



Tuesday, March 13, 2018

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

Re: ALS Workorder: 1802437
Project Name: TEP Starkey Gulch
Project Number:

Dear Mr. Smith:

Three water samples were received from Western Water and Land, Inc., on 2/28/2018. The samples were scheduled for the following analyses:

- BART
- Dissolved Gasses
- GC/MS Volatiles
- Inorganics
- Metals
- Total Extractable Petroleum Hydrocarbons (Diesel)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Katie M. O'Brien
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Louisiana (LA)	05057
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280



1802437

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.

Dissolved Gasses:

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

All acceptance criteria were met.

DRO:

The samples were 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 samples were 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.

All acceptance criteria were met.



Inorganics:

The samples were 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
Total phosphorus	365.2	1119
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

All acceptance criteria were met.

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
 Project: TEP Starkey Gulch
 Sample ID: Puckett 151879
 Legal Location:
 Collection Date: 2/27/2018 11:15

Date: 13-Mar-18
 Work Order: 1802437
 Lab ID: 1802437-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 3/3/2018		PrepBy: HMA
BICARBONATE AS CaCO3	480		20	MG/L	1		3/3/2018
CARBONATE AS CaCO3	ND		20	MG/L	1		3/3/2018
TOTAL ALKALINITY AS CaCO3	480		20	MG/L	1		3/3/2018
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 3/5/2018		PrepBy: JML
IRON RELATED BACTERIA	35000		1	cfu/ml	1		3/13/2018
SLIME FORMING BACTERIA	12500		1	cfu/ml	1		3/13/2018
SULFATE REDUCING BACTERIA	18000		1	cfu/ml	1		3/13/2018
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 2/28/2018		PrepBy: JFN
Diesel Range Organics	ND		0.57	MG/L	1	0.16	2/28/2018 21:14
Surr: O-TERPHENYL	90		63-126	%REC	1		2/28/2018 21:14
DISSOLVED GASSES			RSK175		Prep Date: 3/1/2018		PrepBy: DMS
METHANE	ND		1	UG/L	1	1	3/1/2018 13:54
ETHANE	ND		2	UG/L	1	2	3/1/2018 13:54
PROPANE	ND		1	UG/L	1	1	3/1/2018 13:54
GC/MS VOLATILES			SW8260_25		Prep Date: 2/28/2018		PrepBy: CJW
BENZENE	ND		1	UG/L	1	0.32	2/28/2018 16:12
TOLUENE	ND		1	UG/L	1	0.31	2/28/2018 16:12
ETHYLBENZENE	ND		1	UG/L	1	0.31	2/28/2018 16:12
M+P-XYLENE	ND		1	UG/L	1	0.31	2/28/2018 16:12
O-XYLENE	ND		1	UG/L	1	0.31	2/28/2018 16:12
TOTAL XYLENES	ND		1	UG/L	1		2/28/2018 16:12
Surr: 4-BROMOFLUOROBENZENE	102		85-115	%REC	1		2/28/2018 16:12
Surr: DIBROMOFLUOROMETHANE	101		84-118	%REC	1		2/28/2018 16:12
Surr: TOLUENE-D8	99		85-115	%REC	1		2/28/2018 16:12
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	47	2/28/2018 16:12
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 3/1/2018		PrepBy: HMA
BROMIDE	ND		0.2	MG/L	1	0.06	3/1/2018 11:00
CHLORIDE	26		2	MG/L	10	0.6	3/1/2018 10:45
FLUORIDE	1.3		0.1	MG/L	1	0.03	3/1/2018 11:00
NITRATE/NITRITE AS N	0.18	J	0.1	MG/L	1		3/1/2018 11:00
NITRATE AS N	0.18	J	0.2	MG/L	1	0.06	3/1/2018 11:00
NITRITE AS N	ND		0.1	MG/L	1	0.03	3/1/2018 11:00
SULFATE	180		10	MG/L	10	1.5	3/1/2018 10:45
METALS BY 200.8			EPA200.8		Prep Date: 3/1/2018		PrepBy: JML
BARIUM	0.042		0.001	MG/L	10	0.00039	3/5/2018 11:55
BORON	0.19		0.05	MG/L	10	0.0049	3/5/2018 11:55
CALCIUM	110		1	MG/L	10	0.088	3/5/2018 11:55
IRON	ND		0.1	MG/L	10	0.0094	3/5/2018 11:55
MAGNESIUM	54		0.1	MG/L	10	0.014	3/5/2018 11:55
MANGANESE	0.061		0.002	MG/L	10	0.00031	3/5/2018 11:55

