



Water Quality Monitoring Data Review

Facility Name _____ Facility ID _____ Permit _____
Lab Sample ID _____ Date Sampled _____ Sampler _____
Lat _____ Long _____ QtrQtr _____ Sec _____ Twn _____ Rng _____
Site Address _____
Oil & Gas Well _____ Location/API# _____

Field Sheet Review

1. Was the well/spring properly purged?
 - a. Please provide purge volume if applicable: _____
2. Was the flow rate reduced prior to sampling?
3. Were field parameters measured prior to sampling?
4. Did field parameters stabilize prior to sampling?
5. Did site conditions or other factors suggest that the samples may not be representative of groundwater?
 - a. If yes, please describe:

Laboratory Data Review

6. Were the samples received at the recommended temperature of $\leq 6^{\circ}\text{C}$?
7. Were the samples properly preserved?
 - a. If no, please explain:
8. Was proper chain-of-custody maintained?
 - a. If no, please explain:
9. Were all samples analyzed for the requested analyses?
 - a. If no, can the remaining sample be analyzed within the recommended hold time?
10. Were the proper methods used?
 - a. If no, can the remaining sample be re-analyzed within the recommended holding time?
11. Were all sample holding time limits met?
 - a. If no, please explain:
12. Were the correct reporting limits used?
 - a. If no, please explain:
13. Were laboratory quality assurance samples collected and analyzed (i.e., matrix spikes & matrix spike duplicates) according to laboratory methods?
 - a. If no, please explain:

- 14. Were laboratory quality assurance sample results within acceptance limits?
 - a. *If no, please describe:*

Field Control Samples

- 15. Were **field duplicate** samples submitted?
 - a. *If no, proceed to trip blank questions.*

- 16. Were the original and duplicate samples $\geq 5x$ the practical quantitation limit (PQL)

- 17. Was the Relative Percent Difference (RPD) $\leq 20\%$?
 - a. *If no, please describe:*

- 18. Were **trip blanks** submitted?
 - a. *If no, proceed to equipment blank question.*

- 19. If trip blanks were submitted, were the VOC constituent concentration results below method detection limits?

- 20. If **equipment blanks** were submitted, did the results meet the equipment blank data quality objectives specified in the Sampling and Analysis Plan?

- 21. If **field blanks** were submitted, did the results meet the field blank data quality objectives specified in the Sampling and Analysis Plan?

Corrective Actions

- 22. Are corrective actions required to remedy any data quality issues?
 - a. *If yes, please describe:*

- 23. Date by when corrective actions must be completed: _____
- 24. Summary of Corrective Actions (once completed) _____

Data Suitability Statement

Based upon this data quality review and your professional judgment, have the data been collected and analyzed in general accordance with the COGCC Model Sampling and Analysis Plan? Yes

Are the data suitable for release for incorporation into the Colorado Oil and Gas Conservation Commission environmental database?

Data Quality Reviewer's Name: _____ Company: _____
(Print)

Data Quality Reviewer's Signature: _____ Date: _____



Field PPE, Equipment and Calibration Form



PPE	✓
Hard Hat	
Steel Toed Boots	
Safety Glasses	
FR Clothing	
Disposable Gloves	
Other:	

Calibration Fluid Information	Standard	Manufacturer	Lot No.	Exp. Date
	pH 4	Proactive	1GF196	Jan-24
	pH 7	Proactive	1GE237	Feb-24
	pH 10	Proactive	0GF084	Feb-23
	EC 1413	Proactive	1GE423	Mar-23
	EC 5000	Proactive	1GD1216	Mar-23
	ORP 220	Proactive	1GK1233	Nov-22
	10 NTU	HACH	A1202	Nov-22
	20 NTU	HACH	A1207	Nov-22
	100 NTU	HACH	A1211	Nov-22
800 NTU	HACH	A1201R	Nov-22	

