COMPLIANCE / ENGINEERING / REMEDIATION

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GROUNDWATER MONITORING REPORT
MARCH 2015

MILLER SOUTH #1 SPREAD FIELD
REMEDIATION #7412

LT Environmental, Inc. (LTE), under the direction of Noble Energy, Inc. (Noble), conducted groundwater monitoring activities at the Miller South #1 Spread Field (Site). The legal description of the Site is the south half of the northwest quarter of Section 29, Township 5 North, Range 64 West, 6th Principal Meridian. The Site is located approximately 0.35 miles east of County Road 51 and 0.25 miles south of County Road 54 in Weld County, Colorado. The Site Location Map is included as Figure 1.

On March 8 and 9, 2012, LTE advanced a total of 16 soil borings (SB01 through SB16). Soil borings (SB01 through SB16) were completed as temporary monitoring wells to assess the potential extent of inorganic constituents in groundwater related to the release of calcium chloride-enriched water. Monitoring well SB09 was located up-gradient from the release area to obtain background concentrations. On September 10 and 11, 2012, a total of 17 monitoring wells (Background 01, Background 02, SB01R through SB08R, and SB17 through SB23) were installed to provide background concentrations of the inorganic constituents of concern (Background 01 and Background 02), replace the destroyed monitoring wells (SB01R through SB08R), and delineate the potential extent of groundwater impacts (SB17 through SB23). On January 8, 2013, monitoring well SB05R2 was installed to replace destroyed monitoring well SB05R. On April 1, 2013, three monitoring wells (SB19R through SB21R) were installed to replace those destroyed during the expansion of the landowner's irrigation pond. On September 3, 2015, monitoring wells SB01R2, SB06R2, SB07R2, and SB20R2 were installed to replace destroyed monitoring wells SB01R, SB06R, SB07R, and SB20R. On September 3, 2015, due to landowner restrictions, monitoring wells SB04R, SB11, SB12, SB14, SB18, and SB23 were removed from the monitoring program. Soil boring SB09 was advanced to establish background conditions; however, it was located within the permitted spread field boundaries. Therefore, samples were collected from the Background 01 and Background 02 locations both up-gradient and outside of the permitted spread field and those results were used to calculate the Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 standard for chloride, sulfate, and total dissolved solids (TDS). A Site Map depicting the monitoring well location are provided as Figure 2.

Groundwater Monitoring Activities

On March 27, 2015, under the direction of Noble, LTE personnel were on site to conduct groundwater monitoring activities in 11 monitoring wells (SB01R, SB04R, SB05R2, SB06R, SB07R, SB11, SB12, SB14, SB18, SB20R, and SB23). Upon arrival, monitoring wells SB01R, SB07R, and SB20R were found to be destroyed by recent grading activity conducted by the landowner. Prior to purging, depth to groundwater was measured and recorded for calculating well-specific target purge volumes and relative groundwater elevations. Depth to groundwater during the March 2015 monitoring event ranged from 6.10 feet below top of casing (btoc) in monitoring well SB12 to 6.94 feet btoc in monitoring well SB06R. During the March 2015

monitoring event, groundwater was calculated to flow northwest with an average gradient of 0.006 feet per foot. Relative groundwater elevations for the March monitoring event are presented on Figure 3 and summarized in Table 1.

On September 3, 2015, under the direction of Noble, LTE personnel were on site to conduct groundwater monitoring activities in 11 monitoring wells (SB01R2, SB04R, SB05R2, SB06R2, SB07R2, SB11, SB12, SB14, SB18, SB20R2, and SB23). Monitoring wells SB04R, SB11, SB12, SB14, SB18, and SB23 could not be sampled due to landowner restrictions. Prior to purging, depth to groundwater was measured and recorded for calculating well-specific target purge volumes and relative groundwater elevations. Depth to groundwater during the September 2015 monitoring event ranged from 4.12 feet btoc in monitoring well SB06R2 to 7.19 feet btoc in monitoring well SB20R2. Groundwater was calculated to flow north-northwest with an average gradient of 0.008 feet per foot. Relative groundwater elevations for the September monitoring event are presented on Figure 4 and summarized in Table 1.

During the March 2015 monitoring event, eight groundwater samples (SB04R, SB05R2, SB06R, SB11, SB12, SB14, SB18, and SB23) were collected. During the September 2015 monitoring event, five groundwater samples (SB01R2, SB05R2, SB06R2, SB07R2, and SB20R2) were collected. All samples were submitted to Origins Laboratory, Inc. of Denver, Colorado, for analysis of chloride, bromide, and sulfate by United States Environmental Protection Agency Method 300.0 and TDS by Standard Method 2540C.

Groundwater Analytical Results

The COGCC Table 910-1 groundwater standards for chloride, sulfate, and TDS are 1.25 times the background concentrations from samples collected at monitoring wells Background 01 and Background 02. In order to help identify the potential release location, magnitude, or extent, groundwater data was analyzed to include evaluation of the chloride to bromide ratio (Cl^-/Br^-). The Cl^-/Br^- statistic may allow for identification of the potential calcium chloride impact by normalizing the data to the background inorganic variability and allowing the release to be identified regardless of the natural variability of background chloride concentrations. A benchmark of 250 (unitless) can be used to compare potential anthropogenic sourced data versus naturally occurring concentrations. The Cl^-/Br^- results for the March 2015 and September 2015 monitoring events are presented on Figure 5 and summarized in Table 1.

Laboratory groundwater analytical results for chloride, sulfate, and TDS for the March 2015 and September 2015 monitoring events are presented on Figure 5. Laboratory groundwater analytical results are summarized in Table 1. The laboratory groundwater analytical reports are attached.

Summary and Conclusions

As seen by the current and historical data collected and detailed in this report, groundwater impacts are generally confined to an area near the release. Groundwater monitoring points included in the current monitoring program indicated concentrations are generally stable or decreasing; therefore, monitored natural attenuation is an appropriate remedial method for the Site.

Due to plume stability and landowner restrictions, Noble requests that the monitoring program be reduced to annual sampling in one source monitoring well (SB01R2), one upgradient monitoring well (SB20R2), and two downgradient monitoring wells (SB12 and SB14). Under the direction of Noble, LTE will continue to conduct groundwater monitoring at the Site for chloride, bromide, sulfate, and TDS on an annual basis. The next monitoring event is scheduled for September 2017.

FIGURES

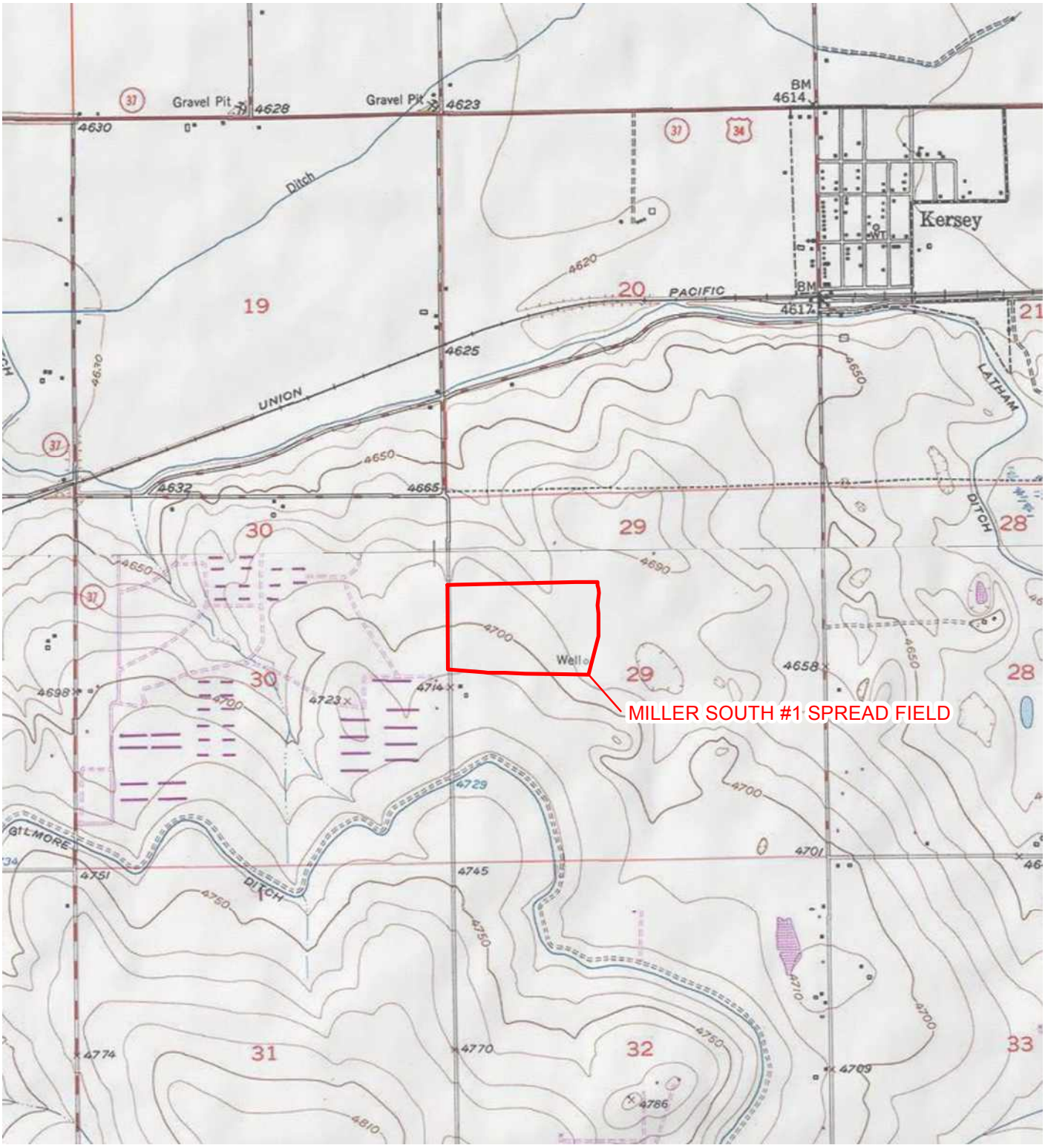

IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

COLORADO

FIGURE 1
SITE LOCATION MAP
MILLER SOUTH #1 SPREAD FIELD
S/2NW Sec29 T5N R64W
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