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SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
Project: TEP Starkey Gulch
Sample ID: Puckett 151879
Legal Location:
Collection Date: 2/27/2018 11:15

Date: 13-Mar-18
Work Order: 1802437
Lab ID: 1802437-1
Matrix: WATER

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
POTASSIUM	6.7		1	MG/L	10	0.069	3/5/2018 11:55
SELENIUM	0.0032		0.001	MG/L	10	0.00022	3/5/2018 11:55
SODIUM	97		1	MG/L	10	0.078	3/5/2018 11:55
STRONTIUM	1.6		0.001	MG/L	10	0.00018	3/5/2018 11:55
PH			SM4500-H		Prep Date: 3/1/2018		PrepBy: HMA
PH	7.49		0.1	pH	1		3/1/2018
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 3/1/2018		PrepBy: HMA
SPECIFIC CONDUCTIVITY	1257		1	umhos/cm	1		3/1/2018
TOTAL DISSOLVED SOLIDS			SM2540C		Prep Date: 3/2/2018		PrepBy: HMA
TOTAL DISSOLVED SOLIDS	780		20	MG/L	1		3/3/2018
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 3/3/2018		PrepBy: HMA
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	0.045	3/3/2018

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SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
 Project: TEP Starkey Gulch
 Sample ID: Puckett 185334
 Legal Location:
 Collection Date: 2/27/2018 14:30

Date: 13-Mar-18
 Work Order: 1802437
 Lab ID: 1802437-2
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 3/3/2018		PrepBy: HMA
BICARBONATE AS CaCO3	460		20	MG/L	1		3/3/2018
CARBONATE AS CaCO3	ND		20	MG/L	1		3/3/2018
TOTAL ALKALINITY AS CaCO3	460		20	MG/L	1		3/3/2018
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 3/5/2018		PrepBy: JML
IRON RELATED BACTERIA	35000		1	cfu/ml	1		3/13/2018
SLIME FORMING BACTERIA	12500		1	cfu/ml	1		3/13/2018
SULFATE REDUCING BACTERIA	18000		1	cfu/ml	1		3/13/2018
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 2/28/2018		PrepBy: JFN
Diesel Range Organics	ND		0.57	MG/L	1	0.16	2/28/2018 21:36
Surr: O-TERPHENYL	95		63-126	%REC	1		2/28/2018 21:36
DISSOLVED GASSES			RSK175		Prep Date: 3/1/2018		PrepBy: DMS
METHANE	ND		1	UG/L	1	1	3/1/2018 13:57
ETHANE	ND		2	UG/L	1	2	3/1/2018 13:57
PROPANE	ND		1	UG/L	1	1	3/1/2018 13:57
GC/MS VOLATILES			SW8260_25		Prep Date: 2/28/2018		PrepBy: CJW
BENZENE	ND		1	UG/L	1	0.32	2/28/2018 16:36
TOLUENE	ND		1	UG/L	1	0.31	2/28/2018 16:36
ETHYLBENZENE	ND		1	UG/L	1	0.31	2/28/2018 16:36
M+P-XYLENE	ND		1	UG/L	1	0.31	2/28/2018 16:36
O-XYLENE	ND		1	UG/L	1	0.31	2/28/2018 16:36
TOTAL XYLENES	ND		1	UG/L	1		2/28/2018 16:36
Surr: 4-BROMOFLUOROBENZENE	100		85-115	%REC	1		2/28/2018 16:36
Surr: DIBROMOFLUOROMETHANE	101		84-118	%REC	1		2/28/2018 16:36
Surr: TOLUENE-D8	96		85-115	%REC	1		2/28/2018 16:36
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	47	2/28/2018 16:36
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 3/1/2018		PrepBy: HMA
BROMIDE	ND		0.2	MG/L	1	0.06	3/1/2018 11:30
CHLORIDE	33		2	MG/L	10	0.6	3/1/2018 11:15
FLUORIDE	1.4		0.1	MG/L	1	0.03	3/1/2018 11:30
NITRATE/NITRITE AS N	0.52		0.1	MG/L	1		3/1/2018 11:30
NITRATE AS N	0.52		0.2	MG/L	1	0.06	3/1/2018 11:30
NITRITE AS N	ND		0.1	MG/L	1	0.03	3/1/2018 11:30
SULFATE	220		10	MG/L	10	1.5	3/1/2018 11:15
METALS BY 200.8			EPA200.8		Prep Date: 3/1/2018		PrepBy: JML
BARIUM	0.032		0.001	MG/L	10	0.00039	3/5/2018 11:58
BORON	0.2		0.05	MG/L	10	0.0049	3/5/2018 11:58
CALCIUM	120		1	MG/L	10	0.088	3/5/2018 11:58
IRON	ND		0.1	MG/L	10	0.0094	3/5/2018 11:58
MAGNESIUM	52		0.1	MG/L	10	0.014	3/5/2018 11:58
MANGANESE	0.11		0.002	MG/L	10	0.00031	3/5/2018 11:58

