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North America Division

October 30, 2012

Mr. Bob Chesson
Department Of Natural Resources
Oil & Gas Conservation Commission
1120 Lincoln St., Suite 801
Denver CO 80203-2136

RE: Ground Water Monitoring Report
Chesnut G22-6
Remediation #5306
API 05-123-17715
Sec. 22, T4N R65W
Weld County, Colorado

Dear Mr. Chesson:

Please find attached quarterly ground water monitoring report for the Chesnut G 22-6. Noble Energy Inc. would like to claim business confidentiality protection for the information submitted in this letter, the supporting materials attached and all previous and subsequent correspondence related to this matter. Please contact the Noble Energy Environmental Department at (720) 587-2026 if you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink that reads 'Jacob Evans'.

Jacob Evans
Senior Environmental Specialist

Attachments



October 19, 2012

Mr. Todd Cullum
Base Construction Foreman
Noble Energy, Inc.
2115 117th Avenue
Greeley, Colorado 80634

Mr. Ryan Bruner
Environmental and Regulatory Supervisor
Noble Energy, Inc.
1625 Broadway, Suite 2200
Denver, Colorado 80202

**RE: Third Quarter 2012 Remediation and Monitoring Summary Report
Chesnut G 22-6 Tank Battery
Weld County, Colorado
COGCC Tracking #1984181 & Remediation #4316**

Dear Mr. Cullum and Mr. Bruner:

LT Environmental, Inc. (LTE), under the direction of Noble Energy, Inc (Noble), conducted corrective actions at the Chesnut G 22-6 Tank Battery (Site) located approximately 0.5 miles south of the intersection of County Road (CR) 44 and CR 43 in Weld County, Colorado (Figure 1).

Site assessment results were previously discussed in the LTE *Environmental Site Assessment Results*, dated April 15, 2009. Noble is continuing groundwater monitoring at the Site to evaluate the previously identified groundwater impact. Phase I of the remediation program, which included source removal, was conducted in December 2008 and summarized in the LTE *Excavation Summary Report*, dated April 2009. LTE, as directed by Noble, has initiated Phase II of the remediation program, which includes an air sparging/soil vapor extraction (AS/SVE) remediation system to mitigate remaining groundwater impact. This report summarizes activities conducted at the Site from June 20, 2012, through October 2, 2012, including operation and maintenance (O&M) of the remediation system, air emissions sampling, and quarterly groundwater monitoring.

Remediation System Description

The AS system is designed to introduce ambient air into the subsurface water column for dissolved hydrocarbon volatilization and to promote aerobic microbial decomposition of petroleum constituents. The SVE system is designed to volatilize petroleum constituents

adsorbed onto soil particles and to remove petroleum vapors released from the groundwater by the AS system. AS and SVE wells are connected to a remediation equipment trailer housing the equipment for the AS/SVE systems (Figures 2 and 3). Additional details of the remediation system were provided in the *LTE Remediation System Installation, Startup, and Groundwater Sampling Results*, dated November 22, 2010.

Remediation System Operations and Maintenance

Remediation system operations (Phase II remediation program) were initiated on August 24, 2010. The remediation system operated approximately 36 percent during the reporting period. System operations were limited during the reporting period due to high temperatures and gas leaks causing generator shutdowns. As a result, LTE initiated the use of a timer to limit operations to low ambient temperature times of the day, which shutdown the system for 8 hours every day. The maximum available runtime during the reporting period was 66 percent. Table 1 provides a summary of system operations.

O&M activities conducted during the reporting period included:

- Completing routine weekly O&M checks to monitor and adjust system performance;
- Testing and analyzing air emissions;
- Changing the generator oil;
- Changing the generator spark plugs;
- Adjusting generator valve overhead clearances;
- Cleaning the generator radiator;
- Finding and fixing gas manifold leak; and
- Troubleshooting the generator.

Soil Vapor Extraction Air Emissions

An air sample was collected in a Tedlar[®] bag from the SVE discharge stack on August 20, 2012. The sample was delivered under strict chain-of-custody (COC) protocol to Origins Laboratory, Inc. (Origins) in Denver, Colorado, for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons-gasoline range organics (TPH-GRO) by United States Environmental Protection Agency (EPA) Modified Method TO-15. Laboratory analytical results of the air sample collected on August 20, 2012, are summarized in Table 2 and included in Attachment 1.

As of August 20, 2012, approximately 848 pounds of volatile organic compounds (VOCs) have been removed by the SVE system. Air emission calculations through August 20, 2012, are provided in Table 2.

Groundwater Sampling Procedures

Seventeen groundwater monitoring wells (MW01R, MW02, MW04, MW05, MW06, MW07, MW08R, MW09R, MW10, MW11, MW12, MW13, MW15, MW16R, MW17R, MW23R, and MW26) were sampled at the Site on September 18, 2012, to determine the current plume extent.

Prior to sampling each monitoring well, the depth to groundwater was measured and recorded for calculating purge volumes (Table 3). Each well was purged of three well casing volumes prior to collection of groundwater samples. Groundwater samples were collected from the well points by advancing disposable 3/16-inch diameter polyvinyl chloride (PVC) tubing inside the 1-inch and 2-inch diameter PVC well casings and extending the tubing to below the groundwater table. A peristaltic pump was utilized to collect the groundwater samples prior to placement into laboratory-prepared sample bottles. Groundwater samples were collected in 40-milliliter vials, placed on ice in a cooler, and delivered under strict COC protocol to eAnalytics Laboratory of Loveland, Colorado. Samples were analyzed for BTEX by EPA Method 8260C.

Hydrogeology

During the September 2012 monitoring event, the depths to groundwater ranged from 3.32 feet below top of casing (btoc) in MW04 to 11.43 feet btoc in MW09R (Table 3). The groundwater flow direction was predominantly to the east with an average hydraulic gradient of approximately 0.048 feet per foot. A relative groundwater elevation map is provided as Figure 4.

Groundwater Analytical Results

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. Historical analytical results and analytical results for September 2012 are illustrated on Figure 5 and presented in Table 3. Laboratory analytical reports, laboratory quality assurance/quality control data, and COC documentation are presented in Attachment 2.

Seventeen groundwater samples were collected during the September 2012 monitoring event. Groundwater analytical results indicated benzene was detected exceeding the WQCC Reg 41 in monitoring wells MW01R, MW05, and MW17R at concentrations of 7.1 $\mu\text{g/L}$, 1,249 $\mu\text{g/L}$, and 5.2 $\mu\text{g/L}$, respectively. BTEX compounds were not detected exceeding regulatory standards in the remaining samples.

Groundwater Monitoring Program

Seventeen groundwater monitoring wells (MW01R, MW02, MW04, MW05, MW06, MW07, MW08R, MW09R, MW10, MW11, MW12, MW13, MW15, MW16R, MW17R, MW23R, and MW26) will be sampled to assess remediation progress. Due to attainment of cleanup goals, the Colorado Oil and Gas Conservation Commission (COGCC) approved abandonment of monitoring and remediation wells located in the farmer's field to the east on February 8, 2012. No further monitoring will be conducted on monitoring wells MW18R, MW19R, MW20, MW21, and MW28 through MW32.

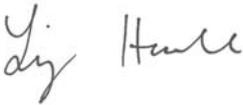
Summary and Conclusions

Current data suggests a decrease in BTEX since the AS/SVE system began operation with a decrease of approximately 86 percent in the benzene groundwater plume extent, as depicted on Figure 6. However, elevated concentrations of benzene are still present at the Site (Table 3). Noble will conduct groundwater monitoring in December 2012 to assess remediation system performance. LTE, under the direction of Noble, recommends continued AS/SVE system operation and groundwater monitoring at the Site on a quarterly basis.

LTE appreciates the opportunity to provide environmental services to Noble. Please call us at 303-433-9788 if you have any questions or comments regarding this report.

