Thursday, October 20, 2016

Rick Allison
COGCC
1120 Lincoln St. #801
Denver, CO 80203

Re: ALS Workorder: 1609342
Project Name: Upper Pierre Aquifer
Project Number: 076 UPWQ

Dear Mr. Allison:

Two water samples were received from COGCC, on 9/21/2016. The samples were scheduled for the following analyses:

BART
Dissolved Gasses
GC/MS Volatiles
Inorganics
Metals

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
Shiloh J. Summy
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
AIHA	214884
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

1609342

Due to analyst oversight, the BART test was not documented daily, and needed to be re-analyzed.

GC/MS Volatiles:

The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

- The vial for sample -1 contained headspace prior to analysis.
- All compounds in the daily (continuing) calibration verifications were within 20%D with the exception of hexachlorobutadiene which was high. This compound was not detected in the associated samples.

All remaining 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.

The vial for sample 1609342-1 contained headspace prior to analysis.

All remaining 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.

Sodium Adsorption Ration (SAR) was determined by calculation based on a reference from the client. Calcium, magnesium, and sodium concentrations were determined by ICP, Method 200.8.

$SAR = Na/(((Ca+Mg)/2)^{1/2})$

The analyte results are the meq/L concentrations based on conversions from their mg/L concentrations. Please note that the SAR value is unitless.

All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes, with the exception of multiple CCVs for boron and sodium. The samples bracketed by these CCVs were re-analyzed with acceptable CCVs.

All remaining 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:

Analyte	Method	SOP #
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
pH	150.1	1126
Specific conductance	SM2510B	1128
TDS	160.1	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
Orthophosphate as P	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All remaining acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1609342
Client Name: COGCC
Client Project Name: Upper Pierre Aquifer
Client Project Number: 076 UPWQ
Client PO Number: CT2017-739

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
AFB N-01	1609342-1		WATER	20-Sep-16	11:45
Trip Blank	1609342-2		WATER	20-Sep-16	

ALS Environmental

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

Chain-of-Custody

Form 202r8

WORKORDER # 1609342

PAGE 1 of 1

DISPOSAL: By Lab or Return to Client

PROJECT NAME	Upper Pierre Aquifer	SAMPLER	JAF
PROJECT No.	076 UPWQ	SITE ID	
		EDD FORMAT	COGCC
COMPANY NAME	COGCC	PURCHASE ORDER	CT2017-739
SEND REPORT TO	Rick Allison	BILL TO COMPANY	COGCC
ADDRESS	1120 Lincoln St, Ste 801	INVOICE ATTN TO	Rick Allison
CITY / STATE / ZIP	Denver, CO 80203	ADDRESS	1120 Lincoln St, Ste 801
PHONE	970-461-2970	CITY / STATE / ZIP	Denver, CO 80203
FAX	970-461-4781	PHONE	970-461-2970
E-MAIL	rick.allison@state.co.us	FAX	970-461-4781
		E-MAIL	rick.allison@state.co.us

DATE: 9/21/16

TURNAROUND

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	Dissolved Methane, Ethane, Propane	Alkalinity (total bicarbonate and carbonate	Total Dissolved Solids	Specific Conductance	pH	Sodium Adsorption Ratio	Volatile Organic Compounds -8260	Anions - Br Cl Fl SO4 P	Cations/ DissolvedMetals - see comments	Nitrate-Nitrite as N	BART - SRB, IRB, SLYM	Cation/Anion Balanc
1	AFB N-01	W	9/20/16	1145	10		II	X	X	X	X	X	X	X	X	X	X	X	X
2	Trip Blank 9/21/16 85	W																	

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

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)	
Cations/ DissolvedMetals - Ca, Fe, Mg, Mn, K, Na, Ba, B, Cr, Se, Sr, Pb Lab Filter Dissolved Metals	x	LEVEL II (Standard QC)
COGCC will email Site ID to lab for EDD generation		LEVEL III (Std QC + forms)
Email pdf report, EDD, and invoice to rick.allison@state.co.us		LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Jake Fritz	9/20/16	0800
RECEIVED BY		Rebecca Neale	9/21/16	1320
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC Workorder No: 1609342

Project Manager: ARV Initials: RLR Date: 9/21/16

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

Cooler #:	1							
Temperature (°C):	1.9°C							
No. of custody seals on cooler:	0							
DOT Survey/ Acceptance Information — External µR/hr reading:	NA							
Background µR/hr reading:	10							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / (NA) (If no, see Form 008.)