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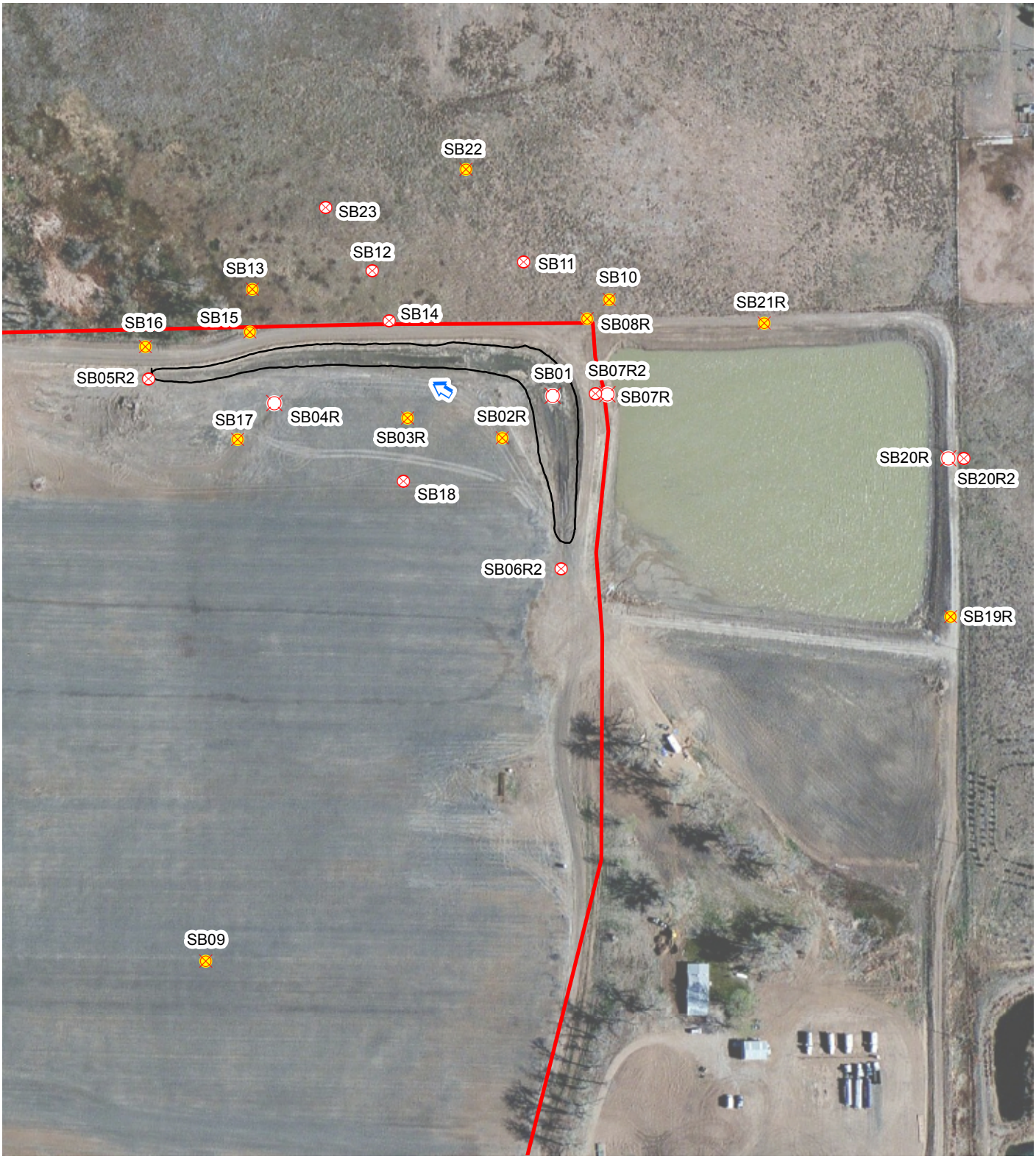


IMAGE COURTESY OF ESRI

LEGEND

- MONITORING WELL
- MONITORING WELL REMOVED FROM MONITORING PROGRAM
- CALCULATED GROUNDWATER FLOW DIRECTION
- SPREAD FIELD BOUNDARY
- SURFICIAL RELEASE EXTENT

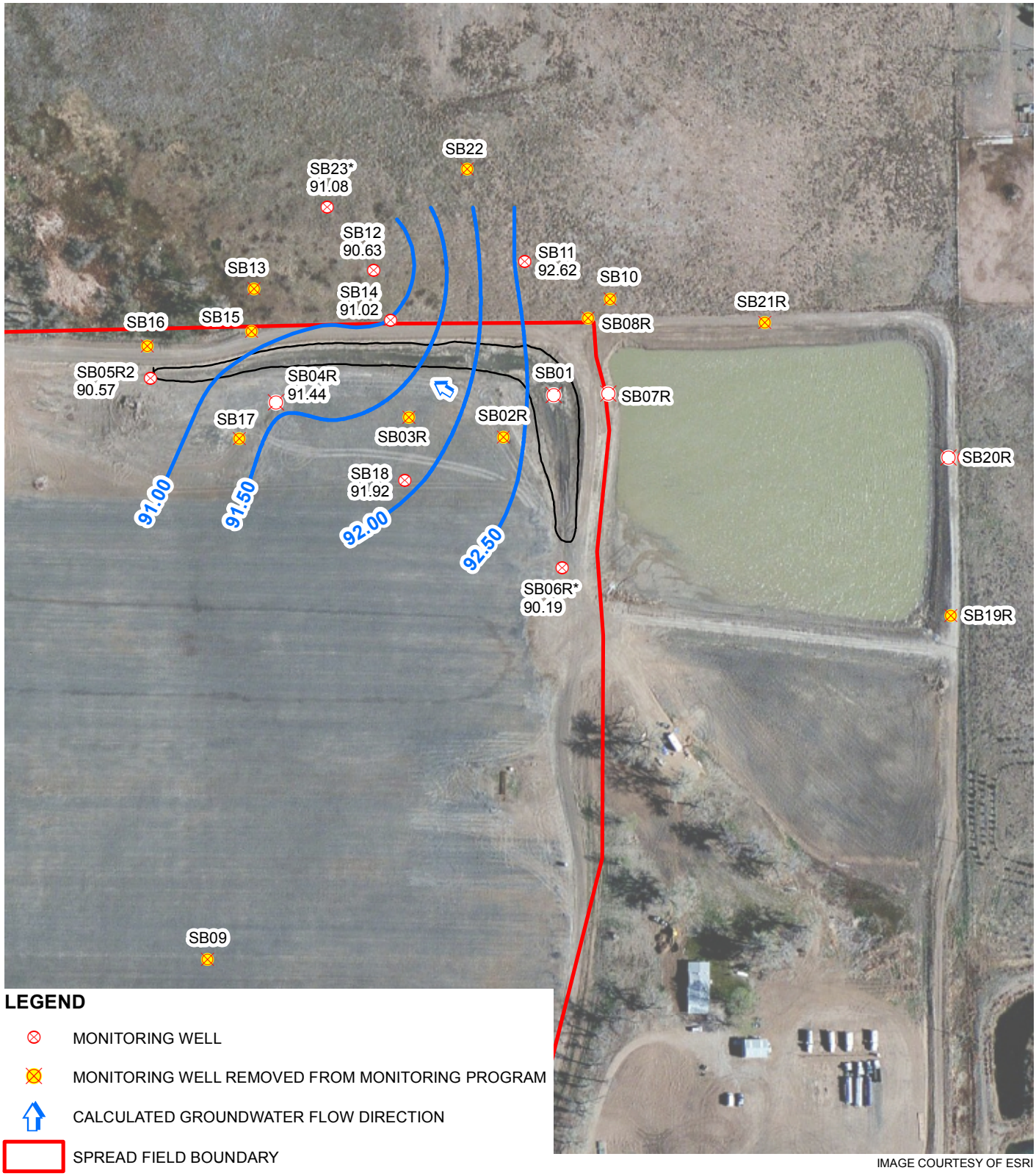
0 200 400
Feet

N

FIGURE 2
SITE MAP
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.