Sincerely,

LT ENVIRONMENTAL, INC



Liz Houle, E.I.T.
Staff Engineer



Rob Rebel, P.E.
Project Engineer

Attachments:

Figure 1	Site Location Map
Figure 2	Air Sparging System Layout
Figure 3	Soil Vapor Extraction System Layout
Figure 4	Relative Groundwater Elevation Map
Figure 5	Groundwater Analytical Results
Figure 6	Benzene Groundwater Analytical Results
Table 1	Remediation System Operations Summary
Table 2	Air Emissions Estimate Summary
Table 3	Groundwater Analytical Results
Attachment 1	Air Emissions Laboratory Analytical Report
Attachment 2	Groundwater Laboratory Analytical Report

FIGURES

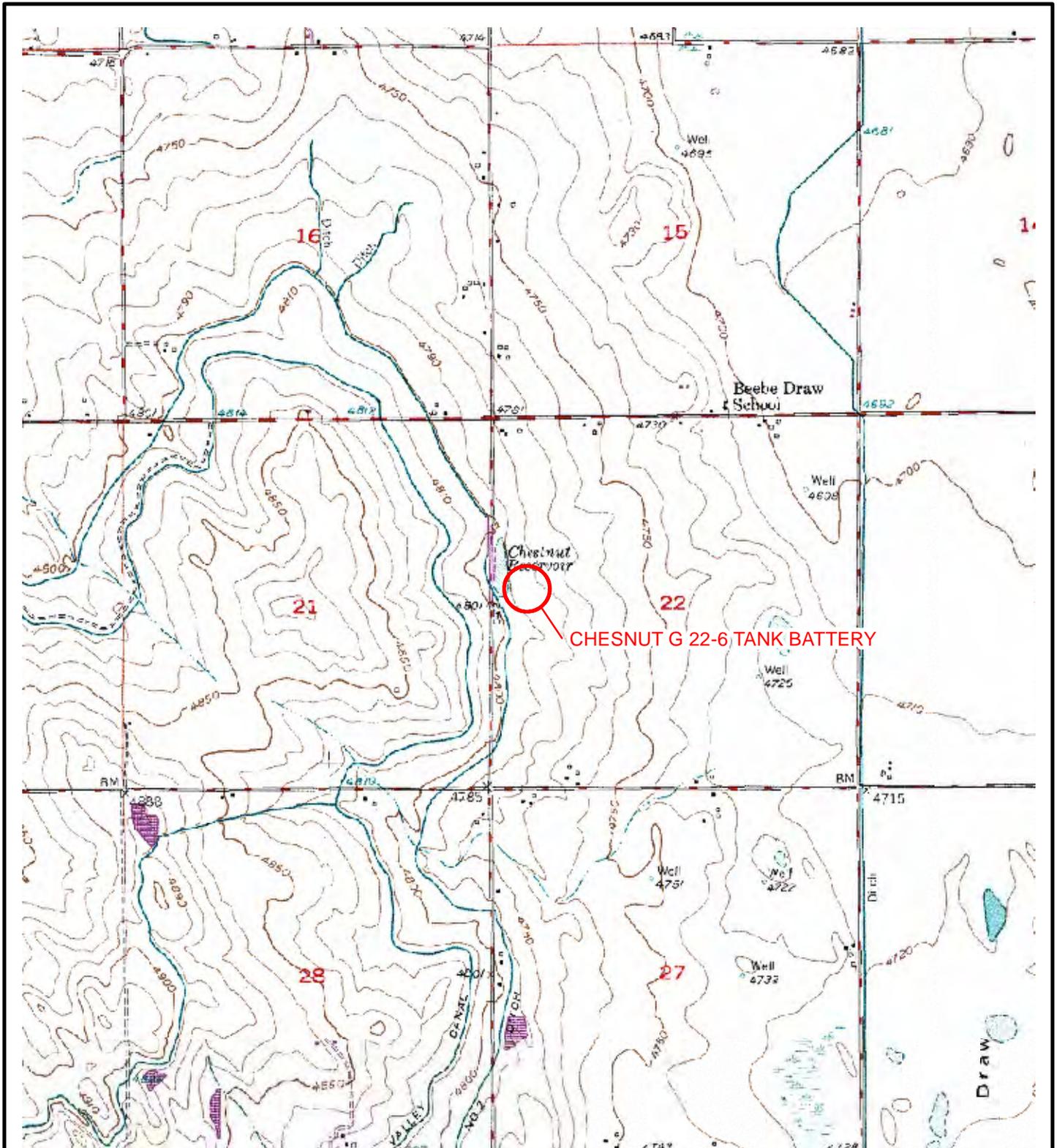


IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES

LEGEND

 SITE LOCATION

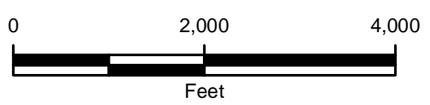
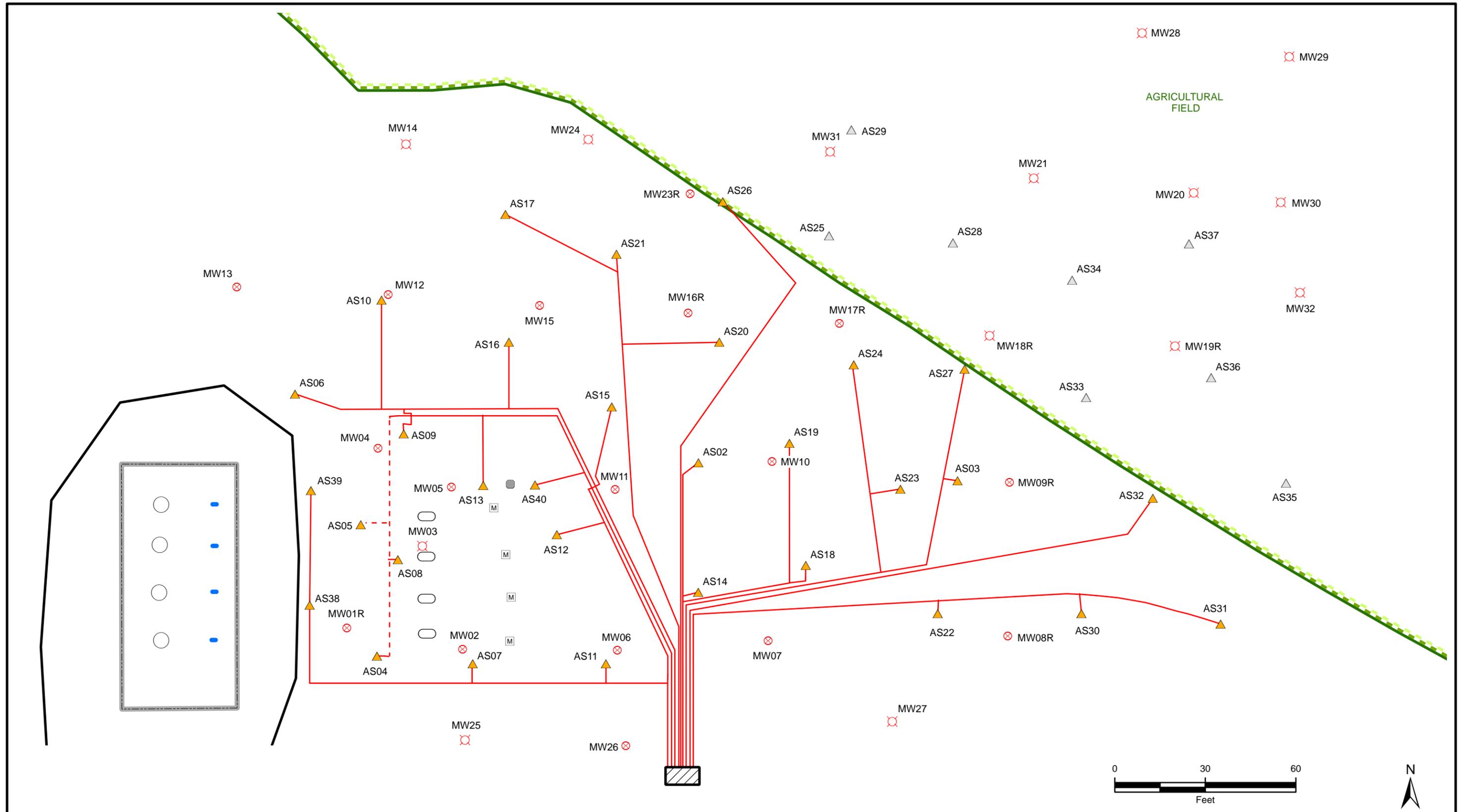


FIGURE 1
SITE LOCATION MAP
CHESNUT G 22-6 TANK BATTERY
WELD COUNTY, COLORADO



NOBLE ENERGY, INC



LEGEND

- | | | | |
|-------------------------------|---------------------------------------|--------------------------------|-------------------------------|
| ▲ EXISTING AIR SPARGING WELL | ⊗ MONITORING WELL | ● WATER VAULT | — ACCESS ROAD |
| △ ABANDONED AIR SPARGING WELL | ⊗ ABANDONED/DESTROYED MONITORING WELL | ○ OIL ABOVEGROUND STORAGE TANK | — AGRICULTURAL FIELD BOUNDARY |
| — ABOVEGROUND PIPING | ● BURNER | ○ SEPARATOR | ▨ REMEDIATION TRAILER |
| - - - BURIED PIPING | Ⓜ METER HOUSE | | ▭ 3 FOOT BERM (METAL) |

