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January 25, 2016

Kellie Jones
Environmental Specialist, District 1
New Mexico Oil Conservation Division
811 South First St.
Artesia, NM 88210

Re: Central Vacuum Unit 106/136 Soil Assessment and Delineation Activities Report

Dear Ms. Jones:

Please find enclosed for your files copies of the following report for the Central Vacuum Unit 106 and Central Vacuum Unit 136 Soil Assessment Report.

- *CVU 106/136 – 2015 Soil Assessment and Delineation Activities Report, Unit N - Section 6 – Township 18 South – Range 35 East, Lea County, NM*

This report was prepared by GHD on behalf of Chevron Environmental Management Company (CEMC) to document assessment activities for comingled releases of produced water at these units. Soil sampling in the release area indicate that vertical and horizontal delineation of Chlorides have been achieved at the site, and that no further assessment or remediation activities are warranted for this project.

Should you have any questions regarding the content of this report, please do not hesitate to contact me. I look forward to working with you in the future.

Sincerely,

Rob Speer
Environmental Project Manager

Soil Assessment Report

Central Vacuum Unit 106 and Central Vacuum Unit 136
Lea County, New Mexico
API : 30-025-25796 and 30-025-25997
NMOCD: 1R-2642-0

Chevron Environmental Management Company

6121 Indian School Road, NE Suite 200 Albuquerque New Mexico 87110
074636 | Report No 3 | December 04 2015

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Appendices

1. Introduction

Soil assessment activities were performed at the Central Vacuum Unit (CVU) #106/136 site from August 18 through August 22 and from September 2 to September 3, 2014. The Chevron CVU 106/136 site (hereafter referred to as the ñSiteò), is located in Section 6 (Unit N),Township 18 South, Range 35 East, in Lea County, New Mexico (Figure 1).

The scope of work for the project was developed between Chevron Environmental Management Company (CEMC), New Mexico Oil Conservation Division (NMOCD), and GHD Services Inc. (formerly Conestoga-Rovers and Associates) personnel. GHD Services Inc. (GHD) performed project management, general oversight of the assessment activities, soil sampling, and documentation of the field work. Drilling was performed by White Drilling Company, of Clyde, Texas and HCI Drilling of Lubbock Texas.

Based on information available from the Petroleum Recovery Research Center Pit Rule Mapping Portal (PPRC Mapping Portal), the depth to groundwater at the Site is indicated to be between 60 and 103 feet bgs. GHD is currently working on two sites (Buckeye Compressor Station and Buckeye Vacuum) located less than a mile from the Site. The depth to groundwater at these sites is approximately 130 feet bgs.

Although the nearest private domestic water and public/municipal water sources are greater than 200 feet and 1,000 feet respectively from the release site, the Site is located within 200 horizontal feet of a playa feature. Consequently, the preliminary total ranking score is 20 (see table below). Based on this, the site-specific RRAL to be applied by NMOCD for chlorides at the Site is 250 ppm.

Table 1.1 New Mexico Oil Conservation Division Site Assessment

Ranking Criteria	Score
Depth to Ground Water (> 100 feet)	0
Wellhead Protection Area (< 1000 feet from water source, < 200 feet from domestic source)	0
Distance to Surface Body Water (200 feet - 1000 feet)	20
Ranking Criteria Total Score	**20**
*Because the ranking criteria total score is 20, NMOCD established RRALs are 10 ppm for benzene, 50 ppm for benzene, toluene, ethylbenzene, and xylene (BTEX), 100 ppm for total petroleum hydrocarbons (TPH), and 250 ppm for chlorides1.	

1. NMOCD Guidance for Release Reporting and Corrective Action, August 13, 1993

2. Site History

Central Vacuum Unit No. 106 (CVU-106) and Central Vacuum Unit No. 136 (CVU-136) are both located in Unit E, Section 6, Township 18S, Range 35E of Lea County, approximately 15 miles southwest of Lovington, New Mexico, along Highway 238 (Figure 1).

GHD has combined the CVU-106 and CVU-136 release sites into a single area for investigation and delineation. Consolidation of these two units into a single Site delineation effort is based on:

- Their co-located nature (release sites are comingled),
- Similar nature of released material (produced water with reported chloride concentrations of 53,000 ppm),
- Identical New Mexico Oil Conservation Division (NMOCD) Recommended Remedial Action Levels (RRALs) for chloride of 250 ppm, and
- Near-contemporaneous release dates.

The first consultant to evaluate the Site was Crain Environmental (Crain). Crain conducted field assessment activities at the CVU-106 and CVU-136 sites between August and November 2010. Crain's assessments included Site visits, soil sample collection, analytical laboratory analyses, and preliminary determinations of impacts to environmental media. In addition, remedial activities were conducted at the CVU-106 release site. GHD met with Ms. Crain on April 21, 2011 to review and transfer the file material for each Site and discuss Site histories. Additional information regarding the Crain Assessments is provided below. A Site visit was performed on October 22, 2013 by GHD. During the Site visit, boring locations were flagged for utility locating purposes. In addition, the Site was walked to observe Site features. During the Site visit, it appeared that a drilling pit was located to the north of the comingled release area (see Figure 2).

2.1 Central Vacuum Unit #106 (CVU-106) Injection Line Release

Chevron submitted a C-141 Release Notification and Corrective Action Form (C-141) to the NMOCD dated August 5, 2010. The NMOCD assigned a Remediation Permit number of 1RP-2642-0 to the CVU-106 release. A release of 300 barrels (bbls) of produced water from a corroded buried injection line occurred on August 2, 2010. None of the released fluid was reported to have been recovered. The C-141 reported that the released produced water had a concentration of 53,000 ppm and impacted an area of surface soils approximately 200 feet by 30 feet.

Crain collected three surface soil samples on August 12, 2010 to a depth of approximately 6 inches across the length of the apparent impacted area. These samples were laboratory-analyzed for chloride (Cl-) concentrations. Chloride results ranged from 5,040 mg/Kg (ppm) to 27,600 ppm.

The apparent impacted area was subsequently excavated to a depth of approximately 2 feet. The dimensions of the irregularly-shaped excavation area were approximately 263 feet by 106 feet. An additional 17 soil samples were collected at a depth of approximately six inches across the floor of the excavation. They were taken from different locations than those sampled in August. Two background samples were also collected at a depth of 6 inches and at 1 foot below grade from a location southwest of the excavation area. Samples were collected on September 16, 2010 and analyzed for chlorides. Results ranged from <16 ppm to 27,200 ppm with only five samples having chloride concentrations below 250 ppm located at the northeast, northwest and southeast corners of the existing excavation.

Additional samples were also collected by hand in the floor of the excavation, ranging from 6 inches to 8 feet in depth. Chloride concentrations in these samples ranged from 16 ppm to 13,600 ppm with the majority of the samples having concentrations above 250 ppm. Finally, soil boring BH-1 was advanced in the floor of the excavation to a depth of 30 feet below ground surface (bgs) at soil sample location SS-5, located just north of the CVU-106 well pad. Samples were collected on 5 foot vertical intervals. Samples analyzed from this boring had chloride concentrations of 250 ppm or

greater with the exception of the sample collected at 30 feet bgs which had a reported chloride concentration of 96 ppm.

During excavation of the produced water-impacted soils, an undefined area was encountered exhibiting visible evidence of significant hydrocarbon contamination. The indicated depth and extent of this contamination suggested the release may have occurred, at least in part, within the area of an abandoned pit that had not been identified previously. No assessment of this pit was performed.

2.2 Central Vacuum Unit #136 (CVU-136) Injection Line Release

Chevron submitted a C-141 Form to NMOCD dated November 5, 2010, describing a release of 276.56 bbls of produced water. The release occurred on October 30, 2010 from a corroded buried injection line. Approximately 200 bbls of the release were reported to have been recovered. The C-141 reported the dimensions of stained soil to be approximately 200 feet by 200 feet. Additionally, it was noted that the CVU-136 injection line released fluid directly adjacent to, and comingled with, the CVU-106 release area. It should be noted that the release did not originate from the CVU-136 well, but from an injection line leak that occurred near the CVU-106 injection well.

Crain collected four surface soil samples to a depth of approximately 6 inches across the apparent stained soil area. These samples were submitted for laboratory analysis of chloride. Chloride results ranged from 11,000 ppm to 13,600 ppm.

The apparent stained soil area was described by Crain to be roughly 300 feet by 208 feet, and the release was described as having comingled with the CVU-106 chloride impacted area.

3. 2013 Site Assessment Summary

Between November 20, 2013 and December 3, 2013, fifteen soil borings (B-1 through B-15) were advanced in or around the CVU-106 and CVU-136 release sites and former excavations by White Drilling of Clyde, TX. Oversight of site assessment drilling was provided by GHD. Soil borings were advanced to total depths between 20 and 51.5 feet bgs based on field screening for hydrocarbons and chlorides. Soil samples were collected for laboratory analysis from each boring at ten foot intervals beginning at ten feet bgs. Several borings also had a sample collected at five feet bgs to assess shallow concentrations. Soil samples were packed into laboratory prepared jars and stored in a cooler with ice. The soil samples were sent to Xenco Laboratories (Xenco) in Odessa, Texas for analysis of BTEX by EPA Method 8021B; TPH gasoline range organics (GRO), TPH diesel range organics (DRO), and TPH oil range organics (ORO) by EPA Method 8015B Modified; and for chloride by EPA Method E300.0.

Soil samples collected from the borings for laboratory analysis were either below laboratory reporting limits or below RRALs for both BTEX and TPH. Soil samples collected from soil borings and analyzed for chloride indicate chloride concentrations above the RRAL of 250 ppm in all borings except for B-6, B-7, B-8, and B-11. Evaluation of the analytical data indicates that the deepest and highest concentrations of chlorides in the vadose zone are in the vicinity of borings B-2 and B-4. Concentrations of chlorides in soil at the Site in exceedance of the RRAL range from 257 ppm to 10,200 ppm at depths ranging from five feet bgs to 51.5 feet bgs with the highest concentration occurring at 40-41.5 feet bgs in boing B-2.

Based on review of the analytical data obtained from the November and December 2013 drilling program it was recommended that the following items be considered for the 2014 work scope.

- Perform geophysical surveys within and surrounding the former injection line release areas to assess the horizontal and vertical extent of chlorides in the vadose zone;
- Install two additional soil borings in and around the release areas to further assess the extent vertical and horizontal chloride concentrations in soil;
- Install a groundwater monitor well to assess if impacts to groundwater had occurred.

Of the recommended items for 2014, a geophysical survey was completed in August of 2014, and two additional soil borings were advance in September of 2014. The monitor well was not installed due to access issues. Findings and results of the 2014 work scope activities are discussed below.

4. 2014 Soil Assessment Activities

4.1 Geophysical Survey

GHD completed a geophysical investigation at the Site between August 18 and 22, 2014. The purpose of the investigation was to delineate areas of elevated conductivity and map the extent of suspected chloride impacts in shallow subsurface soil and groundwater at the Site. The geophysical investigation consisted of an electromagnetic (EM) survey and an electrical resistivity (ER) survey. An EM31 terrain conductivity meter (EM31) was used for the collection of conductivity measurements within the shallow subsurface, to an approximate depth of 17 feet bgs. Apparent resistivity measurements were collected along three ER survey lines to an approximate depth of 50 feet bgs, and these data were used to produce two-dimensional images of resistivity response in the subsurface beneath the Site.

4.1.1 Geophysical Survey Coverage

The geophysical survey coverage for both surveys is presented on Figure 3. The EM31 conductivity survey was completed over the limits of stressed vegetation and surrounding areas between the CVU No. 106 well and the CVU No. 204 well located to the north. EM31 survey lines were spaced approximately 30 feet apart and were generally oriented south to north. Topographic features such as the access road and well pads were also surveyed, for position control. For the ER survey, Lines 1 and 3 were completed generally oriented west to east, and Line 2 was completed oriented approximately south to north. The orientation of the ER survey lines is presented on Figure 3.

