

TABLE 1
GROUNDWATER ANALYTICAL RESULTS

KARCH BLUE DD 30-3J FLOW LINE - SOUTH
COGCC REMEDIATION #8110
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Monitoring Well	Date	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW01	10/15/2013	4.30	90.54	1.08	1.21	43.8	60.9
	1/30/2014	4.95	89.89	<1.0	<1.0	9.22	<1.0
	4/30/2014	3.90	90.94	<1.0	<1.0	6.4	<1.0
	7/25/2014	4.18	90.66	<1.0	<1.0	<1.0	<1.0
	10/22/2014	4.75	90.09	<1.0	<1.0	1.1	<1.0
	1/30/2015	4.65	90.19	<1.0	<1.0	2.4	<1.0
	4/13/2015	3.82	91.02	<1.0	<1.0	1.2	<1.0
	7/29/2015	3.63	91.21	<1.0	<1.0	<1.0	<1.0
	10/26/2015	3.50	91.34	<1.0	<1.0	1.2	<1.0
	1/25/2016	2.81	92.03	<1.0	<1.0	<1.0	<1.0
	4/29/2016	1.28	93.56	<1.0	<1.0	<1.0	<1.0
	8/25/2016	3.42	91.42	<1.00	<1.00	<1.00	<1.00
	10/27/2016	3.10	91.74	<1.00	<1.00	<1.00	<1.00
	1/27/2017	2.61	92.23	<1.00	<1.00	<1.00	<1.00
	4/28/2017	2.50	92.34	<1.00	<1.00	<1.00	<1.00
	8/15/2017	2.80	92.04	<1.00	<1.00	<1.00	<1.00
	10/30/2017	2.60	92.24	<1.00	<1.00	<1.00	<1.00
	1/31/2018	2.45	92.39	<1.00	<1.00	<1.00	<1.00
	4/16/2018	2.40	92.44	<1.00	<1.00	<1.00	<1.00
	7/20/2018	2.56	92.28	<1.00	<1.00	<1.00	<1.00
	10/25/2018	2.78	92.06	<1.00	<1.00	<1.00	<1.00
	1/21/2019	2.25	92.59	<1.00	<1.00	<1.00	<1.00
	4/18/2019	1.25	93.59	<1.00	<1.00	1.60	<1.00
	7/29/2019	3.18	91.66	<1.00	<1.00	<1.00	<1.00
	10/16/2019	3.32	91.52	<1.00	<1.00	<1.00	<1.00

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WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Monitoring Well	Date	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW02	10/15/2013	4.05	90.55	<1.0	<1.0	<1.0	<1.0
	1/30/2014	4.62	89.98	<1.0	<1.0	<1.0	<1.0
	4/30/2014	3.65	90.95	<1.0	<1.0	<1.0	<1.0
	7/25/2014	3.96	90.64	<1.0	<1.0	<1.0	<1.0
	10/22/2014	4.50	90.10	<1.0	<1.0	<1.0	<1.0
	1/30/2015	4.32	90.28	<1.0	<1.0	<1.0	<1.0
	4/13/2015	3.52	91.08	<1.0	<1.0	<1.0	<1.0
	7/29/2015	--	--	Removed from monitoring program			
MW03	10/15/2013	4.45	90.49	<1.0	<1.0	<1.0	<1.0
	1/30/2014	5.00	89.94	<1.0	<1.0	<1.0	<1.0
	4/30/2014	4.02	90.92	<1.0	<1.0	<1.0	<1.0
	7/25/2014	4.32	90.62	<1.0	<1.0	<1.0	<1.0
	10/22/2014	4.90	90.04	<1.0	<1.0	<1.0	<1.0
	1/30/2015	4.66	90.28	<1.0	<1.0	<1.0	<1.0
	4/13/2015	3.89	91.05	<1.0	<1.0	<1.0	<1.0
	7/29/2015	--	--	Removed from monitoring program			
MW04	10/15/2013	4.56	90.50	177	1.53	159	240
	1/30/2014	5.12	89.94	101	<1.0	81.2	44.7
	4/30/2014	4.18	90.88	102	<1.0	64.6	108
	7/25/2014	4.51	90.55	48.9	<1.0	78.0	67.8
	10/22/2014	4.97	90.09	39.8	<1.0	34.4	39.7
	1/30/2015	4.85	90.21	44.5	<1.0	20.4	41.1
	4/13/2015	4.04	91.02	54.6	<1.0	35.3	44.3
	7/29/2015	3.87	91.19	33.3	<1.0	47.7	5.0
	10/26/2015	3.80	91.26	6.6	<1.0	7.9	<1.0
	1/25/2016	3.05	92.01	25.7	<1.0	33.6	2.2
	4/29/2016	1.52	93.54	24.6	<1.0	58.5	11.8
	8/25/2016	3.67	91.39	31.0	<1.00	35.3	11.1
	10/27/2016	3.38	91.68	15.8	<1.00	30.3	5.08
	1/27/2017	2.92	92.14	25.0	<1.00	37.3	8.61

