

1625 Broadway
Suite 2200.
Denver, CO 80202



Tel: 303.228.4000
Fax: 303.228.4286
www.nobleenergyinc.com

North America Division

August 14, 2012

Mr. John Axelson
Department of Natural Resources
Oil & Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, CO 80201

RE: Quarterly Groundwater Monitoring Report
Eckhardt #1 Tank Battery
Spill Tracking #2223317
API 05-123-10836
SESE Sec. 33, T5N, R64W
Weld County, Colorado

Dear Mr. Axelson:

Please find attached quarterly groundwater monitoring report for the Eckhardt #1 tank battery. Noble Energy Inc. would like to claim business confidentiality protection for the information submitted in this letter, the supporting materials attached and all subsequent correspondence related to this matter. Please contact the Noble Energy EHS Department at 303-228-4000 if you have any questions or require additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Ryan Bruner'.

Ryan Bruner
Environmental and Regulatory Supervisor

Attachment



GROUNDWATER MONITORING REPORT JUNE 2012

ECKHARDT 1, 33-15 TANK BATTERY COGCC SPILL TRACKING #2223314

On June 15, 2012, LT Environmental, Inc. (LTE), under the direction of Noble Energy, Inc. (Noble), conducted groundwater monitoring at the Eckhardt 1, 33-15 Tank Battery (Site). The site history was described in preceding reports. The June 2012 groundwater monitoring event constitutes the first post-excavation groundwater monitoring event.

Soil borings SB01 through SB20 were completed as temporary groundwater monitoring wells on March 29, 30, and April 6, 2012. The site map is presented as Figure 1. Groundwater level measurements were collected and are summarized in Table 1.

During the June 2012 monitoring event, depth to groundwater, which ranged from 8.69 feet below top of casing (btoc) in monitoring well SB15 to 10.25 feet btoc in monitoring well SB10, was used to calculate well-specific purge volumes. Following purging, samples were collected and then submitted to eAnalytics Laboratory of Loveland, 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 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.

During the June 2012 monitoring event, groundwater analytical results indicate the sample from monitoring well SB11 exceeded the WQCC Reg 41 for benzene at a concentration of 39.0 $\mu\text{g/L}$, while SB03, SB10, and SB15 were in compliance with WQCC Reg 41 standards. Groundwater analytical results are presented in Figure 2 and summarized in Table 1. The laboratory analytical report is attached.

Future groundwater monitoring will include the impacted well (SB11), three downgradient wells (SB10, SB12, and SB15), and one upgradient well (SB03). Monitoring well SB12 will be incorporated into the groundwater sampling plan as a downgradient monitoring well and will be sampled during the next sampling event.

LTE, under the direction of Noble, will continue to conduct quarterly groundwater monitoring of five monitoring wells (SB03, SB10, SB11, SB12, and SB15) with the goal of obtaining four quarters with analytical results in compliance with WQCC Reg 41. The next groundwater monitoring event is scheduled for September 2012. Remediation activities will be presented in future reports.

FIGURES



IMAGE COURTESY OF GOOGLE EARTH, 07/07/2011

LEGEND

-  MONITORING WELL
-  DESTROYED MONITORING WELL
-  ABANDONED MONITORING WELL
-  DCP GAS LINE
-  DUMP LINE
-  FLOW LINE
-  CURRENT INFRASTRUCTURE