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

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

Project Manager Signature / Date: 9/24/16

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

1609342

Quicksilver Express Courier
303-232-5800

TRACK : 1664
DATE : Sep 21, 2016
TIME : 12:05
DRIVER : 499
SERVICE: Economy
VEHICLE: Car
FROM : PINYON ENVIRONMENTAL ENGINEERING
: 9100 W. JEWELL AVE.
: LAKEWOOD, CO 80232
:
: BIANCA
TO : ALS ENVIRONMENTAL
: 225 COMMERCE DR
: FORT COLLINS, CO 80524
: SAMPLE CUSTODIAN
:
CHARGE : PINYON ENVIRONMENTAL ENGINEERING
:
REF : 11699301
CID : Bianca
INFO : 3 pcs
NOTES : 3 coolers

Weight (lbs):_____ Pieces:_____
Other:_____

RECEIVED BY:
X: 1320

Liability limited to lesser of $0.50/lb

Client: COGCC **Date:** *20-Oct-16*
Project: 076 UPWQ Upper Pierre Aquifer **Work Order:** 1609342
Sample ID: AFB N-01 **Lab ID:** 1609342-1
Legal Location: **Matrix:** WATER
Collection Date: 9/20/2016 11:45 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Alkalinity as Calcium Carbonate		**SM2320B**			Prep Date: **10/3/2016**	PrepBy: **HMA**
BICARBONATE AS CaCO3	**680**		**20**	**MG/L**	1	10/3/2016
CARBONATE AS CaCO3	ND		20	MG/L	1	10/3/2016
TOTAL ALKALINITY AS CaCO3	**680**		**20**	**MG/L**	1	10/3/2016
Biological Activity Reaction Test		**BART**			Prep Date: **10/6/2016**	PrepBy: **BAS**
IRON RELATED BACTERIA	**9000**		**1**	**cfu/ml**	1	10/14/2016
SLIME FORMING BACTERIA	ND		1	cfu/ml	1	10/14/2016
SULFATE REDUCING BACTERIA	**1200**		**1**	**cfu/ml**	1	10/14/2016
Dissolved Gasses		**RSK175**			Prep Date: **9/26/2016**	PrepBy: **JFN**
METHANE	**12000**		**1**	**UG/L**	1	9/26/2016 15:51
ETHANE	**14**		**2**	**UG/L**	1	9/26/2016 15:51
PROPANE	ND		1	UG/L	1	9/26/2016 15:51
GC/MS Volatiles		**SW8260_25**			Prep Date: **9/22/2016**	PrepBy: **JXK**
DICHLORODIFLUOROMETHANE	ND		1	UG/L	1	9/22/2016 12:19
CHLOROMETHANE	ND		1	UG/L	1	9/22/2016 12:19
VINYL CHLORIDE	ND		1	UG/L	1	9/22/2016 12:19
BROMOMETHANE	ND		1	UG/L	1	9/22/2016 12:19
CHLOROETHANE	ND		1	UG/L	1	9/22/2016 12:19
TRICHLOROFLUOROMETHANE	ND		1	UG/L	1	9/22/2016 12:19
1,1-DICHLOROETHENE	ND		1	UG/L	1	9/22/2016 12:19
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND		1	UG/L	1	9/22/2016 12:19
ACETONE	ND		10	UG/L	1	9/22/2016 12:19
IODOMETHANE	ND		1	UG/L	1	9/22/2016 12:19
CARBON DISULFIDE	ND		1	UG/L	1	9/22/2016 12:19
METHYLENE CHLORIDE	ND		1	UG/L	1	9/22/2016 12:19
TRANS-1,2-DICHLOROETHENE	ND		1	UG/L	1	9/22/2016 12:19
METHYL TERTIARY BUTYL ETHER	ND		1	UG/L	1	9/22/2016 12:19
1,1-DICHLOROETHANE	ND		1	UG/L	1	9/22/2016 12:19
VINYL ACETATE	ND		2	UG/L	1	9/22/2016 12:19
CIS-1,2-DICHLOROETHENE	ND		1	UG/L	1	9/22/2016 12:19
2-BUTANONE	ND		10	UG/L	1	9/22/2016 12:19
BROMOCHLOROMETHANE	ND		1	UG/L	1	9/22/2016 12:19
CHLOROFORM	ND		1	UG/L	1	9/22/2016 12:19
1,1,1-TRICHLOROETHANE	ND		1	UG/L	1	9/22/2016 12:19
2,2-DICHLOROPROPANE	ND		1	UG/L	1	9/22/2016 12:19
CARBON TETRACHLORIDE	ND		1	UG/L	1	9/22/2016 12:19
1,1-DICHLOROPROPENE	ND		1	UG/L	1	9/22/2016 12:19
1,2-DICHLOROETHANE	ND		1	UG/L	1	9/22/2016 12:19
BENZENE	ND		1	UG/L	1	9/22/2016 12:19
TRICHLOROETHENE	ND		1	UG/L	1	9/22/2016 12:19
1,2-DICHLOROPROPANE	ND		1	UG/L	1	9/22/2016 12:19
DIBROMOMETHANE	ND		1	UG/L	1	9/22/2016 12:19
BROMODICHLOROMETHANE	ND		1	UG/L	1	9/22/2016 12:19
CIS-1,3-DICHLOROPROPENE	ND		1	UG/L	1	9/22/2016 12:19
4-METHYL-2-PENTANONE	ND		10	UG/L	1	9/22/2016 12:19

