

TABLE 1
GROUNDWATER ANALYTICAL RESULTS

LORENZ UPRR 42-27 1, 41-27 3 TANK BATTERY
COGCC REMEDIATION #8952
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Monitoring Well	Date	Depth to Water (feet btoc)	Groundwater Elevation (AMSL)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW01	8/22/2014	6.22	4,732.91	17,800	2,920	745	11,500
	11/20/2014	9.79	4,729.34	32,900	751	673	10,500
	1/9/2015	7.87	4,731.26	30,000	190	1,300	20,000
	4/10/2015	8.72	4,730.41	25,000	220	640	13,000
	7/16/2015	6.16	4,732.97	22,000	1,800	690	11,000
	10/6/2015	7.02	4,732.11	33,000	150	830	13,000
	1/15/2016	7.56	4,731.57	1,600	1.8	<1.0	2,000
	4/29/2016	7.50	4,731.63	<1.0	<1.0	<1.0	<1.0
	7/15/2016	7.60	4,731.53	<1.0	<1.0	<1.0	<1.0
	10/26/2016	7.65	4,731.48	2,000	<1.0	<1.0	27
	1/19/2017	8.70	4,730.43	1,400	<1.0	64	460
	4/20/2017	9.83	4,729.12	3,100	<1.0	220	2,500
	8/9/2017	7.05	4,731.90	2,100	1.3	210	2,400
MW02	8/22/2014	8.83	4,733.58	0.33	<1.0	<1.0	3.5
	11/20/2014	9.51	4,732.90	<0.50	<1.0	<1.0	<1.0
	1/9/2015	10.25	4,732.16	<1.0	<1.0	<1.0	<1.0
	4/10/2015	11.26	4,731.15	<1.0	<1.0	<1.0	<1.0
	7/16/2015	8.71	4,733.70	<1.0	<1.0	<1.0	<1.0
	10/6/2015	9.30	4,733.11	<1.0	<1.0	<1.0	<1.0
	1/15/2016	10.42	4,731.99	<1.0	<1.0	<1.0	<1.0
	4/29/2016	9.80	4,732.61	<1.0	<1.0	<1.0	<1.0
	7/15/2016	10.15	4,732.26	<1.0	<1.0	<1.0	<1.0
	10/26/2016	10.30	4,732.11	<1.0	<1.0	<1.0	<1.0
	1/19/2017	10.25	4,732.16	<1.0	<1.0	<1.0	<1.0
	4/20/2017	12.71	4,729.70	<1.0	<1.0	<1.0	<2.0
	8/9/2017	NM -REMOVED FROM MONITORING					
MW03	8/22/2014	12.74	4,729.52	<1.0	<1.0	0.68	1.4
	11/20/2014	9.29	4,732.97	<0.50	<1.0	<1.0	<1.0
	1/9/2015	10.08	4,732.18	<1.0	<1.0	<1.0	<1.0
	4/10/2015	11.50	4,730.76	1.1	<1.0	<1.0	<1.0
	7/24/2015	8.04	4,734.22	<1.0	<1.0	<1.0	<1.0
	10/6/2015	8.44	4,733.82	<1.0	<1.0	<1.0	<1.0
	1/15/2016	9.46	4,732.80	<1.0	<1.0	<1.0	<1.0
	4/29/2016	8.83	4,733.43	<1.0	<1.0	<1.0	<1.0
	7/15/2016	9.29	4,732.97	<1.0	<1.0	<1.0	<1.0

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NOBLE ENERGY, INC.