P:\Noble Energy Inc\GIS\MXDs\008312061_MILLER_SOUTH#1_CaCl\008312061_MILLER_SOUTH_CaCl_FIG02_SITE_2015_Q3.mxd



LEGEND

- MONITORING WELL
- MONITORING WELL REMOVED FROM MONITORING PROGRAM
- CALCULATED GROUNDWATER FLOW DIRECTION
- SPREAD FIELD BOUNDARY
- SURFICIAL RELEASE EXTENT
- RELATIVE GROUNDWATER ELEVATION CONTOUR
- CONTOUR INTERVAL = 0.50 FEET
- GRADIENT = 0.006 FEET/FOOT

*THE GROUNDWATER ELEVATIONS FROM MONITORING WELLS SB06R AND SB23 WERE NOT USED TO GENERATE CONTOURS.

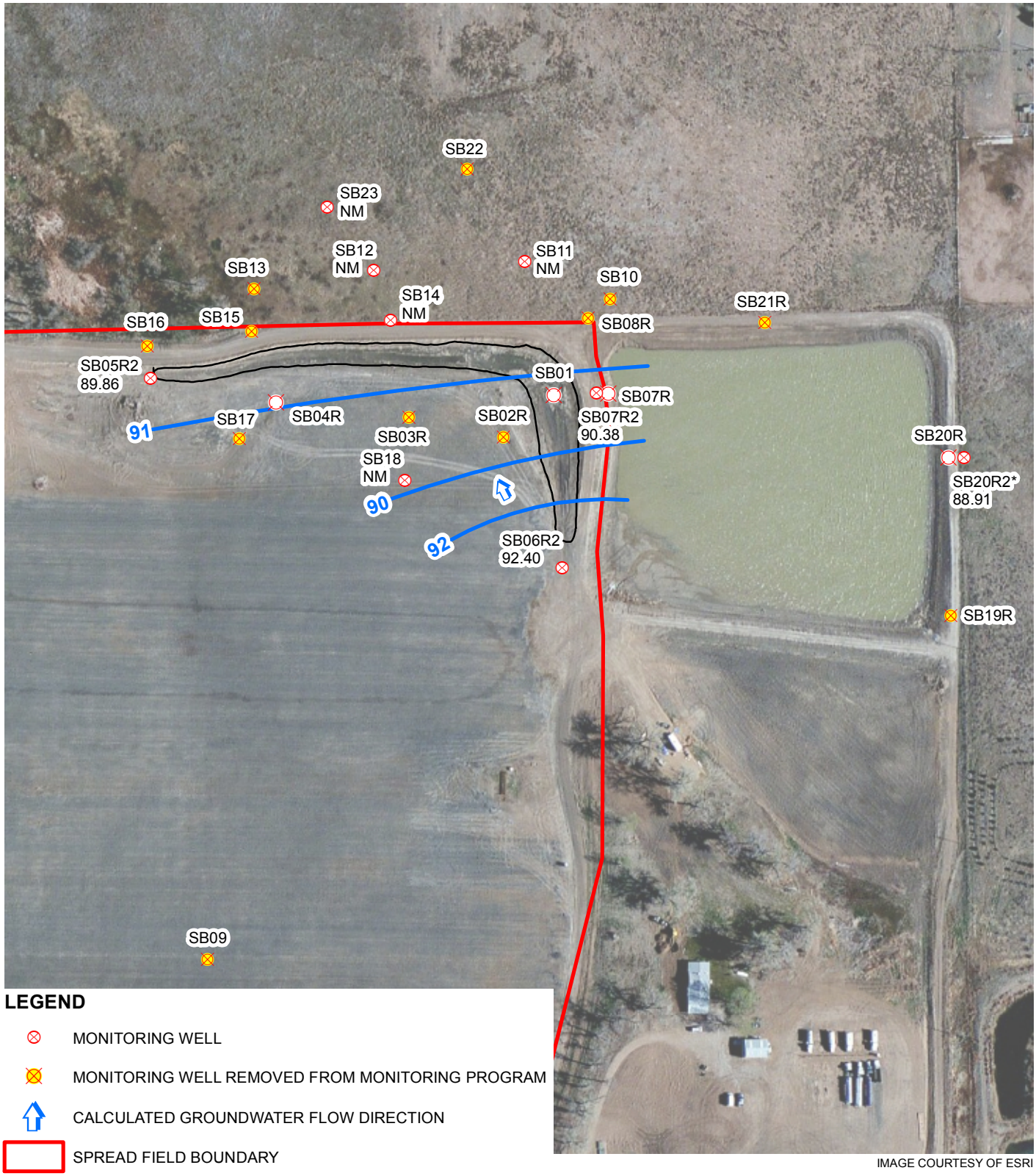
IMAGE COURTESY OF ESRI

0 200 400
Feet

N

FIGURE 3
RELATIVE GROUNDWATER ELEVATION MAP
MARCH 27, 2015
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

P:\Noble Energy Inc\GIS\MXDs\008312061_MILLER_SOUTH#1_CaCl\008312061_MILLER_SOUTH_CaCl_FIG02_GWELEV_2015_Q1.mxd



LEGEND

- MONITORING WELL
- MONITORING WELL REMOVED FROM MONITORING PROGRAM
- CALCULATED GROUNDWATER FLOW DIRECTION
- SPREAD FIELD BOUNDARY
- SURFICIAL RELEASE EXTENT
- RELATIVE GROUNDWATER ELEVATION CONTOUR
- CONTOUR INTERVAL = 1 FOOT
- GRADIENT = 0.008 FEET/FOOT

*THE GROUNDWATER ELEVATION FROM MONITORING WELL SB20R2 WAS NOT USED TO GENERATE CONTOURS.

IMAGE COURTESY OF ESRI

0 200 400
Feet

N

FIGURE 4
RELATIVE GROUNDWATER ELEVATION MAP
SEPTEMBER 3, 2015
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

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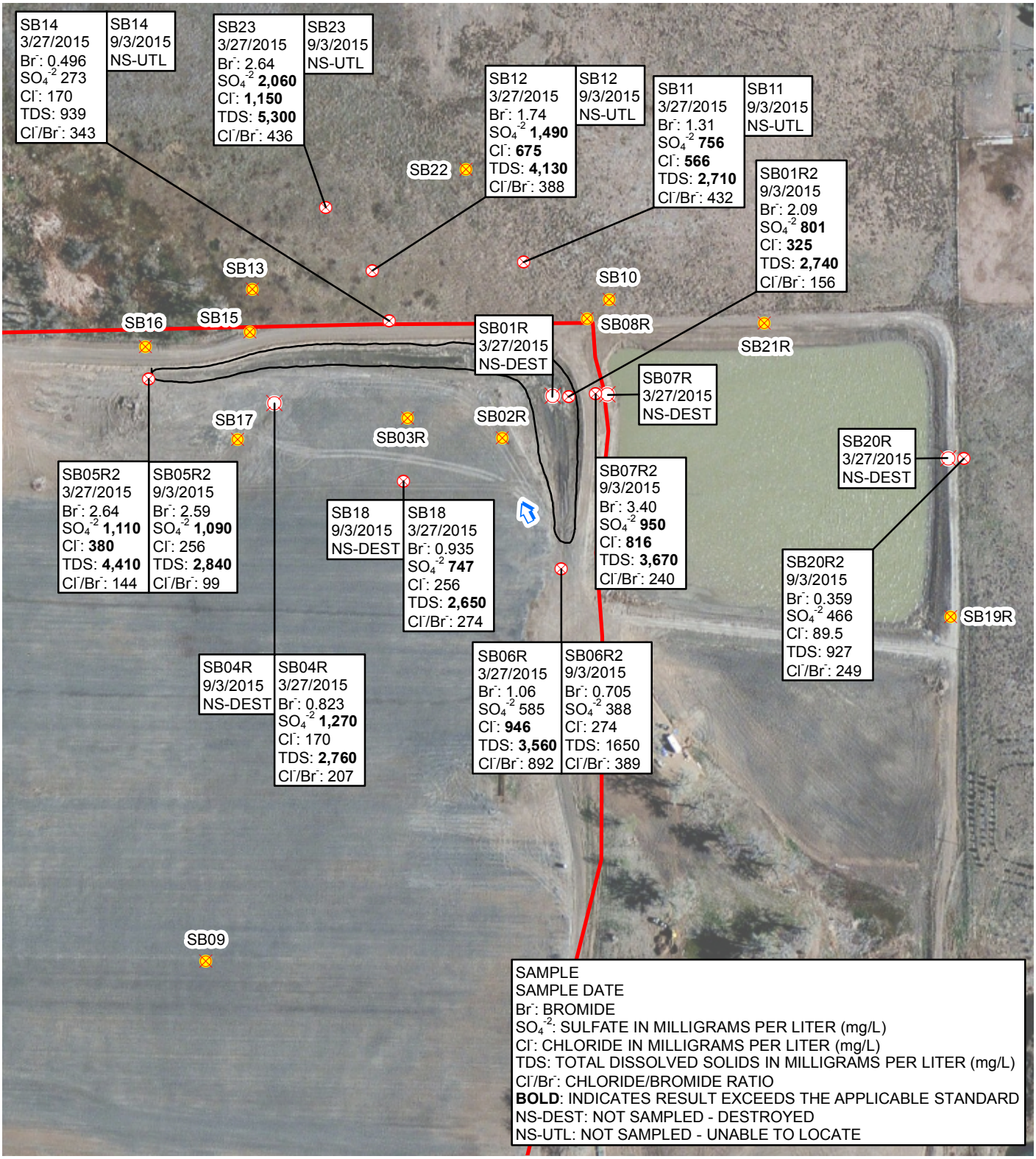