Client: COGCC **Date:** *20-Oct-16*
Project: 076 UPWQ Upper Pierre Aquifer **Work Order:** 1609342
Sample ID: AFB N-01 **Lab ID:** 1609342-1
Legal Location: **Matrix:** WATER
Collection Date: 9/20/2016 11:45 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TOLUENE	ND		1	UG/L	1	9/22/2016 12:19
TRANS-1,3-DICHLOROPROPENE	ND		1	UG/L	1	9/22/2016 12:19
1,1,2-TRICHLOROETHANE	ND		1	UG/L	1	9/22/2016 12:19
2-HEXANONE	ND		10	UG/L	1	9/22/2016 12:19
TETRACHLOROETHENE	ND		1	UG/L	1	9/22/2016 12:19
1,3-DICHLOROPROPANE	ND		1	UG/L	1	9/22/2016 12:19
DIBROMOCHLOROMETHANE	ND		1	UG/L	1	9/22/2016 12:19
1,2-DIBROMOETHANE	ND		1	UG/L	1	9/22/2016 12:19
1-CHLOROHEXANE	ND		1	UG/L	1	9/22/2016 12:19
CHLOROBENZENE	ND		1	UG/L	1	9/22/2016 12:19
1,1,1,2-TETRACHLOROETHANE	ND		1	UG/L	1	9/22/2016 12:19
ETHYLBENZENE	ND		1	UG/L	1	9/22/2016 12:19
M+P-XYLENE	ND		1	UG/L	1	9/22/2016 12:19
O-XYLENE	ND		1	UG/L	1	9/22/2016 12:19
STYRENE	ND		1	UG/L	1	9/22/2016 12:19
BROMOFORM	ND		1	UG/L	1	9/22/2016 12:19
ISOPROPYLBENZENE	ND		1	UG/L	1	9/22/2016 12:19
1,2,3-TRICHLOROPROPANE	ND		1	UG/L	1	9/22/2016 12:19
1,1,2,2-TETRACHLOROETHANE	ND		1	UG/L	1	9/22/2016 12:19
BROMOBENZENE	ND		1	UG/L	1	9/22/2016 12:19
N-PROPYLBENZENE	ND		1	UG/L	1	9/22/2016 12:19
2-CHLOROTOLUENE	ND		1	UG/L	1	9/22/2016 12:19
1,3,5-TRIMETHYLBENZENE	ND		1	UG/L	1	9/22/2016 12:19
4-CHLOROTOLUENE	ND		1	UG/L	1	9/22/2016 12:19
TERT-BUTYLBENZENE	ND		1	UG/L	1	9/22/2016 12:19
1,2,4-TRIMETHYLBENZENE	ND		1	UG/L	1	9/22/2016 12:19
SEC-BUTYLBENZENE	ND		1	UG/L	1	9/22/2016 12:19
1,3-DICHLOROBENZENE	ND		1	UG/L	1	9/22/2016 12:19
P-ISOPROPYLTOLUENE	ND		1	UG/L	1	9/22/2016 12:19
1,4-DICHLOROBENZENE	ND		1	UG/L	1	9/22/2016 12:19
N-BUTYLBENZENE	ND		1	UG/L	1	9/22/2016 12:19
1,2-DICHLOROBENZENE	ND		1	UG/L	1	9/22/2016 12:19
1,2-DIBROMO-3-CHLOROPROPANE	ND		2	UG/L	1	9/22/2016 12:19
1,2,4-TRICHLOROBENZENE	ND		1	UG/L	1	9/22/2016 12:19
HEXACHLOROBUTADIENE	ND		1	UG/L	1	9/22/2016 12:19
NAPHTHALENE	ND		1	UG/L	1	9/22/2016 12:19
1,2,3-TRICHLOROBENZENE	ND		1	UG/L	1	9/22/2016 12:19
Surr: DIBROMOFLUOROMETHANE	*99*		*84-118*	*%REC*	1	9/22/2016 12:19
Surr: TOLUENE-D8	*98*		*85-115*	*%REC*	1	9/22/2016 12:19
Surr: 4-BROMOFLUOROBENZENE	*103*		*85-115*	*%REC*	1	9/22/2016 12:19
Ion Chromatography		**EPA300.0**			Prep Date: **9/21/2016**	PrepBy: **SDW**
BROMIDE	**1.7**		**0.8**	**MG/L**	4	9/22/2016 00:50
CHLORIDE	**190**		**5**	**MG/L**	25	9/22/2016 01:06
FLUORIDE	**3.2**		**0.4**	**MG/L**	4	9/22/2016 00:50
NITRATE AS N	ND		0.8	MG/L	4	9/22/2016 00:50
NITRITE AS N	ND		0.4	MG/L	4	9/22/2016 00:50
ORTHOPHOSPHATE AS P	ND		2	MG/L	4	9/22/2016 00:50

