Permit Application

Lea County, New Mexico

C.K. Disposal E & P Landfill and Processing Facility

Permit No. TBD

Volume II

November 2015

PSC Project # 01058015

PARKHILLSMITH&COOPER

C.K. Disposal, Lea County, New Mexico
E & P Landfill and Processing Facility –Permit No. TBD
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Attachment G

Hydrogeology Report

November 2015

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PARKHILLSMITH&COOPER

ATTACHMENT G
HYDROGEOLOGY REPORT

PROPOSED C.K. DISPOSAL E&P LANDFILL AND PROCESSING FACILITY

Eunice, New Mexico

Project No: 15-04-22

Prepared for:

C.K. Disposal LLC

October 2015

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1.0 INTRODUCTION

The proposed C.K. Disposal E&P Landfill and Processing Facility, henceforth known as "Site", is a proposed Surface Waste Management Facility for oilfield waste processing and disposal services. The proposed Site is subject to Title 19 Chapter 15 Part 36 of the New Mexico Administrative Code (NMAC). Specifically the facility is subject to 19.15.36 NMAC, which is administered by the Oil Conservation Division (OCD).

The proposed tract of land encompasses 316.97 acres and is located in the north half of Section 5, Township 22 South, Range 38 East in Southern Lea County, New Mexico. It is situated approximately 4.16 miles east of the town of Eunice and one-half mile west of the New Mexico-Texas state border south of Highway 234.

The geology and hydrogeology portions of this attachment have been prepared by Kevin T. Carel P.G., a qualified groundwater scientist, for the C.K. Disposal LLC. The following sections are consistent with 19.15.36 NMAC.

2.0 REGIONAL GEOLOGY

2.1 Previous Work

A substantial amount of geologic and hydrogeologic information is available in the vicinity of the proposed Site. Most notably, Nicholson and Clebsch (1961) provide a thorough discussion of the geology and groundwater conditions in Southern Lea County. Geohydrology Associates, Inc. (1978) provide a collection of hydrologic data including water quality information in the general vicinity of the Site. Well logs were derived from the New Mexico Office of State Engineer. Lehman and Rainwater (2000) discuss the geology and groundwater of an area of extreme eastern New Mexico and western Andrews County, Texas that adjoins the proposed Site on the east. Some information is also available from reports by the Texas Commission on Environmental Quality and Cooke-Joyce of a low-level radioactive waste and RCRA waste disposal site located near the proposed Site in nearby Andrews County.

Due to the proposed Site's proximity to the New Mexico-Texas border, a substantial amount of information is relied upon that is located within the State of Texas. Much of the stratigraphic nomenclature used in Texas differs from that used in New Mexico. In order to avoid confusion the stratigraphic names used by Nicholson and Clebsch have been adopted herein with a few minor exceptions.

2.2 Regional Physiography and Topography

The project Site is located in the Pecos Valley section of the Great Plains physiographic province. The Pecos Valley section is a very irregular erosional surface which slopes toward the Pecos River, generally southwestward in the vicinity of the proposed Site. The topography of the Pecos Valley section is complicated by areas of interior drainage which appear to be the result of deep-seated collapse due to dissolution and by vast areas of stabilized and drifting dune sand.

Locally the proposed Site is located on the west flank of a topographic high known as Rattlesnake Ridge. Rattlesnake Ridge, also known as the Dockum Red Bed Ridge or Red

Bed Ridge, in adjacent Andrews County, Texas, is a northwest-southeast trending topographic high. In the vicinity of the proposed site, the crest of the ridge roughly parallels the boundary between Texas and New Mexico. It is regarded as the drainage divide between the Pecos River basin and the Colorado River basin in Texas.

The Eunice Plain is situated west of the Rattlesnake Ridge. The term Eunice Plain has been applied by Nicholson and Clebsch (1961) to refer to the eastern part of Lea County New Mexico that has no other specific geographic designation. It is bounded on the north by the Llano Estacado, on the southwest by the San Simon Ridge and Antelope Ridge, on the west by the Grama Ridge, and on the south by a south-facing scarp that is most prominent at Custer Mountain. The Eunice Plain is underlain by a hard caliche surface and is covered by reddish-brown dune sand.

Monument Draw, a major drainage channel in Lea County, is located approximately one and one-half miles west of the proposed Site. Monument Draw traverses the eastern part of Lea County from north to south for a distance of approximately 35 miles.

Approximately five miles northeast of the proposed Site is the Mescalero Ridge, which is the southwestern edge of the Llano Estacado part of the High Plains physiographic province. The physiographic features of Southern Lea County are illustrated on Figure G.1. A map illustrating the locations of streams, springs or other water courses including water wells within one mile of the proposed Site is provided as Figure G.2 in accordance with 19.15.36.8.C.15(a) NMAC. No streams are located with a one-mile radius of the proposed Site. However, Monument Draw, a major drainage course in Southern Lea County is located approximately one and one-half miles west of the Site. Baker Spring, a local groundwater spring, is located one and one-half miles north of the Site. Thirty-seven wells/geotechnical borings are located within a one-mile radius of the proposed Site. The wells, discussed in detail in Section 3.5 of this report, consist entirely of groundwater monitoring wells, vadose zone monitoring points, geotechnical borings and one exploratory well.

2.3 Regional Stratigraphy and Lithology

According to the Geologic Map of New Mexico, the project Site is underlain by strata deposited during the Holocene Series to middle Pleistocene of the Quaternary System. This Quaternary strata is mostly composed of interlayered sands and was deposited by eolian (wind generated) geologic processes.

Regional stratigraphy includes the geologic units (listed from oldest to youngest) of the Santa Rosa Formation and the Chinle Formation of the Triassic Dockum Group, Cretaceous rocks undifferentiated, the Tertiary Ogallala Formation, and various Holocene to Pleistocene age deposits. According to Nicholson and Clebsch (1961), the Santa Rosa is a red to white poorly sorted, coarse-grained, cross bedded sandstone. The Chinle Formation is described as a red and green claystone with minor siltstone and fine-grained sandstone. The Ogallala Formation is chiefly sand that is poorly to well-cemented with calcium carbonate. It contains some clay, silt and gravel and is capped in most places by caliche. The Holocene and Pleistocene deposits are chiefly sand with some silt and gravel. The stratigraphic positions of these formations, along with their approximate maximum thicknesses, are presented in Table G.1. Figure G.3 illustrates the limits of the local geologic strata. The Quaternary deposits mapped as Qep, which underlie the project Site,

are composed of eolian sands and piedmont-slope deposits along the eastern flank of the Pecos River Valley (Scholle, 2003).

As illustrated in Figure G.3, the closest outcrop of the Ogallala Formation is located approximately one mile north of the project Site and Quaternary alluvial deposits are located approximately one and one-half mile west of the Site. The nearest Cretaceous rocks and Triassic deposits of the Dockum Group are located in a rock quarry located in Section 29, T. 21 S., R. 38 E. approximately one mile north of the proposed Site. The Dockum Group is often locally referred to as "Red Beds".

Table G.1
C.K. Disposal E&P Landfill and Processing Facility
General Regional Stratigraphic Column

Era	Period	Series/Epoch	Group	Formation	Maximum Thickness (+/-ft)
Cenozoic	Quaternary	Holocene		Sand	30
		Pleistocene		Alluvium	400
	Tertiary	Pliocene		Ogallala	300
Mesozoic	Cretaceous			Undifferentiated	35
	Triassic	Late	Dockum Group	Chinle	1,270
				Santa Rosa	300

Source: Nicholson and Clebsch, 1961

2.4 Structural Features

The major structural features of Southern Lea County are the Delaware Basin and the Central Basin Platform (Figure G.4). Regionally, the proposed Site is situated on the northern flank of the Central Basin Platform (CBP). The CBP is a northwest trending uplifted basement block that separates the Midland Basin (to the east) from the Delaware Basin (to the west). According to Hoak et.al. the CBP was uplifted in the mid to late Pennsylvanian time. Before that time, the two basins and the CBP were relatively low relief features within a shallow Paleozoic-age basin called the Tabosa Basin.

In early Permian (i.e. Wolfcampian) time, the uplift of the CBP ceased, and a regional erosional unconformity developed that beveled off the top of the underlying structures. Above this unconformity, carbonate reef and related proximal facies were deposited on the relatively flat erosional surface. A consequence of the erosional event and subsequent deposition is that deeper fold and thrust structures are capped by flat-lying carbonates at shallower depths. The northern termination of the CBP is the Northwest Shelf (NWS). The NWS represents a broad shelf extending northward to the Palo Duro Basin.

Figure G.5 is a regional geologic cross-section of the area modified from DuChene and Cunningham (2006). The cross-section is oriented from southwest to northeast and extends from the Guadalupe Mountains through southern Lea County and to the New Mexico – Texas border. In the center of the cross-section is the Delaware Basin, and the Central Basin Platform is located on the east (right) side. The location of the proposed Site is projected onto the east side of the cross-section. As can be seen on the cross-section, the Delaware Basin is asymmetrical and deepens to the east. Tectonic development of the

Delaware Basin began by the late Pennsylvanian period and major basin subsidence took place during the late Pennsylvanian period and early Permian period. Basin development ended in the late Permian period (Brokaw, et al, 1972). Thickness of sediment in the basin exceeds 20,000 feet and Permian strata alone account for more than 13,000 feet of basin fill materials (Oriel, et al., 1967). During the Triassic period, the area was uplifted resulting in deposition of clastic continental shales (red beds). Continuing uplift resulted in erosion and/or non-deposition until the middle to late Cenozoic period, when regional eastward tilting completed structural development of the basin as it exists today (Stipp, 1954). The western margin of the Delaware Basin is the Guadalupe Mountains and the Salt Flat Graben, which is a Tertiary-age system related to the Basin-and-Range extensional tectonics.

Regionally, the dip of the Triassic rocks is reportedly less than 1 degree to the east and south. However, locally the proposed Site is located on the west flank of topographic high known as Rattlesnake Ridge where the local dip of the Triassic rocks is to the south-southwest. As previously mentioned, Rattlesnake Ridge, is also known as the Dockum Red Bed Ridge (Grisak, et al. 2007) or Red Bed Ridge (Lehman and Rainwater, 2000) in Texas. Nicholson and Clebsch (1961) state that the Rattlesnake Ridge roughly coincides with the New Mexico-Texas state border. However, Lehman and Rainwater (2000) indicated it is a northwest-southeast trending topographic high that extends for at least 100 miles from northern Lea County to Ector County, Texas. According to Grisak et al., the ridge is capped by Cretaceous Antlers sands and gravels that are highly silicified in places. They suggest that the Antlers may have acted as an erosion-resistant cap throughout late Cenozoic time, maintaining the ridge as a drainage divide while late Tertiary Ogallala and partially age-equivalent Gatuna Formation sediments were deposited on either side of the ridge. Lehman and Rainwater (2000) indicate that the crest of the ridge, approximately a mile northeast of the proposed Site, is capped by caliche at the land surface. Regardless of its orientation or exact location, the topographic feature located east and northeast of the proposed Site is herein referred to as “Rattlesnake Ridge”.

Nicholson and Clebsch (1961) propose that the ridge is potentially a fault, or gentle flexure produced by differential compaction of sediments to the west. However the Texas Commission on Environmental Quality suggest that it is a gentle fold resulting from dissolution-induced subsidence (TCEQ, 2008). Lehman and Rainwater (2000) point out that the southwest flank of the ridge (on which the proposed Site is located) is more steeply inclined than the northeast flank. They state that the ridge is not likely a fault but rather is a gentle fold.

2.4.1 Triassic Erosional Surface

The top of the Dockum Group is an erosional surface in southern Lea County. The surface is highly irregular but has only moderate relief. It has undergone two to three episodes of erosion, depending on the location. Beneath the erosional surface, the Dockum Group thickens regionally toward the southeast. The erosional surface truncates the southeast dipping Triassic formations. As a result, the Santa Rosa Formation subcrops beneath the Quaternary deposits in the western part of Lea County, whereas the younger Chinle Formation subcrops in the eastern part of the County. While the top of the Dockum Group is an erosional surface, closed depressions exist over the area that are believed to be the

result of the collapse of the Dockum Group into cavities formed by subsidence in the underlying Permian formations due to salt dissolution.

2.5 Regional Hydrogeology

According to Nicholson and Clebsch (1961), all the potable groundwater used in southern Lea County is derived from three principal geologic units, the Dockum group, the Ogallala Formation, and Quaternary Alluvium. Potable groundwater is not available below the Permian and Triassic unconformity but, because this boundary is not easily defined, the top of the Rustler anhydrite formation is regarded as the effective lower limit of potable groundwater. Virtually all the water wells in the area are completed in Triassic or younger rocks.

A few wells reportedly derive water from several aquifers, but most wells are completed in the shallowest zone that will produce the desired quantity of water. This is because the shallow groundwater in the Quaternary Alluvium and the Ogallala Formation is of better chemical quality than that from the rocks of the Dockum Group and the younger rocks are more permeable, and therefore permit greater well yields.

2.5.1 Dockum Group

In New Mexico, groundwater can be obtained from both the Santa Rosa and the Chinle formations of the Dockum Group. No water is known to be derived from the Permian strata, except possibly from well Section 2 T. 21 S., R. 33 E (T21SR33ES2). Triassic rocks underlie all of southern Lea County but are exposed only in minor outcrops. The lower part of the exposed Dockum Group, the Santa Rosa sandstone, crops out in the north-trending scarps which are located a few miles to the west of the Lea-Eddy County line and in the south-facing scarps of Paduca Breaks. The overlying Chinle Formation is exposed at Custer Mountain and in a large excavation about 2 miles southeast of Monument. The recharge area of the Triassic rocks is in the western part of southern Lea County and the eastern part of Eddy County. Some recharge is derived also from the overlying Ogallala formation and the Quaternary alluvium where they overlie permeable beds of Dockum Group in the subsurface.

The Santa Rosa sandstone is the principal aquifer in the western third of southern Lea County. The unit is recharged by precipitation on the sand dunes, both in Lea County and a few miles to the west in Eddy County; by precipitation and runoff directly on the outcrop; and by groundwater flow from the overlying Ogallala Formation and alluvium. Recharge to the Triassic rocks in Lea County appears to be concentrated in three areas:

- Recharge on the outcrop and infiltration through the dune-sand cover located in the western portion of T. 22 S., R. 32 E;
- A groundwater ridge in T. 21 S., R. 33 E. and;
- A mound in T. 24 S., R. 33 E.

The last two recharge areas are both beneath a cover of younger rocks and presumably they indicate recharge from the discontinuous aquifers in these rocks. Wells completed in the Dockum Group generally have low yields, as the formations have a low permeability. Available hydraulic properties of the Dockum Group are provided in Table G.2.

A well drilled for Waste Control Specialists in 2008 located approximately 580 feet northeast of the proposed Site encountered the Santa Rosa Formation at a depth of 1,092 feet below ground surface (bgs). The depth to which groundwater was first encountered is listed on the well log as 1,092 feet bgs. The well log indicates the Santa Rosa is 292 feet thick and describes it as a gray, fine sandstone with interbedded reddish brown and weak red siltstone and claystone. The well number is TRN 396028 and the well log is provided in Appendix G.C.

A low-level radioactive waste disposal site operated by The United Waste Control Specialists (WCS) is located approximately one-mile northeast of the proposed Site. The WCS site identifies a saturated zone termed the 225-foot zone as the uppermost aquifer beneath the disposal facility (TCEQ, 2008). The 225-foot zone is situated within the Chinle Formation of the Dockum Group. This zone is also identified as the uppermost aquifer in a RCRA hazardous waste permit adjacent to the low-level waste site. The 225 zone reportedly ranges from 25 to 30 feet thick over the entire WCS facility. Further, a uranium enrichment facility, URENCO, is located immediately north of the proposed Site and southwest of the WCS site. According to an environmental assessment report for the URENCO facility, the shallowest groundwater below the site reportedly also occurs within an undifferentiated siltstone seam of the Chinle Formation at depths of 214 to 222 feet bgs (US Nuclear Regulatory Commission, 2015).

In Texas, the saturated Triassic rocks are termed the Dockum Aquifer, which is classified as a minor aquifer by the Texas Water Development Board (TWDB). According to Report 308 by the TWDB, the Dockum Aquifer consists of gravel, sandstone, siltstone, mudstone, shale, and conglomerate. The highest groundwater yields come from the coarsest grained deposits (i.e. sandstone and conglomerate) located at the middle and base of the group. The water-bearing sandstones are often typically referred to as the Santa Rosa Aquifer on a local basis. The water quality in the aquifer is generally poor with freshwater in outcrop areas in the east and brine in the western subsurface portions of the aquifer and the water is very hard. Naturally occurring radioactivity from uranium present within the aquifer can result in gross alpha radiation in excess of the primary drinking water standard. Radium-226 and -228 also occur in amounts above regulatory standards.

Groundwater flow in the Dockum Group in southern Lea County is highly variable but the overall flow pattern is toward the south based on the groundwater contour map prepared by Nicholson and Clebsch (1961). In Andrews County, Texas, just east of the proposed Site, the groundwater flow is to the south and east based on a groundwater contour map of the Dockum Aquifer by Bradley and Kalaswad (2003).

2.5.2 Ogallala Formation and Quaternary Alluvium

According to George et al. (2011), the Ogallala Aquifer is a major aquifer of Texas and is the largest aquifer in the United States. The Ogallala Formation covers the High Plains

immediately north of the southern Lea County area, where it ranges in thickness from 100 to 250 feet. The saturated thickness of the Ogallala Formation on the High Plains ranges from 25 feet to 175 feet because of the very irregular Triassic erosion surface which underlies it. Groundwater within the Ogallala is under water table conditions. The recharge of the Ogallala on the High Plains is due entirely to precipitation, as the formation is topographically high and isolated.