4.1.2 Geophysical Survey Methods

The geophysical methods used for the investigation can be briefly described as follows. The EM31 consists of transmitter and receiver coils located at opposite ends of a 14 foot long boom. In vertical dipole mode (with the instrument held at hip level), this coil configuration yields an approximate depth of investigation of 17 feet bgs. The survey was conducted by logging the quadrature (Q) component of the induced secondary field. This component measures the conductivity of the shallow subsurface, and yields results in MilliSiemens per meter (mS/m). The EM31 was used to determine the horizontal or lateral extent of suspected shallow brine impacts, by delineating areas of elevated conductivity response. During the course of the survey, data were automatically stored in an Archer2 data logger equipped with a built-in differential global positioning system (DGPS)

receiver for position control. Both the EM31 survey data and DGPS points were collected at 1 second intervals. The differential GPS locations are reported as New Mexico State Plane coordinates, North American Datum of 1983 (NAD83) Geodetic System.

The ER survey was completed using a Syscal R1 Plus receiver manufactured by Iris instruments, and a 72 electrode spread. The Syscal R1 Plus is a multi-electrode resistivity imaging system, with an internal switching board and a 200 Watt power source. The output current is automatically adjusted to optimize the input voltage values and ensure the best measurement quality. This system is designed to automatically survey pre-defined sets of resistivity measurements with roll along capability.

Electrical resistivity profiles were completed along three survey lines located between CVU No. 106 and CVU No. 204. Each survey setup utilized a 72 electrode spread configuration with 5 foot electrode spacing. A Wenner array was employed, whereby the two voltage electrodes were at the center of the profile and bound by the two current electrodes for each measurement. This array yielded a depth of investigation of approximately 50 feet bgs, along survey lines approximately 360 feet long.

Upon return from the Site, the ER survey and EM31 data were downloaded to a computer and compiled for data processing and plotting. The apparent resistivity data were imported into an inversion software program (RES2DINV), and processed to yield a modeled profile section of resistivity.

4.1.3 EM31 Conductivity Results

The EM31 data were processed as a colored contour plot, and superimposed over an aerial photograph outlining the surveyed area as presented on Figure 4. The highest intensity conductivity responses are colored red to purple, while areas of low response are colored blue. All remaining intermediate responses correspond to the color scale presented on the figure.

Review of Figure 4 reveals that a long, narrow conductivity anomaly was delineated between CVU No. 106 and CVU No. 204. The edge of this feature was characterized by a conductivity response of 75 mS/m, the contours of which closely coincided with the limits of stressed vegetation observed at the Site. Peak responses of 200 to 400 mS/m were measured within the core of the conductivity anomaly. This feature extended beneath the crushed gravel pad at CVU No. 106 in the south, to beneath the pad at CVU No. 204 to the north. The eastern and western limits of the anomaly also appeared well-defined, and were bound by background conductivity responses ranging from 15 to 25 mS/m. The footprint of the conductivity anomaly is believed to coincide with the extent of suspected brine impacts at the Site; these impacts also appear to be limited to a relatively narrow area (approximately 150 to 200 feet wide) located between CVU No. 106 and CVU No. 204.

Several negative responses (contoured dark blue) in the shape of small circles were also observed on the EM31 survey plot, typically along linear trends across the area of survey. These responses correspond to locations where the EM31 survey crossed over metal pipes found on the ground surface, or buried in the shallow subsurface.

4.1.4 Electrical Resistivity Survey Results

The locations of the electrical resistivity survey lines can be found on Figure 3. The modeled resistivity results are presented on Figures 5 to 7. The modeled sections represent the resistance of

soils in the shallow subsurface, and thus provide an interpretation of the overburden sequences and areas of suspected brine impacts along the lines of survey. Stratigraphic logs of nearby soil borings have also been provided on the sections, to allow comparison between resistivity response and the various soil types encountered in the shallow subsurface.

The highest resistivity values on the modeled sections are colored dark blue, while areas of low resistivity (or conversely, high conductivity) are colored red to purple. All remaining intermediate responses correspond to the color scale presented at the bottom of the sections. Review of the colored plots reveals that contour intervals ranging from 0.5 to 150 Ohm m were applied. The plots also indicate that suspected brine impacted soils can be characterized by a measured resistivity response of approximately 0.5 to 3.0 Ohm m. The modeled resistivity sections indicate that the horizontal and vertical distribution of suspected brine impacts is variable for the three lines of survey. The results for each of the ER survey lines can be further described as follows.

Line 1 extended eastward from the gravel access road, and was centered on an area of stressed vegetation located north of the CVU No. 106 well pad. The results presented on Figure 5 indicate that vegetated areas at the extreme ends of this survey line yielded background resistivity values in excess of 100 Ohm.m. Over the areas of stressed vegetation, however, suspected brine impacts were identified on surface and to lesser degree, also at depth. Modeled resistivity responses of 0.5 to 3.0 Ohm.m suggest that the majority of the suspected brine impacts is limited to the shallow silt and sand sequences extending to an approximate depth of 20 feet bgs. Beneath this depth, responses of 5 to 25 Ohm.m indicate that weaker impacts may extend to a depth of 50 feet bgs and beyond. A circular-shaped conductive feature with responses of less than 0.50 Ohm.m was also detected in the shallow subsurface at 245 feet along the line of survey. The modeled resistivity results suggest that this anomaly may be attributed to a buried metal pipeline at this location.

Line 2 commenced at the base of the crushed gravel pad for well CVU106, and extended northward to the CVU 204 well. This orientation transected the long axis of the EM31 conductivity anomaly and the corresponding extent of suspected brine impacts. The modeled resistivity results for Line 2 presented on Figure 6 reveal that the ER survey yielded anomalous values of 0.5 to 3.0 Ohm.m along the entire extent of the survey line, from ground surface to an approximate depth of 25 feet bgs near the south and north ends of the line. Shallower impacts (5 to 12 feet bgs) were observed between these areas, near the center of the line. Weaker suspected impacts ranging from 8 to 25 Ohm.m were detected beneath these anomalous areas, to a maximum depth of 40 feet bgs. Background responses in excess of 75 Ohm.m were measured at the base of this line, beyond a depth of 45 feet bgs.

Line 3 was completed to the north of Line 1, and commenced in close proximity to an Apache Oil Well located on Site. Stressed vegetation was also observed along this line of survey, to the east of the crushed gravel pad around the Apache well. Review of the modeled resistivity results presented on Figure 7 indicates that the majority of the suspected brine impacts were relatively shallow and extended from ground surface to depths ranging from 8 to 14 feet bgs. Beyond this depth, slightly anomalous results (8 to 25 Ohm.m) suggest that weaker brine impacts have likely migrated to the deeper subsurface. Similar results were observed at the crushed gravel pad around the Apache well, and in the shallow subsurface beneath it. At the east end of the survey line, background responses in excess of 75 Ohm.m were measured.

4.1.5 Geophysical Survey Conclusions

Based on the results of the geophysical investigation presented herein, the following conclusions are presented:

- The extent of suspected brine impacts appeared to have been characterized by EM31 conductivity responses in excess of 75 mS/m, with peak values of 200 to 400 mS/m.
- Background responses appeared to have been characterized by modeled resistivity responses in excess of 75 Ohm.m.
- The vertical extent of the suspected brine impacts along Lines 1, 2, and 3, where low resistivity responses (0.5 to 3.0 Ohm.m) indicative of brine impacts were observed in silt and sand sequences in the shallow subsurface.
- Weaker suspected brine impacts (8 to 25 Ohm.m) appeared to extend to the deeper subsurface at Lines 1 and 3, but the deeper subsurface between these lines yielded background responses in excess of 75 Ohm.m, as observed for the results of Line 2.

4.2 Soil Boring Advancement and Soil Sampling

Between September 2 and September 3, 2014, two soil borings, B-1(2) and B-2(2), were advanced at the Site by White Drilling Company of Clyde, Texas. The soil borings were pre-cleared with an air knife to a depth of approximately two feet when caliche was encountered halting further advancement by air knife. Pre-clearing from a depth of two feet bgs to five feet bgs was completed by use of a hand auger. The remainder of each boring was advanced using an air rotary drill rig and split spoon soil sampling techniques to a total depth of 30 feet bgs.

Soil borings were logged in accordance with the Unified Soil Classification System and recorded. Visual representation of the boring logs can be found in Appendix A. The location of the soil borings are presented on the Site Plan (Figure 2).

Soil samples were collected for laboratory analysis from each boring. First at five feet bgs and then at ten-foot intervals, beginning at ten feet bgs. Soil samples were packed into laboratory prepared jars and stored in a cooler with ice. The soil samples were sent to Xenco Laboratories (Xenco) in Odessa, Texas for analysis of chloride by EPA Method 300.0. Soil laboratory analytical results are summarized in Table 1. The soil laboratory analytical report is included as Appendix B. A Chloride Concentration in Soil Map is presented as Figure 8.

4.3 Subsurface Soils and Soil Analytical Results

Subsurface soils observed in soil samples and drill cuttings consisted primarily of tan poorly graded, sand and silty sand with trace fine grained gravel and clay. Well cemented caliche was present at a depth of five feet bgs in the location of soil boring B-2(2).

Soil samples from five feet bgs in B-1(2) and B-2(2) exceeded the RRAL of 250 mg/kg for chloride with analytical results of 352 mg/kg and 432 mg/kg, respectively. All other sample results from below this depth in these two boring were found to be below the RRAL's for Chlorides.

Laboratory analytical results are summarized on Table 1 and Figure 8. The laboratory analytical report is included as Appendix B.

4.4 Waste Management

Soil cuttings generated during drilling activities were placed in 55-gallon drums and transported by HRW Transportation to the Sundance Services, Inc. facility of Eunice, New Mexico, for disposal. Copies of the waste management documentation can be found in Appendix C.

5. 2015 Soil Assessment Activities

5.1 Soil Boring Advancement and Soil Sampling

On August 24, 2015, one soil boring, MW-1, was advanced at the Site by HCI Drilling of Lubbock, Texas. The soil boring was pre-cleared by air knife. The remainder of the boring was advanced using an air rotary drill rig and split spoon soil sampling techniques to a total depth of 70 feet bgs. The intent was to advance the boring and install a groundwater monitoring well; however, groundwater was not encountered at the borings total depth of 70 feet bgs, and chloride impacts to soil had lessened to a level below the site RRAL for chloride concentration in soil, therefore a well was not installed.

The soil boring was logged in accordance with the Unified Soil Classification System and recorded. Visual representation of the boring log can be found in Appendix A. The location of the soil boring is presented on the Site Plan (Figure 2).

Soil samples were collected for laboratory analysis from the boring first at five feet bgs and then at ten foot intervals beginning at ten feet bgs. Soil samples were packed into laboratory prepared jars and stored in a cooler with ice. The soil samples were sent to Xenco Laboratories (Xenco) in Odessa, Texas for analysis of chloride by EPA Method 300.0.

5.2 Subsurface Soils and Soil Analytical Results

Subsurface soils observed in soil samples and drill cuttings from boring MW-1 consisted primarily of gray to tan, poorly graded, very fine grained, sand and silty sand with some caliche nodules.

Six soil samples collected from intervals between five feet to 50 feet bgs in MW-1 exceeded the RRAL of 250 mg/kg for chloride with analytical results ranging from 738 mg/kg to 7,230 mg/kg. Soil samples collected at 60 and 70 feet bgs were below the RRAL for chloride in soil with results of 220 mg/kg and 79.3 mg/kg, respectively.

Laboratory analytical results are summarized on Table 1 and Figure 8. The laboratory analytical report is included as Appendix B.

5.3 Waste Management

Soil cuttings generated during the August 2015 drilling activities were thin spread in place.