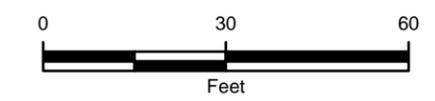
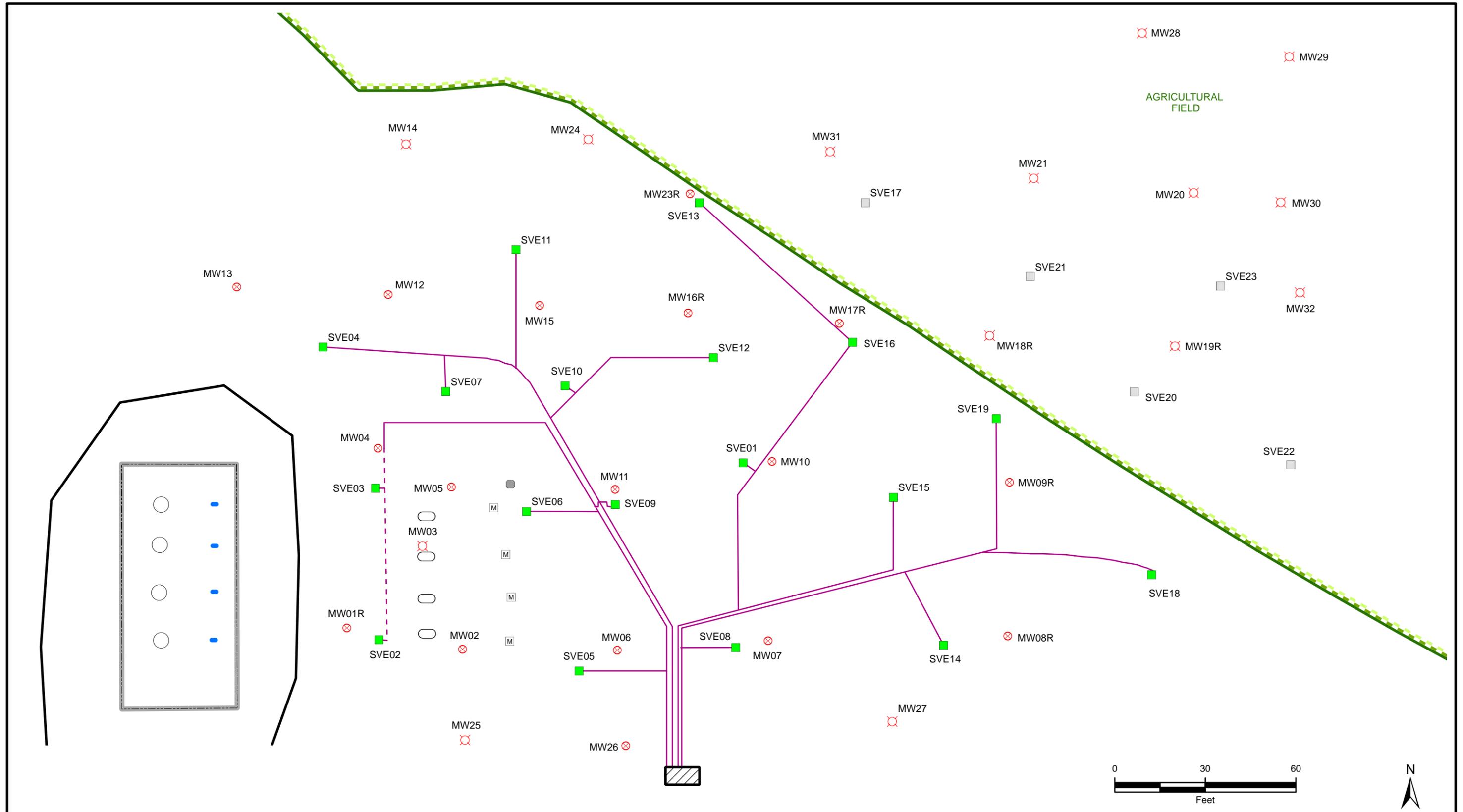


FIGURE 2
AIR SPARGING SYSTEM LAYOUT
CHESNUT G 22-6 TANK BATTERY
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





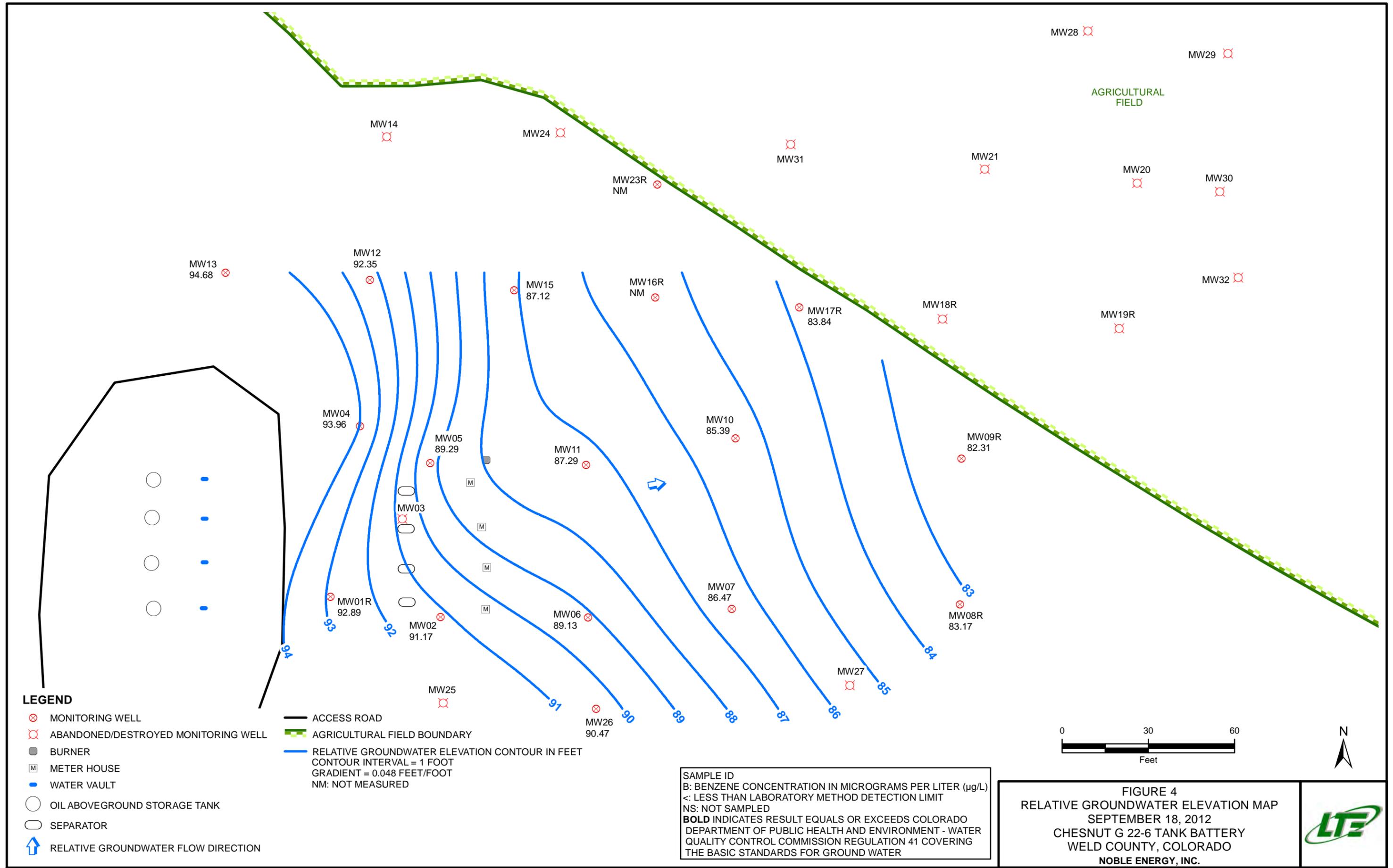
LEGEND

- | | | | |
|--------------------------------------|-------------------------------------|------------------------------|-----------------------------|
| EXISTING SOIL VAPOR EXTRACTION WELL | MONITORING WELL | WATER VAULT | ACCESS ROAD |
| ABANDONED SOIL VAPOR EXTRACTION WELL | ABANDONED/DESTROYED MONITORING WELL | OIL ABOVEGROUND STORAGE TANK | AGRICULTURAL FIELD BOUNDARY |
| ABOVEGROUND PIPING | BURNER | SEPARATOR | REMEDIATION TRAILER |
| BURIED PIPING | METER HOUSE | | 3 FOOT BERM (METAL) |

FIGURE 3
SOIL VAPOR EXTRACTION SYSTEM LAYOUT
CHESNUT G 22-6 TANK BATTERY
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





- LEGEND**
- ⊗ MONITORING WELL
 - ⊗ ABANDONED/DESTROYED MONITORING WELL
 - BURNER
 - Ⓜ METER HOUSE
 - WATER VAULT
 - OIL ABOVEGROUND STORAGE TANK
 - SEPARATOR
 - ↑ RELATIVE GROUNDWATER FLOW DIRECTION