Monitoring Well	Date	Depth to Water (feet btoc)	Groundwater Elevation (AMSL)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW03	10/26/2016	9.40	4,732.86	<1.0	<1.0	<1.0	<1.0
	1/19/2017	9.20	4,733.06	<1.0	<1.0	<1.0	<1.0
	4/20/2017	11.68	4,730.58	<1.0	<1.0	<1.0	<2.0
	8/9/2017	NM -REMOVED FROM MONITORING					
MW04	8/22/2014	9.20	4,733.02	<1.0	<1.0	<1.0	<2.0
	11/20/2014	9.89	4,732.33	<0.50	<1.0	<1.0	<1.0
	1/9/2015	10.45	4,731.77	<1.0	<1.0	<1.0	<1.0
	4/10/2015	11.50	4,730.72	<1.0	<1.0	<1.0	<1.0
	7/16/2015	8.83	4,733.39	<1.0	<1.0	<1.0	<1.0
	10/6/2015	9.46	4,732.76	<1.0	<1.0	<1.0	<1.0
	1/15/2016	10.60	4,731.62	<1.0	<1.0	<1.0	<1.0
	4/29/2016	10.06	4,732.16	<1.0	<1.0	<1.0	<1.0
	7/15/2016	10.29	4,731.93	<1.0	<1.0	<1.0	<1.0
	10/26/2016	10.48	4,731.74	<1.0	<1.0	<1.0	<1.0
	1/19/2017	10.40	4,731.82	<1.0	<1.0	<1.0	<1.0
	4/20/2017	12.87	4,729.35	<1.0	<1.0	<1.0	<2.0
	8/9/2017	NM -REMOVED FROM MONITORING					
MW05	8/22/2014	9.19	4,733.25	869	<1.0	3.7	5.0
	11/20/2014	9.81	4,732.63	7.2	<1.0	<1.0	<1.0
	1/9/2015	10.35	4,732.09	2.6	<1.0	<1.0	<1.0
	4/10/2015	11.05	4,731.39	<1.0	<1.0	<1.0	<1.0
	7/16/2015	9.72	4,732.72	220	<1.0	<1.0	<1.0
	10/6/2015	8.23	4,734.21	<1.0	<1.0	<1.0	<1.0
	1/15/2016	NM	NM	Not sampled - monitoring well frozen/blocked			
	4/29/2016	10.48	4,731.96	<1.0	<1.0	<1.0	<1.0
	7/15/2016	10.13	4,732.31	<1.0	<1.0	<1.0	<1.0
	10/26/2016	8.92	4,733.52	<1.0	<1.0	<1.0	<1.0
	1/19/2017	8.70	4,733.74	<1.0	<1.0	<1.0	<1.0
	4/20/2017	10.82	4,730.23	<1.0	<1.0	<1.0	<2.0
	8/9/2017	7.81	4,733.24	<1.0	<1.0	<1.0	<2.0

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WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Monitoring Well	Date	Depth to Water (feet btoc)	Groundwater Elevation (AMSL)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW06	9/25/2014	6.82	4,732.38	<1.0	<1.0	<1.0	<1.0
	11/20/2014	7.10	4,732.10	<0.50	<1.0	<1.0	<1.0
	1/9/2015	7.87	4,731.33	<1.0	<1.0	<1.0	<1.0
	4/10/2015	9.00	4,730.20	<1.0	<1.0	<1.0	<1.0
	7/16/2015	6.41	4,732.79	<1.0	<1.0	<1.0	<1.0
	10/6/2015	6.92	4,732.28	<1.0	<1.0	<1.0	<1.0
	1/15/2016	8.10	4,731.10	<1.0	<1.0	<1.0	<1.0
	4/29/2016	7.57	4,731.63	<1.0	<1.0	<1.0	<1.0
	7/15/2016	7.97	4,731.23	<1.0	<1.0	<1.0	<1.0
	10/26/2016	7.90	4,731.30	<1.0	<1.0	<1.0	<1.0
	1/19/2017	7.98	4,731.22	<1.0	<1.0	<1.0	<1.0
	4/20/2017	10.46	4,728.74	<1.0	<1.0	<1.0	<2.0
	8/9/2017	NM -REMOVED FROM MONITORING					
	MW07	9/25/2014	7.05	4,732.48	<1.0	<1.0	<1.0
11/20/2014		7.41	4,732.12	<0.50	<1.0	<1.0	<1.0
1/9/2015		8.14	4,731.39	<1.0	<1.0	<1.0	<1.0
4/10/2015		9.31	4,730.22	<1.0	<1.0	<1.0	<1.0
7/16/2015		6.70	4,732.83	<1.0	<1.0	<1.0	<1.0
10/6/2015		7.20	4,732.33	<1.0	<1.0	<1.0	<1.0
1/15/2016		8.32	4,731.21	<1.0	<1.0	<1.0	<1.0
4/29/2016		7.80	4,731.73	<1.0	<1.0	<1.0	<1.0
7/15/2016		8.18	4,731.35	<1.0	<1.0	<1.0	<1.0
10/26/2016		8.20	4,731.33	<1.0	<1.0	<1.0	<1.0
1/19/2017		8.20	4,731.33	<1.0	<1.0	<1.0	<1.0
4/20/2017		10.62	4,728.91	<1.0	<1.0	<1.0	<2.0
8/9/2017		NM -REMOVED FROM MONITORING					
MW08		9/25/2014	8.10	4,732.92	117	12.6	238
	11/20/2014	8.67	4,732.35	<0.50	<1.0	<1.0	298
	1/9/2015	9.50	4,731.52	87	39	60	2,200
	4/10/2015	10.58	4,730.44	89	45	<1.0	3,300
	7/16/2015	7.33	4,733.69	<1.0	<1.0	<1.0	<1.0
	10/6/2015	8.07	4,732.66	<1.0	<1.0	<1.0	<1.0
	1/15/2016	9.63	4,731.10	<1.0	<1.0	<1.0	<1.0
	4/29/2016	9.10	4,731.63	<1.0	<1.0	<1.0	<1.0
	7/15/2016	8.88	4,731.85	<1.0	<1.0	<1.0	<1.0
	10/26/2016	9.51	4,731.22	<1.0	<1.0	<1.0	<1.0
	1/19/2017	9.47	4,731.26	<1.0	<1.0	<1.0	<1.0
	4/20/2017	11.91	4,728.82	<1.0	<1.0	<1.0	<2.0
	8/9/2017	7.72	4,733.01	<1.0	<1.0	<1.0	<2.0

