



GROUNDWATER MONITORING REPORT MARCH 2014

MILLER SOUTH #1 SPREAD FIELD REMEDATION #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. The Site Location Map is included as Figure 1.

On March 8 and 9, 2012, LTE advanced a total of 16 soil borings. Soil borings (SB02 through SB16) were installed using a direct-push rig operated by High Plains Drilling of Denver, Colorado. Soil boring SB01 was installed using a hand auger due to drilling rig access restrictions. Soil boring SB09 was located up-gradient from the release area to obtain background concentrations. On September 10 and 11, 2012, LTE advanced a total of 24 additional soil borings. Soil borings (Background 01, Background 02, SB01R through SB08R, and SB10 through SB23) were installed using a direct-push drill rig operated by ACI Services of Denver, Colorado. The soil borings advanced on September 10 and 11, 2012, replaced all of the monitoring wells installed in March 2012. On April 1, 2013, LTE installed three replacement monitoring wells (SB19R through SB21R) that were destroyed during expansion of the landowner's irrigation pond on site. 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).

On March 4, 2014, Noble, LTE, and the COGCC (represented by Mr. Rick Allison) conducted a meeting to discuss the Site, specifically regarding the groundwater monitoring program and evaluation of site closure methodology. During the meeting, Noble and the COGCC agreed to the following:

- Conduct a groundwater monitoring event of existing monitoring wells and analyze for inorganic groundwater constituents and bromide;
- Analyze samples from the monitoring wells exhibiting the most elevated levels of chloride, SB04R and SB14R, for anions and cations; and
- Submit data in a monitoring report with consideration and recommendations toward the ongoing groundwater monitoring program and site closure.

Groundwater Monitoring Activities

On March 31 and April 1, 2014, LTE, under the direction of Noble, conducted groundwater monitoring activities in 22 monitoring wells (SB01R through SB04R, SB05R2, SB06R through SB08R, SB10 through SB14, SB16 through SB18, SB22, and SB23). Prior to purging, depth to groundwater was measured and recorded for calculating well-specific target purge volumes and relative groundwater elevations. Depth to groundwater ranged from 4.15 feet below top of casing (btoc) in soil boring SB04R to 12.00 feet btoc in SB19R. Groundwater gradients vary at the Site, but generally flow east. Northwest gradients are likely influenced by local agricultural activities. The average gradient is approximately 0.009 feet per foot. Relative groundwater elevations are presented on Figure 2 and summarized in Table 1.

During this monitoring event, eighteen groundwater samples (SB01R through SB04R, SB05R2, SB06R through SB08R, SB10 through SB14, SB16 through SB18, SB22, and SB23) were collected. There was insufficient water to sample monitoring wells SB15 and SB19R through SB21R. All samples were submitted to Origins Laboratory of Denver, Colorado, for analysis of chloride, sulfate, and bromide by United States Environmental Protection Agency (EPA) Method 300.0 and TDS by Standard Method 2540C. Samples SB04R and SB14 were also submitted for analysis of additional anions including fluoride, nitrate, nitrite, ortho-phosphate, and sulfate by EPA method 300.0 and cations including calcium, magnesium, potassium, and sodium by EPA Method 3005A/6010C.

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, as discussed in the March 4, 2014, meeting, groundwater data was analyzed to include evaluation of the chloride to bromide ratio (Cl^-/Br^-). The Cl^-/Br^- ratio statistic may allow for identification of the potential calcium chloride release by normalizing the data to the background inorganic variability and allowing the release to be identified in spite 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 chloride to bromide ratios are presented on Figure 3 and summarized in Table 1 with the highest observed ratio of 722 in the source monitoring well SB04R. Cation and anion analytical results indicate that calcium and chloride appear to be the most prominent constituents in the groundwater.

An analysis of the data from the two monitoring wells exhibiting the most elevated levels of chloride from the previous monitoring event, SB04R and SB14, indicates that the concentrations of chloride and TDS correlate directly with the depth of groundwater. As seen in data collected from both monitoring wells, SB04R and SB14, the concentrations of both chloride and TDS in the groundwater increase as the groundwater elevation rises. This indicates the groundwater is coming into contact with soil containing relatively higher concentrations of chloride and TDS at shallower depths. Current trends indicate the sulfate concentrations have not been affected by groundwater elevation and appear to be stable and decreasing. This conclusion supports the understanding that the inorganic groundwater impact is related to the documented calcium chloride fluid release. The aqueous concentrations of chloride, TDS, and sulfate in monitoring well SB04R, relative to the relative groundwater elevations, are presented as Figures 4, 5, and 6,

respectively. The aqueous concentrations of chloride, TDS, and sulfate in monitoring well SB14, relative to the relative groundwater elevations, are presented as Figures 7, 8, and 9, respectively. Laboratory groundwater analytical results for chloride, total dissolved solids, and sulfate are presented on Figures 10, 11, and 12, respectively. Laboratory groundwater analytical results are summarized in Tables 1 and 2. The laboratory analytical reports are attached.

As seen by the data collected in this report, groundwater impacts are generally confined to an area near the release. Monitoring locations at the extent of the investigation area indicate concentrations are generally stable or decreasing, indicating that a source of the impacts are continuing to be degraded through natural processes and the groundwater plume is in the decreasing phase of its life cycle. The inorganic impacts identified are not migrating and the plume does not present a risk to public health or the environment; therefore, monitored natural attenuation is an appropriate remedial method for the Site.

Due to plume stability, Noble proposes a reduction in the frequency and size of the monitoring program. We propose that monitoring wells SB04R, SB05R2, SB06R, SB07R, SB11, SB14, SB18, and SB23, which define the plume extent, be sampled for inorganics and bromide on a semi-annual basis with results summarized in an annual report. The next monitoring event is scheduled for October 2014.

FIGURES

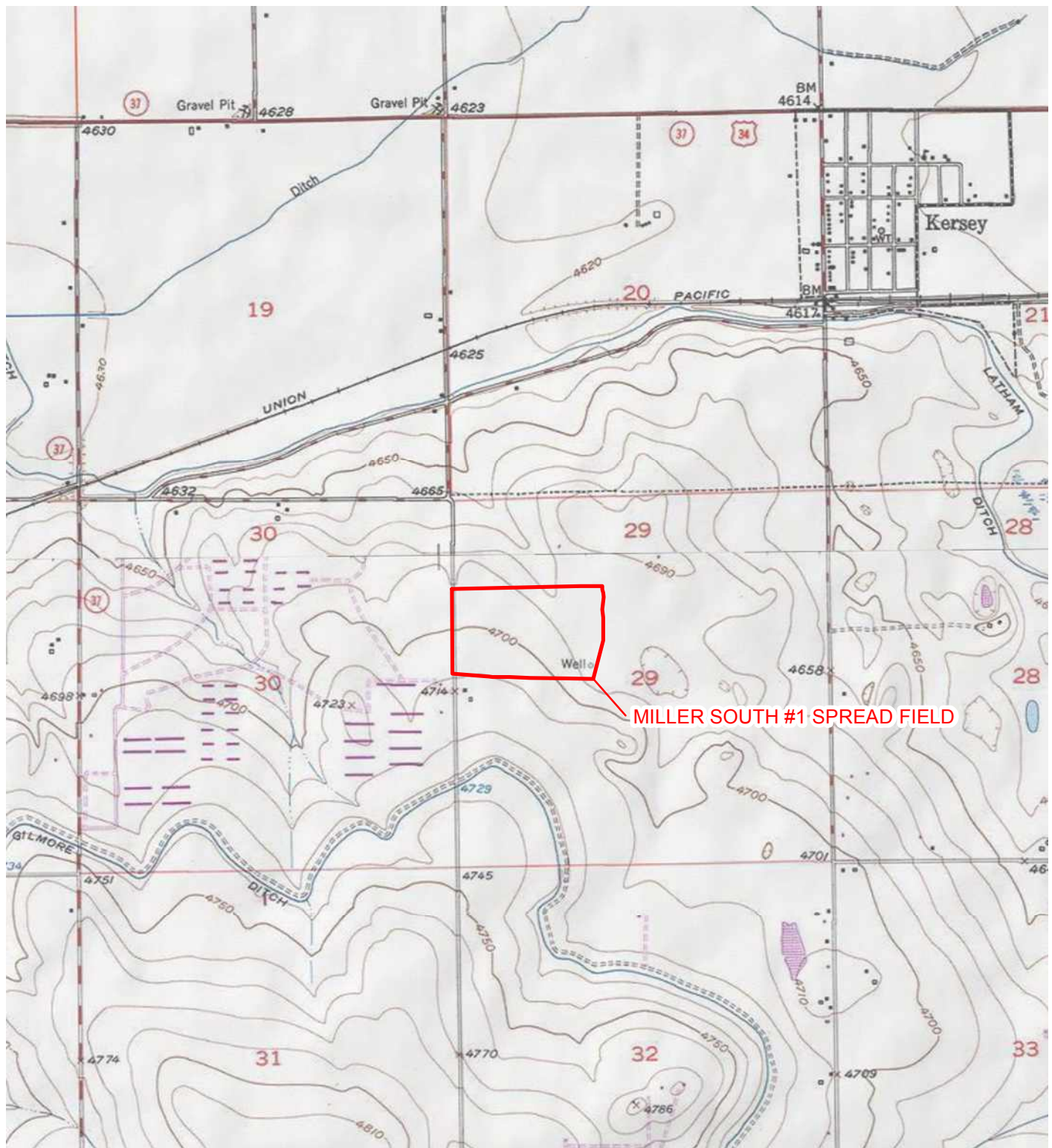


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION



COLORADO

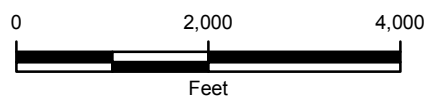


FIGURE 1
SITE LOCATION MAP
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





LEGEND

- ⊗ MONITORING WELL
- ↑ CALCULATED GROUNDWATER FLOW DIRECTION
- SURFICIAL RELEASE EXTENT
- RELATIVE GROUNDWATER ELEVATION CONTOUR