LEGEND

- MONITORING WELL
- MONITORING WELL REMOVED FROM MONITORING PROGRAM
- CALCULATED GROUNDWATER FLOW DIRECTION
- SPREAD FIELD BOUNDARY
- SURFICIAL RELEASE EXTENT

IMAGE COURTESY OF ESRI

0 200 400
Feet

N

FIGURE 5
GROUNDWATER ANALYTICAL RESULTS
MARCH & SEPTEMBER 2015
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

P:\Noble Energy Inc\GIS\MXDs\008312061_MILLER_SOUTH#1_CaCl\008312061_MILLER_SOUTH_CaCl_FIG05_GWA_2015_Q1_Q3.mxd

TABLES

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide*	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
Background 01	9/12/2012	15.36	95.02	236	NA	NA	514	1,600	<1.0	<1.0	<1.0	<1.0
Background 02	9/12/2012	17.40	94.91	217	NA	NA	433	1,400	<1.0	<1.0	<1.0	<1.0
SB01	3/8/2012	3.30	NM	**1,260**	NA	NA	**1,070**	**4,600**	NA	NA	NA	NA
				Monitoring well destroyed/removed								
SB01R	9/11/2012	4.24	90.72	181	NA	NA	372	1,300	<1.0	<1.0	<1.0	<1.0
	1/8/2013	2.75	92.21	**2,820**	NA	NA	**1,010**	**4,700**	NA	NA	NA	NA
	4/1/2013	NM	NM	No Sample - Under Water								
	7/12/2013	2.57	92.39	**1,360**	NA	NA	448	**2,800**	NA	NA	NA	NA
	10/31/2013	NM	NM	No Sample - Under Water								
	11/5/2013	9.56	85.40	208	NA	NA	553	**2,180**	NA	NA	NA	NA
	3/31/2014	9.25	85.71	193	0.725	266	440	1,780	NA	NA	NA	NA
	9/22/2014	NM	NM	No Sample - Under Water								
	3/27/2015	NM	NM	Monitoring well destroyed by landowner grading activity								
SB01R2	9/3/2015	5.62	90.28	**325**	2.09	156	**801**	**2,740**	NA	NA	NA	NA
SB02	3/8/2012	6.46	NM	220	NA	NA	584	1,700	NA	NA	NA	NA
				Monitoring well destroyed/removed								
SB02R	9/11/2012	8.03	91.30	214	NA	NA	300	1,100	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.72	92.61	241	NA	NA	366	830	NA	NA	NA	NA
	4/1/2013	7.18	92.15	241	NA	NA	378	880	NA	NA	NA	NA
	7/12/2013	6.49	92.84	196	NA	NA	365	900	NA	NA	NA	NA
	10/31/2013	5.60	93.73	203	NA	NA	392	980	NA	NA	NA	NA
	4/1/2014	6.25	93.08	192	0.741	259	425	1,380	NA	NA	NA	NA
	9/22/2014	NM	NM	No Sample - Under Water								
				Removed from monitoring program per COGCC document #2314191								

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide*	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB03	3/8/2012	6.22	NM	**348**	NA	NA	**1,070**	**3,100**	NA	NA	NA	NA
							Monitoring well destroyed/removed					
SB03R	9/11/2012	7.50	90.33	278	NA	NA	**646**	**2,300**	<1.0	<1.0	<1.0	<1.0
	1/8/2013	5.90	91.93	252	NA	NA	**741**	1,500	NA	NA	NA	NA
	4/1/2013	6.15	91.68	223	NA	NA	611	1,400	NA	NA	NA	NA
	7/12/2013	6.45	91.38	202	NA	NA	463	1,300	NA	NA	NA	NA
	10/31/2013	6.14	91.69	**348**	NA	NA	**1,310**	**2,500**	NA	NA	NA	NA
	4/1/2014	6.30	91.53	275	1.37	201	**1,030**	**2,930**	NA	NA	NA	NA
	9/22/2014	NM	NM				No Sample - Under Water					
							Removed from monitoring program per COGCC document #2314191					
SB04	3/8/2012	7.08	NM	**296**	NA	NA	**1,220**	**3,100**	NA	NA	NA	NA
							Monitoring well destroyed/removed					
SB04R	9/11/2012	7.94	89.73	**488**	NA	NA	**1,600**	**4,800**	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.83	90.84	**388**	NA	NA	**1,330**	**2,400**	NA	NA	NA	NA
	4/1/2013	6.30	91.37	**356**	NA	NA	**1,330**	**2,400**	NA	NA	NA	NA
	7/12/2013	6.11	91.56	**328**	NA	NA	**1,170**	**2,500**	NA	NA	NA	NA
	10/31/2013	NM	NM				Monitoring well damaged - No Sample					
	11/5/2013	4.28	93.39	**1,420**	NA	NA	**1,010**	**6,030**	NA	NA	NA	NA
	3/31/2014	4.15	93.52	**2,000**	2.77	722	**948**	**5,790**	NA	NA	NA	NA
	9/22/2014	NM	NM				No Sample - Under Water					
	3/27/2015	6.23	91.44	170	0.823	207	**1,270**	**2,760**	NA	NA	NA	NA
	9/3/2015	NM	NM				Monitoring well destroyed by landowner grading activity					
SB05	3/8/2012	7.94	NM	208	NA	NA	**896**	**2,400**	NA	NA	NA	NA
							Monitoring well destroyed/removed					

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide*	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB05R	9/11/2012	6.51	88.62	291	NA	NA	**1,060**	**3,000**	<1.0	<1.0	<1.0	<1.0
							Monitoring well destroyed/removed					
SB05R2	1/8/2013	4.65	NM	**6,170**	NA	NA	**1,570**	**10,000**	NA	NA	NA	NA
	4/1/2013	6.55	90.37	**1,630**	NA	NA	**2,790**	**4,800**	NA	NA	NA	NA
	7/12/2013	7.95	88.97	**489**	NA	NA	**862**	**2,100**	NA	NA	NA	NA
	10/31/2013	6.70	90.22	**436**	NA	NA	**1,650**	**2,800**	NA	NA	NA	NA
	3/31/2014	6.68	90.24	**853**	3.60	237	**1,830**	**4,500**	NA	NA	NA	NA
	9/22/2014	NM	NM				No Sample - Under Water					
	3/27/2015	6.35	90.57	**380**	2.64	144	**1,110**	**4,410**	NA	NA	NA	NA
	9/3/2015	7.06	89.86	256	2.59	99	**1,090**	**2,840**	NA	NA	NA	NA
SB06	3/8/2012	7.82	NM	147	NA	NA	280	890	NA	NA	NA	NA
							Monitoring well destroyed/removed					
SB06R	9/11/2012	7.45	89.68	186	NA	NA	325	1,200	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.32	90.81	218	NA	NA	401	770	NA	NA	NA	NA
	4/1/2013	6.99	90.14	199	NA	NA	366	780	NA	NA	NA	NA
	7/12/2013	4.78	92.35	171	NA	NA	307	750	NA	NA	NA	NA
	10/31/2013	5.89	91.24	223	NA	NA	242	730	NA	NA	NA	NA
	4/1/2014	7.70	89.43	221	1.03	215	308	1,090	NA	NA	NA	NA
	9/22/2014	6.53	90.60	184	0.452	407	318	1,010	NA	NA	NA	NA
	3/27/2015	6.94	90.19	**946**	1.06	892	585	**3,560**	NA	NA	NA	NA
SB06R2	9/3/2015	4.12	92.40	274	0.705	389	388	1,650	NA	NA	NA	NA
SB07	3/8/2012	6.93	NM	**1,020**	NA	NA	**1,620**	**4,700**	NA	NA	NA	NA
							Monitoring well destroyed/removed					
SB07R	9/11/2012	9.68	84.95	**773**	NA	NA	**896**	**3,400**	<1.0	<1.0	<1.0	<1.0
	1/8/2013	7.89	86.74	**1,150**	NA	NA	**2,930**	**4,900**	NA	NA	NA	NA