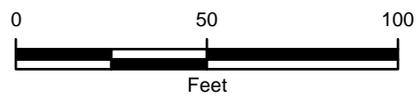
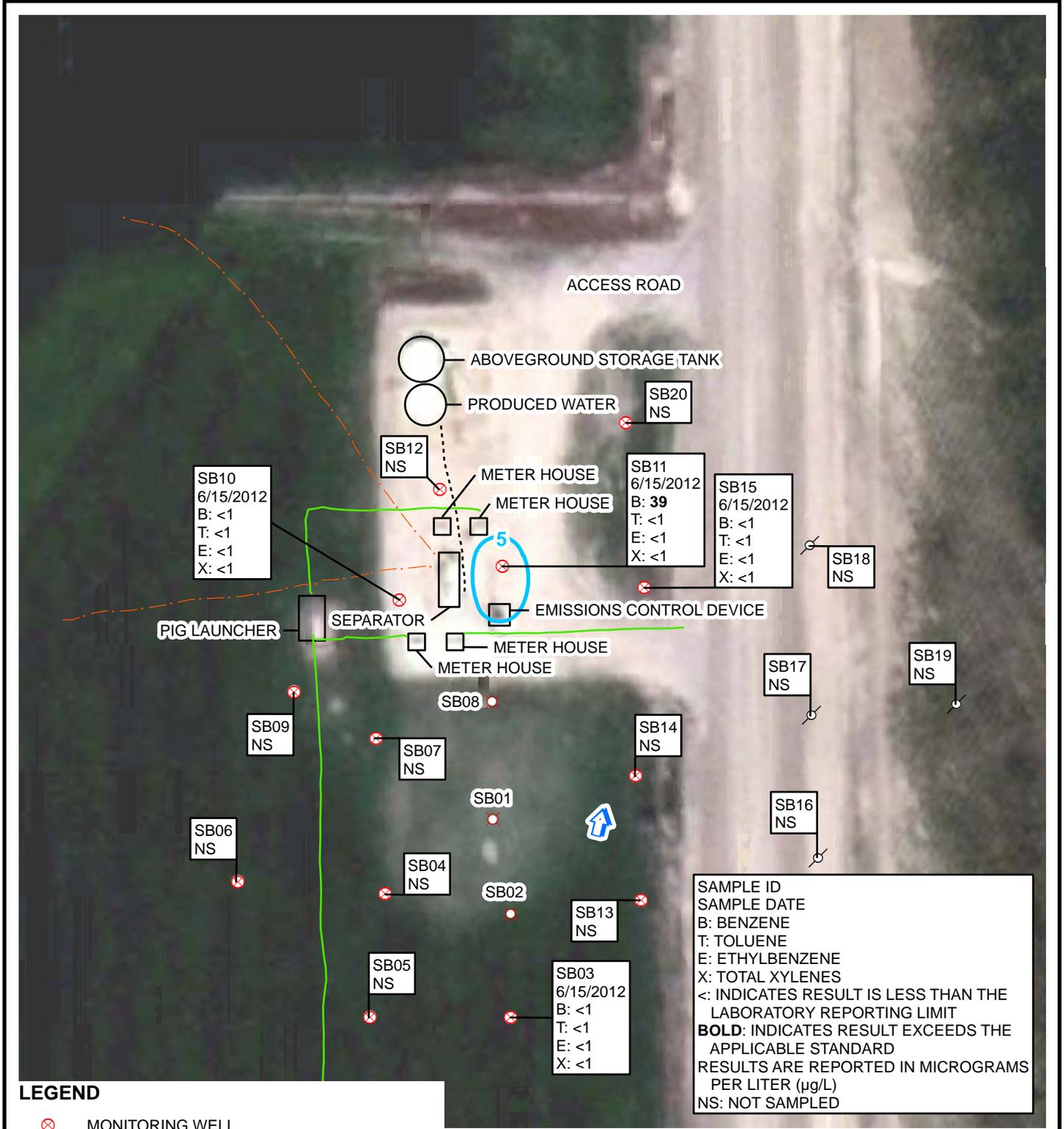


FIGURE 1
SITE MAP
 ECKHARDT 1, 33-15 TANK BATTERY
 WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





SB10
6/15/2012
B: <1
T: <1
E: <1
X: <1

ABOVEGROUND STORAGE TANK
PRODUCED WATER

SB11
6/15/2012
B: **39**
T: <1
E: <1
X: <1

SB15
6/15/2012
B: <1
T: <1
E: <1
X: <1

PIG LAUNCHER

SEPARATOR

EMISSIONS CONTROL DEVICE

METER HOUSE
METER HOUSE

SB09
NS

SB07
NS

SB14
NS

SB06
NS

SB04
NS

SB01

SB17
NS

SB19
NS

SB05
NS

SB02

SB13
NS

SB16
NS

SB03
6/15/2012
B: <1
T: <1
E: <1
X: <1

SAMPLE ID
SAMPLE DATE
B: BENZENE
T: TOLUENE
E: ETHYLBENZENE
X: TOTAL XYLENES
<: INDICATES RESULT IS LESS THAN THE LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE APPLICABLE STANDARD
RESULTS ARE REPORTED IN MICROGRAMS PER LITER (µg/L)
NS: NOT SAMPLED

IMAGE COURTESY OF GOOGLE EARTH, 07/07/2011

LEGEND

- MONITORING WELL
- DESTROYED MONITORING WELL
- ABANDONED MONITORING WELL
- ESTIMATED GROUNDWATER FLOW DIRECTION
- DCP GAS LINE
- DUMP LINE
- FLOW LINE
- BENZENE CONCENTRATION CONTOUR (µg/L)
- CURRENT INFRASTRUCTURE

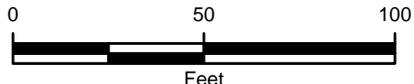


FIGURE 2
GROUNDWATER ANALYTICAL RESULTS
ECKHARDT 1, 33-15 TANK BATTERY
WELD COUNTY, COLORADO



NOBLE ENERGY, INC.