CONTOUR INTERVAL = 1 FOOT

GRADIENT = 0.009 FT/FT

SPREAD FIELD BOUNDARY

*GROUNDWATER ELEVATIONS FROM MONITORING WELLS SB01R, SB02R, SB04R AND SB08R WERE NOT USED TO GENERATE CONTOURS.
NM: NOT MEASURED

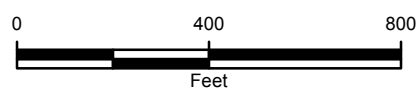
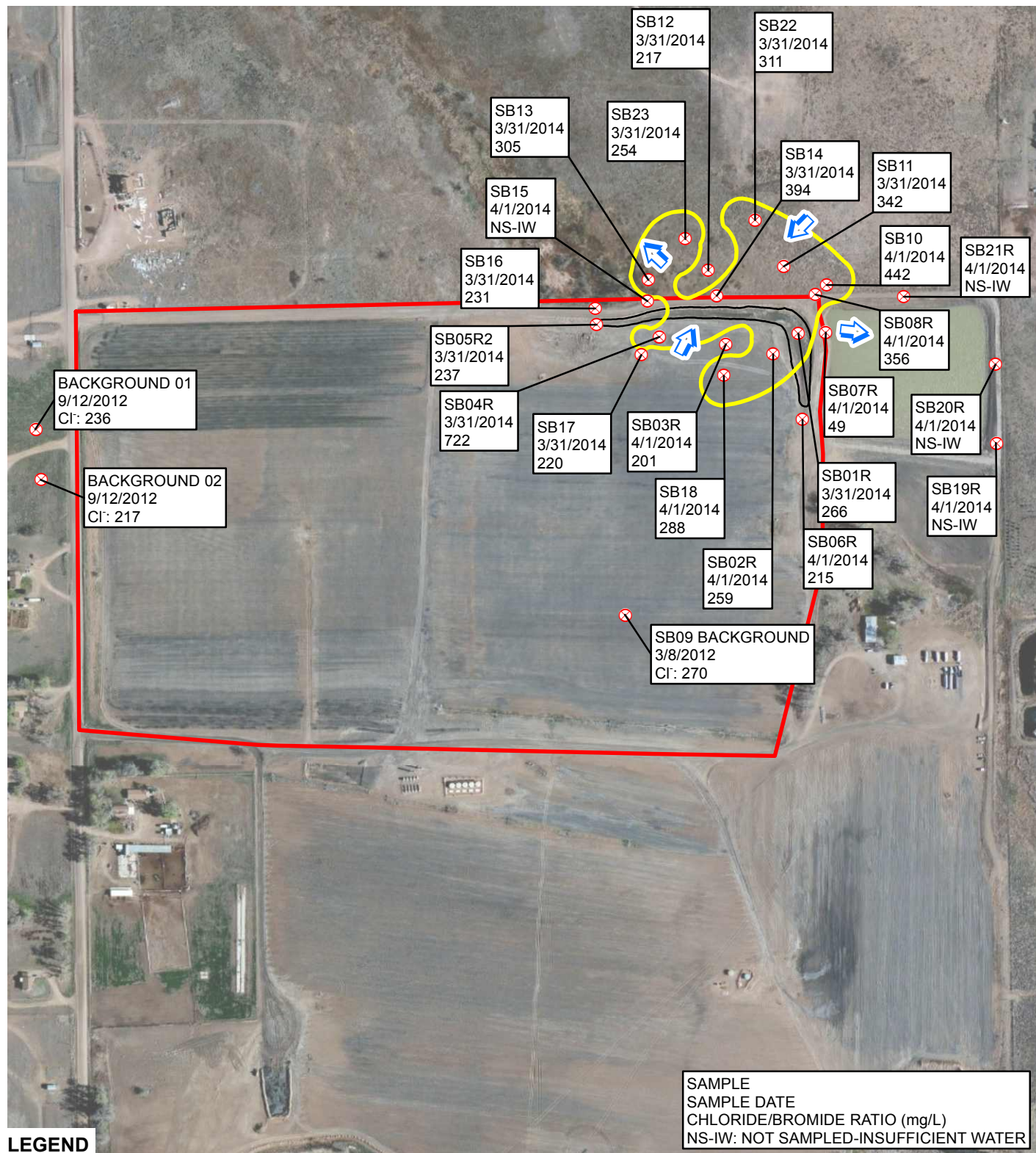


IMAGE COURTESY OF ESRI



FIGURE 2
RELATIVE GROUNDWATER ELEVATION MAP
MARCH 31, & APRIL 1, 2014
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.





LEGEND

- ⊗ MONITORING WELL
- ↑ CALCULATED GROUNDWATER FLOW DIRECTION
- 250 CHLORIDE/BROMIDE RATIO ISOCONCENTRATION CONTOUR
- SURFICIAL RELEASE EXTENT
- ▭ SPREAD FIELD BOUNDARY

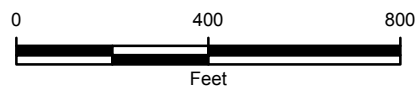
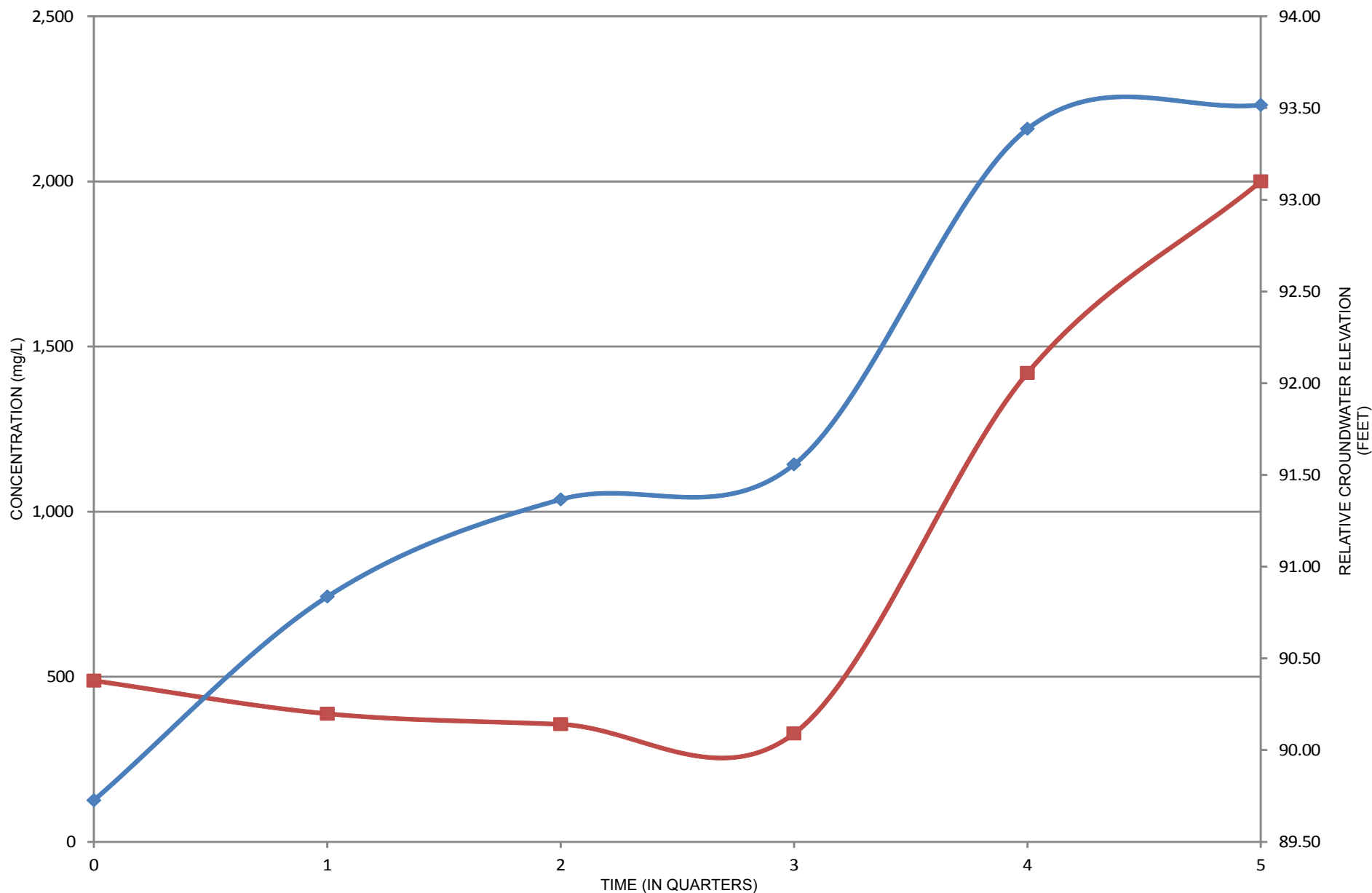