Manufacturer		Name		Serial Number								
YSI		Professional Plus		13J100190								
Date	Time	Calibration / Post Check	pH (std.units)			Specific Conductance (µmhos/cm² @ 25°C)		ORP 220 mV	DO 100%	Temp (°C)	Initials	Comments
			4.0	7.0	10.0	1413	5000					
05/31	0925	cali	4.03	6.77	9.89	1358	4992	218.3	-	-	AS	
06/01	0705	cali	4.00	6.84	10.04	1435	4922	218.5	86.0	19.3	AS	
06/02	0715	cali	3.88	6.78	9.97	1394	5010	218.9	80.5	19.5	AS	
06/06	0720	cali	3.97	6.91	9.99	1412	4907	217.4	79.0	21.2	AS	
06/07	0725	cali	4.00	6.93	10.01	1407	5003	219.8		22.2	AS	
06/08	0725	cali	4.14	7.09	10.15	1413	4989	233.3	95.2	22.9	AS	

Manufacturer		Name		Serial Number	
Geotech		Portable turbidity meter		19062101	
Date	Time	Calibration / Routine Check	Turbidity Calibration (NTU)		
			0.02	10	1000

Other Equipment			
Manufacturer	Model	Serial No.	✓
BW	Gas Alert XT	KA414-1046071	
Garmin	GPSmap 76	80463283	
Olympus	ST 6000 Digital Camera	G855535029	
Global Water	Sonar Water Level Indicator	11406U	



Baseline Water Monitoring Fieldsheet

Sample Date	5/31/2022
Samplers	Santana, Andres

Client(s) Extraction Oil & Gas, Inc (GWA - Rinn Valley West)

Initial 1st Subsequent 2nd Subsequent Response Annual Bi-Annual Frequency

O&G Well API Spud Date Completed Date

Regulation 609 Distance from Well (ft) Billing # AFE # 1800312

Well Parameters

Well / Facility Name Scarbrough 48558 Permit 48558 Receipt 9064599 ID 758680

Map No. Project 744.1708.01 455340 QQ NWSE Sec 18 TwN 2N Rng 68W Use Domestic

County Weld State CO Elev 4844 UTM Easting 496078.56 UTM Northing 4443075.84 Zone 13

Latitude 40.138006000000 Longitude -105.046032000000 NAD 83

Directions UTMS from GPS. Drill '71. Rule 615.

Owner Information

Scarbrough, Buck & Aryn Scarbrough Family Trust Phone: 7202615131 Cell:	Mailing Address: 498 County Road 20.5 Longmont, Colorado 80504-9413 Alt Contact:	Physical Address: 498 County Road 20.5 Longmont, Colorado 80504	Individuals Present During Sampling
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Well Information

CAN/ABA No Refused Sample No Reported Water Level Reported Total Depth Surface Casing Diameter 7.000

Well House No Vault No Pitless Yes Surf. Discharge Pipe No Confined Space No Airline Installed UNK

Well Seal Yes Type/Manufacturer Unknown Vented Yes Gas Flow from Vent No Access for WL No

Storage Tank No Storage Tank Volume (gal) Pressure Tank No Pressure Tank Volume (gal)

Ground Slope Away from Well? No Area Desc/Proximity Back yard, West side of house.

Condition of well Good.

LEL(%) 0 x0.05= Methane Concentration 0 % LEL Sample Location Spigot

Measured Flow Rate (gpm) 0.18 Time 11:05 Sampling Flow Rate 0.18 Method

Measured Water Level Time Instrument

Pump Specifications & Power

Pump Type Submersible Pump Manufacturer Unknown HP Phase Fused Shut Off

Fuse Time on Time Off Breaker Time On Time Off

Timer Time on Time Off Other Time On Time Off Other Description

Mini-Test Data

Clock Time	Elapsed Time	Water Level	Flow Rate (calc)	Flow (gal/sec)	Temp (°C)	pH	EC (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity	Color	Odor	Sediment	Bubbles / Effervescence	CH4 (%)
11:05	0:00		0.18		13.8	7.1	1709	177.6	6.5	12.58	Clear	None	None	None	0
11:10	0:05		0.18		15.1	7.19	1755	147.5	6.35	12.45	Clear	None	None	None	0
11:15	0:10		0.18		16.3	7.25	1769	138.3	6.13	10.74	Clear	None	None	None	0
11:20	0:15		0.18		17.1	7.28	1774	132.2	6.05	11.36	Clear	None	None	None	0
11:25	0:20		0.18		17.8	7.28	1776	131.2	5.66	12.21	Clear	None	None	None	0
11:30	0:25		0.18		18.1	7.28	1782	133.8	6.25	11.48	Clear	None	None	None	0
11:35	0:30		0.18		18.5	7.28	1782	134.8	6.08	10.77	Clear	None	None	None	0
11:40	0:35		0.18		17.6	7.27	1791	127.9	6.01	10.56	Clear	None	None	None	0
11:45	0:40		0.18		17.8	7.27	1800	128.8	6.15	10.59	Clear	None	None	None	0
11:50	0:45		0.18		18.1	7.27	1811	131.8	5.7	9.55	Clear	None	None	None	0