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
Project: TEP Starkey Gulch
Sample ID: Puckett 185334
Legal Location:
Collection Date: 2/27/2018 14:30

Date: 13-Mar-18
Work Order: 1802437
Lab ID: 1802437-2
Matrix: WATER

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
POTASSIUM	5.7		1	MG/L	10	0.069	3/5/2018 11:58
SELENIUM	0.0034		0.001	MG/L	10	0.00022	3/5/2018 11:58
SODIUM	100		1	MG/L	10	0.078	3/5/2018 11:58
STRONTIUM	1.6		0.001	MG/L	10	0.00018	3/5/2018 11:58
PH			SM4500-H		Prep Date: 3/1/2018		PrepBy: HMA
PH	8.06		0.1	pH	1		3/1/2018
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 3/1/2018		PrepBy: HMA
SPECIFIC CONDUCTIVITY	1313		1	umhos/cm	1		3/1/2018
TOTAL DISSOLVED SOLIDS			SM2540C		Prep Date: 3/2/2018		PrepBy: HMA
TOTAL DISSOLVED SOLIDS	790		40	MG/L	1		3/3/2018
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 3/3/2018		PrepBy: HMA
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	0.045	3/3/2018

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
Project: TEP Starkey Gulch
Sample ID: Trip Blank
Legal Location:
Collection Date: 2/27/2018 00:00

Date: 13-Mar-18
Work Order: 1802437
Lab ID: 1802437-3
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
GC/MS VOLATILES			SW8260_25				Prep Date: 2/28/2018 PrepBy: CJW
BENZENE	ND		1	UG/L	1	0.32	2/28/2018 16:59
TOLUENE	ND		1	UG/L	1	0.31	2/28/2018 16:59
ETHYLBENZENE	ND		1	UG/L	1	0.31	2/28/2018 16:59
M+P-XYLENE	ND		1	UG/L	1	0.31	2/28/2018 16:59
O-XYLENE	ND		1	UG/L	1	0.31	2/28/2018 16:59
TOTAL XYLENES	ND		1	UG/L	1		2/28/2018 16:59
Surr: 4-BROMOFLUOROBENZENE	102		85-115	%REC	1		2/28/2018 16:59
Surr: DIBROMOFLUOROMETHANE	103		84-118	%REC	1		2/28/2018 16:59
Surr: TOLUENE-D8	97		85-115	%REC	1		2/28/2018 16:59
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	47	2/28/2018 16:59

Client: Western Water and Land, Inc.
Project: TEP Starkey Gulch
Sample ID: Trip Blank
Legal Location:
Collection Date: 2/27/2018 00:00

Date: 13-Mar-18
Work Order: 1802437
Lab ID: 1802437-3
Matrix: WATER
Percent Moisture:

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

Radiochemistry:

- "Report Limit" is the MDC
- 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

Client: Western Water and Land, Inc.