FIGURE 3
CHLORIDE/BROMIDE ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





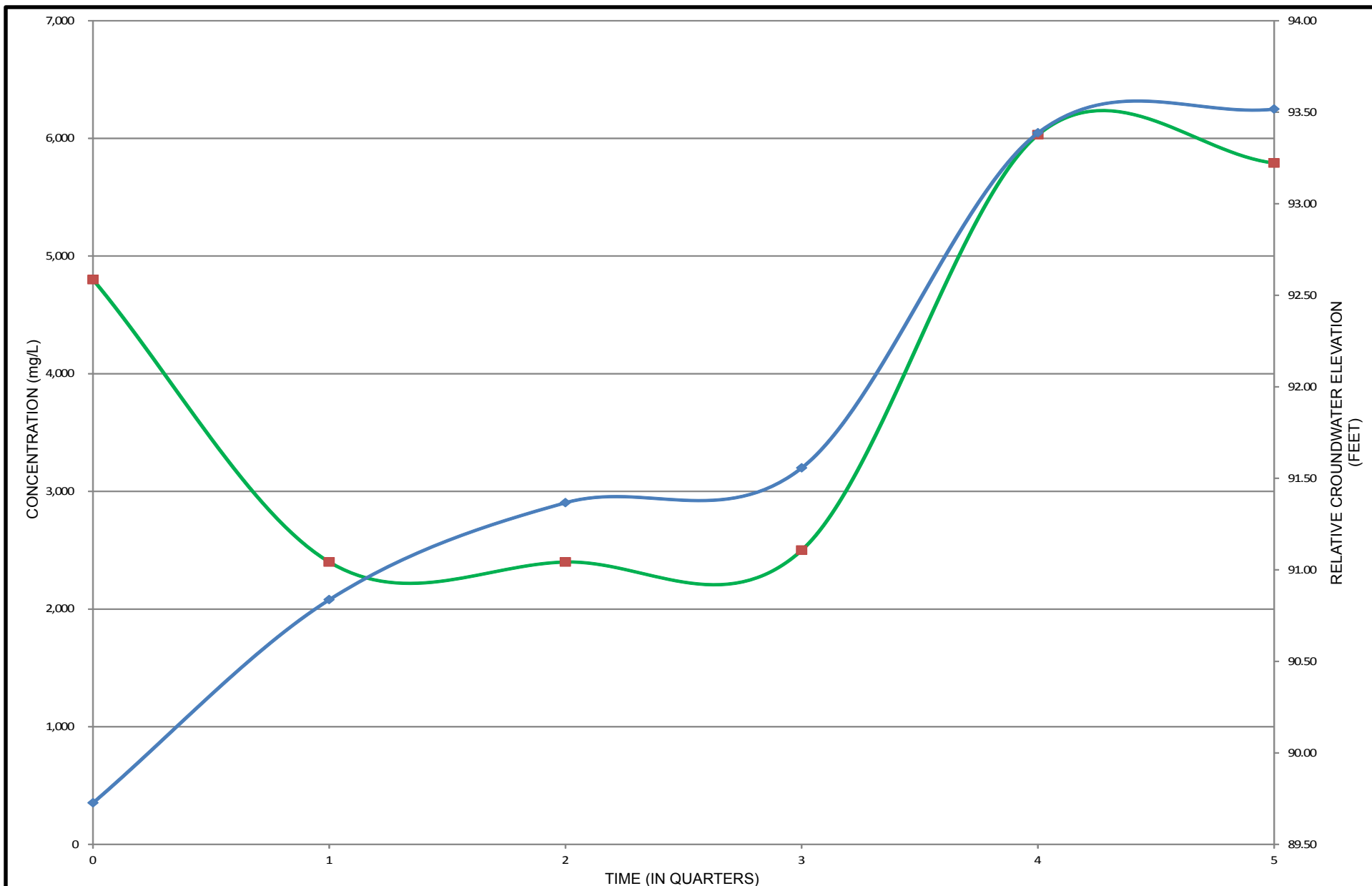
LEGEND

- CHLORIDE CONCENTRATION
- RELATIVE GROUNDWATER ELEVATION

FIGURE 4
SB04R CHLORIDE HYDROGRAPH
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





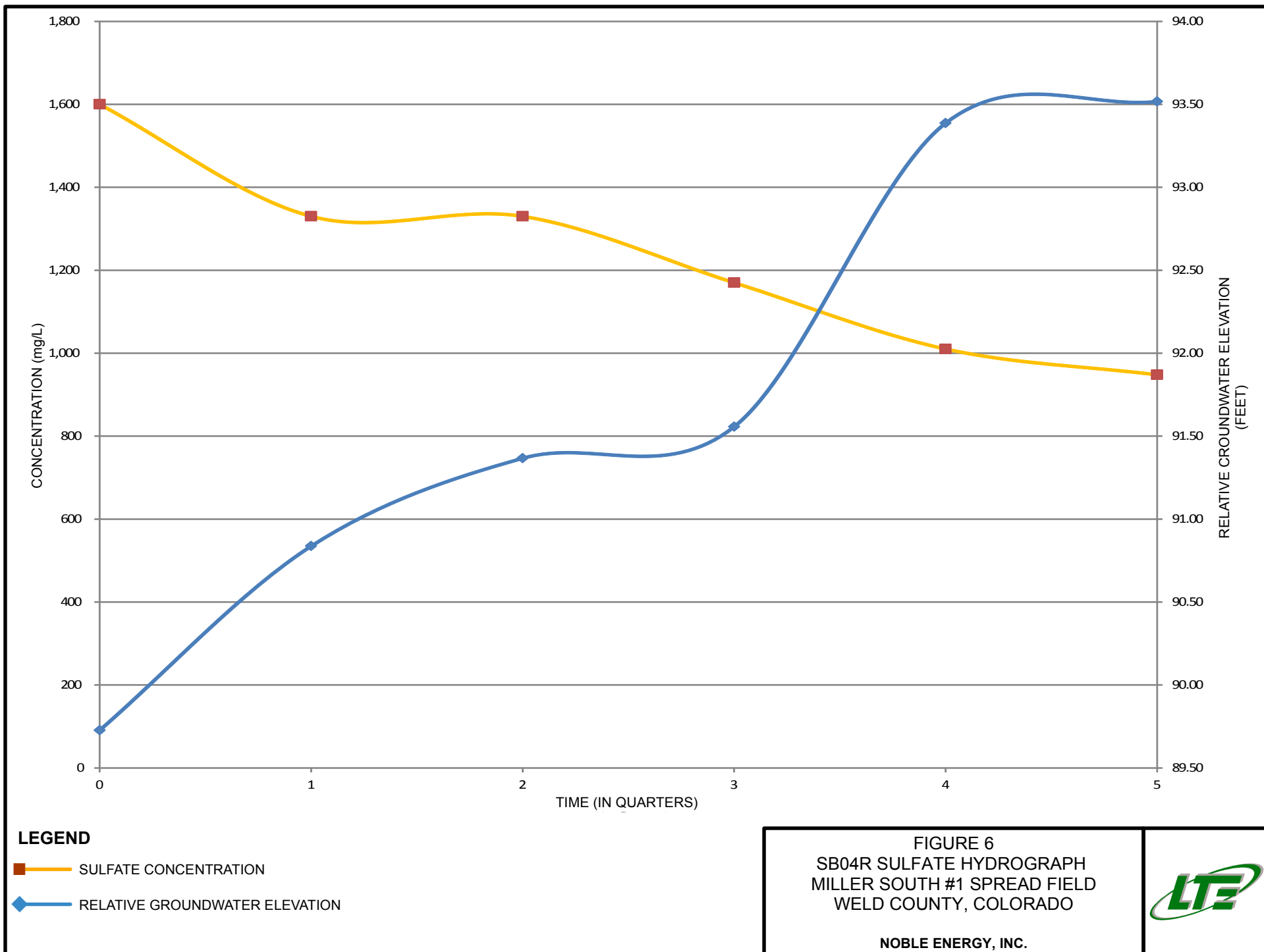
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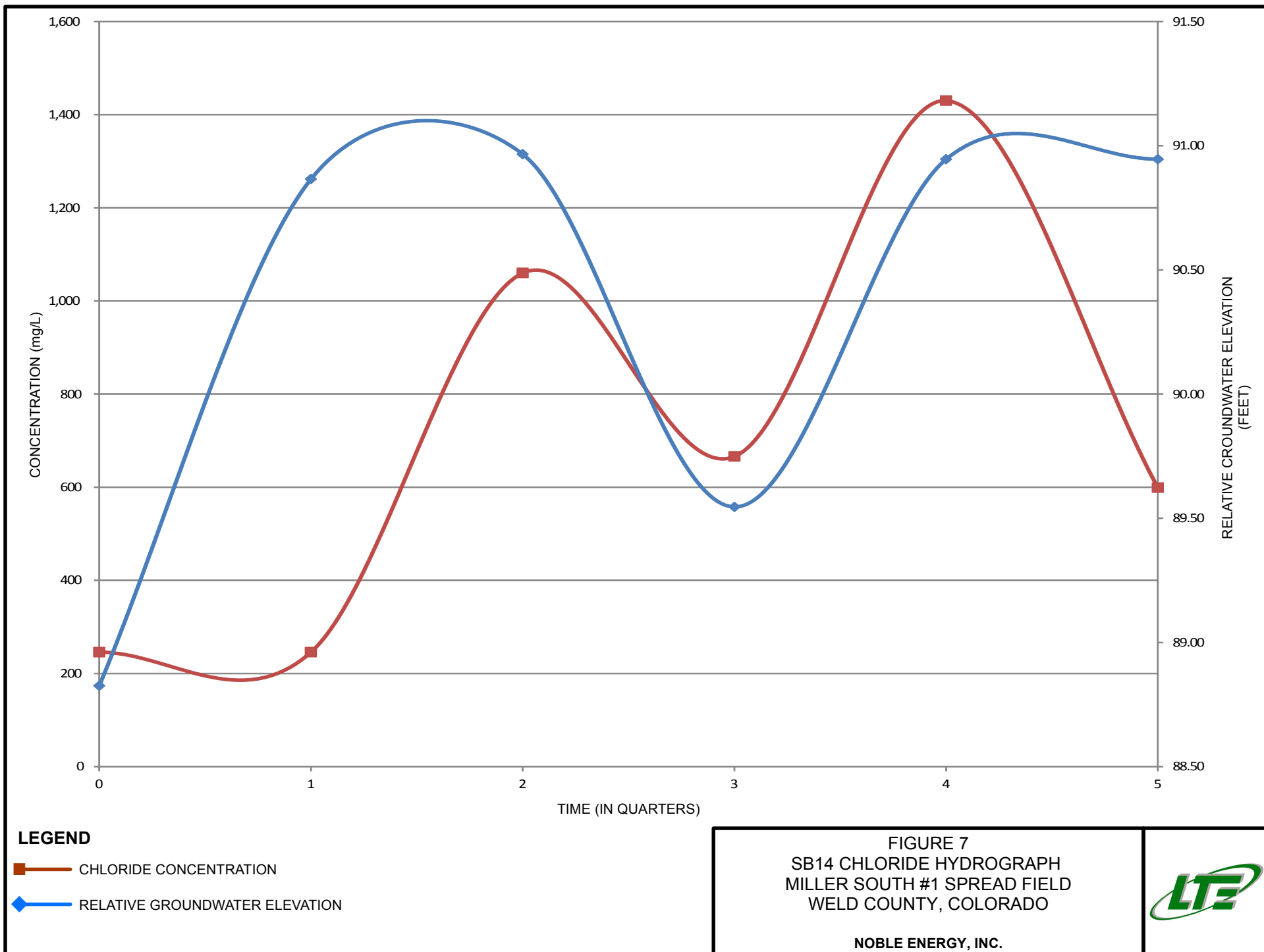
- TOTAL DISSOLVED SOLIDS
- ◆ RELATIVE GROUNDWATER ELEVATION