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide*	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB07R	4/1/2013	8.49	86.14	**1,050**	NA	NA	**3,170**	**5,000**	NA	NA	NA	NA
	7/12/2013	6.98	87.65	**551**	NA	NA	**3,020**	**3,900**	NA	NA	NA	NA
	10/31/2013	7.48	87.15	**839**	NA	NA	**2,530**	**4,000**	NA	NA	NA	NA
	4/1/2014	7.78	86.85	189	3.86	49	502	**5,650**	NA	NA	NA	NA
	9/22/2014	7.44	87.19	**677**	3.31	205	**2,040**	**5,590**	NA	NA	NA	NA
	3/27/2015	NM	NM	Monitoring well destroyed by landowner grading activity								
SB07R2	9/3/2015	6.03	90.38	**816**	3.40	240	**950**	**3,670**	NA	NA	NA	NA
SB08	3/8/2012	9.73	NM	182	NA	NA	395	1,100	NA	NA	NA	NA
				Monitoring well destroyed/removed								
SB08R	9/11/2012	11.77	89.27	**2,140**	NA	NA	500	1,600	<1.0	<1.0	<1.0	<1.0
	1/8/2013	9.39	91.65	247	NA	NA	**736**	1,100	NA	NA	NA	NA
	4/1/2013	9.79	91.25	202	NA	NA	391	860	NA	NA	NA	NA
	7/12/2013	8.80	92.24	**370**	NA	NA	**816**	1,600	NA	NA	NA	NA
	10/31/2013	8.22	92.82	277	NA	NA	475	1,100	NA	NA	NA	NA
	4/1/2014	9.07	91.97	272	0.764	356	348	1,270	NA	NA	NA	NA
	9/22/2014	NM	NM	No Sample - Monitoring well damaged Removed from monitoring program per COGCC document #2314191								
SB09 (background)	3/8/2012	8.09	NM	270	NA	NA	573	2,000	NA	NA	NA	NA
SB10	3/9/2012	9.64	NM	157	NA	NA	414	1,100	NA	NA	NA	NA
	9/12/2012	10.39	89.90	146	NA	NA	203	1,000	<1.0	<1.0	<1.0	<1.0
	1/8/2013	8.42	91.87	195	NA	NA	356	970	NA	NA	NA	NA
	4/1/2013	8.97	91.32	202	NA	NA	642	1,100	NA	NA	NA	NA
	7/12/2013	8.67	91.62	168	NA	NA	308	780	NA	NA	NA	NA

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide*	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB10	10/31/2013	8.20	92.09	196	NA	NA	212	760	NA	NA	NA	NA
	4/1/2014	9.13	91.16	219	0.496	442	267	960	NA	NA	NA	NA
	9/22/2014	7.85	92.44	144	0.365	395	236	834	NA	NA	NA	NA
				Removed from monitoring program per COGCC document #2314191								
SB11	3/9/2012	8.58	NM	267	NA	NA	**717**	1,900	NA	NA	NA	NA
	9/12/2012	9.78	89.05	263	NA	NA	639	1,900	<1.0	<1.0	<1.0	<1.0
	1/8/2013	7.72	91.11	**309**	NA	NA	**808**	1,300	NA	NA	NA	NA
	4/1/2013	7.89	90.94	**306**	NA	NA	**695**	1,300	NA	NA	NA	NA
	7/12/2013	8.68	90.15	**382**	NA	NA	**775**	1,600	NA	NA	NA	NA
	10/31/2013	7.69	91.14	**300**	NA	NA	**686**	1,300	NA	NA	NA	NA
	3/31/2014	7.90	90.93	272	0.796	342	593	1,780	NA	NA	NA	NA
	9/22/2014	6.55	92.28	**458**	1.33	344	**791**	**2,370**	NA	NA	NA	NA
	3/27/2015	6.21	92.62	**566**	1.31	432	**756**	**2,710**	NA	NA	NA	NA
	9/3/2015	NM	NM	No sample - unable to locate								
SB12	3/9/2012	6.16	NM	**300**	NA	NA	**1,230**	**2,500**	NA	NA	NA	NA
	9/12/2012	8.70	88.03	270	NA	NA	**643**	1,900	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.45	90.28	**424**	NA	NA	**921**	1,600	NA	NA	NA	NA
	4/1/2013	6.25	90.48	**366**	NA	NA	**1,650**	**2,200**	NA	NA	NA	NA
	4/4/2013	6.24	90.49	**371**	NA	NA	**1,650**	**2,200**	NA	NA	NA	NA
	7/12/2013	7.94	88.79	**393**	NA	NA	**1,100**	**2,000**	NA	NA	NA	NA
	10/31/2013	6.53	90.20	**311**	NA	NA	**1,210**	**2,100**	NA	NA	NA	NA
	3/31/2014	6.20	90.53	**1,150**	5.29	217	**3,000**	**6,510**	NA	NA	NA	NA
	9/22/2014	4.61	92.12	**392**	1.48	265	**1,330**	**3,370**	NA	NA	NA	NA
	3/27/2015	6.10	90.63	**675**	1.74	388	**1,490**	**4,130**	NA	NA	NA	NA
	9/3/2015	NM	NM	No sample - unable to locate								

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide*	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB13	3/9/2012	5.61	NM	**439**	NA	NA	**1,210**	**2,900**	NA	NA	NA	NA
	9/12/2012	7.43	87.40	**314**	NA	NA	**902**	**2,400**	<1.0	<1.0	<1.0	<1.0
	1/8/2013	5.02	89.81	**352**	NA	NA	**1,010**	1,700	NA	NA	NA	NA
	4/1/2013	4.83	90.00	**1,800**	NA	NA	**3,500**	**5,400**	NA	NA	NA	NA
	7/12/2013	7.03	87.80	**373**	NA	NA	**937**	1,800	NA	NA	NA	NA
	10/31/2013	5.17	89.66	**596**	NA	NA	**1,380**	**2,500**	NA	NA	NA	NA
	3/31/2014	4.60	90.23	**656**	2.15	305	**1,460**	**3,970**	NA	NA	NA	NA
	9/22/2014	1.96	92.87	175	0.447	391	279	836	NA	NA	NA	NA
						Removed from monitoring program per COGCC document #2314191						
SB14	3/9/2012	6.15	NM	125	NA	NA	**991**	1,900	NA	NA	NA	NA
	9/12/2012	8.32	88.83	246	NA	NA	**1,010**	**2,500**	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.28	90.87	246	NA	NA	**999**	1,500	NA	NA	NA	NA
	4/1/2013	6.18	90.97	**1,060**	NA	NA	**862**	**2,600**	NA	NA	NA	NA
	7/12/2013	7.60	89.55	**666**	NA	NA	**752**	**2,100**	NA	NA	NA	NA
	10/31/2013	6.20	90.95	**1,430**	NA	NA	**843**	**3,200**	NA	NA	NA	NA
	3/31/2014	6.20	90.95	**599**	1.52	394	**714**	**2,750**	NA	NA	NA	NA
	9/22/2014	3.83	93.32	86.2	0.433	199	247	843	NA	NA	NA	NA
	3/27/2015	6.13	91.02	170	0.496	343	273	939	NA	NA	NA	NA
	9/3/2015	NM	NM				No sample - unable to locate					
SB15	3/9/2012	10.97	NM				No Sample - Dry					
	9/12/2012	7.89	87.88	292	NA	NA	**900**	**2,500**	<1.0	<1.0	<1.0	<1.0
	1/8/2013	5.65	90.12	**654**	NA	NA	**3,520**	**4,800**	NA	NA	NA	NA
	4/1/2013	5.49	90.28	**588**	NA	NA	**2,720**	**4,400**	NA	NA	NA	NA
	7/12/2013	7.52	88.25	**465**	NA	NA	**1,020**	**2,300**	NA	NA	NA	NA
	10/31/2013	5.72	90.05	**528**	NA	NA	**1,790**	**4,000**	NA	NA	NA	NA

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide*	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB15	4/1/2014	5.50	90.27	No sample - Insufficient water								
	9/22/2014	3.15	92.62	**485**	4.04	120	**2,340**	**5,320**	NA	NA	NA	NA
				Removed from monitoring program per COGCC document #2314191								
SB16	3/9/2012	7.36	NM	**297**	NA	NA	**730**	**2,200**	NA	NA	NA	NA
	9/12/2012	9.15	88.52	194	NA	NA	597	**2,000**	<1.0	<1.0	<1.0	<1.0
	1/8/2013	7.60	90.07	264	NA	NA	**734**	1,500	NA	NA	NA	NA
	4/4/2013	7.58	90.09	**305**	NA	NA	**720**	1,600	NA	NA	NA	NA
	7/12/2013	9.12	88.55	251	NA	NA	**654**	1,600	NA	NA	NA	NA
	10/31/2013	7.66	90.01	253	NA	NA	582	1,400	NA	NA	NA	NA
	3/31/2014	7.62	90.05	238	1.03	231	**644**	**2,070**	NA	NA	NA	NA
	9/22/2014	6.85	90.82	280	1.25	224	**680**	**2,140**	NA	NA	NA	NA
				Removed from monitoring program per COGCC document #2314191								
SB17	9/11/2012	5.55	90.14	237	NA	NA	584	**2,100**	<1.0	<1.0	<1.0	<1.0
	1/8/2013	4.33	91.36	262	NA	NA	621	1,400	NA	NA	NA	NA
	4/1/2013	4.29	91.40	253	NA	NA	635	1,500	NA	NA	NA	NA
	7/12/2013	5.24	90.45	281	NA	NA	**986**	**2,100**	NA	NA	NA	NA
	10/31/2013	4.33	91.36	Not Sampled								
	11/5/2013	4.33	91.36	250	NA	NA	**873**	**2,510**	NA	NA	NA	NA
	3/31/2014	4.45	91.24	262	1.19	220	**903**	**2,480**	NA	NA	NA	NA
	9/22/2014	NM	NM	No Sample - Under Water								
				Removed from monitoring program per COGCC document #2314191								
SB18	9/11/2012	7.75	90.85	290	NA	NA	**920**	**3,000**	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.50	92.10	**313**	NA	NA	**866**	1,800	NA	NA	NA	NA
	4/1/2013	6.73	91.87	284	NA	NA	**772**	1,800	NA	NA	NA	NA