Date: 13-Mar-18

Project: TEP Starkey Gulch

Work Order: 1802437

Sample ID: Trip Blank

Lab ID: 1802437-3

Legal Location:

Matrix: WATER

Collection Date: 2/27/2018 00:00

Percent Moisture:

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

Date: 3/13/2018 1:32:

Client: Western Water and Land, Inc.

QC BATCH REPORT

Work Order: 1802437

Project: TEP Starkey Gulch

Batch ID: **HC180228-81-1** Instrument ID **FUELS-1** Method: **SW8015M**

DUP Sample ID: **1802437-2** Units: **MG/L** Analysis Date: **2/28/2018 21:58**
 Client ID: **Puckett 185334** Run ID: **HC180228-8A** Prep Date: **2/28/2018** 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	0.562						0.57		30	
Surr: O-TERPHENYL	0.725		0.781		93	63-126					

LCS Sample ID: **HC180228-81** Units: **MG/L** Analysis Date: **2/28/2018 22:41**
 Client ID: Run ID: **HC180228-8A** Prep Date: **2/28/2018** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	8.83	0.571	7.94		111	36-150				20	
Surr: O-TERPHENYL	0.761		0.794		96	63-126					

LCSD Sample ID: **HC180228-81** Units: **MG/L** Analysis Date: **2/28/2018 23:03**
 Client ID: Run ID: **HC180228-8A** Prep Date: **2/28/2018** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	8.89	0.571	7.94		112	36-150		8.83	1	20	
Surr: O-TERPHENYL	0.761		0.794		96	63-126			0		

MB Sample ID: **HC180228-81** Units: **MG/L** Analysis Date: **2/28/2018 20:31**
 Client ID: Run ID: **HC180228-8A** Prep Date: **2/28/2018** DF: **1**

Analyte	Result	ReportLimit	MDL							Qual
Diesel Range Organics	ND	0.57	0.16							
Surr: O-TERPHENYL	0.738				93	63-126				

The following samples were analyzed in this batch:

1802437-1	1802437-2
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Client: Western Water and Land, Inc.
 Work Order: 1802437
 Project: TEP Starkey Gulch

QC BATCH REPORT

Batch ID: **HC180301-91-2** Instrument ID **MEE-1** Method: **RSK175**

LCS		Sample ID: HC180301-91			Units: UG/L		Analysis Date: 3/1/2018 12:47				
Client ID:		Run ID: HC180301-91			Prep Date: 3/1/2018		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	146	1	142		102	80-120				25	
ETHANE	271	2	267		102	80-120				25	
PROPANE	392	1	391		100	80-120				25	

LCSD		Sample ID: HC180301-91			Units: UG/L		Analysis Date: 3/1/2018 13:47				
Client ID:		Run ID: HC180301-91			Prep Date: 3/1/2018		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	160	1	142		113	80-120		146	10	25	
ETHANE	295	2	267		111	80-120		271	8	25	
PROPANE	428	1	391		109	80-120		392	9	25	

MB		Sample ID: HC180301-91			Units: UG/L		Analysis Date: 3/1/2018 12:50				
Client ID:		Run ID: HC180301-91			Prep Date: 3/1/2018		DF: 1				
Analyte	Result	ReportLimit	MDL								
METHANE	ND	1	1								
ETHANE	ND	2	2								
PROPANE	ND	1	1								

The following samples were analyzed in this batch: 1802437-1 1802437-2

Client: Western Water and Land, Inc.
 Work Order: 1802437
 Project: TEP Starkey Gulch