A groundwater contour map of the Ogallala Formation and the Quaternary alluvium in the vicinity of the proposed Site is provided as Figure G.6. The groundwater contours are said to be generalized, and in areas with limited subsurface data they are dashed where approximated. As can be seen by the map, the overall groundwater flow pattern is toward the southeast. The boundaries of the aquifer are shown by heavy dashed lines, which delineate the areas in which the Dockum Group and overlying strata project above the water table. The map indicates that the Ogallala Formation is not saturated beneath the proposed Site. This is due to the fact that as the Ogallala Formation rises in elevation toward the crest of Rattlesnake Ridge, its entire section projects above the water table. Based on information provided by Lehman and Rainwater (2000), the strata above the Dockum Group become saturated again on the northeast flank of the ridge approximately two miles east of the proposed Site in Andrews County, Texas where it plunges back below the saturated zone.

An east-west oriented hydrogeologic cross-section B-B' (Figure G.7), was constructed using information from two site borings (BH-01 and BH-02) and six (6) other wells located in the general vicinity of the proposed Site. The well logs are provided in Appendix G.A. The surface geology was taken from Scholle (2003) and elevation of water table within the Ogallala was taken from Nicholson and Clebsch (1961). The cross-section illustrates how the Ogallala Formation rises above the saturated zone along the southwest flank of Rattlesnake Ridge in the vicinity of the proposed Site. As a result, the 225-foot zone within the Chinle Formation discussed in Section 2.5.1 is believed to be the shallowest fresh water aquifer beneath the proposed Site as required by 19.15.36.8.C.15(c) NMAC.

Where saturated, hydraulic continuity occurs between the Ogallala Formation and porous or permeable sections of the underlying Dockum Group. Available hydraulic properties of the Ogallala Aquifer are provided in Table G.2 (page 8).

Table G.2
C.K. Disposal E&P Landfill and Processing Facility
Hydraulic Properties of Regional Aquifers

Property	Ogallala	Dockum Group
Composition	Sand, silt and gravel	Sandstone, siltstone and shale
Transmissivity	315-201,000 gpd/ft (2)	1,500 ft^2/d* (1)
Permeability/Hydraulic Conductivity	232 gpd/ft^2 (2)	Not Available
Porosity	Not Available	13% (Santa Rosa)
Specific Yield	16.06 % (2)	Not Available
Specific Capacity	Not Available	3.84 gpd/ft (1)
Storativity	Not Available	1.9×10^{-4} (1)

* – Average
(1) – Bradley, R.G. and Kalaswad, S., 2003
(2) – Knowles, 1984

3.0 SITE GEOLOGY AND HYDROGEOLOGY

The proposed Site was evaluated with an investigation of the geology, hydrogeology and geotechnical properties of the site in a total of 5 borings. Based on the site characterization, a sufficient number of borings were drilled to establish subsurface site stratigraphy and to determine the geotechnical properties of the soils beneath the Site. Geologic strata have been characterized to depths of more than 175 feet below ground surface (bgs) and up to 130 feet below the elevation of the deepest excavation.

The borings were drilled in accordance with established field exploration methods. Installation, abandonment, and plugging of borings were performed in accordance with applicable regulations. Drilling was performed by HCI Drilling, of Lubbock, Texas, who is a licensed driller in the state of New Mexico. A discussion of the aforementioned tasks is provided below.

3.1 Drilling Activities

3.1.1 Site Exploration Borings

Field exploration activities were conducted May 26 and 27, 2015. As part of this investigation, 5 borings were drilled using air-rotary techniques. The boring locations are illustrated on Figure G.10 and a summary of the borings is provided in Table G.3. Cuttings from the drilling operations were visually observed by a qualified geologist employed by The Carel Corporation and used to prepare lithologic logs of the borings. The boring logs provided in Appendix G.B.

Table G.3
C.K. Disposal E&P Landfill and Processing Facility
Summary of Borings

Boring ID	Date	Northing	Easting	Surface Elevation	Depth (ft)	Bottom Hole Elevation (msl)	Above or Below (-) EDE (3,329.2 ft msl)
BH-01	5/26/2015	521233.9	924924.7	3382	175	3207	122.2
BH-02	5/26/2015	521273.7	928310.3	3391.8	175	3216.8	112.4
BH-03	5/26/2015	520437.2	926605.3	3386.3	175	3211.3	117.9
BH-04	5/26/2015	519600.9	924941.3	3374.1	175	3199.1	130.1
BH-05	5/27/2015	519636.2	928326.9	3386.1	175	3211.1	118.1

Notes:
EDE – Elevation of Deepest Excavation

Geotechnical information from these borings is provided in Attachment C, Appendix A.

3.1.2 Surface Penetration Plugging

The cuttings from the drilling operations were observed for moisture and the bore holes were left open to allow for groundwater measurements. The cuttings were observed to be only slightly moist in some places and no groundwater was observed after a 24-hour period, therefore no piezometers were installed and the bore holes were subsequently plugged and abandoned.

3.2 Site Stratigraphy

According to the Geologic Map of New Mexico, the project Site is underlain by strata deposited during the Holocene Series to middle Pleistocene of the Quaternary System. This Quaternary strata is mostly composed of interlayered sands and was deposited by eolian (wind generated) geologic processes. The eolian sediments at the Site consist of well-sorted fine-grain sands to silty sands, largely composed of quartz and secondary feldspar minerals.

The following paragraphs present an interpretation of the stratigraphy beneath the Site. In accordance with 19.15.36.8.C.(15)(d) NMAC, two geologic cross-sections, Cross-Section C-C' and D-D', Figure G.8 and Figure G.9, respectively illustrate the stratigraphy and lithology present beneath the Site. Detailed descriptions of these strata are included in the following sections in accordance with 19.15.36.8.C.(15)(d) NMAC.

3.2.1 Stratum I – Clayey Sand

This stratum is composed of brown to reddish brown clayey sand. This stratum represents Quaternary aged eolian and piedmont deposits (Scholle, 2003) or drift sand (Nicholson and Clebsch, 1961). Stratum I was deposited by eolian (i.e. wind) processes. The materials observed are composed largely of quartz and secondary feldspar minerals. Stratum I appears to be the thinnest in the northern part of the site near BH-02 where it is about 7 feet thick and thickest in the northwestern part of the site near boring BH-01 where it is at least 17 feet thick.

3.2.2 Stratum II – Silty Sand with Caliche

Stratum II is composed of light brown to white silty clayey sand with caliche. This stratum represents the Ogallala Formation. Similar to Stratum I, Stratum II is also composed largely of quartz and secondary feldspar minerals. Two of the borings, BH-03 and BH-05, contained gravels composed of quartz and caliche nodules up to one inch in diameter. Stratum II was fully penetrated by each of the five (5) borings. Based on analysis of the boring logs, Stratum II appears to be the thinnest in the northwestern part of the site near BH-01 (23 feet) and where Stratum I is thickest. The thickest section of Stratum II encountered was 36 feet in BH-04.

3.2.3 Stratum III - Claystone

Stratum III is described as a reddish brown claystone. The claystone contains some silt and sand layers. The color is predominantly reddish brown but changes to brown, dark brown and purple. This claystone belongs to the Triassic Chinle Formation of the Dockum Group and is locally referred to as "Red Bed". According to Nicholson and Clebsch (1961), the Chinle Formation is as much as 1,270 feet thick.

Each of the five borings encountered Stratum III at depths ranging from 35 to 50 feet bgs. Figure G.10 is a structure map of the top of the Dockum Group that was prepared from the boring information. The structure map indicates that the surface of the Stratum III has a gentle arcuate shape that generally dips to the west-southwest. The surface does not conform to the regional dip in southern Lea County which is easterly toward the Delaware

Basin. Thus the surface of Stratum III appears to be the result of the Site's proximity to Rattlesnake Ridge.

Nicholson and Clebsch (1961) and Lehman and Rainwater (2000) each prepared contour maps of the surface of the Dockum Group. Nicholson and Clebsch's map is of an area west of the proposed Site. Their data was limited in the area of the proposed Site as indicated by dashed contour lines. Lehman and Rainwater's contour map is located east of the proposed Site. The two maps were combined with the site specific contours from Figure G.10 to construct a local structure map of the top of the Dockum Group, Figure G.11. The site specific contours for the proposed Site fit nicely with both Nicholson and Clebsch's and Lehman and Rainwater's maps. Only minor adjustment and extension of Nicholson and Clebsch's 3,350' contour line is required to conform to the site specific contour lines. Further, minimal adjustments are needed to conform Lehman and Rainwater's 3,360, 3,350 and 3,340 contours to the contours for the proposed Site. It is noted that Nicholson and Clebsch used a 25-foot contour interval, Lehman and Rainwater used a 20-foot contour interval and a five-foot contour interval was used on Figure G.10. Hence, each of the original three contour maps use different contour intervals. In order to best illustrate the Dockum structure, several contours were added or extended to provide a 10-foot contour interval in the vicinity of the proposed Site (i.e. between contours 3,300 and 3,360).

3.3 Groundwater Occurrence

As previously stated, five (5) borings were advanced each to a depth of 175-feet bgs. No groundwater was observed in the cuttings obtained during advancement of the borings nor was any groundwater observed in any of the bore holes after a 24-hour period. No groundwater is present within the upper 175-feet of the Ogallala Formation or Chinle Formation because they rise above the saturated zone of the Ogallala Formation as illustrated in Figure G.6 and Figure G.7.

Rule 19.15.36.13A.(1) NMAC restricts landfills where groundwater is less than 100 feet below the lowest elevation of the design depth at which oilfield waste will be placed. The lowest elevation of the proposed Site is 3,329.2 ft msl. Therefore, no groundwater is present within 100-feet of the proposed Site as prohibited by 19.15.36.13A.(1) NMAC.

As previously mentioned in Section 2.5.1, a low-level radioactive waste disposal site operated by United Waste Control Specialists (WCS) is located approximately one-mile northeast of the proposed Site. The WCS site identifies a saturated zone termed the 225-foot zone as the uppermost aquifer beneath the disposal facility. The 225-foot zone is situated within the Chinle Formation. This zone is also identified as the uppermost aquifer in a RCRA hazardous waste permit adjacent to the low-level radioactive waste site. Similarly, the URENCO facility located immediately north of the proposed Site identifies the shallowest saturated zone as being between 214 to 222 feet bgs. While not encountered by site borings, the 225-foot zone is considered to be the shallowest fresh water aquifer beneath the proposed Site as required by 19.15.36.8.C.15(c) NMAC.

3.4 Groundwater Quality Data

Since this Site is not permitted and thus has no existing groundwater monitoring wells, there is no existing analytical data. However, published data is available for some but not all constituents required by 19.15.36.8.C.(15)(b) and is provided in Table G.4 below. The data taken from Geohydrology Associates (1978) was for a well located in Section 33 Township 21 South, Range 37 East completed in the Dockum Group. The well depth is reported to be 350 feet and the well is believed to be completed in the Chinle Formation. It is the closest well to the proposed Site known to be completed in the Dockum Group in their dataset. The data from Cooke-Joyce (2003) represents a range of concentrations for wells that are apparently completed in the 225-foot zone of the Chinle Formation based on reported well depths. The data from URENCO is the maximum detected concentration in groundwater samples collected through April 2011 from monitor wells completed in the Chinle Formation.

Table G.4
C.K. Disposal E&P Landfill and Processing Facility
Groundwater Quality Data

Constituent	Concentration	Unit	Well Location	Source
BTEX	N/A			
TDS	11,600(1)	mg/L	URENCO	New Mexico Environment Dept., 2012
Major Cations				
Calcium	50	ppm	22.37.33	Geohydrology Associates, 1978
Magnesium	31	ppm	22.37.33	Geohydrology Associates, 1978
Sodium	563	ppm	22.37.33	Geohydrology Associates, 1978
Potassium	N/A	ppm	22.37.33	Geohydrology Associates, 1978
Major Anions				
Bicarbonate	360	ppm	22.37.33	Geohydrology Associates, 1978
Chloride	3,750(1)	ppm	URENCO	New Mexico Environment Dept., 2012
Sulfate	855	ppm	22.37.33	Geohydrology Associates, 1978
RCRA Metals				
Arsenic	N/A			
Barium	0.01 – 0.09	mg/L	WCS Site	Cook Joyce, 2003
Cadmium	N/A			
Chromium	0.005 – 0.015	mg/L	WCS Site	Cook Joyce, 2003
Lead	0.051(1)	mg/L	URENCO	New Mexico Environment Dept., 2012
Mercury	N/A			
Selenium	0.21(1)	mg/L	URENCO	New Mexico Environment Dept., 2012
Silver	N/A			

Notes:
N/A – Not Available
(1) – Maximum Detected Concentrations through April 2011

3.5 Area Water Wells

A water well search was conducted for a one-mile radius around the Site. The search identified 37 wells/borings within one (1) mile of the Site (see Appendix G.C). The water

well search included a review of the interactive search engine and well records available through the New Mexico Office of the State Engineer. An internet search was also conducted in an effort to locate additional water well data in the surrounding one (1) mile radius.

The water wells within one (1) mile of the site are illustrated on the Local Streams, Springs and Water Well Map (Figure G.2) and listed in Tables G.5a and G.5b. Table G.5a contains wells logs derived from the New Mexico Office of the State Engineer. Table G.5b contains logs of borings from the Lea County Landfill, which were derived from the internet search for other possible well locations.

No water wells were identified from the New Mexico Office of the State Engineer in Township 21S, Range 38E, Section 31 and Township 22S, Range 38E, Sections 4-9.

Table G.5a
C.K. Disposal – E&P Landfill and Processing Facility
Water Wells within One Mile
New Mexico Office of the State Engineer

Well Tracking No.	Depth (ft)	Completion Date	Completion Formation	Well Use	Latitude	Longitude	Initial Depth to Water (ft)
415642	231.5	12/5/2008	Chinle	Monitor	32º26'14.9" N	103º4'49.9" W	Dry
415643	36	12/5/2008	Chinle	Monitor	32º26'14.9" N	103º4'45.5" W	Dry
376945	220.5	4/3/2007	Chinle	Monitor	32º26'21.9" N	103º4'27.1" W	178.83
376946	32.2	4/3/2007	Chinle	Monitor	32º26'33.1" N	103º4'27.6" W	Dry
376947	240.9	4/3/2007	Chinle	Monitor	32º26'32.9" N	103º4'39.2" W	Dry
376959	231	3/29/2007	Chinle	Monitor	32º26'16.2" N	103º5'21.2" W	Dry
376958	246.3	3/29/2007	Chinle	Monitor	32º26'23.4" N	103º4'57.8" W	217.14
376949	261.3	3/29/2007	Chinle	Monitor	32º26'33.1" N	103º5'2.1" W	243.31
376948	22	3/30/2007	Ogallala	Monitor	32º26'32.8" N	103º4'59.9" W	Dry
376950	26.9	3/29/2007	Ogallala	Monitor	32º26'33.0" N	103º5'8.3" W	Dry
376952	257.5	3/29/2007	Chinle	Monitor	32º26'32.9" N	103º5'19.3" W	241.26
376954	236.4	3/30/2007	Chinle	Monitor	32º26'27.6" N	103º5'22.7" W	Dry
418652	38	12/5/2008	Chinle	Monitor	32º26'14.8" N	103º4'40.3" W	Dry
418653	39	12/5/2008	Chinle	Monitor	32º26'13.4" N	103º4'52.2" W	Dry
376955	236	3/29/2007	Chinle	Monitor	32º25'56.9" N	103º5'23.7" W	Dry
415856	43	12/4/2008	Chinle	Monitor	32º26'1.2" N	103º5'5.5" W	Dry
418655	250	12/4/2008	Chinle	Monitor	32º26'1.1" N	103º5'3.1" W	Dry
418654	40	12/4/2008	Chinle	Monitor	32º26'1.1" N	103º5'1.1" W	Dry
376956	237	4/3/2007	Chinle	Monitor	32º25'52.5" N	103º5'7.6" W	Dry
376944	225.8	4/3/2007	Chinle	Monitor	32º26'5.3" N	103º4'26.9" W	220.49
376887	241.2	4/3/2007	Chinle	Monitor	32º25'46.8" N	103º4'31.8" W	Dry
376957	231.4	4/3/2007	Chinle	Monitor	32º25'50.4" N	103º4'52.5" W	Dry
399475	28	2/20/2008	Ogallala	Monitor	32º26'29.0" N	103º3'58.0" W	Dry
396028	2,020	4/29/2008	Santa Rosa	Exploratory	32º25'45.8" N	103º4'20.4" W	1,092
395941	75	Unknown	Chinle	Piezometer	32º26'30.1" N	103º4'10.9" W	Unknown
395941	49	2/9/2008	Chinle	Monitor	32º26'29.0" N	103º4'13.0" W	Dry

Note:
Formation names have been modified to conform to the stratigraphic nomenclature adopted by Nicholson and Clebsch.

The wells in Table G.5a are located north and northeast of the site. The wells are all completed in the Ogallala Formation or Chinle Formation at varying depths, and listed as monitor wells except for well 396028, which was drilled to a depth of 2,020 feet bgs in the Upper Permian. However, that well is completed in the Santa Rosa Formation.

Table G.5b
C.K. Disposal – E&P Landfill and Processing Facility
Water Wells within One Mile
Internet Search

Well/Boring ID	Depth (ft)	Completion Date	Deepest Formation Encountered	Well Use	Northing	Easting	Initial Depth to Water (ft)
VMP/B-101	50	11/22/1997	Chinle	Geotechnical/ Monitoring	9800.52	9898.97	Dry
VMP/B-102	50	11/20/1997	Chinle	Geotechnical/ Monitoring	8467.05	7193.22	Dry
B-103	55	11/21/1997	Chinle	Geotechnical	9711.58	8682.07	Dry
B-104	60	11/21/1997	Chinle	Geotechnical	8518.93	9678.16	Dry
B-105	50	11/19/1997	Chinle	Geotechnical	6609.23	7335.60	Dry
B-106	65	11/21/1997	Chinle	Geotechnical	5968.89	9285.60	Dry
B-107	92	11/22/1997	Chinle	Geotechnical	4016.88	9228.40	Dry
B-108	215	11/20/1997	Chinle	Geotechnical	9696.33	7439.48	Dry
B-109	120	11/21/1997	Chinle	Geotechnical	7717.16	9920.72	Dry
B-110	600	11/19/1997	Chinle	Geotechnical	7924.34	8019.53	Dry
B-111	598	11/13/1997	Chinle	Geotechnical	9140.96	9138.76	Dry

Note: VMP – vadose zone monitoring point

The wells in Table G.5b are located east of the proposed Site. The wells/borings were all drilled to Chinle Formation at varying depths. Two of the borings were converted to vadose zone monitoring points (VMP).