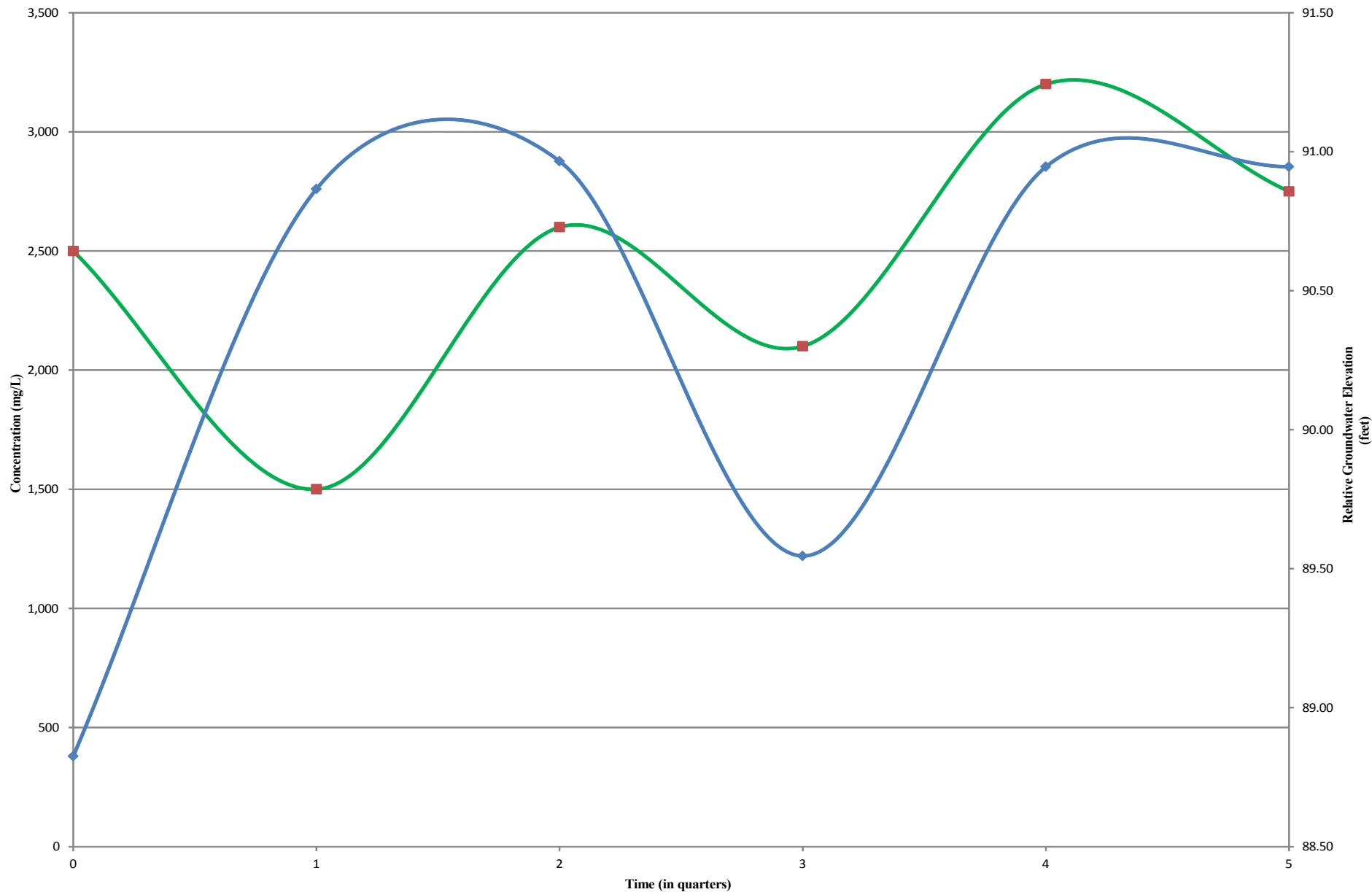
FIGURE 5
SB04R TOTAL DISSOLVED SOLIDS HYDROGRAPH
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.









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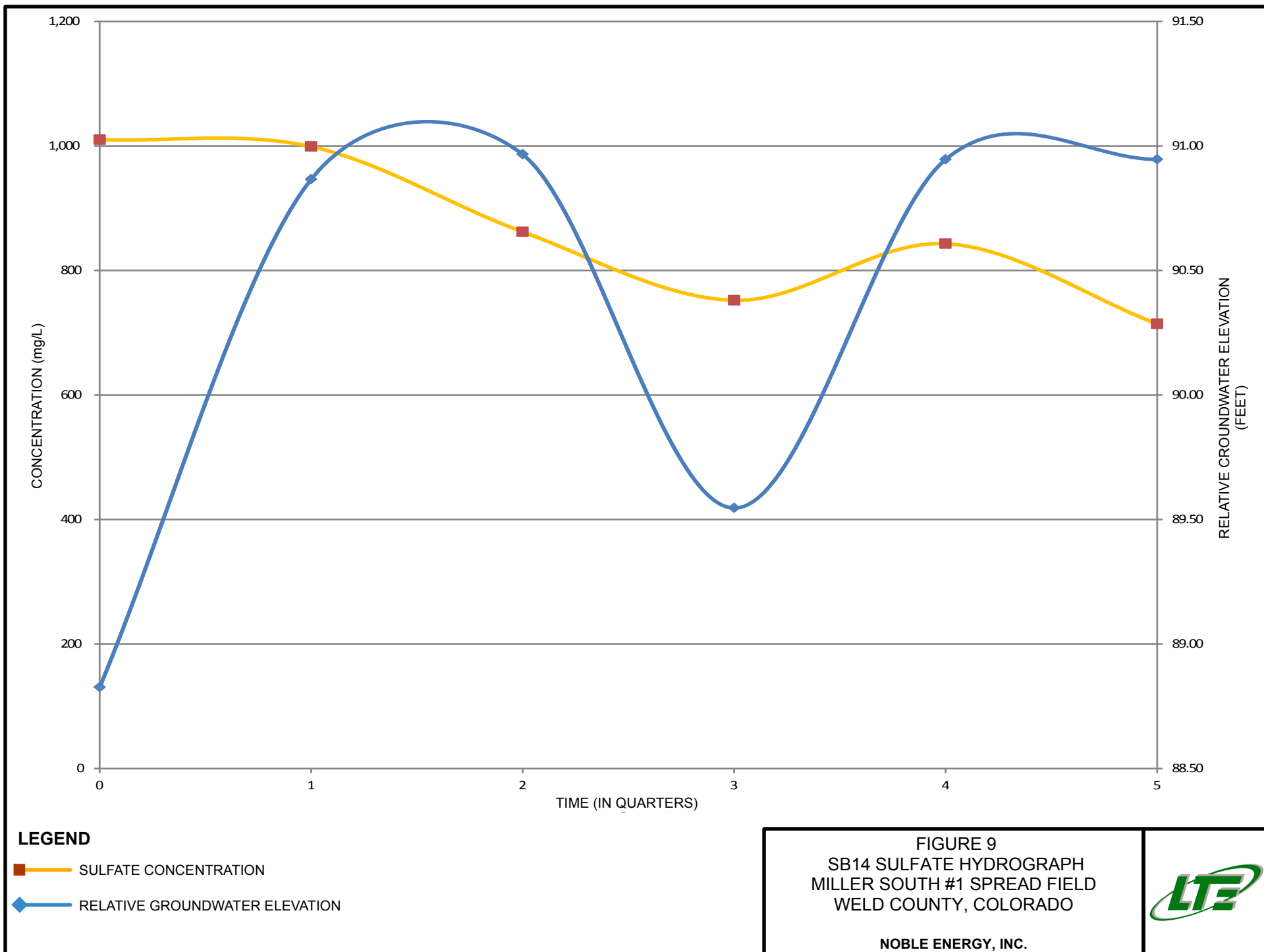
-  TOTAL DISSOLVED SOLIDS
-  RELATIVE GROUNDWATER ELEVATION

