

# **FREMONT ENVIRONMENTAL INC.**

October 26, 2018

Mr. Jacob Evans  
Noble Energy Inc.  
2115 117<sup>th</sup> Avenue  
Greeley, CO 80634

Subject:     **Ground Water Data Submittal**  
              Libsack R G27-15  
              SWSE Sec 27, T4N, R65W  
              API # 05-123-13256  
              Weld County, Colorado  
              Fremont Project No. C013-009  
              Facility ID# 323601, Remediation #7871

Dear Mr. Evans:

Enclosed please find a copy of the above referenced Ground Water Data Submittal for the Libsack R G27-15 site in Weld County, Colorado. The enclosed report describes monitoring and sampling efforts to assess ground water quality at the site.

Please contact me at (303) 956-8714 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,  
**FREMONT ENVIRONMENTAL INC.**



Paul V. Henehan, P.E.  
Senior Consultant

Enclosure

**TABLE 1**  
**SUMMARY OF GROUND WATER ELEVATION DATA AND CHEMISTRY DATA**  
**NOBLE ENERGY INC.**  
**LIBSACK R G27-15, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C013-009**

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-1	06/14/13	<1.0	<1.0	<1.0	<1.0	99.89	2.93	96.96	NP
	06/24/13	NS	NS	NS	NS		2.66	97.23	NP
	07/09/13	NS	NS	NS	NS		2.53	97.36	NP
	07/19/13	NS	NS	NS	NS		Inundated	Inundated	Inundated
	10/18/13	<1	<1	<1	<1		1.66	98.23	NP
	01/13/14	<1	<1	<1	<1		2.25	97.64	NP
	04/02/14	<1	<1	<1	<1		2.74	97.15	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.52	97.37	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.86	98.03	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.87	98.02	NP
04/20/15	<1.0	<1.0	<1.0	<1.0	2.11	97.78	NP		
MW-2	06/14/13	<1.0	<1.0	<1.0	<1.0	100.00	3.01	96.99	NP
	06/24/13	NS	NS	NS	NS		2.75	97.25	NP
	07/09/13	NS	NS	NS	NS		2.62	97.38	NP
	07/19/13	NS	NS	NS	NS		1.95	98.05	NP
	10/18/13	<1	<1	<1	<1		1.75	98.25	NP
	01/13/14	<1	<1	<1	<1		2.36	97.64	NP
	04/02/14	<1	<1	<1	<1		2.82	97.18	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.61	97.39	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.97	98.03	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.97	98.03	NP
04/20/15	<1.0	<1.0	<1.0	<1.0	2.20	97.80	NP		
MW-3	06/14/13	<1.0	<1.0	<1.0	<1.0	99.92	3.05	96.87	NP
	06/24/13	NS	NS	NS	NS		2.78	97.14	NP
	07/09/13	NS	NS	NS	NS		2.65	97.27	NP
	07/19/13	NS	NS	NS	NS		2.02	97.90	NP
	10/18/13	1.3	<1	<1	<1		1.88	98.04	NP
	01/13/14	<1	<1	<1	<1		2.40	97.52	NP
	04/02/14	<1	<1	<1	<1		2.84	97.08	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.66	97.26	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		2.02	97.90	NP

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-3	01/20/15	<1.0	<1.0	<1.0	<1.0		2.04	97.88	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		2.27	97.65	NP
MW-4	06/14/13	<b>4,523</b>	<1.0	<1.0	168	99.47	2.69	96.78	NP
	06/24/13	NS	NS	NS	NS		2.42	97.05	NP
	07/09/13	<b>868</b>	<1.0	<1.0	<1.0		2.28	97.19	NP
	07/19/13	NS	NS	NS	NS		1.61	97.86	NP
	10/18/13	<1	<1	<1	<1		1.46	98.01	NP
	01/13/14	<1	<1	<1	<1		2.07	97.40	NP
	04/02/14	<b>33.1</b>	<1	<1	<1		2.55	96.92	NP
	07/15/14	<b>6.4</b>	<1.0	<1.0	<1.0	99.47	2.31	97.16	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.68	97.79	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.71	97.76	NP
04/20/15	1.6	<1.0	<1.0	<1.0		1.94	97.53	NP	
MW-5	06/14/13	<b>494</b>	<1.0	1.8	15.7	99.29	2.68	96.61	NP
	06/24/13	NS	NS	NS	NS		2.39	96.90	NP
	07/09/13	<b>535</b>	<1.0	<1.0	<1.0		2.26	97.03	NP
	07/19/13	NS	NS	NS	NS		Inundated	Inundated	Inundated
	10/18/13	<1	<1	<1	<1		1.31	97.98	NP
	01/13/14	<1	<1	<1	<1		2.01	97.28	NP
	04/02/14	<1	<1	<1	<1		2.49	96.80	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.26	97.03	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.65	97.64	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.66	97.63	NP
04/20/15	<1.0	<1.0	<1.0	<1.0		1.89	97.40	NP	
MW-6	06/14/13	<1.0	<1.0	<1.0	<1.0	99.66	3.01	96.65	NP
	06/24/13	NS	NS	NS	NS		2.74	96.92	NP
	07/09/13	NS	NS	NS	NS		2.61	97.05	NP
	07/19/13	NS	NS	NS	NS		2.01	97.65	NP
	10/18/13	<1	<1	<1	<1		1.79	97.87	NP
	01/13/14	2.9	<1	<1	<1		1.33	98.33	NP
	04/02/14	<b>258</b>	<1	<1	<1		2.82	96.84	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.61	97.05	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.98	97.68	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.99	97.67	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		2.23	97.43	NP
	07/20/15	<1.0	<1.0	<1.0	<1.0		2.38	97.28	NP
10/28/15	<1.0	<1.0	<1.0	<1.0		1.86	97.80	NP	

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-6	01/29/16	<1.0	<1.0	<1.0	<1.0		3.07	96.59	NP
	04/28/16	<1.0	<1.0	<1.0	<1.0		1.81	97.85	NP
	07/26/16	<1.0	<1.0	<1.0	<1.0		2.74	96.92	NP
	10/18/16	<1.0	<1.0	<1.0	<1.0		1.93	97.73	NP
	01/06/17	<1.0	<1.0	<1.0	<1.0		3.01	96.65	NP
	04/05/17	<1.0	<1.0	<1.0	<1.0		3.39	96.27	NP
	07/25/17	<1.0	<1.0	<1.0	2.0		3.25	96.41	NP
	10/12/17	<1.0	<1.0	<1.0	<1.0		1.78	97.88	NP
	01/25/18	<1.0	2.0	1.3	6.8		2.36	97.30	NP
	04/06/18	<1.0	<1.0	<1.0	<2.0		2.69	96.97	NP
	07/09/18	<1.0	<1.0	<1.0	<2.0		2.87	96.79	NP
	10/12/18	<1.0	<1.0	<1.0	<2.0		2.78	96.88	NP
MW-7	06/14/13	1,063	27.8	<1.0	104	99.38	2.72	96.66	NP
	06/24/13	NS	NS	NS	NS		2.43	96.95	NP
	07/09/13	2,226	100	58.9	164		2.3	97.08	NP
	07/19/13	NS	NS	NS	NS		1.76	97.62	NP
	10/18/13	108	<1	3.9	1.9		1.44	97.94	NP
	01/13/14	<1	<1	<1	<1		2.02	97.36	NP
	04/02/14	<1	<1	<1	<1	99.38	2.47	96.91	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.28	97.10	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.63	97.75	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.64	97.74	NP
	04/20/15	NF	NF	NF	NF		NF	NF	NF
	07/20/15	<1.0	<1.0	<1.0	<1.0		1.19	98.19	NP
	10/28/15	<1.0	<1.0	<1.0	<1.0		0.67	98.71	NP
	01/29/16	Damaged	Damaged	Damaged	Damaged		Damaged	Damaged	Damaged
	03/17/16	<1.0	<1.0	<1.0	<1.0		NM	NM	NP
	04/28/16	<1.0	<1.0	<1.0	<1.0		too shallow	too shallow	NP
	07/26/16	<1.0	<1.0	<1.0	<1.0		1.80	97.58	NP
	10/18/16	<1.0	<1.0	<1.0	<1.0		0.98	98.40	NP
	01/06/17	<1.0	<1.0	<1.0	<1.0		2.07	97.31	NP
	04/05/17	<1.0	<1.0	<1.0	<1.0		2.46	96.92	NP
	07/25/17	<1.0	<1.0	<1.0	<1.0		2.34	97.04	NP
	10/12/17	<1.0	<1.0	<1.0	<1.0		0.87	99.66	NP
01/25/18	<1.0	<1.0	<1.0	<2.0		1.90	97.48	NP	
04/06/18	<1.0	<1.0	<1.0	<2.0		2.23	97.15	NP	
07/09/18	<1.0	<1.0	<1.0	<2.0		2.41	96.97	NP	
10/12/18	<1.0	<1.0	<1.0	<2.0		2.33	97.05	NP	