Sample Yes No Sample Reason

Sample Location Spigot

Sampling Before Tank Flow Cell Used Purge Volume 8.10 gal = (Pumped 45 min @ 0.18 gpm)

Well Volume = 0.00 gal (Radius 12.25 in) Squared * Water Column 0 *0.163 Casing Volumes Removed

Sample/Visit Time 11:50 Weather Clear/70° Field Conditions Good

Comment Water was clear. No issues sampling.



05.31.2022 10:37 AM
40.13804, -105.04605
498 County Rd 20 1/2, Longmont, CO 80504, USA

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 21, 2022

Heather Shideman

Civitas Resources

650 Southgate Drive

Windsor, CO 80550

RE: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Work Order # 2206022

Enclosed are the results of analyses for samples received by Summit Scientific on 06/01/22 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BW_Scarbrough_48558	2206022-01	Water	05/31/22 11:50	06/01/22 15:00

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

7206022

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933

Client: Extraction Oil and Gas (XOG) **Report to:** Apex Companies, LLC **Project Manager:** Heather Shideman
Address: 1512 Larimer St., Suite 540 **E-Mail:** Rochelle.Carlisle@apexcos.com, Heather.Shideman@apexcos.com, Kolbi.Condos@apexcos.com
City/State/Zip: Denver, CO 80202 **cc:** nbennett@civiresources.com
Phone: (970) 576-3446 **Project Name:** BWSE/GWA_Rinn_Valley_West
Sampler Name: *Andres Santoro* **Project No.:** **Facility ID:** 758680

ID	Field ID / Point of Collection	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions		
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister Serial #	Other (Specify)	COGCC 609	COGCC 615					
1	BW_Scarbrough_48558 NWSE_18_2N_68W	05/31	1150	10	6	1			X					X					Sample Frequency: IN
	Temperature, field:	18.1	°C																
	pH, field:	7.27	s.u.																
	Conductivity, field:	181	uS/cm																
	ORP, field:	131.8	mV																
	Dissolved Oxygen, field:	5.70	mg/L																
	Turbidity, field:	9.55	NTU																
Relinquished by: <i>Andres Santoro</i>		Date/Time: 05/31/22 1815		Received by: <i>[Signature]</i>		Date/Time: 6122 1500		Turn Around Time (Check)				Notes:							
Relinquished by:		Date/Time:		Received by:		Date/Time:		Same Day ___ 72 hours ___ 24 hours ___ Standard <u>X</u> 48 hours ___											
Relinquished by:		Date/Time:		Received by:		Date/Time:		Sample Integrity: Temperature Upon Receipt: <u>3.0</u> Intact: <u>(Yes)</u> No											

U2

Sample Receipt Checklist

S2 Work Order# 2206022

Client: YOG (Apex) Client Project ID: BUSE/GWA Rimm Valley West

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on ice
Were all samples received intact ⁽¹⁾ ?	-			
Was adequate sample volume provided ⁽¹⁾ ?	-			
If custody seals are present, are they intact ⁽¹⁾ ?	-			
Are samples due within 48 hours present?		-		
Are water samples with short hold times present? NOTE: The short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			-	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	-			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	-			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	-			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	-			
For volatiles in water - is there headspace present? If yes, contact client and note in narrative.		-		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the comments column - HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	-			HCl, HNO ₃
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.