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Monitoring Well	Date	Depth to Water (feet btoc)	Groundwater Elevation (AMSL)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW09	9/25/2014	9.42	4,732.81	207	6,740	299	5,160
	11/20/2014	9.60	4,732.63	38.4	70.6	<1.0	782
	1/9/2015	7.90	4,731.67	34	2.7	120	5,000
	4/10/2015	11.60	4,727.97	<1.0	<1.0	<1.0	<1.0
	7/16/2015	9.32	4,730.25	14	48	<1.0	100
	10/6/2015	9.51	4,732.57	<1.0	<1.0	<1.0	<1.0
	1/15/2016	9.63	4,732.45	<1.0	<1.0	<1.0	<1.0
	4/29/2016	10.15	4,731.93	<1.0	<1.0	<1.0	9.6
	7/15/2016	10.44	4,731.64	<1.0	<1.0	<1.0	<1.0
	10/26/2016	10.55	4,731.53	170	1.8	23	900
	1/19/2017	10.50	4,731.58	<1.0	<1.0	<1.0	<1.0
	4/20/2017	12.73	4,729.35	<1.0	<1.0	<1.0	<2.0
	8/9/2017	9.52	4,732.56	<1.0	<1.0	<1.0	<2.0
MW10	1/9/2015	9.17	4,731.94	<1.0	<1.0	<1.0	<1.0
	4/10/2015	10.19	4,730.92	<1.0	<1.0	<1.0	<1.0
	7/16/2015	7.65	4,733.46	<1.0	<1.0	<1.0	<1.0
	10/6/2015	8.21	4,732.90	<1.0	<1.0	<1.0	<1.0
	1/15/2016	9.38	4,731.73	<1.0	<1.0	<1.0	<1.0
	4/29/2016	8.79	4,732.32	<1.0	<1.0	<1.0	<1.0
	7/15/2016	9.08	4,732.03	<1.0	<1.0	<1.0	<1.0
	10/26/2016	9.70	4,731.41	<1.0	<1.0	<1.0	<1.0
	1/19/2017	9.70	4,731.41	<1.0	<1.0	<1.0	<1.0
	4/20/2017	11.78	4,729.57	<1.0	<1.0	<1.0	<2.0
	8/9/2017		NM -REMOVED FROM MONITORING				
MW11	1/9/2015	9.05	4,732.03	<1.0	<1.0	<1.0	2.1
	4/10/2015	10.03	4,731.05	<1.0	<1.0	<1.0	<1.0
	7/16/2015	7.80	4,733.28	<1.0	<1.0	<1.0	<1.0
	10/6/2015	8.10	4,732.98	<1.0	<1.0	<1.0	<1.0
	1/15/2016	9.34	4,731.74	<1.0	<1.0	<1.0	<1.0
	4/29/2016	9.60	4,731.48	<1.0	<1.0	<1.0	<1.0
	7/15/2016	8.93	4,732.15	<1.0	<1.0	<1.0	<1.0
	10/26/2016	9.10	4,731.98	<1.0	<1.0	<1.0	<1.0
	1/19/2017	9.10	4,731.98	<1.0	<1.0	<1.0	<1.0
	4/20/2017	11.52	4,729.56	<1.0	<1.0	<1.0	<2.0
	8/9/2017		NM -REMOVED FROM MONITORING				