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-8	06/14/13	<1.0	<1.0	<1.0	<1.0	99.46	2.69	96.77	NP
	06/24/13	NS	NS	NS	NS		2.39	97.07	NP
	07/09/13	NS	NS	NS	NS		2.27	97.19	NP
	07/19/13	NS	NS	NS	NS		Inundated	Inundated	Inundated
	10/18/13	<1	<1	<1	<1		1.79	97.67	NP
	01/13/14	<1	<1	<1	<1		2.08	97.38	NP
	04/02/14	<1	<1	<1	<1		2.46	97.00	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.25	97.21	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.69	97.77	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.71	97.75	NP
04/20/15	<1.0	<1.0	<1.0	<1.0	1.93	97.53	NP		
MW-9	06/14/13	<1.0	<1.0	<1.0	<1.0	99.51	3.05	96.46	NP
	06/24/13	NS	NS	NS	NS	99.03	2.25	96.78	NP
	07/09/13	NS	NS	NS	NS	2.14	96.89	NP	
	07/19/13	NS	NS	NS	NS	1.18	97.85	NP	
	10/18/13	<1	<1	<1	<1	1.28	97.75	NP	
	01/13/14	<1	<1	<1	<1	1.82	97.69	NP	
	04/02/14	<1	<1	<1	<1	2.31	96.72	NP	
	07/15/14	<1.0	<1.0	<1.0	<1.0	2.11	97.40	NP	
	10/07/14	<1.0	<1.0	<1.0	<1.0	1.44	98.07	NP	
	01/20/15	<1.0	<1.0	<1.0	<1.0	1.46	97.57	NP	
04/20/15	<1.0	<1.0	<1.0	<1.0	1.69	97.34	NP		
MW-10	06/14/13	<1.0	<1.0	<1.0	<1.0	100.01	3.61	96.40	NP
	06/24/13	NS	NS	NS	NS	99.44	2.7	96.74	NP
	07/09/13	NS	NS	NS	NS	2.59	96.85	NP	
	07/19/13	NS	NS	NS	NS	1.89	97.55	NP	
	10/18/13	<1	<1	<1	<1	99.44	1.73	97.71	NP
	01/13/14	<1	<1	<1	<1	2.29	97.72	NP	
	04/02/14	<1	<1	<1	<1	2.76	96.68	NP	
	07/15/14	<1.0	<1.0	<1.0	<1.0	2.54	97.47	NP	
	10/07/14	<1.0	<1.0	<1.0	<1.0	1.91	98.10	NP	
	01/20/15	<1.0	<1.0	<1.0	<1.0	1.92	97.52	NP	
04/20/15	<1.0	<1.0	<1.0	<1.0	2.16	97.28	NP		
MW-11	06/14/13	<1.0	<1.0	<1.0	<1.0	100.50	4.1	96.40	NP
	06/24/13	NS	NS	NS	NS	99.98	3.23	96.75	NP
	07/09/13	NS	NS	NS	NS	3.12	96.86	NP	
	07/19/13	NS	NS	NS	NS	2.48	97.50	NP	

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-11	10/18/13	<1	<1	<1	<1		2.24	97.74	NP
	01/13/14	<1	<1	<1	<1		2.82	97.68	NP
	04/02/14	<1	<1	<1	<1		3.31	96.67	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		3.42	97.08	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		2.43	98.07	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		2.44	97.54	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		2.67	97.31	NP
MW-12	07/09/13	<1.0	<1.0	<1.0	<1.0	99.68	2.62	97.06	NP
	07/19/13	NS	NS	NS	NS		2.14	97.54	NP
	10/18/13	<1	<1	<1	<1		1.74	97.94	NP
	01/13/14	<1	<1	<1	<1		2.32	97.36	NP
	04/02/14	<1	<1	<1	<1		2.81	96.87	NP
	07/15/14	WD	WD	WD	WD		WD	WD	WD
	01/20/15	<1.0	<1.0	<1.0	<1.0		WD	WD	NP
04/20/15	NF	NF	NF	NF		NF	NF	NF	
MW-13	07/09/13	<b>71.1</b>		160	<b>2,606</b>	99.76	2.78	96.98	NP
	07/19/13	NS	NS	NS	NS		2.28	97.48	NP
	10/18/13	<b>131</b>	<1	9.4	200		1.93	97.83	NP
	01/13/14	<b>112</b>	<1	91.7	4.3		2.51	97.25	NP
	04/02/14	<b>75.5</b>	1.7	47.9	125		3.07	96.69	NP
	07/15/14	<b>71.2</b>	<1.0	31.4	168		2.84	96.92	NP
	10/07/14	<b>96.9</b>	<1.0	56.6	2.1		1.19	98.57	NP
	01/20/15	<b>100</b>	<1.0	129	13.5		1.20	98.56	NP
	04/20/15	<b>130</b>	<1.0	92	<1.0		1.44	98.32	NP
	07/20/15	<b>70</b>	<1.0	7.2	<1.0		2.58	97.18	NP
	10/28/15	<b>30</b>	<1.0	2.4	<1.0		2.06	97.70	NP
	01/29/16	<b>63</b>	<1.0	22	<1.0		3.28	96.48	NP
	04/28/16	<b>34</b>	<1.0	7.2	<1.0		2.02	97.74	NP
	07/26/16	<b>13</b>	<1.0	<1.0	<1.0		2.95	96.81	NP
	10/18/16	<b>18</b>	<1.0	1.5	<1.0		2.14	97.62	NP
	01/06/17	<b>46</b>	<1.0	9.1	<1.0		3.22	96.54	NP
	04/05/17	<b>25</b>	<1.0	1.0	<1.0		3.62	96.14	NP
07/25/17	<1.0	<1.0	<1.0	<1.0		3.51	96.25	NP	
10/12/17	<1.0	<1.0	<1.0	<1.0		2.04	99.66	NP	
01/25/18	<1.0	<1.0	1.1	<2.0		2.51	97.25	NP	
04/06/18	<1.0	<1.0	<1.0	<2.0	99.76	2.79	96.97	NP	
07/09/18	<1.0	<1.0	<1.0	<2.0		2.97	96.79	NP	