 Custodian Printed Name

6122

 Date/Time



Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

BW_Scarbrough_48558
NWSE_18_2N_68W
2206022-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BFF0147	06/06/22	06/06/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	500	"	"	"	"	"	"	

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		63.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	0.100	mg/L	1	BFF0181	06/07/22	06/07/22	EPA 8015M	
C28-C36 (ORO)	ND	0.100	"	"	"	"	"	"	

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		126 %	44.8-129		"	"	"	"	

Dissolved Gases by RSK-175

Summit Scientific

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650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

BW_Scarbrough_48558
NWSE_18_2N_68W
2206022-01 (Water)

Summit Scientific

Dissolved Gases by RSK-175

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Methane	ND	0.010		mg/L	1	BFF0144	06/06/22	06/07/22	RSK-175 mod	
Ethane	ND	0.010		"	"	"	"	"	"	
Propane	ND	0.010		"	"	"	"	"	"	

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: Ethene		96.7 %		70-130		"	"	"	"	

Dissolved Metals by EPA Method 200.8

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	64700	50.0		ug/l	1	BFF0135	06/06/22	06/06/22	EPA 200.8	
Iron	ND	10.0		"	"	"	"	"	"	
Magnesium	96500	50.0		"	"	"	"	"	"	
Manganese	ND	1.00		"	"	"	"	"	"	
Potassium	1400	50.0		"	"	"	"	"	"	
Sodium	124000	50.0		"	"	"	"	"	"	
Barium	28.6	1.00		"	"	"	"	"	"	
Boron	277	10.0		"	"	"	"	"	"	
Selenium	6.03	1.00		"	"	"	"	"	"	
Strontium	2310	10.0		"	"	"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Bromide	0.728	0.200		mg/L	1	BFF0019	06/01/22	06/01/22	EPA 300.0	
Chloride	93.2	20.0		"	200	"	"	"	"	
Fluoride	2.21	0.200		"	1	"	"	"	"	
Sulfate	246	60.0		"	200	"	"	"	"	

Summit Scientific

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Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

BW_Scarbrough_48558
NWSE_18_2N_68W
2206022-01 (Water)

Summit Scientific

Anions by EPA Method 300.0

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Nitrate as N	12.7	0.100	mg/L	1	BFF0019	06/01/22	06/01/22	EPA 300.0	
Nitrite as N	ND	0.100	"	"	"	"	"	"	
Nitrate/Nitrite as N	12.7	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Alkalinity	500	10.0	mg/L as CaCO3	1	BFF0068	06/02/22	06/03/22	SM2320-B	
Carbonate	ND	10.0	"	"	"	"	"	"	
Bicarbonate	500	10.0	"	"	"	"	"	"	

Conventional Chemistry Parameters by APHA/EPA Methods

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phosphorus - Total	0.266	0.0500	mg/L	1	BFF0186	06/07/22	06/09/22	SM4500-P-E	

Specific Conductance by SM2510B

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2480	1.00	umhos/cm	1	BFF0108	06/03/22	06/03/22	SM2510B	

Total Dissolved Solids by SM2540C

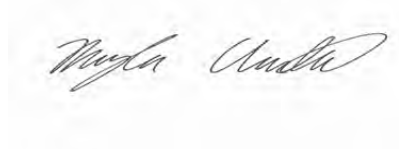
Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1200	10.0	mg/L	1	BFF0064	06/02/22	06/02/22	SM2540C	

pH by SM4500

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Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

BW_Scarbrough_48558
NWSE_18_2N_68W
2206022-01 (Water)

Summit Scientific

pH by SM4500

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.32	1.00	pH Units	1	BFF0256	06/01/22	06/09/22	SM4500-H+ B	I-03

Biological Activity Reaction Test

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Iron Related Bacteria	9000	25.0	CFU/ml	1	BFF0072	06/02/22	06/09/22	BART	
Sulfate Reducing Bacteria	130000	200	"	"	"	"	"	"	
Slime Forming Bacteria	6000	500	"	"	"	"	"	"	

Field Data

Date Sampled: **05/31/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	1811.0		uS/cm	1	BFF0046	05/31/22	05/31/22	Field Method	
Oxidation/Reduction Potential	131.8		mv	"	"	"	"	"	
Turbidity	9.55		NTU	"	"	"	"	"	
Dissolved Oxygen	5.70		mg/L	"	"	"	"	"	
Temperature	18.10		Degrees C	"	"	"	"	"	
pH	7.27		SU	"	"	"	"	"	

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Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFF0147 - EPA 5030 Water MS

Blank (BFF0147-BLK1)

Prepared & Analyzed: 06/06/22

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
m,p-Xylene	ND	2.0	"								
o-Xylene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Naphthalene	ND	1.0	"								
1,2,4-Trimethylbenzene	ND	1.0	"								
1,3,5-Trimethylbenzene	ND	1.0	"								
Gasoline Range Hydrocarbons	ND	500	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	8.65		"	13.3		64.9		23-173			
<i>Surrogate: Toluene-d8</i>	11.9		"	13.3		89.3		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	11.6		"	13.3		87.1		21-167			