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide*	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB18	7/12/2013	7.11	91.49	265	NA	NA	**714**	**2,000**	NA	NA	NA	NA
	10/31/2013	6.27	92.33	**330**	NA	NA	**699**	1,900	NA	NA	NA	NA
	4/1/2014	6.95	91.65	282	0.979	288	623	**2,260**	NA	NA	NA	NA
	9/22/2014	NM	NM	No Sample - Under Water								
	3/27/2015	6.68	91.92	256	0.935	274	**747**	**2,650**	NA	NA	NA	NA
	9/3/2015	NM	NM	Monitoring well destroyed by landowner grading activity								
SB19	9/11/2012	8.56	91.77	196	NA	NA	317	1,300	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.85	93.48	**390**	NA	NA	**831**	1,600	NA	NA	NA	NA
				Monitoring well destroyed/removed								
SB19R	4/1/2013	12.65	85.10	190	NA	NA	324	680	NA	NA	NA	NA
	7/12/2013	6.78	90.97	211	NA	NA	368	810	NA	NA	NA	NA
	10/31/2013	10.23	87.52	239	NA	NA	317	860	NA	NA	NA	NA
	4/1/2014	12.00	85.75	No sample - Insufficient water								
	9/22/2014	NM	NM	No sample - Monitoring well destroyed								
				Removed from monitoring program per COGCC document #2314191								
SB20	9/11/2012	10.33	89.50	183	NA	NA	180	1,000	<1.0	<1.0	<1.0	<1.0
	1/8/2013	9.40	90.43	209	NA	NA	329	710	NA	NA	NA	NA
				Monitoring well destroyed/removed								
SB20R	4/1/2013	11.23	84.71	234	NA	NA	301	750	NA	NA	NA	NA
	7/12/2013	7.56	88.38	234	NA	NA	342	880	NA	NA	NA	NA
	10/31/2013	8.69	87.25	244	NA	NA	283	700	NA	NA	NA	NA
	4/1/2014	11.42	84.52	No sample - Insufficient water								
	9/22/2014	9.39	86.55	155	0.404	384	149	650	NA	NA	NA	NA
	3/27/2015	NM	NM	Monitoring well destroyed by landowner grading activity								
SB20R2	9/3/2015	7.19	88.91	89.5	0.359	249	466	927	NA	NA	NA	NA

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide*	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB21	9/11/2012	10.17	90.62	162	NA	NA	490	1,200	<1.0	<1.0	<1.0	<1.0
	1/8/2013	8.36	92.43	196	NA	NA	350	660	NA	NA	NA	NA
SB21R	4/1/2013	9.95	86.89	190	NA	NA	163	650	NA	NA	NA	NA
	7/12/2013	5.81	91.03	223	NA	NA	369	880	NA	NA	NA	NA
	10/31/2013	7.93	88.91	238	NA	NA	239	710	NA	NA	NA	NA
	4/1/2014	11.13	85.71	No sample - Insufficient water								
	9/22/2014	NM	NM	No sample - Monitoring well destroyed								
				Removed from monitoring program per COGCC document #2314191								
SB22	9/12/2012	11.14	87.53	**355**	NA	NA	**815**	**2,200**	<1.0	<1.0	<1.0	<1.0
	1/8/2013	9.14	89.53	**378**	NA	NA	**884**	1,400	NA	NA	NA	NA
	4/1/2013	9.06	89.61	**337**	NA	NA	**815**	1,500	NA	NA	NA	NA
	7/12/2013	10.08	88.59	**359**	NA	NA	**808**	1,700	NA	NA	NA	NA
	10/31/2013	9.42	89.25	**416**	NA	NA	**897**	1,700	NA	NA	NA	NA
	3/31/2014	8.90	89.77	**380**	1.22	311	**874**	**2,330**	NA	NA	NA	NA
	9/22/2014	NM	NM	No sample - Could not locate								
				Removed from monitoring program per COGCC document #2314191								
SB23	9/12/2012	11.25	86.21	212	NA	NA	515	1,500	<1.0	<1.0	<1.0	<1.0
	1/8/2013	8.26	89.20	268	NA	NA	**712**	1,100	NA	NA	NA	NA
	4/1/2013	7.95	89.51	**354**	NA	NA	**1,100**	1,600	NA	NA	NA	NA
	7/12/2013	9.65	87.81	**368**	NA	NA	**1,120**	1,900	NA	NA	NA	NA
	10/31/2013	8.61	88.85	237	NA	NA	607	1,400	NA	NA	NA	NA
	3/31/2014	7.72	89.74	**604**	2.38	254	**1,830**	**3,950**	NA	NA	NA	NA
	9/22/2014	6.84	90.62	**1,290**	4.18	309	**2,940**	**6,850**	NA	NA	NA	NA

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Bromide (mg/L)	Chloride/ Bromide*	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB23	3/27/2015	6.38	91.08	**1,150**	2.64	436	**2,060**	**5,300**	NA	NA	NA	NA
	9/3/2015	NM	NM	No sample - unable to locate								
COGCC Table 910-1 Standard				**295**	**--**	**250***	**642.5**	**2,000**	**5**	**560**	**700**	**1,400**

NOTES:

btoc - below top of casing

COGCC - Colorado Oil and Gas Conservation Commission

mg/L - milligrams per liter

NA - not analyzed

NM- not measured

µg/L - micrograms per liter

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

-- - indicates there is no standard

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

Chloride, sulfate, and total dissolved solids standards are calculated based on 1.25 times background concentrations

Chloride, bromide, and sulfate analyzed by EPA Method 300.0

Total dissolved solids analyzed by Standard Method 2540C and EPA Method 160.1

BOLD indicates result exceeds the applicable standard

* - This value is not a regulatory limit and is included for reference purposes only. Unimpacted groundwater would not be expected to exhibit a ratio of chloride to bromide that exceeds this naturally occurring value.

ATTACHMENT

LABORATORY ANALYTICAL REPORTS

ORIGINS LABORATORY, INC

April 02, 2015

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

Project Name - Noble - Miller #1 South CACL **Project Number - 008312061**

Attached are your analytical results for Noble - Miller #1 South CACL received by Origins Laboratory, Inc. March 27, 2015. This project is associated with Origins project number X503356-01.

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

THE NELAC INSTITUTE

ACCREDITED
TESTING CERT # 3494.01

ORIGINS LABORATORY, INC

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB04R	X503356-01	Water	March 27, 2015 11:30	03/27/2015 15:10
SB05R2	X503356-02	Water	March 27, 2015 11:40	03/27/2015 15:10
SB06R	X503356-03	Water	March 27, 2015 11:50	03/27/2015 15:10
SB11	X503356-04	Water	March 27, 2015 12:00	03/27/2015 15:10
SB12	X503356-05	Water	March 27, 2015 12:10	03/27/2015 15:10
SB14	X503356-06	Water	March 27, 2015 12:20	03/27/2015 15:10
SB18	X503356-07	Water	March 27, 2015 12:30	03/27/2015 15:10
SB23	X503356-08	Water	March 27, 2015 12:50	03/27/2015 15:10

Origins Laboratory, Inc.