- ACCESS ROAD
- AGRICULTURAL FIELD BOUNDARY
- RELATIVE GROUNDWATER ELEVATION CONTOUR IN FEET
CONTOUR INTERVAL = 1 FOOT
GRADIENT = 0.048 FEET/FOOT
NM: NOT MEASURED

SAMPLE ID
 B: BENZENE CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
 <: LESS THAN LABORATORY METHOD DETECTION LIMIT
 NS: NOT SAMPLED
BOLD INDICATES RESULT EQUALS OR EXCEEDS COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT - WATER QUALITY CONTROL COMMISSION REGULATION 41 COVERING THE BASIC STANDARDS FOR GROUND WATER

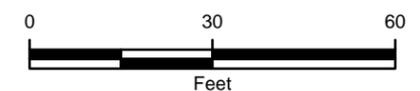
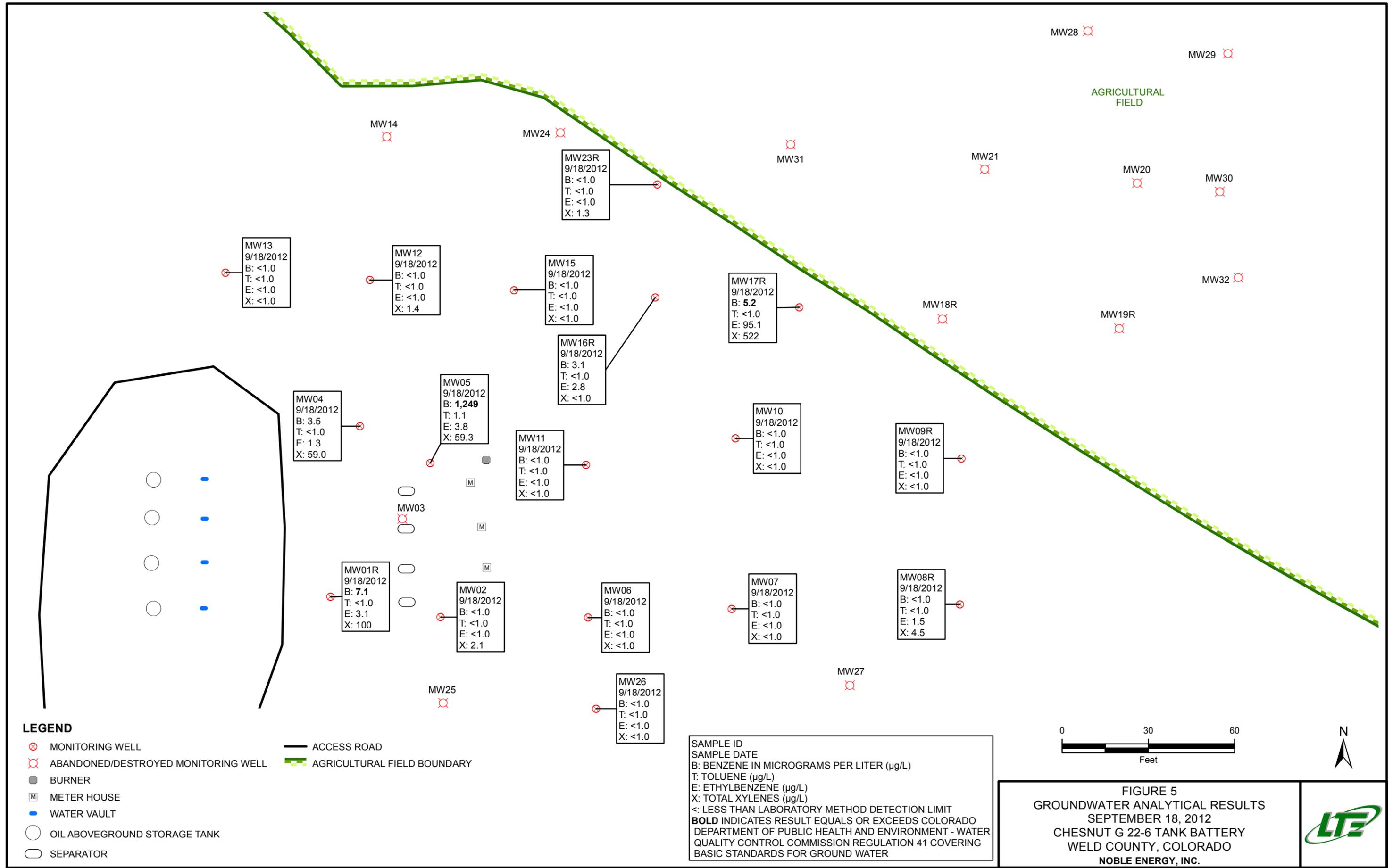
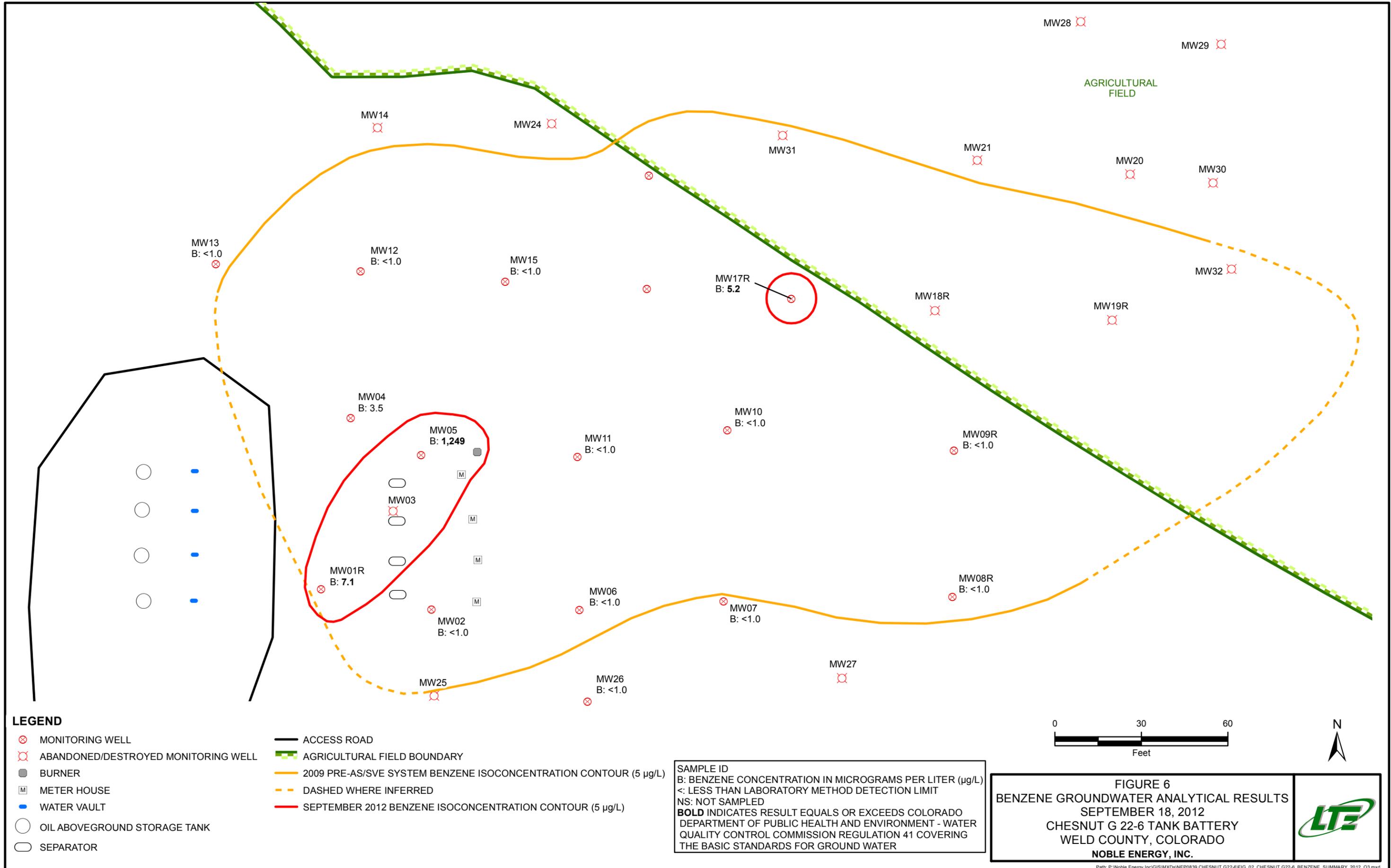


FIGURE 4
 RELATIVE GROUNDWATER ELEVATION MAP
 SEPTEMBER 18, 2012
 CHESNUT G 22-6 TANK BATTERY
 WELD COUNTY, COLORADO
 NOBLE ENERGY, INC.