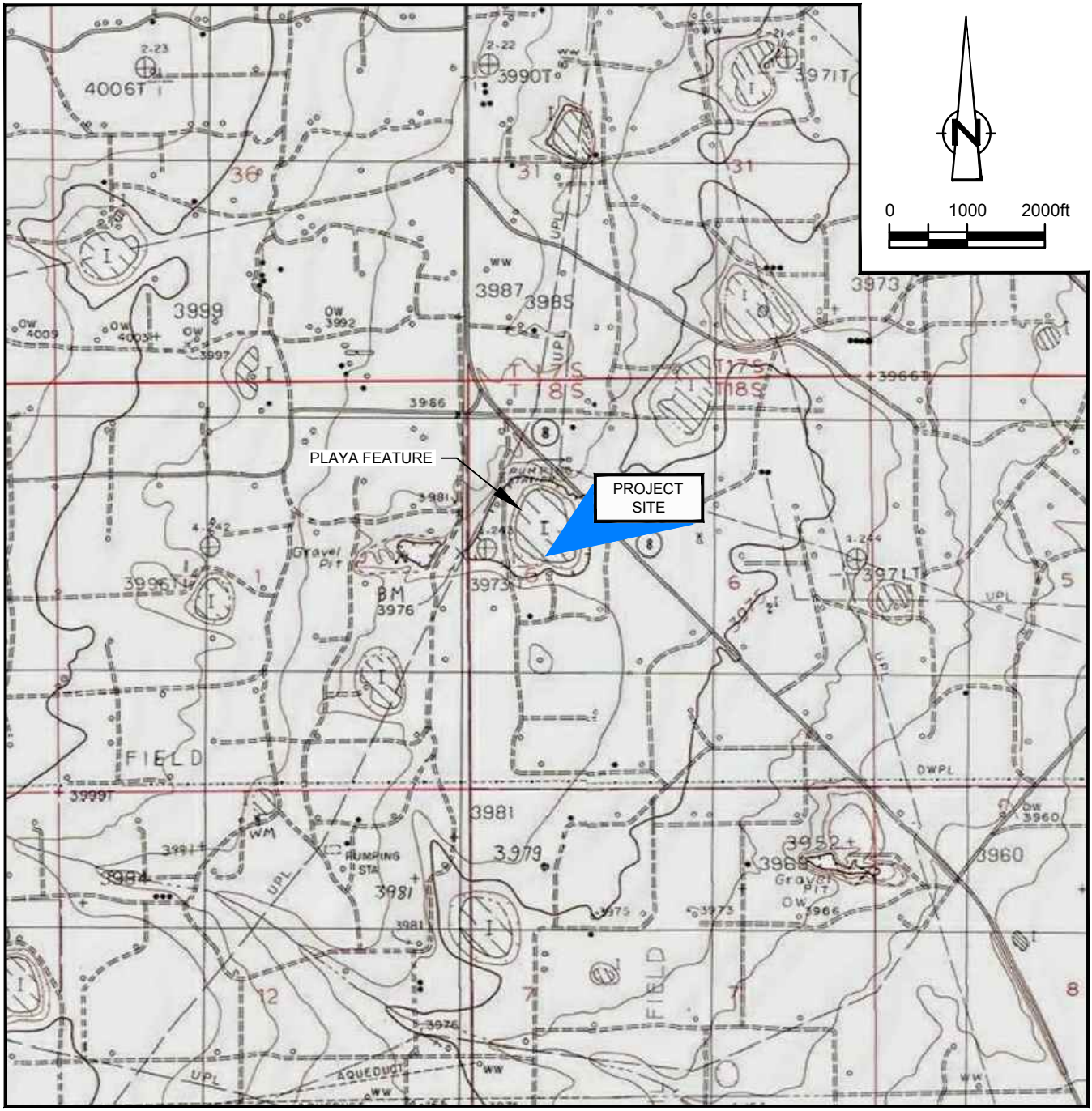
6. Recommendations

Based on data collected from the field assessment, GHD recommends the installation of a liner to prevent further lateral migration of chlorides. After a discussion with the NMOCD on November 10, 2015 the agreed plan of action for the site is the installation of a plastic liner in the area of impacted

soil. The impacted area will be cleared and grubbed and the liner will be placed at ground surface. Once the liner is in place, two feet of soil will be spread atop the liner and the area will be revegetated with an approved regional seed mix. Pipelines located within the lined area will be marked on either side with a warning to repair the liner if disturbed.

A work plan detailing the liner installation will be provided for NMOCD approval prior to commencement of work. Once the approved work plan scope has been completed a summary of installation activities will be provided to the NMOCD with a request to receive remedial closure for the CVU 106/136 release area.

Figures

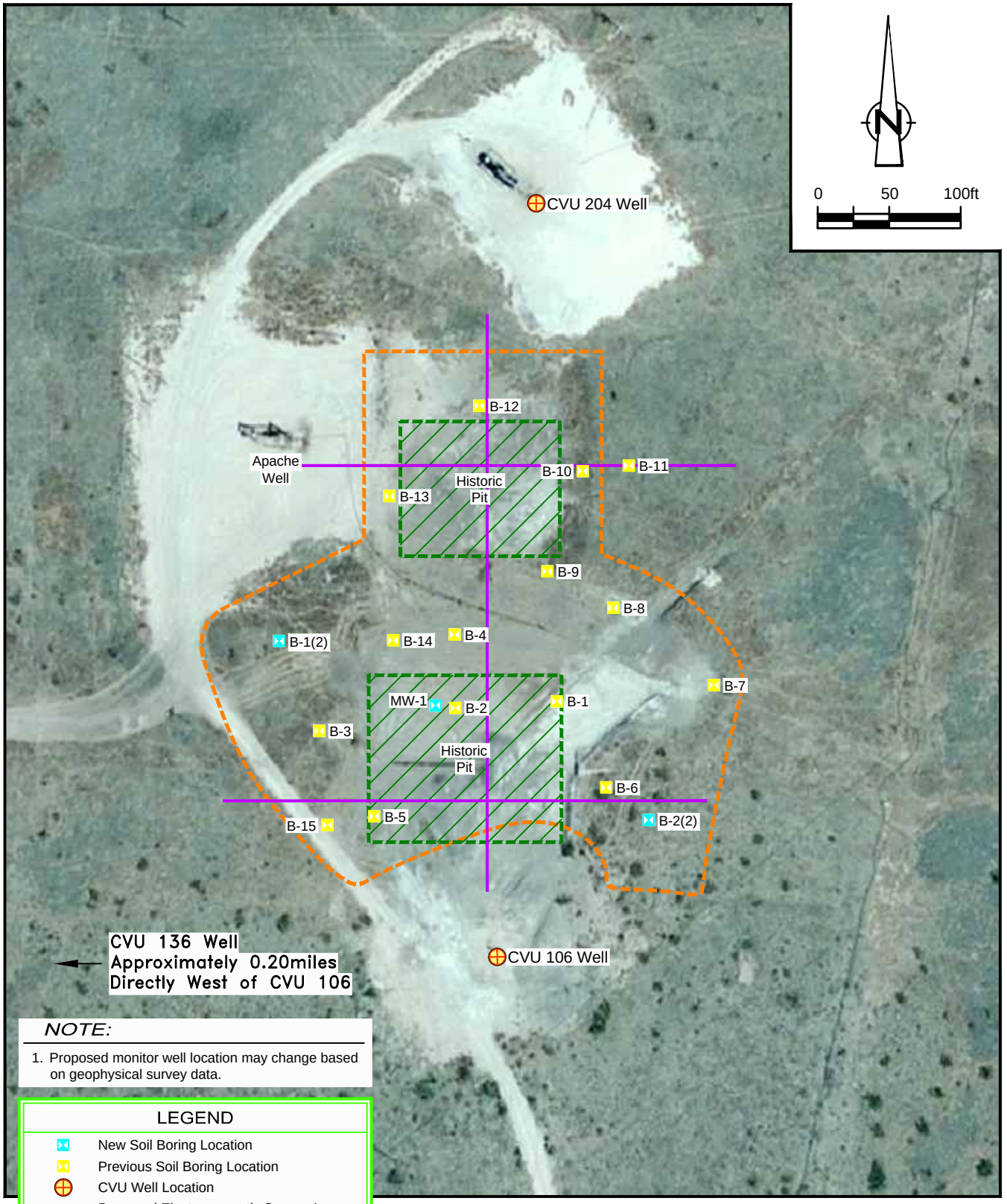


SOURCE: USGS 7.5 MINUTE QUAD
"BUCKEYE AND LOVINGTON SW, NEW MEXICO"

LAT/LONG: 32.7779° NORTH, 103.5021° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 1

SITE LOCATION MAP
CVU No.136 AND CVU No.106
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company



NOTE:

1. Proposed monitor well location may change based on geophysical survey data.

LEGEND

- New Soil Boring Location
- Previous Soil Boring Location
- CVU Well Location
- Proposed Electromagnetic Survey Area
- Proposed Resistivity Survey Lines
- Historic Pit Limits

Figure 2

SITE PLAN
CVU No.136 AND CVU No.106
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

GHD

074636-00(003)GN-DL001 NOV 18/2015

IMAGE PROJECTION: NEW MEXICO EAST STATE PLANE COORDINATES
NAD 83, US SURVEY FOOT

LEGEND

- EM31 SURVEY LINE LOCATION
- ELECTRICAL RESISTIVITY SURVEY LINE LOCATION
- CVU WELL LOCATION

Figure 3

GEOPHYSICAL SURVEY COVERAGE
CVU No.136 AND CVU No.106
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

74636-02(MEMO001)GN-WA001 NOV 16/2015

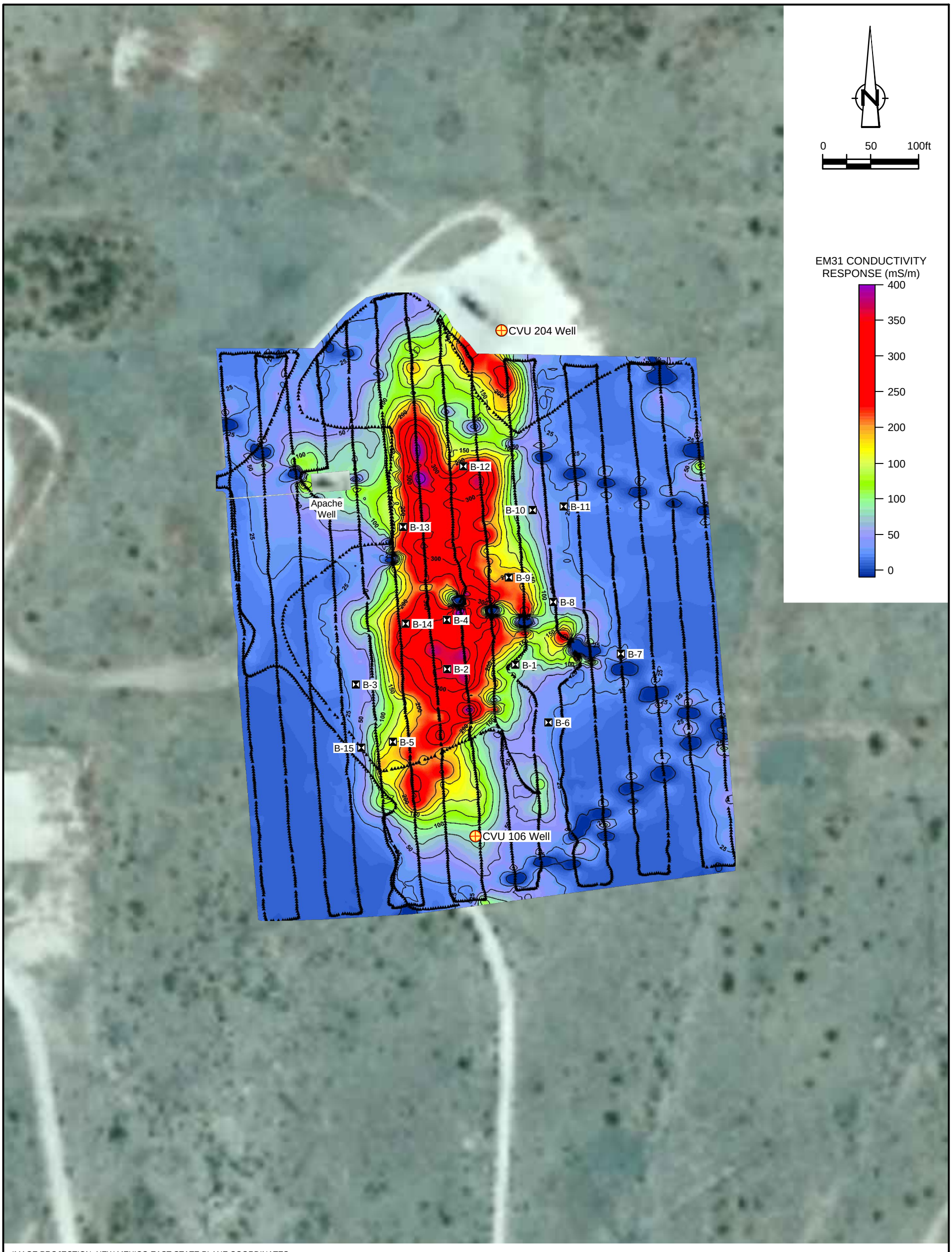


IMAGE PROJECTION: NEW MEXICO EAST STATE PLANE COORDINATES
NAD 83, US SURVEY FOOT

LEGEND

- EM31 SURVEY LINE LOCATION
- ELECTRICAL RESISTIVITY SURVEY LINE LOCATION
- SOIL BORING LOCATION
- CVU WELL LOCATION

Figure 4

EM31 CONDUCTIVITY SURVEY RESULTS
CVU No.136 AND CVU No.106
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

