

**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	<b>17,800</b>	<b>2,920</b>	<b>745</b>	<b>11,500</b>
	11/20/2014	9.79	4,729.34	<b>32,900</b>	<b>751</b>	673	<b>10,500</b>
	1/9/2015	7.87	4,731.26	<b>30,000</b>	190	<b>1,300</b>	<b>20,000</b>
	4/10/2015	8.72	4,730.41	<b>25,000</b>	220	640	<b>13,000</b>
	7/16/2015	6.16	4,732.97	<b>22,000</b>	<b>1,800</b>	690	<b>11,000</b>
	10/6/2015	7.02	4,732.11	<b>33,000</b>	150	<b>830</b>	<b>13,000</b>
	1/15/2016	7.56	4,731.57	<b>1,600</b>	1.8	<1.0	<b>2,000</b>
	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	<b>2,000</b>	<1.0	<1.0	27
	1/19/2017	8.70	4,730.43	<b>1,400</b>	<1.0	64	460
	4/20/2017	9.83	4,729.12	<b>3,100</b>	<1.0	220	<b>2,500</b>
	8/9/2017	7.05	4,731.90	<b>2,100</b>	1.3	210	<b>2,400</b>
	10/3/2017	7.77	4,731.18	<b>1,900</b>	1.1	230	<b>35,000</b>
	1/2/2018	7.07	4,731.88	<b>1,520</b>	<4.00	193	1,390
	4/4/2018	8.12	4,730.83	<b>360</b>	<1.0	27	320
	7/5/2018	7.52	4,731.43	<b>220</b>	<1.0	<1.0	160
	10/4/2018	7.89	4,731.06	<1.0	<1.0	<1.0	<2.0
	1/7/2019	8.76	4,730.19	<1.0	<1.0	<1.0	<2.0
	4/1/2019	9.52	4,729.43	<1.0	<1.0	<1.0	<2.0
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					

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**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)
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
	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	<b>869</b>	<1.0	3.7	5.0
	11/20/2014	9.81	4,732.63	<b>7.2</b>	<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	<b>220</b>	<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			

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**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)
MW05	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
	10/3/2017	8.00	4,733.05	<1.0	<1.0	<1.0	<2.0
	1/2/2018	8.25	4,732.80	<1.00	<1.00	<1.00	<1.00
	4/4/2018	9.33	4,731.72	<1.0	<1.0	<1.0	<2.0
	7/5/2018	8.59	4,732.46	<1.0	<1.0	<1.0	<2.0
	10/4/2018	8.96	4,732.09	<1.0	<1.0	<1.0	<2.0
	1/7/2019	9.80	4,731.25	<1.0	<1.0	<1.0	<2.0
	4/1/2019	10.99	4,730.06	<1.0	<1.0	<1.0	<2.0
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	<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

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**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)
MW07	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	<b>117</b>	12.6	238	<b>4,860</b>
	11/20/2014	8.67	4,732.35	<0.50	<1.0	<1.0	298
	1/9/2015	9.50	4,731.52	<b>87</b>	39	60	<b>2,200</b>
	4/10/2015	10.58	4,730.44	<b>89</b>	45	<1.0	<b>3,300</b>
	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
	10/3/2017	8.43	4,732.30	<1.0	<1.0	<1.0	<2.0
	1/2/2018	8.90	4,731.83	3.70	<1.00	12.1	66.1
	4/4/2018	10.20	4,730.53	4.0	1.5	5.1	23
	7/5/2018	9.40	4,731.33	3.3	<1.0	26	410
	10/4/2018	9.81	4,730.92	<1.0	<1.0	<1.0	<2.0
	1/7/2019	10.64	4,730.09	<1.0	<1.0	320	<b>1,700</b>
	4/1/2019	11.43	4,729.30	<1.0	<1.0	<1.0	<2.0
MW09	9/25/2014	9.42	4,732.81	<b>207</b>	<b>6,740</b>	299	<b>5,160</b>
	11/20/2014	9.60	4,732.63	<b>38.4</b>	70.6	<1.0	782
	1/9/2015	7.90	4,731.67	<b>34</b>	2.7	120	<b>5,000</b>
	4/10/2015	11.60	4,727.97	<1.0	<1.0	<1.0	<1.0
	7/16/2015	9.32	4,730.25	<b>14</b>	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