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WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Monitoring Well	Date	Depth to Water (feet btoc)	Groundwater Elevation (AMSL)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW12	1/9/2015	9.15	4,731.32	<1.0	<1.0	<1.0	<1.0
	4/10/2015	10.25	4,730.22	<1.0	<1.0	<1.0	<1.0
	7/16/2015	7.35	4,733.12	<1.0	<1.0	<1.0	<1.0
	10/6/2015	7.98	4,732.49	<1.0	<1.0	<1.0	<1.0
	1/15/2016	9.29	4,731.18	<1.0	<1.0	<1.0	<1.0
	4/29/2016	8.75	4,731.72	<1.0	<1.0	<1.0	<1.0
	7/15/2016	8.83	4,731.64	<1.0	<1.0	<1.0	<1.0
	10/26/2016	9.10	4,731.37	<1.0	<1.0	<1.0	<1.0
	1/19/2017	9.02	4,731.45	<1.0	<1.0	<1.0	<1.0
	4/20/2017	11.41	4,729.06	<1.0	<1.0	<1.0	<2.0
	8/9/2017	NM -REMOVED FROM MONITORING					
MW13	1/9/2015	9.80	4,731.35	990	220	130	3,900
	4/10/2015	10.85	4,730.30	1,100	25	<1.0	2,400
	7/16/2015	8.21	4,732.94	620	1,200	150	4,600
	10/6/2015	8.56	4,732.50	290	2,600	460	6,300
	1/15/2016	9.90	4,731.16	210	240	<1.0	3,700
	4/29/2016	9.40	4,731.66	71	59	<1.0	2,200
MW13	7/15/2016	9.54	4,731.52	17	40	<1.0	3,100
	10/26/2016	9.75	4,731.31	3.8	2.5	7.6	3,300
	1/19/2017	9.66	4,731.40	21	1.8	<1.0	4,500
	4/20/2017	11.92	4,729.14	16	<1.0	<1.0	7,300
	8/9/2017	8.68	4,732.38	14	1.2	140	3,100
CDPHE WQCC Reg 41				5.0	560	700	1,400

NOTES:

AMSL - above mean sea level

btoc - below top of casing

µg/L - micrograms per liter

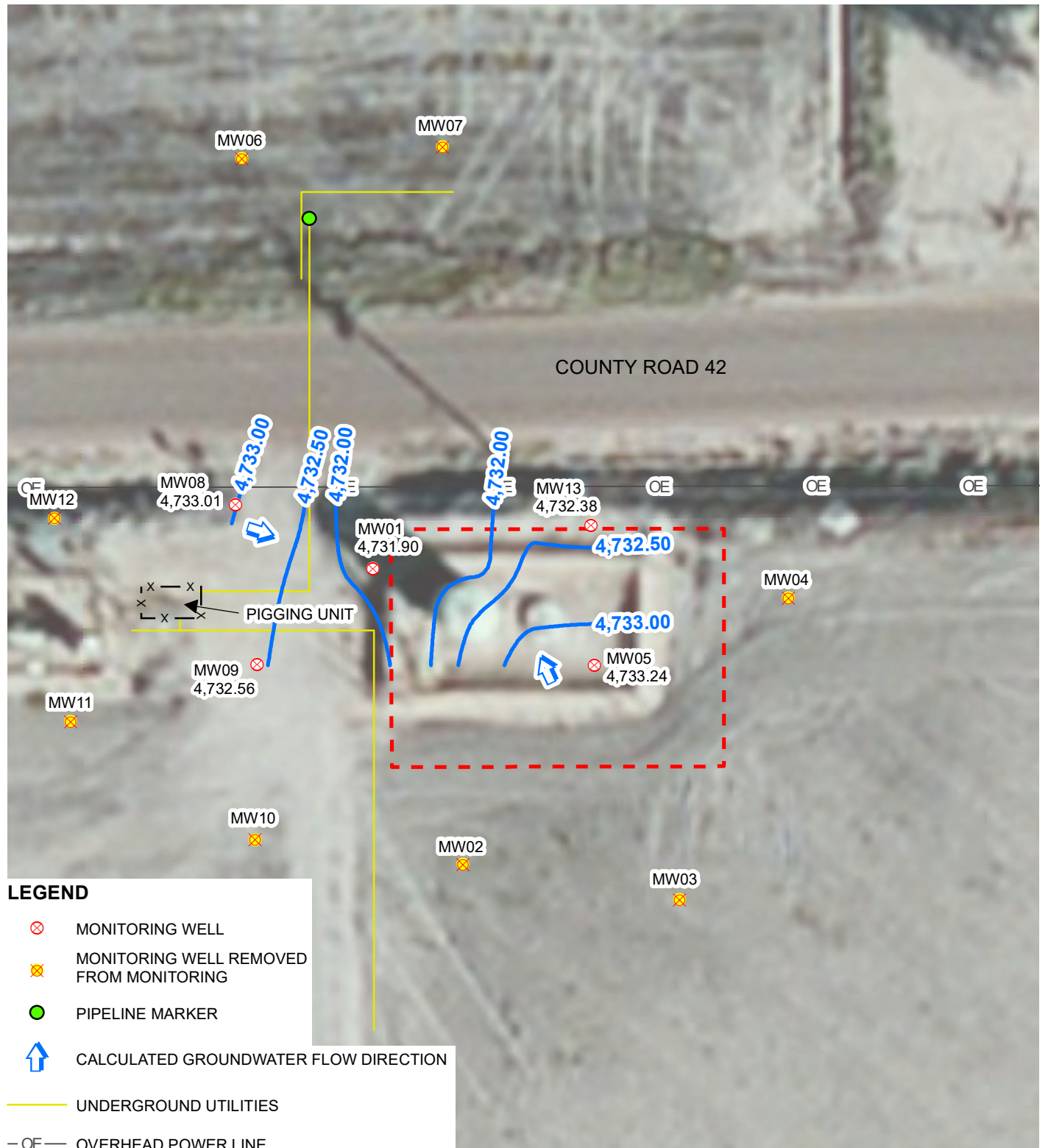
< - indicates result is less than the stated laboratory reporting limit

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B

Bold indicates result exceeds the applicable standard

CDPHE WQCC Reg 41 - Colorado Department of Public Health and Environment-Water Quality Control Commission

Regulation 41- The Basic Standards for Ground Water



LEGEND

- ⊗ MONITORING WELL
- ⊗ MONITORING WELL REMOVED FROM MONITORING
- PIPELINE MARKER
- ↑ CALCULATED GROUNDWATER FLOW DIRECTION

— UNDERGROUND UTILITIES

— OE — OVERHEAD POWER LINE

⊗ EXCAVATION EXTENT

⊗ FENCE

— GROUNDWATER ELEVATION CONTOUR;