QC BATCH REPORT

Batch ID: IP180301-1-2 Instrument ID ICPMS2 Method: EPA200.8

LCS		Sample ID: IM180301-1			Units: MG/L		Analysis Date: 3/5/2018 11:46				
Client ID:		Run ID: IM180305-10A4			Prep Date: 3/1/2018		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.0903	0.001	0.1		90	85-115				20	
BORON	0.968	0.05	1		97	85-115				20	
CALCIUM	9.9	1	10		99	85-115				20	
IRON	4.89	0.1	5		98	85-115				20	
MAGNESIUM	10	0.1	10		100	85-115				20	
MANGANESE	0.102	0.002	0.1		103	85-115				20	
POTASSIUM	4.97	1	5		99	85-115				20	
SELENIUM	0.0963	0.001	0.1		96	85-115				20	
SODIUM	10.1	1	10		101	85-115				20	
STRONTIUM	0.0978	0.001	0.1		98	85-115				20	

LCSD		Sample ID: IM180301-1			Units: MG/L		Analysis Date: 3/5/2018 11:49				
Client ID:		Run ID: IM180305-10A4			Prep Date: 3/1/2018		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.0949	0.001	0.1		95	85-115		0.0903	5	20	
BORON	0.989	0.05	1		99	85-115		0.968	2	20	
CALCIUM	10.3	1	10		103	85-115		9.9	4	20	
IRON	5	0.1	5		100	85-115		4.89	2	20	
MAGNESIUM	10.2	0.1	10		102	85-115		10	2	20	
MANGANESE	0.102	0.002	0.1		102	85-115		0.102	0	20	
POTASSIUM	4.96	1	5		99	85-115		4.97	0	20	
SELENIUM	0.0978	0.001	0.1		98	85-115		0.0963	2	20	
SODIUM	10.1	1	10		101	85-115		10.1	0	20	
STRONTIUM	0.097	0.001	0.1		97	85-115		0.0978	1	20	

Client: Western Water and Land, Inc.
Work Order: 1802437
Project: TEP Starkey Gulch

QC BATCH REPORT

Batch ID: **IP180301-1-2** Instrument ID **ICPMS2** Method: **EPA200.8**

MB Sample ID: **FP180228-1** Units: **MG/L** Analysis Date: **3/5/2018 11:40**
 Client ID: Run ID: **IM180305-10A4** Prep Date: **3/1/2018** DF: **10**

Analyte	Result	ReportLimit	MDL	Qual
BARIUM	ND	0.001	0.00039	
BORON	ND	0.05	0.0048	
CALCIUM	ND	1	0.088	
IRON	ND	0.1	0.0094	
MAGNESIUM	ND	0.1	0.014	
MANGANESE	ND	0.002	0.00031	
POTASSIUM	ND	1	0.069	
SELENIUM	ND	0.001	0.00022	
SODIUM	ND	1	0.078	
STRONTIUM	ND	0.001	0.00018	

The following samples were analyzed in this batch:

1802437-1	1802437-2
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Client: Western Water and Land, Inc.
 Work Order: 1802437
 Project: TEP Starkey Gulch

QC BATCH REPORT

Batch ID: VL180228-4-1 Instrument ID: HPV4 Method: SW8260_25

LCS		Sample ID: VL180228-4			Units: %REC		Analysis Date: 2/28/2018 12:15				
Client ID:		Run ID: VL180228-4A			Prep Date: 2/28/2018		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	26.3		25		105	85-115					
Surr: DIBROMOFLUOROMETHANE	25.9		25		104	84-118					
Surr: TOLUENE-D8	24.5		25		98	85-115					
BENZENE	9.26	1	10		93	83-117				20	
TOLUENE	8.73	1	10		87	82-113				20	
ETHYLBENZENE	8.77	1	10		88	81-113				20	
M+P-XYLENE	17.6	1	20		88	82-115				20	
O-XYLENE	8.35	1	10		84	81-115				20	