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Monitoring Well	Date	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW04	4/28/2017	2.70	92.36	36.1	<1.00	45.6	13.2
	8/15/2017	3.00	92.06	20.7	<1.00	31.2	7.8
	10/30/2017	2.82	92.24	17.0	<1.00	34.6	<1.00
	1/31/2018	2.63	92.43	17.6	<1.00	41.5	2.33
	4/16/2018	2.65	92.41	10.2	<1.00	14.4	<1.00
	7/20/2018	2.82	92.24	15.9	<1.00	36.8	4.11
	10/25/2018	3.02	92.04	19.5	<1.00	19.9	13.4
	1/21/2019	2.50	92.56	10.5	<1.00	30.2	4.29
	4/18/2019	1.48	93.58	8.86	<1.00	47.3	9.20
	7/29/2019	3.45	91.61	28.2	<1.00	39.0	10.9
	10/16/2019	3.28	91.78	4.92	<1.00	10.3	<1.00
MW05	10/15/2013	4.83	90.37	<1.0	<1.0	<1.0	<1.0
	1/30/2014	5.40	89.80	<1.0	<1.0	<1.0	<1.0
	4/30/2014	4.43	90.77	<1.0	<1.0	<1.0	<1.0
	7/25/2014	4.79	90.41	<1.0	<1.0	<1.0	<1.0
	10/22/2014	5.15	90.05	<1.0	<1.0	<1.0	<1.0
	1/30/2015	5.05	90.15	<1.0	<1.0	<1.0	<1.0
	4/13/2015	4.31	90.89	<1.0	<1.0	<1.0	<1.0
	7/29/2015	4.13	91.07	<1.0	<1.0	<1.0	<1.0
	10/26/2015	4.01	91.19	<1.0	<1.0	<1.0	<1.0
	1/25/2016	3.28	91.92	<1.0	<1.0	<1.0	<1.0
	4/29/2016	1.82	93.38	<1.0	<1.0	<1.0	<1.0
	8/25/2016	3.90	91.30	<1.00	<1.00	<1.00	<1.00
	10/27/2016	3.60	91.60	<1.00	<1.00	<1.00	<1.00
	1/27/2017	3.20	92.00	<1.00	<1.00	<1.00	<1.00
	4/28/2017	2.95	92.25	<1.00	<1.00	<1.00	<1.00

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MW05	8/15/2017	3.20	92.00	<1.00	<1.00	<1.00	<1.00
	10/30/2017	3.07	92.13	<1.00	<1.00	<1.00	<1.00
	1/31/2018	3.05	92.15	<1.00	<1.00	<1.00	<1.00
	4/16/2018	2.91	92.29	<1.00	<1.00	<1.00	<1.00
	7/20/2018	3.08	92.12	<1.00	<1.00	<1.00	<1.00
	10/25/2018	3.29	91.91	<1.00	<1.00	<1.00	<1.00
	1/21/2019	2.75	92.45	<1.00	<1.00	<1.00	<1.00
	4/18/2019	1.79	93.41	<1.00	<1.00	1.16	<1.00
	7/29/2019	3.73	91.47	<1.00	<1.00	<1.00	<1.00
	10/16/2019	3.83	91.37	<1.00	<1.00	<1.00	<1.00
MW06	10/15/2013	4.91	90.30	<1.0	1.02	<1.0	<1.0
	1/30/2014	5.26	89.95	<1.0	<1.0	<1.0	<1.0
	4/30/2014	4.45	90.76	<1.0	<1.0	<1.0	<1.0
	7/25/2014	4.78	90.43	<1.0	<1.0	<1.0	<1.0
	10/22/2014	4.95	90.26	<1.0	<1.0	<1.0	<1.0
	1/30/2015	5.97	89.24	<1.0	<1.0	<1.0	<1.0
	4/13/2015	4.35	90.86	<1.0	<1.0	<1.0	<1.0
	7/29/2015	4.18	91.03	<1.0	<1.0	<1.0	<1.0
	10/26/2015	4.04	91.17	<1.0	<1.0	<1.0	<1.0
	1/25/2016	3.30	91.91	<1.0	<1.0	<1.0	<1.0
	4/29/2016	1.78	93.43	<1.0	<1.0	<1.0	<1.0
	8/25/2016	3.92	91.29	<1.00	<1.00	<1.00	<1.00
	10/27/2016	3.63	91.58	<1.00	<1.00	<1.00	<1.00
	1/27/2017	3.25	91.96	<1.00	<1.00	<1.00	<1.00
	4/28/2017	2.95	92.26	<1.00	<1.00	<1.00	<1.00
	8/15/2017	3.22	91.99	<1.00	<1.00	<1.00	<1.00
	10/30/2017	3.08	92.13	<1.00	<1.00	<1.00	<1.00