74636-02(MEMO001)GN-WA002 NOV 16/2015

LINE 1

INVERSE MODEL RESISTIVITY SECTION

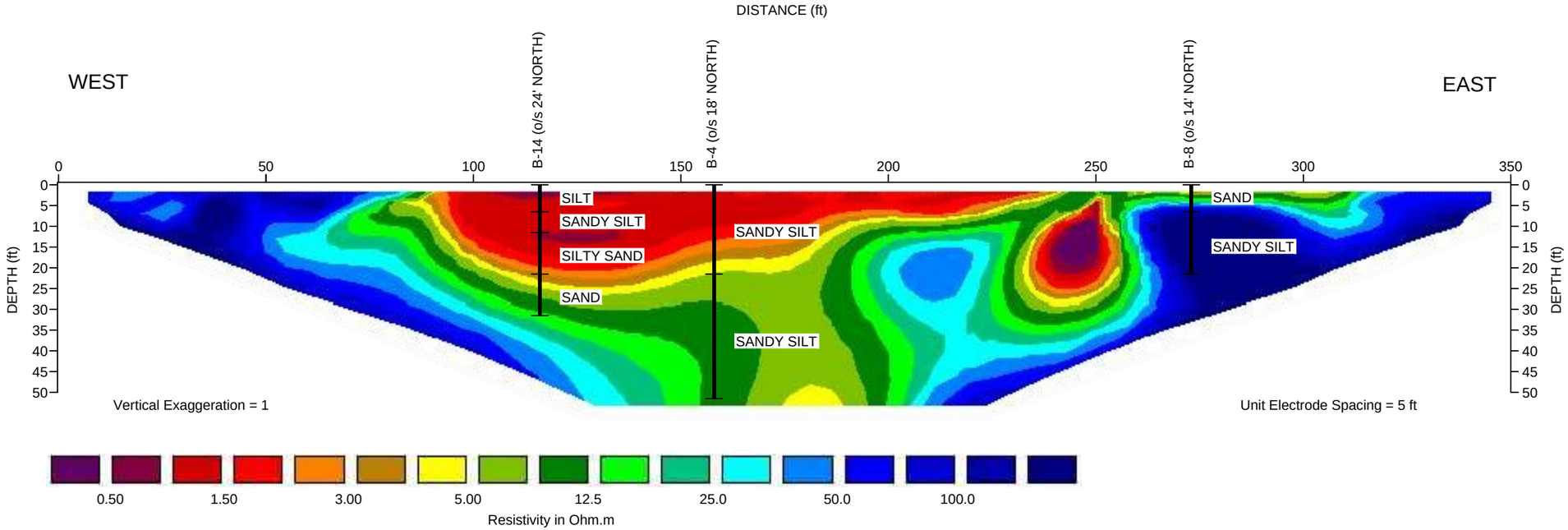


Figure 5

ELECTRICAL RESISTIVITY RESULTS - LINE 1
CVU No.136 AND CVU No.106
LEA COUNTY, NEW MEXICO

Chevron Environmental Management Company

LINE 2

INVERSE MODEL RESISTIVITY SECTION

DISTANCE (ft)

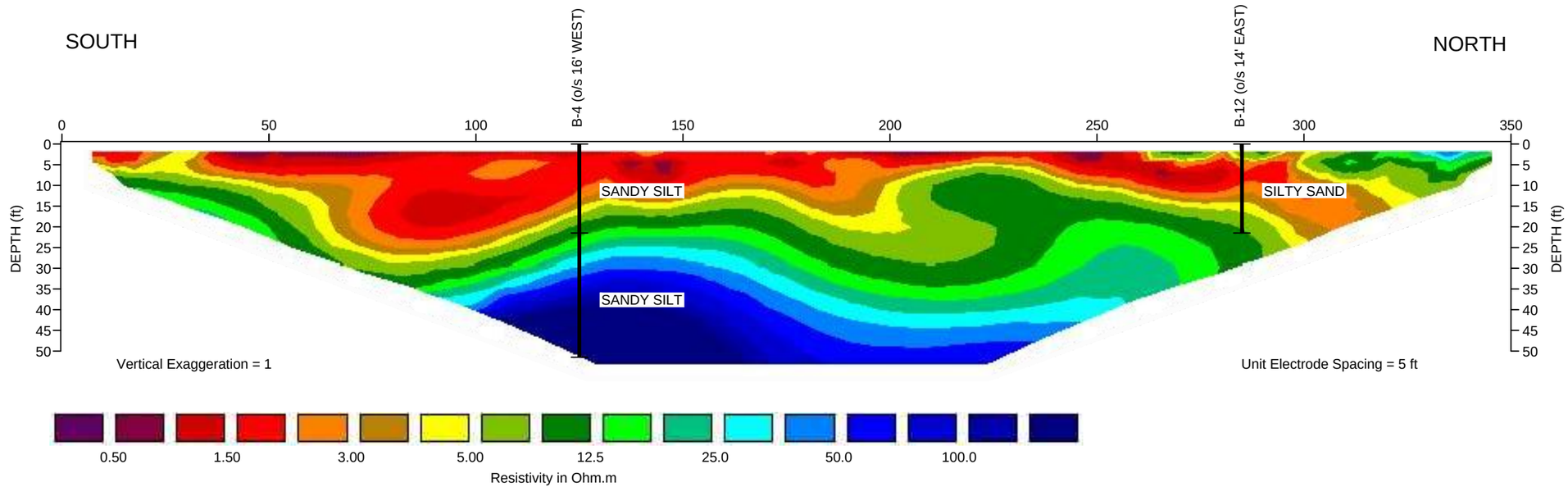


Figure 6

ELECTRICAL RESISTIVITY RESULTS - LINE 2
CVU No.136 AND CVU No.106
LEA COUNTY, NEW MEXICO

Chevron Environmental Management Company

LINE 3

INVERSE MODEL RESISTIVITY SECTION

DISTANCE (ft)

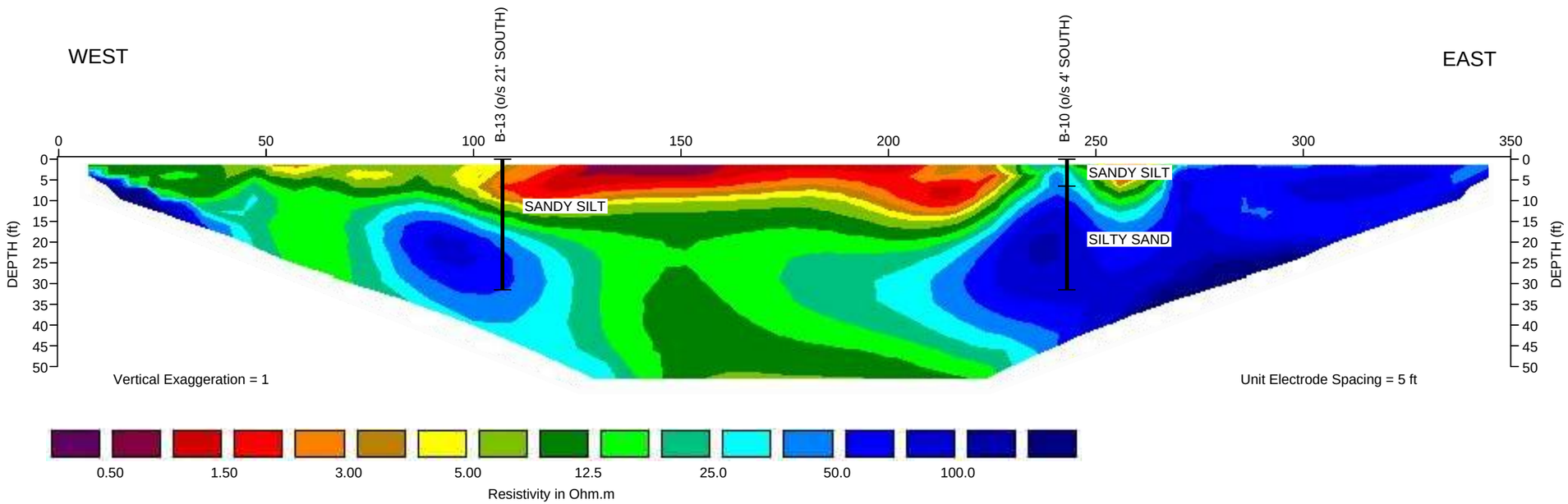
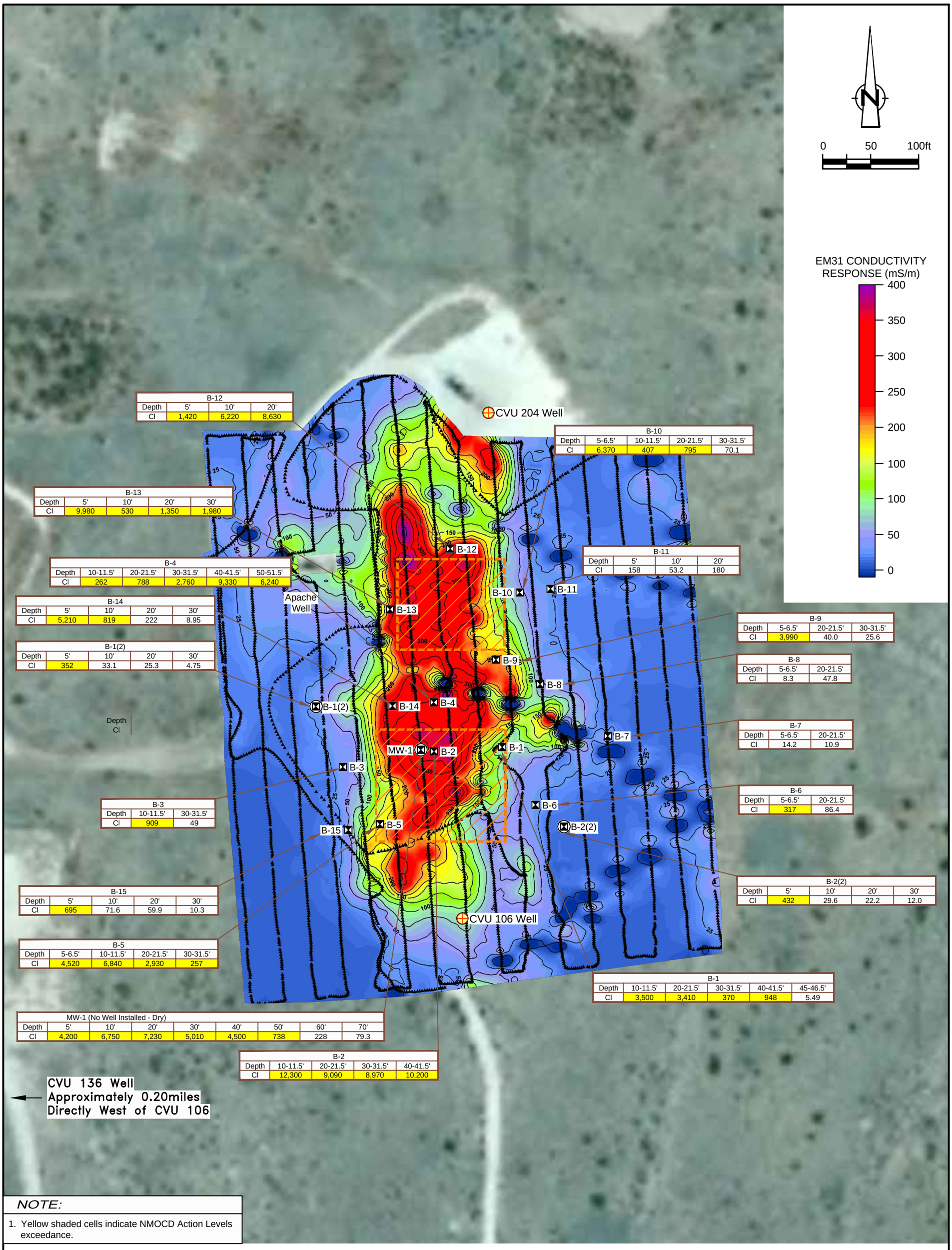