Client:	COGCC	**Date:**	*20-Oct-16*
Project:	076 UPWQ Upper Pierre Aquifer	**Work Order:**	1609342
Sample ID:	AFB N-01	**Lab ID:**	1609342-1
Legal Location:		**Matrix:**	WATER
Collection Date:	9/20/2016 11:45	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SULFATE	ND		4	MG/L	4	9/22/2016 00:50
Dissolved Metals by 200.8			**EPA200.8**	Prep Date: **10/5/2016**		PrepBy: **BAS**
BORON	**2.1**		**0.05**	**MG/L**	10	10/12/2016 18:08
BARIUM	**0.049**		**0.001**	**MG/L**	10	10/11/2016 03:17
CALCIUM	**1.7**		**1**	**MG/L**	10	10/11/2016 03:17
CHROMIUM	ND		0.01	MG/L	10	10/11/2016 03:17
IRON	ND		0.1	MG/L	10	10/11/2016 03:17
POTASSIUM	**1.2**		**1**	**MG/L**	10	10/11/2016 03:17
MAGNESIUM	**0.47**		**0.1**	**MG/L**	10	10/11/2016 03:17
MANGANESE	**0.0055**		**0.002**	**MG/L**	10	10/11/2016 03:17
SODIUM	**440**		**1**	**MG/L**	10	10/12/2016 18:08
LEAD	ND		0.0005	MG/L	10	10/11/2016 03:17
SODIUM ADSORPTION RATIO	ND		0.26	NU	10	10/12/2016 18:08
SELENIUM	ND		0.001	MG/L	10	10/11/2016 03:17
STRONTIUM	**0.1**		**0.001**	**MG/L**	10	10/11/2016 03:17
pH			**EPA150.1**	Prep Date: **9/23/2016**		PrepBy: **HMA**
PH	**8.67**		**0.1**	**pH**	1	9/23/2016
Specific Conductance in Water			**SM2510B**	Prep Date: **9/23/2016**		PrepBy: **HMA**
SPECIFIC CONDUCTIVITY	**1875**		**1**	**umhos/cm**	1	9/23/2016
Total Dissolved Solids			**EPA160.1**	Prep Date: **9/27/2016**		PrepBy: **HMA**
TOTAL DISSOLVED SOLIDS	**1400**		**40**	**MG/L**	1	9/28/2016