MW13
B: <1.0

MW14
B: <1.0

MW12
B: <1.0

MW24
B: <1.0

MW15
B: <1.0

MW17R
B: 5.2

MW31
B: <1.0

MW21
B: <1.0

MW20
B: <1.0

MW30
B: <1.0

MW32
B: <1.0

MW19R
B: <1.0

MW04
B: 3.5

MW05
B: 1,249

MW11
B: <1.0

MW10
B: <1.0

MW09R
B: <1.0

MW01R
B: 7.1

MW02
B: <1.0

MW06
B: <1.0

MW07
B: <1.0

MW08R
B: <1.0

MW25
B: <1.0

MW26
B: <1.0

MW27
B: <1.0

MW28
B: <1.0

MW29
B: <1.0

AGRICULTURAL FIELD

TABLES

TABLE 1

REMEDIATION SYSTEM OPERATIONS SUMMARY

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

Date	AS Hours	SVE Hours	Generator Hours	System Status Upon Arrival (On/Off)	Notes
8/24/2010	38.9	40.0	47.0	Startup	
9/8/2010	396.4	397.5	404.6	On	
9/27/2010	773.6	782.9	840.0	Off	AS high pressure alarm and SVE VFD fault
9/30/2010	849.4	858.7	916.4	On	
10/21/2010	1350.5	1359.8	1410.1	On	AS outlet pressure gauge broken
11/10/2010	1828.4	1837.8	1885.6	On	AS04 flow controls broken
12/1/2010	2198.1	2231	2361.6	On	
12/2/2010	2223.8	2256.7	2387.4	On	Troubleshooting pressure problems with AS cycles
12/3/2010	2247.0	2280.0	2410.6	On	
12/17/2010	2582.7	2615.7	2746.3	On	
12/20/2010	2614.9	2647.9	2818.3	Off	
12/30/2010	2721.3	2879.0	3049.5	Startup	
1/12/2011	3012.2	3143.5	3362.1	On	
1/17/2011	3129.8	3217.8	3479.7	On	Repair SVE manifold
1/25/2011	3318.8	3406.4	3664.4	On	
2/2/2011	3511.5	3699.1	3862	On	
2/14/2011	3529.8	3617.4	3881.1	Off	System down since 2/10/2011 due to cold weather
2/18/2011	3545.0	3712.4	3976.2	On	AS system down due to high pressure alarm
2/25/2011	3660.7	3879.5	4143.3	On	
3/3/2011	3798.7	4020.8	4284.3	On	Valve adjustments
3/4/2011	3819.5	4042.1	4305.9	On	Repair wellheads and apply CLR to problem wells
3/11/2011	3988.7	4211.3	4475.1	On	
3/18/2011	4155.4	4377.9	4641.4	On	
3/24/2011	4297.4	4520.0	4783.8	On	Clean crank case breather; adjust overhead clearances
3/28/2011	-	-	-	On	Troubleshooting modem
3/31/2011	4465.2	4687.9	4951.7	On	Change spark plugs
4/7/2011	4628.6	4851.7	5115.5	On	
4/8/2011	4655.0	4878.0	-	On	Grease and oil AS and SVE blowers
4/14/2011	476.7	5019.7	5283.9	On	Valve adjustments
4/18/2011	4919.3	5142.3	5406.6	On	
4/26/2011	5083.7	5306.7	5570.4	On	
4/29/2011	5157.9	5381.0	5645.2	On	Install new pressure gauges
5/4/2011	-	-	-	On - SVE Down	SVE system down due to aux #2 alarm
5/6/2011	-	-	-	On - SVE Down	SVE system down due to aux #2 alarm; troubleshooting SVE
5/9/2011	-	-	-	Off	Troubleshooting; change spark plugs
5/12/2011	-	-	-	Off	Troubleshooting
5/17/2011	-	-	-	Off	Troubleshooting
5/19/2011	5321.1	5536.6	5809.5	Off	Troubleshooting - anti-sieze compound causing spark plugs to short out
5/20/2011	5346.1	5536.6	5834.5	On - SVE Down	SVE system down due to aux #2 alarm
5/25/2011	5360.1	5536.6	5848.6	On - SVE Down	SVE system down due to aux #2 alarm
5/27/2011	5405.0	5536.6	5893.8	On - SVE Down	SVE system down due to aux #2 alarm
6/1/2011	-	-	-	On - SVE Down	Troubleshooting SVE
6/2/2011	5547.6	5538.0	6037.1	On - SVE Down	SVE system down due to aux #2 alarm
6/3/2011	5549.3	5539.7	6060.8	On - SVE Down	Troubleshooting SVE
6/9/2011	5689.9	5543.7	6201.4	On - SVE Down	SVE system down due to aux #2 alarm
6/21/2011	-	-	-	On - SVE Down	Fixed SVE shutdowns by replacing PLC card
6/23/2011	6023.0	5589.4	6534.8	On	
6/28/2011	6099.5	5666.0	6611.4	Off	High engine temperature alarm
7/1/2011	6135.0	5702.5	6650.0	Off	High LEL/remote E stop alarm
7/6/2011	6153.8	5792.5	6740.2	On	

**TABLE 1
REMEDIATION SYSTEM OPERATIONS SUMMARY**

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

Date	AS Hours	SVE Hours	Generator Hours	System Status Upon Arrival (On/Off)	Notes
7/14/2011	6292.9	5937.7	6885.5	On	
7/19/2011	6372.3	6011.1	6958.9	Off	High engine temperature alarm
7/28/2011	6462.9	6101.8	7049.6	On	
8/3/2011	-	-	-	Off	High engine temperature alarm
8/5/2011	-	-	-	Off	Troubleshooting generator
8/8/2011	-	-	-	Off	Troubleshooting generator
8/12/2011	-	-	-	Off	Troubleshooting generator
8/16/2011	-	-	-	Off	Troubleshooting generator
8/17/2011	6532.9	6172.0	7120.3	Off	Replaced diaphragm in carburetor
8/23/2011	6629.8	6268.9	7217.4	On	Generator did not restart
8/31/2011	-	-	7233.6	Off	Troubleshooting generator
9/14/2011	6646.3	6285.6	7234.3	Off	Troubleshooting generator
9/27/2011	6734.5	6374	7386	Off	Troubleshooting generator
10/5/2011	6759.5	6398.9	7450	Off	High engine temperature alarm
10/10/2011	6880.3	6519.8	7570.9	On	
10/21/2011	7141.1	6780.6	7831.7	On	High engine temperature alarm
10/28/2011	7217.1	6856.8	7907.8	Off	
11/3/2011	7357.3	6997	8048.2	On	
11/14/2011	7523.9	7163.7	8241.2	Off	Off to repair leaking gasket found on 11/11/11
11/18/2011	7617.7	7257.6	8335.1	On	
11/21/2011	7687.5	7327.9	8405.4	On	
11/23/2011	7712.6	7353	8451.3	On	
12/15/2011	7723.1	7363.7	8544.3	Off	
12/29/2011	7724.7	7365.3	8682.3	Off	Troubleshooting generator
1/5/2012	7729.0	7369.3	8819.8	Off	Troubleshooting generator
1/12/2012	7898.1	7538.5	8989.0	On	Changed oil; adjusted flows
1/18/2012	7915.1	7555.5	9106.9	Off	
1/24/2012	7921.1	7561.8	9115.0	Off	
1/26/2012	7957.6	7598.1	9156.7	Off	
1/30/2012	7995.5	7636.3	9195.4	Off	
2/10/2012	8257.5	7898.8	9457.9	On	
2/15/2012	8374.7	8015.6	9574.6	On	Replaced torn head gasket; adjusted flows
2/22/2012	-	-	9666.9	On	Emptied knockout tank
2/27/2012	8663.6	8304.1	9786.6	On	Changed alternator belt
3/6/2012	8807.4	8447.9	10007.5	Off	High engine temperature alarm
3/7/2012	8808.3	8448.9	10008.5	Off	High engine temperature alarm
3/14/2012	-	-	-	Off	Removed radiator for cleaning
3/15/2012	-	-	-	Off	Reinstalled radiator
3/22/2012	9049.7	8690.3	10250.0	On	Changed oil; changed air filter; adjusted flows
3/27/2012	9165.2	8805.8	10365.5	On	
4/6/2012	-	9048.6	10608.2	On	Changed spark plugs; cleaned crankcase breather; greased SVE; adjusted flows
4/10/2012	9500.4	9141	10700.7	On	
4/19/2012	9719.1	9359.8	10919.4	On	Changed oil; greased AS blower
4/23/2012	-	-	-		Completed oil reservoir wiring
4/24/2012	9814.8	9455.6	11015.3	Off	High engine temperature alarm; changed AS oil
4/30/2012	9816.2	9457	11016.5	Off	
5/8/2012	9910.2	9551	11110.7	Off	High engine temperature alarm
5/17/2012	10125.6	9766.5	11326.2	On	Stack sample collected
5/25/2012	10241.1	9881.9	11442.5	Off	High LEL/remote E stop alarm; changed oil
5/31/2012	-	-	-	Off	High engine temperature alarm; changed spark plugs; changed SVE oil; cleaned crankcase breather
6/4/2012	-	-	-	Off	Knockout tank high-level alarm; high engine temperature alarm - set timer
6/5/2012	-	-	-	Off	High engine temperature alarm