4.0 REFERENCES

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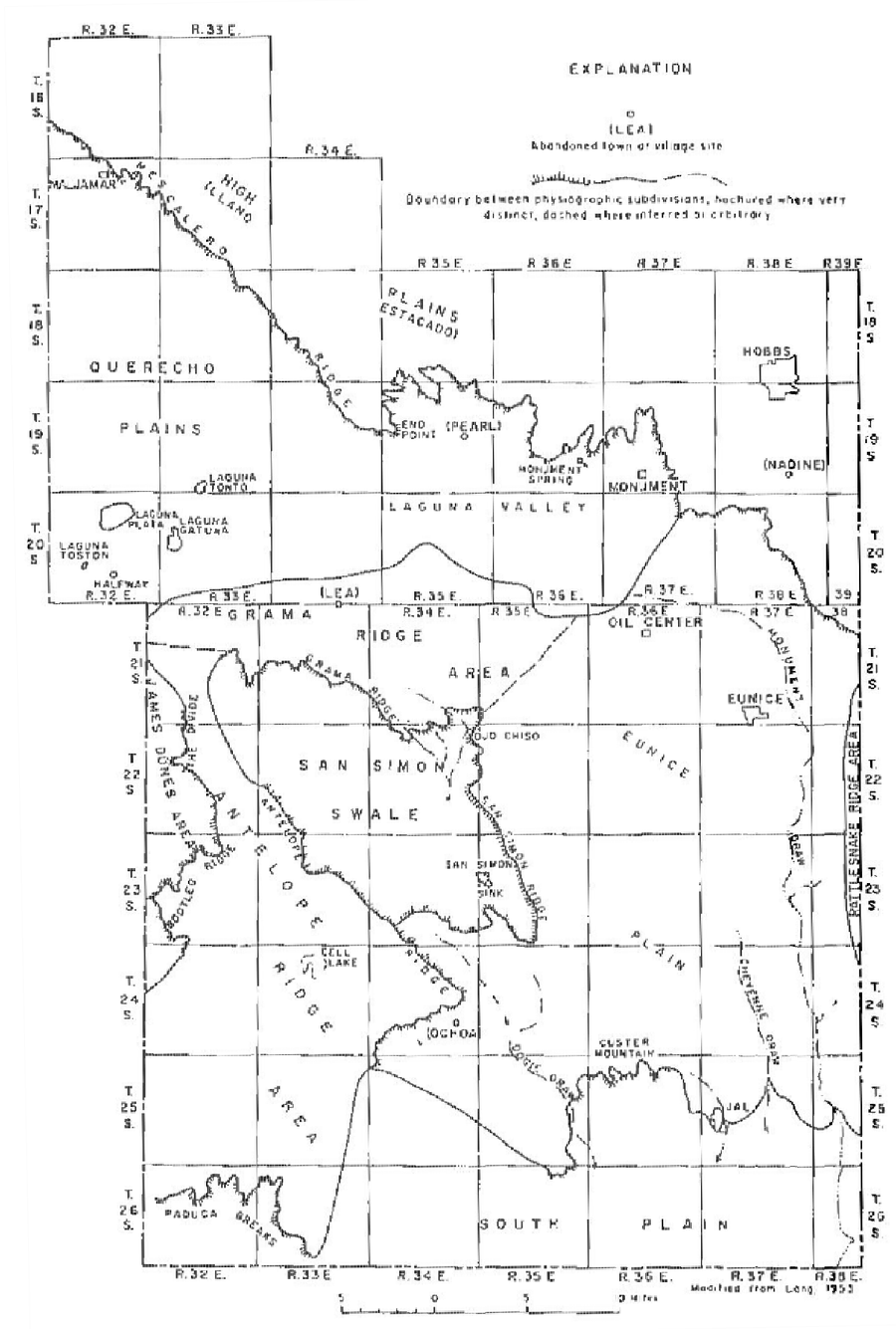
FIGURES



Source: Nicholson, Alexander, and Alfred Clebsch. *Geology and Ground-Water Conditions in Southern Lea County, New Mexico* (1961): Figure 3, page 8.

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NEW LANDFILL SITE
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LEA COUNTY, NEW MEXICO

KEY PLAN

NO	DATE	DESCRIPTION

ISSUING OFFICE: PROJECT NO:

PHYSIOGRAPHIC FEATURES

FIG.G.1

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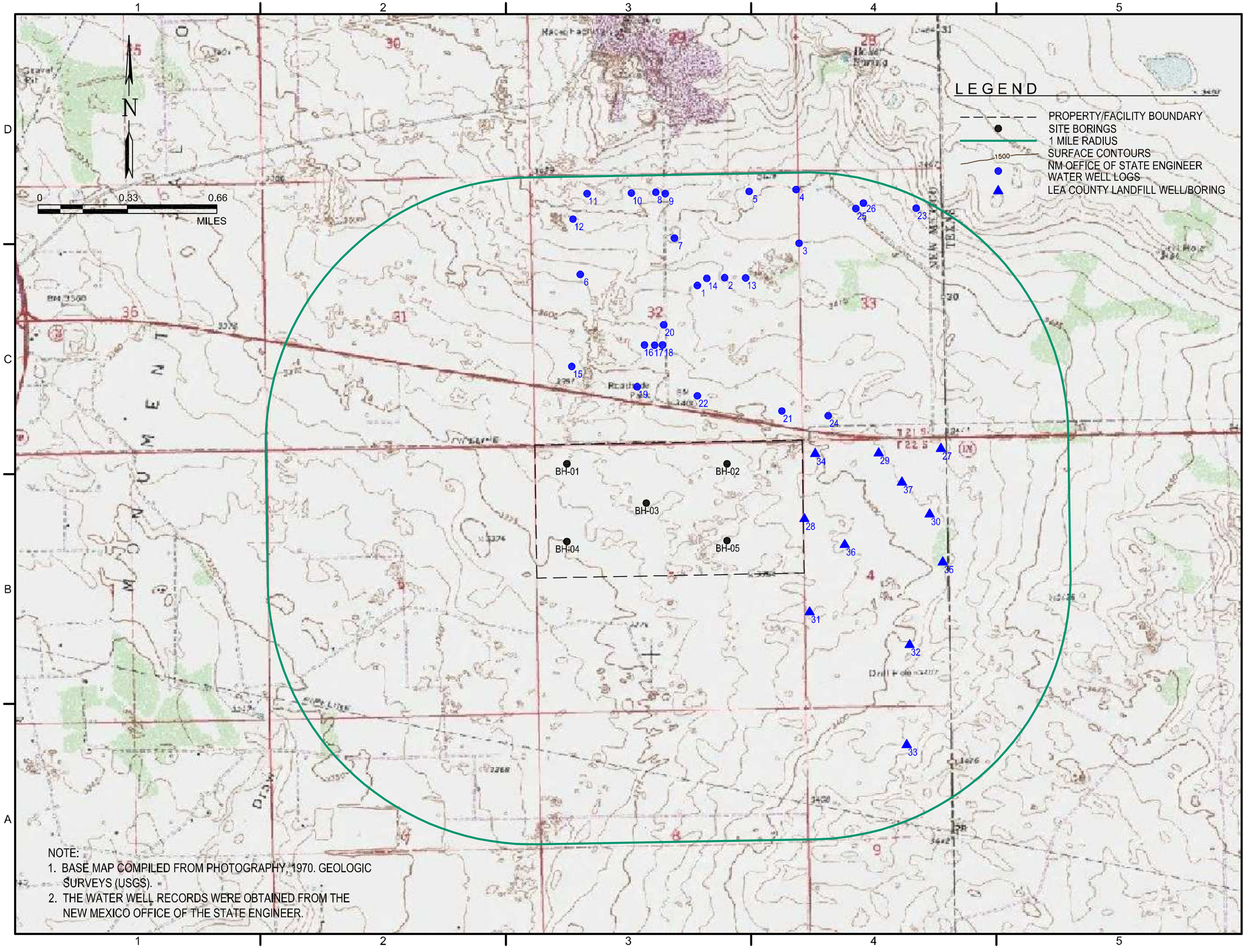

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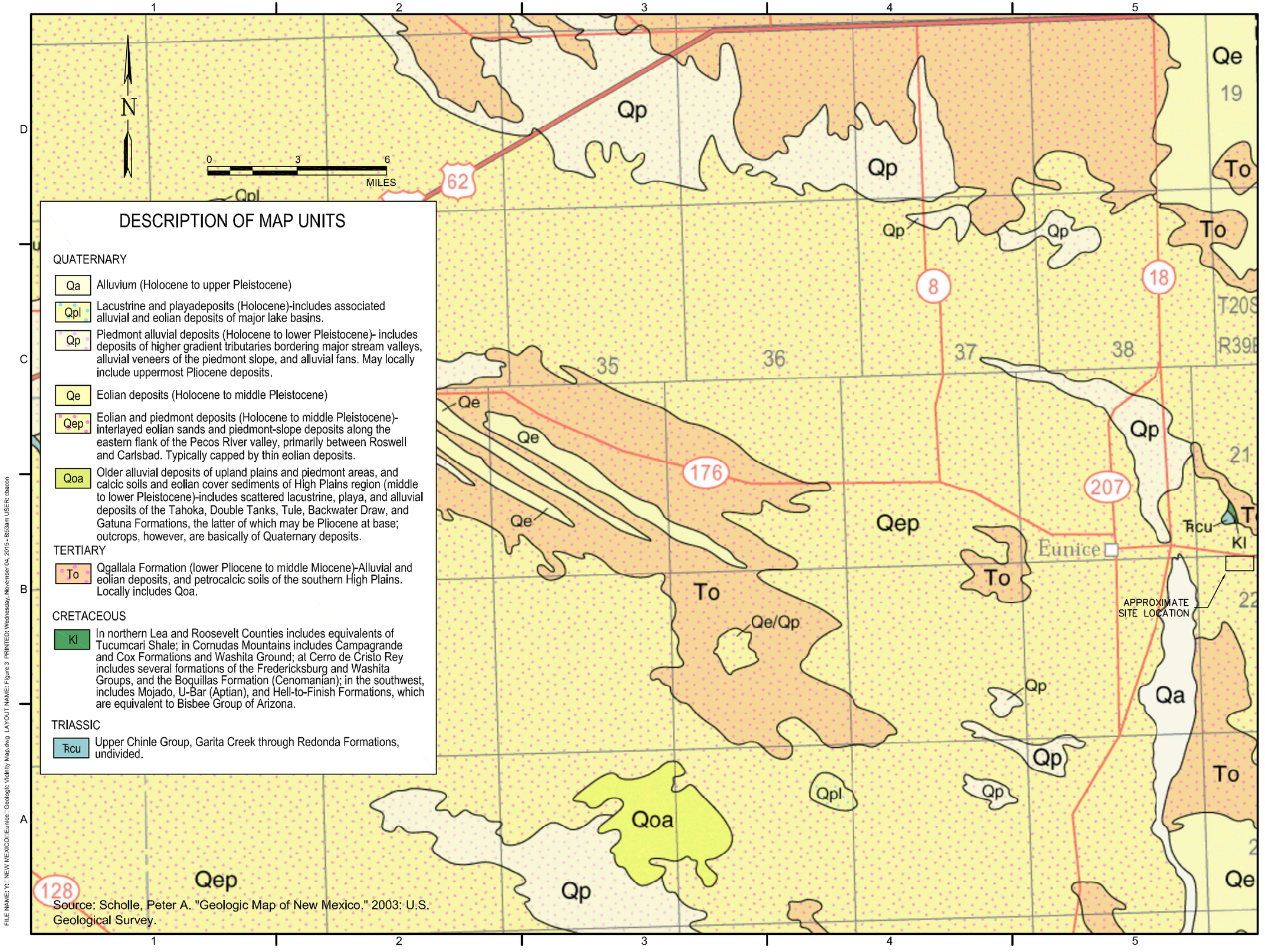
LOCAL STREAMS, SPRINGS AND WATER WELLS

FIG.G.2



DESCRIPTION OF MAP UNITS

QUATERNARY

- Qa — Alluvium (Holocene to upper Pleistocene)
- Qpl — Lacustrine and playadeposits (Holocene)-includes associated alluvial and eolian deposits of major lake basins.
- Qp — Piedmont alluvial deposits (Holocene to lower Pleistocene)- includes deposits of higher gradient tributaries bordering major stream valleys, alluvial veneers of the piedmont slope, and alluvial fans. May locally include uppermost Pliocene deposits.
- Qe — Eolian deposits (Holocene to middle Pleistocene)
- Qep — Eolian and piedmont deposits (Holocene to middle Pleistocene)-interlayed eolian sands and piedmont-slope deposits along the eastern flank of the Pecos River valley, primarily between Roswell and Carlsbad. Typically capped by thin eolian deposits.
- Qoa — Older alluvial deposits of upland plains and piedmont areas, and calcic soils and eolian cover sediments of High Plains region (middle to lower Pleistocene)-includes scattered lacustrine, playa, and alluvial deposits of the Tahoka, Double Tanks, Tule, Backwater Draw, and Gatuna Formations, the latter of which may be Pliocene at base; outcrops, however, are basically of Quaternary deposits.

TERTIARY

- To — Qgallala Formation (lower Pliocene to middle Miocene)-Alluvial and eolian deposits, and petrocalcic soils of the southern High Plains. Locally includes Qoa.

CRETACEOUS

- Kl — In northern Lea and Roosevelt Counties includes equivalents of Tucumcari Shale; in Cornudas Mountains includes Campagrande and Cox Formations and Washita Ground; at Cerro de Cristo Rey includes several formations of the Fredericksburg and Washita Groups, and the Boquillas Formation (Cenomanian); in the southwest, includes Mojado, U-Bar (Aptian), and Hell-to-Finish Formations, which are equivalent to Bisbee Group of Arizona.

TRIASSIC

- Trcu — Upper Chinle Group, Garita Creek through Redonda Formations, undivided.

Source: Scholle, Peter A. "Geologic Map of New Mexico." 2003: U.S. Geological Survey.

FILE NAME: Y:\...\NEW MEXICO\Eunice\ Geologic Vicinity Map.dwg LAYOUT NAME: Figure 3 PRINTED: Wednesday, November 04, 2015 - 8:53am USER: cbacon

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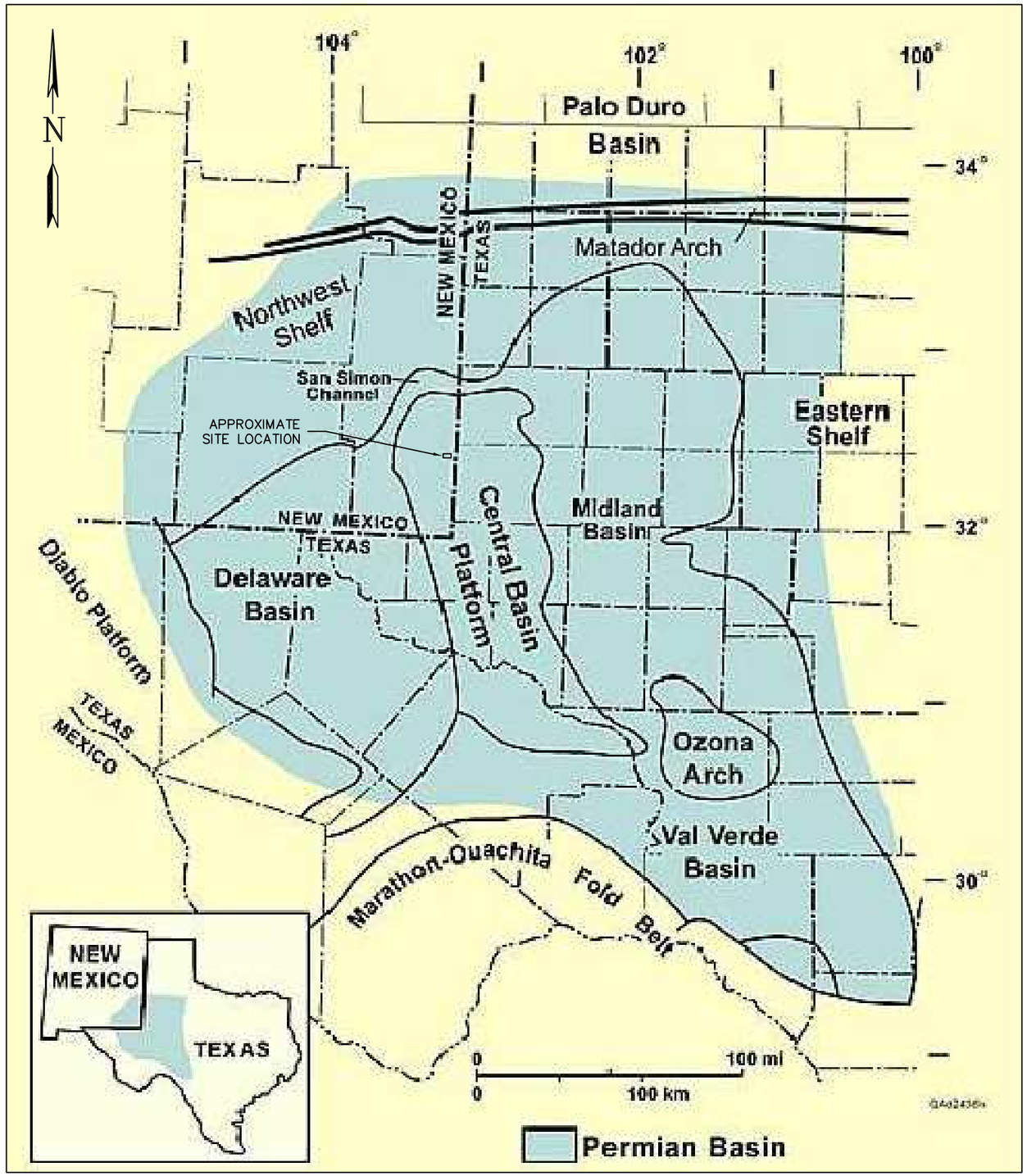
REGIONAL GEOLOGIC MAP

FIG.G.3



Source: Permian Basin map at Department of Energy, National Energy Lab. *The West Texas Permian Basin*, Digital image. Wikipedia.