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MW06	1/31/2018	2.90	92.31	<1.00	<1.00	<1.00	<1.00
	10/16/2019	3.82	91.39	<1.00	<1.00	<1.00	<1.00
	4/16/2018	2.94	92.27	<1.00	<1.00	<1.00	<1.00
	7/20/2018	3.11	92.10	<1.00	<1.00	<1.00	<1.00
	10/25/2018	3.27	91.94	<1.00	<1.00	<1.00	<1.00
	1/21/2019	2.76	92.45	<1.00	<1.00	<1.00	<1.00
	4/18/2019	1.75	93.46	<1.00	<1.00	1.14	<1.00
	7/29/2019	3.72	91.49	<1.00	<1.00	<1.00	<1.00
	10/16/2019	3.82	91.39	<1.00	<1.00	<1.00	<1.00
MW07	10/15/2013	5.02	90.06	<1.0	<1.0	<1.0	<1.0
	1/30/2014	5.35	89.73	<1.0	<1.0	<1.0	<1.0
	4/30/2014	4.61	90.47	2.6	<1.0	2.0	<1.0
	7/25/2014	4.67	90.41	<1.0	<1.0	<1.0	<1.0
	10/22/2014	5.15	89.93	<1.0	<1.0	<1.0	<1.0
	1/30/2015	5.00	90.08	<1.0	<1.0	<1.0	<1.0
	4/13/2015	4.49	90.59	<1.0	<1.0	<1.0	<1.0
	7/29/2015	4.30	90.78	<1.0	<1.0	<1.0	<1.0
	10/26/2015	4.22	90.86	<1.0	<1.0	<1.0	<1.0
	1/25/2016	3.47	91.61	<1.0	<1.0	<1.0	<1.0
	4/29/2016	1.97	93.11	29.3	<1.0	1.4	<1.0
	8/25/2016	4.10	90.98	<1.00	<1.00	<1.00	<1.00
	10/27/2016	3.82	91.26	<1.00	<1.00	<1.00	<1.00
	1/27/2017	3.40	91.68	<1.00	<1.00	<1.00	<1.00
	4/28/2017	3.17	91.91	<1.00	<1.00	<1.00	<1.00
	8/15/2017	3.45	91.63	<1.00	<1.00	<1.00	<1.00
	10/30/2017	3.28	91.80	<1.00	<1.00	<1.00	<1.00

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Monitoring Well	Date	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW07	1/31/2018	3.07	92.01	<1.00	<1.00	<1.00	<1.00
	4/16/2018	3.11	91.97	<1.00	<1.00	<1.00	<1.00
	7/20/2018	3.25	91.83	<1.00	<1.00	<1.00	<1.00
	10/25/2018	3.48	91.60	<1.00	<1.00	<1.00	<1.00
	1/21/2019	2.94	92.14	<1.00	<1.00	<1.00	<1.00
	4/18/2019	1.90	93.18	<1.00	<1.00	1.22	<1.00
	7/29/2019	3.89	91.19	40.1	<1.00	2.62	<1.00
	10/16/2019	4.01	91.07	<1.00	<1.00	<1.00	<1.00
MW08	10/15/2013	4.66	90.32	<1.0	<1.0	<1.0	<1.0
	1/30/2014	5.20	89.78	<1.0	<1.0	<1.0	<1.0
	4/30/2014	4.25	90.73	<1.0	<1.0	<1.0	<1.0
	7/25/2014	4.66	90.32	<1.0	<1.0	<1.0	<1.0
	10/22/2014	4.91	90.07	<1.0	<1.0	<1.0	<1.0
	1/30/2015	4.87	90.11	<1.0	<1.0	<1.0	<1.0
	4/13/2015	4.13	90.85	<1.0	<1.0	<1.0	<1.0
	7/29/2015	3.96	91.02	<1.0	<1.0	<1.0	<1.0
	10/26/2015	3.88	91.10	<1.0	<1.0	<1.0	<1.0
	1/25/2016	3.15	91.83	<1.0	<1.0	<1.0	<1.0
	4/29/2016	1.62	93.36	<1.0	<1.0	<1.0	<1.0
	8/25/2016	3.70	91.28	<1.00	<1.00	<1.00	<1.00
	10/27/2016	3.55	91.43	<1.00	<1.00	<1.00	<1.00
	1/27/2017	3.05	91.93	<1.00	<1.00	<1.00	<1.00
	4/28/2017	2.80	92.18	<1.00	<1.00	<1.00	<1.00
	8/15/2017	3.10	91.88	<1.00	<1.00	<1.00	<1.00
	10/30/2017	2.93	92.05	<1.00	<1.00	<1.00	<1.00
	1/31/2018	2.72	92.26	<1.00	<1.00	<1.00	<1.00