LCS (BFF0147-BS1)

Prepared & Analyzed: 06/06/22

Benzene	22.1	1.0	ug/l	33.3		66.3		51-132			
Toluene	29.0	1.0	"	33.3		87.1		51-138			
Ethylbenzene	35.2	1.0	"	33.3		105		58-146			
m,p-Xylene	74.4	2.0	"	66.7		112		57-144			
o-Xylene	36.7	1.0	"	33.3		110		53-146			
Naphthalene	27.6	1.0	"	33.3		82.9		70-130			
1,2,4-Trimethylbenzene	36.4	1.0	"	33.3		109		70-130			
1,3,5-Trimethylbenzene	37.3	1.0	"	33.3		112		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	9.47		"	13.3		71.0		23-173			
<i>Surrogate: Toluene-d8</i>	12.1		"	13.3		90.8		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	11.8		"	13.3		88.8		21-167			

Matrix Spike (BFF0147-MS1)

Source: 2206057-01

Prepared & Analyzed: 06/06/22

Benzene	22.4	1.0	ug/l	33.3	ND	67.3		34-141			
Toluene	29.2	1.0	"	33.3	ND	87.8		27-151			
Ethylbenzene	35.4	1.0	"	33.3	ND	106		29-160			
m,p-Xylene	74.8	2.0	"	66.7	ND	112		20-166			
o-Xylene	37.0	1.0	"	33.3	ND	111		33-159			
Naphthalene	31.7	1.0	"	33.3	ND	95.0		70-130			
1,2,4-Trimethylbenzene	37.4	1.0	"	33.3	ND	112		70-130			
1,3,5-Trimethylbenzene	38.1	1.0	"	33.3	ND	114		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	9.46		"	13.3		71.0		23-173			
<i>Surrogate: Toluene-d8</i>	12.2		"	13.3		91.1		20-170			

Summit Scientific

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Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BFF0147 - EPA 5030 Water MS

Matrix Spike (BFF0147-MS1)

Source: 2206057-01

Prepared & Analyzed: 06/06/22

Surrogate: 4-Bromofluorobenzene	11.7		ug/l	13.3		87.8	21-167		
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Matrix Spike Dup (BFF0147-MSD1)


Source: 2206057-01

Prepared & Analyzed: 06/06/22

Benzene	22.2	1.0	ug/l	33.3	ND	66.5	34-141	1.26	30
Toluene	29.2	1.0	"	33.3	ND	87.6	27-151	0.171	30
Ethylbenzene	35.1	1.0	"	33.3	ND	105	29-160	0.908	30
m,p-Xylene	73.8	2.0	"	66.7	ND	111	20-166	1.29	30
o-Xylene	37.1	1.0	"	33.3	ND	111	33-159	0.162	30
Naphthalene	33.8	1.0	"	33.3	ND	101	70-130	6.50	30
1,2,4-Trimethylbenzene	37.8	1.0	"	33.3	ND	113	70-130	1.20	30
1,3,5-Trimethylbenzene	37.9	1.0	"	33.3	ND	114	70-130	0.605	30
Surrogate: 1,2-Dichloroethane-d4	9.78		"	13.3		73.4	23-173		
Surrogate: Toluene-d8	12.1		"	13.3		90.6	20-170		
Surrogate: 4-Bromofluorobenzene	12.0		"	13.3		89.8	21-167		

Summit Scientific

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Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFF0181 - EPA 5030 Water GC

Blank (BFF0181-BLK1)

Prepared & Analyzed: 06/07/22

C10-C28 (DRO)	ND	0.100	mg/L								
C28-C36 (ORO)	ND	0.100	"								
Surrogate: <i>o</i> -Terphenyl	0.0261		"	0.0250	104	44.8-129					

LCS (BFF0181-BS1)

Prepared & Analyzed: 06/07/22

C10-C28 (DRO)	0.714	0.100	mg/L	1.00	71.4	70-130					
Surrogate: <i>o</i> -Terphenyl	0.0318		"	0.0250	127	44.8-129					


LCS Dup (BFF0181-BSD1)