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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)
MW09	10/26/2016	10.55	4,731.53	<b>170</b>	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
	10/3/2017	9.71	4,732.37	<1.0	<1.0	<1.0	<2.0
	1/2/2018	9.91	4,732.17	<1.00	<1.00	1.26	17.0
	4/4/2018	11.13	4,730.95	<1.0	<1.0	<1.0	6.6
	7/5/2018	10.36	4,731.72	<b>9.8</b>	90	34	470
	10/4/2018	10.42	4,731.66	<1.0	<1.0	<1.0	<2.0
	1/7/2019	11.10	4,730.98	<1.0	<1.0	<1.0	<2.0
	4/1/2019	11.91	4,730.17	<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					
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

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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	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	<b>990</b>	220	130	<b>3,900</b>
	4/10/2015	10.85	4,730.30	<b>1,100</b>	25	<1.0	<b>2,400</b>
	7/16/2015	8.21	4,732.94	<b>620</b>	<b>1,200</b>	150	<b>4,600</b>
	10/6/2015	8.56	4,732.50	<b>290</b>	<b>2,600</b>	460	<b>6,300</b>
	1/15/2016	9.90	4,731.16	<b>210</b>	240	<1.0	<b>3,700</b>
	4/29/2016	9.40	4,731.66	<b>71</b>	59	<1.0	<b>2,200</b>
	7/15/2016	9.54	4,731.52	<b>17</b>	40	<1.0	<b>3,100</b>
	10/26/2016	9.75	4,731.31	3.8	2.5	7.6	<b>3,300</b>
	1/19/2017	9.66	4,731.40	<b>21</b>	1.8	<1.0	<b>4,500</b>
	4/20/2017	11.92	4,729.14	<b>16</b>	<1.0	<1.0	<b>7,300</b>
	8/9/2017	8.68	4,732.38	<b>14</b>	1.2	140	<b>3,100</b>
	10/3/2017	8.85	4,732.21	4.5	<1.0	<1.0	970
	1/2/2018	9.22	4,731.84	<4.00	<4.00	86.1	895
	4/4/2018	10.35	4,730.71	2.4	<1.0	74	340
	7/5/2018	9.67	4,731.39	2.9	<1.0	9.7	670
	10/4/2018	10.02	4,731.04	<1.0	<1.0	4.1	43
	1/7/2019	10.85	4,730.21	<1.0	<1.0	<1.0	<2.0
	4/1/2019	11.63	4,729.43	<1.0	<1.0	<1.0	<2.0
CDPHE WQCC Reg 41				<b>5.0</b>	<b>560</b>	<b>700</b>	<b>1,400</b>