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Monitoring Well	Date	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW08	4/16/2018	2.74	92.24	<1.00	<1.00	<1.00	<1.00
	7/20/2018	2.91	92.07	<1.00	<1.00	<1.00	<1.00
	10/25/2018	3.11	91.87	<1.00	<1.00	<1.00	<1.00
	1/21/2019	2.58	92.40	<1.00	<1.00	<1.00	<1.00
	4/18/2019	1.55	93.43	<1.00	<1.00	1.17	<1.00
	7/29/2019	3.55	91.43	<1.00	<1.00	<1.00	<1.00
	10/16/2019	3.64	91.34	<1.00	<1.00	<1.00	<1.00
MW09	10/15/2013	4.29	90.33	<1.0	<1.0	<1.0	<1.0
	1/30/2014	4.85	89.77	<1.0	<1.0	<1.0	<1.0
	4/30/2014	3.90	90.72	<1.0	<1.0	<1.0	<1.0
	7/25/2014	4.39	90.23	<1.0	<1.0	<1.0	<1.0
	10/22/2014	4.65	89.97	<1.0	<1.0	<1.0	<1.0
	1/30/2015	4.50	90.12	<1.0	<1.0	<1.0	<1.0
	4/13/2015	3.76	90.86	<1.0	<1.0	<1.0	<1.0
	7/29/2015	--	--	Removed from monitoring program			
MW10	10/15/2013	4.30	90.32	<1.0	<1.0	<1.0	<1.0
	1/30/2014	4.75	89.87	<1.0	<1.0	<1.0	<1.0
	4/30/2014	3.85	90.77	<1.0	<1.0	<1.0	<1.0
	7/25/2014	4.23	90.39	<1.0	<1.0	<1.0	<1.0
	10/22/2014	5.60	89.02	<1.0	<1.0	<1.0	<1.0
	1/30/2015	4.45	90.17	<1.0	<1.0	<1.0	<1.0
	4/13/2015	3.78	90.84	<1.0	<1.0	<1.0	<1.0
	7/29/2015	--	--	Removed from monitoring program			

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Monitoring Well	Date	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW11	10/15/2013	4.57	90.26	<1.0	<1.0	<1.0	<1.0
	1/30/2014	4.95	89.88	<1.0	<1.0	<1.0	<1.0
	4/30/2014	4.15	90.68	<1.0	<1.0	<1.0	<1.0
	7/25/2014	4.51	90.32	<1.0	<1.0	<1.0	<1.0
	10/22/2014	4.91	89.92	<1.0	<1.0	<1.0	<1.0
	1/30/2015	4.65	90.18	<1.0	<1.0	<1.0	<1.0
	4/13/2015	4.02	90.81	<1.0	<1.0	<1.0	<1.0
	7/29/2015	--	--	Removed from monitoring program			
MW12	10/15/2013	4.60	90.46	<1.0	<1.0	<1.0	<1.0
	1/30/2014	5.15	89.91	<1.0	<1.0	<1.0	<1.0
	4/30/2014	4.20	90.86	<1.0	<1.0	<1.0	<1.0
	7/25/2014	4.72	90.34	<1.0	<1.0	<1.0	<1.0
	10/22/2014	5.07	89.99	<1.0	<1.0	<1.0	<1.0
	1/30/2015	4.92	90.14	<1.0	<1.0	<1.0	<1.0
	4/13/2015	4.11	90.95	<1.0	<1.0	<1.0	<1.0
	7/29/2015	--	--	Removed from monitoring program			
CDPHE WQCC Reg 41				5.0	560	700	1,400