CONTOUR INTERVAL = 0.50 FEET

GRADIENT = 0.025 FEET/FOOT

GROUNDWATER ELEVATIONS WERE MEASURED ON AUGUST 9, 2017

IMAGE COURTESY OF ESRI

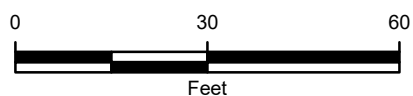
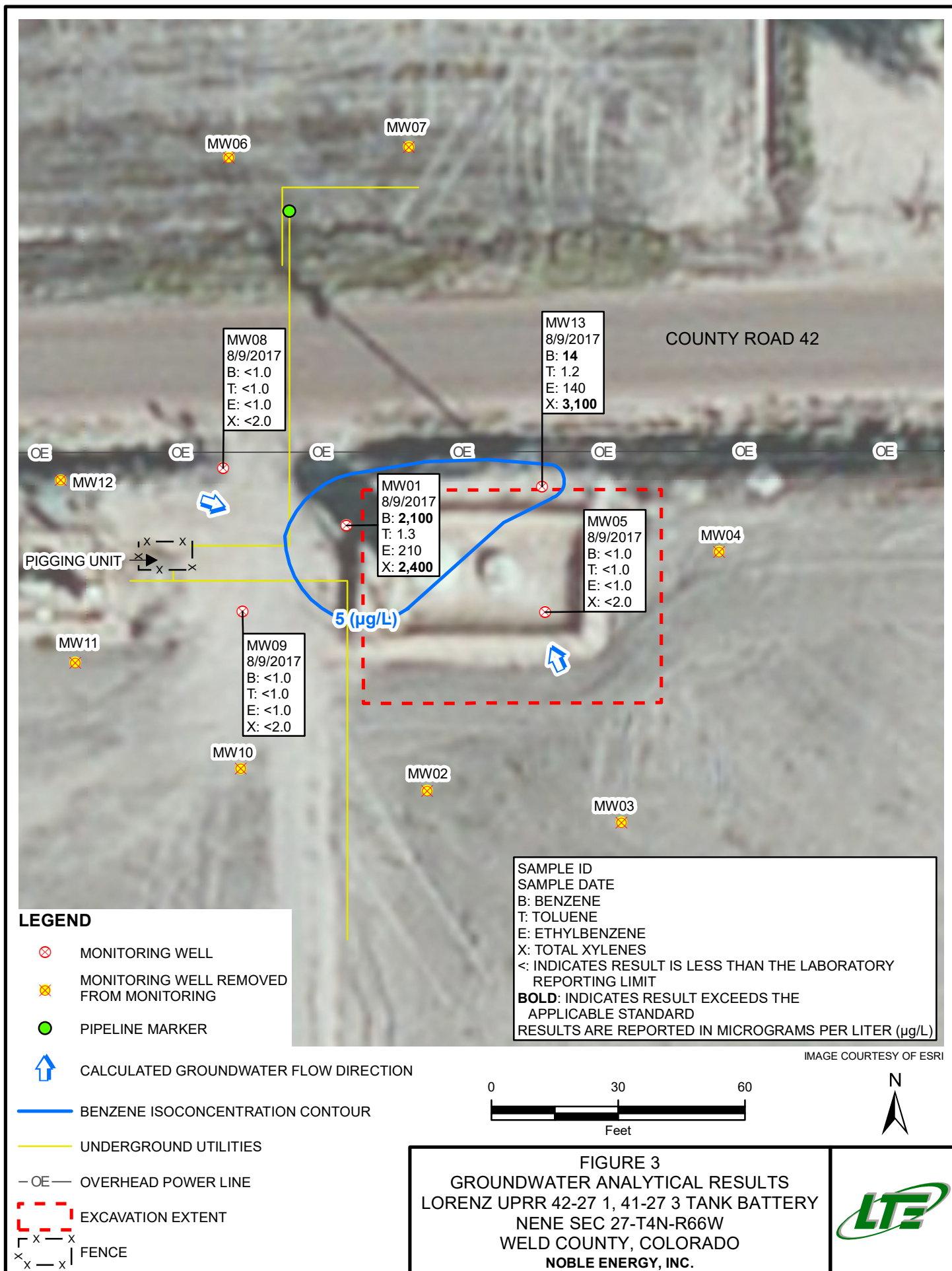


FIGURE 2
GROUNDWATER ELEVATION MAP
LORENZ UPRR 42-27 1, 41-27 3 TANK BATTERY
NENE SEC 27-T4N-R66W
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.





Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 15, 2017

Charles Greeson

LT Environmental, Inc.