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REGIONAL STRUCTURAL FEATURES

FIG.G.4

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FILE NAME: Y:_NEW MEXICO\Eunice\Regional Cross Section.dwg LAYOUT NAME: Figure 5 PRINTED: Wednesday, November 04, 2015 - 8:50am USER: cbacon

A WEST

A' EAST

GUADALUPE MOUNTAINS

DELAWARE BASIN

CENTRAL BASIN PLATFORM

Pecos River

Quaternary

Tertiary

Triassic

Approximate Site Location

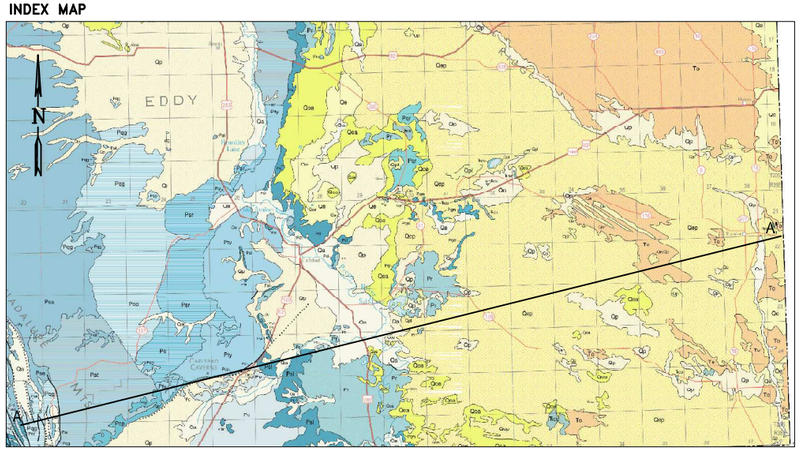
Permian

Penn

Pre-Penn

Precambrian

INDEX MAP



Source: DuChene, Harvey R., and Kimberley I. Cunningham. "Tectonic Influences on Speleogenesis in the Guadalupe Mountains, New Mexico and Texas." New Mexico Geological Society Guidebook. (2006): 211-18.

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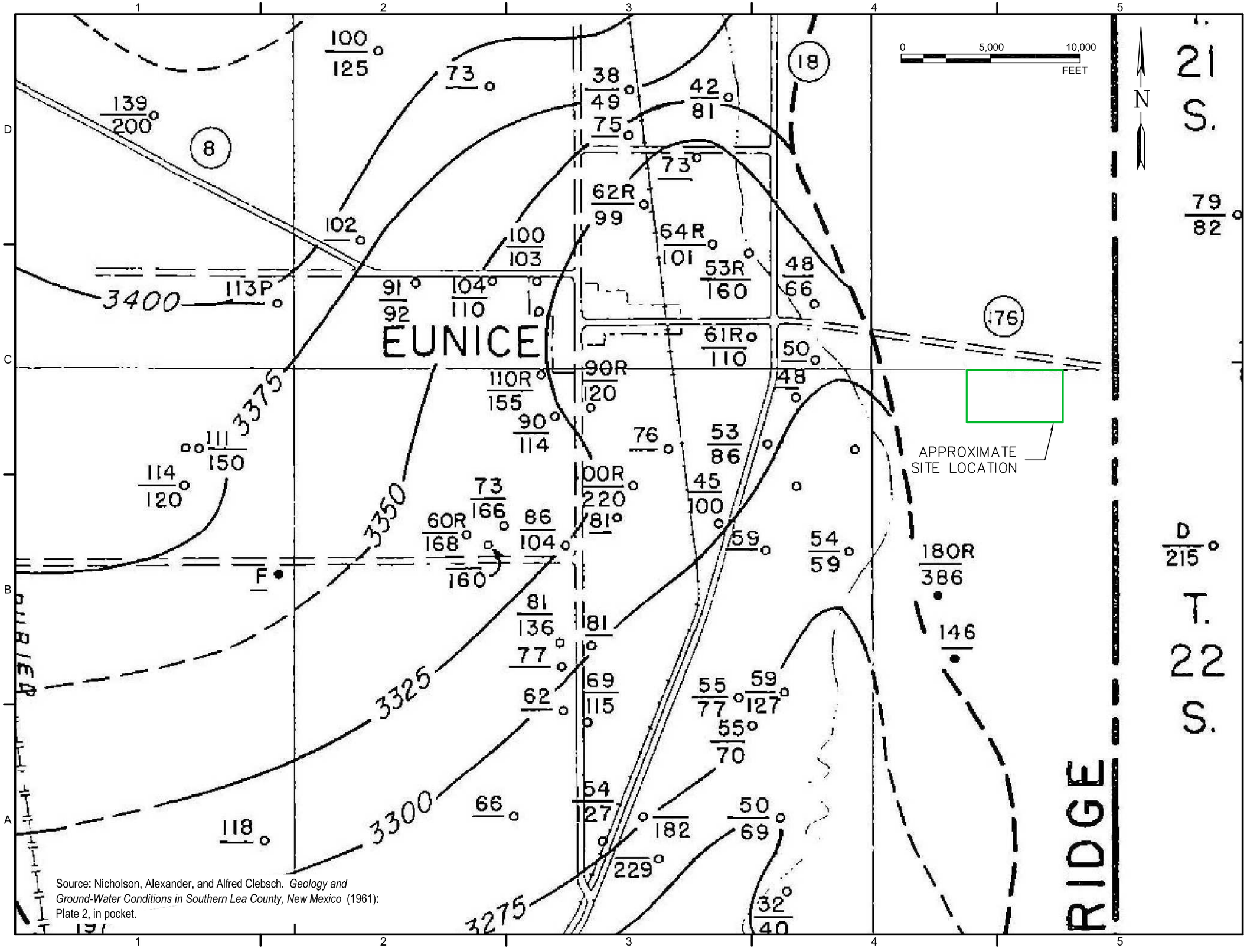
REGIONAL GEOLOGIC CROSS-SECTION A-A'

FIG.G.5



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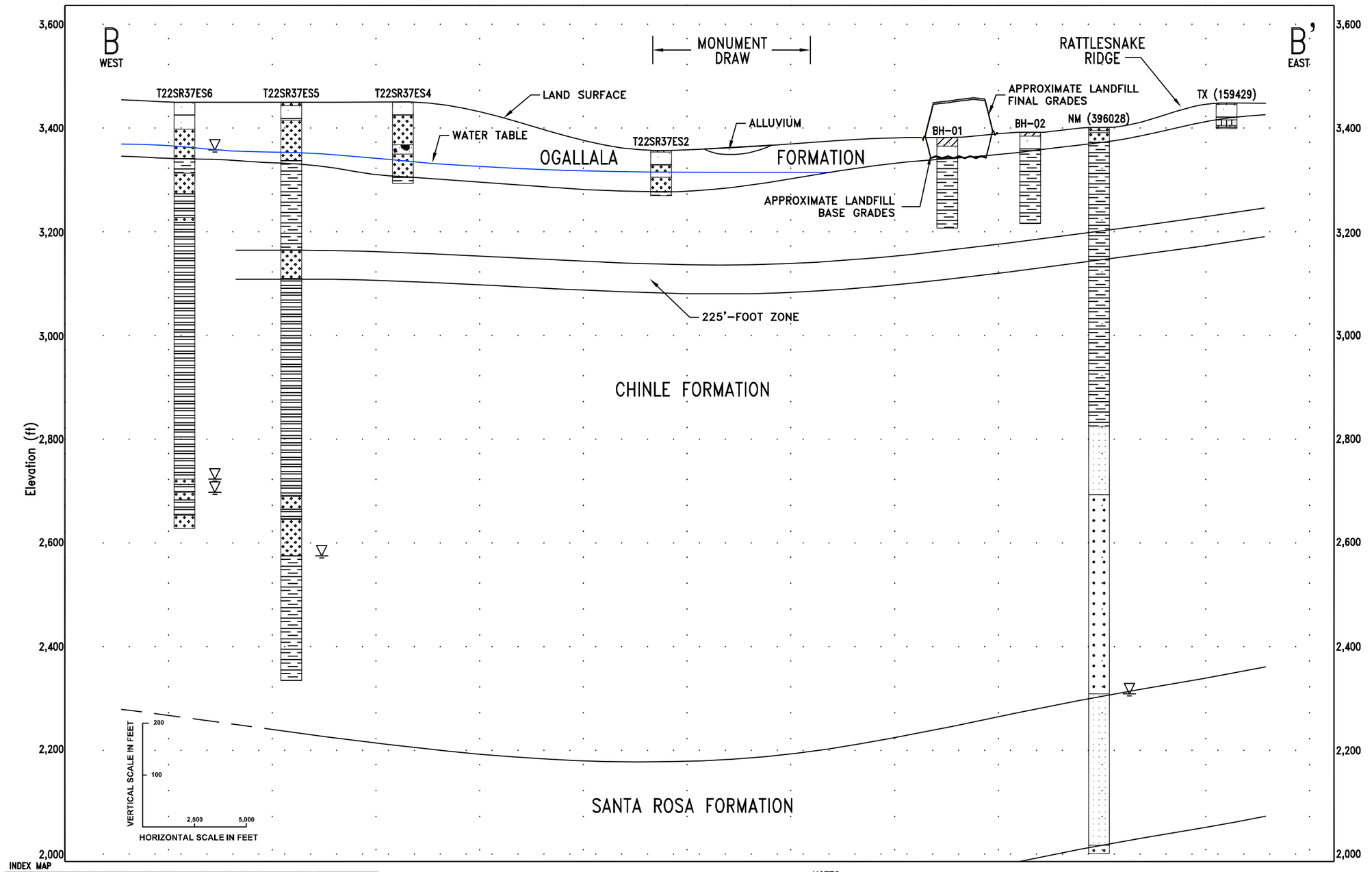
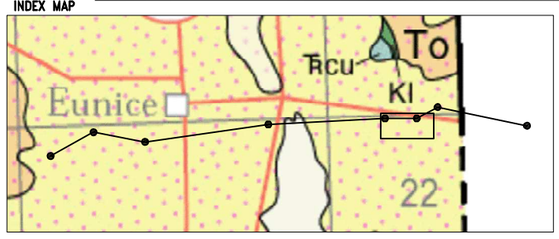
GROUNDWATER CONTOUR MAP, OGALLALA FORMATION

FIG.G.6



INDEX MAP



LITHOLOGY GRAPHICS

- USCS Well-graded Sand
- USCS Well-graded Sandy Gravel
- Calcareous Sandstone
- Sandstone
- Claystone
- Siltstone
- Shale
- Groundwater Elevation at Time of Drilling

NOTES:

1. CORRELATIONS ARE ITERPOLATED BETWEEN WELLS/BORINGS, ACTUAL CONDITIONS MAY VARY FROM THOSE ILLUSTRATED.
2. WATER LEVEL SURFACE TAKEN FROM NICHOLSON AND CLEBSCH, 1961.
3. T22SR37ES6 OR SIMILAR DENOTES THE WELL LOCATION (TOWNSHIP, RANGE, SECTION). NO STATE WELL ID AVAILABLE.
4. NM (396028) – NEW MEXICO STATE WELL ID.
5. TX (159429) – TEXAS STATE WELL ID.
6. BH-01/BH-02 – SITE BORING.
7. HORIZONTAL DISTANCES ARE APPROXIMATE.

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LEA COUNTY, NEW MEXICO

KEY PLAN

NO	DATE	DESCRIPTION

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HYDROGEOLOGIC CROSS-SECTION B-B'

FIG.G.7

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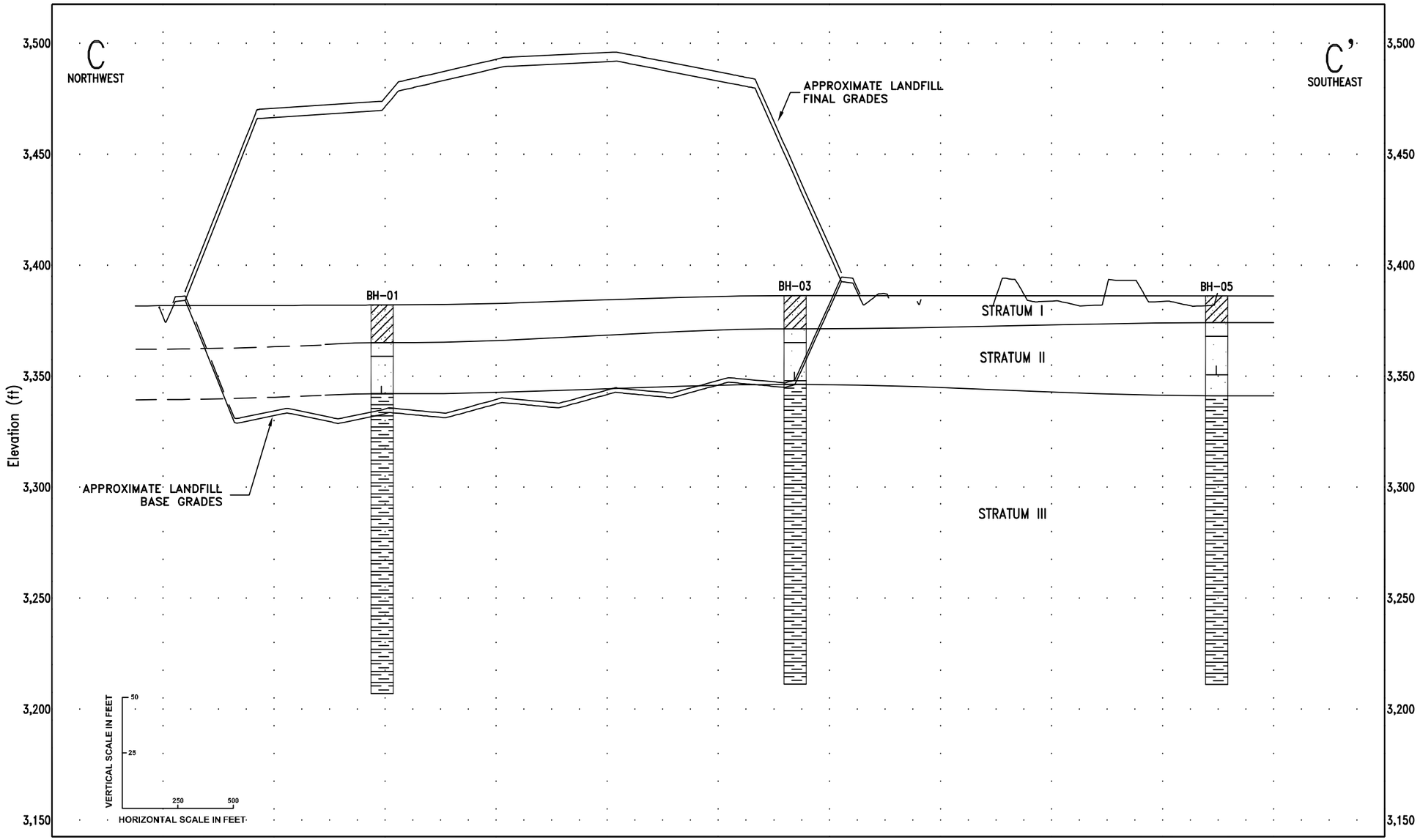

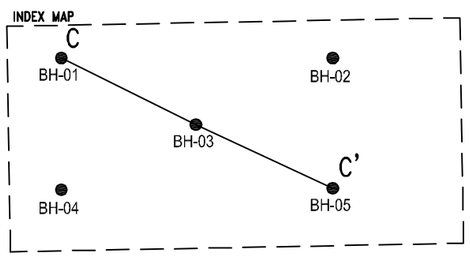

LITHOLOGY GRAPHICS

- USCS Clayey Sand
- Calcareous Sandstone
- Claystone

NOTES:

1. CROSS-SECTIONS ARE INTERPOLATED BETWEEN BORINGS, ACTUAL CONDITIONS MAY VARY FROM THOSE ILLUSTRATED.
2. SEE SECTION 3.2 OF HYDROGEOLOGY REPORT FOR STRATUM DESCRIPTIONS.
3. EACH BORING WAS DRILLED USING AIR ROTARY METHODS.
4. GROUNDWATER WAS NOT ENCOUNTERED IN ANY OF THE BORINGS.
5. HORIZONTAL DISTANCES ARE APPROXIMATE AND FOR PRESENTATION PURPOSES. SEE PLAN OF BORINGS FOR ACTUAL DIMENSIONS.