NOTES:

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 8260C

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

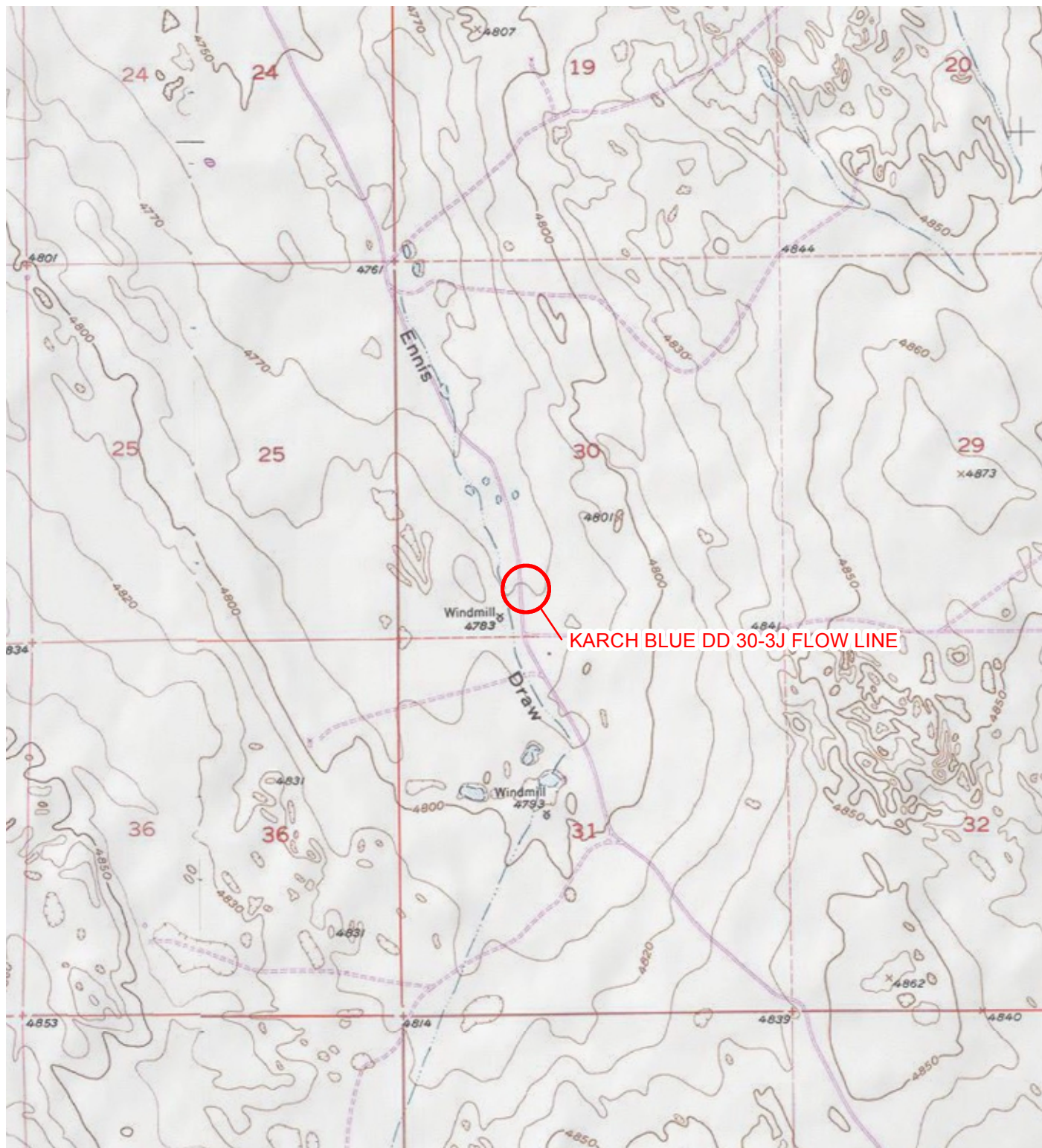


IMAGE COURTESY OF ESRI/USGS

LEGEND

○ SITE LOCATION

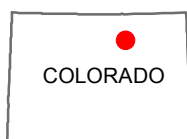
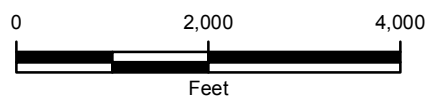


FIGURE 1
SITE LOCATION MAP
KARCH BLUE DD 30-3J FLOW LINE
E 1/2 SW 1/4 SEC 30-T3N-R63W
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.