Prepared & Analyzed: 06/07/22

C10-C28 (DRO)	0.706	0.100	mg/L	1.00	70.6	70-130	1.14	200			
Surrogate: <i>o</i> -Terphenyl	0.0278		"	0.0250	111	44.8-129					

Summit Scientific

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650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

Dissolved Gases by RSK-175 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BFF0144 - GC

Blank (BFF0144-BLK1)

Prepared: 06/06/22 Analyzed: 06/07/22

Methane	ND	0.010	mg/L								
Ethane	ND	0.010	"								
Propane	ND	0.010	"								
Surrogate: Ethene	0.0453		"	0.0364		124	70-130				

LCS (BFF0144-BS1)

Prepared: 06/06/22 Analyzed: 06/07/22

Methane	0.035	0.010	mg/L	0.0428		81.6	70-130				
Ethane	0.10	0.010	"	0.0798		129	70-130				
Propane	0.15	0.010	"	0.139		106	70-130				
Surrogate: Ethene	0.0886		"	0.0728		122	70-130				

Duplicate (BFF0144-DUP1)

Source: 2206022-01

Prepared: 06/06/22 Analyzed: 06/07/22

Methane	ND	0.010	mg/L		ND					30	
Ethane	ND	0.010	"		ND					30	
Propane	ND	0.010	"		ND					30	
Surrogate: Ethene	0.0355		"	0.0364		97.6	70-130				

Matrix Spike (BFF0144-MS1)

Source: 2206022-01

Prepared: 06/06/22 Analyzed: 06/07/22

Methane	0.039	0.010	mg/L	0.0428	ND	91.0	70-130				
Ethane	0.085	0.010	"	0.0798	ND	107	70-130				
Propane	0.12	0.010	"	0.139	ND	88.9	70-130				
Surrogate: Ethene	0.0769		"	0.0728		106	70-130				

Summit Scientific

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Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

Dissolved Metals by EPA Method 200.8 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			Limit	RPD	Limit	RPD	

Batch BFF0135 - EPA 200.8

Blank (BFF0135-BLK1)

Prepared & Analyzed: 06/06/22

Calcium	ND	50.0	ug/l							
Iron	ND	10.0	"							
Magnesium	ND	50.0	"							
Manganese	ND	1.00	"							
Potassium	ND	50.0	"							
Sodium	ND	50.0	"							
Barium	ND	1.00	"							
Boron	ND	10.0	"							
Selenium	ND	1.00	"							
Strontium	ND	10.0	"							

LCS (BFF0135-BS1)

Prepared & Analyzed: 06/06/22

Calcium	5710	50.0	ug/l	5000	114	85-115				
Iron	5460	10.0	"	5000	109	85-115				
Magnesium	5420	50.0	"	5000	108	85-115				
Manganese	501	1.00	"	500	100	85-115				
Potassium	5610	50.0	"	5000	112	85-115				
Sodium	5510	50.0	"	5000	110	85-115				
Barium	501	1.00	"	500	100	85-115				
Boron	2630	10.0	"	2500	105	85-115				
Selenium	49.9	1.00	"	50.0	99.7	85-115				
Strontium	503	10.0	"	500	101	85-115				

Duplicate (BFF0135-DUP1)


Source: 2205455-01

Prepared & Analyzed: 06/06/22

Calcium	63700	50.0	ug/l	62300		2.12	20			
Iron	ND	10.0	"	ND			20			
Magnesium	12000	50.0	"	11900		0.759	20			
Manganese	0.354	1.00	"	0.319		10.4	20			
Potassium	1280	50.0	"	1280		0.160	20			
Sodium	247000	50.0	"	242000		2.06	20			
Barium	10.0	1.00	"	9.84		1.63	20			
Boron	469	10.0	"	466		0.706	20			
Selenium	5.19	1.00	"	5.51		5.88	20			
Strontium	287	10.0	"	280		2.38	20			

Summit Scientific

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Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

Dissolved Metals by EPA Method 200.8 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BFF0135 - EPA 200.8

Matrix Spike (BFF0135-MS1)