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LEA COUNTY, NEW MEXICO

KEY PLAN

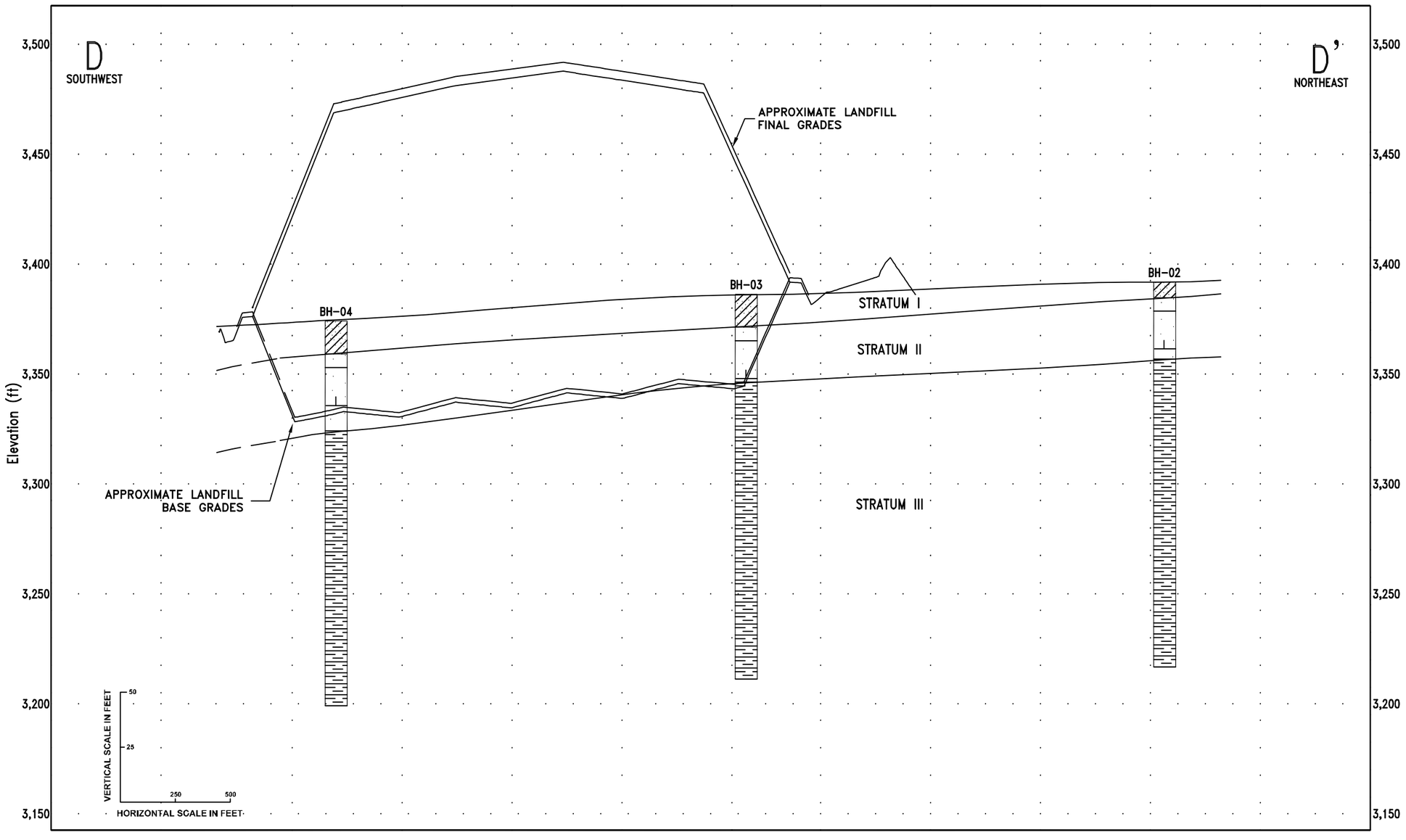
NO	DATE	DESCRIPTION

ISSUING OFFICE: PROJECT NO:

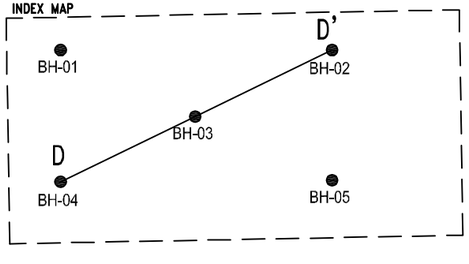
GEOLOGIC CROSS-SECTION C-C'

FIG.G.8

FILE NAME: Y:\NEW MEXICO\Eunice\Cross Sections.dwg LAYOUT NAME: Figure 8 PRINTED: Wednesday, November 04, 2015 - 8:55am USER: coacon



INDEX MAP



LITHOLOGY GRAPHICS

- USCS Clayey Sand
- Calcareous Sandstone
- Claystone

NOTES:

1. CROSS-SECTIONS ARE INTERPOLATED BETWEEN BORINGS, ACTUAL CONDITIONS MAY VARY FROM THOSE ILLUSTRATED.
2. SEE SECTION 3.2 OF HYDROGEOLOGY REPORT FOR STRATUM DESCRIPTIONS.
3. EACH BORING WAS DRILLED USING AIR ROTARY METHODS.
4. GROUNDWATER WAS NOT ENCOUNTERED IN ANY OF THE BORINGS.
5. HORIZONTAL DISTANCES ARE APPROXIMATE AND FOR PRESENTATION PURPOSES. SEE PLAN OF BORINGS FOR ACTUAL DIMENSIONS.

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LEA COUNTY, NEW MEXICO

KEY PLAN

NO	DATE	DESCRIPTION

ISSUING OFFICE: PROJECT NO:

GEOLOGIC CROSS-SECTION D-D'

FIG.G.9

FILE NAME: Y:\NEW MEXICO\Eunice\Cross Sections.dwg LAYOUT NAME: Figure 9 PRINTED: Wednesday, November 04, 2015 - 8:55am USER: coacon

0 400 800
FEET

N

LEGEND

- PROPERTY/FACILITY BOUNDARY
- SITE BORINGS
- 3500 SURFACE CONTOURS
- 3300 SITE SPECIFIC DOCKUM CONTOURS

BH-01
3,342.0'

BH-02
3,355.8'

BH-03
3,346.3'

BH-04
3,324.1'

BH-05
3,341.1'

3,360'
3,355'
3,350'
3,345'
3,340'
3,335'
3,330'
3,325'
3,320'

BYPASS LANE
INBOUND SCALE
SCALE HOUSE
OUTBOUND SCALE
BYPASS LANE

VEHICLE QUEUING

STABILIZATION AND SOLIDIFICATION AREA

GATE HOUSE

POND NO. 4
POND NO. 8
POND NO. 12
POND NO. 3
POND NO. 7
POND NO. 11
POND NO. 2
POND NO. 6
POND NO. 10
POND NO. 5
POND NO. 9

DETENTION POND #1
DETENTION POND #2

PSC
PARKHILL SMITH & COOPER

The CAREL CORPORATION

C.K. DISPOSAL E & P LANDFILL & PROCESSING FACILITY

NMED PERMIT NO. __

NEW LANDFILL SITE & PROCESSING FACILITY

LEA COUNTY, NEW MEXICO

KEY PLAN

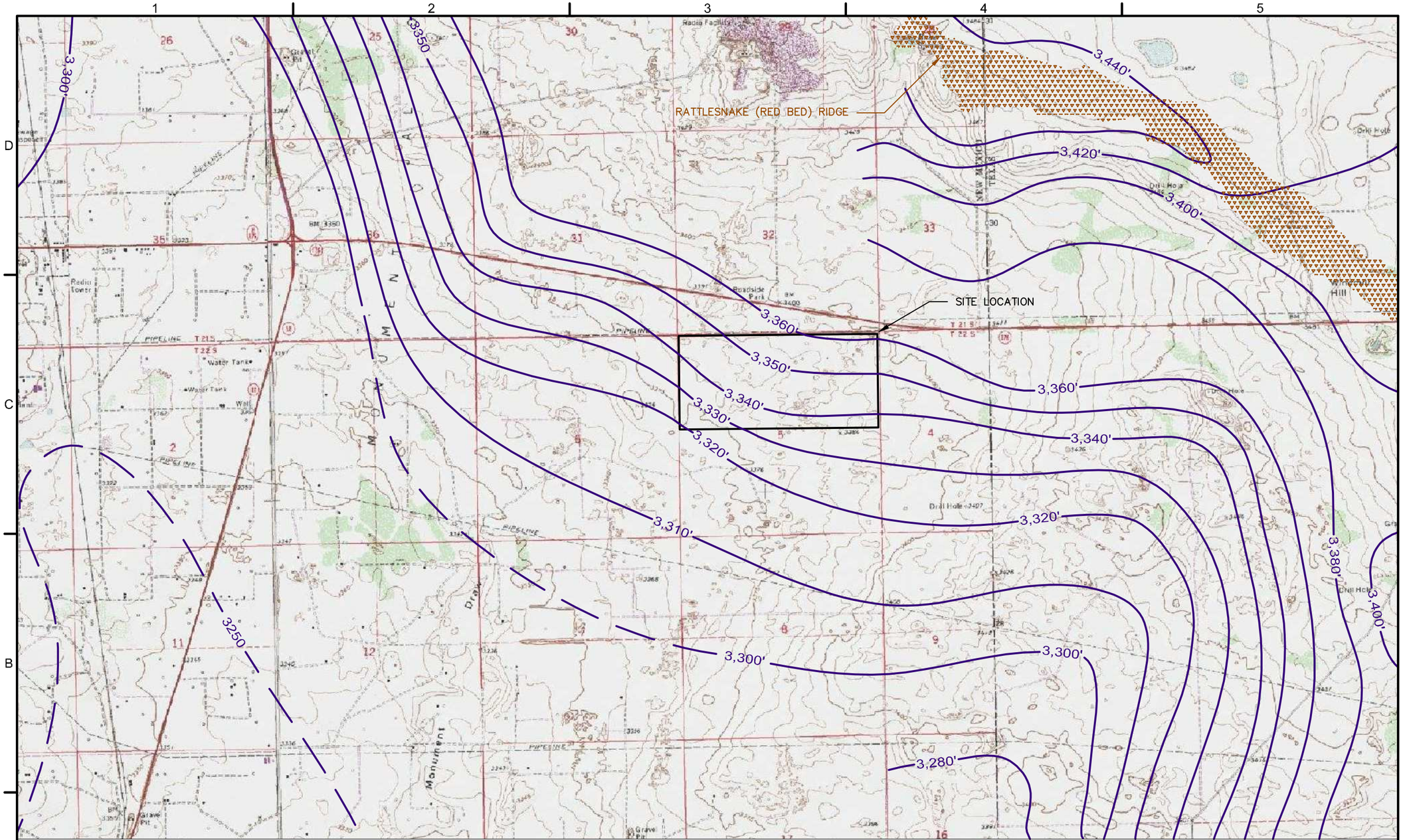
NO	DATE	DESCRIPTION

ISSUING OFFICE: PROJECT NO:

STRUCTURE MAP TOP OF THE DOCKUM GROUP

FIG.G.10

FILE NAME: Y:\...NEW MEXICO\...Eunice\...Structure Map Top of the Dockum Group.dwg LAYOUT NAME: Figure 10 PRINTED: Wednesday, November 04, 2015 - 8:48am USER: cxacon



1 2 3 4 5

D C B A

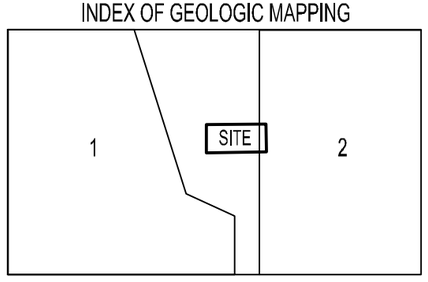
0 0.5 1 MILE

LEGEND

- PROPERTY/FACILITY BOUNDARY
- 1500 DOCKUM CONTOURS
- RATTLESNAKE (RED BED) RIDGE

N

INDEX OF GEOLOGIC MAPPING



Numbers in outlined areas refer to the sources below:

Source:

1. Nicholson, Alexander, and Alfred Clebsch. *Geology and Ground-Water Conditions in Southern Lea County, New Mexico* (1961): Plate 1, in pocket.
2. Lehman, Thomas M. and Rainwater, Ken. *Geology of the WCS - Flying "W" Ranch, Andrews County, Texas*. University Water Resources Center, Lubbock, Texas (2000).

PARKHILL SMITH & COOPER

The CAREL CORPORATION

C.K. DISPOSAL
E & P LANDFILL & PROCESSING FACILITY

NMED PERMIT NO. __

NEW LANDFILL SITE & PROCESSING FACILITY

LEA COUNTY, NEW MEXICO

KEY PLAN

NO DATE DESCRIPTION

ISSUING OFFICE: PROJECT NO:

LOCAL STRUCTURE MAP OF THE DOCKUM GROUP

FIG.G.11

FILE NAME: Y:\NEW MEXICO\Eunice\Composite Map.dwg LAYOUT NAME: Figure 11 PRINTED: Wednesday, November 04, 2015 - 8:58am USER: cbacon

APPENDICES

APPENDIX G.A

WELLS USED ON CROSS-SECTION B-B’

T22S R37E S6

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well _____ Owner's Well No. _____
Street or Post Office Address _____
City and State _____

Well was drilled under Permit No. _____ and is located in the:

a. _____ ¼ _____ ¼ _____ ¼ _____ ¼ of Section _____ Township _____ Range _____ N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor _____ License No. _____

Address _____

Drilling Began _____ Completed _____ Type tools _____ Size of hole _____ in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well _____ ft.

Completed well is ☐ shallow ☐ artesian. Depth to water upon completion of well _____ ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor _____
Address _____
Plugging Method _____
Date Well Plugged _____
Plugging approved by:

_____
State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received Typed 1/20/78

Quad _____ FWL _____ FSL _____

File No. _____ Use Oil Location No. 22.37.6.41000

T22SR37ES6

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	55		Caliche and sand
55	95		Dry sand
95	112		Water sand
112	140		Red bed, shale
140	180		Sand
180	225		Shale
225	235		Sand
235	730		Shale, red rock
730	740		Water sand
740	755		Shale
755	770		Water sand
770	800		Shale
800	825		Sand
			L S Elev 3445
			Depth to K Trc 1240
			Elev of K Trc 3335
Water -	95'-112'		
	770'-775'	2 BWPH	

Section 7. REMARKS AND ADDITIONAL INFORMATION

This well record is an exceprt from Oil Conservation Commission files at Hobbs, N.M.

Location: 22.37.6.41000
Owner: Gulf Oil Corp.
South Penrose Skelly Unit 109
Record of Casing: 16" - 115'

Elevation: 3453' GL

Cable

1980' FSL - 1980' FEL

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All ons, except Section 5, shall be answered as completely and accurat possible when any well is

T22SR37ES5

Revised June 1971

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well _____ Owner's Well No. _____
Street or Post Office Address _____
City and State _____

Well was drilled under Permit No. _____ and is located in the:

a. _____ ¼ _____ ¼ _____ ¼ _____ ¼ of Section _____ Township _____ Range _____ N.M.P.M

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in
the _____ Grant

(B) Drilling Contractor _____ License No. _____

Address _____

Drilling Began _____ Completed _____ Type tools _____ Size of hole _____ in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well _____ ft.

Completed well is ☐ shallow ☐ artesian. Depth to water upon completion of well _____ ft

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor _____
Address _____
Plugging Method _____
Date Well Plugged _____
Plugging approved by:

_____
State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received Typed 1/20/78

Quad _____ FWL _____ FSL _____

File No. _____ Use Oil Location No. 22.37.5.12000

T22SR37ES5

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	12		Cellar
12	40		Caliche
40	118		Sand
118	290		Red bed
290	345		Sand
345	765		Shale, red rock
765	790		Sand
790	810		Shale
810	880		Sand
880	1120		Red bed (water 220'-235')
			L S Elev ~~3444~~ 3445
			Depth to K ~~1116~~ Trc 1116
			Elev of K ~~2328~~ Trc 2329

Section 7. REMARKS AND ADDITIONAL INFORMATION

This well record is an excerpt from Oil Conservation Commission files at Hobbs, N.M.

Location: 22.37.5.12000
Owner: Gulf Oil Corp.
South Penrose Skelly Unit #106
Record of Casing: 16" - 122'
13" - 288'
10 3/4" - 677'
Cable

660' FNL - 1980' FWL

Elevation: 3455' GL
~~3444~~ 3445

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All ons, except Section 5, shall be answered as completely and accurat possible when any well is

T22SR37ES4

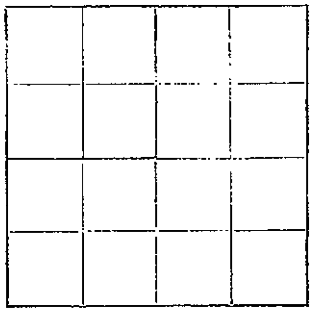
Form WR-23 STATE ENGINEER OFFICE

ELLW ENGR. LOG

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Skelly Gasoline) Oil Company

Street and Number Box 1257

City Eunice, N.M. State

Well was drilled under Permit No. CP-254 and is located in the NE ¼ SE ¼ NW ¼ of Section 4 Twp. 22 Rge. 37

(B) Drilling Contractor Abbott Bros. License No. WD-46

Street and Number Box 637

City Hobbs, N.M. State

Drilling was commenced FX Jan. 15,1972 19

Drilling was completed Jan. 21, 1972 19

Elevation at top of casing in feet above sea level 3455 Total depth of well 162

State whether well is shallow or artesian shallow Depth to water upon completion 90

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1	87	105	18	gravel and sand
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
85/8	23	10	1	160	160	none	128	150

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used

Section 5 PLUGGING RECORD

Name of Plugging Contractor License No.

Street and Number City State

Tons of Clay used Tons of Roughage used Type of roughage

Plugging method used Date Plugged 19

Plugging approved by:

Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

STATE ENGINEER OFFICE

Date Received

1972 MAR 23 AM 8:18

File No. CP-254 Use IND. Location No. 22.37.4.1421

T22SR37ES4

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	4	4	brown	soil
4	30	26	gray	caliche
30	68	38	brown	sand
68	87	19	brown	tight sand
87	105	18	brown	sand & gravel
105	150	45	brown	sand
150	162	12	red	clay

L S Elev 3455 ✓
Depth to K Trc 150 ✓
Elev of K Trc 3305 ✓

Loc. No. 22.37.4.14242
Hydro. Survey Field Check X

SOURCE OF ALTITUDE GIVEN
Interpolated from Topo. Sheet X
Determined by Inst. Leveling
Other

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

Burnell Cobb
Well Driller

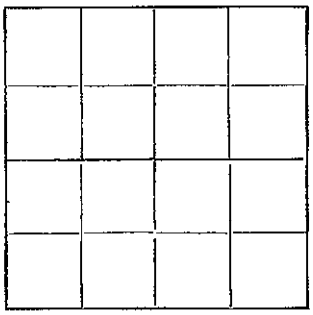
T22SR37ES2

Form WR-23 STATE ENGINEER OFFICE

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to t nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely a accurately as possible when any well is drilled, repaired or deepened. When this form is used as a pluggi record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Humble Oil Co.