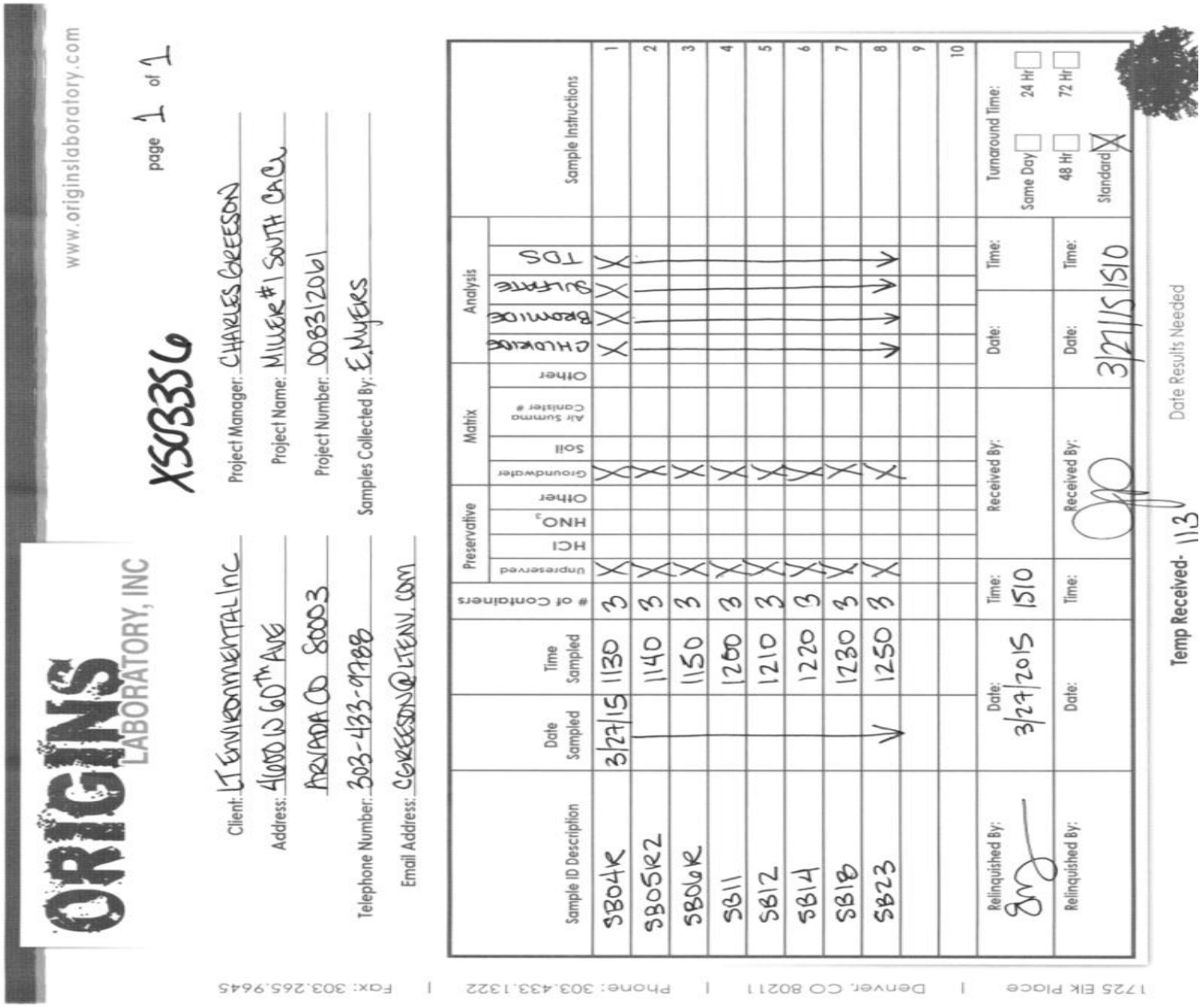
Jen Pellegrini For Noelle Doyle Mathis, President

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.

ORIGINS LABORATORY, INC

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL



Origins Laboratory, Inc.

Jen Pellegrini

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

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X5033356

Client: LTE
Client Project ID: miller #1 South

Checklist Completed by: Jen Pellegrini
Date/time completed: 3/27/15

Shipped Via: H/D (UPS, FedEx, Hand Delivered, Pick-up, etc.)
Airbill #: N/A

Matrix(s) Received: (Check all that apply): ____Soil/Solid Y Water ____Other: ____ (Describe)

Cooler Number/Temperature: 1 / 11.3 °c ____/____°c ____/____°c ____/____°c

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C[1]?		X		sampled same day
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		Y		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		Y		
Were all samples received intact[1]?	Y			
Was adequate sample volume provided[1]?	Y			
Are short holding time analytes or samples with HTs due within 48 hours present[1]?		X		
Is a chain-of-custody (COC) present and filled out completely[1]?	Y			
Does the COC agree with the number and type of sample bottles received[1]?	Y			
Do the sample IDs on the bottle labels match the COC[1]?	Y			
Is the COC properly relinquished by the client with date and time recorded[1]?	Y			
For volatiles in water – is there headspace (> ¼ inch bubble) present? **If yes, contact client and note in narrative.**			X	
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)*			Y	
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) 3/27/15 Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB04R
3/27/2015 11:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X503356-01 (Water)								
Anions by EPA300.0								
Bromide	**0.823**	0.400	mg/L	2	1467298		03/31/2015	
Chloride	**170**	20.0	"	100	"	"	"	
Sulfate	**1270**	40.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**2760**	14.3	mg/L	1	1467643	"	03/31/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, 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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB05R2
3/27/2015 11:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X503356-02 (Water)								
Anions by EPA300.0								
Bromide	**2.64**	0.200	mg/L	1	1467298		03/28/2015	
Chloride	**380**	20.0	"	100	"	"	03/31/2015	
Sulfate	**1110**	40.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**4410**	20.0	mg/L	1	1467643	"	03/31/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, 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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB06R
3/27/2015 11:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X503356-03 (Water)								
Anions by EPA300.0								
Bromide	**1.06**	0.400	mg/L	2	1467298		03/31/2015	
Chloride	**946**	40.0	"	200	"	"	"	
Sulfate	**585**	80.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**3560**	14.3	mg/L	1	1467643	"	03/31/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, 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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB11
3/27/2015 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X503356-04 (Water)								
Anions by EPA300.0								
Bromide	**1.31**	0.200	mg/L	1	1467298		03/28/2015	
Chloride	**566**	20.0	"	100	"	"	03/31/2015	
Sulfate	**756**	40.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**2710**	14.3	mg/L	1	1467643	"	03/31/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB12
3/27/2015 12:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X503356-05 (Water)								
Anions by EPA300.0								
Bromide	**1.74**	1.00	mg/L	5	1467298		03/31/2015	
Chloride	**675**	40.0	"	200	"	"	"	
Sulfate	**1490**	80.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**4130**	14.3	mg/L	1	1467643	"	03/31/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB14
3/27/2015 12:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X503356-06 (Water)								
Anions by EPA300.0								
Bromide	**0.496**	0.200	mg/L	1	1467298		03/28/2015	
Chloride	**170**	10.0	"	50	"	"	03/31/2015	
Sulfate	**273**	20.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**939**	14.3	mg/L	1	1467643	"	03/31/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB18
3/27/2015 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X503356-07 (Water)								
Anions by EPA300.0								
Bromide	**0.935**	0.400	mg/L	2	1467298		03/31/2015	
Chloride	**256**	20.0	"	100	"	"	"	
Sulfate	**747**	40.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**2650**	14.3	mg/L	1	1467643	"	03/31/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB23
3/27/2015 12:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X503356-08 (Water)								
Anions by EPA300.0								
Bromide	**2.64**	1.00	mg/L	5	1467298		04/01/2015	
Chloride	**1150**	40.0	"	200	"	"	"	
Sulfate	**2060**	80.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**5300**	14.3	mg/L	1	1467643	"	03/31/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

Anions by EPA300.0 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1467298 -										
BLANK (1203289186-BLK)					Prepared: Analyzed: 03/28/2015					
Sulfate	ND	0.400	mg/L				-			U
Chloride	ND	0.200	"				-			U
Bromide	ND	0.200	"				-			U
LCS (1203289187-BKS)					Prepared: Analyzed: 03/28/2015					
Sulfate	9.32	0.400	mg/L	10.0		93.2	90-110			
Chloride	4.54	0.200	"	5.00		90.9	90-110			
Bromide	1.21	0.200	"	1.25		97.1	90-110			
DUP (1203289188 D)		**Source: X503356-01**			Prepared: Analyzed: 03/31/2015					
Sulfate	1270	40.0	mg/L		1270		0-20	0.0371	20	
Chloride	170	20.0	"		170		0-20	0.188	20	
Bromide	0.822	0.400	"		0.823		0-20	0.0486	20	
PS (1203289189 S)		**Source: X503356-01**			Prepared: Analyzed: 03/31/2015					
Sulfate	2280	40.0	mg/L	10.0		102	90-110			
Chloride	633	20.0	"	5.00		92.6	90-110			
Bromide	3.27	0.400	"	1.25		97.8	90-110			

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

TDS by SM2540C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1467643 -										
BLANK (1203290131-BLK)					Prepared: Analyzed: 03/31/2015					
Total Dissolved Solids	ND	14.3	mg/L				-			U
LCS (1203290132-BKS)					Prepared: Analyzed: 03/31/2015					
Total Dissolved Solids	296	14.3	mg/L	300		98.6	95-105			
DUP (1203290134 D)		**Source: X503356-05**			Prepared: Analyzed: 03/31/2015					
Total Dissolved Solids	4170	14.3	mg/L		4130		0-5	1.03	5	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

Notes and Definitions

U Result not detected above the detection limit

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.

Jen Pellegrini For Noelle Doyle Mathis, 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.

ORIGINS LABORATORY, INC

September 11, 2015

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

Project Name - Noble - Miller #1 South CACL **Project Number - 008312061**

Attached are your analytical results for Noble - Miller #1 South CACL received by Origins Laboratory, Inc. September 03, 2015. This project is associated with Origins project number X509042-01.