IMAGE COURTESY OF GOOGLE EARTH 2016

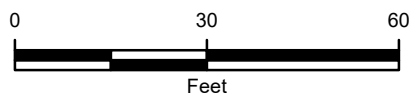
LEGEND

- ⊗ MONITORING WELL
- ⊗ MONITORING WELL REMOVED FROM MONITORING PROGRAM
- ↑ CALCULATED GROUNDWATER FLOW DIRECTION

— RELATIVE GROUNDWATER ELEVATION CONTOUR
 CONTOUR INTERVAL = 0.20 FEET
 GRADIENT = 0.019 FEET/FOOT

— UNDERGROUND UTILITIES

- - - EXCAVATION EXTENT



GROUNDWATER ELEVATIONS WERE MEASURED
 OCTOBER 16, 2019
 NM: NOT MEASURED

FIGURE 2
RELATIVE GROUNDWATER ELEVATION MAP - SOUTH
KARCH BLUE DD 30-3J FLOW LINE
E 1/2 SW 1/4 SEC 30-T3N-R63W
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.



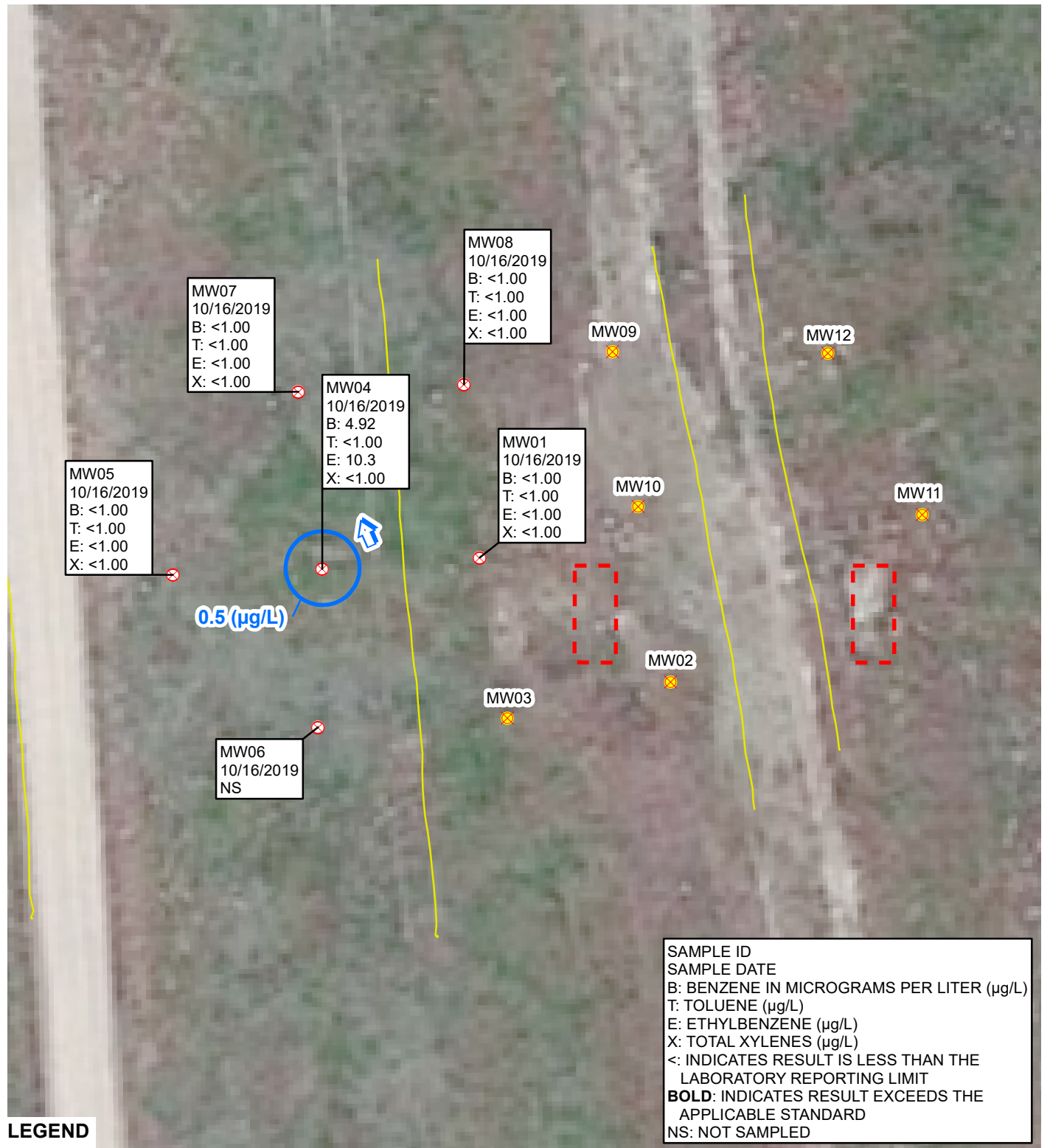


IMAGE COURTESY OF GOOGLE EARTH 2016

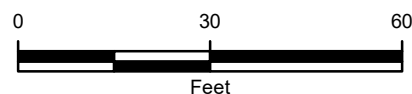


FIGURE 3
GROUNDWATER ANALYTICAL RESULTS - SOUTH
KARCH BLUE DD 30-3J FLOW LINE
E 1/2 SW 1/4 SEC 30-T3N-R63W
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.





October 17, 2019

LT Environmental, Inc.

Jeremy Pike

4600 West 60th Avenue

Arvada

CO 80003

Project Name - Noble - Karch Blue 30-3J South

Project Number - 008313054

Attached are your analytical results for Noble - Karch Blue 30-3J South received by Origins Laboratory, Inc. October 16, 2019. This project is associated with Origins project number Y910252-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

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

Jeremy Pike
Project Number: 008313054
Project: Noble - Karch Blue 30-3J South

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	Y910252-01	Water	October 16, 2019 12:05	10/16/2019 16:10
MW05	Y910252-02	Water	October 16, 2019 12:50	10/16/2019 16:10
MW06	Y910252-03	Water	October 16, 2019 11:25	10/16/2019 16:10
MW07	Y910252-04	Water	October 16, 2019 12:32	10/16/2019 16:10
MW08	Y910252-05	Water	October 16, 2019 12:21	10/16/2019 16:10
MW04	Y910252-06	Water	October 16, 2019 11:50	10/16/2019 16:10

Origins Laboratory, Inc.



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

Jeremy Pike
Project Number: 008313054
Project: Noble - Karch Blue 30-3J South

www.originslaboratory.com

7910252

ORIGINS
LABORATORY, INC

page ☐ of ☐

Client: LT Environmental, Inc.
Address: 4600 West 60th Ave, Arvada, CO
Telephone Number: 303-433-9788
Email Address: Noble Remediation Team

Project Manager: Jeremy Pike
Project Name: Karch Blue DD 30-3J (South)
Project Number: 008313054
Samples Collected By:

Invoice Jacob Evans

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #		
MW01	10/16/19	1205	3	X				X			BTEX	1