**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

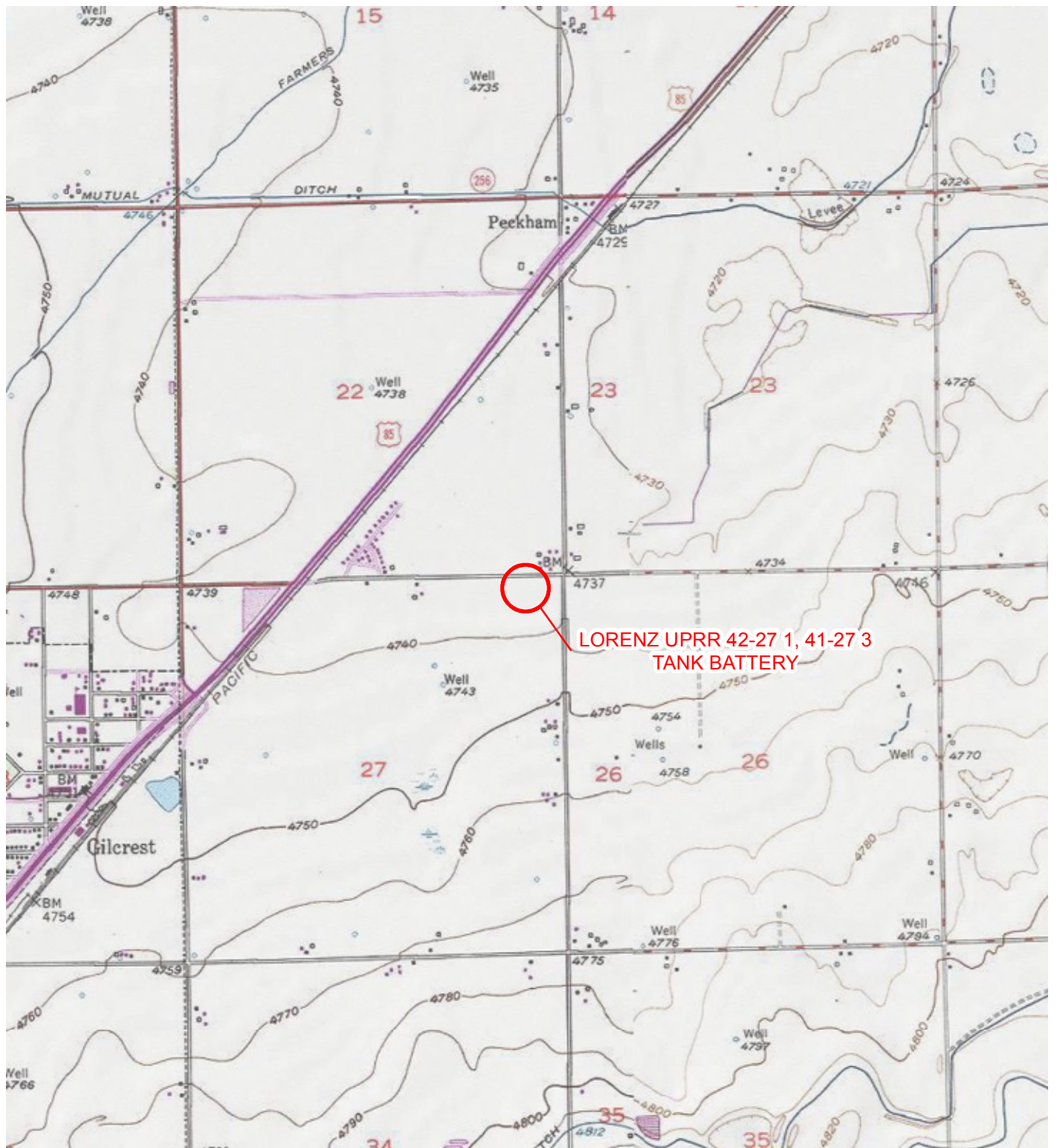


IMAGE COURTESY OF ESRI/USGS

# LEGEND

○ SITE LOCATION

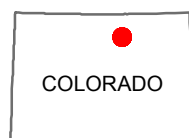
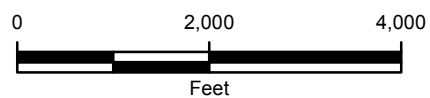
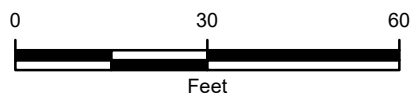


FIGURE 1  
SITE LOCATION MAP  
LORENZ UPRR 42-27 1, 41-27 3 TANK BATTERY  
NENE SEC 27-T4N-R66W  
WELD COUNTY, COLORADO  
NOBLE ENERGY, INC.