FIGURE 8
SB14 TOTAL DISSOLVED SOLIDS HYDROGRAPH
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





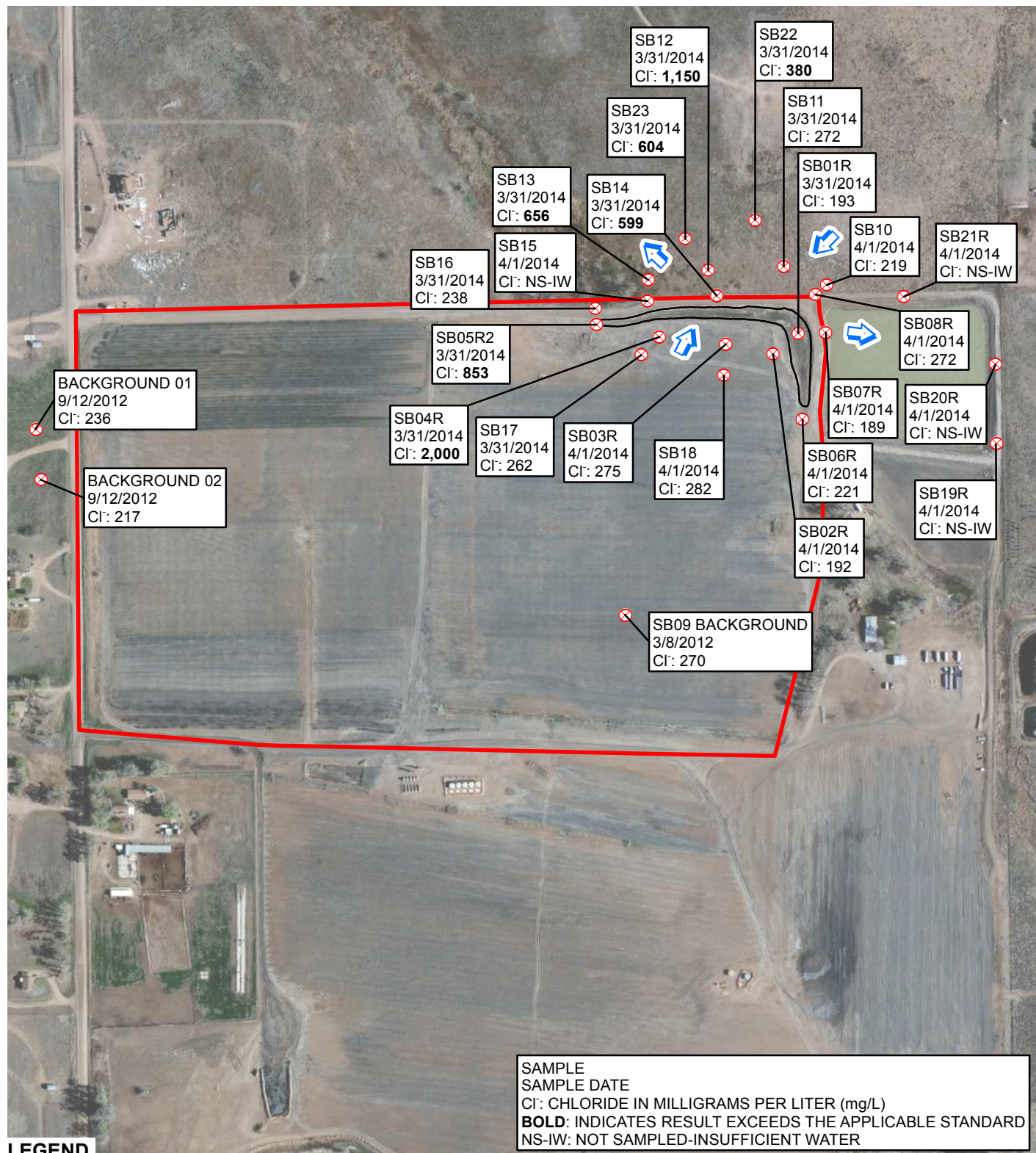
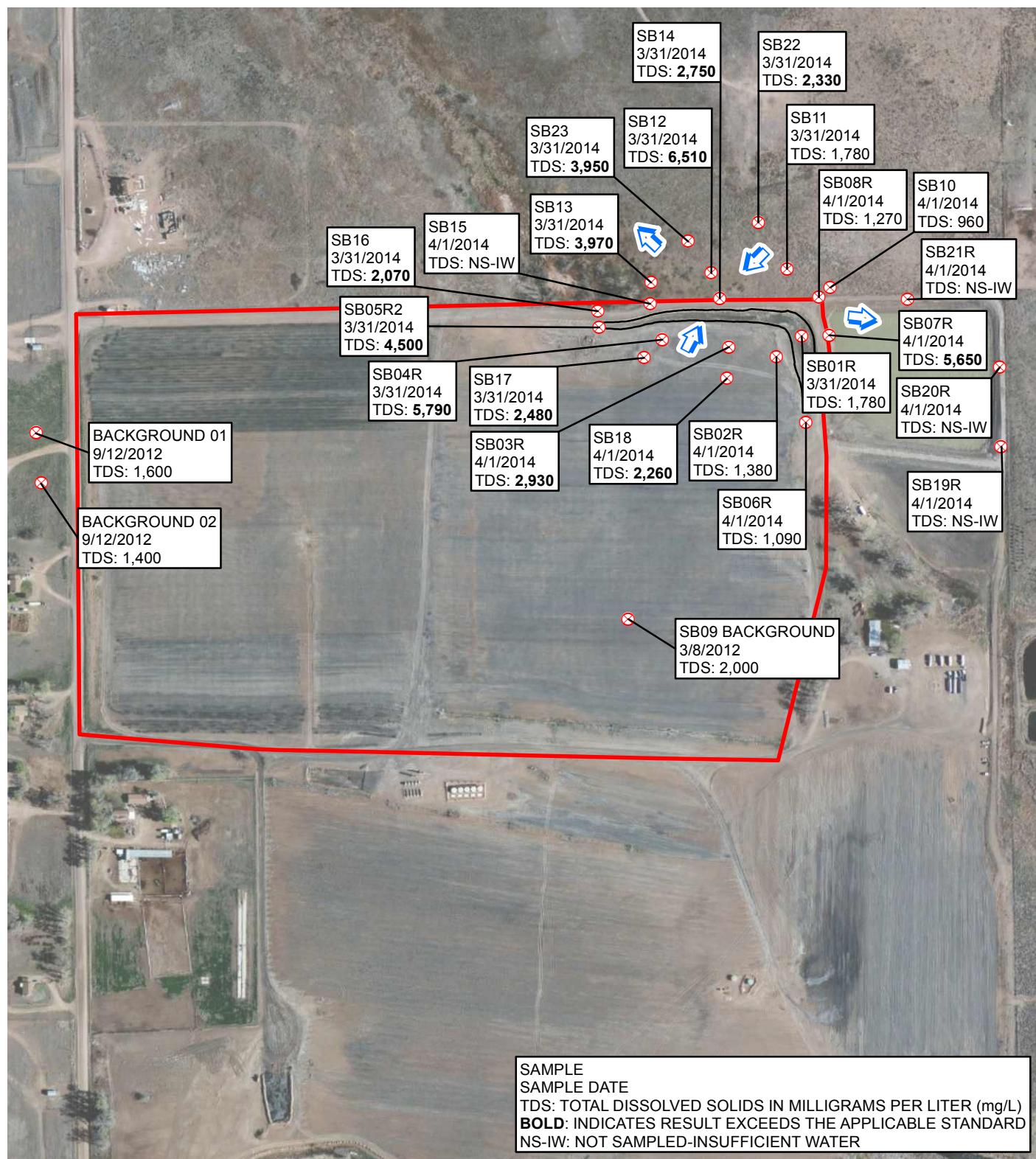


