

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
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

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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)
MW03	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
	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
MW05	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
	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

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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)
MW05	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
	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
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
	1/31/2018	2.90	92.31	<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

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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
	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
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

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MW08	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
	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
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			
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			

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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

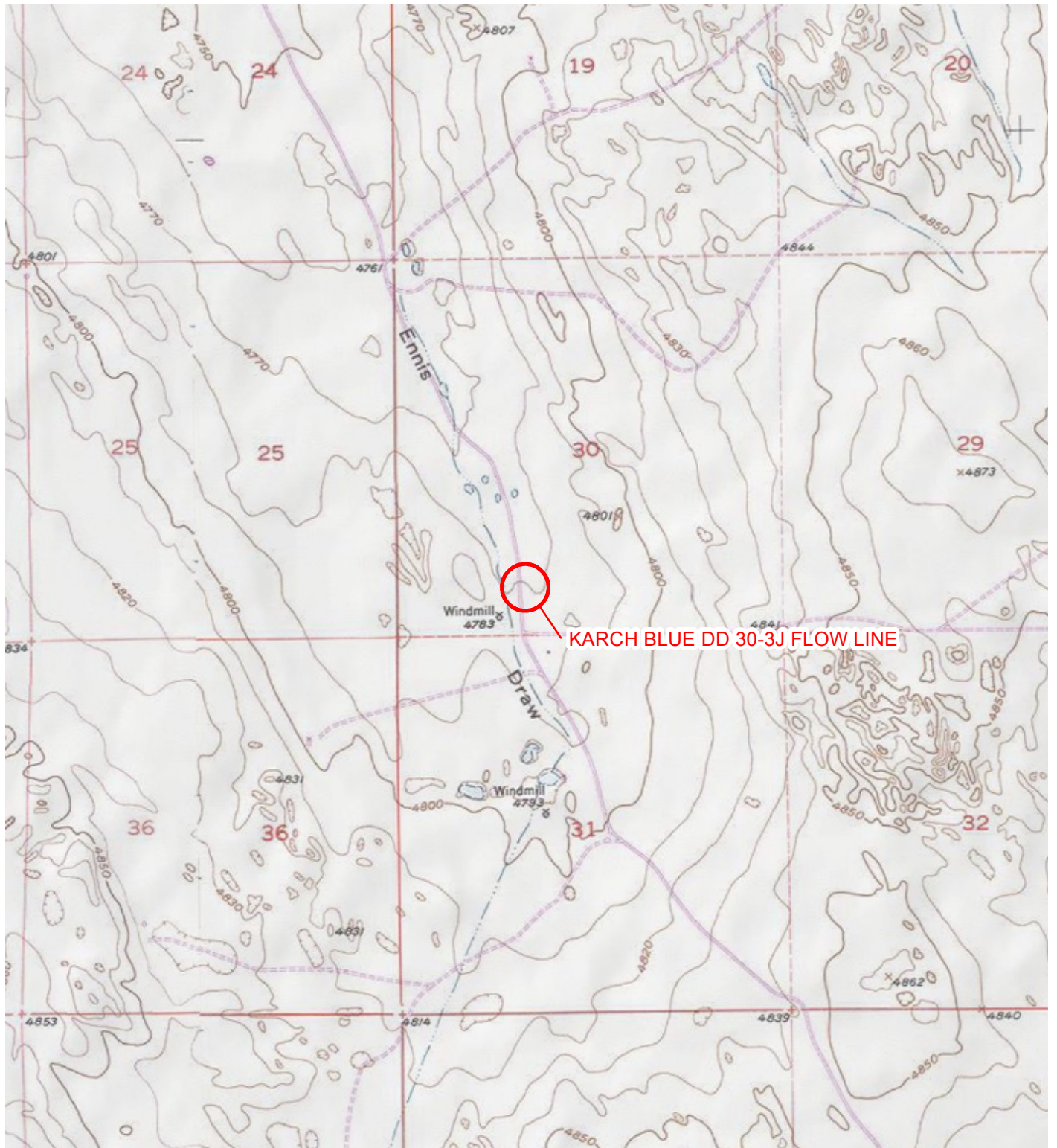


IMAGE COURTESY OF ESRI/USGS

LEGEND

○ SITE LOCATION

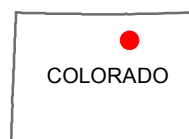
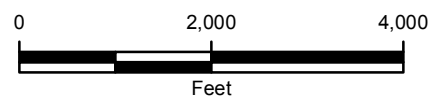


FIGURE 1
SITE LOCATION MAP
KARCH BLUE DD 30-3J FLOW LINE
E 1/2 SW 1/4 SEC 30-T3N-R63W
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.





LEGEND

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

— RELATIVE GROUNDWATER ELEVATION CONTOUR

CONTOUR INTERVAL = 0.10 FEET

GRADIENT = 0.012 FEET/FOOT

— UNDERGROUND UTILITIES

- - - EXCAVATION EXTENT

GROUNDWATER ELEVATIONS WERE MEASURED
APRIL 18, 2019

*MONITORING WELL MW06 WAS NOT
USED TO GENERATE RELATIVE
GROUNDWATER ELEVATION CONTOURS
FOR THIS SAMPLING EVENT.

IMAGE COURTESY OF GOOGLE EARTH 2016

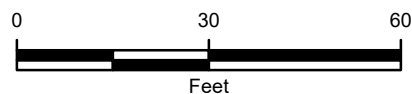


FIGURE 2
RELATIVE GROUNDWATER ELEVATION MAP - SOUTH
KARCH BLUE DD 30-3J FLOW LINE
E 1/2 SW 1/4 SEC 30-T3N-R63W
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.



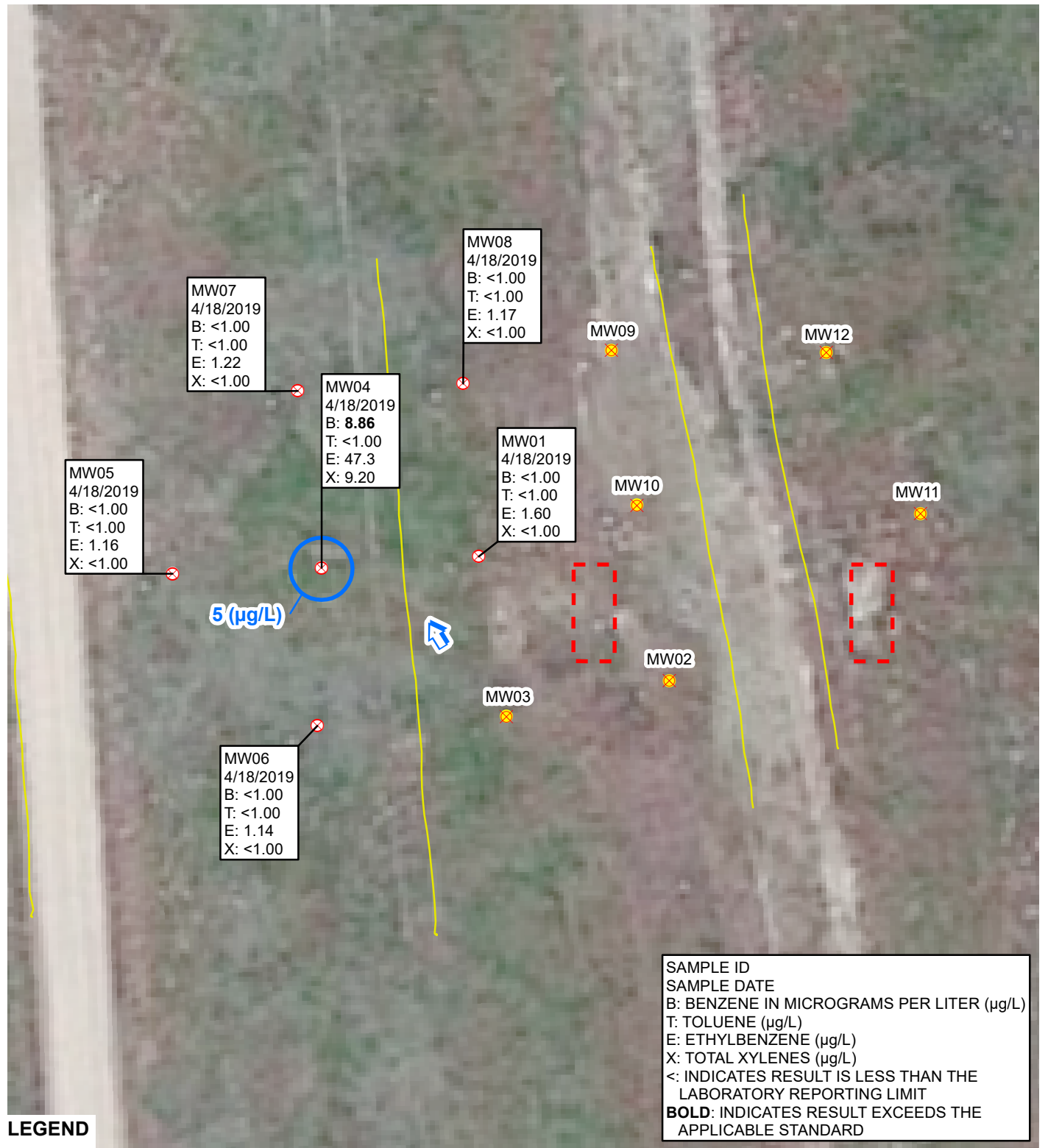


FIGURE 3
 GROUNDWATER ANALYTICAL RESULTS - SOUTH
 KARCH BLUE DD 30-3J FLOW LINE
 E 1/2 SW 1/4 SEC 30-T3N-R63W
 WELD COUNTY, COLORADO
 NOBLE ENERGY, INC.





April 23, 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. April 18, 2019. This project is associated with Origins project number Y904338-01.

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	Y904338-01	Water	April 18, 2019 11:00	04/18/2019 13:50
MW05	Y904338-02	Water	April 18, 2019 11:35	04/18/2019 13:50
MW06	Y904338-03	Water	April 18, 2019 12:00	04/18/2019 13:50
MW07	Y904338-04	Water	April 18, 2019 11:50	04/18/2019 13:50
MW08	Y904338-05	Water	April 18, 2019 11:20	04/18/2019 13:50
MW04	Y904338-06	Water	April 18, 2019 12:30	04/18/2019 13:50

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

www.originslaboratory.com

page 1 of 1

ORIGINS
LABORATORY, INC

1904338

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: *Hayden White*

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 #	Other		
MW001	4/18/19	1100	3	X				X			BTEX	1	
MW005		1135										2	
MW006		1200										3	
MW007		1150										4	
MW008		1120										5	
MW004		1230										6	
												7	
												8	
												9	
												10	
Relinquished By: <i>Hayden White</i>	Date: 4/18/19	Time: 1350	Received By: <i>[Signature]</i>	Date: 4/18/19	Time: 1350	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard							
Relinquished By:	Date:	Time:	Received By:	Date:	Time:								

Date Results Needed

11.0

Origins Laboratory, Inc.