4600 West 60th Avenue

Arvada, CO 80003

RE: NEP - Lorenz UPRR 42 27-1, 41-27-3

Enclosed are the results of analyses for samples received by Summit Scientific on 08/09/17 16:18. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'Ben Shrewsbury', with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury

Laboratory Manager



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: NEP - Lorenz UPRR 42 27-1, 41-27-3

Project Number: 0083-14023
Project Manager: Charles Greeson

Reported:
08/15/17 17:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW05	1708096-01	Water	08/09/17 14:37	08/09/17 16:18
MW08	1708096-02	Water	08/09/17 15:02	08/09/17 16:18
MW09	1708096-03	Water	08/09/17 14:47	08/09/17 16:18
MW13	1708096-04	Water	08/09/17 14:10	08/09/17 16:18
MW01	1708096-05	Water	08/09/17 14:25	08/09/17 16:18

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.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: NEP - Lorenz UPRR 42 27-1, 41-27-3

Project Number: 0083-14023
Project Manager: Charles Greeson

Reported:
08/15/17 17:57

Summit Scientific



1708093

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client:	LT Environmental, Inc.		
Address:	4600 West 60th Ave		
City/State/Zip:	Arvada, CO 80003		
Phone:	303-433-9788	Fax:	303-433-1432
Sampler Name:	Glenn Thompson		

Project Manager:	Charles Greeson
E-Mail:	Noble Remediation Team
Project Name:	Lorenz UPRR 42-27 1, 41-27 3
Project Number:	008314023

				Preservative		Matrix		Analyze For:										Special Instructions			
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX									
MW05	8/9/17	1437	3			X		X				X									Decant all samples
MW08	8/9/17	1502	3			X		X				X									
MW09	8/9/17	1447	3			X		X				X									
MW13	8/9/17	1410	3			X		X				X									
MW01	8/9/17	1425	3			X		X				X									
Relinquished by: 				Date/Time: 8/9/17 1618		Received by: 		Date/Time: 8/9/17 1618		Turn Around Time (Check)		Same Day <input type="checkbox"/>		72 Hours <input type="checkbox"/>						Notes:	
Relinquished by:				Date/Time:		Received by:		Date/Time:		48 Hours <input type="checkbox"/>										Invoice Jacob	
Relinquished by:				Date/Time:		Received in Lab by:		Date/Time:		Sample Integrity:		Temperature Upon Receipt: 10.5		Intact: Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>				only	

Winn-Dixie Supermarket, Inc.

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: NEP - Lorenz UPRR 42 27-1, 41-27-3

Project Number: 0083-14023
Project Manager: Charles Greeson

Reported:
08/15/17 17:57

Sample Receipt Checklist

S2 Work Order: 1708093

Client: KEMWest, Inc

Client Project ID: Denver Water

Shipped Via: Hand

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #:

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: (Describe)

Cooler ID					
Temp (°C)	15.1				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input checked="" type="checkbox"/>			PCR
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Nakita
Custodian Printed Name

[Signature]
Signature or initials of Custodian

8/9/17 1345
Date/Time



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: NEP - Lorenz UPRR 42 27-1, 41-27-3
Project Number: 0083-14023
Project Manager: Charles Greeson

Reported:
08/15/17 17:57

MW05
1708096-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/09/17 14:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1708103	08/11/17	08/11/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/09/17 14:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: NEP - Lorenz UPRR 42 27-1, 41-27-3
Project Number: 0083-14023
Project Manager: Charles Greeson

Reported:
08/15/17 17:57

MW08
1708096-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/09/17 15:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1708103	08/11/17	08/11/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/09/17 15:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: NEP - Lorenz UPRR 42 27-1, 41-27-3
Project Number: 0083-14023
Project Manager: Charles Greeson

Reported:
08/15/17 17:57

MW09
1708096-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/09/17 14:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1708103	08/11/17	08/11/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/09/17 14:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	45-146		"	"	"	"	

Summit Scientific

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Arvada CO, 80003

Project: NEP - Lorenz UPRR 42 27-1, 41-27-3
Project Number: 0083-14023
Project Manager: Charles Greeson