FIGURE 10
CHLORIDE GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





LEGEND

- ⊗ MONITORING WELL
- ↑ CALCULATED GROUNDWATER FLOW DIRECTION
- SURFICIAL RELEASE EXTENT
- SPREAD FIELD BOUNDARY

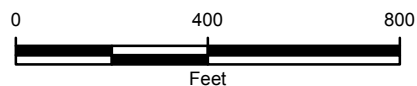
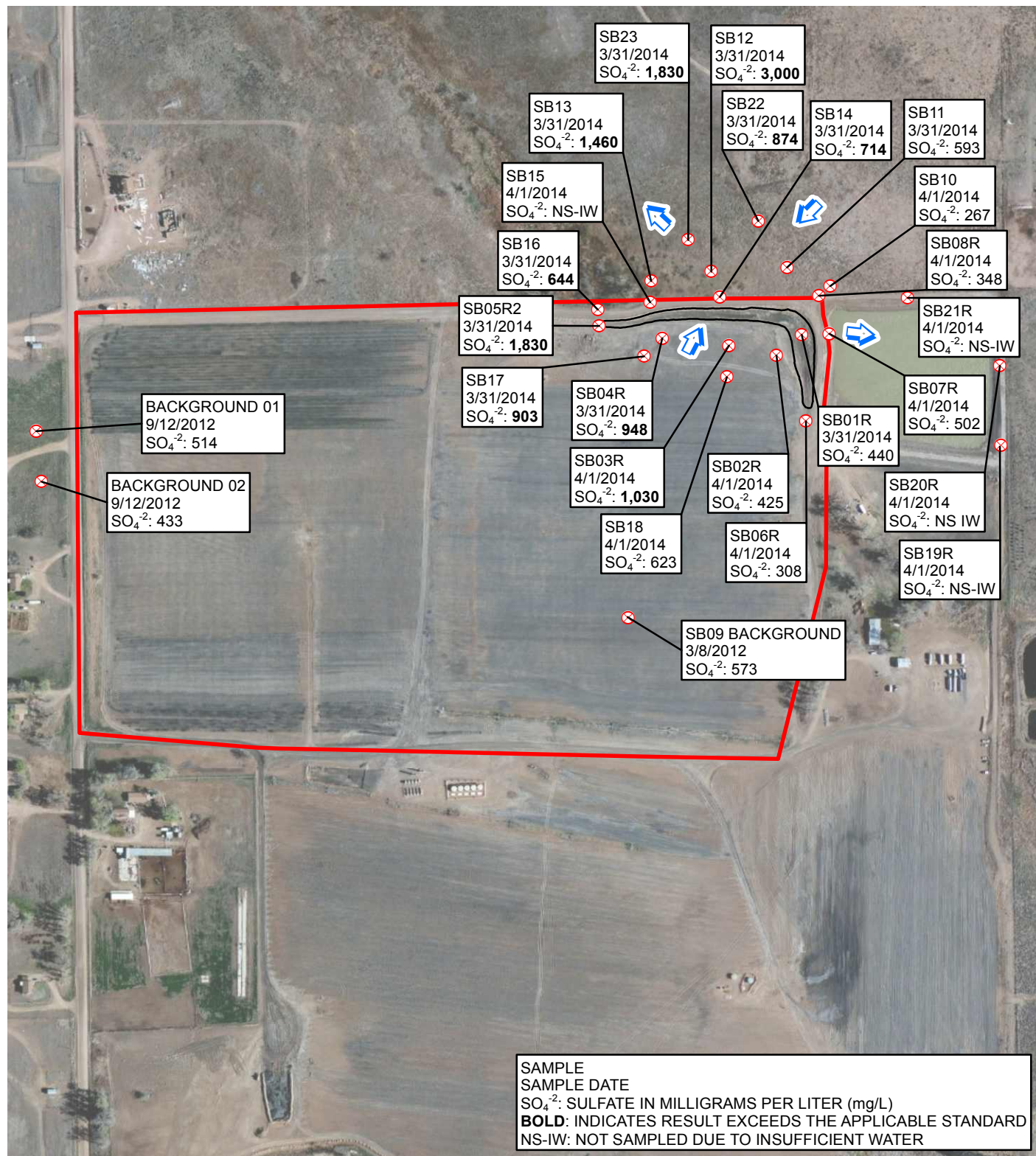


FIGURE 11
 TOTAL DISSOLVED SOLIDS
 GROUNDWATER ANALYTICAL RESULTS
 MILLER SOUTH #1 SPREAD FIELD
 WELD COUNTY, COLORADO
 NOBLE ENERGY, INC.





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
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
SB02	3/8/2012	6.46	NM	220	NA	NA	584	1,700	NA	NA	NA	NA
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
SB03	3/8/2012	6.22	NM	348	NA	NA	1,070	3,100	NA	NA	NA	NA
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

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)
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
SB05	3/8/2012	7.94	NM	208	NA	NA	896	2,400	NA	NA	NA	NA
							Monitoring well destroyed/removed					
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
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

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)
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
	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
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
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
	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

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)
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
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
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
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

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	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
	4/1/2014	5.50	90.27					No sample - Insufficient water				
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
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
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
	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

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)
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								
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								
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
Monitoring well destroyed/removed												
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								
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

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	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
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

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 or 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 ratio

TABLE 2

**CATION & ANION ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.**

Analyte	Units	SB04R	SB14
Anions			
Bromide	mg/L	2.77	1.52
Chloride	mg/L	2,000	599
Fluoride	mg/L	0.759	1.32
Nitrate	mg/L	18.1	13.1
Nitrite	mg/L	<0.100	<0.100
Ortho-phosphate	mg/L	<1.00	<0.200
Sulfate	mg/L	948	714
Cations			
Calcium	mg/L	1,240.000	245.000
Magnesium	mg/L	183.000	36.400
Potassium	mg/L	55.600	11.100
Sodium	mg/L	682.000	137.000

NOTES:

mg/L - milligrams per liter

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

Anions analyzed by EPA Method 300.0

Cations analyzed by EPA Method SW846/6010C

ATTACHMENT
LABORATORY ANALYTICAL REPORTS



July 25, 2014

LT Environmental, Inc.

Charles Greeson

4600 West 60th Avenue

Arvada

CO 80003

Project Name - Noble - Miller 1 South

Project Number - 008312061

Attached are your analytical results for Noble - Miller 1 South received by Origins Laboratory, Inc. March 31, 2014. This project is associated with Origins project number X403345-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

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

Charles Gresson
Project Number: 008312061
Project: Noble - Miller 1 South

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01R	X403345-01	Water	March 31, 2014 12:55	03/31/2014 17:19
SB04R	X403345-02	Water	March 31, 2014 13:48	03/31/2014 17:19
SB05R2	X403345-03	Water	March 31, 2014 13:15	03/31/2014 17:19
SB11	X403345-04	Water	March 31, 2014 15:40	03/31/2014 17:19
SB12	X403345-05	Water	March 31, 2014 15:00	03/31/2014 17:19
SB13	X403345-06	Water	March 31, 2014 15:20	03/31/2014 17:19
SB14	X403345-07	Water	March 31, 2014 13:20	03/31/2014 17:19
SB16	X403345-08	Water	March 31, 2014 13:10	03/31/2014 17:19
SB17	X403345-09	Water	March 31, 2014 14:00	03/31/2014 17:19
SB22	X403345-10	Water	March 31, 2014 15:50	03/31/2014 17:19
SB23	X403345-11	Water	March 31, 2014 15:10	03/31/2014 17:19

C Gresson requested that SB05R to SB05R2 via email on 4.18.14. ndm 4.20.14

S. Kahn asked that sulfate be added to all the samples. 7.25.14 ndm

Origins Laboratory, Inc.



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

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

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

www.originslaboratory.com

page 1 of 2

ORIGINS LABORATORY, INC

Client: LTE

Project Manager/Send Report To: Charles Greeson

Email Address: Cgreeson@ltenv.com

Project Name/Number: Miller 1 South CAC, 008312061

Samples Collected By: Jayson Eisinger, LST

Address: _____

Telephone Number: _____

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative	Matrix	Analysis/Method	Sample Instructions
SB01R	3/31/14	1255	3	X	Soil	X X X	1
SB04R		1348			Groundwater	X X X	2
SB05R		1315			Other	X X X	3
SB11		1540			Soil		4
SB12		1500			Groundwater		5
SB13		1520			Other		6
SB14		1320			Soil		7
SB16		1310			Groundwater		8
SB17		1400			Other		9
SB22		1550			Soil		10
Relinquished By:	Date: 3/31/14	Time: 1700	Received By:	Date: 3/31/14	Time: 1700	Turnaround Time:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Same Day <input type="checkbox"/>	24 Hr <input type="checkbox"/>
						48 Hr <input type="checkbox"/>	72 Hr <input type="checkbox"/>
						Standard <input checked="" type="checkbox"/>	

Comments: _____

Date Results Needed: _____

Origins Laboratory, Inc.

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

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

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

www.originslaboratory.com

X403345

page 2 of 2

ORIGINS
LABORATORY, INC

Client: LTE

Project Manager/Send Report To: Charles Greeson

Email Address: Cgreeson@ltenvi.com

Project Name/Number: Miller 1 South CIL 008312061

Samples Collected By: Jaxon Evangelista

Address: _____

Telephone Number: _____

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis/Method	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #			Other
S623	3/31/14	1510	3	X					X			X B random X Peroxide X TDS	1
													2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By: <u>[Signature]</u>	Date: <u>3/31/14</u>	Time: <u>1700</u>	Received By: <u>[Signature]</u>	Date: <u>3/31/14</u>	Time: <u>1700</u>
Relinquished By: <u>[Signature]</u>	Date: <u>3/31/14</u>	Time: <u>1700</u>	Received By: <u>[Signature]</u>	Date: <u>3/31/14</u>	Time: <u>1700</u>

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☒

Comments: _____

Date Results Needed: _____

Origins Laboratory, Inc.

[Signature]

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

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

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

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X403345

Client: LTE

Client Project ID: Miller 1 South

Checklist Completed by: Jose Smith

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

Date/time completed: 4/1/14 9:30

Airbill #: NA

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

Cooler Number/Temperature: 1 12.3 °C 1 °C 1 °C 1 °C

Thermometer ID: 1002

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"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>Arions</u>
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
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)

4.10.14 1457
Date/Time Reviewed

Origins Laboratory, Inc.