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-13	10/12/18	1.8	<1.0	<1.0	<2.0		2.90	96.86	NP
MW-14	07/09/13	<b>9.2</b>		1.6	16.8	99.42	2.5	96.92	NP
	07/19/13	NS	NS	NS	NS		1.96	97.46	NP
	10/18/13	<b>10.6</b>	<1	<1	<1		1.63	97.79	NP
	01/13/14	1.2	<1	<1	<1		2.28	97.14	NP
	04/02/14	2	<1	<1	4		2.78	96.64	NP
	07/15/14	1.6	<1.0	<1.0	1.5		2.58	96.84	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.92	97.50	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.94	97.48	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		2.17	97.25	NP
	07/20/15	<1.0	<1.0	<1.0	<1.0		2.41	97.01	NP
	10/28/15	<1.0	<1.0	<1.0	<1.0		1.89	97.53	NP
	01/29/16	<1.0	<1.0	<1.0	<1.0		3.11	96.31	NP
	04/28/16	<1.0	<1.0	<1.0	<1.0		1.85	97.57	NP
	07/26/16	<1.0	<1.0	<1.0	<1.0		2.78	96.64	NP
	10/18/16	<1.0	<1.0	<1.0	<1.0		1.97	97.45	NP
	01/06/17	<1.0	<1.0	<1.0	<1.0		3.05	96.37	NP
	04/05/17	<1.0	<1.0	<1.0	<1.0		3.43	95.99	NP
	07/25/17	<1.0	<1.0	<1.0	<1.0		3.24	96.18	NP
	10/12/17	<1.0	<1.0	<1.0	<1.0		1.77	99.66	NP
	01/25/18	<1.0	<1.0	<1.0	<2.0		2.38	97.04	NP
04/06/18	<1.0	<1.0	<1.0	<2.0	2.72	96.70	NP		
07/09/18	<1.0	<1.0	<1.0	<2.0	2.92	96.50	NP		
10/12/18	<1.0	<1.0	<1.0	<2.0	2.80	-2.80	NP		
MW-15	07/09/13	<1.0	<1.0	<1.0	<1.0	99.59	2.68	96.91	NP
	07/19/13	NS	NS	NS	NS		2.12	97.47	NP
	10/18/13	<1	<1	<1	<1		1.82	97.77	NP
	01/13/14	<1	<1	<1	<1		2.39	97.20	NP
	04/02/14	<1	<1	<1	<1		2.88	96.71	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.65	96.94	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		2.01	97.58	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		2.03	97.56	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		2.26	97.33	NP
MW-16	07/09/13	<b>177</b>		394	<b>5,089</b>	99.18	2.3	96.88	NP
	07/19/13	NS	NS	NS	NS		1.74	97.44	NP
	10/18/13	<b>166</b>	<1	104	405		1.41	97.77	NP
	01/13/14	<b>249</b>	<1	268	<b>1733</b>		2.02	97.16	NP

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-16	04/02/14	149	3.1	127	852	99.18	2.49	96.69	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.29	96.89	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.61	97.57	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.62	97.56	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		1.85	97.33	NP
	07/20/15	<1.0	<1.0	<1.0	<1.0		2.06	97.12	NP
	10/28/15	<1.0	<1.0	<1.0	<1.0		1.53	97.65	NP
	01/29/16	<1.0	<1.0	<1.0	<1.0		2.75	96.43	NP
	04/28/16	<1.0	<1.0	<1.0	<1.0		1.50	97.68	NP
	07/26/16	<1.0	<1.0	<1.0	<1.0		2.43	96.75	NP
	10/18/16	<1.0	<1.0	<1.0	<1.0		1.63	97.55	NP
	01/06/17	<1.0	<1.0	<1.0	<1.0		2.72	96.46	NP
	04/05/17	<1.0	<1.0	<1.0	<1.0		3.10	96.08	NP
	07/25/17	<1.0	<1.0	<1.0	<1.0		2.99	96.19	NP
	10/12/17	<1.0	<1.0	<1.0	<1.0		1.52	99.66	NP
	01/25/18	<1.0	<1.0	<1.0	<2.0		1.96	97.22	NP
	04/06/18	<1.0	<1.0	1.6	9.6		2.32	96.86	NP
07/09/18	<1.0	<1.0	<1.0	<2.0	2.48	96.70	NP		
10/12/18	<1.0	<1.0	<1.0	2.5	2.42	96.76	NP		
MW-17	07/09/13	851		390	9,256	99.45	2.5	96.95	NP
	07/19/13	NS	NS	NS	NS		2.02	97.43	NP
	10/18/13	961	<1	82.2	8473		1.43	98.02	NP
	01/13/14	455	<1	101	4781		2.19	97.26	NP
	04/02/14	435	4.4	69.1	5184		2.69	96.76	NP
	07/15/14	1081	<1.0	106	5741		2.46	96.99	NP
	10/07/14	461	<1.0	247	2008		1.85	97.60	NP
	01/20/15	212	2.3	181	1844		1.86	97.59	NP
	04/20/15	26	<1.0	4.4	140		2.19	97.26	NP
	07/20/15	280	<1.0	21	130		2.27	97.18	NP
	10/28/15	77	<1.0	29	54		1.75	97.70	NP
	01/29/16	<1.0	<1.0	<1.0	<1.0		2.97	96.48	NP
	04/28/16	<1.0	<1.0	<1.0	<1.0		1.70	97.75	NP
	07/26/16	16	<1.0	1.8	18		2.64	96.81	NP
	10/18/16	71	<1.0	2.9	17		1.83	97.62	NP
01/06/17	91	<1.0	7.2	5.5	2.91	96.54	NP		
04/05/17	50	<1.0	4.1	<1.0	3.28	96.17	NP		
07/25/17	3.1	<1.0	<1.0	<1.0	3.16	96.29	NP		
10/12/17	14	<1.0	1.3	25	1.69	99.66	NP		

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-17	01/25/18	190	1.1	3.8	10		2.15	97.30	NP
	04/06/18	<1.0	<1.0	<1.0	<2.0		2.46	96.99	NP
	07/09/18	NS	NS	NS	NS		DRY	DRY	DRY
	10/12/18	NS	NS	NS	NS		DRY	DRY	DRY
MW-18	07/09/13	<1.0	<1.0	<1.0	<1.0	98.28	1.54	96.74	NP
	07/19/13	NS	NS	NS	NS		1.02	97.26	NP
	10/18/13	<1	<1	<1	<1		0.66	97.62	NP
	01/13/14	<1	<1	<1	<1		1.15	97.13	NP
	04/02/14	<1	<1	<1	<1		1.68	96.60	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		1.49	96.79	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		0.81	97.47	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		0.83	97.45	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		1.06	97.22	NP
	07/20/15	<1.0	<1.0	<1.0	<1.0		1.29	96.99	NP
	10/28/15	<1.0	<1.0	<1.0	<1.0		0.76	97.52	NP
	01/29/16	<1.0	<1.0	<1.0	<1.0	98.28	1.98	96.30	NP
	04/28/16	<1.0	<1.0	<1.0	<1.0		too shallow	too shallow	NP
	07/26/16	<1.0	<1.0	<1.0	<1.0		1.81	96.47	NP
	10/18/16	<1.0	<1.0	<1.0	<1.0		1.00	97.28	NP
	01/06/17	<1.0	<1.0	<1.0	<1.0		2.09	96.19	NP
	04/05/17	<1.0	<1.0	<1.0	<1.0		2.47	95.81	NP
	07/25/17	<1.0	<1.0	<1.0	<1.0		2.36	95.92	NP
	10/12/17	<1.0	<1.0	<1.0	<1.0		0.89	99.66	NP
	01/25/18	<1.0	<1.0	<1.0	<2.0		1.12	97.16	NP
04/06/18	<1.0	<1.0	<1.0	<2.0		1.45	96.83	NP	
07/09/18	<1.0	<1.0	<1.0	<2.0		1.70	96.58	NP	
10/12/18	<1.0	<1.0	<1.0	<2.0		1.58	96.70	NP	
MW-19	07/09/13	<1.0	<1.0	<1.0	<1.0	98.47	1.71	96.76	NP
	07/19/13	NS	NS	NS	NS		1.1	97.37	NP
	10/18/13	<1	<1	<1	<1		1.78	96.69	NP
	01/13/14	<1	<1	<1	<1		1.33	97.14	NP
	04/02/14	<1	<1	<1	<1		1.84	96.63	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		1.65	96.82	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		0.99	97.48	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.01	97.46	NP
04/20/15	<1.0	<1.0	<1.0	<1.0		1.24	97.23	NP	
MW-20	07/19/13	<1.0	<1.0	<1.0	<1.0	99.40	1.33	98.07	NP