IMAGE COURTESY OF GOOGLE EARTH 2017



**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.



GROUNDWATER ELEVATIONS WERE MEASURED ON  
 APRIL 1, 2019



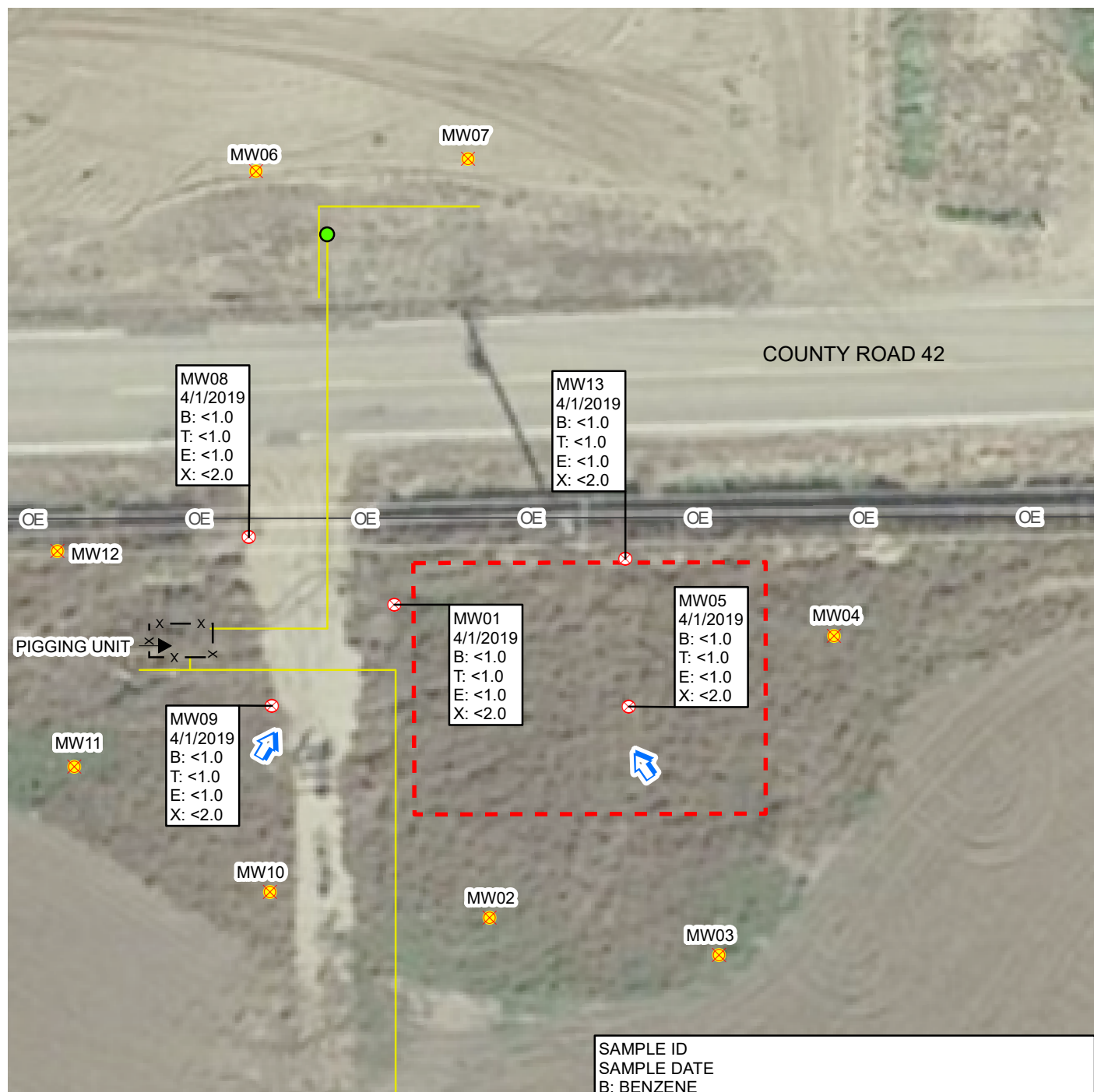
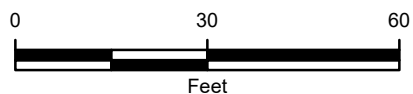


IMAGE COURTESY OF GOOGLE EARTH 2017



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



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 09, 2019

Jeremy Pike

LT Environmental, Inc.