**TABLE 1
REMEDIATION SYSTEM OPERATIONS SUMMARY**

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

Date	AS Hours	SVE Hours	Generator Hours	System Status Upon Arrival (On/Off)	Notes
6/12/2012	-	-	11562.6	Off	High engine temperature alarm
6/13/2012	10285.0	9926	11563.2	Off	High LEL/remote E stop alarm
6/19/2012	10286.3	9927.3	11564.6	Off	High engine temperature alarm
6/27/2012			11643	Off	High engine temperature alarm, installed fan
7/2/2012	10365.1	1006.2	11763	Off	Generator on, AS/SVE down due to tripped breaker
7/10/2012	10397.5	10038.6	11795.8	Off	High LEL/remote E stop alarm
7/25/2012	-	-	-	Off	High LEL/remote E stop alarm, troubleshooting
7/27/2012	10397.0	10039	11796	Off	Troubleshooting generator; recalibrated LEL, changed spark plugs
7/30/2012					Removed radiator for cleaning
8/3/2012	10430.0	10071	11829	Off	
8/6/2012	10477.0	10119	11877.1	Off	Changed oil, cleaned crankcase, flows
8/14/2012	-	-	-	Off	High LEL/remote E stop alarm; left system off
8/20/2012	10558.7	10200.2	11958.9	Off	Fixed gas leak, stack sample, flows
8/23/2012	-	-	-	Off	High LEL/remote E stop alarm
8/27/2012	10579.6	10247.8	12009.5	Off	High LEL/remote E stop alarm
9/6/2012	10644.1	10341.2	12105.4	Off	High LEL/remote E stop alarm, changed generator air filter
9/13/2012	10686.4	10403.5	12169.9	Off	High LEL/remote E stop alarm, changed spark plugs
9/18/2012	10743.2	10515.2	12286.7	On	Changed oil, cleaned crankcase, flows
9/20/2012	10767.8	10561.8		On	Flows
9/25/2012	10783.7	10577.8	12457.5	On	Generator on, AS/SVE down due to tripped breaker
9/27/2012	-	-	-	Off	High LEL/remote E stop alarm; replaced stolen battery
10/1/2012	-	-	-	Off	High LEL/remote E stop alarm; adjusted EMIT
10/2/2012	10807.6	10601.8	12483.1	On	
Operational % Since Startup	58%	57%	67%		
Operational % in Quarter	21%	27%	36%		

NOTES:

- AS - air sparging
- CLR - calcium, lime, rust remover
- LEL - lower explosive limit
- PLC - programmable logic controller
- SVE - soil vapor extraction
- VFD - variable frequency drive
- Indicates no reading was collected
- % - percent

TABLE 2

AIR EMISSIONS ESTIMATE SUMMARY

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

Sample Information and Lab Analysis								
Date	Total Flow (cf)	Delta Flow (cf)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH (µg/L)	PID (ppm)
9/8/2010	2,574,000	2,574,000	0.087	0.048	0.021	0.311	7.44	4.9
9/22/2010	4,464,000	1,890,000	0.039	0.048	0.0074	0.098	7.7	0.6
10/21/2010	10,342,320	5,878,320	<i>2.0</i>	0.015	2.7	<i>5.4</i>	1.2	0
2/25/2011	28,484,160	18,141,840	<i>0.049</i>	<i>0.055</i>	<i>0.065</i>	0.35	450	93.3
6/2/2011	41,918,010	13,433,850	0.330	0.047	0.026	1.38	370	54.1
8/17/2011	46,863,210	4,945,200	<i>0.0008</i>	0.0077	<i>0.0011</i>	0.0105	1.6	0.9
11/14/2011	54,003,450	7,140,240	0.387	<i>0.1675</i>	<i>0.118</i>	<i>0.169</i>	<i>10.55</i>	1.5
2/15/2012	61,159,410	7,155,960	0.229	1.850	0.289	2.065	3.010	8.9
5/17/2012	74,816,430	13,657,020	0.0068	0.055	0.0098	0.127	20.0	0
8/20/2012	78,199,290	3,382,860	0.120	0.109	0.0461	0.159	14.800	1.2

Emission Calculations						
Date	Flow Rate (cfm)	Benzene (lb/hr)	Toluene (lb/hr)	Ethylbenzene (lb/hr)	Total Xylenes (lb/hr)	TVPH (lb/hr)
9/8/2010	120	0.0000	0.0000	0.0000	0.0001	0.0033
9/22/2010	120	0.0000	0.0000	0.0000	0.0000	0.0035
10/21/2010	140	0.0010	0.0000	0.0014	0.0028	0.0006
2/25/2011	120	0.0000	0.0000	0.0000	0.0002	0.2020
6/2/2011	135	0.0002	0.0000	0.0000	0.0007	0.1868
8/17/2011	130	0.0000	0.0000	0.0000	0.0000	0.0008
11/14/2011	120	0.0002	0.0001	0.0001	0.0001	0.0047
2/15/2012	140	0.0001	0.0010	0.0002	0.0011	0.0016
5/17/2012	130	0.0000	0.0000	0.0000	0.0001	0.0097
8/20/2012	130	0.0001	0.0001	0.0000	0.0001	0.0072

Tons Emitted Over Total Operating Time								
Date	Total Operational Hours	Delta Hours	Benzene (lbs)	Toluene (lbs)	Ethylbenzene (lbs)	Total Xylenes (lbs)	TVPH (lbs)	TVPH (tons)
9/8/2010	397.5	357.5	0.01	0.01	0.00	0.05	1.19	0.00
9/22/2010	660.0	262.5	0.00	0.01	0.00	0.01	0.91	0.00
10/21/2010	1,359.8	699.8	0.73	0.01	0.99	1.98	0.44	0.00
2/25/2011	3,879.5	2,519.7	0.05	0.06	0.07	0.40	508.89	0.25
6/2/2011	5,538.0	1,658.5	0.28	0.04	0.02	1.16	309.84	0.15
8/17/2011	6,172.0	634.0	0.00	0.00	0.00	0.00	0.49	0.00
11/14/2011	7,163.7	991.7	0.17	0.07	0.05	0.08	4.70	0.00
2/15/2012	8,015.6	851.9	0.10	0.83	0.13	0.92	1.34	0.00
5/17/2012	9,766.5	1,750.9	0.01	0.05	0.01	0.11	17.03	0.01
8/20/2012	10,200.2	433.7	0.03	0.02	0.01	0.03	3.12	0.00
		Sum	1.39	1.09	1.29	4.73	847.95	0.42

NOTES:

cf - cubic feet

µg/L - micrograms per liter

TVPH - total volatile petroleum hydrocarbons

PID - photo-ionization detector

ppm - parts per million

cfm - cubic feet per minute

lb/hr - pounds per hour

lbs - pounds

Italicized values are reported as one half the detection limit for a non-detected result.

TABLE 3

GROUNDWATER ANALYTICAL RESULTS

CHESNUT G 22-6 TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Well ID	Date	Depth to Water/<Product> (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	26,400	8,320	536	8,800
	3/5/2010	14.60	NM	26,100	6,270	666	11,090
MW01R	9/20/2010	NM	NM	Could Not Locate Well			
	12/2/2010	8.68	88.25	5,600	161	37.1	1,550
	3/14/2011	15.33	81.60	1,010	<1.00	<1.00	12.8
	6/2/2011	9.89	87.04	1,080	<1.0	13.5	1,400
	9/12/2011	2.96	93.97	1,560	<1.0	84.5	1,510
	12/9/2011	7.80	89.13	427	<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	5.8	<1	<1	19.3
	9/18/2012	4.04	92.89	7.1	<1.0	3.1	100
	MW02	1/13/2009	15.12	83.02	3,460	1,420	199
3/5/2010		15.95	82.19	857	3.61	151	1,448.61
9/20/2010		6.00	92.14	338	<1.0	104	2,256.14
12/2/2010		10.04	88.10	125	<1.0	147	1,590
3/14/2011		16.40	81.74	37.4	<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	
MW03	1/13/2009	15.06	NM	11,700	7,860	195	5,950
MW04	1/13/2009	13.13	84.15	19,700	7,460	555	9,990
	3/5/2010	15.71 *sheen	81.57	Sample not collected			
	9/20/2010	3.70	93.58	563	<10.0	<10.0	6,027
	12/2/2010	9.33	87.95	664	42	19.1	4,710
	3/14/2011	14.94	82.34	713	<10.0	113	6,510
	6/2/2011	9.10	88.18	233	<1.0	31.8	457
	9/12/2011	3.40	93.88	23.8	<1.0	6.8	124
	12/9/2011	9.60	87.68	57.2	<1.0	3.62	90.3
	3/22/2012	14.21	83.07	295	5.33	5.99	53.7
	6/8/2012	4.57	92.40	14.3	<1	<1	14.4
9/18/2012	3.32	93.96	3.5	<1.0	1.3	59.0	
MW05	1/13/2009	14.58	82.39	15,500	14,900	412	6,860
	3/5/2010	16.06 * sheen	80.91	Sample not collected			
	9/20/2010	6.60	90.37	12,700	1,500	522	8,190
	12/2/2010	10.48	86.49	14,700	185	122	5,650
	3/14/2011	16.16	80.81	67.9	<1.00	<1.00	112
	6/2/2011	13.25	83.72	143	<1.0	<1.0	13.0
	9/12/2011	5.96	91.01	5,050	22.5	59.1	2,680
	12/9/2011	10.70	86.27	8,790	10.6	<10.0	659
	3/22/2012	NM	NM	Not Sampled - Dry			
	6/8/2012	8.36	88.61	337	<1	<1	4.4
9/18/2012	7.68	89.29	1,249	1.1	3.8	59.3	
MW06	2/19/2009	17.24	79.73	305	15.8	167	2,476
	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	