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-20	10/18/13	<1	<1	<1	<1		1.51	97.89	NP
	01/13/14	<1	<1	<1	<1		2.11	97.29	NP
	04/02/14	<1	<1	<1	<1		2.57	96.83	NP
	07/15/14	8.4	<1.0	<1.0	<1.0		2.32	97.08	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.70	97.70	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.71	97.69	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		1.95	97.45	NP
MW-21	07/19/13	<1.0	<1.0	<1.0	<1.0	99.31	1.67	97.64	NP
	10/18/13	<1	<1	<1	<1		1.51	97.80	NP
	01/13/14	<1	<1	<1	<1		2.10	97.21	NP
	04/02/14	<1	<1	<1	<1		2.56	96.75	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.33	96.98	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.71	97.60	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.73	97.58	NP
04/20/15	<1.0	<1.0	<1.0	<1.0		1.96	97.35	NP	
MW-22	07/19/13	<1.0	<1.0	<1.0	<1.0	99.12	2.01	97.11	NP
	10/18/13	<1	<1	<1	<1		1.73	97.39	NP
	01/13/14	<1	<1	<1	<1		2.01	97.11	NP
	04/02/14	<1	<1	<1	<1		2.49	96.63	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.30	96.82	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.85	97.27	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.86	97.26	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		2.09	97.03	NP
	07/20/15	<1.0	<1.0	<1.0	<1.0	99.12	1.10	98.02	NP
	10/28/15	<1.0	<1.0	<1.0	<1.0		0.59	98.53	NP
	01/29/16	<1.0	<1.0	<1.0	<1.0		1.79	97.33	NP
	04/28/16	<1.0	<1.0	<1.0	<1.0		too shallow	too shallow	NP
	07/26/16	<1.0	<1.0	<1.0	<1.0		1.80	97.32	NP
	10/18/16	<1.0	<1.0	<1.0	<1.0		0.99	98.13	NP
	01/06/17	<1.0	<1.0	<1.0	<1.0		2.07	97.05	NP
	04/05/17	<1.0	<1.0	<1.0	<1.0		2.45	96.67	NP
	07/25/17	<1.0	<1.0	<1.0	<1.0		2.34	96.78	NP
10/12/17	<1.0	<1.0	<1.0	<1.0		0.88	99.66	NP	
01/25/18	<1.0	<1.0	<1.0	<2.0		2.05	97.07	NP	
04/06/18	<1.0	<1.0	<1.0	<2.0		2.25	96.87	NP	
07/09/18	<1.0	<1.0	<1.0	2.8		2.47	96.65	NP	
10/12/18	<1.0	<1.0	<1.0	<2.0		2.42	96.70	NP	

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)	
MW-23	07/19/13	<1.0	<1.0	<1.0	<1.0	98.77	1.41	97.36	NP	
	10/18/13	<1	<1	<1	<1		0.98	97.79	NP	
	01/13/14	<1	<1	<1	<1		1.52	97.25	NP	
	04/02/14	<1	<1	<1	<1		2.01	96.76	NP	
	07/15/14	<1.0	<1.0	<1.0	<1.0		1.82	96.95	NP	
	10/07/14	<1.0	<1.0	<1.0	<1.0		1.16	97.61	NP	
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.18	97.59	NP	
	04/20/15	<1.0	<1.0	<1.0	<1.0		1.42	97.35	NP	
	07/20/15	<1.0	<1.0	<1.0	<1.0		1.62	97.15	NP	
	10/28/15	<1.0	<1.0	<1.0	<1.0		1.10	97.67	NP	
	01/29/16	<1.0	<1.0	<1.0	<1.0		2.32	96.45	NP	
	04/28/16	<1.0	<1.0	<1.0	<1.0		1.06	97.71	NP	
	07/26/16	<1.0	<1.0	<1.0	<1.0		1.99	96.78	NP	
	10/18/16	<1.0	<1.0	<1.0	<1.0		1.19	97.58	NP	
	01/06/17	<1.0	<1.0	<1.0	<1.0		2.27	96.50	NP	
	04/05/17	<1.0	<1.0	<1.0	<1.0		2.63	96.14	NP	
	07/25/17	<1.0	<1.0	<1.0	<1.0		2.53	96.24	NP	
	10/12/17	<1.0	<1.0	<1.0	<1.0		1.07	99.66	NP	
	01/25/18	<1.0	<1.0	<1.0	<2.0		1.45	97.32	NP	
	04/06/18	<1.0	<1.0	<1.0	<2.0		1.75	97.02	NP	
07/09/18	<1.0	<1.0	<1.0	<2.0	1.97	96.80	NP			
10/12/18	<1.0	<1.0	<1.0	<2.0	1.93	96.84	NP			
MW-24	07/19/13	2.4	<1.0	36.6	1,364	99.08	1.57	97.51	NP	
	10/18/13	<1	<1	<1	<1		1.2	97.88	NP	
	01/13/14	3.3	<1	23.7	64.4		1.74	97.34	NP	
	04/02/14	1.9	<1	10.3	35.7		2.23	96.85	NP	
	07/15/14	<1.0	<1.0	4.0	1.4		2.01	97.07	NP	
	10/07/14	<1.0	<1.0	<1.0	1.5		1.40	97.68	NP	
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.39	97.69	NP	
	04/20/15	<1.0	<1.0	<1.0	4.6		1.62	97.46	NP	
	07/20/15	<1.0	<1.0	<1.0	<1.0		1.82	97.26	NP	
	10/28/15	<1.0	<1.0	<1.0	<1.0		1.30	97.78	NP	
	01/29/16	<1.0	<1.0	<1.0	<1.0		99.08	2.51	96.57	NP
	04/28/16	<1.0	<1.0	<1.0	<1.0		1.25	97.83	NP	
	07/26/16	<1.0	<1.0	<1.0	<1.0		2.18	96.90	NP	
	10/18/16	<1.0	<1.0	<1.0	<1.0		1.36	97.72	NP	
	01/06/17	2.3	<1.0	<1.0	6.4		2.49	96.59	NP	
04/05/17	2.3	<1.0	3.6	30	2.84	96.24	NP			

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)	
MW-24	07/25/17	<1.0	<1.0	<1.0	<1.0		2.75	96.33	NP	
	10/12/17	<1.0	<1.0	<1.0	<1.0		1.27	99.66	NP	
	01/25/18	<1.0	<1.0	<1.0	<2.0		1.65	97.43	NP	
	04/06/18	<1.0	<1.0	<1.0	1200		2.00	97.08	NP	
	07/09/18	NS	NS	NS	NS		DRY	DRY	DRY	
	10/12/18	<1.0	<1.0	<1.0	<2.0		2.10	96.98	NP	
MW-25	07/19/13	<b>803</b>	<1.0	473	<b>10,322</b>	99.36	1.96	97.40	NP	
	10/18/13	<b>435</b>	<1	119	<b>1572</b>		1.49	97.87	NP	
	01/13/14	<b>47.8</b>	<1	6.3	159		2.03	97.33	NP	
	04/02/14	<b>44.1</b>	<1	24.3	200		2.58	96.78	NP	
	07/15/14	<b>115</b>	<1.0	39.2	120		2.35	97.01	NP	
	10/07/14	<b>57.1</b>	<1.0	9.3	12.1		1.69	97.67	NP	
	01/20/15	<b>36.2</b>	<1.0	5.1	44.6		1.71	97.65	NP	
	04/20/15	<b>16</b>	<1.0	1.2	5.0		1.94	97.42	NP	
	07/20/15	<b>5.8</b>	<1.0	<1.0	<1.0		2.15	97.21	NP	
	10/28/15	<b>13</b>	<1.0	<1.0	<1.0		1.63	97.73	NP	
	01/29/16	Damaged	Damaged	Damaged	Damaged		Damaged	Damaged	Damaged	Damaged
	03/17/16	<b>83</b>	<1.0	2.1	24		NM	NM	NP	
	04/28/16	<b>7.3</b>	<1.0	<1.0	4.0		too shallow	too shallow	NP	
	07/26/16	2.7	<1.0	<1.0	<1.0		1.80	97.56	NP	
	10/18/16	<1.0	<1.0	<1.0	<1.0		0.98	98.38	NP	
	01/06/17	<1.0	<1.0	<1.0	<1.0		2.07	97.29	NP	
	04/05/17	<b>51</b>	<1.0	2.1	18		2.46	96.90	NP	
	07/25/17	1.4	<1.0	<1.0	<1.0		2.34	97.02	NP	
	10/12/17	<1.0	<1.0	<1.0	<1.0		0.86	99.66	NP	
	01/25/18	<1.0	<1.0	<1.0	2.3		1.96	97.40	NP	
04/06/18	<b>5.6</b>	<1.0	<1.0	<b>3900</b>	2.33	97.03	NP			
07/09/18	<b>13</b>	<1.0	<1.0	<2.0	2.49	96.87	NP			
10/12/18	<1.0	<1.0	<1.0	<2.0	2.42	96.94	NP			
MW-26	07/19/13	<b>198</b>	<1.0	344	<b>2,547</b>	99.30	1.88	97.42	NP	
	10/18/13	<b>109</b>	<1	83.9	894		1.49	97.81	NP	
	01/13/14	<1	<1	<1	<1		2.01	97.29	NP	
	04/02/14	<1	<1	<1	<1		2.54	96.76	NP	
	07/15/14	<1.0	<1.0	<1.0	<1.0		2.29	97.01	NP	
	10/07/14	2.7	<1.0	<1.0	1.2		1.64	97.66	NP	
	01/20/15	<1.0	<1.0	<1.0	<1.0		1.65	97.65	NP	
	04/20/15	<b>13</b>	<1.0	2.0	8.0		1.88	97.42	NP	