Source: 2205455-01

Prepared & Analyzed: 06/06/22

Calcium	62000	50.0	ug/l	5000	62300	NR	70-130				QM-02
Iron	5420	10.0	"	5000	ND	108	70-130				
Magnesium	16000	50.0	"	5000	11900	81.7	70-130				
Manganese	499	1.00	"	500	0.319	99.7	70-130				
Potassium	6370	50.0	"	5000	1280	102	70-130				
Sodium	223000	50.0	"	5000	242000	NR	70-130				QM-02
Barium	481	1.00	"	500	9.84	94.3	70-130				
Boron	2840	10.0	"	2500	466	95.0	70-130				
Selenium	52.9	1.00	"	50.0	5.51	94.7	70-130				
Strontium	747	10.0	"	500	280	93.3	70-130				

Matrix Spike Dup (BFF0135-MSD1)

Source: 2205455-01

Prepared & Analyzed: 06/06/22

Calcium	59300	50.0	ug/l	5000	62300	NR	70-130	4.42	25		QM-02
Iron	5400	10.0	"	5000	ND	108	70-130	0.342	25		
Magnesium	15900	50.0	"	5000	11900	80.2	70-130	0.477	25		
Manganese	500	1.00	"	500	0.319	99.8	70-130	0.158	25		
Potassium	6470	50.0	"	5000	1280	104	70-130	1.53	25		
Sodium	223000	50.0	"	5000	242000	NR	70-130	0.215	25		QM-02
Barium	481	1.00	"	500	9.84	94.3	70-130	0.0235	25		
Boron	2800	10.0	"	2500	466	93.4	70-130	1.43	25		
Selenium	51.8	1.00	"	50.0	5.51	92.6	70-130	1.98	25		
Strontium	742	10.0	"	500	280	92.4	70-130	0.659	25		

Summit Scientific

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Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike	Source		%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BFF0019 - General Preparation

Blank (BFF0019-BLK1)

Prepared & Analyzed: 06/01/22

Bromide	ND	0.200	mg/L								
Chloride	ND	0.100	"								
Fluoride	ND	0.200	"								
Sulfate	ND	0.300	"								
Nitrate as N	ND	0.100	"								
Nitrite as N	ND	0.100	"								
Nitrate/Nitrite as N	ND	0.200	"								

LCS (BFF0019-BS1)

Prepared & Analyzed: 06/01/22

Bromide	11.0	0.200	mg/L	10.0	110	90-110				
Chloride	3.18	0.100	"	3.00	106	90-110				
Fluoride	2.03	0.200	"	2.00	101	90-110				
Sulfate	15.6	0.300	"	15.0	104	90-110				
Nitrate as N	2.86	0.100	"	3.00	95.4	90-110				
Nitrite as N	3.17	0.100	"	3.00	106	90-110				

Duplicate (BFF0019-DUP1)

Source: 2205411-01

Prepared & Analyzed: 06/01/22

Bromide	ND	40.0	mg/L	1.80			200	20		QR-01
Chloride	255	20.0	"	257			0.937	20		
Fluoride	ND	40.0	"	24.2			200	20		QR-01
Sulfate	7590	60.0	"	8580			12.3	20		
Nitrate as N	ND	20.0	"	ND				20		
Nitrite as N	ND	20.0	"	ND				20		
Nitrate/Nitrite as N	ND	40.0	"	ND				20		

Matrix Spike (BFF0019-MS1)

Source: 2205411-01

Prepared & Analyzed: 06/01/22

Bromide	2310	40.0	mg/L	2000	1.80	115	80-120			
Chloride	934	20.0	"	600	257	113	80-120			
Fluoride	523	40.0	"	400	24.2	125	80-120			QM-07
Sulfate	10900	60.0	"	3000	8580	76.3	80-120			QM-02
Nitrate as N	582	20.0	"	600	ND	96.9	80-120			
Nitrite as N	674	20.0	"	600	ND	112	80-120			

Summit Scientific

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Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFF0068 - General Preparation

Blank (BFF0068-BLK1)

Prepared: 06/02/22 Analyzed: 06/03/22

Total Alkalinity	ND	10.0	mg/L as CaCO3								
Carbonate	ND	10.0	"								
Bicarbonate	ND	10.0	"								

LCS (BFF0068-BS1)

Prepared: 06/02/22 Analyzed: 06/03/22

Total Alkalinity	100	10.0	mg/L as CaCO3	100	100	100	80-120				
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Duplicate (BFF0068-DUP1)