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

THE NELAC INSTITUTE

ACCREDITED
TESTING CERT # 3494.01

ORIGINS LABORATORY, INC

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01R2	X509042-01	Water	September 3, 2015 12:24	09/03/2015 15:30
SB05R2	X509042-02	Water	September 3, 2015 14:00	09/03/2015 15:30
SB06R2	X509042-03	Water	September 3, 2015 13:37	09/03/2015 15:30
SB07R2	X509042-04	Water	September 3, 2015 12:40	09/03/2015 15:30
SB20R2	X509042-05	Water	September 3, 2015 14:17	09/03/2015 15:30

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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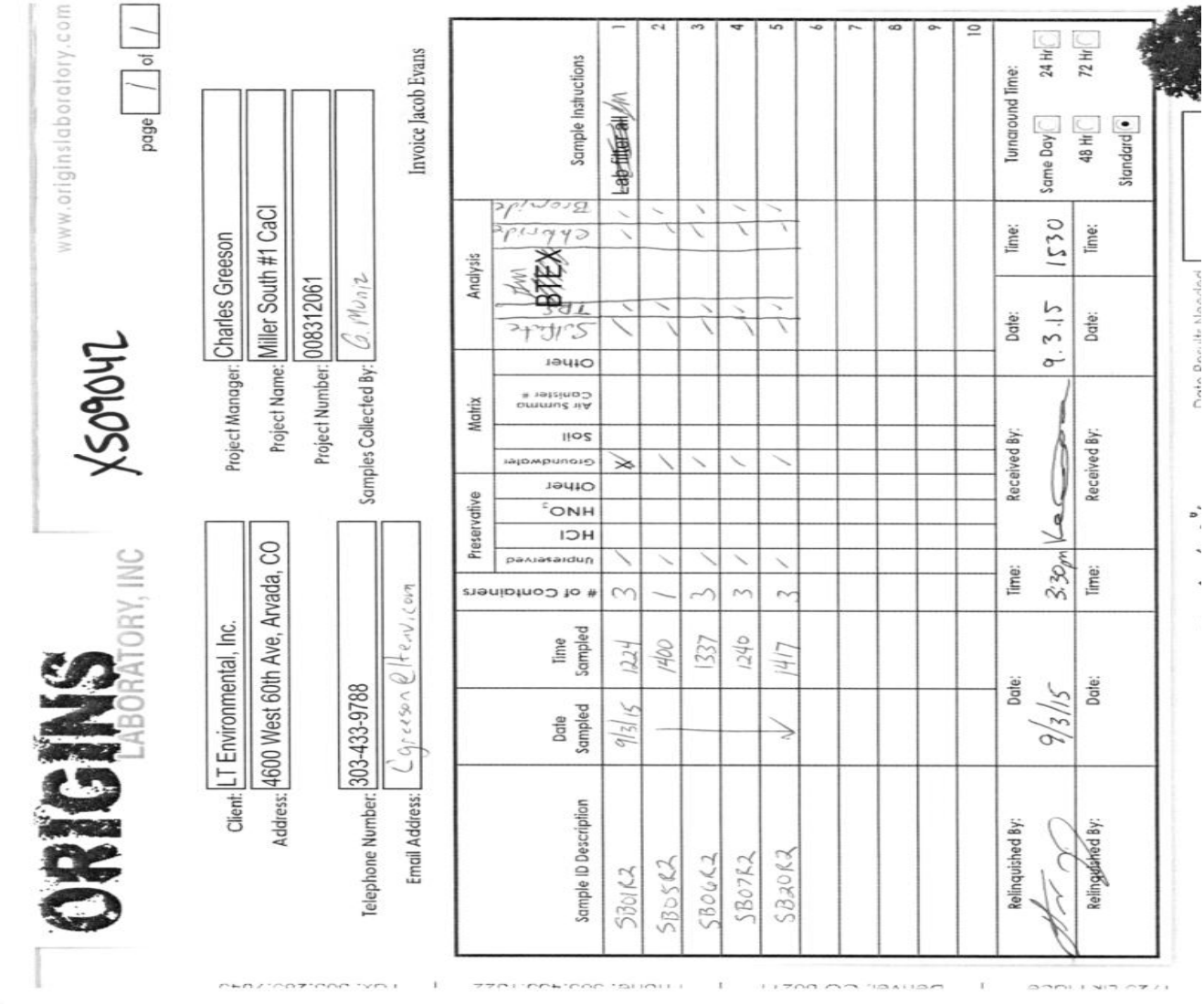
LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL



Origins Laboratory, Inc.

Jen Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS09042

Client: LTE

Client Project ID: Miller South #1 CACl

Checklist Completed by: Jeff Smith

Shipped Via: H/D (UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 9/3/15

Airbill #: NA

Matrix(s) Received: (Check all that apply): ____Soil/Solid X Water ____Other: ____

Cooler Number/Temperature: 1 / 6.2 °C ____/____ °C ____/____ °C ____/____ °C (Describe)

Thermometer ID: 3003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C[1]?		X		Sampled Same Day
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact[1]?	X			
Was adequate sample volume provided[1]?	X			
Are short holding time analytes or samples with HTs due within 48 hours present[1]?		X		
Is a chain-of-custody (COC) present and filled out completely[1]?	X			
Does the COC agree with the number and type of sample bottles received[1]?	X			
Do the sample IDs on the bottle labels match the COC[1]?	X			
Is the COC properly relinquished by the client with date and time recorded[1]?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? **If yes, contact client and note in narrative.**			X	
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)*			X	
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) 9/4/15 Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB01R2
9/3/2015 12:24:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X509042-01 (Water)								
Anions by EPA300.0								
Bromide	**2.09**	2.00	mg/L	10	1505505		09/05/2015	
Chloride	**325**	20.0	"	100	"	"	09/08/2015	
Sulfate	**801**	40.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**2740**	14.3	mg/L	1	1505522	"	09/04/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB05R2
9/3/2015 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X509042-02 (Water)								
Anions by EPA300.0								
Bromide	**2.59**	2.00	mg/L	10	1505505		09/05/2015	
Chloride	**256**	20.0	"	100	"	"	09/08/2015	
Sulfate	**1090**	40.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**2840**	14.3	mg/L	1	1505522	"	09/04/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB06R2
9/3/2015 1:37:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X509042-03 (Water)								
Anions by EPA300.0								
Bromide	**0.705**	0.200	mg/L	1	1505505		09/11/2015	
Chloride	**274**	10.0	"	50	"	"	09/08/2015	
Sulfate	**388**	20.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**1650**	50.0	mg/L	1	1505522	"	09/04/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB07R2
9/3/2015 12:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X509042-04 (Water)								
Anions by EPA300.0								
Bromide	**3.40**	2.00	mg/L	10	1505505		09/05/2015	
Chloride	**816**	20.0	"	100	"	"	09/08/2015	
Sulfate	**950**	40.0	"	"	"	"	"	
TDS by SM2540C								
Total Dissolved Solids	**3670**	14.3	mg/L	1	1505522	"	09/04/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB20R2
9/3/2015 2:17:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
GEL Laboratories, LLC								
X509042-05 (Water)								
Anions by EPA300.0								
Bromide	**0.359**	0.200	mg/L	1	1505505		09/06/2015	
Chloride	**89.5**	2.00	"	10	"	"	09/05/2015	
Sulfate	**466**	20.0	"	50	"	"	09/08/2015	
TDS by SM2540C								
Total Dissolved Solids	**927**	14.3	mg/L	1	1505522	"	09/04/2015	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

Anions by EPA300.0 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505505 -										
BLANK (1203387501-BLK)					Prepared: Analyzed: 09/05/2015					
Sulfate	ND	0.400	mg/L				-			U
Chloride	ND	0.200	"				-			U
Bromide	ND	0.200	"				-			U
LCS (1203387502-BKS)					Prepared: Analyzed: 09/05/2015					
Sulfate	10.2	0.400	mg/L	10.0		102	90-110			
Chloride	5.10	0.200	"	5.00		102	90-110			
Bromide	1.33	0.200	"	1.25		106	90-110			
DUP (1203387503 D)		**Source: X509042-05**			Prepared: Analyzed: 09/08/2015					
Sulfate	455	20.0	mg/L		466		0-20	2.49	20	
Chloride	90.2	2.00	"		89.5		0-20	0.761	20	
Bromide	0.320	0.200	"		0.359		0-20	11.3	20	
PS (1203387504 S)		**Source: X509042-05**			Prepared: Analyzed: 09/08/2015					
Sulfate	996	20.0	mg/L	10.0		106	90-110			
Chloride	149	2.00	"	5.00		120	90-110			
Bromide	1.63	0.200	"	1.25		102	90-110			

Origins Laboratory, Inc.

Jen Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

TDS by SM2540C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505522 -										
BLANK (1203387540-BLK)					Prepared: Analyzed: 09/04/2015					
Total Dissolved Solids	ND	14.3	mg/L				-			U
LCS (1203387541-BKS)					Prepared: Analyzed: 09/04/2015					
Total Dissolved Solids	300	14.3	mg/L	300		100	95-105			

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

Notes and Definitions

U Result not detected above the detection limit

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.

Jen Pellegrini For Noelle Doyle Mathis, President

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