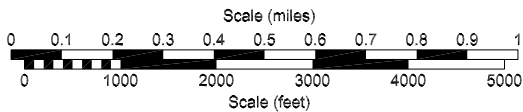
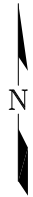
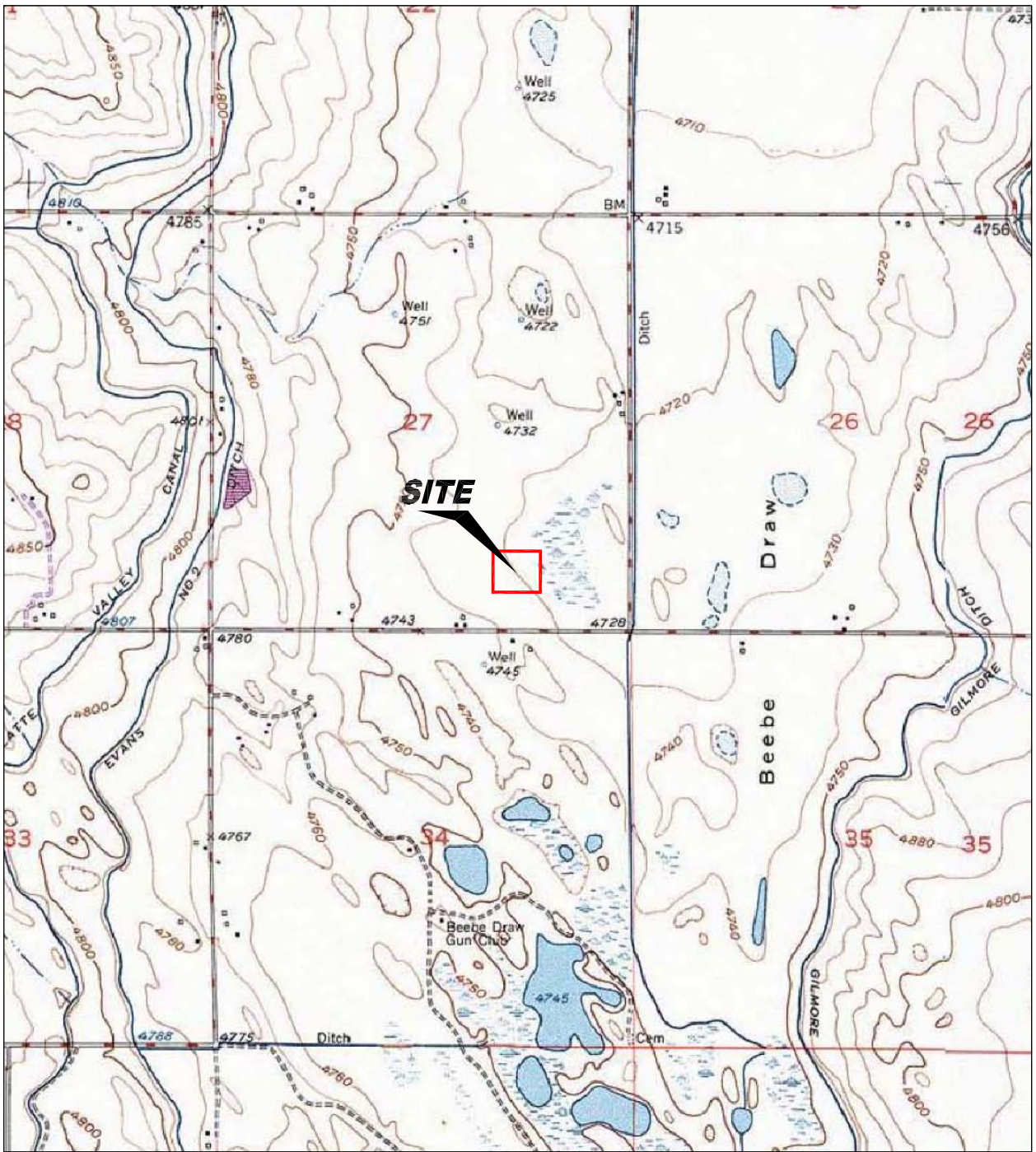
SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-26	07/20/15	3.1	<1.0	<1.0	<1.0	99.30	2.11	97.19	NP
	10/28/15	20	<1.0	13	49		1.60	97.70	NP
	01/29/16	Damaged	Damaged	Damaged	Damaged		Damaged	Damaged	Damaged
	03/17/16	23	<1.0	2.2	59		NM	NM	NP
	04/28/16	60	<1.0	20	110		too shallow	too shallow	NP
	07/26/16	40	<1.0	6.3	17		1.79	97.51	NP
	10/18/16	2.8	<1.0	10	190		0.98	98.32	NP
	01/06/17	29	<1.0	5.2	57		2.06	97.24	NP
	04/05/17	38	<1.0	6.5	75		2.44	96.86	NP
	07/25/17	<1.0	<1.0	<1.0	<1.0		2.21	97.09	NP
	10/12/17	<1.0	<1.0	<1.0	<1.0		0.75	99.66	NP
	01/25/18	<1.0	<1.0	<1.0	72		2.00	97.30	NP
	04/06/18	130	<1.0	1.2	6900		2.32	96.98	NP
	07/09/18	3.2	<1.0	5.7	50		2.58	96.72	NP
10/12/18	<1.0	<1.0	<1.0	2.4	2.43	96.87	NP		
MW-27	07/19/13	<1.0	<1.0	<1.0	<1.0	98.40	0.91	97.49	NP
	10/18/13	<1	<1	<1	<1		0.7	97.70	NP
	01/13/14	<1	<1	<1	<1		1.23	97.17	NP
	04/02/14	<1	<1	<1	<1		1.73	96.67	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		3.41	94.99	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		0.87	97.53	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		0.89	97.51	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		1.12	97.28	NP
MW-28	07/19/13	<1.0	<1.0	<1.0	<1.0	98.64	1.14	97.50	NP
	10/18/13	<1	<1	<1	<1		0.79	97.85	NP
	01/13/14	<1	<1	<1	<1		1.28	97.36	NP
	04/02/14	<1	<1	<1	<1		1.79	96.85	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		1.59	97.05	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		0.95	97.69	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		0.96	97.68	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		1.19	97.45	NP
	07/20/15	<1.0	<1.0	<1.0	<1.0		1.38	97.26	NP
	10/28/15	<1.0	<1.0	<1.0	<1.0		0.87	97.77	NP
	01/29/16	<1.0	<1.0	<1.0	<1.0		2.07	96.57	NP
	04/28/16	<1.0	<1.0	<1.0	<1.0		too shallow	too shallow	NP
	07/26/16	<1.0	<1.0	<1.0	<1.0		1.82	96.82	NP
10/18/16	<1.0	<1.0	<1.0	<1.0	1.81	96.83	NP		