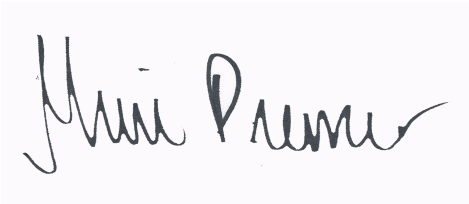
4600 West 60th Avenue

Arvada, CO 80003

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

Enclosed are the results of analyses for samples received by Summit Scientific on 04/02/19 12:22. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink on a light blue background. The signature is cursive and reads "Muri Premer".

Muri Premer For Ben Shrewsbury

Laboratory Manager



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

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

Project Number: 008314023  
Project Manager: Jeremy Pike

**Reported:**  
04/09/19 17:09

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW05	1904015-01	Water	04/01/19 14:47	04/02/19 12:22
MW08	1904015-02	Water	04/01/19 14:42	04/02/19 12:22
MW09	1904015-03	Water	04/01/19 14:35	04/02/19 12:22
MW13	1904015-04	Water	04/01/19 14:55	04/02/19 12:22
MW01	1904015-05	Water	04/01/19 15:05	04/02/19 12:22

Summit Scientific

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# Summit Scientific

1904015

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: Drew Bullinger

Project Manager: Jeremy Pike cc Chris Roy  
E-Mail: Noble Remediation Team  
Project Name: Lorenz UPRR 42-27 1, 41-27 3  
Project Number: 008314023

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:												Special Instructions					
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX																	
Mw05	4/1/19	14:47	3			X		X					X												Decant all samples				
Mw08	4/1/19	14:42	3			X		X					X																
Mw09	4/1/19	14:35	3			X		X					X																
Mw13	4/1/19	14:55	3			X		X					X																
Mw01	4/1/19	15:05	3			X		X					X																
Relinquished by: <u>Drew Bullinger</u>				Date/Time: <u>4/2/19 11:03</u>				Received by:				Date/Time:				Turn Around Time (Check)												Notes:  Invoice Jacob  on 12	
																Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>													
Relinquished by:				Date/Time:				Received by:				Date/Time:																	
Relinquished by:				Date/Time:				Received in Lab by: <u>[Signature]</u>				Date/Time: <u>4-2-19 1103</u>				Sample Integrity:													
																Temperature Upon Receipt: <u>21</u>													
																Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>													

### Sample Receipt Checklist

S2 Work Order 1904015

Client: LT ENVIRONMENTAL Client Project ID: LORENZ UPRR 42-27 1,41-27 3

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

☒ ☐ ☐ ☐ ☐

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

Temp (°C)	2.1
-----------	-----

Thermometer ID: 61857155-K

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

MP  
Custodian Printed Name or Initials

Signature

4/2/19  
Date/Time



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

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

Project Number: 008314023  
Project Manager: Jeremy Pike

**Reported:**  
04/09/19 17:09

**MW05**  
**1904015-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/01/19 14:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904042	04/03/19	04/08/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/01/19 14:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		97.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.4 %		21-167		"	"	"	"	

Summit Scientific

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

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

Project Number: 008314023  
Project Manager: Jeremy Pike

**Reported:**  
04/09/19 17:09

**MW08**  
**1904015-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/01/19 14:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1904042	04/03/19	04/09/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/01/19 14:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.4 %	21-167		"	"	"	"	

Summit Scientific

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

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

Project Number: 008314023  
Project Manager: Jeremy Pike

**Reported:**  
04/09/19 17:09

**MW09**  
**1904015-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/01/19 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1904042	04/03/19	04/08/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/01/19 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	21-167		"	"	"	"	