Street and Number

City State

Well was drilled under Permit No. and is located in t

NE ¼ NE ¼ NE ¼ of Section 2 Twp. 22S Rge. 37E

(B) Drilling Contractor E. B. Burke License No.

Street and Number

City State

Drilling was commenced 19

Drilling was completed Jan. 19 4

Elevation at top of casing in feet above sea level 3357.7 (+1.5) Total depth of well 87

State whether well is shallow or artesian Depth to water upon completion

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1				
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used

Section 5 PLUGGING RECORD

Name of Plugging Contractor License No.

Street and Number City State

Tons of Clay used Tons of Roughage used Type of roughage

Plugging method used Date Plugged 19

Plugging approved by:

Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

Date Received Copied from USGS Well

Schedule by A. Nicholson 10/9/53

File No. Use Location No. 22.37.2.222 30

T22SR37ES2

22.37.2.222

Humble Oil Co.

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	3			soil
3	28			caliche
28	42			sand
42	52			lime
52	80			sand
80	87			red bed

U S Elev 3358' 3357
Depth in K Tra 80' 80
Elev of K Tra 3278' 3277

Loc. No. 22,37,2,222314

Hydro Survey Field Check X

SOURCE OF ALTITUDE GIVEN

Interpolated from topographic map X

Determined by instrumental leveling

Other

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

E. B. Burke
Well Driller

BH-01

LOG OF BORING NO. BH-01

Project Description: CK Disposal

Location: Eunice, NM
Top of PVC EL: feet MSL
Surface EL: 3382 feet MSL
Completion Depth: 175 feet
Date Boring Started: 5/26/2015
Date Boring Completed: 5/26/2015

Northing: 160.00
Easting: 1850.00

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
5–15			CLAYEY SAND, brown to reddish brown, moderately well sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction		
20–35			SILTY SAND, with caliche, light brown to white, well sorted, well rounded, very fine to fine grained, dry, strong HCL reaction		
40–175			CLAYSTONE, reddish brown some gray, slightly moist to dry, weak HCL reaction		

Drilling Contractor: HCI Drilling
Drilling Method: Air Rotary
Sampling Method: Cuttings
Geologist: Steven J. Wimmer
Project No.: 15-04-22

Groundwater Observations	
Date	Depth to Water (ft)
5/26/15	Dry

Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig

GROUNDWATER WELL - B&W EUNICE.GPJ CAREL2.GDT 9/14/15

LOG OF BORING NO. BH-01
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Water level at time of drilling.
Water level at end of drilling.
Water level after drilling.

BH-02

LOG OF BORING NO. BH-02

Project Description: CK Disposal

CAREL

Location: Eunice, NM
Top of PVC EL: feet MSL
Surface EL: 3391.8 feet MSL
Completion Depth: 175 feet
Date Boring Started: 5/26/2015
Date Boring Completed: 5/26/2015

Northing: 521273.70
Easting: 928310.35

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
5–10			CLAYEY SAND, brown to reddish brown, moderately well sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction		
10–35			SILTY SAND, with caliche, light brown to white, well sorted, well rounded, very fine to fine grained, dry, strong HCL reaction		
35–70			CLAYSTONE, reddish brown with gray, dry, weak HCL reaction, some purple		
70–175			less gray and purple; slightly moist to dry		

GROUNDWATER WELL - B&W EUNICE.GPJ CAREL2.GDT 9/16/15

Drilling Contractor: HCI Drilling
Drilling Method: Air Rotary
Sampling Method: Cuttings
Geologist: Steven J. Wimmer
Project No.: 15-04-22

Groundwater Observations	
Date	Depth to Water (ft)
5/26/15	Dry

Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig

LOG OF BORING NO. BH-02
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

▽ Water level at time of drilling.
▼ Water level at end of drilling.
▽ Water level after drilling.

NM (396028)

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD and DRILLING LOG

1. PERMIT HOLDER(S)

Name: WASTE CONTROL SPECIALISTS
Address: P.O. BOX 1129
City: ANDREWS
State: TX Zip: 79714
Phone: (505) 394-4300
Contact: MICHAEL BURNEY
Contact Phone: (505) 394-4300

Name: _____
Address: _____
City: _____
State: _____ Zip: _____
Phone: _____

2. STATE ENGINEER REFERENCE NUMBERS:

File # CP 975 EXPLORE, Well # C.P. 975

3. LOCATION OF WELL (The Datum Is Assumed To Be WGS 84 Unless Otherwise Specified)

Latitude: 32 Deg 25 Min 45.8 Sec
Longitude: 103 Deg 04 Min 20.4 Sec
(Enter Lat/Long To At Least 1/10th Of A Second)
Datum If Not WGS 84: _____

4. DRILLING CONTRACTOR

License Number: WD1184
Name: WEST TEXAS WATER WELL SERVICE Work Phone: (432) 530-2696

Drill Rig Serial Number: 261602

List The Name Of Each Drill Rig Supervisor That Managed On-Site Operations During The Drilling Process:

RONNY KEITH

STATE ENGINEER OFFICE
2007 MAY 11 P 2:

5. DRILLING RECORD

Drilling Began: 1-21-08 ; Completed: 4-29-08 ; Drilling Method MUD ROTARY

Diameter Of Bore Hole: 7-7/8 (in);

Total Depth Of Well: 2,020 (ft);

Completed Well Is (Circle One): Shallow / (Artesian);

Depth To Water First Encountered: 1,092 (ft);

Depth To Water Upon Completion Of Well: N/A (ft).

Do Not Write Below This Line

TRN Number: 396028
Form: wr-20 May 07

File Number: CP-975

21.38.33.333

Explore

NM(396028)

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD and DRILLING LOG

6. RECORD OF CASING

Diameter (inches)	Pounds (per ft.)	Threads (per inch)	Depth (feet)	Length Top to Bottom (feet)	Type of Shoe	Perforations (from to)
13-3/8	48	8	2' AGL	40'		
8-5/8	24	8	3' AGL	1,440'	FLOAT GUIDE	

7. RECORD OF MUDDING AND CEMENTING

Depth (feet)	Hole (diameter)	Mud Used (# of sacks)	Cement (cubic feet)	Method of Placement
0 - 40	17-1/2		35	TRIMMIE
0 - 1,440	12-1/4		574	POSITIVE
1,380-2,020	7-7/8		275	TRIMMIE

STATE ENGINEER OFFICE
2013 MAY 14 P 2:05

Do Not Write Below This Line

Trn Number: _____ File Number: _____
Form: wr-20 May 07

NM(396028)

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

8. LOG OF HOLE. For Each Water Bearing Strata, Estimate The Yield Of The Formation In Gallons Per Minute.

Depth (feet) From	Depth (feet) To	Thickness (Feet)	For Water Bearing Strata Enter The Estimated Yield in GPM	Color and Type of Material Encountered
			SEE ATTACHED	GEOLOGIC LOG

STATE ENGINEER OFFICE
2003 MAY 14 P 2 04

Enter Method Used To Estimate Yield: N/A

Do Not Write Below This Line

Trn Number: _____ File Number: _____

NM(396028)

CP-975 Geologic log

0-6 ft 6 pad fill and fine brown sand

6-10 ft 4 white sandy limestone (Mescalero caliche)

10-29 ft 19 sand, light brown, and brown calcareous sandstone (Gatuña Formation)

29-576 ft 547 interbedded sandstone, siltstone, and claystone; reddish-brown to gray; bioturbated (Cooper Canyon Formation)

576-708 ft 132 sandstone and siltstone, gray to reddish brown (Trujillo Formation)

708-1092 ft 384 interbedded very fine sandstone and siltstone, gray to dark reddish brown (Tecovas Formation)

1092-1384 ft 292 gray, fine sandstone with interbedded reddish brown and weak red siltstone and claystone (Santa Rosa Formation)

1384-1566 ft 182 reddish brown, very fine sandstone and siltstone, with some fibrous gypsum in lower part (Dewey Lake Formation)

1566-1602 ft 34 gray anhydrite beds, with intermediate reddish-brown and gray siltstone (Forty-niner Member of the Rustler Formation)

1602-1609 ft 7 gray anhydrite and wavy thin laminae of dolomite (Magenta Dolomite Member of the Rustler Formation)

1609-1736 ft 127 gray anhydrite beds, with intermediate halite including anhydrite and polyhalite (Tamarisk Member of the Rustler Formation)

1736-1807 ft 71 halite with thin two thin anhydrite beds and basal reddish-brown, very fine sandstone (Los Medaños Member of the Rustler Formation)

1807-2020 ft 213 halite with anhydrite/polyhalitic marker beds (MB103 and uppermost MB109) (Salado Formation)

STATE ENGINEER OFFICE
SANTA FE, NEW MEXICO
2008 MAY 14 P 2:06

NM (396028)

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. ADDITIONAL STATEMENTS OR EXPLANATIONS:

2008 MAY 14 P 2 05

STATE ENGINEER OFFICE
SANTA FE, NEW MEXICO

The undersigned hereby certifies that, to the best of his or her knowledge and belief, the foregoing is a true and correct record of the above described bore hole. The undersigned further certifies that he or she will file this well record with the Office Of The State Engineer and permit holder within 20 days after completion of the well drilling.

Tommy Veitt
Driller

05-12-08
(mm/dd/year)

Do Not Write Below This Line

Trn Number: _____ File Number: _____

TX (159429)

STATE OF TEXAS WELL REPORT for Tracking #159429

Owner:	**Waste Control Specialists**	Owner Well #:	**TP-62**
Address:	**P.O. Box 1129** **Andrews , TX 79714**	Grid #:	**26-40-5**
Well Location:	**30 Miles NW of Andrews** **Andrews , TX 79714**	Latitude:	**32° 25' 21" N**
Well County:	**Andrews**	Longitude:	**103° 02' 59" W**
Elevation:	**No Data**	GPS Brand Used:	**Garmin etrex**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Date: Started: **1/10/2008**
Completed: **1/10/2008**

Diameter of Hole: Diameter: **5.625 in From Surface To 49 ft**

Drilling Method: **Air Rotary**

Borehole Completion: Gravel Packed From: **35 ft to 49 ft**
Gravel Pack Size: **8/16**

Annular Seal Data: 1st Interval: **From 0 ft to 5 ft with 20 Cement (#sacks and material)**
2nd Interval: **From 5 ft to 35 ft with 10 bentonite (#sacks and material)**
3rd Interval: **No Data**
Method Used: **poured**
Cemented By: **Talon**
Distance to Septic Field or other Concentrated Contamination: **No Data**
Distance to Property Line: **No Data**
Method of Verification: **No Data**
Approved by Variance: **No Data**

Surface Completion: **Surface Slab Installed**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **fresh**
Depth of Strata: **No Data**
Chemical Analysis Made: **No**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

TX (159429)

Company Information:	**Talon Drilling, LP** **921 N Bivins** **Amarillo , TX 79107**
Driller License Number:	**54499**
Licensed Well Driller Signature:	**Shane Currie**
Registered Driller Apprentice Signature:	**No Data**
Apprentice Registration Number:	**No Data**
Comments:	**No Data**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking #**159429**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0 to 2 Sandy SILT, tan.
2 to 32 CALICHE, light gray to tan.
32 to 43 Silty SAND, tan.
43 to 46.25 Sandy GRAVEL, various colored chert.
46.25 to 49 CLAY, maroon with gray mottling.

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
2 new pvc casing 0 to 39 sch 40
2 new pvc screening 39 to 49 slot 0.010

WLB

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505-394-5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 SW 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 14.8698 s Longitude: 103 d 04 m 49.8642 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____, of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-993

I. On land owned by (required): Louisiana Energy Services

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/5/08 ; Completed: 12/5/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 231.5 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-993 — Trn Number: 415642
Form: wr-20 — page 1 of 4

Monitor

21.38.32.231

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	231	234	end cap	211	231

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	20	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
20	206	7-7/8	61		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

Do Not Write Below This Line

File Number: CP-993
Form: wr-20

Trn Number: 415642

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	5	5	Sandstone, lightly cemented, burnt orange
5	15	10	Caliche, relatively soft, gray to lt orange
15	30	15	Sand, minor chert gravel, lt orange sand
30	85	55	Claystone, maroon
85	90	5	Siltstone, hard gray
90	210	120	Claystone, dark purple
210	225	15	Sandstone, very fine-grained, hard, gray
225	231	6	Clayston, maroon

STATE ENGINEER OFFICE
11 AM '21

Do Not Write Below This Line

File Number: CP-993 Trn Number: 415642

Form: wr-20

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-20

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cie
Driller

12/28/08
(mm/dd/year)

STATE ENGINEER OFFICE
2008 DEC 31 A 11:51

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-993
Form: wr-20

Trn Number: 415642

WLB

2

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505-394-5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 SW 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 14.9172 s Longitude: 103 d 04 m 45.4866 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-994

I. On land owned by (required): Louisiana Energy Services

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/5/08 ; Completed: 12/5/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 36 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-994 — Trn Number: 415643
Form: wr-20 — page 1 of 4

21.38.32.232

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	36	39	end cap	26	36

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
5	23	7-7/8	5		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

Do Not Write Below This Line

File Number: CP-994
Form: wr-20

Trn Number: 415643

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	Sandstone, lightly cemented, burnt orange
10	23	13	Caliche, hard, gray
23	34	11	Gravelly sand, chert gravel, red sand matrix
34	36	2	Claystone, dark purple

STATE ENGINEER OFFICE
2011 JUL 14 P 3:47
RECEIVED

Do Not Write Below This Line

File Number: CP-994 Trn Number: 415643

Form: wr-20 page 3 of 4

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-21

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

12/29/08
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-994
Form: wr-20

Trn Number: 415643

WL B

3

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisianna Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: New Mexico Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SE 1/4 NE 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 21.907 s Longitude: 103 d 04 m 27.079 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-947

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/15/07 ; Completed: 4/03/07 ; Type tools: Air rotary;
Size of hole: 7-7/8 in.; Total depth of well: 220.5 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: 178.43 ft.

Do Not Write Below This Line

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 20 P 2:00

File Number: CP-947
Form: wr-20

page 1 of 4

Trn Number: 376945

Monitor

21.38.32.224

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
178.83	218.1	39.27	claystone & siltstone	0-5

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	sch 40 PVC	2	0	198.1	198.1	N/A	N/A	
4	sch 40 PVC	2	198.1	218.1	20	PVC end cap	198.1	218.1

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie - bentonite/cement
75	192	7-7/8	43		poured - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:00

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File Number: CP-947
Form: wr-20

Trn Number: 376945

21.38.32.224

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	SAND, loose, dry, brown - tan
2	25	23	caliche, soft, dry, gray
25	30	5	SANDY, gravel, dry, orange to tan
30	130	100	clay, highly plastic, maroon with gray mottling
130	140	10	siltstone, hard, dry, gray with maroon mottling
140	195	55	claystone, dry maroon w/ gray mottling
195	205	10	Siltstone, hard, dry gray w/ maroon splotching
205	207	2	claystone, firm dry, maroon w/ gray mottling
207	215	8	Siltstone with claystone hard, gray & maroon
215	230	15	claystone, firm dry maroon w/ gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:01

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File Number: CP-947
Form: wr-20

Trn Number: 376945

21.38.32.224

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

04/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

FOR STATE ENGINEER USE ONLY

Quad _____; FWL _____; FSL _____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-947
Form: wr-20

Trn Number: 376945

Monitor

21.38.32.224

WLR

4

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: __ Zip: _____

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 33.098 s Longitude: 103 d 04 m 27.582 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-948

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/15/07 ; Completed: 4/03/07 ; Type tools: Air rotary ;
Size of hole: 7-7/8 in.; Total depth of well: 32.2 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 1:07

Do Not Write Below This Line

File Number: CP-948
Form: wr-20

page 1 of 4

Trn Number: 376946
01

Monitor

21.38.32.222

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
			DRY	

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	22.2	22.2	N/A	N/A	
4	Sch 40 PVC	2	22.2	32.2	10	PVC end cap	22.2	32.2

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	10	7-7/8	1	2.6	tremie - bentonite/cement
10	19	7-7/8	5	N/A	pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

Do Not Write Below This Line

File Number: CP-948
Form: wr-20

Trn Number: 376946

Monitor 21.38.32.222

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	3	3	Topsoil - silt loose, dry, brown
3	30	27	Caliche, hard, dry, tan to gray
30	35	5	clay, highly plastic, dry, maroon & gray

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:01

Do Not Write Below This Line

File Number: CP-948
Form: wr-20

Trn Number: 376946

Monitor

21.38.32.222

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

04/24/2007
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; **FWL** ____; **FSL** ____; **Use** _____; **Location No.** _____

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

Do Not Write Below This Line

File Number: CP-948
Form: wr-20

Trn Number: 376948

Monitor

21.38.32.222

WLB

5

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505.394.5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 NE 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 32.895 s Longitude: 103 d 04 m 39.176 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-949

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.676.8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/16/07 ; Completed: 4/03/07 ; Type tools: Air Rotary ;
Size of hole: 7-7/8 in.; Total depth of well: 240.4 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:02

Do Not Write Below This Line

File Number: CP-949
Form: wr-20

Trn Number: 376947

Monitor

21.38.32.221

5

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
			DRY	

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4.0	sch 40 PVC	2	0	220.9	220.9	N/A	N/A	
4.0	sch 40 PVC	2	220.9	240.9	20	PVC end cap	220.9	240.9

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	15	7-7/8	1	20	tremie - bentonite/cement
15	215	7-7/8	53	N/A	pour - bentonite pellets