MW05		1250										2
MW06		1125										3
MW07		1232										4
MW08		1221										5
MW09		1150										6
												7
												8
												9
												10

Sample ID changed per the email from Jeremy on 10/17/19.

Relinquished By: *[Signature]* Date: 10/16/19 Time: 1110
Received By: *[Signature]* Date: 10/16/19 Time: 1610

Relinquished By: *[Signature]* Date: 10/16/19 Time: 1110
Received By: *[Signature]* Date: 10/16/19 Time: 1610

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☒

Date Results Needed

7.4

Origins Laboratory, Inc.

Jefe Pellegrini

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

Jeremy Pike
Project Number: 008313054
Project: Noble - Karch Blue 30-3J South

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y910252

Client: LTE

Client Project ID: Karch Blue 30-3J South

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 10 / 16 / 2019

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid ☒ Water ☐ Other: ☐

Cooler Number/Temperature: 1 / 7.4 °C 1 / 1 °C 1 / 1 °C (Describe) °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		<input checked="" type="checkbox"/>		<u>Same Day</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) 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 with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

⁽¹⁾If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) JP

Date/Time Reviewed 10/17/19

Origins Laboratory, Inc.

Jen Pellegrini

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

Jeremy Pike
Project Number: 008313054
Project: Noble - Karch Blue 30-3J South

MW01

10/16/2019 12:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc. Y910252-01 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9J1701	KDK	10/17/2019	10/17/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	124 %	70-130	"	"	"
Surrogate: Toluene-d8	101 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	100 %	70-130	"	"	"

Origins Laboratory, Inc.



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

Jeremy Pike
Project Number: 008313054
Project: Noble - Karch Blue 30-3J South

MW05

10/16/2019 12:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y910252-02 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9J1701	KDK	10/17/2019	10/17/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	127 %	70-130			"	"	"
Surrogate: Toluene-d8	100 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"

Origins Laboratory, Inc.