TABLE

TABLE 1

**GROUNDWATER ANALYTICAL RESULTS
ECKHARDT 1, 33-15 TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.**

Monitoring Well	Date	Depth to Water (feet btoc)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB01	3/30/2012 5/24/2012	9.70	380	<1.0	7.9	6.7
			Destroyed During Excavation Activities			
SB02	3/30/2012 5/24/2012	9.34	<1.0	<1.0	1.7	<1.0
			Destroyed During Excavation Activities			
SB03	3/30/2012 6/15/2012	9.43 10.06	<1.0 <1	<1.0 <1	<1.0 <1	<1.0 <1
SB04	3/30/2012 6/15/2012	9.55	<1.0	<1.0	190	650
			Not Sampled Per COGCC Approval			
SB05	3/30/2012 6/15/2012	9.80	<1.0	<1.0	<1.0	<1.0
			Not Sampled Per COGCC Approval			
SB06	3/30/2012 6/15/2012	9.97	<1.0	<1.0	<1.0	<1.0
			Not Sampled Per COGCC Approval			
SB07	3/30/2012 6/15/2012	9.52	<1.0	<1.0	<1.0	<1.0
			Not Sampled Per COGCC Approval			
SB08	3/30/2012 5/24/2012	9.75	100	<1.0	<1.0	7.6
			Destroyed During Excavation Activities			
SB09	3/30/2012 6/15/2012	10.02	<1.0	<1.0	<1.0	<1.0
			Not Sampled Per COGCC Approval			
SB10	3/30/2012 6/15/2012	8.90 10.25	<1.0 <1	<1.0 <1	<1.0 <1	<1.0 <1
SB11	3/30/2012 6/15/2012	8.90 10.19	<1.0 39.0	<1.0 <1	<1.0 <1	<1.0 <1
SB12	3/30/2012 6/15/2012	8.85	<1.0	<1.0	<1.0	<1.0
			Not Sampled Per COGCC Approval			
SB13	4/9/2012 6/15/2012	9.52	<1.0	<1.0	<1.0	<1.0
			Not Sampled Per COGCC Approval			
SB14	4/9/2012 6/15/2012	9.64	<1.0	<1.0	<1.0	<1.0
			Not Sampled Per COGCC Approval			
SB15	4/9/2012 6/15/2012	7.65 8.69	<1.0 <1	<1.0 <1	<1.0 <1	<1.0 <1
SB16	4/9/2012 6/15/2012	9.50	<1.0	<1.0	<1.0	<1.0
			Abandoned Per COGCC Approval			
SB17	4/9/2012 6/15/2012	8.43	<1.0	<1.0	11	150
			Abandoned Per COGCC Approval			
SB18	4/9/2012 6/15/2012	8.63	<1.0	<1.0	<1.0	<1.0
			Abandoned Per COGCC Approval			
SB19	4/9/2012 6/15/2012	9.90	<1.0	<1.0	<1.0	<1.0
			Abandoned Per COGCC Approval			
SB20	4/9/2012 6/15/2012	10.10	<1.0	<1.0	<1.0	<1.0
			Not Sampled Per COGCC Approval			
CDPHE WQCC Reg 41			5	560	700	1,400

NOTES:

btoc - below top of casing

µg/L - micrograms per liter

< - indicates result is less than the stated laboratory method reporting limit

BOLD - indicates result exceeds the applicable standard

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

CDPHE WQCC Reg 41 - Colorado Department of Public Health and Environment-Water Quality Control Commission Regulation 41 covering The Basic Standards for Ground Water

ATTACHMENT

LABORATORY ANALYTICAL REPORT

Certificate of Analysis



June 19, 2012

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

Project: Eckhardt 1, 33-15

Lab ID: 061502

Date Received: 06/15/12

Number of Samples Received: 4

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 - 4

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,

A handwritten signature in black ink, appearing to read "Chris Dieken".

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

Certificate of Analysis

**Quality Control
Analysis**



June 19, 2012

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

Project: Eckhardt 1, 33-15

Lab ID: 061502

Matrix: WATER
Batch ID: EA 06-18-12

EPA Method: 8260C BTEX

Sample Name	Benzene	Ethyl - Benzene	Toluene	Total Xylenes	Date Analyzed	Lab ID
Laboratory Control Sample	91	88	91	93	06/18/12	L 06-18-12
(Acceptable 70-130%)	% Rec	% Rec	% Rec	% Rec		
Calibration Verification	88	103	89	97	06/18/12	C 06-18-12
(Acceptable 80-120%)	% Rec	% Rec	% Rec	% Rec		
Reagent Blank	< 1	< 1	< 1	< 1	06/18/12	RB 06-18-12
	ug/L	ug/L	ug/L	ug/L		

Todd Rhea

Laboratory Manager - eAnalytics Laboratory