Figure 7

ELECTRICAL RESISTIVITY RESULTS - LINE 3
CVU No.136 AND CVU No.106
LEA COUNTY, NEW MEXICO

Chevron Environmental Management Company



B-12			
Depth	5'	10'	20'
Cl	1,420	6,220	8,630

B-13				
Depth	5'	10'	20'	30'
Cl	9,980	530	1,350	1,980

B-4					
Depth	10-11.5'	20-21.5'	30-31.5'	40-41.5'	50-51.5'
Cl	262	788	2,760	9,330	6,240

B-14				
Depth	5'	10'	20'	30'
Cl	5,210	819	222	8.95

B-1(2)				
Depth	5'	10'	20'	30'
Cl	352	33.1	25.3	4.75

B-3		
Depth	10-11.5'	30-31.5'
Cl	909	49

B-15				
Depth	5'	10'	20'	30'
Cl	695	71.6	59.9	10.3

B-5				
Depth	5-6.5'	10-11.5'	20-21.5'	30-31.5'
Cl	4,520	6,840	2,930	257

MW-1 (No Well Installed - Dry)								
Depth	5'	10'	20'	30'	40'	50'	60'	70'
Cl	4,200	6,750	7,230	5,010	4,500	738	228	79.3

B-2				
Depth	10-11.5'	20-21.5'	30-31.5'	40-41.5'
Cl	12,300	9,090	8,970	10,200

B-10				
Depth	5-6.5'	10-11.5'	20-21.5'	30-31.5'
Cl	6,370	407	795	70.1

B-11			
Depth	5'	10'	20'
Cl	158	53.2	180

B-9			
Depth	5-6.5'	20-21.5'	30-31.5'
Cl	3,990	40.0	25.6

B-8		
Depth	5-6.5'	20-21.5'
Cl	8.3	47.8

B-7		
Depth	5-6.5'	20-21.5'
Cl	14.2	10.9

B-6		
Depth	5-6.5'	20-21.5'
Cl	317	86.4

B-2(2)				
Depth	5'	10'	20'	30'
Cl	432	29.6	22.2	12.0

B-1					
Depth	10-11.5'	20-21.5'	30-31.5'	40-41.5'	45-46.5'
Cl	3,500	3,410	370	948	5.49

NOTE:

1. Yellow shaded cells indicate NMOCD Action Levels exceedance.

LEGEND

- EM31 SURVEY LINE LOCATION
- HISTORIC PIT LIMITS
- PREVIOUS SOIL BORING LOCATION
- CVU WELL LOCATION
- NEW SOIL BORING LOCATION
- Depth — DEPTH OF SAMPLE (ft)
- Cl — CHLORIDES CONCENTRATION (mg/kg)

IMAGE PROJECTION: NEW MEXICO EAST STATE PLANE COORDINATES
NAD 83, US SURVEY FOOT

Figure 8

CHLORIDE CONCENTRATION IN SOIL MAP
CVU No.136 AND CVU No.106
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

74636-02(MEMO001)GN-WA004 NOV 18/2015

Tables

TABLE I
SOIL ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
Chevron CVU#106 and CVU#136
LEA COUNTY, NEW MEXICO

Boring Number	Sample ID	Depth (feet)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH (8015B Modified) GRO (mg/kg)	TPH (8015B Modified) DRO (mg/kg)	TPH (8015B Modified) ORO (mg/kg)	TPH (8015B Modified) Total TPH (mg/kg)	Chlorides (mg/kg)
NMOCD Recommended Remediation Action Levels (Total Ranking Score = 20)													
				10 mg/kg	**--- mg/kg**	**--- mg/kg**	**--- mg/kg**	**50 mg/kg**	**--- mg/kg**	**--- mg/kg**	**--- mg/kg**	**100 mg/kg**	**250 mg/kg**
B-1	S-074636-112013-CM-B-1(10-11.5)	10-11.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.4	262	23.2	**285**	**3,500**
	S-074636-112013-CM-B-1(20-21.5)	20-21.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.9	52.1	< 16.9	52.1	**3,410**
	S-074636-112013-CM-B-1(30-31.5)	30-31.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.2	37.7	< 16.2	37.7	**370**
	S-074636-112013-CM-B-1(40-41.5)	40-41.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.2	56.8	< 16.2	56.8	**948**
	S-074636-112013-CM-B-1(45-46.5)	45-46.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 15.9	< 15.9	< 15.9	< 15.9	5.49
B-2	S-074636-112013-CM-B-2(10-11.5)	10-11.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.7	< 16.7	< 16.7	< 16.7	**12,300**
	S-074636-112013-CM-B-2(20-21.5)	20-21.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.3	21.3	< 16.3	21.3	**9,090**
	S-074636-112013-CM-B-2(30-31.5)	30-31.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.3	46.4	< 16.3	46.4	**8,970**
	S-074636-112013-CM-B-2(40-41.5)	40-41.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.6	94.7	< 16.6	94.7	**10,200**
B-3	S-074636-112013-CM-B-3(10-11.5)	10-11.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 15.9	20	< 15.9	20	**909**
	S-074636-112013-CM-B-3(30-31.5)	30-31.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.8	< 16.8	< 16.8	< 16.8	49
B-4	S-074636-112013-CM-B-4(10-11.5)	10-11.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.4	< 16.4	< 16.4	< 16.4	**262**
	S-074636-112013-CM-B-4(20-21.5)	20-21.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.9	< 16.9	< 16.9	< 16.9	**788**
	S-074636-112013-CM-B-4(30-31.5)	30-31.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.4	39.9	< 16.4	39.9	**2,760**
	S-074636-112013-CM-B-4(40-41.5)	40-41.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.7	< 16.7	< 16.7	< 16.7	**9,330**
	S-074636-112013-CM-B-4(50-51.5)	50-51.5	11/20/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.0	25.6	< 16.0	25.6	**6,240**
B-5	S-074636-112113-CM-B-5(5-6.5)	5-6.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 15.9	< 15.9	< 15.9	< 15.9	**4,520**
	S-074636-112113-CM-B-5(10-11.5)	10-11.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.5	56.6	< 16.5	56.6	**6,840**
	S-074636-112113-CM-B-5(20-21.5)	20-21.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.6	49.5	< 16.6	49.5	**2,930**
	S-074636-112113-CM-B-5(30-31.5)	30-31.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.6	26.7	< 16.6	< 26.7	**257**
B-6	S-074636-112113-CM-B-6(5-6.5)	5-6.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 15.8	< 15.8	< 15.8	< 15.8	**317**
	S-074636-112113-CM-B-6(20-21.5)	20-21.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 15.7	52.4	< 15.7	52.4	86.4
B-7	S-074636-112113-CM-B-7(5-6.5)	5-6.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 17.2	< 17.2	< 17.2	< 17.2	14.2
	S-074636-112113-CM-B-7(20.21.5)	20-21.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.0	25	< 16.0	25	10.9
B-8	S-074636-112113-CM-B-8(5-6.5)	5-6.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.4	37.5	< 16.4	37.5	8.3
	S-074636-112113-CM-B-8(20-21.5)	20-21.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.5	< 16.5	< 16.5	< 16.5	47.8
B-9	S-074636-112113-CM-B-9(5-6.5)	5-6.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 17.9	< 17.9	< 17.9	< 17.9	**3,990.0**
	S-074636-112113-CM-B-9(20-21.5)	20-21.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 17.3	< 17.3	< 17.3	< 17.3	40.0
	S-074636-112113-CM-B-9(30-31.5)	30-31.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.3	< 16.3	< 16.3	< 16.3	25.6
B-10	S-074636-112113-CM-B-10(5-6.5)	5-6.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 19.3	< 19.3	< 19.3	< 19.3	**6,370**
	S-074636-112113-CM-B-10(10-11.5)	10-11.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 17.1	< 17.1	< 17.1	< 17.1	**407**
	S-074636-112113-CM-B-10(20-21.5)	20-21.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.4	62.8	< 16.4	62.8	**795**
	S-074636-112113-CM-B-10(30-31.5)	30-31.5	11/21/13	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.2	< 16.2	< 16.2	< 16.2	70.1
B-11	S-074636-120213-CK-B-11-5	5	12/2/13	NA	NA	NA	NA	NA	< 16.4	< 16.4	< 16.4	< 16.4	158
	S-074636-120213-CK-B-11-10	10	12/2/13	NA	NA	NA	NA	NA	< 16.0	< 16.0	< 16.0	< 16.0	53.2
	S-074636-120213-CK-B-11-20	20	12/2/13	NA	NA	NA	NA	NA	< 16.2	< 16.2	< 16.2	< 16.2	180
B-12	S-074636-120213-CK-B-12-5	5	12/2/13	NA	NA	NA	NA	NA	< 17.9	< 17.9	< 17.9	< 17.9	**1,420**
	S-074636-120213-CK-B-12-10	10	12/2/13	NA	NA	NA	NA	NA	< 18.4	< 18.4	< 18.4	< 18.4	**6,220**
	S-074636-120213-CK-B-12-20	20	12/2/13	NA	NA	NA	NA	NA	< 17.9	< 17.9	< 17.9	< 17.9	**8,630**

TABLE I
SOIL ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
Chevron CVU#106 and CVU#136
LEA COUNTY, NEW MEXICO