Source: 2206022-01

Prepared: 06/02/22 Analyzed: 06/03/22

Total Alkalinity	500	10.0	mg/L as CaCO3	500				0.00	20		
Carbonate	ND	10.0	"	ND					20		
Bicarbonate	500	10.0	"	500				0.00	20		

Matrix Spike (BFF0068-MS1)

Source: 2206022-01

Prepared: 06/02/22 Analyzed: 06/03/22

Total Alkalinity	600	10.0	mg/L as CaCO3	100	500	100	70-130				
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Matrix Spike Dup (BFF0068-MSD1)


Source: 2206022-01

Prepared: 06/02/22 Analyzed: 06/03/22

Total Alkalinity	600	10.0	mg/L as CaCO3	100	500	100	70-130	0.00	20		
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Summit Scientific

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Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFF0186 - General Preparation

Blank (BFF0186-BLK1)

Prepared: 06/07/22 Analyzed: 06/09/22

Phosphorus - Total ND 0.0500 mg/L

LCS (BFF0186-BS1)

Prepared: 06/07/22 Analyzed: 06/09/22

Phosphorus - Total 1.04 0.0500 mg/L 1.00 104 80-120

Duplicate (BFF0186-DUP1)

Source: 2206022-01

Prepared: 06/07/22 Analyzed: 06/09/22

Phosphorus - Total 0.251 0.0500 mg/L 0.266 5.80 20

Matrix Spike (BFF0186-MS1)

Source: 2206022-01

Prepared: 06/07/22 Analyzed: 06/09/22

Phosphorus - Total 1.01 0.0500 mg/L 1.00 0.266 74.2 70-130

Matrix Spike Dup (BFF0186-MSD1)


Source: 2206022-01

Prepared: 06/07/22 Analyzed: 06/09/22

Phosphorus - Total 0.978 0.0500 mg/L 1.00 0.266 71.2 70-130 3.02 20

Summit Scientific

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Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

Specific Conductance by SM2510B - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFF0108 - General Preparation

Duplicate (BFF0108-DUP1)

Source: 2206022-01

Prepared & Analyzed: 06/03/22

Specific Conductance (EC)	2580	1.00	umhos/cm		2480			3.80	20	
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Summit Scientific

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Civitas Resources
 650 Southgate Drive
 Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
 Project Manager: Heather Shideman

Reported:
 07/21/22 14:11

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BFF0064 - General Preparation

Blank (BFF0064-BLK1)

Prepared & Analyzed: 06/02/22

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BFF0064-DUP1)

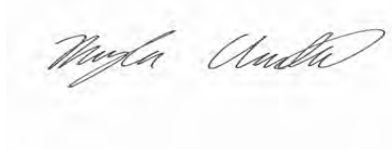
Source: 2205463-01

Prepared & Analyzed: 06/02/22

Total Dissolved Solids 1020 10.0 mg/L 1060 3.67 20

Summit Scientific

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Civitas Resources
 650 Southgate Drive
 Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
 Project Manager: Heather Shideman

Reported:
 07/21/22 14:11

pH by SM4500 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BFF0256 - General Preparation

LCS (BFF0256-BS1)

Prepared: 06/01/22 Analyzed: 06/09/22

pH	9.18	1.00	pH Units	9.18	100	90-110
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Duplicate (BFF0256-DUP1)

Source: 2206005-01

Prepared: 06/01/22 Analyzed: 06/09/22

pH	6.66	1.00	pH Units	6.67	0.150	20
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Summit Scientific

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Civitas Resources
 650 Southgate Drive
 Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
 Project Manager: Heather Shideman

Reported:
 07/21/22 14:11

Biological Activity Reaction Test - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike		Source		%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit			

Batch BFF0072 - General Preparation

Blank (BFF0072-BLK1)

Prepared: 06/02/22 Analyzed: 06/09/22

Iron Related Bacteria	ND	25.0	CFU/ml								
Sulfate Reducing Bacteria	ND	200	"								
Slime Forming Bacteria	ND	500	"								

Summit Scientific

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Civitas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Civitas - XOG - BWSE/GWA_Rinn_Valley_West

Project Number: Fac ID 758680
Project Manager: Heather Shideman

Reported:
07/21/22 14:11

Notes and Definitions

- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- QM-02 The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
- I-03 This sample was recieved and analyzed outside of the recommended holding time.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference