



## GROUNDWATER MONITORING REPORT DECEMBER 2014

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### CHESNUT G 22-6 TANK BATTERY COGCC REMEDIATION #4316

LT Environmental, Inc. (LTE), under the direction of Noble Energy, Inc. (Noble), conducted groundwater monitoring activities at the Chesnut G 22-6 Tank Battery (Site). The Site is located 0.48 miles south of County Road 44 and 0.07 miles east of County Road 43 in Weld County, Colorado. The legal site description is the southwest quarter of the northwest quarter of Section 22, Township 4 North, Range 65 West, 6<sup>th</sup> Principal Meridian. The Site Location Map is provided as Figure 1.

Site history and remediation activities were described in preceding reports, including Phase I and Phase II of the remediation program which involved excavation source removal and operation of an air sparging and soil vapor extraction (AS/SVE) system, respectively. Phase III of the remediation program included subsurface injections of Chemically Oxygenated Granular Activated Carbon (COGAC<sup>TM</sup>), which is designed for *in-situ* remediation of petroleum hydrocarbon under aerobic conditions.

On January 9 through February 18, 2009, soil borings MW01 through MW30 were completed as temporary monitoring wells. On July 9, 2010, destroyed monitoring wells MW08, MW09, and MW17 were replaced with monitoring wells MW08R, MW09R, and MW17R, respectively. On July 16, 2010, destroyed monitoring well MW01 was replaced with MW01R. On March 11, 2011, destroyed monitoring wells MW18 and MW19 were replaced with monitoring wells MW18R and MW19R, and two new monitoring wells (MW31 and MW32) were installed to delineate the potential extent of dissolved-phase petroleum hydrocarbon impact. On February 17, 2012, destroyed monitoring wells MW16 and MW23 were replaced with monitoring wells MW16R and MW23R. On March 4, 2013, destroyed monitoring well MW03 was replaced with MW03R.

### Groundwater Monitoring and Results

On December 31, 2014, and January 8, 2015, under the direction of Noble, LTE personnel conducted groundwater monitoring activities in 17 monitoring wells (MW01R, MW02, MW03R, MW04 through MW07, MW08R, MW09R, MW10 through MW13, MW15, MW16R, MW17R, and MW23R). Prior to purging, depth to groundwater was measured and recorded for calculating well-specific target purge volumes and relative groundwater elevations. Depth to groundwater ranged from 7.58 feet below top of casing (btoc) in monitoring well MW04 to 13.02 feet btoc in monitoring well MW08R. Groundwater was calculated to flow east with an average hydraulic gradient of 0.044 feet per foot. Relative groundwater elevations are presented on Figure 2 and summarized in Table 1. Following purging, samples were collected, placed on ice, then submitted with a completed chain of custody form to Origins Laboratory, Inc. of Denver, Colorado, for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency Method 8260C.

The Colorado Department of Public Health and Environment-Water Quality Control Commission has established Regulation 41-The Basic Standards for Ground Water (WQCC Reg 41) for BTEX at 5.0 micrograms per liter ( $\mu\text{g/L}$ ), 560  $\mu\text{g/L}$ , 700  $\mu\text{g/L}$ , and 1,400  $\mu\text{g/L}$ , respectively. Groundwater analytical results indicated monitoring well MW05 exceeded the WQCC Reg 41 standard for benzene at a concentration of 25.4  $\mu\text{g/L}$ . All remaining analytical results were in compliance with applicable WQCC Reg 41 standards. Groundwater analytical results are presented on Figure 3 and summarized in Table 1. The laboratory analytical reports are attached.

### **Groundwater Monitoring Program**

Due to a documented reduction in benzene plume size by a minimum of four quarters of groundwater monitoring results in compliance with applicable WQCC Reg 41 standards, Noble requests a reduction in the monitoring wells included in the current groundwater monitoring program and proposes continued sampling at monitoring wells MW02, MW03R, MW04, MW05, MW06, MW10, MW11, MW15, MW16R, MW17R, and MW23R.

### **Site Summary**

LTE, under the direction of Noble, will continue to conduct quarterly groundwater monitoring with the goal of obtaining four consecutive quarters with laboratory groundwater analytical results in compliance with applicable WQCC Reg 41 standards. The next quarterly groundwater monitoring event is scheduled for March 2015. Further remediation efforts will be discussed in future correspondence.

## FIGURES

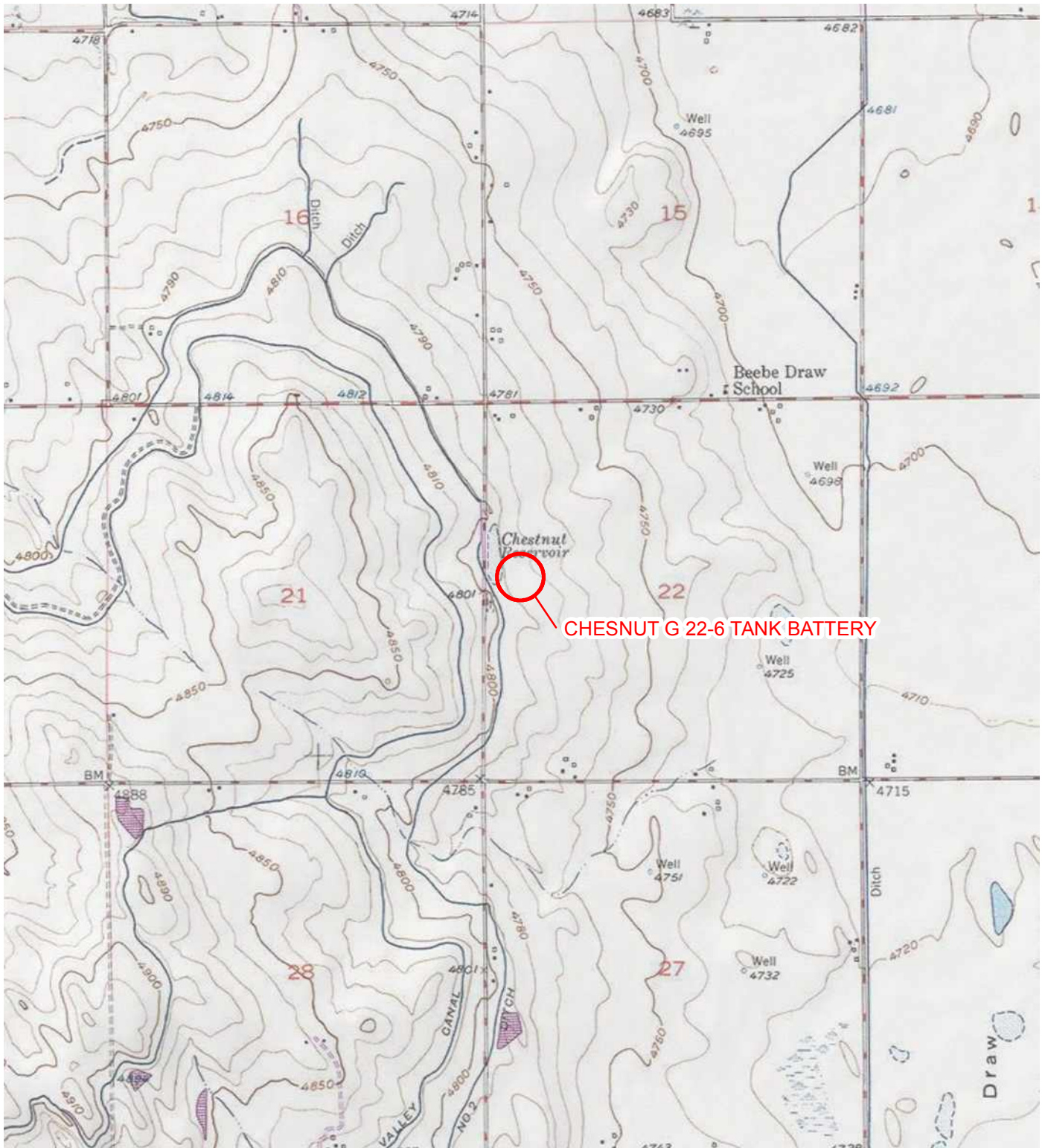
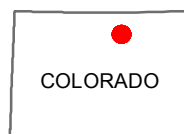
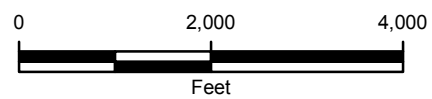


IMAGE COURTESY OF ESRI/USGS

# LEGEND

○ SITE LOCATION



COLORADO

FIGURE 1  
SITE LOCATION MAP  
CHESNUT G 22-6 TANK BATTERY  
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.

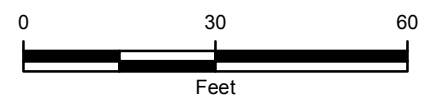






**LEGEND**

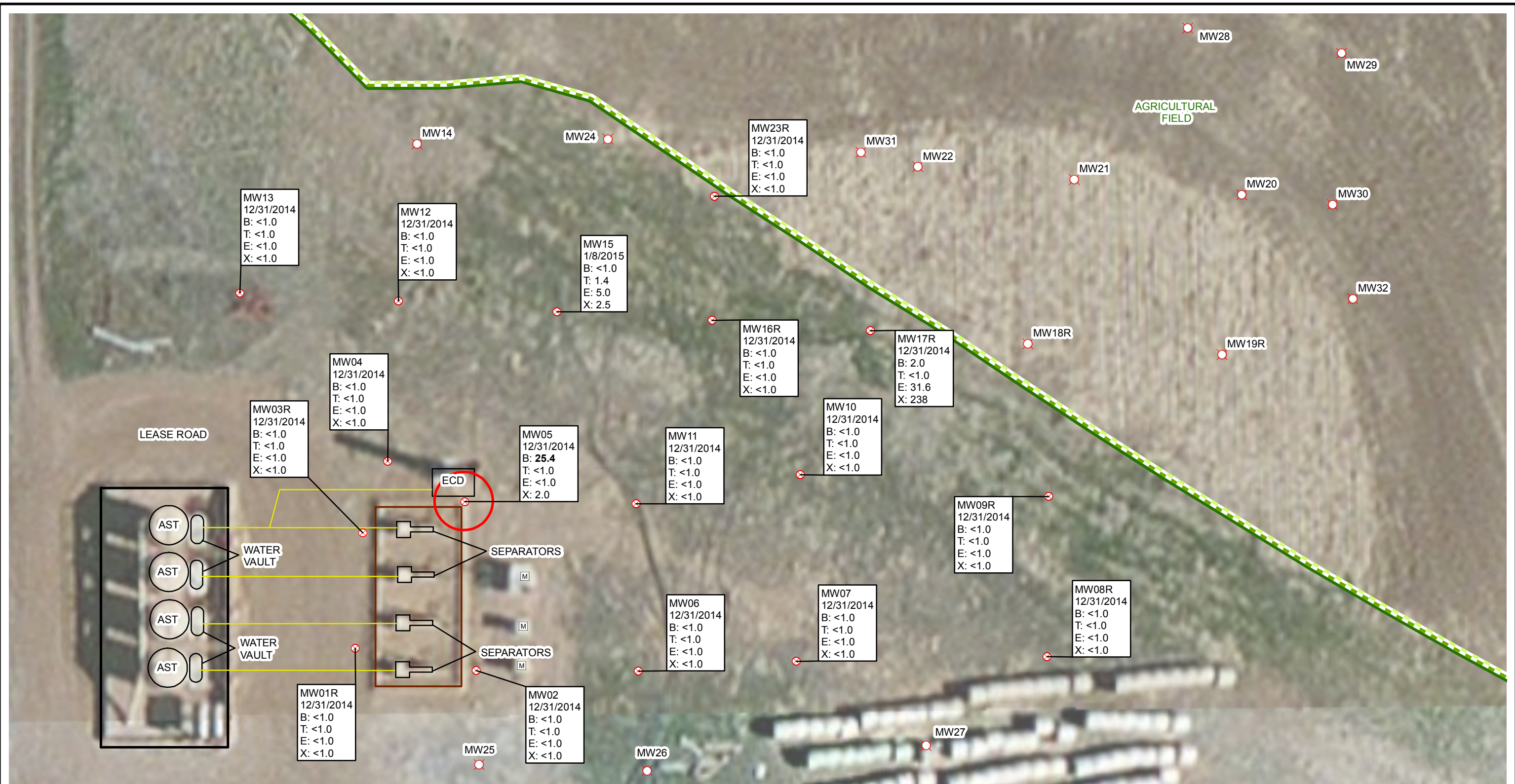
- |                                       |   |                               |
|---------------------------------------|---|-------------------------------|
| MONITORING WELL                       | UNDERGROUND UTILITY   | METAL BERM                    |
| ABANDONED/DESTROYED MONITORING WELL   | AGRICULTURAL FIELD BOUNDARY   | DIRT BERM                     |
| METER HOUSE                           | RELATIVE GROUNDWATER ELEVATION CONTOUR IN FEET<br>CONTOUR INTERVAL = 2 FEET<br>GRADIENT = 0.044 FEET/FOOT | AST: ABOVEGROUND STORAGE TANK |
| CALCULATED GROUNDWATER FLOW DIRECTION |   | ECD: EMISSION CONTROL DEVICE  |



**FIGURE 2**  
RELATIVE GROUNDWATER ELEVATION MAP  
DECEMBER 31, 2014 & JANUARY 8, 2015  
CHESNUT G 22-6 TANK BATTERY  
WELD COUNTY, COLORADO  
**NOBLE ENERGY, INC.**







**LEGEND**

- ⊗ MONITORING WELL
- ⊗ ABANDONED/DESTROYED MONITORING WELL
- Ⓜ METER HOUSE
- UNDERGROUND UTILITY
- AGRICULTURAL FIELD BOUNDARY
- METAL BERM
- DIRT BERM
- AST: ABOVEGROUND STORAGE TANK
- ECD: EMISSIONS CONTROL DEVICE
- DECEMBER 2014 BENZENE ISOCONCENTRATION CONTOUR (5 µg/L)

SAMPLE ID  
SAMPLE DATE  
B: BENZENE IN MICROGRAMS PER LITER (µg/L)  
T: TOLUENE (µg/L)  
E: ETHYLBENZENE (µg/L)  
X: TOTAL XYLENES (µg/L)  
<: LESS THAN LABORATORY METHOD DETECTION LIMIT  
**BOLD INDICATES RESULT EXCEEDS APPLICABLE STANDARD**



**FIGURE 3**  
**GROUNDWATER ANALYTICAL RESULTS**  
**DECEMBER 31, 2014 & JANUARY 8, 2015**  
**CHESNUT G 22-6 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**



## **TABLES**

TABLE 1

**GROUNDWATER ANALYTICAL RESULTS**  
**CHESNUT G 22-6 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**

Monitoring Well	Date	Depth to Water/<LNAPL> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW01	1/13/2009	15.11	NM	<b>26,400</b>	<b>8,320</b>	536	<b>8,800</b>
	3/5/2010	14.60	NM	<b>26,100</b>	<b>6,270</b>	666	<b>11,090</b>
MW01R	12/2/2010	8.68	88.25	<b>5,600</b>	161	37.1	<b>1,550</b>
	3/14/2011	15.33	81.60	<b>1,010</b>	<1.00	<1.00	12.8
	6/2/2011	9.89	87.04	<b>1,080</b>	<1.0	13.5	<b>1,400</b>
	9/12/2011	2.96	93.97	<b>1,560</b>	<1.0	84.5	<b>1,510</b>
	12/9/2011	7.80	89.13	<b>427</b>	<1.0	34.5	945
	3/22/2012	13.50	83.43	<1.0	4.17	<1.0	<1.0
	6/8/2012	4.56	92.37	<b>5.8</b>	<1	<1	19.3
	9/18/2012	4.04	92.89	<b>7.1</b>	<1.0	3.1	100
	12/3/2012	6.53	90.40	<1.0	<1.0	<1.0	<1.0
	3/22/2013	13.78	83.15	<1.0	<1.0	<1.0	2.89
	6/18/2013	5.35	91.58	<1.0	<1.0	<1.0	<1.0
	9/17/2013	1.60	95.33	<1.0	<1.0	<1.0	<1.0
	12/11/2013	8.41	88.52	<1.0	<1.0	1.12	4.16
	3/4/2014	13.79	83.14	<1.0	<1.0	<1.0	<1.0
	6/27/2014	4.18	92.75	<1.0	<1.0	<1.0	<1.0
	9/24/2014	3.35	93.58	<1.0	<1.0	<1.0	<1.0
	12/31/2014	8.20	88.73	<1.0	<1.0	<1.0	<1.0
MW02	1/13/2009	15.12	83.02	<b>3,460</b>	<b>1,420</b>	199	<b>6,120</b>
	3/5/2010	15.95	82.19	<b>857</b>	3.61	151	<b>1,448.61</b>
	9/20/2010	6.00	92.14	<b>338</b>	<1.0	104	<b>2,256.14</b>
	12/2/2010	10.04	88.10	<b>125</b>	<1.0	147	<b>1,590</b>
	3/14/2011	16.40	81.74	<b>37.4</b>	<1.00	22.0	266
	6/2/2011	13.02	85.12	<1.0	<1.0	<1.0	<3.0
	9/12/2011	5.38	92.76	4.9	<1.0	2.4	9.5
	12/9/2011	10.00	88.14	<1.0	<1.0	2.17	20.4
	3/22/2012	16.19	81.95	1	2.36	9.88	47.2
	6/8/2012	7.45	90.69	<1	<1	<1	<1
	9/18/2012	6.97	91.17	<1.0	<1.0	<1.0	2.1
	12/3/2012	8.49	89.65	<1.0	<1.0	<1.0	<1.0
	3/18/2013	15.99	82.15	<1.0	<1.0	14.8	60.3
	6/18/2013	7.62	90.52	<1.0	<1.0	<1.0	<1.0
	9/17/2013	3.46	94.68	<1.0	<1.0	<1.0	<1.0
	12/11/2013	10.39	87.75	<1.0	<1.0	<1.0	<1.0
	3/4/2014	16.18	81.96	<1.0	<1.0	12.9	25.8
	6/27/2014	6.60	91.54	<1.0	<1.0	<1.0	<1.0
	9/24/2014	3.25	94.89	<1.0	<1.0	<1.0	<1.0
	12/31/2014	10.64	87.50	<1.0	<1.0	<1.0	<1.0
MW03	1/13/2009	15.06	NM	<b>11,700</b>	<b>7,860</b>	195	<b>5,950</b>
Monitoring well destroyed							



TABLE 1 (Continued)

**GROUNDWATER ANALYTICAL RESULTS**  
**CHESNUT G 22-6 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**

Monitoring Well	Date	Depth to Water/<LNAPL> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW03R	3/18/2013	17.72	NM	<2.0	<2.0	1.98	27.5
	6/18/2013	10.33	87.92	<1.0	<1.0	<1.0	<1.0
	9/17/2013	5.84	92.41	1.2	<1.0	<1.0	<1.0
	12/11/2013	12.71	85.54	<1.0	<1.0	<1.0	<1.0
	3/4/2014	17.72	80.53	1.9	<1.0	<1.0	<1.0
	6/27/2014	8.70	89.55	<1.0	<1.0	<1.0	<1.0
	9/24/2014	7.78	90.47	1.8	<1.0	<1.0	<1.0
	12/31/2014	7.62	90.63	<1.0	<1.0	<1.0	<1.0
MW04	1/13/2009	13.13	84.15	<b>19,700</b>	<b>7,460</b>	555	<b>9,990</b>
	3/5/2010	15.71	81.57		Not sampled - Sheen on water		
	9/20/2010	3.70	93.58	<b>563</b>	<10.0	<10.0	<b>6,027</b>
	12/2/2010	9.33	87.95	<b>664</b>	42	19.1	<b>4,710</b>
	3/14/2011	14.94	82.34	<b>713</b>	<10.0	113	<b>6,510</b>
	6/2/2011	9.10	88.18	<b>233</b>	<1.0	31.8	457
	9/12/2011	3.40	93.88	<b>23.8</b>	<1.0	6.8	124
	12/9/2011	9.60	87.68	<b>57.2</b>	<1.0	3.62	90.3
	3/22/2012	14.21	83.07	<b>295</b>	5.33	5.99	53.7
	6/8/2012	4.57	92.71	<b>14.3</b>	<1	<1	14.4
	9/18/2012	3.32	93.96	3.5	<1.0	1.3	59.0
	12/3/2012	8.80	88.48	<1.0	<1.0	<1.0	<1.0
	3/18/2013	13.83	83.45	<b>10.2</b>	<1.0	1.49	6.27
	6/18/2013	5.54	91.74	<b>27.7</b>	<1.0	<1.0	<1.0
	9/17/2013	1.07	96.21	1.39	<1.0	1.27	3.68
	12/11/2013	8.69	88.59	1.26	<1.0	<1.0	<1.0
	3/4/2014	13.20	84.08	1.9	<1.0	1.3	<1.0
	6/27/2014	4.02	93.26	2.6	<1.0	<1.0	<1.0
	9/24/2014	3.63	93.65	<1.0	<1.0	<1.0	<1.0
	12/31/2014	7.58	89.70	<1.0	<1.0	<1.0	<1.0
MW05	1/13/2009	14.58	82.39	<b>15,500</b>	<b>14,900</b>	412	<b>6,860</b>
	3/5/2010	16.06	80.91		Not sampled - LNAPL present		
	9/20/2010	6.60	90.37	<b>12,700</b>	<b>1,500</b>	522	<b>8,190</b>
	12/2/2010	10.48	86.49	<b>14,700</b>	185	122	<b>5,650</b>
	3/14/2011	16.16	80.81	<b>67.9</b>	<1.00	<1.00	112
	6/2/2011	13.25	83.72	<b>143</b>	<1.0	<1.0	13.0
	9/12/2011	5.96	91.01	<b>5,050</b>	22.5	59.1	<b>2,680</b>
	12/9/2011	10.70	86.27	<b>8,790</b>	10.6	<10.0	659
	3/22/2012	--	--		Not Sampled - Dry		
	6/8/2012	8.36	88.61	<b>337</b>	<1	<1	4.4
	9/18/2012	7.68	89.29	<b>1,249</b>	1.1	3.8	59.3
	12/3/2012	10.08	86.89	<1.0	<1.0	<1.0	<1.0
	3/18/2013	16.25	80.72	<1.3	<1.3	<1.3	<4.0

TABLE 1 (Continued)

**GROUNDWATER ANALYTICAL RESULTS**  
**CHESNUT G 22-6 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**

Monitoring Well	Date	Depth to Water/<LNAPL> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW05	6/18/2013	9.58	87.39	2.44	<1.0	<1.0	1.88
	9/17/2013	4.21	92.76	<b>7.97</b>	<1.0	<1.0	2.27
	12/11/2013	10.70	86.27	<b>155</b>	<1.0	<1.0	6.04
	3/4/2014	15.92	81.05	<b>49.8</b>	<1.0	<1.0	<1.0
	6/27/2014	7.80	89.17	<b>88.1</b>	<1.0	1.1	6.3
	9/24/2014	6.39	90.58	<b>182</b>	1.0	2.6	12.5
	12/31/2014	10.25	86.72	<b>25.4</b>	<1.0	<1.0	2.0
MW06	2/19/2009	17.24	80.10	<b>305</b>	15.8	167	<b>2,476</b>
	3/5/2010	16.47	80.87	1.27	<1.0	8.77	9.60
	9/20/2010	6.95	90.39	<1.0	<1.0	3.51	13.0
	12/2/2010	11.01	86.33	<1.0	<1.0	28.8	205
	3/14/2011	16.91	80.43	<1.00	<1.00	42.8	317
	6/2/2011	14.30	83.04	<1.0	<1.0	2.1	4.9
	9/12/2011	6.51	90.83	<1.0	<1.0	<1.0	<3.0
	12/9/2011	10.80	86.54	<1.0	<1.0	<1.0	<3.0
	3/22/2012	17.08	80.26	<1.0	<1.0	1.46	4.9
	6/8/2012	9.22	88.12	<1	<1	<1	<1
	9/18/2012	8.21	89.13	<1.0	<1.0	<1.0	<1.0
	12/3/2012	9.50	87.84	<1.0	<1.0	<1.0	<1.0
	3/18/2013	16.70	80.64	<1.0	<1.0	2.84	8.79
	6/18/2013	8.89	88.45	<1.0	<1.0	<1.0	<1.0
	9/17/2013	4.23	93.11	<1.0	<1.0	<1.0	<1.0
	12/11/2013	11.36	85.98	<1.0	<1.0	<1.0	<1.0
	3/4/2014	16.94	80.40	1.1	<1.0	<1.0	<1.0
	6/27/2014	7.84	89.50	<1.0	<1.0	<1.0	<1.0
	9/24/2014	7.26	90.08	<1.0	<1.0	<1.0	<1.0
	12/31/2014	11.64	85.70	<1.0	<1.0	<1.0	<1.0
MW07	2/19/2009	19.18	75.41	3.99	7.09	64.1	288.67
	3/5/2010	15.93	78.66	<b>5.47</b>	<1.0	4.11	55.02
	9/20/2010	7.35	87.24	<1.0	<1.0	<1.0	<3.0
	12/2/2010	10.32	84.27	<1.0	<1.0	<1.0	<1.0
	3/14/2011	16.12	78.47	<1.00	<1.00	<1.00	<3.00
	6/2/2011	14.59	80.00	<1.0	<1.0	<1.0	<3.0
	9/12/2011	6.25	88.34	<1.0	<1.0	<1.0	<3.0
	12/9/2011	NM	NM	Could not locate monitoring well			
	3/22/2012	16.42	78.17	<1.0	<1.0	<1.0	<1.0
	6/8/2012	8.65	85.94	<1	<1	<1	<1
	9/18/2012	8.12	86.47	<1.0	<1.0	<1.0	<1.0
	12/3/2012	9.14	85.45	<1.0	<1.0	<1.0	<1.0
	3/18/2013	16.13	78.46	<1.0	<1.0	<1.0	<3.0
	6/18/2013	8.72	85.87	<1.0	<1.0	<1.0	<1.0

TABLE 1 (Continued)

**GROUNDWATER ANALYTICAL RESULTS**  
**CHESNUT G 22-6 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**

Monitoring Well	Date	Depth to Water/<LNAPL> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW07	9/17/2013	3.62	90.97	<1.0	<1.0	<1.0	<1.0
	12/11/2013	10.54	84.05	<1.0	<1.0	<1.0	<1.0
	3/4/2014	16.08	78.51	<1.0	<1.0	<1.0	<1.0
	6/27/2014	7.85	86.74	<1.0	<1.0	<1.0	<1.0
	9/24/2014	5.95	88.64	<1.0	<1.0	<1.0	<1.0
	12/31/2014	11.75	82.84	<1.0	<1.0	<1.0	<1.0
MW08	2/19/2009	18.03	NM	<b>34.3</b>	<b>2,000</b>	202	<b>4,213</b>
MW08R	9/20/2010	10.90	83.61	1.21	<1.0	118	657.4
	12/2/2010	12.94	81.57	<1.0	<1.0	<1.0	119
	3/14/2011	18.61	75.90	<1.00	<1.00	<1.00	1,070
	6/2/2011	17.80	76.71	<1.0	<1.0	207	587
	9/12/2011	9.66	84.85	<1.0	<1.0	44.6	241
	12/9/2011	12.67	81.84	<1.0	<1.0	9.99	68.6
	3/22/2012	18.67	75.84	<1.0	8.37	16.3	109
	6/8/2012	11.99	82.52	<1	<1	1.7	26.1
	9/18/2012	11.34	83.17	<1.0	<1.0	1.5	4.5
	12/3/2012	11.88	82.63	<1.0	<1.0	2.65	20.2
	3/22/2013	18.68	75.83	<1.0	<1.0	8.47	103
	6/18/2013	12.10	82.41	<1.0	<1.0	1.98	6.85
	9/17/2013	7.41	87.10	<1.0	<1.0	1.65	4.80
	12/11/2013	12.78	81.73	<1.0	<1.0	<1.0	<1.0
	3/4/2014	18.23	76.28	<1.0	<1.0	5.0	14.9
	6/27/2014	11.35	83.16	<1.0	<1.0	<1.0	<1.0
	9/24/2014	9.21	85.30	<1.0	<1.0	<1.0	<1.0
	12/31/2014	13.02	81.49	<1.0	<1.0	<1.0	<1.0
MW09	2/19/2009	18.96	NM	<b>1,250</b>	23	19.0	25.28
MW09R	9/20/2010	10.75	82.99	<b>3,350</b>	<1.0	368	<b>1,891.7</b>
	12/2/2010	12.79	80.95	<b>10.2</b>	<10.0	85.2	392
	3/14/2011	17.67	76.07	<b>422</b>	<1.0	200	644
	6/2/2011	17.02	76.72	<b>902</b>	<1.0	303	<b>1,490</b>
	9/12/2011	9.57	84.17	1.1	<1.0	128	609
	12/9/2011	12.50	81.24	1.79	<1.0	13.7	28.5
	3/22/2012	17.81	75.93	1.64	8	14.5	43.4
	6/8/2012	12.34	81.4	<1	<1	5.9	8.9
	9/18/2012	11.43	82.31	<1.0	<1.0	<1.0	<1.0
	12/3/2012	12.00	81.74	<1.0	<1.0	<1.0	<1.0
	3/22/2013	17.92	75.82	<1.0	<1.0	<1.0	<1.0
	6/18/2013	12.70	81.04	<1.0	<1.0	12.7	16
	9/17/2013	7.32	86.42	<1.0	<1.0	<1.0	<1.0
	12/11/2013	12.50	81.24	<1.0	<1.0	<1.0	<1.0
	3/4/2014	17.36	76.38	<1.0	<1.0	<1.0	<1.0



TABLE 1 (Continued)

**GROUNDWATER ANALYTICAL RESULTS**  
**CHESNUT G 22-6 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**

Monitoring Well	Date	Depth to Water/<LNAPL> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW09R	6/27/2014	11.66	82.08	<1.0	<1.0	<1.0	<1.0
	9/24/2014	9.40	84.34	<1.0	<1.0	<1.0	<1.0
	12/31/2014	12.67	81.07	<1.0	<1.0	<1.0	<1.0
MW10	2/19/2009	17.34	76.83	<b>10,300</b>	374	412	<b>2,435</b>
	3/5/2010	16.46	77.71	<b>9,790</b>	581	452	<b>3,707</b>
	9/20/2010	7.70	86.47	<b>4,130</b>	50.0	434	<b>4,280</b>
	12/2/2010	10.83	83.34	<b>1,560</b>	<10.0	33.5	1,100
	3/14/2011	12.25	81.92	<b>1,070</b>	<1.00	12.6	476
	6/2/2011	12.35	81.82	<1.0	<1.0	<1.0	<3.0
	9/12/2011	7.01	87.16	<b>310</b>	<1.0	107	250
	12/9/2011	10.62	83.55	<b>243</b>	<1.0	53.2	279
	3/22/2012	16.37	77.80	<b>30.3</b>	1.75	<1.0	<1.0
	6/8/2012	9.60	84.57	<b>18.2</b>	<1	<1	<1
	9/18/2012	8.78	85.39	<1.0	<1.0	<1.0	<1.0
	12/3/2012	10.02	84.15	<1.0	<1.0	<1.0	<1.0
	3/18/2013	16.30	77.87	<1.0	<1.0	<1.0	<3.0
	6/18/2013	10.34	83.83	<b>28.8</b>	<1.0	<1.0	<1.0
	9/17/2013	4.09	90.08	<1.0	<1.0	<1.0	<1.0
	12/11/2013	10.78	83.39	<1.0	<1.0	<1.0	<1.0
	3/4/2014	15.95	78.22	<1.0	<1.0	<1.0	<1.0
	6/27/2014	9.06	85.11	2.2	<1.0	<1.0	<1.0
	9/24/2014	7.09	87.08	1.7	<1.0	<1.0	<1.0
	12/31/2014	10.67	83.50	<1.0	<1.0	<1.0	<1.0
MW11	2/19/2009	17.67	78.49	<b>6,130</b>	48.5	43.4	818.6
	3/5/2010	16.38	79.78	<b>10,500</b>	<1.0	10.1	497
	9/20/2010	7.20	88.96	<b>2,670</b>	<1.0	<1.0	235.88
	12/2/2010	11.55	84.61	<b>835</b>	<10.0	<10.0	57.1
	3/14/2011	16.27	79.89	<b>180</b>	<1.00	<1.00	<3.00
	6/2/2011	13.82	82.34	<1.0	<1.0	<1.0	<3.0
	9/12/2011	7.11	89.05	<1.0	<1.0	<1.0	<3.0
	12/9/2011	11.31	84.85	<1.0	<1.0	<1.0	<3.0
	3/22/2012	16.85	79.31	<1.0	2	<1.0	<1.0
	6/8/2012	9.76	86.40	<1	<1	<1	<1
	9/18/2012	8.87	87.29	<1.0	<1.0	<1.0	<1.0
	12/3/2012	10.78	85.38	<1.0	<1.0	<1.0	<1.0
	3/18/2013	16.98	79.18	<1.0	<1.0	<1.0	<3.0
	6/18/2013	10.55	85.61	<1.0	<1.0	<1.0	<1.0
	9/17/2013	4.61	91.55	<1.0	<1.0	<1.0	<1.0
	12/11/2013	11.42	84.74	<1.0	<1.0	<1.0	<1.0
	3/4/2014	16.35	79.81	<1.0	<1.0	<1.0	<1.0
	6/27/2014	8.92	87.24	<1.0	<1.0	<1.0	<1.0

TABLE 1 (Continued)

**GROUNDWATER ANALYTICAL RESULTS**  
**CHESNUT G 22-6 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**

Monitoring Well	Date	Depth to Water/<LNAPL> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW11	9/24/2014	7.33	88.83	<1.0	<1.0	<1.0	<1.0
	12/31/2014	11.32	84.84	<1.0	<1.0	<1.0	<1.0
MW12	2/19/2009	14.81	81.95	<b>1,970</b>	257	138	423
	3/5/2010	14.63	82.13	<b>465</b>	24.5	42.7	199.9
	9/20/2010	4.10	92.66	<b>9.92</b>	<1.0	<1.0	171.07
	12/2/2010	13.41	83.35	<1.0	<1.0	<1.0	<1.0
	3/14/2011	14.91	81.85	2.35	<1.00	13.5	250
	6/2/2011	10.42	86.34	<1.0	<1.0	<1.0	<3.0
	9/12/2011	3.47	93.29	<b>58.7</b>	<1.0	<1.0	6.4
	12/9/2011	10.35	86.41	<1.0	<1.0	<1.0	<3.0
	3/22/2012	15.25	81.51	<1.0	2	1.4	4.98
	6/8/2012	5.76	91.00	<b>12.8</b>	<1	3.7	13.7
	9/18/2012	4.41	92.35	<1.0	<1.0	<1.0	1.4
	12/3/2012	10.34	86.42	<1.0	<1.0	<1.0	<1.0
	3/18/2013	15.33	81.43	<1.0	<1.0	1.41	<3.0
	6/18/2013	8.31	88.45	<b>19.8</b>	<1.0	<1.0	<1.0
	9/17/2013	2.40	94.36	1.13	<1.0	<1.0	<1.0
	12/11/2013	10.07	86.69	<1.0	<1.0	<1.0	<1.0
	3/4/2014	14.35	82.41	<1.0	<1.0	<1.0	<1.0
	6/27/2014	5.38	91.38	3.3	<1.0	<1.0	<1.0
	9/24/2014	5.13	91.63	1.1	<1.0	<1.0	<1.0
	12/31/2014	8.89	87.87	<1.0	<1.0	<1.0	<1.0
MW13	2/19/2009	15.13	83.32	<1.0	<1.0	<1.0	<3.0
	3/5/2010	15.11	83.34	<1.0	<1.0	<1.0	<3.0
	9/20/2010	3.80	94.65	<1.0	<1.0	<1.0	<3.0
	12/2/2010	10.60	87.85	<1.0	<1.0	<1.0	<1.0
	3/14/2011	15.21	83.24	<1.00	<1.00	<1.00	<3.00
	6/2/2011	7.41	91.04	<1.0	<1.0	<1.0	<3.0
	9/12/2011	2.94	95.51	<1.0	<1.0	<1.0	<3.0
	12/9/2011	11.04	87.41	<1.0	<1.0	<1.0	<3.0
	3/22/2012	15.73	82.72	<1.0	1.87	<1.0	<1.0
	6/8/2012	5.01	93.44	<1	<1	<1	<1
	9/18/2012	3.77	94.68	<1.0	<1.0	<1.0	<1.0
	12/3/2012	10.90	87.55	<1.0	<1.0	<1.0	<1.0
	3/18/2013	15.76	82.69	<1.0	<1.0	<1.0	<3.0
	6/18/2013	7.36	91.09	<1.0	<1.0	<1.0	<1.0
	9/17/2013	2.48	95.97	<1.0	<1.0	<1.0	<1.0
	12/11/2013	10.68	87.77	<1.0	<1.0	<1.0	<1.0
	3/4/2014	14.81	83.64	<1.0	<1.0	<1.0	<1.0
	6/27/2014	4.70	93.75	<1.0	<1.0	<1.0	<1.0

TABLE 1 (Continued)

**GROUNDWATER ANALYTICAL RESULTS**  
**CHESNUT G 22-6 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**

Monitoring Well	Date	Depth to Water/<LNAPL> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW13	9/24/2014	4.85	93.60	<1.0	<1.0	<1.0	<1.0
	12/31/2014	9.23	89.22	<1.0	<1.0	<1.0	<1.0
MW14	2/19/2009	14.32	NM	<1.0	<1.0	<1.0	<3.0
Monitoring well destroyed							
MW15	2/19/2009	14.95	78.55	<b>2,490</b>	<b>3,380</b>	150	<b>1,732</b>
	3/5/2010	13.00	80.50	<b>998</b>	<b>1,890</b>	141	<b>2,026</b>
	9/20/2010	2.80	90.70	<b>107</b>	<1.0	<1.0	417.3
	12/2/2010	8.24	85.26	<b>133</b>	<1.0	<1.0	470
	3/14/2011	12.96	80.54	<b>181</b>	<1.00	135	<b>1,580</b>
	6/2/2011	7.44	86.06	<b>35.4</b>	<1.0	15.6	308
	9/12/2011	2.44	91.06	<b>15.2</b>	<1.0	29.1	249
	12/9/2011	10.30	83.20	<1.0	<1.0	<1.0	<3.0
	3/22/2012	15.31	78.19	<1.0	2.09	<1.0	<1.0
	6/8/2012	5.40	88.10	<1	<1	<1	<1
	9/18/2012	6.38	87.12	<1.0	<1.0	<1.0	<1.0
	12/3/2012	10.06	83.44	<1.0	<1.0	<1.0	<1.0
	3/18/2013	13.81	79.69	<b>36.9</b>	<1.0	60.5	84.6
	6/18/2013	9.20	84.30	<1.0	<1.0	<1.0	<1.0
	9/17/2013	1.02	92.48	<b>7.73</b>	<1.0	9.72	21.9
	12/11/2013	10.16	83.34	<1.0	<1.0	<1.0	<1.0
	3/4/2014	14.58	78.92	<1.0	<1.0	<1.0	<1.0
	6/27/2014	6.85	86.65	<1.0	<1.0	<1.0	<1.0
	9/24/2014	3.89	89.61	<1.0	<1.0	7.1	10.0
	1/8/2015	7.90	85.60	<1.0	1.4	5.0	2.5
MW16	2/19/2009	15.25	NM	<b>1,060</b>	16.2	156	37.5
MW16R	3/22/2012	15.58	NM	<1.0	<1.0	<1.0	<1.0
	6/8/2012	8.59	NM	1.1	<1	4.2	<1
	9/18/2012	6.78	NM	3.1	<1.0	2.8	<1.0
	12/3/2012	10.71	NM	<1.0	<1.0	<1.0	<1.0
	3/19/2013	15.91	NM	2.52	<1.0	<1.0	<3.0
	6/18/2013	10.81	NM	<b>19.7</b>	<1.0	<1.0	<1.0
	9/17/2013	3.37	NM	<1.0	<1.0	<1.0	<1.0
	12/11/2013	10.48	NM	<1.0	<1.0	<1.0	<1.0
	3/4/2014	14.80	NM	<1.0	<1.0	<1.0	<1.0
	6/27/2014	8.00	NM	<b>6.1</b>	<1.0	<1.0	<1.0
	9/24/2014	6.56	NM	<1.0	<1.0	<1.0	<1.0
	12/31/2014	9.64	84.59	<1.0	<1.0	<1.0	<1.0
MW17	2/19/2009	15.93 <15.91>	NM	<b>3,680</b>	<b>9,940</b>	<b>775</b>	1,075
MW17R	9/20/2010	7.92	84.99	<1.0	<1.0	46.1	256.31



TABLE 1 (Continued)

**GROUNDWATER ANALYTICAL RESULTS**  
**CHESNUT G 22-6 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**

Monitoring Well	Date	Depth to Water/<LNAPL> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW17R	12/2/2010	11.10	81.81	3.10	<1.0	112	570
	3/14/2011	15.62	77.29	<b>9.19</b>	<1.00	52.6	470
	6/2/2011	13.53	79.38	3.4	<1.0	16.5	448
	9/12/2011	6.93	85.98	<1.0	<1.0	45.1	275
	12/9/2011	11.11	81.80	<b>9.28</b>	<1.0	141	1,090
	3/22/2012	15.89	77.02	<b>5.4</b>	2.59	85.3	616
	6/8/2012	10.44	82.47	4.1	<1	117	668
	9/18/2012	9.07	83.84	<b>5.2</b>	<1.0	95.1	522
	12/3/2012	10.98	81.93	<b>24.8</b>	<1.0	97.5	684
	3/22/2013	16.16	76.75	<b>51.4</b>	<1.0	158	<b>1,460</b>
	6/18/2013	11.84	81.07	3.23	<1.0	82.1	474
	9/17/2013	4.61	88.30	3.26	<1.0	40.7	145
	12/11/2013	11.03	81.88	<4.0	<4.0	106	769
	3/4/2014	15.31	77.60	<4.0	<4.0	51.6	351
	6/27/2014	9.76	83.15	<4.0	<4.0	40.8	430
	9/24/2014	7.70	85.21	2.2	<1.0	49.4	337
	12/31/2014	10.65	82.26	2.0	<1.0	31.6	238
MW18	2/19/2009	16.22	NM	<b>1,410</b>	80.9	51.0	229.6
MW18R	3/14/2011	16.25	75.85	<1.00	<1.00	<1.00	<3.00
	6/2/2011	15.24	76.86	<1.0	<1.0	<1.0	<3.0
	9/12/2011	8.76	83.34	<1.0	<1.0	<1.0	<3.0
Abandoned per COGCC approval							
MW19	2/25/2009	16.67	NM	<b>329</b>	<1.0	1.45	6.65
MW19R	3/14/2011	17.44	74.27	<1.00	<1.00	<1.00	<3.00
	6/2/2011	16.96	74.75	<1.0	<1.0	<1.0	<3.0
	9/12/2011	10.61	81.10	<1.0	<1.0	<1.0	<3.0
Abandoned per COGCC approval							
MW20	2/25/2009	17.55	NM	2.13	2.34	16.0	3.27
Monitoring well destroyed							
MW21	2/25/2009	16.87	NM	2.00	<1.0	<1.0	11.9
Monitoring well destroyed							
MW22	2/25/2009	16.70	NM	<b>8.70</b>	40.7	3.78	22.65
Monitoring well destroyed							
MW23	2/25/2009	15.25	NM	<b>32.9</b>	5.29	9.01	38.36
MW23R	3/22/2012	16.20	NM	<1.0	2.33	<1.0	<1.0
	6/8/2012	9.38	NM	<1	<1	<1	<1
	9/18/2012	7.33	NM	<1.0	<1.0	<1.0	1.3

TABLE 1 (Continued)

**GROUNDWATER ANALYTICAL RESULTS**  
**CHESNUT G 22-6 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**

Monitoring Well	Date	Depth to Water/<LNAPL> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW23R	12/3/2012	11.88	NM	<1.0	<1.0	<1.0	<1.0
	3/19/2013	16.67	NM	<1.0	<1.0	<1.0	<3.0
	6/18/2013	11.73	NM	<1.0	<1.0	<1.0	<1.0
	9/17/2013	4.33	NM	<1.0	<1.0	<1.0	<1.0
	12/11/2013	11.26	NM	<1.0	<1.0	<1.0	<1.0
	3/4/2014	15.31	NM	<1.0	<1.0	<1.0	<1.0
	6/27/2014	8.75	NM	<1.0	<1.0	<1.0	<1.0
	9/24/2014	7.40	NM	<1.0	<1.0	<1.0	<1.0
	12/31/2014	10.35	83.73	<1.0	<1.0	<1.0	<1.0
MW24	2/25/2009	14.87	NM	1.02	<1.0	<1.0	<3.0
					Monitoring well destroyed		
MW25	2/25/2009	18.20	NM	<1.0	<1.0	<1.0	4.01
	3/5/2010	17.46	NM	<1.0	<1.0	<1.0	<3.0
					Monitoring well destroyed		
MW26	2/25/2009	18.02	78.14	<1.0	<1.0	<1.0	<3.0
	3/5/2010	17.36	78.80	<1.0	<1.0	<1.0	<3.0
	9/20/2010	5.10	91.06	<1.0	<1.0	<1.0	<3.0
	12/2/2010	8.78	87.38	<1.0	<1.0	<1.0	<1.0
	3/14/2011	15.63	80.53	<1.00	<1.00	<1.00	<3.00
	6/2/2011	11.67	84.49	<1.0	<1.0	<1.0	<3.0
	9/12/2011	4.02	92.14	<1.0	<1.0	<1.0	<3.0
	12/9/2011	NM	NM	<1.0	<1.0	<1.0	<3.0
	3/22/2012	--	--		Not Sampled - Dry		
	6/8/2012	5.99	90.17	<1	<1	<1	<1
	9/18/2012	5.69	90.47	<1.0	<1.0	<1.0	<1.0
	12/3/2012	7.26	88.90	<1.0	<1.0	<1.0	<1.0
	3/18/2013	--	--		Not Sampled - Dry		
	6/18/2013	5.91	90.25	<1.0	<1.0	<1.0	<1.0
	9/17/2013	2.20	93.96	<1.0	<1.0	<1.0	<1.0
	12/11/2013	9.49	86.67	<1.0	<1.0	<1.0	<1.0
	3/4/2014	--	--		Not Sampled - Dry		
	6/27/2014	5.23	90.93	<1.0	<1.0	<1.0	<1.0
					Monitoring well destroyed		

TABLE 1 (Continued)

**GROUNDWATER ANALYTICAL RESULTS**  
**CHESNUT G 22-6 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**

Monitoring Well	Date	Depth to Water/<LNAPL> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW27	2/25/2009	19.98	NM	<1.0	<1.0	<1.0	<3.0
					Monitoring well destroyed		
MW28	2/25/2009	15.82	NM	<1.0	<1.0	<1.0	<3.0
					Monitoring well destroyed		
MW29	2/25/2009	16.77	NM	<1.0	<1.0	<1.0	<3.0
					Monitoring well destroyed		
MW30	2/25/2009	16.86	NM	<1.0	<1.0	<1.0	<3.0
					Monitoring well destroyed		
MW31	3/14/2011	14.83	76.86	<1.00	<1.00	<1.00	<3.00
	6/2/2011	11.11	80.58	<1.0	<1.0	<1.0	<3.0
					Monitoring well destroyed		
MW32	3/14/2011	18.47	72.41	<1.00	<1.00	<1.00	<3.00
	6/2/2011	18.27	72.61	<1.0	<1.0	<1.0	<3.0
	9/12/2011	12.92	77.96	<1.0	<1.0	<1.0	<3.0
					Abandoned per COGCC approval		
<b>CDPHE WQCC Reg 41 Standard</b>				<b>5.0</b>	<b>560</b>	<b>700</b>	<b>1,400</b>

**NOTES:**

btoc - below top of casing

COGCC - Colorado Oil and Gas Conservation Commission

µg/L - micrograms per liter

LNAPL - light non-aqueous phase liquid

NM - not measured

&lt; - indicates result is less than the stated laboratory reporting limit

-- - not applicable

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

**BOLD** indicates result exceeds 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



**ATTACHMENT**  
**LABORATORY ANALYTICAL REPORTS**



January 07, 2015

LT Environmental, Inc.

Charles Greeson

4600 West 60th Avenue

Arvada

CO 80003

**Project Name - Noble - Chestnut G 22-6**

**Project Number - NEP0839**

Attached are your analytical results for Noble - Chestnut G 22-6 received by Origins Laboratory, Inc. December 31, 2014. This project is associated with Origins project number X501003-01.

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01R	X501003-01	Water	December 31, 2014 11:20	12/31/2014 15:25
MW02	X501003-02	Water	December 31, 2014 11:35	12/31/2014 15:25
MW03R	X501003-03	Water	December 31, 2014 14:15	12/31/2014 15:25
MW04	X501003-04	Water	December 31, 2014 14:30	12/31/2014 15:25
MW05	X501003-05	Water	December 31, 2014 14:45	12/31/2014 15:25
MW06	X501003-06	Water	December 31, 2014 11:45	12/31/2014 15:25
MW07	X501003-07	Water	December 31, 2014 12:00	12/31/2014 15:25
MW08R	X501003-08	Water	December 31, 2014 12:20	12/31/2014 15:25
MW09R	X501003-09	Water	December 31, 2014 12:40	12/31/2014 15:25
MW10	X501003-10	Water	December 31, 2014 0:00	12/31/2014 15:25

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW11	X501003-11	Water	December 31, 2014 13:00	12/31/2014 15:25
MW12	X501003-12	Water	December 31, 2014 13:50	12/31/2014 15:25
MW13	X501003-13	Water	December 31, 2014 14:05	12/31/2014 15:25
MW17R	X501003-14	Water	December 31, 2014 13:15	12/31/2014 15:25
MW23R	X501003-15	Water	December 31, 2014 13:30	12/31/2014 15:25
MW16R	X501003-16	Water	December 31, 2014 13:25	12/31/2014 15:25

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

www.originslaboratory.com

X501003

page 1 of 2

**ORIGINS**  
LABORATORY, INC

LTE

Client: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_  
Email Address: \_\_\_\_\_

Project Manager: Charles Greeson  
Project Name: Greeson@Ltevu.com  
Project Number: Chestnut G 22-6 NEP0839  
Samples Collected By: J. Pellegrini

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #		
MW01R	12/31/14	1120	3	X				X				Lab filter
MW02		1135	1									
MW03R		1115	1									
MW04		1430	1									
MW05		1445	1									
MW06		1145	1									
MW07		1200	1									
MW08R		1220	1									
MW09R		1240	1									
MW10												

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<i>[Signature]</i>	12/31/14	1525	<i>[Signature]</i>	12/31/14	1525	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>

Date Results Needed

Temp Received: 69

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.

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**ORIGINS**

LABORATORY, INC

www.originslaboratory.com

X501003

page 2 of 2

LIE

Client: \_\_\_\_\_

Project Manager: Charles Green

Address: \_\_\_\_\_

Project Name: Green@Lien.com

\_\_\_\_\_

Project Number: Client 0-72-6 NEP0839

Telephone Number: \_\_\_\_\_

Samples Collected By: Exchange 11 Stg

Email Address: \_\_\_\_\_

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis			Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #	Other				
MW1	12/31/14	1300	3	X					X					Lab filter	1
MW12		1350	1												2
MW13		1405	1												3
MW17R		1315	1												4
MW12R		1330	1												5
MW16R		1325	1												6
															7
															8
															9
															10
Relinquished By: <u>[Signature]</u>	Date: 12/31/14	Time: 1525	Received By: <u>gubab</u>	Date: 12/31/14	Time: 1525										Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>
Relinquished By: <u>[Signature]</u>	Date: _____	Time: _____	Received By: _____	Date: _____	Time: _____										

Origins Laboratory, Inc.

Jeff Pellipini

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: XSO1003

Client: LTE

Client Project ID: Chestnut G22-6

Checklist Completed by: Jeff Smith

Shipped Via: HTD  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 1/5/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 6.9 °C 1 /     °C 1 /     °C (Describe)

Thermometer ID: T033

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		<u>Sampled Some Dry</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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		<u>No Sample time for MW12</u>
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"/>		<u>No MW12R Extra MW23R</u>
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 <sup>(1)</sup> ? (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 <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any): <u>I received confirmation from Charles G. by email confirming that MW12R was mis-labeled on the COC and should have been written as MW23R</u> <u>1/6/15 Jeff Smith</u>				

<sup>(1)</sup> 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: [Signature] (Project Manager)

01-06-15  
Date/Time Reviewed

Origins Laboratory, Inc.

Jeff 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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

MW01R

12/31/2014 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X501003-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	98.7 %	87.3-113			"	"	"
Surrogate: Toluene-d8	92.4 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	92.6 %	88.6-111			"	"	"

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**MW02**

**12/31/2014 11:35:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X501003-02 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	99.5 %	87.3-113			"	"	"
Surrogate: Toluene-d8	91.6 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	92.7 %	88.6-111			"	"	"

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

MW03R

12/31/2014 2:15:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.  
X501003-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	100 %	87.3-113	"	"	"
Surrogate: Toluene-d8	97.8 %	90.9-108	"	"	"
Surrogate: 4-Bromofluorobenzene	89.3 %	88.6-111	"	"	"

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

## MW04

12/31/2014 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X501003-04 (Water)

### BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	100 %	87.3-113			"	"	"
Surrogate: Toluene-d8	113 %	90.9-108			"	"	" S-07
Surrogate: 4-Bromofluorobenzene	92.1 %	88.6-111			"	"	"

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**MW05**

**12/31/2014 2:45:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X501003-05 (Water)**

**BTEX by EPA 8260C**

Benzene	25.4	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	2.0	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	95.4 %	87.3-113			"	"	"
Surrogate: Toluene-d8	96.1 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	92.0 %	88.6-111			"	"	"

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**MW06**

**12/31/2014 11:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X501003-06 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	99.4 %	87.3-113			"	"	"
Surrogate: Toluene-d8	105 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	92.6 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

## MW07

12/31/2014 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X501003-07 (Water)

### BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	103 %	87.3-113			"	"	"
Surrogate: Toluene-d8	110 %	90.9-108			"	"	" S-07
Surrogate: 4-Bromofluorobenzene	94.3 %	88.6-111			"	"	"

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

MW08R

12/31/2014 12:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X501003-08 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	98.7 %	87.3-113			"	"	"
Surrogate: Toluene-d8	95.2 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	90.7 %	88.6-111			"	"	"

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

MW09R

12/31/2014 12:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X501003-09 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	98.8 %	87.3-113	"	"	"
Surrogate: Toluene-d8	107 %	90.9-108	"	"	"
Surrogate: 4-Bromofluorobenzene	92.6 %	88.6-111	"	"	"

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

MW10  
12/31/2014 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X501003-10 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	99.8 %	87.3-113	"	"	"
Surrogate: Toluene-d8	103 %	90.9-108	"	"	"
Surrogate: 4-Bromofluorobenzene	96.7 %	88.6-111	"	"	"

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

MW11

12/31/2014 1:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X501003-11 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	94.6 %	87.3-113			"	"	"
Surrogate: Toluene-d8	102 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	92.5 %	88.6-111			"	"	"

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

## MW12

12/31/2014 1:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X501003-12 (Water)

### BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	95.6 %	87.3-113			"	"	"
Surrogate: Toluene-d8	102 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	92.0 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

MW13

12/31/2014 2:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X501003-13 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	90.3 %	87.3-113			"	"	"
Surrogate: Toluene-d8	91.2 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	89.4 %	88.6-111			"	"	"

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

## MW17R

12/31/2014 1:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X501003-14 (Water)

### BTEX by EPA 8260C

Benzene	2.0	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	31.6	1.0	"	"	"	"	"
Xylenes, total	238	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	101 %	87.3-113			"	"	"
Surrogate: Toluene-d8	106 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	92.5 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

## MW23R

12/31/2014 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X501003-15 (Water)

### BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	102 %	87.3-113			"	"	"
Surrogate: Toluene-d8	108 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	91.4 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

MW16R

12/31/2014 1:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X501003-16 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5A05009	01/05/2015	01/06/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	98.6 %	87.3-113			"	"	"
Surrogate: Toluene-d8	106 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	92.9 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 5A05009 - EPA 5030B (Water)**

**Blank (5A05009-BLK1)**

Prepared: 01/05/2015 Analyzed: 01/06/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5	99.8	87.3-113				
Surrogate: Toluene-d8	60		"	62.5	95.5	90.9-108				
Surrogate: 4-Bromofluorobenzene	56		"	62.5	89.3	88.6-111				

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 5A05009 - EPA 5030B (Water)**

**LCS (5A05009-BS1)**

Prepared: 01/05/2015 Analyzed: 01/06/2015

Benzene	55.8	1.0	ug/L	50.0		112	75-126			
Toluene	52.9	1.0	"	50.0		106	78.7-126			
Ethylbenzene	58.1	1.0	"	50.0		116	80-130			
m,p-Xylene	113	2.0	"	100		113	77.2-133			
o-Xylene	52.2	1.0	"	50.0		104	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		93.4	87.3-113			
Surrogate: Toluene-d8	59		"	62.5		95.2	90.9-108			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		92.8	88.6-111			

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 5A05009 - EPA 5030B (Water)**

Matrix Spike (5A05009-MS1)		Source: X501003-01			Prepared: 01/05/2015 Analyzed: 01/06/2015					
Benzene	56.0	1.0	ug/L	50.0	0.2	112	74-130			
Toluene	50.0	1.0	"	50.0	ND	100	73-131			
Ethylbenzene	55.7	1.0	"	50.0	ND	111	76-132			
m,p-Xylene	112	2.0	"	100	ND	112	69-139			
o-Xylene	53.4	1.0	"	50.0	ND	107	74-131			
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		91.0	87.3-113			
Surrogate: Toluene-d8	58		"	62.5		92.3	90.9-108			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		95.1	88.6-111			

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 5A05009 - EPA 5030B (Water)**

Matrix Spike Dup (5A05009-MSD1)		Source: X501003-01			Prepared: 01/05/2015 Analyzed: 01/06/2015					
Benzene	57.5	1.0	ug/L	50.0	0.2	115	74-130	2.73	20	
Toluene	54.5	1.0	"	50.0	ND	109	73-131	8.56	20	
Ethylbenzene	57.8	1.0	"	50.0	ND	116	76-132	3.79	20	
m,p-Xylene	112	2.0	"	100	ND	112	69-139	0.589	20	
o-Xylene	53.5	1.0	"	50.0	ND	107	74-131	0.206	20	
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		92.0	87.3-113			
Surrogate: Toluene-d8	56		"	62.5		90.2	90.9-108			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		93.6	88.6-111			

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

### Notes and Definitions

S-07 High surrogate in sample, however sample is non-detect. High surrogate indicates result values are biased high.

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.*



January 12, 2015

LT Environmental, Inc.

Charles Greeson

4600 West 60th Avenue

Arvada

CO 80003

**Project Name - Noble - Chestnut G 22-6**

**Project Number - NEP0839**

Attached are your analytical results for Noble - Chestnut G 22-6 received by Origins Laboratory, Inc. January 08, 2015. This project is associated with Origins project number X501057-01.

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW15	X501057-01	Water	January 8, 2015 9:50	01/08/2015 15:45

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X501057

Client: LTE

Client Project ID: Chestnut G22-6

Checklist Completed by: Jeff Smith

Shipped Via: H/D

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

Date/time completed: 1/8/12

Airbill #: NA

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

Cooler Number/Temperature: 1 / 5.3 °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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) 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 with date and time recorded <sup>(1)</sup> ?	<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 <sup>(1)</sup> ? (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 <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

<sup>(1)</sup>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: [Signature] (Project Manager)

01-09-12  
Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

MW15  
1/8/2015 9:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X501057-01 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	5A08009	01/08/2015	01/08/2015
Toluene	1.4	1.0	"	"	"	"	"
Ethylbenzene	5.0	1.0	"	"	"	"	"
Xylenes, total	2.5	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	102 %	87.3-113			"	"	"
Surrogate: Toluene-d8	99.4 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	106 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 5A08009 - EPA 5030B (Water)**

**Blank (5A08009-BLK1)**

Prepared: 01/08/2015 Analyzed: 01/08/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5	102		87.3-113			
Surrogate: Toluene-d8	63		"	62.5	100		90.9-108			
Surrogate: 4-Bromofluorobenzene	65		"	62.5	104		88.6-111			

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 5A08009 - EPA 5030B (Water)**

**LCS (5A08009-BS1)**

Prepared: 01/08/2015 Analyzed: 01/08/2015

Benzene	55.9	1.0	ug/L	50.0	112	75-126
Toluene	56.2	1.0	"	50.0	112	78.7-126
Ethylbenzene	56.4	1.0	"	50.0	113	80-130
m,p-Xylene	114	2.0	"	100	114	77.2-133
o-Xylene	56.0	1.0	"	50.0	112	77.9-126
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5	105	87.3-113
Surrogate: Toluene-d8	63		"	62.5	101	90.9-108
Surrogate: 4-Bromofluorobenzene	63		"	62.5	101	88.6-111

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 5A08009 - EPA 5030B (Water)**

Matrix Spike (5A08009-MS1)		Source: X501054-01			Prepared: 01/08/2015 Analyzed: 01/08/2015					
Benzene	53.2	1.0	ug/L	50.0	ND	106	74-130			
Toluene	53.6	1.0	"	50.0	ND	107	73-131			
Ethylbenzene	57.6	1.0	"	50.0	0.7	114	76-132			
m,p-Xylene	113	2.0	"	100	ND	113	69-139			
o-Xylene	52.8	1.0	"	50.0	0.5	105	74-131			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.1	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		98.7	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	88.6-111			

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 5A08009 - EPA 5030B (Water)**

Matrix Spike Dup (5A08009-MSD1)		Source: X501054-01			Prepared: 01/08/2015 Analyzed: 01/08/2015					
Benzene	58.8	1.0	ug/L	50.0	ND	118	74-130	10.1	20	
Toluene	59.9	1.0	"	50.0	ND	120	73-131	11.0	20	
Ethylbenzene	64.2	1.0	"	50.0	0.7	127	76-132	10.9	20	
m,p-Xylene	128	2.0	"	100	ND	128	69-139	12.5	20	
o-Xylene	62.0	1.0	"	50.0	0.5	123	74-131	15.9	20	
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		91.7	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		98.8	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	88.6-111			

Origins Laboratory, Inc.



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

Charles Greeson  
Project Number: NEP0839  
Project: Noble - Chestnut G 22-6

### Notes and Definitions

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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Jen Pellegrini For Noelle Doyle Mathis, President