LCSD		Sample ID: VL180228-4			Units: %REC		Analysis Date: 2/28/2018 12:38				
Client ID:		Run ID: VL180228-4A			Prep Date: 2/28/2018		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	25.7		25		103	85-115			2		
Surr: DIBROMOFLUOROMETHANE	26.2		25		105	84-118			1		
Surr: TOLUENE-D8	24.2		25		97	85-115			1		
BENZENE	9.93	1	10		99	83-117		9.26	7	20	
TOLUENE	9.28	1	10		93	82-113		8.73	6	20	
ETHYLBENZENE	9.28	1	10		93	81-113		8.77	6	20	
M+P-XYLENE	18.7	1	20		93	82-115		17.6	6	20	
O-XYLENE	9.22	1	10		92	81-115		8.35	10	20	

MB		Sample ID: VL180228-4			Units: %REC		Analysis Date: 2/28/2018 14:38				
Client ID:		Run ID: VL180228-4A			Prep Date: 2/28/2018		DF: 1				
Analyte	Result	ReportLimit	MDL								Qual
Surr: 4-BROMOFLUOROBENZENE	25.6				102	85-115					
Surr: DIBROMOFLUOROMETHANE	25.1				100	84-118					
Surr: TOLUENE-D8	24.7				99	85-115					
BENZENE	ND	1	0.32								
TOLUENE	ND	1	0.31								
ETHYLBENZENE	ND	1	0.31								
M+P-XYLENE	ND	1	0.31								
O-XYLENE	ND	1	0.31								
TOTAL XYLENES	ND	1									

The following samples were analyzed in this batch: 1802437-1 1802437-2 1802437-3

Client: Western Water and Land, Inc.
 Work Order: 1802437
 Project: TEP Starkey Gulch

QC BATCH REPORT

Batch ID: VL180228-4-3 Instrument ID: HPV4 Method: SW8260_25

LCS		Sample ID: VL180228-8			Units: UG/L		Analysis Date: 2/28/2018 13:27				
Client ID:		Run ID: VL180228-4A			Prep Date: 2/28/2018		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	924	100	1000		92	80-120				20	

LCSD		Sample ID: VL180228-8			Units: UG/L		Analysis Date: 2/28/2018 13:50				
Client ID:		Run ID: VL180228-4A			Prep Date: 2/28/2018		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	948	100	1000		95	80-120		924	3	20	

MB		Sample ID: VL180228-4			Units: UG/L		Analysis Date: 2/28/2018 14:38				
Client ID:		Run ID: VL180228-4A			Prep Date: 2/28/2018		DF: 1				
Analyte	Result	ReportLimit	MDL								
GASOLINE RANGE ORGANICS	ND	100	47								

The following samples were analyzed in this batch: 1802437-1 1802437-2 1802437-3

Client: Western Water and Land, Inc.
 Work Order: 1802437
 Project: TEP Starkey Gulch

QC BATCH REPORT

Batch ID: **IC180301-1-2** Instrument ID **IC3** Method: **EPA300.0**

LCS		Sample ID: IC180301-1			Units: MG/L		Analysis Date: 3/1/2018 09:46				
Client ID:		Run ID: IC180301-1A3			Prep Date: 3/1/2018		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	9.66	0.2	10		97	90-110				15	
CHLORIDE	9.8	0.2	10		98	90-110				15	
FLUORIDE	4.87	0.1	5		97	90-110				15	
NITRATE AS N	9.82	0.2	10		98	90-110				15	
NITRITE AS N	4.97	0.1	5		99	90-110				15	
SULFATE	48.7	1	50		97	90-110				15	

MB		Sample ID: IC180301-1			Units: MG/L		Analysis Date: 3/1/2018 10:01				
Client ID:		Run ID: IC180301-1A3			Prep Date: 3/1/2018		DF: 1				
Analyte	Result	ReportLimit	MDL								Qual
BROMIDE	ND	0.2	0.06								
CHLORIDE	ND	0.2	0.06								
FLUORIDE	ND	0.1	0.03								
NITRATE/NITRITE AS N	ND	0.1									
NITRATE AS N	ND	0.2	0.06								
NITRITE AS N	ND	0.1	0.03								
SULFATE	ND	1	0.15								

The following samples were analyzed in this batch: 1802437-1 1802437-2

Client: Western Water and Land, Inc.