Client: COGCC **Date:** *20-Oct-16*
Project: 076 UPWQ Upper Pierre Aquifer **Work Order:** 1609342
Sample ID: Trip Blank **Lab ID:** 1609342-2
Legal Location: **Matrix:** WATER
Collection Date: 9/20/2016 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GC/MS Volatiles		**SW8260_25**		Prep Date: **9/22/2016**		PrepBy: **JXK**
DICHLORODIFLUOROMETHANE	ND		1	UG/L	1	9/22/2016 11:15
CHLOROMETHANE	ND		1	UG/L	1	9/22/2016 11:15
VINYL CHLORIDE	ND		1	UG/L	1	9/22/2016 11:15
BROMOMETHANE	ND		1	UG/L	1	9/22/2016 11:15
CHLOROETHANE	ND		1	UG/L	1	9/22/2016 11:15
TRICHLOROFLUOROMETHANE	ND		1	UG/L	1	9/22/2016 11:15
1,1-DICHLOROETHENE	ND		1	UG/L	1	9/22/2016 11:15
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND		1	UG/L	1	9/22/2016 11:15
ACETONE	ND		10	UG/L	1	9/22/2016 11:15
IODOMETHANE	ND		1	UG/L	1	9/22/2016 11:15
CARBON DISULFIDE	ND		1	UG/L	1	9/22/2016 11:15
METHYLENE CHLORIDE	ND		1	UG/L	1	9/22/2016 11:15
TRANS-1,2-DICHLOROETHENE	ND		1	UG/L	1	9/22/2016 11:15
METHYL TERTIARY BUTYL ETHER	ND		1	UG/L	1	9/22/2016 11:15
1,1-DICHLOROETHANE	ND		1	UG/L	1	9/22/2016 11:15
VINYL ACETATE	ND		2	UG/L	1	9/22/2016 11:15
CIS-1,2-DICHLOROETHENE	ND		1	UG/L	1	9/22/2016 11:15
2-BUTANONE	ND		10	UG/L	1	9/22/2016 11:15
BROMOCHLOROMETHANE	ND		1	UG/L	1	9/22/2016 11:15
CHLOROFORM	ND		1	UG/L	1	9/22/2016 11:15
1,1,1-TRICHLOROETHANE	ND		1	UG/L	1	9/22/2016 11:15
2,2-DICHLOROPROPANE	ND		1	UG/L	1	9/22/2016 11:15
CARBON TETRACHLORIDE	ND		1	UG/L	1	9/22/2016 11:15
1,1-DICHLOROPROPENE	ND		1	UG/L	1	9/22/2016 11:15
1,2-DICHLOROETHANE	ND		1	UG/L	1	9/22/2016 11:15
BENZENE	ND		1	UG/L	1	9/22/2016 11:15
TRICHLOROETHENE	ND		1	UG/L	1	9/22/2016 11:15
1,2-DICHLOROPROPANE	ND		1	UG/L	1	9/22/2016 11:15
DIBROMOMETHANE	ND		1	UG/L	1	9/22/2016 11:15
BROMODICHLOROMETHANE	ND		1	UG/L	1	9/22/2016 11:15
CIS-1,3-DICHLOROPROPENE	ND		1	UG/L	1	9/22/2016 11:15
4-METHYL-2-PENTANONE	ND		10	UG/L	1	9/22/2016 11:15
TOLUENE	ND		1	UG/L	1	9/22/2016 11:15
TRANS-1,3-DICHLOROPROPENE	ND		1	UG/L	1	9/22/2016 11:15
1,1,2-TRICHLOROETHANE	ND		1	UG/L	1	9/22/2016 11:15
2-HEXANONE	ND		10	UG/L	1	9/22/2016 11:15
TETRACHLOROETHENE	ND		1	UG/L	1	9/22/2016 11:15
1,3-DICHLOROPROPANE	ND		1	UG/L	1	9/22/2016 11:15
DIBROMOCHLOROMETHANE	ND		1	UG/L	1	9/22/2016 11:15
1,2-DIBROMOETHANE	ND		1	UG/L	1	9/22/2016 11:15
1-CHLOROHEXANE	ND		1	UG/L	1	9/22/2016 11:15
CHLOROBENZENE	ND		1	UG/L	1	9/22/2016 11:15
1,1,1,2-TETRACHLOROETHANE	ND		1	UG/L	1	9/22/2016 11:15
ETHYLBENZENE	ND		1	UG/L	1	9/22/2016 11:15
M+P-XYLENE	ND		1	UG/L	1	9/22/2016 11:15
O-XYLENE	ND		1	UG/L	1	9/22/2016 11:15

Client: COGCC **Date:** *20-Oct-16*
Project: 076 UPWQ Upper Pierre Aquifer **Work Order:** 1609342
Sample ID: Trip Blank **Lab ID:** 1609342-2
Legal Location: **Matrix:** WATER
Collection Date: 9/20/2016 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
STYRENE	ND		1	UG/L	1	9/22/2016 11:15
BROMOFORM	ND		1	UG/L	1	9/22/2016 11:15
ISOPROPYLBENZENE	ND		1	UG/L	1	9/22/2016 11:15
1,2,3-TRICHLOROPROPANE	ND		1	UG/L	1	9/22/2016 11:15
1,1,2,2-TETRACHLOROETHANE	ND		1	UG/L	1	9/22/2016 11:15
BROMOBENZENE	ND		1	UG/L	1	9/22/2016 11:15
N-PROPYLBENZENE	ND		1	UG/L	1	9/22/2016 11:15
2-CHLOROTOLUENE	ND		1	UG/L	1	9/22/2016 11:15
1,3,5-TRIMETHYLBENZENE	ND		1	UG/L	1	9/22/2016 11:15
4-CHLOROTOLUENE	ND		1	UG/L	1	9/22/2016 11:15
TERT-BUTYLBENZENE	ND		1	UG/L	1	9/22/2016 11:15
1,2,4-TRIMETHYLBENZENE	ND		1	UG/L	1	9/22/2016 11:15
SEC-BUTYLBENZENE	ND		1	UG/L	1	9/22/2016 11:15
1,3-DICHLOROBENZENE	ND		1	UG/L	1	9/22/2016 11:15
P-ISOPROPYLTOLUENE	ND		1	UG/L	1	9/22/2016 11:15
1,4-DICHLOROBENZENE	ND		1	UG/L	1	9/22/2016 11:15
N-BUTYLBENZENE	ND		1	UG/L	1	9/22/2016 11:15
1,2-DICHLOROBENZENE	ND		1	UG/L	1	9/22/2016 11:15
1,2-DIBROMO-3-CHLOROPROPANE	ND		2	UG/L	1	9/22/2016 11:15
1,2,4-TRICHLOROBENZENE	ND		1	UG/L	1	9/22/2016 11:15
HEXACHLOROBUTADIENE	ND		1	UG/L	1	9/22/2016 11:15
NAPHTHALENE	ND		1	UG/L	1	9/22/2016 11:15
1,2,3-TRICHLOROBENZENE	ND		1	UG/L	1	9/22/2016 11:15
Surr: DIBROMOFLUOROMETHANE	*99*		*84-118*	*%REC*	1	9/22/2016 11:15
Surr: TOLUENE-D8	*97*		*85-115*	*%REC*	1	9/22/2016 11:15
Surr: 4-BROMOFLUOROBENZENE	*102*		*85-115*	*%REC*	1	9/22/2016 11:15