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-28	01/06/17	<1.0	<1.0	<1.0	<1.0		2.88	95.76	NP
	04/05/17	<1.0	<1.0	<1.0	<1.0		2.49	96.15	NP
	07/25/17	<1.0	<1.0	<1.0	<1.0		2.27	96.37	NP
	10/12/17	<1.0	<1.0	<1.0	<1.0		0.81	99.66	NP
	01/25/18	<1.0	<1.0	<1.0	<2.0		1.23	97.41	NP
	04/06/18	3.6	<1.0	1.4	840		1.53	97.11	NP
	07/09/18	NS	NS	NS	NS		DRY	DRY	DRY
	10/12/18	<1.0	<1.0	<1.0	<2.0		1.64	97.00	NP
MW-29	07/19/13	<1.0	<1.0	<1.0	<1.0	101.04	3.45	97.59	NP
	10/18/13	<1	<1	<1	<1		3.03	98.01	NP
	01/13/14	<1	<1	<1	<1		3.58	97.46	NP
	04/02/14	<1	<1	<1	<1		4.13	96.91	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0	101.04	3.96	97.08	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		3.32	97.72	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		NF	NF	NP
	04/20/15	NF	NF	NF	NF		NF	NF	NF
MW-30	07/19/13	<1.0	<1.0	<1.0	<1.0	100.22	2.73	97.49	NP
	10/18/13	<1	<1	<1	<1		2.3	97.92	NP
	01/13/14	<1	<1	<1	<1		2.82	97.40	NP
	04/02/14	<1	<1	<1	<1		3.35	96.87	NP
	07/15/14	<1.0	<1.0	<1.0	<1.0		3.22	97.00	NP
	10/07/14	<1.0	<1.0	<1.0	<1.0		2.59	97.63	NP
	01/20/15	<1.0	<1.0	<1.0	<1.0		2.61	97.61	NP
	04/20/15	<1.0	<1.0	<1.0	<1.0		2.94	97.28	NP
Table 910-1 Limits		5	560	700	1,400				

Bold face values exceed the COGCC limits

NP - No Free Product

NS- Not Sampled



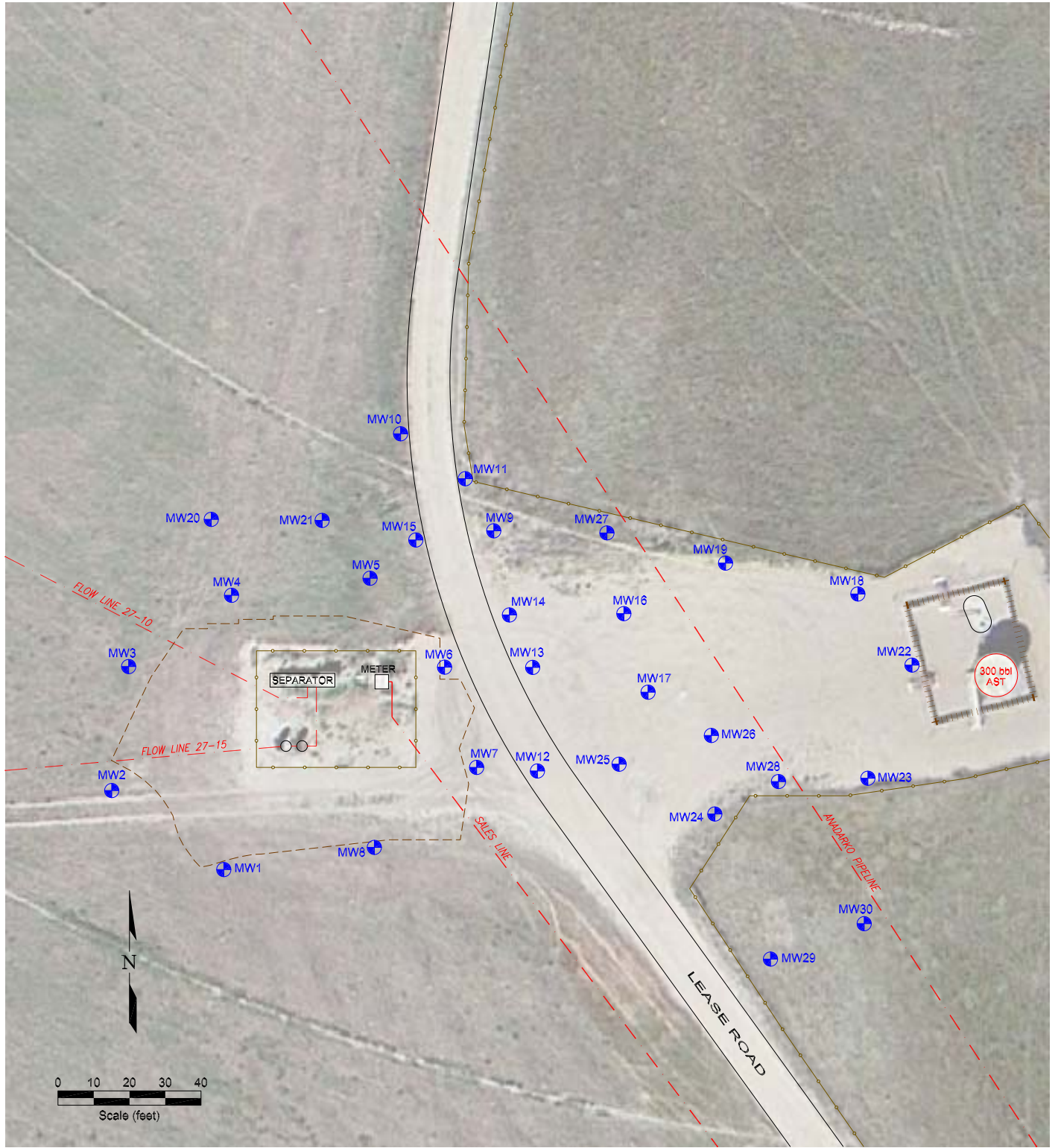
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1  
SITE LOCATION MAP

Noble Lipsack R G27-15  
SW SE Section 27, T4N, R65W  
Weld County, Colorado

Project No. C013-009	Prepared by	Drawn by JMA
Date 5/21/13	Reviewed by	Filename 13009T