QC BATCH REPORT

Work Order: 1802437

Project: TEP Starkey Gulch

Batch ID: PH180301-1-2

Instrument ID pH-1

Method: SM4500-H

CCV Sample ID: CCV1

Units: pH

Analysis Date: 3/1/2018

Client ID: Run ID: PH180301-1A1

Prep Date: 3/1/2018 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			6.9-7.1					

ICV Sample ID: ICV

Units: pH

Analysis Date: 3/1/2018

Client ID: Run ID: PH180301-1A1

Prep Date: 3/1/2018 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.03	0.1	7			6.95-7.05					

The following samples were analyzed in this batch:

1802437-1	1802437-2
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Client: Western Water and Land, Inc.
 Work Order: 1802437
 Project: TEP Starkey Gulch

QC BATCH REPORT

Batch ID: **SC180301-1-1** Instrument ID **pH-2** Method: **SM2510B**

CCV	Sample ID: CCV				Units: umhos/cm	Analysis Date: 3/1/2018					
Client ID:		Run ID: SC180301-1A1				Prep Date: 3/1/2018			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1400	1	1410		99	71.7-1554					

ICV	Sample ID: ICV				Units: umhos/cm	Analysis Date: 3/1/2018					
Client ID:		Run ID: SC180301-1A1				Prep Date: 3/1/2018			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	712	1	718		99	46.2-789.7					

The following samples were analyzed in this batch:

1802437-1	1802437-2
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Client: Western Water and Land, Inc.
Work Order: 1802437
Project: TEP Starkey Gulch

QC BATCH REPORT

Batch ID: **TD180302-2-1** Instrument ID **Balance** Method: **SM2540C**

LCS Sample ID: **TD180302-2** Units: **MG/L** Analysis Date: **3/3/2018**
 Client ID: Run ID: **TD180303-1A1** Prep Date: **3/2/2018** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	361	20	400		90	85-115				5	

MB Sample ID: **TD180302-2** Units: **MG/L** Analysis Date: **3/3/2018**
 Client ID: Run ID: **TD180303-1A1** Prep Date: **3/2/2018** DF: **1**

Analyte	Result	ReportLimit	MDL	Qual
TOTAL DISSOLVED SOLIDS	ND	20		

The following samples were analyzed in this batch:

1802437-1	1802437-2
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Client: Western Water and Land, Inc.
 Work Order: 1802437
 Project: TEP Starkey Gulch

QC BATCH REPORT

Batch ID: TP180303-1-1 Instrument ID Spec Method: EPA365.2

LCS		Sample ID: TP180303-1			Units: MG/L		Analysis Date: 3/3/2018				
Client ID:		Run ID: TP180303-1A2			Prep Date: 3/3/2018		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: TP180303-1			Units: MG/L		Analysis Date: 3/3/2018					
Client ID:		Run ID: TP180303-1A2			Prep Date: 3/3/2018		DF: 1					
Analyte	Result	ReportLimit	MDL									Qual
TOTAL PHOSPHORUS	ND	0.05	0.045									

MS		Sample ID: 1802437-1			Units: MG/L		Analysis Date: 3/3/2018				
Client ID: Puckett 151879		Run ID: TP180303-1A2			Prep Date: 3/3/2018		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.224	0.05	0.25	0.05	89	80-120				20	

MSD		Sample ID: 1802437-1			Units: MG/L		Analysis Date: 3/3/2018				
Client ID: Puckett 151879		Run ID: TP180303-1A2			Prep Date: 3/3/2018		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.226	0.05	0.25	0.05	91	80-120		0.224		20	

The following samples were analyzed in this batch:

1802437-1	1802437-2
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