Boring Number	Sample ID	Depth (feet)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH (8015B Modified) GRO (mg/kg)	TPH (8015B Modified) DRO (mg/kg)	TPH (8015B Modified) ORO (mg/kg)	TPH (8015B Modified) Total TPH (mg/kg)	Chlorides (mg/kg)
NMOCD Recommended Remediation Action Levels (Total Ranking Score = 20)													
				10 mg/kg	**--- mg/kg**	**--- mg/kg**	**--- mg/kg**	**50 mg/kg**	**--- mg/kg**	**--- mg/kg**	**--- mg/kg**	**100 mg/kg**	**250 mg/kg**
B-13	S-074636-120313-CK-B-13-5	5	12/3/13	NA	NA	NA	NA	NA	< 20.0	< 20.0	< 20.0	< 20.0	**9,980**
	S-074636-120313-CK-B-13-10	10	12/3/13	NA	NA	NA	NA	NA	< 18.2	< 18.2	< 18.2	< 18.2	**530**
	S-074636-120313-CK-B-13-20	20	12/3/13	NA	NA	NA	NA	NA	< 17.0	< 17.0	< 17.0	< 17.0	**1,350**
	S-074636-120313-CK-B-13-30	30	12/3/13	NA	NA	NA	NA	NA	< 16.5	< 16.5	< 16.5	< 16.5	**1,980**
B-14	S-074636-120313-CK-B-14-5	5	12/3/13	NA	NA	NA	NA	NA	< 17.9	< 17.9	< 17.9	< 17.9	**5,210**
	S-074636-120313-CK-B-14-10	10	12/3/13	NA	NA	NA	NA	NA	< 16.2	< 16.2	< 16.2	< 16.2	**819**
	S-074636-120313-CK-B-14-20	20	12/3/13	NA	NA	NA	NA	NA	< 15.8	< 15.8	< 15.8	< 15.8	222
	S-074636-120313-CK-B-14-30	30	12/3/13	NA	NA	NA	NA	NA	< 16.0	< 16.0	< 16.0	< 16.0	8.95
B-15	S-074636-120313-CK-B-15-5	5	12/3/13	NA	NA	NA	NA	NA	< 16.0	< 16.0	< 16.0	< 16.0	**695**
	S-074636-120313-CK-B-15-10	10	12/3/13	NA	NA	NA	NA	NA	< 15.3	< 15.3	< 15.3	< 15.3	71.6
	S-074636-120313-CK-B-15-20	20	12/3/13	NA	NA	NA	NA	NA	< 16.2	< 16.2	< 16.2	< 16.2	59.9
	S-074636-120313-CK-B-15-30	30	12/3/13	NA	NA	NA	NA	NA	< 15.8	< 15.8	< 15.8	< 15.8	10.3
B-1(2)	074636-090314-SP-B1-01	5	9/3/14	NA	NA	NA	NA	NA	NA	NA	NA	NA	352.0
	074636-090314-SP-B1-02	10	9/3/14	NA	NA	NA	NA	NA	NA	NA	NA	NA	33.1
	074636-090314-SP-B1-03	20	9/3/14	NA	NA	NA	NA	NA	NA	NA	NA	NA	25.3
	074636-090314-SP-B1-04	30	9/3/14	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.8
B-2(2)	074636-090314-SP-B2-01	5	9/3/14	NA	NA	NA	NA	NA	NA	NA	NA	NA	432.0
	074636-090314-SP-B2-02	10	9/3/14	NA	NA	NA	NA	NA	NA	NA	NA	NA	29.6
	074636-090314-SP-B2-03	20	9/3/14	NA	NA	NA	NA	NA	NA	NA	NA	NA	22.2
	074636-090314-SP-B2-04	30	9/3/14	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.0
MW-1 (No Well Installed - Dry)	SS-074636-JF-MW-1	5	8/24/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4,200**
	SS-074636-JF-MW-1	10	8/24/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	**6,750**
	SS-074636-JF-MW-1	20	8/24/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	**7,230**
	SS-074636-JF-MW-1	30	8/24/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5,010**
	SS-074636-JF-MW-1	40	8/24/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4,500**
	SS-074636-JF-MW-1	50	8/24/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	**738**
	SS-074636-JF-MW-1	60	8/24/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	220
	SS-074636-JF-MW-1	70	8/24/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	79.3

Notes:

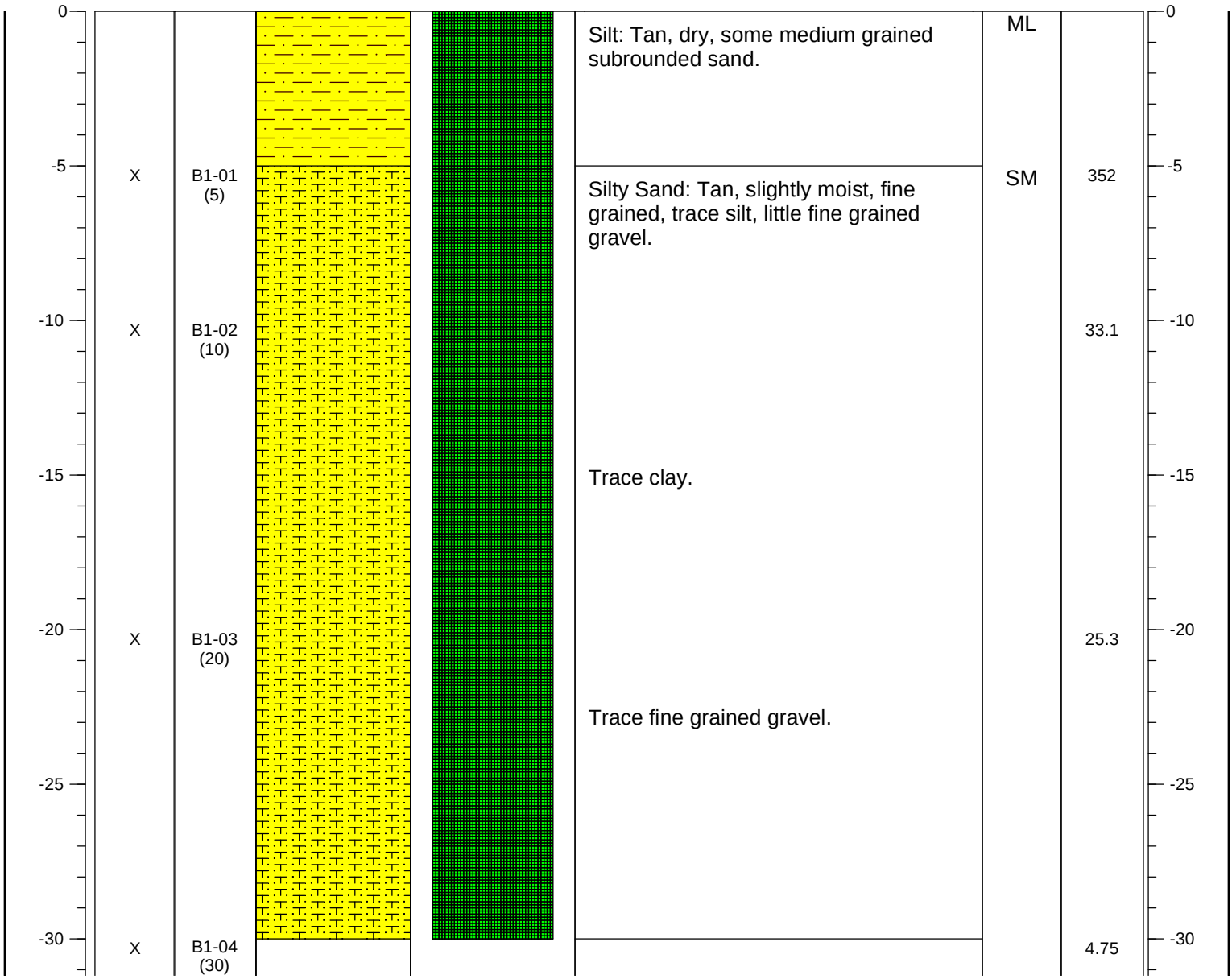
1. BTEX analyses by EPA Method 8021B
2. TPH analyzed by EPA Method 8015B Mod.
3. Chlorides analyzed by EPA 300.0
4. NA - Not Analyzed
5. Bold concentrations above lab reporting limits.
6. Highlighted cells indicated concentrations above regulatory limits

Appendices

Appendix A
Soil Boring Logs

PROJECT NAME: CVU 106/136
LOCATION: Lea County, New Mexico
FIELD LOGGED BY: Steven Perez
SURFACE ELEVATION (msl): No survey available
GROUNDWATER ELEVATION (msl): N/A
REMARKS:
COORDINATES:

SOIL BORING NO: B-1(2)
DRILL TYPE: Air Rotary
BORE HOLE DIAMETER: 4"
DRILLED BY: White Drilling
DATE/TIME HOLE STARTED: September 3, 2014
DATE/TIME HOLE COMPLETED: September 3, 2014



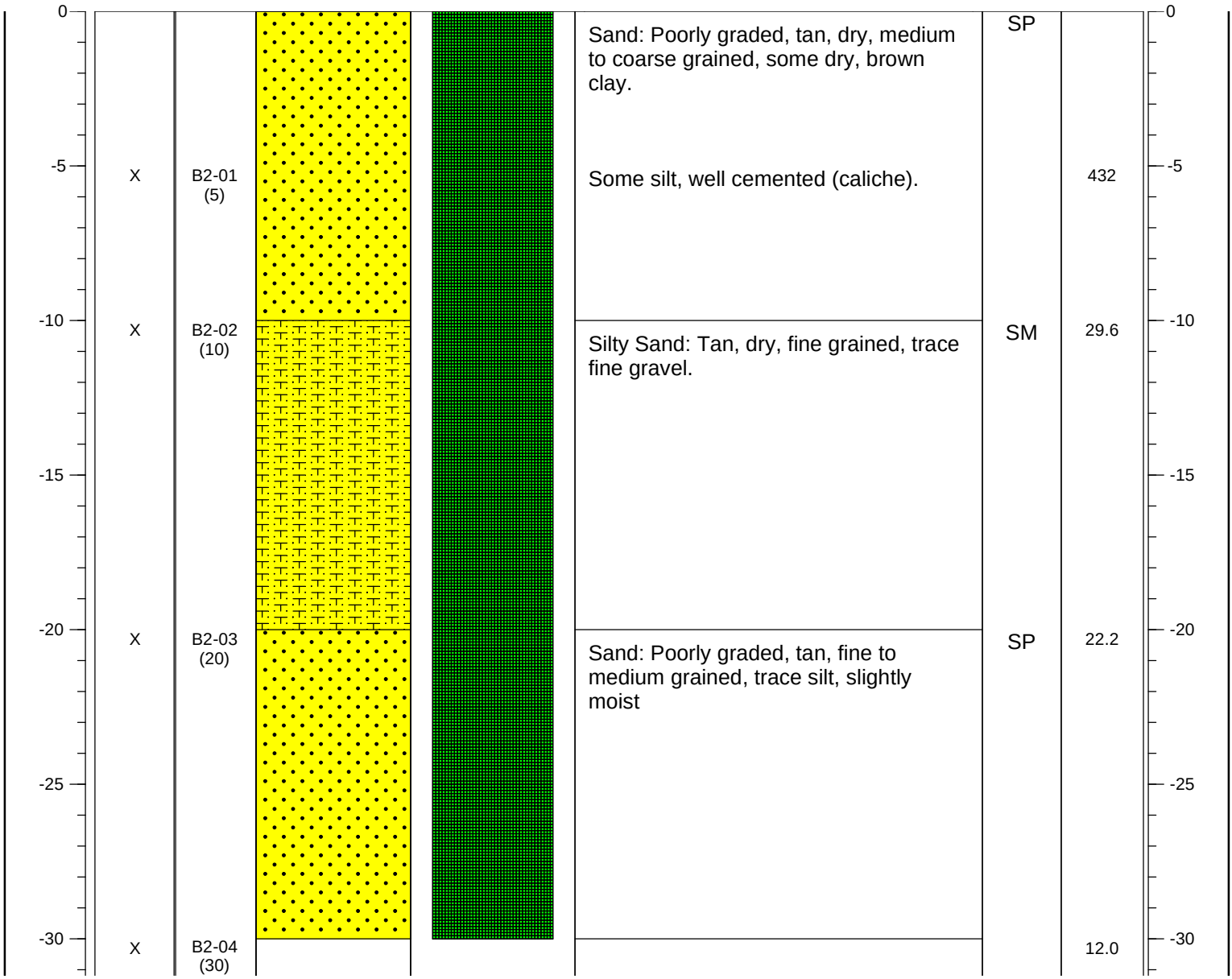
TD = 30.0' bgs

GHD Services Inc.