TABLE 3 (CONTINUED)

GROUNDWATER ANALYTICAL RESULTS

CHESNUT G 22-6 TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Well ID	Date	Depth to Water/<Product> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW07	2/19/2009	19.18	75.41	3.99	7.09	64.1	288.67
	3/5/2010	15.93	78.66	5.47	<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 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
MW08 MW08R	2/19/2009	18.03	NM	34.3	2,000	202	4,213
	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
MW09 MW09R	2/19/2009	18.96	NM	1,250	23.0	19.0	25.28
	9/20/2010	10.75	82.99	3,350	<1.0	368	1,891.7
	12/2/2010	12.79	80.95	10.2	<10.0	85.2	392
	3/14/2011	17.67	76.07	422	<1.0	200	644
	6/2/2011	17.02	76.72	902	<1.0	303	1,490
	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	81.40	<1	<1	5.9	8.9
	9/18/2012	11.43	82.31	<1.0	<1.0	<1.0	<1.0
MW10	2/19/2009	17.34	76.83	10,300	374	412	2,435
	3/5/2010	16.46	77.71	9,790	581	452	3,707
	9/20/2010	7.70	86.47	4,130	50.0	434	4,280
	12/2/2010	10.83	83.34	1,560	<10.0	33.5	1,100
	3/14/2011	12.25	81.92	1,070	<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	310	<1.0	107	250
	12/9/2011	10.62	83.55	243	<1.0	53.2	279
	3/22/2012	16.37	77.80	30.3	1.75	<1.0	<1.0
	6/8/2012	9.60	84.57	18.2	<1	<1	<1
	9/18/2012	8.78	85.39	<1.0	<1.0	<1.0	<1.0
MW11	2/19/2009	17.67	78.49	6,130	48.5	43.4	818.6
	3/5/2010	16.38	79.78	10,500	<1.0	10.1	497
	9/20/2010	7.20	88.96	2,670	<1.0	<1.0	235.88
	12/2/2010	11.55	84.61	835	<10.0	<10.0	57.1
	3/14/2011	16.27	79.89	180	<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

TABLE 3 (CONTINUED)

GROUNDWATER ANALYTICAL RESULTS

CHESNUT G 22-6 TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Well ID	Date	Depth to Water/<Product> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW12	2/19/2009	14.81	81.95	1,970	257	138	423
	3/5/2010	14.63	82.13	465	24.5	42.7	199.9
	9/20/2010	4.10	92.66	9.92	<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	58.7	<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	12.8	<1	3.7	13.7
9/18/2012	4.41	92.35	<1.0	<1.0	<1.0	1.4	
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	
MW14	2/19/2009	14.32	NM	<1.0	<1.0	<1.0	<3.0
	3/5/2012	NM	NM	Destroyed			
MW15	2/19/2009	14.95	78.55	2,490	3,380	150	1,732
	3/5/2010	13.00	80.50	998	1,890	141	2,026
	9/20/2010	2.80	90.70	107	<1.0	<1.0	417.3
	12/2/2010	8.24	85.26	133	<1.0	<1.0	470
	3/14/2011	12.96	80.54	181	<1.00	135	1,580
	6/2/2011	7.44	86.06	35.4	<1.0	15.6	308
	9/12/2011	2.44	91.06	15.2	<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	
MW16 MW16R	2/19/2009	15.25	NM	1,060	16.2	156	37.5
	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
MW17 MW17R	2/19/2009	15.93 <15.91>	NM	3,680	9,940	775	1,075
	9/20/2010	7.92	84.99	<1.0	<1.0	46.1	256.31
	12/2/2010	11.10	81.81	3.10	<1.0	112	570
	3/14/2011	15.62	77.29	9.19	<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	9.28	<1.0	141	1,090
	3/22/2012	15.89	77.02	5.4	2.59	85.3	616
	6/8/2012	10.44	82.47	4.1	<1	117	668
	9/18/2012	9.07	83.84	5.2	<1.0	95.1	522
MW18 MW18R	2/19/2009	16.22	NM	1,410	80.9	51.0	229.6
	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
	2/28/2012	NM	NM	Abandoned per COGCC approval			

TABLE 3 (CONTINUED)

GROUNDWATER ANALYTICAL RESULTS

CHESNUT G 22-6 TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Well ID	Date	Depth to Water/<Product> (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW19	2/25/2009	16.67	NM	329	<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
	2/28/2012	NM	NM	Abandoned per COGCC approval			
MW20	2/25/2009	17.55	NM	2.13	2.34	16.0	3.27
				Destroyed			
MW21	2/25/2009	16.87	NM	2.00	<1.0	<1.0	11.9
				Destroyed			
MW22	2/25/2009	16.70	NM	8.70	40.7	3.78	22.65
				Destroyed			
MW23	2/25/2009	15.25	NM	32.9	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
MW24	2/25/2009	14.87	NM	1.02	<1.0	<1.0	<3.0
				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
				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	NM	NM	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
MW27	2/25/2009	19.98	NM	<1.0	<1.0	<1.0	<3.0
				Destroyed			
MW28	2/25/2009	15.82	NM	<1.0	<1.0	<1.0	<3.0
				Destroyed			
MW29	2/25/2009	16.77	NM	<1.0	<1.0	<1.0	<3.0
				Destroyed			
MW30	2/25/2009	16.86	NM	<1.0	<1.0	<1.0	<3.0
				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
	9/12/2011			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
	2/28/2012	NM	NM	Abandoned per COGCC approval			
CDPHE WQCC Reg 41				5.0	560	700	1,400

NOTES:

btoc - below top of casing

µg/L - micrograms per liter

NM - not measured

< indicates result is less than the stated laboratory reporting limit

Bold indicates concentration exceeds CDPHE WQCC Reg 41.

CDPHE WQCC Reg 41 - Colorado Department of Public Health and Environment - Water Quality Control

Commission Regulation 41 covering The Basic Standards for Ground Water

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

COGCC - Colorado Oil and Gas Conservation Commission

ATTACHMENT 1

AIR EMISSIONS LABORATORY ANALYTICAL REPORT



August 29, 2012

LT Environmental, Inc.

Rob Rebel

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. August 21, 2012. This project is associated with Origins project number X208129-01.

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

Rob Rebel
Project Number: NEP0839
Project: Noble - Chestnut G 22-6

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Stack 01	X208129-01	Air	August 20, 2012 12:00	08/21/2012 15:20

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.

Noelle E Doyle, President

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

Rob Rebel
 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: X208129

Client: LTE

Client Project ID: Chestnut G 22-6

Checklist Completed by: Jeff Smith

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

Date/time completed: 8/21/12 15:30

Airbill #: 621

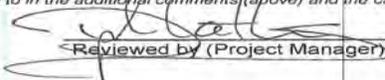
Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: Air
 (Describe)

Cooler Number/Temperature: 127.0 °C 1 °C 1 °C 1 °C

Thermometer ID: T001

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"/>	Air
Is there ice present (document if blue ice is used)			<input checked="" type="checkbox"/>	Air
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"/>	Air
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 HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	Air
Additional Comments (if any):				

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


 Reviewed by (Project Manager)

08-29-12 1157
 Date/Time Reviewed

Origins Laboratory, Inc.