Reported:
08/15/17 17:57

MW13
1708096-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/09/17 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	14	1.0	ug/l	1	1708103	08/11/17	08/11/17	EPA 8260B	
Toluene	1.2	1.0	"	"	"	"	"	"	
Ethylbenzene	140	25	"	25	"	"	"	"	
Xylenes (total)	3100	50	"	"	"	"	"	"	

Date Sampled: **08/09/17 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		109 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.4 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.4 %	45-146		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
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Arvada CO, 80003

Project: NEP - Lorenz UPRR 42 27-1, 41-27-3
Project Number: 0083-14023
Project Manager: Charles Greeson

Reported:
08/15/17 17:57

MW01
1708096-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/09/17 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	2100	100	ug/l	100	1708103	08/11/17	08/11/17	EPA 8260B	
Toluene	1.3	1.0	"	1	"	"	"	"	
Ethylbenzene	210	1.0	"	"	"	"	"	"	
Xylenes (total)	2400	200	"	100	"	"	"	"	

Date Sampled: **08/09/17 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		106 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		104 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	45-146		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: NEP - Lorenz UPRR 42 27-1, 41-27-3

Project Number: 0083-14023
Project Manager: Charles Greeson

Reported:
08/15/17 17:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1708103 - EPA 5030 Water MS

Blank (1708103-BLK1)

Prepared & Analyzed: 08/10/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.3		113	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.5	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.1	45-146			

LCS (1708103-BS1)

Prepared & Analyzed: 08/10/17

Benzene	31.2	1.0	ug/l	33.3		93.5	51-132			
Toluene	35.3	1.0	"	33.3		106	51-138			
Ethylbenzene	38.4	1.0	"	33.1		116	58-146			
m,p-Xylene	70.4	2.0	"	66.5		106	57-144			
o-Xylene	36.6	1.0	"	32.7		112	53-146			
Surrogate: 1,2-Dichloroethane-d4	15.8		"	13.3		119	37-154			
Surrogate: Toluene-d8	13.7		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	45-146			

Matrix Spike (1708103-MS1)

Source: 1708089-01

Prepared & Analyzed: 08/10/17

Benzene	1360	1.0	ug/l	33.3	2990	NR	34-141			E, QM-4X
Toluene	4740	1.0	"	33.3	1.97	NR	27-151			E, QM-4X
Ethylbenzene	334	1.0	"	33.1	523	NR	29-160			E, QM-4X
m,p-Xylene	6260	2.0	"	66.5	7330	NR	20-166			E, QM-4X
o-Xylene	1860	1.0	"	32.7	49.2	NR	33-159			E, QM-4X
Surrogate: 1,2-Dichloroethane-d4	15.5		"	13.3		116	37-154			
Surrogate: Toluene-d8	14.1		"	13.3		106	45-149			
Surrogate: 4-Bromofluorobenzene	14.4		"	13.3		108	45-146			

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Project: NEP - Lorenz UPRR 42 27-1, 41-27-3
Project Number: 0083-14023
Project Manager: Charles Greeson

Reported:
08/15/17 17:57

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

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

Batch 1708103 - EPA 5030 Water MS

Matrix Spike Dup (1708103-MSD1)		Source: 1708089-01			Prepared & Analyzed: 08/10/17					
Benzene	1260	1.0	ug/l	33.3	2990	NR	34-141	7.71	32	E, QM-4X
Toluene	4410	1.0	"	33.3	1.97	NR	27-151	7.06	25	E, QM-4X
Ethylbenzene	320	1.0	"	33.1	523	NR	29-160	4.28	50	E, QM-4X
m,p-Xylene	5820	2.0	"	66.5	7330	NR	20-166	7.24	36	E, QM-4X
o-Xylene	1740	1.0	"	32.7	49.2	NR	33-159	6.44	26	E, QM-4X
Surrogate: 1,2-Dichloroethane-d4	14.8		"	13.3		111	37-154			
Surrogate: Toluene-d8	13.8		"	13.3		103	45-149			
Surrogate: 4-Bromofluorobenzene	13.9		"	13.3		104	45-146			

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Project: NEP - Lorenz UPRR 42 27-1, 41-27-3

Project Number: 0083-14023
Project Manager: Charles Greeson

Reported:
08/15/17 17:57

Notes and Definitions

QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
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