Client:	COGCC	**Date:**	*20-Oct-16*
Project:	076 UPWQ Upper Pierre Aquifer	**Work Order:**	1609342
Sample ID:	Trip Blank	**Lab ID:**	1609342-2
Legal Location:		**Matrix:**	WATER
Collection Date:	9/20/2016	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **HC160926-9-1** Instrument ID **MEE-1** Method: **RSK175**

LCS Sample ID: **HC160926-9** Units: **UG/L** Analysis Date: **9/26/2016 15:13**

Client ID: Run ID: **HC160926-9A** Prep Date: **9/26/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	129	1	142		91	80-120				25	
ETHANE	249	2	267		93	80-120				25	
PROPANE	362	1	391		93	80-120				25	

LCSD Sample ID: **HC160926-9** Units: **UG/L** Analysis Date: **9/26/2016 16:20**

Client ID: Run ID: **HC160926-9A** Prep Date: **9/26/2016** 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		129	7	25	
ETHANE	268	2	267		100	80-120		249	7	25	
PROPANE	390	1	391		100	80-120		362	7	25	

MB Sample ID: **HC160926-9** Units: **UG/L** Analysis Date: **9/26/2016 15:19**

Client ID: Run ID: **HC160926-9A** Prep Date: **9/26/2016** 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: 1609342-1

QC BATCH REPORT

Batch ID: **IP161005-1-6** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS Sample ID: **IM161005-1** Units: **MG/L** Analysis Date: **10/11/2016 02:20**

Client ID: Run ID: **IM161010-13A12** Prep Date: **10/5/2016** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.113	0.001	0.1		113	85-115				20	
CALCIUM	10.2	1	10		102	85-115				20	
CHROMIUM	0.54	0.01	0.5		108	85-115				20	
IRON	5.37	0.1	5		107	85-115				20	
LEAD	0.0556	0.0005	0.05		111	85-115				20	
MAGNESIUM	10.8	0.1	10		108	85-115				20	
MANGANESE	0.106	0.002	0.1		106	85-115				20	
POTASSIUM	5.11	1	5		102	85-115				20	
SELENIUM	0.104	0.001	0.1		104	85-115				20	
STRONTIUM	0.106	0.001	0.1		106	85-115				20	

MB Sample ID: **IP161005-1** Units: **MG/L** Analysis Date: **10/11/2016 02:17**

Client ID: Run ID: **IM161010-13A12** Prep Date: **10/5/2016** 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									
CALCIUM	ND	1									
CHROMIUM	ND	0.01									
IRON	ND	0.1									
LEAD	ND	0.0005									
MAGNESIUM	ND	0.1									
MANGANESE	ND	0.002									
POTASSIUM	ND	1									
SELENIUM	ND	0.001									
STRONTIUM	ND	0.001									

The following samples were analyzed in this batch: 1609342-1

QC BATCH REPORT

Batch ID: **IP161005-1-6** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS Sample ID: **IM161005-1** Units: **MG/L** Analysis Date: **10/12/2016 16:41**

Client ID: Run ID: **IM161012-10A9** Prep Date: **10/5/2016** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BORON	1.06	0.05	1		106	85-115				20	
SODIUM	10.3	1	10		103	85-115				20	

MB Sample ID: **IP161005-1** Units: **MG/L** Analysis Date: **10/12/2016 16:38**

Client ID: Run ID: **IM161012-10A9** Prep Date: **10/5/2016** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BORON	ND	0.05									
SODIUM	ND	1									

The following samples were analyzed in this batch: 1609342-1

Batch ID: **VL160922-3-1** Instrument ID **HPV1** Method: **SW8260_25**

LCS Sample ID: **VL160922-3** Units: **UG/L** Analysis Date: **9/22/2016 09:05**

Client ID: Run ID: **VL160922-3A** Prep Date: **9/22/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
1,1-DICHLOROETHENE	10.7	1	10		107	77-119				20	
BENZENE	10.7	1	10		107	83-117				20	
TRICHLOROETHENE	11.3	1	10		113	83-117				20	
TOLUENE	10.9	1	10		109	82-113				20	
CHLOROBENZENE	11.3	1	10		113	81-113				20	
Surr: DIBROMOFLUOROMETHANE	25		25		100	84-118					
Surr: TOLUENE-D8	23.8		25		95	85-115					
Surr: 4-BROMOFLUOROBENZENE	25.2		25		101	85-115					

LCSD Sample ID: **VL160922-3** Units: **UG/L** Analysis Date: **9/22/2016 09:27**

Client ID: Run ID: **VL160922-3A** Prep Date: **9/22/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
1,1-DICHLOROETHENE	10.6	1	10		106	77-119		10.7	1	20	
BENZENE	10.6	1	10		106	83-117		10.7	1	20	
TRICHLOROETHENE	11.1	1	10		111	83-117		11.3	2	20	
TOLUENE	10.8	1	10		108	82-113		10.9	1	20	
CHLOROBENZENE	11.1	1	10		111	81-113		11.3	2	20	
Surr: DIBROMOFLUOROMETHANE	25		25		100	84-118			0		
Surr: TOLUENE-D8	24.1		25		96	85-115			1		
Surr: 4-BROMOFLUOROBENZENE	24.7		25		99	85-115			2		

QC BATCH REPORT

Batch ID: **VL160922-3-1** Instrument ID **HPV1** Method: **SW8260_25**

MB Sample ID: **VL160922-3** Units: **UG/L** Analysis Date: **9/22/2016 10:12**

Client ID: Run ID: **VL160922-3A** Prep Date: **9/22/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
DICHLORODIFLUOROMETHANE	ND	1									
CHLOROMETHANE	ND	1									
VINYL CHLORIDE	ND	1									
BROMOMETHANE	ND	1									
CHLOROETHANE	ND	1									
TRICHLOROFLUOROMETHANE	ND	1									
1,1-DICHLOROETHENE	ND	1									
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND	1									
ACETONE	ND	10									
IODOMETHANE	ND	1									
CARBON DISULFIDE	ND	1									
METHYLENE CHLORIDE	ND	1									
TRANS-1,2-DICHLOROETHENE	ND	1									
METHYL TERTIARY BUTYL ETHER	ND	1									
1,1-DICHLOROETHANE	ND	1									
VINYL ACETATE	ND	2									
CIS-1,2-DICHLOROETHENE	ND	1									
2-BUTANONE	ND	10									
BROMOCHLOROMETHANE	ND	1									
CHLOROFORM	ND	1									
1,1,1-TRICHLOROETHANE	ND	1									
2,2-DICHLOROPROPANE	ND	1									
CARBON TETRACHLORIDE	ND	1									
1,1-DICHLOROPROPENE	ND	1									
1,2-DICHLOROETHANE	ND	1									
BENZENE	ND	1									
TRICHLOROETHENE	ND	1									
1,2-DICHLOROPROPANE	ND	1									
DIBROMOMETHANE	ND	1									
BROMODICHLOROMETHANE	ND	1									
CIS-1,3-DICHLOROPROPENE	ND	1									
4-METHYL-2-PENTANONE	ND	10									
TOLUENE	ND	1									
TRANS-1,3-DICHLOROPROPENE	ND	1									
1,1,2-TRICHLOROETHANE	ND	1									
2-HEXANONE	ND	10									
TETRACHLOROETHENE	ND	1									
1,3-DICHLOROPROPANE	ND	1									
DIBROMOCHLOROMETHANE	ND	1									
1,2-DIBROMOETHANE	ND	1									

QC BATCH REPORT

Batch ID: **VL160922-3-1** Instrument ID **HPV1** Method: **SW8260_25**

MB Sample ID: **VL160922-3** Units: **UG/L** Analysis Date: **9/22/2016 10:12**

Client ID: Run ID: **VL160922-3A** Prep Date: **9/22/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
1-CHLOROHEXANE	ND	1									
CHLOROBENZENE	ND	1									
1,1,1,2-TETRACHLOROETHANE	ND	1									
ETHYLBENZENE	ND	1									
M+P-XYLENE	ND	1									
O-XYLENE	ND	1									
STYRENE	ND	1									
BROMOFORM	ND	1									
ISOPROPYLBENZENE	ND	1									
1,2,3-TRICHLOROPROPANE	ND	1									
1,1,2,2-TETRACHLOROETHANE	ND	1									
BROMOBENZENE	ND	1									
N-PROPYLBENZENE	ND	1									
2-CHLOROTOLUENE	ND	1									
1,3,5-TRIMETHYLBENZENE	ND	1									
4-CHLOROTOLUENE	ND	1									
TERT-BUTYLBENZENE	ND	1									
1,2,4-TRIMETHYLBENZENE	ND	1									
SEC-BUTYLBENZENE	ND	1									
1,3-DICHLOROBENZENE	ND	1									
P-ISOPROPYLTOLUENE	ND	1									
1,4-DICHLOROBENZENE	ND	1									
N-BUTYLBENZENE	ND	1									
1,2-DICHLOROBENZENE	ND	1									
1,2-DIBROMO-3-CHLOROPROPANE	ND	2									
1,2,4-TRICHLOROBENZENE	ND	1									
HEXACHLOROBUTADIENE	ND	1									
NAPHTHALENE	ND	1									
1,2,3-TRICHLOROBENZENE	ND	1									
Surr: DIBROMOFLUOROMETHANE	24.7		25		99	84-118					
Surr: TOLUENE-D8	24.3		25		97	85-115					
Surr: 4-BROMOFLUOROBENZENE	25.6		25		102	85-115					