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

Jeremy Pike

Project Number: 008313054

Project: Noble - Karch Blue 30-3J South

MW06

10/16/2019 11:25:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y910252-03 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9J1701	KDK	10/17/2019	10/17/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4

129 % 70-130

"

"

"

Surrogate: Toluene-d8

101 % 70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

102 % 70-130

"

"

"

Origins Laboratory, Inc.



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

Jeremy Pike
Project Number: 008313054
Project: Noble - Karch Blue 30-3J South

MW07

10/16/2019 12:32:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y910252-04 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9J1701	KDK	10/17/2019	10/17/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	127 %	70-130			"	"	"
Surrogate: Toluene-d8	99.0 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"

Origins Laboratory, Inc.



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

Jeremy Pike
Project Number: 008313054
Project: Noble - Karch Blue 30-3J South

MW08

10/16/2019 12:21:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc. Y910252-05 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9J1701	KDK	10/17/2019	10/17/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	127 %	70-130			"	"	"
Surrogate: Toluene-d8	102 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"

Origins Laboratory, Inc.



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

Jeremy Pike
Project Number: 008313054
Project: Noble - Karch Blue 30-3J South

MW04

10/16/2019 11:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc. Y910252-06 (Water)

BTEX by EPA 8260D

Benzene	4.92	1.00	ug/L	1	B9J1701	KDK	10/17/2019	10/17/2019	
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	10.3	1.00	"	"	"	KDK	"	"	
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	130 %	70-130			"	"	"
Surrogate: Toluene-d8	102 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"

Origins Laboratory, Inc.



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

Jeremy Pike
Project Number: 008313054
Project: Noble - Karch Blue 30-3J South

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

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

Batch B9J1701 - EPA 5030B (Water)

Blank (B9J1701-BLK1)

Prepared: 10/17/2019 Analyzed: 10/17/2019

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	78		"	62.5	125		70-130			
Surrogate: Toluene-d8	62		"	62.5	99.6		70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5	101		70-130			

Origins Laboratory, Inc.



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

Jeremy Pike
Project Number: 008313054
Project: Noble - Karch Blue 30-3J South

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

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

Batch B9J1701 - EPA 5030B (Water)

LCS (B9J1701-BS1)

Prepared: 10/17/2019 Analyzed: 10/17/2019

Benzene	44.7	1.00	ug/L	50.0		89.4	70-130			
Toluene	45.7	1.00	"	50.0		91.5	70-130			
Ethylbenzene	48.5	1.00	"	50.0		97.0	70-130			
m,p-Xylene	98.4	2.00	"	100		98.4	70-130			
o-Xylene	49.8	1.00	"	50.0		99.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	74		"	62.5		118	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

Origins Laboratory, Inc.



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LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Jeremy Pike

Project Number: 008313054

Project: Noble - Karch Blue 30-3J South

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

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

Batch B9J1701 - EPA 5030B (Water)

Matrix Spike (B9J1701-MS1)		Source: Y910251-02			Prepared: 10/17/2019 Analyzed: 10/17/2019					
Benzene	46.8	1.00	ug/L	50.0	0.570	92.4	70-130			
Toluene	47.0	1.00	"	50.0	ND	94.0	70-130			
Ethylbenzene	49.5	1.00	"	50.0	0.090	98.8	70-130			
m,p-Xylene	102	2.00	"	100	ND	102	70-130			
o-Xylene	50.8	1.00	"	50.0	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	71		"	62.5		114	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

Origins Laboratory, Inc.



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.

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Jeremy Pike

Project Number: 008313054

Project: Noble - Karch Blue 30-3J South

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

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

Batch B9J1701 - EPA 5030B (Water)

Matrix Spike Dup (B9J1701-MSD1)		Source: Y910251-02			Prepared: 10/17/2019 Analyzed: 10/17/2019					
Benzene	45.4	1.00	ug/L	50.0	0.570	89.7	70-130	2.84	20	
Toluene	47.3	1.00	"	50.0	ND	94.6	70-130	0.594	20	
Ethylbenzene	48.4	1.00	"	50.0	0.090	96.6	70-130	2.25	20	
m,p-Xylene	99.4	2.00	"	100	ND	99.4	70-130	2.05	20	
o-Xylene	50.4	1.00	"	50.0	ND	101	70-130	0.750	20	
Surrogate: 1,2-Dichloroethane-d4	72		"	62.5		116	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.4	70-130			

Origins Laboratory, Inc.



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

Jeremy Pike
Project Number: 008313054
Project: Noble - Karch Blue 30-3J South

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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.