Summit Scientific

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

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

Project Number: 008314023  
Project Manager: Jeremy Pike

**Reported:**  
04/09/19 17:09

**MW13**  
**1904015-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/01/19 14:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1904042	04/03/19	04/08/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/01/19 14:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.3 %	21-167		"	"	"	"	

Summit Scientific

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

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

Project Number: 008314023  
Project Manager: Jeremy Pike

**Reported:**  
04/09/19 17:09

**MW01**  
**1904015-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/01/19 15:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1904042	04/03/19	04/08/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/01/19 15:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.9 %	21-167		"	"	"	"	

Summit Scientific

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

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

Project Number: 008314023  
Project Manager: Jeremy Pike

**Reported:**  
04/09/19 17:09

## 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 1904042 - EPA 5030 Water MS

##### Blank (1904042-BLK1)

Prepared: 04/03/19 Analyzed: 04/05/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	9.50		"	13.3		71.3	23-173			
Surrogate: Toluene-d8	11.5		"	13.3		86.5	20-170			
Surrogate: 4-Bromofluorobenzene	11.1		"	13.3		83.4	21-167			

##### LCS (1904042-BS1)

Prepared: 04/03/19 Analyzed: 04/05/19

Benzene	29.1	1.0	ug/l	33.3		87.3	70-130			
Toluene	31.0	1.0	"	33.3		93.1	70-130			
Ethylbenzene	33.3	1.0	"	33.3		100	70-130			
m,p-Xylene	70.2	2.0	"	66.7		105	70-130			
o-Xylene	32.4	1.0	"	33.3		97.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.56		"	13.3		71.7	23-173			
Surrogate: Toluene-d8	12.0		"	13.3		89.8	20-170			
Surrogate: 4-Bromofluorobenzene	11.2		"	13.3		84.3	21-167			

##### Matrix Spike (1904042-MS1)

Source: 1903326-01

Prepared: 04/03/19 Analyzed: 04/05/19

Benzene	29.1	1.0	ug/l	33.3	ND	87.3	70-130			
Toluene	31.1	1.0	"	33.3	ND	93.3	70-130			
Ethylbenzene	32.9	1.0	"	33.3	ND	98.6	70-130			
m,p-Xylene	70.4	2.0	"	66.7	ND	106	70-130			
o-Xylene	32.0	1.0	"	33.3	ND	96.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.70		"	13.3		72.8	23-173			
Surrogate: Toluene-d8	11.8		"	13.3		88.9	20-170			
Surrogate: 4-Bromofluorobenzene	11.0		"	13.3		82.5	21-167			

Summit Scientific

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

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

Project Number: 008314023  
Project Manager: Jeremy Pike

**Reported:**  
04/09/19 17:09

**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 1904042 - EPA 5030 Water MS**

Matrix Spike Dup (1904042-MSD1)		Source: 1903326-01			Prepared: 04/03/19 Analyzed: 04/05/19					
Benzene	28.8	1.0	ug/l	33.3	ND	86.3	70-130	1.11	30	
Toluene	30.9	1.0	"	33.3	ND	92.7	70-130	0.677	30	
Ethylbenzene	32.6	1.0	"	33.3	ND	97.8	70-130	0.825	30	
m,p-Xylene	69.2	2.0	"	66.7	ND	104	70-130	1.78	30	
o-Xylene	32.2	1.0	"	33.3	ND	96.5	70-130	0.467	30	
Surrogate: 1,2-Dichloroethane-d4	10.4		"	13.3		77.7	23-173			
Surrogate: Toluene-d8	11.8		"	13.3		88.4	20-170			
Surrogate: 4-Bromofluorobenzene	11.2		"	13.3		83.8	21-167			

Summit Scientific

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

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

Project Number: 008314023  
Project Manager: Jeremy Pike

**Reported:**  
04/09/19 17:09

### Notes and Definitions

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