**LEGEND**


-  MONITORING WELL
-  FENCE LINE
-  PIPELINE
-  CONTAINMENT BERM
-  ABOVE GROUND STORAGE TANK

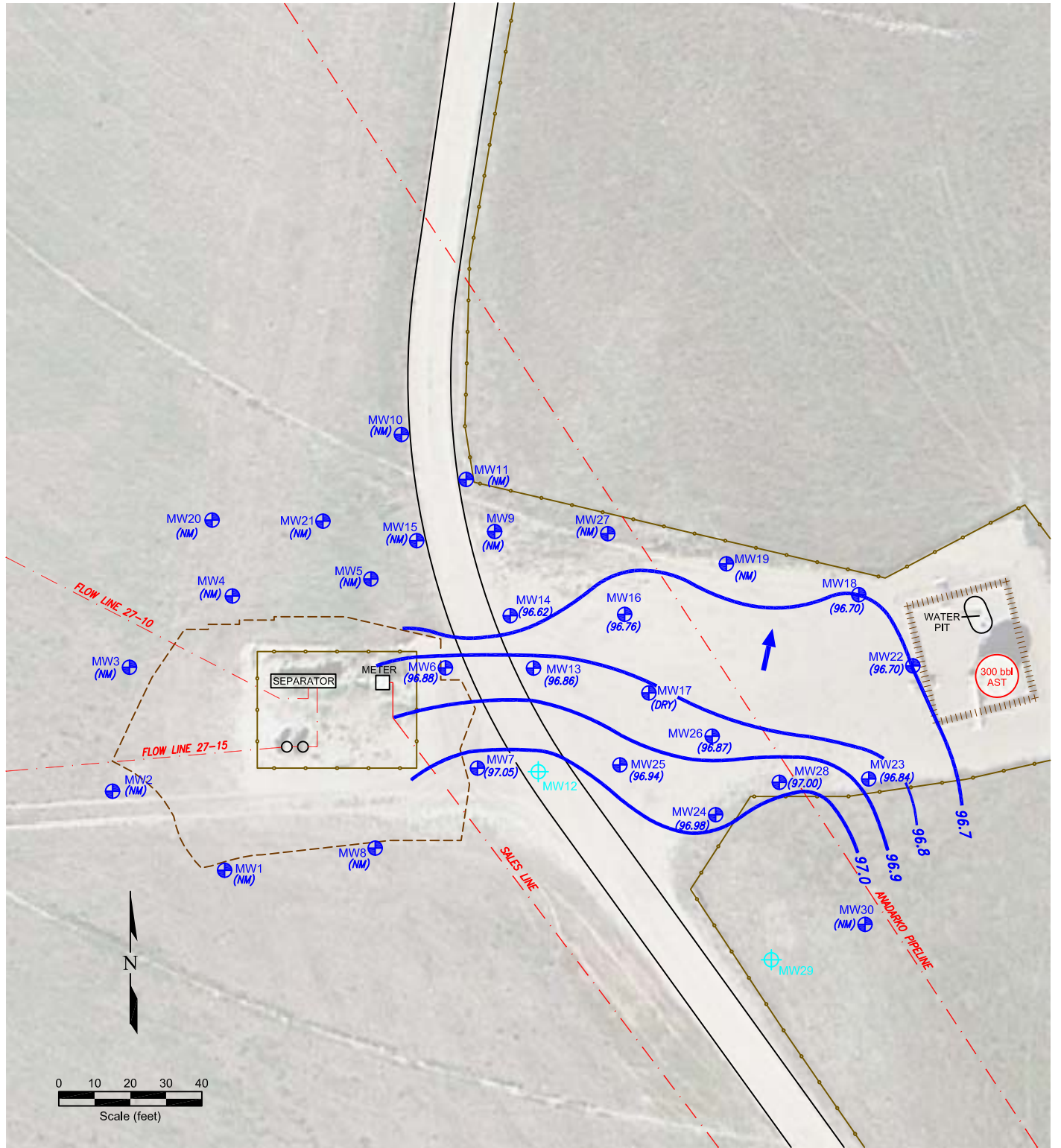
Figure 2

**SITE MAP**

**Noble Libsack R G27-15**  
 SW SE Section 27, T4N, R65W  
 Weld County, Colorado

Project No. C013-009	Prepared by	Drawn by JMA
Date 7/24/13	Reviewed by	Filename 13009R





**LEGEND**













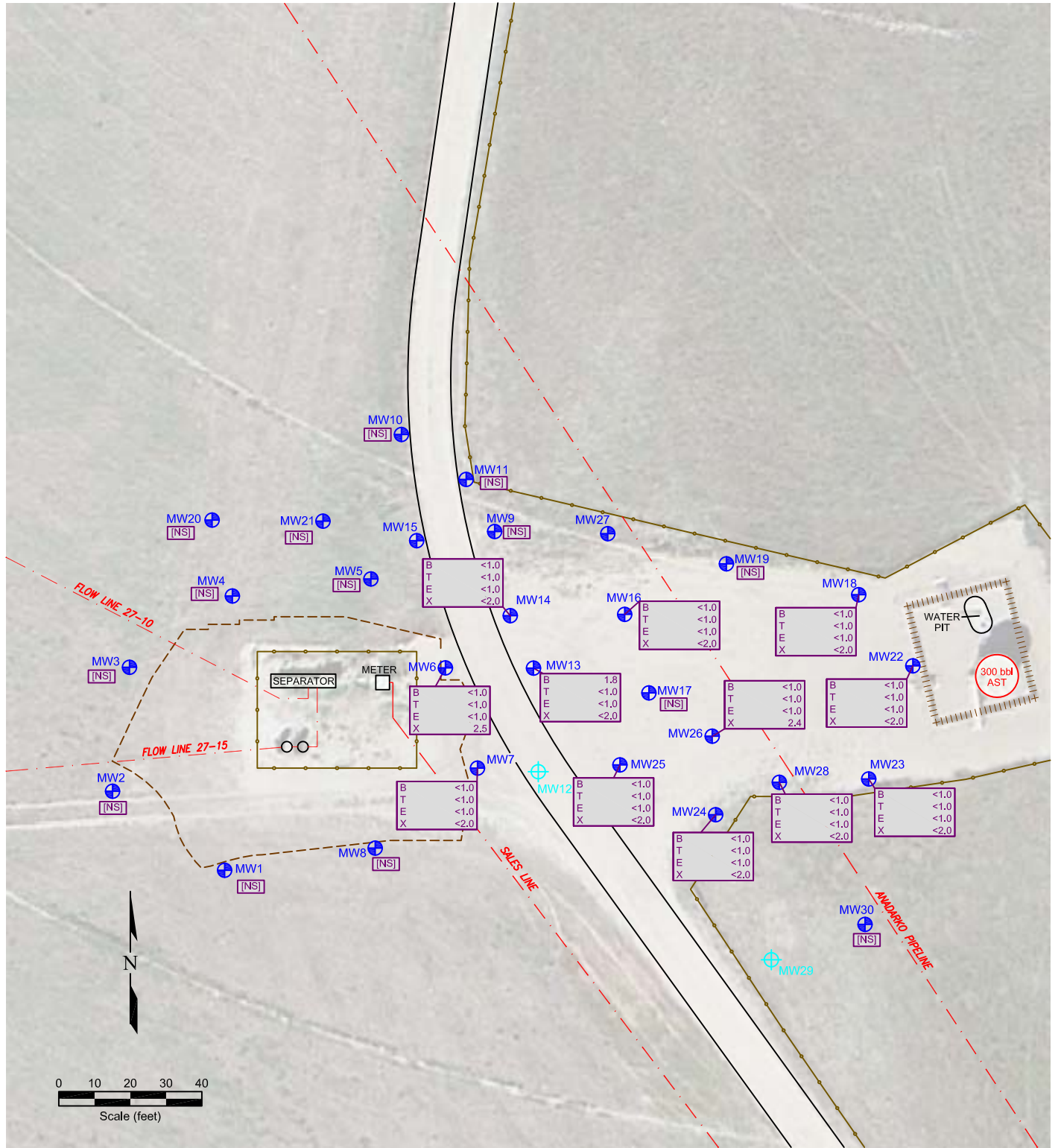
-  MONITORING WELL
-  DESTROYED MONITORING WELL
-  FENCE LINE
-  PIPELINE
-  CONTAINMENT BERM
-  ABOVE GROUND STORAGE TANK
-  GROUND WATER ELEVATION (ft above arbitrary datum)
-  TOO SHALLOW
-  NOT MEASURED
-  WATER TABLE CONTOUR
-  GROUND WATER FLOW DIRECTION
-  NOT USED FOR CONTOURING

Figure 3  
**INFERRED GROUND WATER CONTOUR MAP**  
 October 12, 2018







**Noble Libsack R G27-15**  
 SW SE Section 27, T4N, R65W  
 Weld County, Colorado

Project No. <b>C013-009</b>	Prepared by <b>TDA</b>	Drawn by <b>JMA</b>
Date <b>10/26/18</b>	Reviewed by <b>EB</b>	Filename <b>13009R</b>





**LEGEND**

-  MONITORING WELL
-  DESTROYED MONITORING WELL
-  FENCE LINE
-  PIPELINE
-  CONTAINMENT BERM
-  ABOVE GROUND STORAGE TANK
- |   |      |
|---|------|
| B | <1.0 |
| T | <1.0 |
| E | <1.0 |
| X | <1.0 |