BORING LOG AND WELL COMPLETION FORM

PROJECT NAME: CVU 106/136
LOCATION: Lea County, New Mexico
FIELD LOGGED BY: Steven Perez
SURFACE ELEVATION (msl):
GROUNDWATER ELEVATION (msl): N/A
REMARKS:
COORDINATES:

SOIL BORING NO: B-2(2)
DRILL TYPE: Air Rotary
BORE HOLE DIAMETER: 4"
DRILLED BY: White Drilling
DATE/TIME HOLE STARTED: September 3, 2014
DATE/TIME HOLE COMPLETED: September 3, 2014



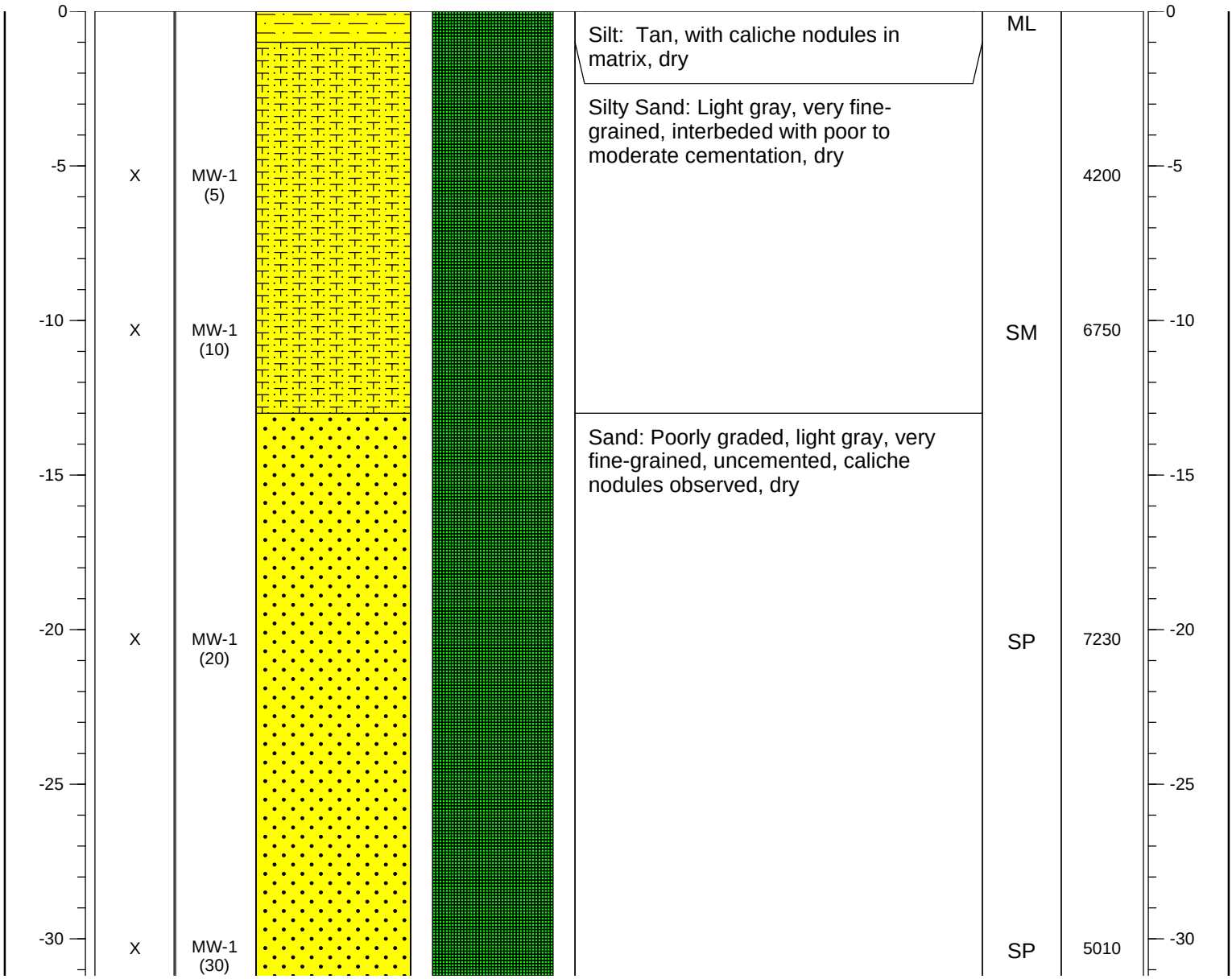
TD = 30.0' bgs

GHD Services Inc.

BORING LOG AND WELL COMPLETION FORM

PROJECT NAME: CVU 106/136
LOCATION: Buckeye, New Mexico
FIELD LOGGED BY: J. Fergerson
SURFACE ELEVATION (msl): ~3977 '
GROUNDWATER ELEVATION (msl): Not encountered
REMARKS: Boring was dry. No monitoring well was installed.
COORDINATES: ~32.777845, -103.502146

SOIL BORING NO: MW-1
DRILL TYPE: Air Rotary
BORE HOLE DIAMETER: 4 inches
DRILLED BY: Harrison Cooper Inc.
DATE/TIME HOLE STARTED: August 24, 2015
DATE/TIME HOLE COMPLETED: August 24, 2015



PROJECT NAME: CVU 106/136
LOCATION: Buckeye, New Mexico
FIELD LOGGED BY: J. Fergerson
SURFACE ELEVATION (msl): ~3977 '
GROUNDWATER ELEVATION (msl): Not encountered
REMARKS: Boring was dry. No monitoring well was installed.
COORDINATES: ~32.777845, -103.502146

SOIL BORING NO: MW-1
DRILL TYPE: Air Rotary
BORE HOLE DIAMETER: 4 inches
DRILLED BY: Harrison Cooper Inc.
DATE/TIME HOLE STARTED: August 24, 2015
DATE/TIME HOLE COMPLETED: August 24, 2015

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	Chloride mg/kg	DEPTH (bgs) - ft
-35								-35
-40	X	MW-1 (40)				SP	4500	-40
-45								-45
-50	X	MW-1 (50)			Sand: Poorly graded, tan, very fine-grained, uncemented, caliche nodules observed, slightly moist	SP	738	-50
-55								-55
-60	X	MW-1 (60)			Sand: Poorly graded, tan, very fine-grained, uncemented, caliche nodules observed, moist	SP	220	-60

PROJECT NAME: CVU 106/136
LOCATION: Buckeye, New Mexico
FIELD LOGGED BY: J. Fergerson
SURFACE ELEVATION (msl): ~3977 '
GROUNDWATER ELEVATION (msl): Not encountered
REMARKS: Boring was dry. No monitoring well was installed.
COORDINATES: ~32.777845, -103.502146

SOIL BORING NO: MW-1
DRILL TYPE: Air Rotary
BORE HOLE DIAMETER: 4 inches
DRILLED BY: Harrison Cooper Inc.
DATE/TIME HOLE STARTED: August 24, 2015
DATE/TIME HOLE COMPLETED: August 24, 2015

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	Chloride mg/kg	DEPTH (bgs) - ft
-65								-65
-70	X	MW-1 (70)				SP	79.3	-70

Appendix B
Soil Analytical Reports

Analytical Report 492889

for

Conestoga-Rovers & Associates-Albuquerque, NM

Project Manager: Bernie Bockisch

Chevron-CVU106/136

074636

12-SEP-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

12-SEP-14

Project Manager: **Bernie Bockisch**
Conestoga-Rovers & Associates-Albuquerque, NM
6121 Indian School Rd. NE Suite 200

Albuquerque, NM 87110

Reference: XENCO Report No(s): **492889**
Chevron-CVU106/136
Project Address: Buckeye, NM

Bernie Bockisch:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 492889. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 492889 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

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Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

Sample Cross Reference 492889

Conestoga-Rovers & Associates-Albuquerque, NM, Albuqu

Chevron-CVU106/136

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
074636-090314-SP-B1-01	S	09-03-14 10:45	- 5 ft	492889-001
074636-090314-SP-B1-02	S	09-03-14 10:55	- 10 ft	492889-002
074636-090314-SP-B1-03	S	09-03-14 11:05	- 20 ft	492889-003
074636-090314-SP-B1-04	S	09-03-14 11:15	- 30 ft	492889-004
074636-090314-SP-B2-01	S	09-03-14 12:45	- 5 ft	492889-005
074636-090314-SP-B2-02	S	09-03-14 12:55	- 10 ft	492889-006
074636-090314-SP-B2-03	S	09-03-14 13:05	- 20 ft	492889-007
074636-090314-SP-B2-04	S	09-03-14 13:15	- 30 ft	492889-008

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 492889

Conestoga-Rovers & Associates-Albuquerque, NM, Albuquerque, NM

Project Name: Chevron-CVU106/136

Project Id: 074636
Contact: Bernie Bockisch
Project Location: Buckeye, NM

Date Received in Lab: Tue Sep-09-14 10:15 am
Report Date: 12-SEP-14
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	492889-001		492889-002		492889-003		492889-004		492889-005		492889-006	
	Field Id:	074636-090314-SP-B1-01		074636-090314-SP-B1-02		074636-090314-SP-B1-03		074636-090314-SP-B1-04		074636-090314-SP-B2-01		074636-090314-SP-B2-02	
	Depth:	5 ft		10 ft		20 ft		30 ft		5 ft		10 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-03-14 10:45		Sep-03-14 10:55		Sep-03-14 11:05		Sep-03-14 11:15		Sep-03-14 12:45		Sep-03-14 12:55	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Sep-09-14 12:00		Sep-09-14 12:00		Sep-09-14 12:00		Sep-09-14 12:00		Sep-09-14 12:00		Sep-09-14 12:00	
	Analyzed:	Sep-09-14 17:30		Sep-09-14 17:52		Sep-09-14 19:00		Sep-09-14 19:23		Sep-09-14 19:45		Sep-09-14 20:08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		352	21.1	33.1	2.12	25.3	2.23	4.75	2.10	432	20.8	29.6	2.06
Percent Moisture	***Extracted:***												
	Analyzed:	Sep-09-14 17:00		Sep-09-14 17:00		Sep-09-14 17:00		Sep-09-14 17:00		Sep-09-14 17:00		Sep-09-14 17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.28	1.00	5.63	1.00	10.1	1.00	4.57	1.00	3.91	1.00	2.77	1.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 492889

Conestoga-Rovers & Associates-Albuquerque, NM, Albuquerque, NM

Project Name: Chevron-CVU106/136

Project Id: 074636
Contact: Bernie Bockisch
Project Location: Buckeye, NM

Date Received in Lab: Tue Sep-09-14 10:15 am
Report Date: 12-SEP-14
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	492889-007		492889-008			
	Field Id:	074636-090314-SP-B2-03		074636-090314-SP-B2-04			
	Depth:	20 ft		30 ft			
	Matrix:	SOIL		SOIL			
	Sampled:	Sep-03-14 13:05		Sep-03-14 13:15			
Inorganic Anions by EPA 300/300.1	***Extracted:***	Sep-09-14 12:00		Sep-09-14 12:00			
	Analyzed:	Sep-09-14 20:53		Sep-09-14 21:16			
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		22.2	2.09	12.0	2.09		
Percent Moisture	***Extracted:***						
	Analyzed:	Sep-09-14 17:00		Sep-09-14 17:00			
	Units/RL:	%	RL	%	RL		
Percent Moisture		4.34	1.00	4.51	1.00		

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

BS / BSD Recoveries

Project Name: Chevron-CVU106/136

Work Order #: 492889 **Project ID:** 074636

Analyst: JUM **Date Prepared:** 09/09/2014 **Date Analyzed:** 09/09/2014

Lab Batch ID: 950481 **Sample:** 661236-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	48.2	96	50.0	46.2	92	4	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Chevron-CVU106/136

Work Order #: 492889

Lab Batch #: 950481 **Project ID:** 074636

Date Analyzed: 09/09/2014 **Date Prepared:** 09/09/2014 **Analyst:** JUM

QC- Sample ID: 492859-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	17.0	54.5	67.6	93	80-120	

Lab Batch #: 950481

Date Analyzed: 09/09/2014 **Date Prepared:** 09/09/2014 **Analyst:** JUM

QC- Sample ID: 492889-006 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	29.6	51.4	90.5	118	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Sample Duplicate Recovery

Project Name: Chevron-CVU106/136

Work Order #: 492889

Lab Batch #: 950225 **Project ID:** 074636

Date Analyzed: 09/09/2014 17:00 **Date Prepared:** 09/09/2014 **Analyst:** WRU

QC- Sample ID: 492858-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	10.5	10.3	2	20	

Lab Batch #: 950225

Date Analyzed: 09/09/2014 17:00 **Date Prepared:** 09/09/2014 **Analyst:** WRU

QC- Sample ID: 492892-002 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	11.2	11.9	6	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

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Service Center - San Antonio, Texas (210-509-3334)
Odessa, Texas (432-563-1800)
Norcross, Georgia (770-449-8800)
Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)
www.xenco.com

Xenco Quote #: | Xenco Job #: 492889

Client / Reporting Information

Company Name / Branch: Conestoga Rovers & Associates
Company Address: 6121 Indian School Rd NE, Albuquerque, NM, 87110
Email: bbochisch@craworld.com Phone No: 505.280.0572
Project Contact: Bernie Bochisch
Samplers's Name: Steve Perez

Project Information

Project Name/Number: Chevron - CVL106/136 074636
Project Location: Buckeye, NM
Invoice To:
PO Number:

Analytical Information

Chlorides 300.0

Matrix Codes

A= Air
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
WW= Waste Water
W = Wipe
O = Oil

