19/2017				
Client ID:	Run ID: TD170719-2A1			Prep Date: 7/18/2017			DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	397	20	400		99	85-115				5	

LCSD	Sample ID: TD170718-2			Units: MG/L			Analysis Date: 7/19/2017				
Client ID:	Run ID: TD170719-2A1			Prep Date: 7/18/2017			DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	391	20	400		98	85-115		397	2	5	

MB	Sample ID: TD170718-2			Units: MG/L			Analysis Date: 7/19/2017				
Client ID:	Run ID: TD170719-2A1			Prep Date: 7/18/2017			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: 1707153-1