 BENZENE (ug/L)  
TOLUENE (ug/L)  
ETHYLBENZENE (ug/L)  
TOTAL XYLENES (ug/L)
-  NOT SAMPLED

Figure 4  
**GROUND WATER CHEMISTRY MAP**

**October 12, 2018**  
**Noble Libsack R G27-15**  
SW SE Section 27, T4N, R65W  
Weld County, Colorado

Project No. <b>C013-009</b>	Prepared by <b>TDA</b>	Drawn by <b>JMA</b>
Date <b>10/26/18</b>	Reviewed by <b>EB</b>	Filename <b>13009R</b>



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 19, 2018

Paul Henehan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Libsack R G27-15

Enclosed are the results of analyses for samples received by Summit Scientific on 10/12/18 15:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Libsack R G27-15

Project Number: C013-009  
Project Manager: Paul Henehan

**Reported:**  
10/19/18 08:10

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-6	1810170-01	Water	10/12/18 00:00	10/12/18 15:30
MW-7	1810170-02	Water	10/12/18 00:00	10/12/18 15:30
MW-13	1810170-03	Water	10/12/18 00:00	10/12/18 15:30
MW-14	1810170-04	Water	10/12/18 00:00	10/12/18 15:30
MW-16	1810170-05	Water	10/12/18 00:00	10/12/18 15:30
MW-18	1810170-06	Water	10/12/18 00:00	10/12/18 15:30
MW-22	1810170-07	Water	10/12/18 00:00	10/12/18 15:30
MW-23	1810170-08	Water	10/12/18 00:00	10/12/18 15:30
MW-24	1810170-09	Water	10/12/18 00:00	10/12/18 15:30
MW-25	1810170-10	Water	10/12/18 00:00	10/12/18 15:30
MW-26	1810170-11	Water	10/12/18 00:00	10/12/18 15:30
MW-28	1810170-12	Water	10/12/18 00:00	10/12/18 15:30

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.*



# Summit Scientific

S<sub>2</sub>

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

Client: Fremont Environmental	Project Manager: Paul Henehan
Address: P.O Box 1289	E-Mail: paulh@fremontenv.com, kenn@fremontenv.com, ethanb@fremontenv.com
City/State/Zip: Wellington, CO 80549	Bill to: Noble - Jacob
Phone: 303-956-8714	Project Name: Noble - Libsack R G27-15
Sampler Name: E. Black	Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested					Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GNBTX	DRO	pH, EC	SAR		BTEX	
1	MW-26	10/12/18		2					X										
2	MW-28			1					X										
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: <i>Ethan Black</i>	Date/Time: 10/12/18 1530	Received by: <i>[Signature]</i>	Date/Time: 10/12/18 15:30	<b>Turn Around Time</b> (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	<b>Notes:</b>  Sample Integrity: Temperature Upon Receipt: 6.9 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact:	

**Sample Receipt Checklist**

S2 Work Order 1810170

Client: Fremont Client Project ID: Noble-Libseck RG27-15

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

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

Temp (°C)	<u>6.9</u>
-----------	------------

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 <u>same day</u> of sampling, this requirement is met provided that there is evidence that <u>cooling</u> has begun.	<input checked="" type="checkbox"/>			
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<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) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<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.				

CS  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

10-12-10 15:35  
Date/Time



Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-6**  
**1810170-01 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1810190	10/15/18	10/15/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		80.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		93.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.3 %		21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-7**  
**1810170-02 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1810190	10/15/18	10/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		83.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		94.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.2 %		21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-13**  
**1810170-03 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>1.8</b>	1.0		ug/l	1	1810190	10/15/18	10/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>		82.7 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		95.4 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		87.7 %		21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-14**  
**1810170-04 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1810190	10/15/18	10/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		82.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		94.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.6 %		21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-16**  
**1810170-05 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1810190	10/15/18	10/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2.5</b>	<b>2.0</b>		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		85.0 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.4 %		21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-18**  
**1810170-06 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1810190	10/15/18	10/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		81.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		93.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.8 %		21-167		"	"	"	"	

Summit Scientific

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 Wellington CO, 80549

Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-22**  
**1810170-07 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1810190	10/15/18	10/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		81.1 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		94.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.1 %		21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental  
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 Wellington CO, 80549

Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-23**  
**1810170-08 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1810190	10/15/18	10/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		81.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.5 %		21-167		"	"	"	"	

Summit Scientific

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Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-24**  
**1810170-09 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1810190	10/15/18	10/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		80.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		93.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.3 %		21-167		"	"	"	"	

Summit Scientific

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Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-25**  
**1810170-10 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1810190	10/15/18	10/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		78.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		92.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.4 %		21-167		"	"	"	"	

Summit Scientific

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Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-26**  
**1810170-11 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1810190	10/15/18	10/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2.4</b>	2.0		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		84.1 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.3 %		21-167		"	"	"	"	

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Fremont Environmental  
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 Wellington CO, 80549

Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**MW-28**  
**1810170-12 (Water)**

**Summit Scientific**

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

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1810190	10/15/18	10/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/12/18 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		78.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		93.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.6 %		21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental  
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Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**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 1810190 - EPA 5030 Water MS**

**Blank (1810190-BLK1)**

Prepared & Analyzed: 10/15/18

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	10.6		"	13.2		80.5	23-173			
Surrogate: Toluene-d8	12.4		"	13.3		93.2	20-170			
Surrogate: 4-Bromofluorobenzene	11.4		"	13.3		85.9	21-167			

**LCS (1810190-BS1)**

Prepared & Analyzed: 10/15/18

Benzene	24.0	1.0	ug/l	33.3		71.9	70-130			
Toluene	28.0	1.0	"	33.3		83.9	70-130			
Ethylbenzene	27.9	1.0	"	33.3		83.8	70-130			
m,p-Xylene	58.6	2.0	"	66.7		87.9	70-130			
o-Xylene	29.2	1.0	"	33.3		87.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	10.3		"	13.2		78.0	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.3	20-170			
Surrogate: 4-Bromofluorobenzene	11.8		"	13.3		88.7	21-167			

**Matrix Spike (1810190-MS1)**

Source: 1810170-01

Prepared & Analyzed: 10/15/18

Benzene	24.9	1.0	ug/l	33.3	ND	74.8	70-130			
Toluene	28.9	1.0	"	33.3	ND	86.6	70-130			
Ethylbenzene	30.3	1.0	"	33.3	ND	90.9	70-130			
m,p-Xylene	63.4	2.0	"	66.7	ND	95.1	70-130			
o-Xylene	31.5	1.0	"	33.3	ND	94.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	10.2		"	13.2		77.3	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.6	20-170			
Surrogate: 4-Bromofluorobenzene	11.9		"	13.3		89.3	21-167			

Summit Scientific

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 Wellington CO, 80549

Project: Noble - Libsack R G27-15

Project Number: C013-009  
 Project Manager: Paul Henehan

**Reported:**  
 10/19/18 08:10

**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 1810190 - EPA 5030 Water MS**

**Matrix Spike Dup (1810190-MSD1)**

Source: 1810170-01

Prepared & Analyzed: 10/15/18

Benzene	24.2	1.0	ug/l	33.3	ND	72.6	70-130	2.93	30	
Toluene	28.3	1.0	"	33.3	ND	84.9	70-130	1.99	30	
Ethylbenzene	30.1	1.0	"	33.3	ND	90.4	70-130	0.629	30	
m,p-Xylene	62.1	2.0	"	66.7	ND	93.1	70-130	2.15	30	
o-Xylene	31.4	1.0	"	33.3	ND	94.3	70-130	0.254	30	
Surrogate: 1,2-Dichloroethane-d4	10.8		"	13.2		81.5	23-173			
Surrogate: Toluene-d8	12.3		"	13.3		92.5	20-170			
Surrogate: 4-Bromofluorobenzene	11.8		"	13.3		88.8	21-167			

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Project: Noble - Libsack R G27-15

Project Number: C013-009  
Project Manager: Paul Henehan

**Reported:**  
10/19/18 08:10

### 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