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 MAR 27 P 2:02

Do Not Write Below This Line

File Number: CP-949
Form: wr-20

Trn Number: 376947

21.38.32.221

Monitor

5

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in feet	Color and Type of Material Encountered
0	4	4	SAND, loose, dry, orange to light red
4	30	26	CALICHE, moderately hard, chert, dry, orange & red
30	50	20	SANDY, Gravel, chert, dry, tan to light orange
50	115	65	Clay, highly plastic, firm, dry, gray & Maroon
115	125	10	Siltstone, hard, moist, gray
125	180	55	Claystone, dry, maroon w/ gray mottling
180	190	10	Siltstone & claystone interbedded, dry gray
190	235	45	Claystone, hard, dry, maroon w/ gray veining
235	240	5	Siltstone, hard to hard, dry, gray
240	245	5	Claystone, hard, dry, maroon w/ gray & green mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:02

Do Not Write Below This Line

File Number: CP-949
Form: wr-20

Trn Number: 376947

Monitor

21.38.32.221

5

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Joe Cie
Driller

04/24/07
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:02

FOR STATE ENGINEER USE ONLY

Quad ____; **FWL** ____; **FSL** ____; **Use** _____; **Location No.** _____

Do Not Write Below This Line

File Number: CP-949
Form: wr-20

Trn Number: 376947

Monitor

21.38.32.221

WLB

6

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231
Work Phone: 505.394.5704
Home Phone: _____

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 SW 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 16.2 s Longitude: 103 d 5 m 21.2 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-959

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107
Work Phone: 806.467.0607
Home Phone: 806.676.8220

4. DRILLING RECORD

Drilling began: 3/23/07; Completed: 3/24/07; Type tools: Air Rotary
Size of hole: 7-7/8 in.; Total depth of well: 231 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

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2007 APR 27 P 12:07
STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

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File Number: CP-959
Form: wr-20

Trn Number: 376939

Monitor

21.38.32.131

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	211	211	N/A		
4	Sch 40 PVC	2	211	231	20	PVC end cap	211	231

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	70	7-7/8	1	18	tremie - bentonite/cement
70	205	7-7/8	48		pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

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File Number: CP-959
Form: wr-20

Trn Number: 376959

Monitor

21.38.32.131

6

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	SAND loose moist orange/brown
2	15	13	CALICHE, soft dry tan
15	20	5	Gravelly sand, loose dry orange to tan
20	30	10	Claystone w/ siltstone maroon & gray
30	95	65	Claystone, dry maroon w/ gray mottling
95	110	15	Claystone w/ siltstone dry maroon & gray
110	130	20	Claystone, hard, dry maroon w/ gray mottling
130	135	5	Claystone w/ siltstone dry maroon & gray
135	210	75	Claystone, hard dry maroon & gray
210	215	5	Siltstone w/ claystone hard, gray & maroon
215	240	25	Claystone, moderate hard dry maroon & gray

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 DEC 27 P 2:17 RECD

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File Number: CP-959
Form: wr-20

Trn Number: 376959

21.38.32.131

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller ~~Driller~~ 04/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 AUG 27 P 2:01

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-959
Form: wr-20

page 4 of 4

Trn Number: 376959

21.38.32.131

Monitor

WLB

7

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SE 1/4 NE 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 23.387 s Longitude: 103 d 04 m 57.803 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP958

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/20/07; Completed: 3/29/07; Type tools: Air rotary
Size of hole: 7-7/8 in.; Total depth of well: 246.3 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: 217.14 ft.

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2007 APR 2 P 2:01
STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

Do Not Write Below This Line

File Number: CP-958
Form: wr-20
Trn Number: 376958
page 1 of 4

Monitor 21.38.32.124

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
217.19	246.3	29.11	claystone w/siltstone	0-5

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	226.3	226.3	N/A	N/A	
4	Sch 40 PVC	2	226.3	246.3	20	PVC End Cap	226.3	246.3

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	70	7-7/8	1	18	tremie - cement/bentonite
70	220	7-7/8	43	n/a	pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 OCT 27 P 2:01

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File Number: CP-958
Form: wr-20

Trn Number: 376958

21.38.32.124

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	5	5	SAND, loose, damp, burnt orange
5	35	30	CALICHE, hard, dry light orange to gray
35	40	5	SANDY gravel, gray sand matrix
40	70	30	CLAY, Plastic, firm gray & maroon
70	80	10	claystone w/ siltstone dry maroon & gray
80	225	145	claystone, firm, dry maroon w/ gray mottling
225	245	20	claystone w/ siltstone dry, light red
245	250	5	claystone stiff, dry maroon w/ gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2011 MAR 21 P 2:01

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File Number: CP-958
Form: wr-20

Trn Number: 376958

Monitor

21.38.32.124

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

04/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-958
Form: wr-20

Trn Number: 376958

Monitor

21.38.32.124

WLB

8

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 33.072 s Longitude: 103 d 05 m 2.128 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-951

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon / LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/29/07 ; Completed: 3/29/07 ; Type tools: Air Rotary
Size of hole: 7-7/8 in.; Total depth of well: 261.3 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: 243.31 ft.

STATE ENGINEER OFFICE
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2007 APR 26 P 2:

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File Number: CP-951
Form: wr-20

page 1 of 4

Trn Number: 376949

21.38.32.122

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
243.81	261.3	17.49	Siltstone, hard, gray	0 - 2

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	sch 40 PVC	2	0	241.3	241.3	N/A	N/A	
4	sch 40 PVC	2	241.3	261.3	20	PVC end cap	241.3	261.3

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie bentonite/cement
75	235	7-7/8	65	—	pour bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:03

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File Number: CP-951
Form: wr-20

Trn Number: 376949

Monitor

21.38.32.122

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in feet	Color and Type of Material Encountered
0	4	4	SAND loose, dry tan-brown
4	20	16	CALICHE, soft, chert, dry, tan
20	25	5	Gravelly SAND, chert, orange SAND matrix
25	45	20	CLAY, highly plastic, firm, dry maroon
45	65	20	Siltstone, hard, dry, gray
65	120	55	Claystone, hard, dry, maroon w/ gray mottling
120	125	5	claystone, interbedded w/ siltstone maroon
125	240	115	Claystone, dry maroon w/ gray mottling
240	260	20	Siltstone, hard, damp gray
260	265	5	claystone, dry, maroon with gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
1991 APR 27 P 2:00

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File Number: CP-951
Form: wr-20

Trn Number: 376949

Monitor

21.38.32.122

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller — 04/24/07 (mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:03

FOR STATE ENGINEER USE ONLY

Quad ____; **FWL** ____; **FSL** ____; **Use** _____; **Location No.** _____

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File Number: CP-951
Form: wr-20

Trn Number: 376949

Monitor

21.38.32.122

WL-B

9

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 32.801 s Longitude: 103 d 04 m 59.861 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-950

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/21/07 ; Completed: 3/30/07 ; Type tools: Air rotary ;
Size of hole: 7-7/8 in.; Total depth of well: 22 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: dry ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 2 PM 2:02

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File Number: CP-950
Form: wr-20

page 1 of 4

Trn Number: 376948

Monitor

21.38.32.122

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	SCH 40 PVC	2	0	10.1	10.1	N/A	N/A	
4	SCH 40 PVC	2	10.1	20.1	10.0	PVC end cap	10.1	20.1

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	2	7-7/8	1	0.5	tremie bentonite/cement
2	7	7-7/8	2		pour bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 FEB 27 P 2:02

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File Number: CP-950
Form: wr-20

Trn Number: 376948

Monitor

21.38.32.122

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	SAND, loose, moist, tan to brown
2	15	13	CALICHE, soft, chert gravel, moist, orange-tan,
15	19	4	Gravelly SAND, light cementation, moist red sand
19	22	3	Clay, highly plastic, firm, moist, Maroon w/ gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:02

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File Number: CP-950 Trn Number: 376948

Form: wr-20 page 3 of 4

21.38.32.122

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cain
Driller

04/24/2007
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:02

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File Number: CP-950
Form: wr-20

Trn Number: 376948

Monitor

2438.32.122

WLB

10

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505.394.5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: __ Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 NE 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 35.002 s Longitude: 103 d 05 m 8.300 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-952

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.676.8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/21/07 ; Completed: 3/29/07 ; Type tools: Air Rotary
Size of hole: 7-7/8 in.; Total depth of well: 26.9 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:03

Do Not Write Below This Line

File Number: CP-952 — Trn Number: 376950
Form: wr-20

Monitor

21.38.32.121

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	SCH 40 PVC	2	0	16.9	16.9	N/A	N/A	
4	SCH 40 PVC	2	16.9	26.9	10	PVC end cap	16.9	26.9

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	4	7-7/8	1	1	trewie - cement/bentonite
4	14	7-7/8	4	N/A	pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feet of Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 AUG 27 P 2:03

Do Not Write Below This Line

File Number: CP-952
Form: wr-20

Trn Number: 376950

Monitor

21.38.32.121

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	SAND, loose, moist, burnt orange
2	20	18	CALICHE, realative soft, chert, dry tan - light orange
20	27	7	Gravelly, SAND, chert gravel burnt orange
27	30	3	Clay highly plastic, firm, dry maroon

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 MAR 27 P 2:01

Do Not Write Below This Line

File Number: CP 952
Form: wr-20

Trn Number: 376950

21.38.32.121

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

04/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:03

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-952
Form: wr-20

Trn Number: 376950

21.38.32.121

WLB

11

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231
Work Phone: 505.394.5204
Home Phone: _____

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NW 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 32.999 s Longitude: 103 d 05 m 19.283 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-953

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107
Work Phone: 806.467.0607
Home Phone: 806.676.8220

4. DRILLING RECORD

Drilling began: 3/22/07 ; Completed: 3/29/07 ; Type tools: Air Rotary
Size of hole: 7-7/8 in.; Total depth of well: 257.5 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: 241.26 ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

Do Not Write Below This Line

File Number: CP-953
Form: wr-20
Trn Number: 376952
page 1 of 4

Monitor

21.38.32.112

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
241.26	257.5	16.24	Claystone w/ interbedded siltstone	0-2

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	237.5	237.5	N/A	N/A	
4	sch 40 PVC	2	237.5	257.5	20	PVC end cap	237.5	257.5

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie - cement/bentonite
75	230	7-7/8	2/5	N/A	pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:04

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File Number: CP-953
Form: wr-20

Trn Number: 376952

Monitor

21.38.3.2.112

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	5	5	SAND, loose moist burnt orange
5	15	10	CALICHE, hard dry orange
15	35	20	CLAY, high plastic maroon w/ gray mottling
35	50	15	Siltstone, hard dry gray
50	200	150	Claystone, dry, maroon
200	210	10	Claystone, w/ interbedded siltstone, hard dry maroon
210	245	35	Claystone, hard, dry maroon w/ gray splotching
245	255	10	Claystone, w/ interbedded siltstone hard, dry maroon
255	260	5	Claystone, hard, dry maroon gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
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File Number: CP-953 Trn Number: 376952

Form: wr-20 page 3 of 4

Monitor

21.38.32.112

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

4/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2 04

FOR STATE ENGINEER USE ONLY

Quad _____; FWL _____; FSL _____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-953
Form: wr-20

Trn Number: 376952

Monitor

21.38.32.112

WLB

12

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 NW 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 27.646 s Longitude: 103 d 05 m 22.714 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-954

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon / LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/22/07 ; Completed: 3/30/07 ; Type tools: Air Rotary
Size of hole: 7-7/8 in.; Total depth of well: 236.4 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

Do Not Write Below This Line

File Number: CP-954
Form: wr-20
page 1 of 4
Trn Number: 376954

21.38.32.111

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	216.4	216.4	N/A	N/A	
4	Sch 40 PVC	2	216.4	236.4	20	PVC end cap	216.4	236.4

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	15	7-7/8	1	20	tremie - cement/bentonite
15	210	7-7/8	43		pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 DEC 27 P 2:10

Do Not Write Below This Line

File Number: CP-954
Form: wr-20

Trn Number: 376954

Monitor

21.39.32.111

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	SAND, fine, loose, moist, burnt orange
10	20	10	CALICHE, soft light orange
20	35	15	Siltstone, hard, dry gray
35	45	10	Claystone, hard dry maroon w/ gray mottling
45	50	5	claystone w/ interbedded siltstone maroon & gray
50	75	25	claystone, dry, maroon w/ gray mottling
75	85	10	siltstone w/ interbedded claystone
85	105	20	Claystone, hard, dry maroon w/ gray mottling
105	110	5	Siltstone w/ interbedded claystone hard dry gray & maroo
110	130	20	Claystone, dry maroon w/ gray mottling
130	160	30	Claystone, with siltstone dry maroon & gray
160	170	10	Claystone, dry maroon to purple w/ gray mottling
170	175	5	Siltstone, hard, dry, gray
175	180	5	Claystone, hard dry, maroon w/ gray mottling
180	190	10	Siltstone w/ Claystone dry gray & maroon
190	215	25	Claystone, hard, dry, maroon w/ gray & maroon
215	235	25	siltstone, hard, dry, gray
235	245	10	claystone, hard, dry maroon w/ gray

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:04

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File Number: CP-954
Form: wr-20

Trn Number: 376954

Monitor

21.39.3.2.111

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cole
Driller

04/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:04

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

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File Number: CP-954
Form: wr-20

page 4 of 4

Trn Number: 376954

21.39.32.111

Monitor

JLB

13

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505-394-5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SW 1/4 SW 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 14.8482 s Longitude: 103 d 04 m 40.2564 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County,

G. Other: _____

H. Give State Engineer File Number if existing well: CP-995

I. On land owned by (required): Louisiana Energy Services

STATE ENGINEER OFFICE
DEC 22 2008
LOG

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/5/08 ; Completed: 12/5/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 38 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

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File Number: CP-995 — Trn Number: 418652
Form: wr-20 — page 1 of 4

21.38.32.233

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	38	41	end cap	28	38

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
5	25	7-7/8	6		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

Do Not Write Below This Line

File Number: CP-995 Trn Number: 418652

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	9	9	Sand, lightly cemented, tan to lt orange
9	24	13	Caliche, relative soft, lt gray
4	36	12	Gravelly sand, chert, tan to lt red matrix
36	38	2	Claystone, purple

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STATE ENGINEER OFFICE

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File Number: CP-995 Trn Number: 418652

File Number: _____
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NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-22

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The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cie
Driller

12/29/08
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

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File Number: CP-995
Form: wr-20

Trn Number: 418652

NLB

14

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services Work Phone: 505-394-5204
Contact: Laurie Wetherell Home Phone: _____
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SW 1/4 SW 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 13.383 s Longitude: 103 d 04 m 52.212 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County

G. Other: _____

H. Give State Engineer File Number if existing well: CP-996

I. On land owned by (required): Louisiana Energy Services

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling Work Phone: 806.467.0607
Agent: Shane Currie Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/5/08 ; Completed: 12/5/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 39 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

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File Number: CP-996 Trn Number: 418653
Form: wr-20 page 1 of 4

21.38.32.233

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	39	42	end cap	21	36

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
5	20	7-7/8	5		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

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File Number: CP-996 Trn Number: 418653
Form: wr-20

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	Sandstone, lightly cemented, burnt orange
10	21	11	Caliche, soft, lt orange to tan
21	37	16	Gravelly sand, abundant chert, lt orange-tan
37	39	2	Claystone, purple

STATE ENGINEER OFFICE
2011 DEC -9 P 1:23
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Form: wr-20

Trn Number: 418653

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-23

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cain
Driller

12/29/08
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

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File Number: CP-996
Form: wr-20

Trn Number: 418653

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.6704
Home Phone: _____
State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SW 1/4 NW 1/4 SW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 25 m 56.857 s Longitude: 103 d 05 m 23.671 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-955

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/23/07 ; Completed: 3/29/07 ; Type tools: Air rotary;
Size of hole: 7-7/8 in.; Total depth of well: 236 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 1:47

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File Number: CP-955
Form: wr-20
page 1 of 4
Trn Number: 376955

Monitor 21.38.32.313

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	SCH 40 PVC	2	0	216	216	N/A	N/A	
4	SCH 40 PVC	2	216	236	20	PVC End Cap	216	236

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie - cement/bentonite
75	210	7-7/8	42		pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:00

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File Number: CP-955
Form: wr-20

Trn Number: 376955

Monitor

21.38.32.313

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	SAND, loose, damp tan
10	30	20	CALICHE, soft chert gravel with orange pink
30	35	5	SANDY Gravel, chert, dry light red sand
35	55	20	CLAY, highly plastic, firm
55	60	5	Claystone w/ siltstone hard, dry maroon & gray
60	220	160	Claystone, dry maroon w/ gray mottling
220	225	5	Siltstone w/ claystone hard, dry gray & maroon
225	240	15	Silty claystone, dry, light red to dark red/maroon

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
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File Number: CP-955 Trn Number: 376955

Form: wr-20 page 3 of 4

Monitor

21.38.32.313

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Jose Cisneros
Driller

04/24/2007
(mm/dd/year)

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:02

Do Not Write Below This Line

File Number: CP-955
Form: wr-20

Trn Number: 376955

Monitor

21.38.32.313

WLB

16

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services Work Phone: 505-394-5204
Contact: Laurie Wetherell Home Phone: _____
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 NE 1/4 SW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 1.1718 s Longitude: 103 d 05 m 5.5062 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-999

I. On land owned by (required): Louisiana Energy Services

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling Work Phone: 806.467.0607
Agent: Shane Currie Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/4/08 ; Completed: 12/4/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 43 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

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File Number: CP-999 Trn Number: 415856
Form: wr-20 page 1 of 4

Monitor 21.38.32.321

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	43	46	end cap	28	43

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
5	22	7-7/8	5		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
2021 OCT 6 PM 1:22

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File Number: CP-999
Form: wr-20

Trn Number: 415856

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	11	11	Sand, lightly cemented, burnt orange
11	29	18	Caliche, relatively soft, gray to lt orange
23	34	11	Gravelly sand, chert gravel, red sand matrix
34	36	2	Claystone, dark purple

STATE ENGINEER OFFICE
2021 DEC 17 P 1:25

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File Number: CP-999 Trn Number: 415856