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

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

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

SB01R

3/31/2014 12:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X403345-01 (Water)

Anions by EPA 300.0

Bromide	0.725	0.200	mg/L	1	1376843		04/01/2014	
Chloride	193	10.0	"	50	"	"	04/02/2014	
Sulfate	440	20.0	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	1780	14.3	mg/L	1	1376953	"	04/02/2014	
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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 Doyle Mathis, President

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Charles Greeson

Project Number: 008312061

Project: Noble - Miller 1 South

SB04R

3/31/2014 1:48:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X403345-02 (Water)

Anions by EPA 300.0

Bromide	2.77	1.00	mg/L	5	1376843		04/02/2014	
Chloride	2000	100	"	500	"	"	"	
Fluoride	0.759	0.500	"	5	"	"	"	
Nitrate	18.1	0.500	"	"	"	"	"	
Nitrite	ND	0.100	"	1	"	"	04/01/2014	U
Ortho-phosphate	ND	1.00	"	5	"	"	04/04/2014	HU
Sulfate	948	200	"	500	"	"	04/02/2014	

Cations by SW846 3005A/6010C

Calcium	1240000	2000	ug/L	10	1376832	04/03/2014	04/07/2014	
Magnesium	183000	300	"	1	"	"	"	
Potassium	55600	1500	"	10	"	"	"	
Sodium	682000	3000	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	5790	17.9	mg/L	1	1376953		04/02/2014	
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Origins Laboratory, Inc.



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

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

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

SB05R2

3/31/2014 1:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X403345-03 (Water)

Anions by EPA 300.0

Bromide	3.60	0.400	mg/L	2	1376843		04/02/2014	
Chloride	853	40.0	"	200	"	"	"	"
Sulfate	1830	80.0	"	"	"	"	"	"

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	4500	37.0	mg/L	1	1376953	"	04/02/2014	
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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 Doyle Mathis, President

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

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

SB11**3/31/2014 3:40:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X403345-04 (Water)**Anions by EPA 300.0**

Bromide	0.796	0.200	mg/L	1	1376843		04/01/2014	
Chloride	272	20.0	"	100	"	"	04/02/2014	
Sulfate	593	40.0	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	1780	14.3	mg/L	1	1376953	"	04/02/2014	
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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 Doyle Mathis, President

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

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

SB12**3/31/2014 3:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X403345-05 (Water)**Anions by EPA 300.0**

Bromide	5.29	1.00	mg/L	5	1376843		04/02/2014	
Chloride	1150	40.0	"	200	"	"	"	"
Sulfate	3000	80.0	"	"	"	"	"	"

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	6510	23.3	mg/L	1	1376953	"	04/02/2014	
------------------------	------	------	------	---	---------	---	------------	--

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 Doyle Mathis, President

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

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

SB13**3/31/2014 3:20:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X403345-06 (Water)**Anions by EPA 300.0**

Bromide	2.15	0.200	mg/L	1	1376843		04/01/2014	
Chloride	656	40.0	"	200	"	"	04/02/2014	
Sulfate	1460	80.0	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	3970	14.3	mg/L	1	1376953	"	04/02/2014	
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Origins Laboratory, Inc.



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

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Charles Greeson

Project Number: 008312061

Project: Noble - Miller 1 South

SB14

3/31/2014 1:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC

X403345-07 (Water)

Anions by EPA 300.0

Bromide	1.52	1.00	mg/L	5	1376843		04/02/2014	
Chloride	599	40.0	"	200	"	"	"	
Fluoride	1.32	0.500	"	5	"	"	"	
Nitrate	13.1	0.500	"	"	"	"	"	H
Nitrite	ND	0.100	"	1	"	"	04/01/2014	U
Ortho-phosphate	ND	0.200	"	"	"	"	"	U
Sulfate	714	80.0	"	200	"	"	04/02/2014	

Cations by SW846 3005A/6010C

Calcium	245000	200	ug/L	1	1376832	04/03/2014	04/07/2014	
Magnesium	36400	300	"	"	"	"	"	
Potassium	11100	150	"	"	"	"	"	
Sodium	137000	300	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	2750	14.3	mg/L	1	1376953		04/02/2014	
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Origins Laboratory, Inc.



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

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

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

SB16**3/31/2014 1:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X403345-08 (Water)**Anions by EPA 300.0**

Bromide	1.03	0.200	mg/L	1	1376843		04/01/2014	
Chloride	238	10.0	"	50	"	"	04/02/2014	
Sulfate	644	20.0	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	2070	14.3	mg/L	1	1376953	"	04/02/2014	
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Origins Laboratory, Inc.



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

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

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

SB17**3/31/2014 2:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X403345-09 (Water)**Anions by EPA 300.0**

Bromide	1.19	0.200	mg/L	1	1376843		04/02/2014	
Chloride	262	10.0	"	50	"	"	"	"
Sulfate	903	20.0	"	"	"	"	"	"

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	2480	14.3	mg/L	1	1376953	"	04/02/2014	
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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 Doyle Mathis, President

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

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

SB22**3/31/2014 3:50:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X403345-10 (Water)**Anions by EPA 300.0**

Bromide	1.22	0.200	mg/L	1	1376843		04/02/2014	
Chloride	380	20.0	"	100	"	"	"	"
Sulfate	874	40.0	"	"	"	"	"	"

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	2330	14.3	mg/L	1	1376953	"	04/02/2014	
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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 Doyle Mathis, President

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

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

SB23**3/31/2014 3:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X403345-11 (Water)**Anions by EPA 300.0**

Bromide	2.38	0.200	mg/L	1	1376843		04/02/2014	
Chloride	604	40.0	"	200	"	"	"	"
Sulfate	1830	80.0	"	"	"	"	"	"

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	3950	14.3	mg/L	1	1376953	"	04/02/2014	
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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 Doyle Mathis, President

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

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

Anions by EPA 300.0 - Quality Control

GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1376843 -

BLANK (1203060608-BLK)

Prepared: Analyzed: 04/02/2014

Chloride	ND	0.200	mg/L				-			U
Fluoride	ND	0.100	"				-			U
Nitrate	ND	0.100	"				-			U
Nitrite	ND	0.100	"				-			U
Ortho-phosphate	ND	0.200	"				-			U
Sulfate	ND	0.400	"				-			U
Bromide	ND	0.200	"				-			U

LCS (1203060613-BKS)

Prepared: Analyzed: 04/02/2014

Chloride	4.81	0.200	mg/L	5.00	96.3	90-110				
Sulfate	10.2	0.400	"	10.0	102	90-110				
Ortho-phosphate	1.16	0.200	"	1.25	92.8	90-110				
Nitrite	2.45	0.100	"	2.50	97.9	90-110				
Fluoride	2.40	0.100	"	2.50	95.9	90-110				
Bromide	1.26	0.200	"	1.25	101	90-110				
Nitrate	2.47	0.100	"	2.50	99	90-110				

DUP (1203060632 D)

Source: X403345-02

Prepared: Analyzed: 04/01/2014

Nitrite	ND	0.100	mg/L		<0.038	0-20	0.00	20		U
Bromide	2.69	1.00	"		2.77	0-20	2.82	20		
Sulfate	952	200	"		948	0-20	0.416	20		
Ortho-phosphate	ND	1.00	"		<0.335	0-20	0.00	20		HU
Nitrate	18.1	0.500	"		18.1	0-20	0.0331	20		
Chloride	2000	100	"		2000	0-20	0.158	20		
Fluoride	0.855	0.500	"		0.759	0-20	12.0	20		

DUP (1203060633 D)

Source: X403345-07

Prepared: Analyzed: 04/02/2014

Origins Laboratory, Inc.



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

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

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

Anions by EPA 300.0 - Quality Control

GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1376843 -

DUP (1203060633 D)		Source: X403345-07			Prepared: Analyzed: 04/02/2014					
Bromide	1.44	1.00	mg/L		1.52		0-20	5.20	20	
Chloride	599	40.0	"		599		0-20	0.0567	20	
Fluoride	1.32	0.500	"		1.32		0-20	0.531	20	
Nitrate	13.1	0.500	"		13.1		0-20	0.0305	20	H
Nitrite	ND	0.100	"		<0.038		0-20	0.00	20	U
Ortho-phosphate	ND	0.200	"		<0.067		0-20	0.00	20	U
Sulfate	728	80.0	"		714		0-20	1.95	20	
PS (1203060634 S)		Source: X403345-02			Prepared: Analyzed: 04/02/2014					
Fluoride	12.4	0.500	mg/L	2.50		93.4	90-110			
Bromide	9.22	1.00	"	1.25		103	90-110			
Nitrate	31.7	0.500	"	2.50		109	90-110			
Nitrite	3.06	0.100	"	2.50		122	90-110			
Ortho-phosphate	5.20	1.00	"	1.25		83.1	90-110			H
Sulfate	6060	200	"	10.0		102	90-110			
Chloride	4620	100	"	5.00		105	90-110			
PS (1203060635 S)		Source: X403345-07			Prepared: Analyzed: 04/02/2014					
Nitrate	26.6	0.500	mg/L	2.50		108	90-110			H
Sulfate	2750	80.0	"	10.0		102	90-110			
Nitrite	2.67	0.100	"	2.50		107	90-110			
Fluoride	12.6	0.500	"	2.50		90.5	90-110			
Chloride	1590	40.0	"	5.00		99.2	90-110			
Bromide	7.91	1.00	"	1.25		102	90-110			
Ortho-phosphate	1.15	0.200	"	1.25		91.7	90-110			

Origins Laboratory, Inc.