WW= Waste Water

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	074636-090314-SP-B1-01	5	9/3/14	10:45	S	1									
2	074636-090314-SP-B1-02	10'		10:55		1									
3	074636-090314-SP-B1-03	20'		11:05		1									
4	074636-090314-SP-B1-04	30'		11:15		1									
5	074636-090314-SP-B2-01	5		12:45		1									
6	074636-090314-SP-B2-02	10'		12:55		1									
7	074636-090314-SP-B2-03	20'		13:05		1									
8	074636-090314-SP-B2-04	30'		13:15		1									
9															
10															

Turnaround Time (Business days)

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
- ☐ Contract TAT
- ☐ 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 3:00 pm

Data Deliverable Information

- ☐ Level II Std QC
- ☐ Level IV (Full Data Pkg /raw data)
- ☐ Level III Std QC+ Forms
- ☐ TRRP Level IV
- ☐ Level 3 (CLP Forms)
- ☐ UST / RG -411
- ☐ TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Steven Perez	9/8/14 8:30	1	2	9/9/14	2 10:15
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☐	On Ice ☒ Cooler Temp. Thermo. Corr. Factor 4.0

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negotiated under a fully executed client contract.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga-Rovers & Associates-Albuque

Date/ Time Received: 09/09/2014 10:15:00 AM

Work Order #: 492889

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**No**
#5 Custody Seals intact on sample bottles?	**No**
#6 *Custody Seals Signed and dated?	**No**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**N/A**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 09/09/2014

Checklist reviewed by: Date:

Analytical Report 514225

for

GHD-Albuquerque, NM

Project Manager: Bernie Bockisch

Chevron-CVU106/136

074636

02-SEP-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

02-SEP-15

Project Manager: **Bernie Bockisch**
GHD-Albuquerque, NM
6121 Indian School Rd. NE Suite 200

Albuquerque, NM 87110

Reference: XENCO Report No(s): **514225**
Chevron-CVU106/136
Project Address: Buckeye, NM

Bernie Bockisch:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 514225. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 514225 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

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Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

Sample Cross Reference 514225

GHD-Albuquerque, NM, Albuquerque, NM

Chevron-CVU106/136

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS-074636-JF-MW-1	S	08-24-15 11:10	- 5 ft	514225-001
SS-074636-JF-MW-1	S	08-24-15 11:15	- 10 ft	514225-002
SS-074636-JF-MW-1	S	08-24-15 11:20	- 20 ft	514225-003
SS-074636-JF-MW-1	S	08-24-15 11:25	- 30 ft	514225-004
SS-074636-JF-MW-1	S	08-24-15 11:30	- 40 ft	514225-005
SS-074636-JF-MW-1	S	08-24-15 11:35	- 50 ft	514225-006
SS-074636-JF-MW-1	S	08-24-15 11:40	- 60 ft	514225-007
SS-074636-JF-MW-1	S	08-24-15 11:50	- 70 ft	514225-008

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 514225

GHD-Albuquerque, NM, Albuquerque, NM

Project Name: Chevron-CVU106/136

Project Id: 074636
Contact: Bernie Bockisch
Project Location: Buckeye, NM

Date Received in Lab: Tue Aug-25-15 12:43 pm
Report Date: 02-SEP-15
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	514225-001		514225-002		514225-003		514225-004		514225-005		514225-006	
	Field Id:	SS-074636-JF-MW-1		SS-074636-JF-MW-1		SS-074636-JF-MW-1		SS-074636-JF-MW-1		SS-074636-JF-MW-1		SS-074636-JF-MW-1	
	Depth:	5 ft		10 ft		20 ft		30 ft		40 ft		50 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-24-15 11:10		Aug-24-15 11:15		Aug-24-15 11:20		Aug-24-15 11:25		Aug-24-15 11:30		Aug-24-15 11:35	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-31-15 16:00		Aug-31-15 16:00		Aug-31-15 16:00		Aug-31-15 16:00		Aug-31-15 16:00		Aug-31-15 16:00	
	Analyzed:	Sep-01-15 18:30		Sep-01-15 18:56		Sep-01-15 19:18		Sep-01-15 20:49		Sep-01-15 21:12		Sep-01-15 21:34	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4200	432	6750	452	7230	434	5010	427	4500	215	738	21.1
Percent Moisture	***Extracted:***												
	Analyzed:	Aug-27-15 17:30		Aug-27-15 17:30		Aug-27-15 17:30		Aug-27-15 17:30		Aug-27-15 17:30		Aug-27-15 17:30	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.40	1.00	11.4	1.00	7.78	1.00	6.24	1.00	6.93	1.00	5.33	1.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 514225

GHD-Albuquerque, NM, Albuquerque, NM

Project Name: Chevron-CVU106/136

Project Id: 074636
Contact: Bernie Bockisch
Project Location: Buckeye, NM

Date Received in Lab: Tue Aug-25-15 12:43 pm
Report Date: 02-SEP-15
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	514225-007		514225-008			
	Field Id:	SS-074636-JF-MW-1		SS-074636-JF-MW-1			
	Depth:	60 ft		70 ft			
	Matrix:	SOIL		SOIL			
	Sampled:	Aug-24-15 11:40		Aug-24-15 11:50			
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-31-15 16:00		Aug-31-15 16:00			
	Analyzed:	Sep-01-15 21:57		Sep-01-15 22:20			
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		220	10.4	79.3	2.04		
Percent Moisture	***Extracted:***						
	Analyzed:	Aug-27-15 17:30		Aug-27-15 17:30			
	Units/RL:	%	RL	%	RL		
Percent Moisture		3.89	1.00	1.77	1.00		

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

BS / BSD Recoveries

Project Name: Chevron-CVU106/136

Work Order #: 514225 **Project ID:** 074636

Analyst: JUM **Date Prepared:** 08/31/2015 **Date Analyzed:** 09/01/2015

Lab Batch ID: 975962 **Sample:** 697518-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	49.4	99	50.0	49.6	99	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Chevron-CVU106/136

Work Order #: 514225

Lab Batch #: 975962 **Project ID:** 074636

Date Analyzed: 09/01/2015 **Date Prepared:** 08/31/2015 **Analyst:** JUM

QC- Sample ID: 514050-017 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1090	1040	2210	108	80-120	

Lab Batch #: 975962

Date Analyzed: 09/01/2015 **Date Prepared:** 08/31/2015 **Analyst:** JUM

QC- Sample ID: 514225-003 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	7230	10800	17800	98	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Sample Duplicate Recovery

Project Name: Chevron-CVU106/136

Work Order #: 514225

Lab Batch #: 975640 **Project ID:** 074636

Date Analyzed: 08/27/2015 17:30 **Date Prepared:** 08/27/2015 **Analyst:** WRU

QC- Sample ID: 513982-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	1.70	1.32	25	20	F

Lab Batch #: 975640

Date Analyzed: 08/27/2015 17:30 **Date Prepared:** 08/27/2015 **Analyst:** WRU

QC- Sample ID: 514225-006 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.33	5.10	4	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)

Dallas Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

www.xenco.com

Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job # 514225

Client / Reporting Information

Company Name / Branch: GHD Services, Inc. - Albuquerque

Company Address: 6121 Indian School Road NE, Albuquerque, NM 87110, 505-884-0672

Email: Christopher.Knight@ghd.com, Bernard.Bockisch@ghd.com

Project Contact: Benie Bockisch

Samplers's Name: John Fergerson

Project Information

Project Name/Number: CEMC/074636

Project Location: CVU #106 & #136

Invoice To: GHD Services, Inc.

PO Number:

Analytical Information

Matrix Codes

S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
W = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chlorides (300.0)	Field Comments
1	SS-074636-JF-MW-1	5'	8/24/15	11:10	S	1								X	X	
2	SS-074636-JF-MW-1	10'	8/24/15	11:15	S	1								X	X	
3	SS-074636-JF-MW-1	20'	8/24/15	11:20	S	1								X	X	
4	SS-074636-JF-MW-1	30'	8/24/15	11:25	S	1								X	X	
5	SS-074636-JF-MW-1	40'	8/24/15	11:30	S	1								X	X	
6	SS-074636-JF-MW-1	50'	8/24/15	11:35	S	1								X	X	
7	SS-074636-JF-MW-1	60'	8/24/15	11:40	S	1								X	X	
8	SS-074636-JF-MW-1	70'	8/24/15	11:50	S	1								X	X	
9																
10																

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [x] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 3:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

See SSOW

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	John Fergerson	8/25/15 1243	Christine Day	2	8/25/15 1243	2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice: X
			5			Cooler Temp. 2.5° Thermo. Corr. Factor

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negiotiated under a fully executed client contract.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: GHD-Albuquerque, NM

Date/ Time Received: 08/25/2015 12:43:00 PM

Work Order #: 514225

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Caroline Dugan Date: 08/26/2015

Checklist reviewed by: Kelsey Brooks Date: 08/27/2015

Appendix C
Waste Management Documentation

SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231
(575) 394-2511

TICKET No. 316675

LEASE OPERATOR/SHIPPER/COMPANY: Chevron

LEASE NAME: CVU 1016/136

TRANSPORTER COMPANY: HRW | **TIME** 11:14 AM/PM

DATE: 10-2-14 **VEHICLE NO:** 1 **GENERATOR COMPANY MAN'S NAME:** Fredric Edwards

CHARGE TO: Chevron Environmental Mgmt Company | **RIG NAME AND NUMBER**

TYPE OF MATERIAL

[ ] Production Water	[ ] Drilling Fluids	[ ] Rinsate
[ ] Tank Bottoms	[X] Contaminated Soil	[ ] Jet Out
[ ] Solids	[ ] BS&W Content:	[ ] Call Out

Description: OD 2 Drums - Leaving here

RRC or API # **C-133#**

VOLUME OF MATERIAL [ ] **BBLS.** _____ : [ ] **YARD** _____ : [ ] _____

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET. TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

THIS WILL CERTIFY *that the above Transporter loaded the material represented by this Transporter Statement at the above described location, and that it was tendered by the above described shipper. This will certify that no additional materials were added to this load, and that the material was delivered without incident.*

DRIVER: _____
(SIGNATURE)

FACILITY REPRESENTATIVE: Stephanie Bakena
(SIGNATURE)

White - Sundance Canary - Sundance Acct #1 Pink - Transporter

This Memorandum

is an acknowledgment that a Bill of Lading has been issued and is not Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper No. N/A

Carrier No. N/A

Page 1 of 1

HRW Transportation (Name of carrier) (SCAC)

Date 10-2-14

On Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec.1.

TO:

Consignee Sundance Services

Street Sundance Lane

City Eunice State NM Zip Code 88231

FROM: Shipper CEMC, CVU 106/136

Street Unit E, Section6, T18S, R35E

City Buckeye, Lea County State NM Zip Code

24 hr. Emergency Contact Tel. No. (505) 280-0572

Route

Vehicle Number V-004

No. of Units & Container Type	HM	BASIC DESCRIPTION UN or NA Number, Proper Shipping Name, Hazard Class, Packing Group	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
2 DM		NON DOT-Regulated Material (soil)	800#			

PLACARDS TENDERED: YES ☐ NO ☐

Note — (1) Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, as follows: "The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____." (2) Where the applicable tariff provisions specify a limitation of the carrier's liability absent a release or a value declaration by the shipper. and the shipper does not release the carrier's liability or declare a value, the carrier's liability shall be limited to the extent provided by such provisions. See NMFC Item 172. (3) Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged as to ensure safe transportation. See Section 2(e) of item 360, Bills of Lading, Freight Bills and Statements of Charges and Section 1(a) of the Contract Terms and Conditions for a list of such articles.

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

_____ Signature

REMIT C.O.D. TO: ADDRESS

COD Amt: $

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

C.O.D. FEE: PREPAID ☐ COLLECT ☐ $

TOTAL CHARGES $

FREIGHT CHARGES

FREIGHT PREPAID except when box at right is checked ☐ Check box if charges are to be collect

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.

Shipper hereby certifies that he is familiar with all the lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER Chevron Environmental Management Company

PER Freddie Robinson on behalf of CEMC

Freddie E Robinson

CARRIER HRW Industrial Services

PER

DATE 10-2-14

3

Permanent post-office address of shipper.