The following samples were analyzed in this batch: 1609342-1 1609342-2

QC BATCH REPORT

Batch ID: **AK161003-1-2** Instrument ID **NONE** Method: **SM2320B**

LCS Sample ID: **AK161003-1** Units: **MG/L** Analysis Date: **10/3/2016**
Client ID: Run ID: **AK161003-1A1** Prep Date: **10/3/2016** 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	399	20	400		100	85-115				15	

LCSD Sample ID: **AK161003-1** Units: **MG/L** Analysis Date: **10/3/2016**
Client ID: Run ID: **AK161003-1A1** Prep Date: **10/3/2016** 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	402	20	400		100	85-115		399	1	15	

MB Sample ID: **AK161003-1** Units: **MG/L** Analysis Date: **10/3/2016**
Client ID: Run ID: **AK161003-1A1** Prep Date: **10/3/2016** 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	20									
CARBONATE AS CaCO3	ND	20									
TOTAL ALKALINITY AS CaCO3	ND	20									

The following samples were analyzed in this batch: 1609342-1

QC BATCH REPORT

Batch ID: **IC160921-1-3** Instrument ID **IC-2** Method: **EPA300.0**

LCS Sample ID: **IC160921-1** Units: **MG/L** Analysis Date: **9/21/2016 17:53**

Client ID: Run ID: **IC160920-1A1** Prep Date: **9/21/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
FLUORIDE	2.01	0.1	2		101	90-110				15	
CHLORIDE	4.93	0.2	5		99	90-110				15	
NITRITE AS N	1.95	0.1	2		98	90-110				15	
BROMIDE	4.99	0.2	5		100	90-110				15	
NITRATE AS N	4.92	0.2	5		98	90-110				15	
ORTHOPHOSPHATE AS P	1.89	0.5	2		94	90-110				15	
SULFATE	19.5	1	20		97	90-110				15	

LCSD Sample ID: **IC160921-1** Units: **MG/L** Analysis Date: **9/21/2016 18:09**

Client ID: Run ID: **IC160920-1A1** Prep Date: **9/21/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
FLUORIDE	2	0.1	2		100	90-110		2.01	0	15	
CHLORIDE	4.91	0.2	5		98	90-110		4.93	0	15	
NITRITE AS N	1.96	0.1	2		98	90-110		1.95	0	15	
BROMIDE	4.99	0.2	5		100	90-110		4.99	0	15	
NITRATE AS N	4.9	0.2	5		98	90-110		4.92	0	15	
ORTHOPHOSPHATE AS P	1.96	0.5	2		98	90-110		1.89	4	15	
SULFATE	19.7	1	20		99	90-110		19.5	1	15	

MB Sample ID: **IC160921-1** Units: **MG/L** Analysis Date: **9/21/2016 17:36**

Client ID: Run ID: **IC160920-1A1** Prep Date: **9/21/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
FLUORIDE	ND	0.1									
CHLORIDE	ND	0.2									
NITRITE AS N	ND	0.1									
BROMIDE	ND	0.2									
NITRATE AS N	ND	0.2									
ORTHOPHOSPHATE AS P	ND	0.5									
SULFATE	ND	1									

The following samples were analyzed in this batch: 1609342-1

Client: COGCC
Work Order: 1609342
Project: 076 UPWQ Upper Pierre Aquifer

QC BATCH REPORT

Batch ID: **TD160927-1-2** Instrument ID **Balance** Method: **EPA160.1**

LCS Sample ID: **TD160927-1** Units: **MG/L** Analysis Date: **9/28/2016**
Client ID: Run ID: **TD160928-1A1** Prep Date: **9/27/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	415	20	400		104	85-115				5	

LCSD Sample ID: **TD160927-1** Units: **MG/L** Analysis Date: **9/28/2016**
Client ID: Run ID: **TD160928-1A1** Prep Date: **9/27/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	427	20	400		107	85-115		415	3	5	

MB Sample ID: **TD160927-1** Units: **MG/L** Analysis Date: **9/28/2016**
Client ID: Run ID: **TD160928-1A1** Prep Date: **9/27/2016** 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: 1609342-1