Jefe Pellegrini

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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

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y904338

Client: LTE

Client Project ID: Noble - Karch Blue 30-3J South

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 4/19/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 11.0 °C / °C / °C (Describe)

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"/>		
<u>Excluded from Comments if any.</u>				

⁽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) JG

4/22/19
Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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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

MW01

4/18/2019 11:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y904338-01 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9D1908	KDK	04/19/2019	04/19/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	1.60	1.00	"	"	"	KDK	"	"	
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	106 %	70-130	"	"	"
Surrogate: Toluene-d8	108 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	103 %	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

MW05

4/18/2019 11:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

Y904338-02 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9D1908	KDK	04/19/2019	04/19/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	1.16	1.00	"	"	"	KDK	"	"	
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4

117 %

70-130

"

"

"

Surrogate: Toluene-d8

107 %

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

MW06

4/18/2019 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y904338-03 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9D1908	KDK	04/19/2019	04/19/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	1.14	1.00	"	"	"	KDK	"	"	
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	109 %	70-130			"	"	"
Surrogate: Toluene-d8	110 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	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

MW07

4/18/2019 11:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y904338-04 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9D1908	KDK	04/19/2019	04/19/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	1.22	1.00	"	"	"	KDK	"	"	
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"
Surrogate: Toluene-d8	112 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	103 %	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

MW08

4/18/2019 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y904338-05 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B9D1908	KDK	04/19/2019	04/19/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	1.17	1.00	"	"	"	KDK	"	"	
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"
Surrogate: Toluene-d8	108 %	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

MW04

4/18/2019 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y904338-06 (Water)

BTEX by EPA 8260D

Benzene	8.86	1.00	ug/L	1	B9D1908	KDK	04/19/2019	04/19/2019	
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	47.3	1.00	"	"	"	KDK	"	"	
Xylenes, total	9.20	1.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4

105 %

70-130

"

"

"

Surrogate: Toluene-d8

105 %

70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

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 B9D1908 - EPA 5030B (Water)										
Blank (B9D1908-BLK1)					Prepared: 04/19/2019 Analyzed: 04/19/2019					
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	65		"	62.5		105	70-130			
Surrogate: Toluene-d8	68		"	62.5		109	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 B9D1908 - EPA 5030B (Water)

LCS (B9D1908-BS1)

Prepared: 04/19/2019 Analyzed: 04/19/2019

Benzene	44.5	1.00	ug/L	50.0	89.0	70-130
Toluene	54.6	1.00	"	50.0	109	70-130
Ethylbenzene	54.2	1.00	"	50.0	108	70-130
m,p-Xylene	110	2.00	"	100	110	70-130
o-Xylene	52.7	1.00	"	50.0	105	70-130
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5	95.9	70-130
Surrogate: Toluene-d8	67		"	62.5	108	70-130
Surrogate: 4-Bromofluorobenzene	62		"	62.5	98.9	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
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Batch B9D1908 - EPA 5030B (Water)

Matrix Spike (B9D1908-MS1)		Source: Y904333-01			Prepared: 04/19/2019 Analyzed: 04/19/2019					
Benzene	44.5	1.00	ug/L	50.0	ND	89.0	70-130			
Toluene	56.5	1.00	"	50.0	ND	113	70-130			
Ethylbenzene	57.8	1.00	"	50.0	0.350	115	70-130			
m,p-Xylene	116	2.00	"	100	ND	116	70-130			
o-Xylene	56.3	1.00	"	50.0	ND	113	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.2	70-130			
Surrogate: Toluene-d8	68		"	62.5		109	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		100	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 B9D1908 - EPA 5030B (Water)

Matrix Spike Dup (B9D1908-MSD1)		Source: Y904333-01			Prepared: 04/19/2019 Analyzed: 04/19/2019					
Benzene	44.0	1.00	ug/L	50.0	ND	88.1	70-130	1.06	20	
Toluene	55.9	1.00	"	50.0	ND	112	70-130	1.10	20	
Ethylbenzene	58.1	1.00	"	50.0	0.350	116	70-130	0.673	20	
m,p-Xylene	117	2.00	"	100	ND	117	70-130	0.549	20	
o-Xylene	56.5	1.00	"	50.0	ND	113	70-130	0.301	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		98.3	70-130			
Surrogate: Toluene-d8	69		"	62.5		110	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

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.



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