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

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

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

Cations by SW846 3005A/6010C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1376832 - SW846 3005A										
BLANK (1203060618-BLK)					Prepared: 04/03/2014 Analyzed: 04/07/2014					
Sodium	ND	300	ug/L		<0		-			U
Calcium	ND	200	"		<0		-			U
Magnesium	ND	300	"		<0		-			U
Potassium	ND	150	"		<0		-			U
LCS (1203060619-BKS)					Prepared: 04/03/2014 Analyzed: 04/07/2014					
Sodium	5360	300	ug/L	5000	0	107	80-120			
Potassium	5300	150	"	5000	0	106	80-120			
Calcium	5330	200	"	5000	0	107	80-120			
Magnesium	5540	300	"	5000	0	111	80-120			
DUP (1203060620 D)					Source: X403345-02		Prepared: 04/03/2014 Analyzed: 04/07/2014			
Calcium	1230000	2000	ug/L		1240000		0-20	0.858	20	
Magnesium	184000	300	"		183000		0-20	0.654	20	
Potassium	55100	1500	"		55600		0-20	0.851	20	
Sodium	675000	3000	"		682000		0-20	1.09	20	
MS (1203060621 S)					Source: X403345-02		Prepared: 04/03/2014 Analyzed: 04/07/2014			
Calcium	1300000	2000	ug/L	5000	1240000	NR	75-125			
Magnesium	190000	300	"	5000	183000	148	75-125			
Potassium	63700	1500	"	5000	55600	162	75-125			
Sodium	711000	3000	"	5000	682000	573	75-125			

Origins Laboratory, Inc.



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

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

Total Dissolved Solids by SM 2540C - Quality Control

GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1376953 -										
BLANK (1203060855-BLK)					Prepared: Analyzed: 04/02/2014					
Total Dissolved Solids	ND	14.3	mg/L		<0		-			U
DUP (1203060856 D)					Source: X403345-01 Prepared: Analyzed: 04/02/2014					
Total Dissolved Solids	1790	14.3	mg/L		1780		0-10	0.560	10	
DUP (1203060857 D)					Source: X403345-11 Prepared: Analyzed: 04/02/2014					
Total Dissolved Solids	3970	14.3	mg/L		3950		0-10	0.433	10	
LCS (1203060858-BKS)					Prepared: Analyzed: 04/02/2014					
Total Dissolved Solids	300	14.3	mg/L	300	0	100	95-105			

Origins Laboratory, Inc.



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

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

Notes and Definitions

U Result not detected above the detection limit

HU Holding time exceeded. Non detect.

H Holding time exceeded

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Noelle Doyle Mathis, President



August 01, 2014

LT Environmental, Inc.

Charles Greeson

4600 West 60th Avenue

Arvada

CO 80003

Project Name - Noble - Miller 1 South

Project Number - 008312061

Attached are your analytical results for Noble - Miller 1 South received by Origins Laboratory, Inc. April 01, 2014. This project is associated with Origins project number X404009-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

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

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

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB02R	X404009-01	Water	April 1, 2014 12:30	04/01/2014 14:50
SB03R	X404009-02	Water	April 1, 2014 12:40	04/01/2014 14:50
SB06R	X404009-03	Water	April 1, 2014 12:15	04/01/2014 14:50
SB07R	X404009-04	Water	April 1, 2014 11:45	04/01/2014 14:50
SB08R	X404009-05	Water	April 1, 2014 11:10	04/01/2014 14:50
SB10	X404009-06	Water	April 1, 2014 11:00	04/01/2014 14:50
SB18	X404009-07	Water	April 1, 2014 12:50	04/01/2014 14:50

Client asked that Sulfate be added to work order. ndm.

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 Doyle Mathis, President

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

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

www.originslaboratory.com

X404009

page 1 of 1

ORIGINS
LABORATORY, INC

Client: LT

Project Manager/Send Report To: Charles Greeson

Address: _____

Email Address: Cgreeson@ltenv.com

Project Name/Number: Miller#1 South CaCL 008312061

Telephone Number: _____

Samples Collected By: Jayson Evangelista

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis/Method	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa		
SB02R	4/11/14	1230	3	X							X X X TDS	1
SB03R		1240										2
SB06R		1215										3
SB07R		1145										4
SB08R		1110										5
SB10		1100										6
SB18		1250										7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<u>[Signature]</u>	4/11/14	1450	<u>[Signature]</u>	4/11/14	1450	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard

Comments:

Date Results Needed:

Origins Laboratory, Inc.

[Signature]

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

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

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

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X404009

Client: LTE

Client Project ID: Miller #1 South GCL

Checklist Completed by: Jose Smith

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

Date/time completed: 4/1/14 15:39

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.3 °C 1 / 1 °C 1 / 1 °C 1 / 1 °C

Thermometer ID: 7003

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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)

6/27/14/14/5
Date/Time Reviewed

Origins Laboratory, Inc.

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

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

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

SB02R

4/1/2014 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X404009-01 (Water)

Anions by EPA 300.0

Bromide	0.741	0.200	mg/L	1	1377010		04/02/2014	
Chloride	192	10.0	"	50	"	"	04/03/2014	
Sulfate	425	20.0	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	1380	14.3	mg/L	1	1376953	"	04/02/2014	
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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 Doyle Mathis, President

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

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

SB03R

4/1/2014 12:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X404009-02 (Water)

Anions by EPA 300.0

Bromide	1.37	0.200	mg/L	1	1377010		04/02/2014	
Chloride	275	10.0	"	50	"	"	04/03/2014	
Sulfate	1030	20.0	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	2930	14.3	mg/L	1	1376953	"	04/02/2014	
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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 Doyle Mathis, President

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

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

SB06R

4/1/2014 12:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X404009-03 (Water)

Anions by EPA 300.0

Bromide	1.03	0.200	mg/L	1	1377010		04/02/2014	
Chloride	221	10.0	"	50	"	"	04/03/2014	
Sulfate	308	20.0	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	1090	14.3	mg/L	1	1376953	"	04/02/2014	
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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 Doyle Mathis, President

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

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

SB07R

4/1/2014 11:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X404009-04 (Water)

Anions by EPA 300.0

Bromide	3.86	0.400	mg/L	2	1377010		04/03/2014	
Chloride	189	10.0	"	50	"	"	"	"
Sulfate	502	20.0	"	"	"	"	"	"

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	5650	14.3	mg/L	1	1376953	"	04/02/2014	
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Noelle Doyle Mathis, President

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

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

SB08R

4/1/2014 11:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X404009-05 (Water)

Anions by EPA 300.0

Bromide	0.764	0.200	mg/L	1	1377010		04/02/2014	
Chloride	272	20.0	"	100	"	"	04/03/2014	
Sulfate	348	40.0	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	1270	14.3	mg/L	1	1376953	"	04/02/2014	
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Noelle Doyle Mathis, President

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

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

SB10**4/1/2014 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X404009-06 (Water)**Anions by EPA 300.0**

Bromide	0.496	0.200	mg/L	1	1377010		04/02/2014	
Chloride	219	10.0	"	50	"	"	04/03/2014	
Sulfate	267	20.0	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	960	14.3	mg/L	1	1376953	"	04/02/2014	
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Noelle Doyle Mathis, President

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

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

SB18

4/1/2014 12:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X404009-07 (Water)

Anions by EPA 300.0

Bromide	0.979	0.200	mg/L	1	1377010		04/02/2014	
Chloride	282	10.0	"	50	"	"	04/03/2014	
Sulfate	623	20.0	"	"	"	"	"	

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	2260	14.3	mg/L	1	1376953	"	04/02/2014	
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Noelle Doyle Mathis, President

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

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

Anions by EPA 300.0 - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1377010 -										
BLANK (1203060987-BLK)					Prepared: Analyzed: 04/02/2014					
Chloride	ND	0.200	mg/L				-			U
Sulfate	ND	0.400	"				-			U
Bromide	ND	0.200	"				-			U
DUP (1203060988 D)					Source: X404009-07 Prepared: Analyzed: 04/02/2014					
Bromide	1.01	0.200	mg/L		0.979		0-20	2.77	20	
Chloride	281	10.0	"		282		0-20	0.208	20	
Sulfate	625	20.0	"		623		0-20	0.348	20	
PS (1203060989 S)					Source: X404009-07 Prepared: Analyzed: 04/03/2014					
Sulfate	1160	20.0	mg/L	10.0		108	90-110			
Chloride	560	10.0	"	5.00		111	90-110			
Bromide	2.32	0.200	"	1.25		108	90-110			
LCS (1203060990-BKS)					Prepared: Analyzed: 04/02/2014					
Bromide	1.29	0.200	mg/L	1.25		103	90-110			
Chloride	5.01	0.200	"	5.00		100	90-110			
Sulfate	10.3	0.400	"	10.0		103	90-110			

Origins Laboratory, Inc.



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

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

Total Dissolved Solids by SM 2540C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1376953 -										
BLANK (1203060855-BLK)					Prepared: Analyzed: 04/02/2014					
Total Dissolved Solids	ND	14.3	mg/L		0		-			U
DUP (1203060856 D)					Source: 345554001 Prepared: Analyzed: 04/02/2014					
Total Dissolved Solids	1790	14.3	mg/L		1780		0-10	0.560	10	
DUP (1203060857 D)					Source: 345554011 Prepared: Analyzed: 04/02/2014					
Total Dissolved Solids	3970	14.3	mg/L		3950		0-10	0.433	10	
LCS (1203060858-BKS)					Prepared: Analyzed: 04/02/2014					
Total Dissolved Solids	300	14.3	mg/L	300	0	100	95-105			

Origins Laboratory, Inc.



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

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

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.



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Noelle Doyle Mathis, President