Noelle E Doyle, President

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

Rob Rebel
 Project Number: NEP0839
 Project: Noble - Chestnut G 22-6

Stack 01

8/20/2012 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 X208129-01 (Air)

GBTEX by TO-15M GC/MS

Gasoline Range Hydrocarbons	14800	1730	ug/m ³ Air	8.63	2H28004	08/28/2012	08/28/2012	
Benzene	120	17.3	"	"	"	"	"	
Toluene	109	43.2	"	"	"	"	"	
Ethylbenzene	46.1	43.2	"	"	"	"	"	
m,p-Xylene	159	94.9	"	"	"	"	"	
o-Xylene	ND	43.2	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	86.4 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	83.5 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	92.3 %	70-130			"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Noelle E Doyle, President

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

Rob Rebel
 Project Number: NEP0839
 Project: Noble - Chestnut G 22-6

Volatile Organic Compounds by EPA Method 8260B in Air - 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 2H28004 - Default Prep - Air

Blank (2H28004-BLK1)

Prepared: 08/28/2012 Analyzed: 08/28/2012

Gasoline Range Hydrocarbons	ND	200	ug/m ³ Air							
Benzene	ND	2.00	"							
Toluene	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
Xylenes, total	ND	5.00	"							

<i>Surrogate: 1,2-Dichloroethane-d4</i>	48.9		"	42.1		116	70-130			
<i>Surrogate: Toluene-d8</i>	43.8		"	41.0		107	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	78.9		"	71.6		110	70-130			

LCS (2H28004-BS1)

Prepared: 08/28/2012 Analyzed: 08/28/2012

Benzene	32.6	2.00	ug/m ³ Air	32.6		99.9	70-130			
Toluene	40.2	5.00	"	39.6		102	70-130			
Ethylbenzene	51.9	5.00	"	45.6		114	70-130			
m,p-Xylene	123	11.0	"	116		105	70-130			
o-Xylene	48.4	5.00	"	46.5		104	70-130			

<i>Surrogate: 1,2-Dichloroethane-d4</i>	45.6		"	42.1		108	70-130			
<i>Surrogate: Toluene-d8</i>	43.0		"	41.0		105	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	76.2		"	71.6		106	70-130			

LCS Dup (2H28004-BSD1)

Prepared: 08/28/2012 Analyzed: 08/28/2012

Benzene	31.7	2.00	ug/m ³ Air	32.6		97.3	70-130	2.69	20	
Toluene	39.4	5.00	"	39.6		99.6	70-130	1.89	20	
Ethylbenzene	49.8	5.00	"	45.6		109	70-130	4.19	20	
m,p-Xylene	119	11.0	"	116		102	70-130	2.94	20	
o-Xylene	46.9	5.00	"	46.5		101	70-130	3.19	20	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	45.6		"	42.1		108	70-130			
<i>Surrogate: Toluene-d8</i>	43.3		"	41.0		106	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	76.2		"	71.6		106	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Noelle E Doyle, President

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

Rob Rebel
Project Number: NEP0839
Project: Noble - Chestnut G 22-6

Volatile Organic Compounds by EPA Method 8260B in Air - 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 2H28004 - Default Prep - Air

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.

Noelle E Doyle, President

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

Rob Rebel
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

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.

Noelle E Doyle, President

ATTACHMENT 2
GROUNDWATER LABORATORY ANALYTICAL REPORT

Certificate of Analysis

eANALYTICS LABORATORY

September 19, 2012

Client: LT Environmental
4600 West 60th Avenue
Arvada, Colorado 80003

Project: Chesnut G22-6

Lab ID: 091804

Date Received: 09/18/12

Number of Samples Received: 17

Sample Condition: Samples arrived intact and in appropriate sample containers

Sample Temperature: Within acceptable range of 2-6° C, or as specified in EPA Method

Analysis	EPA Method	Lab ID on COC
BTEX	8260C	1 - 17

All quality control analyses associated with the requested analyses were satisfactorily passed before the samples were run. If you have any questions please give us a call, we are happy to help.

Thank you for allowing eAnalytics Laboratory to provide laboratory services for you, we truly appreciate your business.

Sincerely,



Christopher Dieken
Quality Assurance Manager
eAnalytics Laboratory
(970) 667-6975
info@eAnalyticsLab.com



A2LA & Department of Defense (DoD) Certified

Certificate of Analysis

Chain of Custody



September 19, 2012

Chain of Custody Form

eANALYTICS LABORATORY			eANALYTICS LABORATORY																											
1767 Rocky Mountain Avenue Loveland CO 80538			Phone: (970) 667-6975			Fax: (970) 669-0941			www.eAnalyticsLab.com																					
CLIENT INFORMATION			ANALYSIS INFORMATION																											
(*New Clients please fill out completely)			(Select analysis by checking box on corresponding sample line)																											
Company: LTE			Number of Containers	Matrix: (S) Soil (W) Water (V) Vapor (O) Other	<input checked="" type="checkbox"/> BTEX (EPA 8161/8162/8163/8164)	<input type="checkbox"/> TEPH (EPA 8015)	<input type="checkbox"/> Vapor BTEX / TVPH (EPA TO-14)	<input type="checkbox"/> Full VOC (EPA 8260)	<input type="checkbox"/> Semi-Volatiles 8270 / PAH	<input type="checkbox"/> TRPH / Oil & Grease	<input type="checkbox"/> RCRA 8 Metals (Total / TCLP / Dissolved)	<input type="checkbox"/> React. / Ignit. / Corrosivity / Paint Filter	<input type="checkbox"/> pH / TSS / TDS	<input type="checkbox"/> Metals (Specify)	<input type="checkbox"/> PCBs	<input type="checkbox"/> Anions (Specify)	Other Analysis													
Project: Chesnut G 22-6																														
Project Manager: Rob Rebel																														
Sampler: M. Bruce, Liz Houle																														
Phone/Email: Rebel@LTenv.com																														
Address: 4600 W 60th Ave Arvada CO 80003																														
Lab ID	Sample Name	Sampling Date/Time																												
01	MW01R	9/18/12	1145 AM/PM	3	W	X																								
02	MW02		1400 AM/PM																											
03	MW04		1300 AM/PM																											
04	MW05		1320 AM/PM																											
05	MW06		1340 AM/PM																											
06	MW07		1150 AM/PM																											
07	MW08R		1215 AM/PM																											
08	MW09R		1230 AM/PM																											
09	MW10		1200 AM/PM																											
10	MW11		1330 AM/PM																											
11	MW12		1235 AM/PM																											
12	MW13		1260 AM/PM																											
13	MW15		1310 AM/PM																											
14	MW16R		1220 AM/PM																											
15	MW17R		1245 AM/PM																											
Comments:																														
Turnaround Time (Business Days) TAT begins when sample is received by eANALYTICS <input checked="" type="radio"/> Normal (5-10 Days) <input type="radio"/> 3 Day (1.25x) <input type="radio"/> 2 Day (1.5x) <input type="radio"/> 1 Day (2x) <input type="radio"/> Same Day (3x) Rush analysis requires an extra charge. If possible please inform eANALYTICS in advance for rush analysis.										Record of Custody Relinquished by: <i>M. Bruce</i> Date: 9-18-12 Company: LTE Time: 1445 AM/PM Received by: _____ Date: _____ Company: _____ Time: _____ AM/PM																				
Colorado OPS Project: Yes / <input checked="" type="radio"/> No										Relinquished by: _____ Date: _____ Company: _____ Time: _____ AM/PM Received by: <i>[Signature]</i> Date: 9-18-12 Company: eANALYTICS Time: 2:45 AM/PM																				
For eANALYTICS Use Samples Received Intact: <input checked="" type="radio"/> Yes / <input type="radio"/> No Received Within Temperature Range (2-6°C): <input checked="" type="radio"/> Yes / <input type="radio"/> No Sample Preservative: <input checked="" type="radio"/> Ice / <input type="radio"/> None / <input type="radio"/> Acid / <input type="radio"/> Other																														

WO # 091804

eANALYTICS: Environmental testing made Easy

Page 1 of 2

Certificate of Analysis

**Quality Control
Analysis**



September 19, 2012

Client: LT Environmental
4600 West 60th Avenue
Arvada, Colorado 80003

Project: Chesnut G22-6

Lab ID: 091804

Matrix: WATER
Batch ID: EA 09-18-12

EPA Method: 8260C BTEX

Sample Name	Benzene	Toluene	Ethyl - Benzene	Total Xylenes	Date Analyzed	Lab ID
Laboratory Control Sample	90	99	91	101	09/18/12	L 09-18-12
(Acceptable 70-130%)	% Rec	% Rec	% Rec	% Rec		
Calibration Verification	88	105	97	98	09/18/12	C 09-18-12
(Acceptable 80-120%)	% Rec	% Rec	% Rec	% Rec		
Reagent Blank	< 1.0	< 1.0	< 1.0	< 1.0	09/18/12	RB 09-18-12
	ug/L	ug/L	ug/L	ug/L		

Todd Rhea

Laboratory Manager - eAnalytics Laboratory