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-26

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Crie
Driller

12/24/08
(mm/dd/year)

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2008 DEC 31 PM 1:15
OFFICE OF THE STATE ENGINEER

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FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-999
Form: wr-20

Trn Number: 415856

WLB

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505-394-5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 SW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant. U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 1.071 s Longitude: 103 d 05 m 3.048 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-998

I. On land owned by (required): Louisiana Energy Services

STATE ENGINEER OFFICE 2008 DEC 15 P 12:21

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/4/08 ; Completed: 12/4/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 250 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-998 — Trn Number: 418655
Form: wr-20 — page 1 of 4

Monitor 21.38.32.322

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	250	253	end cap	230	250

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	20	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
20	206	7-7/8	68		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
2021 DEC -3 P 1:21

Do Not Write Below This Line

File Number: CP-998
Form: wr-20

Trn Number: 418655

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	12	12	Sand, lightly cemented, burnt orange
12	25	13	Caliche, relatively soft, gray to lt orange
25	36	11	Sandstone, lightly cemented, burnt orange
36	70	34	Claystone, maroon
70	72	2	Siltstone, hard gray
72	153	81	Claystone, light red with maroon to purple
153	215	62	Claystone, maroon to lt red
215	218	3	Siltstone, interbeded w/claystone, gray
218	230	12	Claystone, interbeded siltstone, maroon-gray
230	235	5	Siltstone, interbeded w/claystone, gray
235	250	15	Claystone, lt red to maroon

STATE ENGINEER OFFICE
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2011 DEC 13 P 1:22

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File Number: CP-998
Form: wr-20

Trn Number: 418655

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-25

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cain
Driller

12/29/08
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-998
Form: wr-20

Trn Number: 418655

WLB

18

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505-394-5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SE 1/4 NE 1/4 SW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in _____ County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 1.0998 s Longitude: 103 d 05 m 1.086 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County

G. Other: _____

H. Give State Engineer File Number if existing well: CP-997

I. On land owned by (required): Louisiana Energy Services

STATE ENGINEER OFFICE 2008 DEC 18 P 1:21

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/4/08 ; Completed: 12/4/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 40 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-997 — Trn Number: 418654
Form: wr-20 — page 1 of 4

Monitor 21.38.32.324

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	40	43	end cap	25	40

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
5	20	7-7/8	5		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
2021 JUL -8 P 1:21

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File Number: CP-997
Form: wr-20

Trn Number: 418654

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	11	11	Sandstone, slight cemented, burnt orange
11	29	18	Caliche, soft, gray to lt orange
29	37	8	Gravelly sand, abundant chert, orange sand
37	40	3	Claystone, maroon

STATE ENGINEER OFFICE
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12 11 01 PM '21

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File Number: CP-997 Trn Number: 418654

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-24

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cie
Driller

12/29/08
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad _____; FWL _____; FSL _____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-997
Form: wr-20

Trn Number: 418654

JLB

19

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505.394.5704
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 SE 1/4 SW 1/4 Section: 32 Township: 21S Range: 38E .M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 25 m 52.494 s Longitude: 103 d 05 m 7.607 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-956

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.676.8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/28/07 ; Completed: 4/3/07 ; Type tools: Air rotary
Size of hole: 7-7/8 in.; Total depth of well: 237 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

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2007 APR 27 P 2:
STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

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File Number: CP-956 — Trn Number: 376956
Form: wr-20 — page 1 of 4

Monitor

21.38.32.341

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	sch 40 PVC	2	0	217.1	217.1	N/A	N/A	
4	sch 40 PVC	2	217.1	237.1	20	PVC end cap	217.1	237.1

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie - cement / bentonite
		7 7/8	48	n/a	pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:05

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File Number: CP-956
Form: wr-20

Trn Number: 376956

Monitor

21.38.32.341

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	5	5	SAND, fine, damp, burnt orange
5	25	20	Caliche, soft, dry, gray to tan
25	40	15	SANDY Gravel, chert, dry, burnt orange
40	60	20	Clay firm, dry, maroon w/ gray mottling
60	85	25	claystone w/ siltstone, hard, dry maroon & gray
85	165	80	claystone, dry, maroon w/ gray mottling
165	190	25	Claystone w/ siltstone, hard, dry maroon
190	220	30	claystone, hard, dry maroon w/ gray mottling
220	235	15	claystone, w/ siltstone hard, dry light red
235	240	15	claystone, hard, dry, maroon w/ gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:05

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File Number: CP-956
Form: wr-20

Trn Number: 376956

21.38.32.341

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cie — Driller

04/24/07 — (mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:05

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

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File Number: CP-956
Form: wr-20

Trn Number: 376956

Monitor

21.38.32.341

WLB

20

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505.394.5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 SE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 5.327 s Longitude: 103 d 04 m 26.985 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-946

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.676.8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/16/07 ; Completed: 4/03/07 ; Type tools: Air Rotary ;
Size of hole: 7-7/8 in.; Total depth of well: 225.8 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: 220.49 ft.

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2007 APR 27 P 12:00
STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

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File Number: CP-946
Form: wr-20

page 1 of 4

Trn Number: 376944

Monitor

21.38.32.422

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
220.49	225.8	5.31	claystone	0-1

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	sch 40 PVC	2	0	205.8	205.8	N/A	N/A	
4	sch 40 PVC	2	205.8	225.8	20	PVC end cap	205.8	225.8

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	15	7-7/8	1	20	tremie - bentonite/cement
15	200	7-7/8	48	N/A	Poured - bentonite pellets

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:00

Do Not Write Below This Line

File Number: CP-946
Form: wr-20

Trn Number: 376944

Moniter

21.38.32.422

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	SAND, loose dry, burnt orange
2	20	18	CALICHE, Moderately hard, dry gray
20	35	15	Gravely SAND, fine grained light gray
35	70	35	CLAY, highly plastic, firm, dry, maroon
70	80	10	CLAYstone, dry light red cuttings
80	95	15	CLAYstone, dry maroon with gray and green mottling
95	100	5	claystone, interbedded siltstone, dry, maroon & gray
100	115	15	claystone, firm dry maroon & gray
115	125	10	claystone, interbedded siltstone maroon
125	175	50	claystone, dry maroon
175	185	10	claystone, interbedded w/ siltstone, dry maroon
185	195	10	siltstone, hard dry gray
195	200	5	siltstone, hard dry gray
200	215	15	claystone, hard dry maroon
215	220	5	siltstone, damp, gray
220	235	15	claystone, firm, dry, maroon

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 1:27

Do Not Write Below This Line

File Number: CP-946
Form: wr-20

Trn Number: 376944
00

Monitor

21.38.32.422

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cline
Driller

04/24/07
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:00

FOR STATE ENGINEER USE ONLY

Quad ____; **FWL** ____; **FSL** ____; **Use** _____; **Location No.** _____

Do Not Write Below This Line

File Number: CP-946
Form: wr-20

Trn Number: 376944

21.38.32.422

Monitor

WLB

21

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services Work Phone: 505.394.5204
Contact: Laurie Wethereil Home Phone: _____
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SE 1/4 SE 1/4 SE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 25 m 46.785 s Longitude: 103 d 4 m 31.815 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-945

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE Work Phone: 806.467.0607
Agent: Shane Currie Home Phone: 806.676.8220
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/14/07 ; Completed: 4/3/07 ; Type tools: Air Rotary
Size of hole: 7 7/8 in.; Total depth of well: 241.2 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 1:58

Do Not Write Below This Line

File Number: CP-945 Trn Number: 376887
Form: wr-20 page 1 of 4

Monitor 21.38.32.444

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
			DRY	

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	sch 40 PVC	2	0	221.2	221.2	N/A	N/A	
4	sch 40 PVC	2	221.2	241.2	20	PVC end cap	221.2	241.2

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie - bentonite/cement
75	215	7-7/8	48	N/A	poured - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 1:5

Do Not Write Below This Line

File Number: CP-945
Form: wr-20

Trn Number: 376887

Monitor

21.38.32.444

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	SAND, fine-grained, loose dry, brown to light orange
10	25	15	Caliche, moderately soft, dry, orange and white
25	60	35	Clay, stiff dry, gray and maroon, mottled
60	190	130	claystone, dry maroon
190	200	10	Siltstone, hard damp; light gray
200	260	60	claystone, firm dry maroon

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 4:51

Do Not Write Below This Line

File Number: CP-945
Form: wr-20

Trn Number: 376887

Monitor

21.38.32.444

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Craig — Driller — 04/24/2007 (mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 1:58

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File Number: CP-945 Trn Number: 376887

Form: wr-20 page 4 of 4

Moxitor

21.38.32.444

22

WLB

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231
Work Phone: 505.394.5204
Home Phone: _____

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 SW 1/4 SE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant. U.S.G.S. Quad Map _____

C. Latitude: 32 d 25 m 50.439 s Longitude: 103 d 04 m 52.541 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-957

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107
Work Phone: 806.467.0607
Home Phone: 806.676.8220

4. DRILLING RECORD

Drilling began: 3/20/07; Completed: 4/3/07; Type tools: Air rotary;
Size of hole: 7-7/8 in.; Total depth of well: 231.4 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

RECEIVED
2007 APR 12 P 2:03
STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

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File Number: CP-957
Form: wr-20
page 1 of 4
Trn Number: 376957

Monitor 21.38.32.431

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	211.4	211.4	N/A	N/A	
4	Sch 40 PVC	2	211.4	231.4	20	PVC end cap	211.4	231.4

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	15	7-7/8	1	20	tremie - cement/bentonite
15	205	7-7/8	48		poored - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 DEC 27 P 2:00

Do Not Write Below This Line

File Number: CP-957
Form: wr-20

Trn Number: 376957

Monitor

21.38.32.431

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	SAND fine, loose, dry orange to tan
10	35	25	CALICHE, hard dry, orange & gray
35	40	5	SANDY gravel, maroon
40	85	45	Clay, highly plastic firm dry maroon
85	95	10	Siltstone, hard dry gray
95	105	10	Claystone, light red
105	110	5	Siltstone w/ claystone gray & maroon
110	170	60	claystone, dry maroon w/ gray mottling
170	195	25	Siltstone w/ claystone hard dry gray & maroon
195	220	25	Claystone, dry, maroon
220	230	10	Siltstone w/ Claystone dry gray & maroon
230	240	10	Claystone w/ some silt maroon w/ gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 MAR 27 P 2:

Do Not Write Below This Line

File Number: CP-957 Trn Number: 376957

Form: wr-20 page 3 of 4

Monitor 21.38.32.431

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cole
Driller

4/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:0

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-957
Form: wr-20

Trn Number: 376957

21.38.32.431

Monitor

WLB

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Waste Control Specialists, LLC — Work Phone: 888-789-2783
Contact: Mike Burney — Home Phone: 505-394-4300
Address: 9998 W. Highway 176
City: Andrews — State: TX Zip: 79714

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 NW 1/4 Section: 33 Township: 21S Range: 38E N.M.P.M.
in _____ County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 29 s Longitude: 103 d 03 m 58 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County

G. Other: _____

H. Give State Engineer File Number if existing well: CP-979

I. On land owned by (required): Waste Control Specialists, LLC

STATE ENGINEER OFFICE
2008 MAR -6 A 11:33

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling, L.P. — Work Phone: 806-467-0607
Agent: Shane Currie — Home Phone: 806-676-8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 2/20/08 ; Completed: 2/20/08 ; Type tools: Air Rotary Rig
Size of hole: 5 6/8 in.; Total depth of well: 28 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-979 — Trn Number: 399475
Form: wr-20 — page 1 of 4

Monitor

21.38.33.122

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
			Dry	

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
2	Sch 40 PVC	2	0	28	28	PVC end cap	13	28

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	5-5/8	20		tremie - bentonite/cement
5	10	5-5/8	2		poured - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
2007 MAR -6 A 11:33

Do Not Write Below This Line

File Number: CP-979
Form: wr-20

Trn Number: _____

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in feet	Color and Type of Material Encountered
0	0.5	0.5	Surface Soil
0.5	15	14.5	Caliche
15	17	2	Gravelly sand
17	25	8	clayey silty sand
25	28.5	3.5	gray sandstone

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2009 MAR -6 A 11:33

Do Not Write Below This Line

File Number: CP-979 Trn Number: _____

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2008 MAR -6 A 11:33

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cline
Driller

03/03/2008
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-979
Form: wr-20

Trn Number: _____

WDB

24

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD and DRILLING LOG

1. PERMIT HOLDER(S)

Name: WASTE CONTROL SPECIALISTS
Address: P.O. BOX 1129
City: ANDREWS
State: TX Zip: 79714
Phone: (505) 394-4300
Contact: MICHAEL BURNEY
Contact Phone: (505) 394-4300

Name: _____
Address: _____
City: _____
State: _____ Zip: _____
Phone: _____

2. STATE ENGINEER REFERENCE NUMBERS:

File # CP 975 EXPLORE, Well # C.P. 975

3. LOCATION OF WELL (The Datum Is Assumed To Be WGS 84 Unless Otherwise Specified)

Latitude: 32 Deg 25 Min 45.8 Sec
Longitude: 103 Deg 04 Min 20.4 Sec
(Enter Lat/Long To At Least 1/10th Of A Second)
Datum If Not WGS 84: _____

Santa Rosa

4. DRILLING CONTRACTOR

License Number: WD1184
Name: WEST TEXAS WATER WELL SERVICE Work Phone: (432) 530-2696

Drill Rig Serial Number: 261602

List The Name Of Each Drill Rig Supervisor That Managed On-Site Operations During The Drilling Process:

RONNY KEITH

STATE ENGINEER OFFICE
2008 MAY 14 P 2:

5. DRILLING RECORD

Drilling Began: 1-21-08 ; Completed: 4-29-08 ; Drilling Method MUD ROTARY

Diameter Of Bore Hole: 7-7/8 (in);

Total Depth Of Well: 2,020 (ft);

Completed Well Is (Circle One): Shallow / (Artesian);

Depth To Water First Encountered: 1,092 (ft);

Depth To Water Upon Completion Of Well: N/A (ft).

Do Not Write Below This Line

TRN Number: 396028
Form: wr-20 May 07

File Number: CP-975

21.38.33.333

Explore

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD and DRILLING LOG

6. RECORD OF CASING

Diameter (inches)	Pounds (per ft.)	Threads (per inch)	Depth (feet)	Length Top to Bottom (feet)	Type of Shoe	Perforations (from to)
13-3/8	48	8	2' AGL	40'		
8-5/8	24	8	3' AGL	1,440'	FLOAT GUIDE	

7. RECORD OF MUDDING AND CEMENTING

Depth (feet)	Hole (diameter)	Mud Used (# of sacks)	Cement (cubic feet)	Method of Placement
0 - 40	17-1/2		35	TRIMMIE
0 - 1,440	12-1/4		574	POSITIVE
1,380-2,020	7-7/8		275	TRIMMIE

STATE ENGINEER OFFICE
2013 MAY 14 P 2:03

Do Not Write Below This Line

Trn Number: _____ File Number: _____
Form: wr-20 May 07

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

8. LOG OF HOLE. For Each Water Bearing Strata, Estimate The Yield Of The Formation In Gallons Per Minute.

Depth (feet) From	Depth (feet) To	Thickness (Feet)	For Water Bearing Strata Enter The Estimated Yield in GPM	Color and Type of Material Encountered
			SEE ATTACHED GEOLOGIC LOG	

STATE ENGINEER OFFICE
2008 NOV 10 P 2 04

Enter Method Used To Estimate Yield: N/A

Do Not Write Below This Line

Trn Number: _____ File Number: _____

CP-975 Geologic log

0-6 ft 6 pad fill and fine brown sand

6-10 ft 4 white sandy limestone (Mescalero caliche) Ogalala

10-29 ft 19 sand, light brown, and brown calcareous sandstone (Gatuña Formation) ? Ogalala

29-576 ft 547 interbedded sandstone, siltstone, and claystone; reddish-brown to gray; bioturbated (Cooper Canyon Formation)

576-708 ft 132 sandstone and siltstone, gray to reddish brown (Trujillo Formation)

708-1092 ft 384 interbedded very fine sandstone and siltstone, gray to dark reddish brown (Tecovas Formation)

1092-1384 ft 292 gray, fine sandstone with interbedded reddish brown and weak red siltstone and claystone (Santa Rosa Formation)

1400

1384-1566 ft 182 reddish brown, very fine sandstone and siltstone, with some fibrous gypsum in lower part (Dewey Lake Formation)

1566-1602 ft 34 gray anhydrite beds, with intermediate reddish-brown and gray siltstone (Forty-niner Member of the Rustler Formation)

1602-1609 ft 7 gray anhydrite and wavy thin laminae of dolomite (Magenta Dolomite Member of the Rustler Formation)

1609-1736 ft 127 gray anhydrite beds, with intermediate halite including anhydrite and polyhalite (Tamarisk Member of the Rustler Formation)

1736-1807 ft 71 halite with thin two thin anhydrite beds and basal reddish-brown, very fine sandstone (Los Medaños Member of the Rustler Formation)

1807-2020 ft 213 halite with anhydrite/polyhalitic marker beds (MB103 and uppermost MB109) (Salado Formation)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2000 MAY 11 P 2:06

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. ADDITIONAL STATEMENTS OR EXPLANATIONS:

2008 MAY 14 P 2 06

STATE ENGINEER OFFICE

The undersigned hereby certifies that, to the best of his or her knowledge and belief, the foregoing is a true and correct record of the above described bore hole. The undersigned further certifies that he or she will file this well record with the Office Of The State Engineer and permit holder within 20 days after completion of the well drilling.

Tommy Keith
Driller

05-12-08
(mm/dd/year)

Do Not Write Below This Line

Trn Number: _____ File Number: _____

File Number: _____ (For OSE Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT
TO DRILL AN EXPLORATORY WELL

2-24674
B20

1. APPLICANT:

Name: Waste Control Specialists LLC Work Phone: 888-789-2783
Contact: Mike Burney Home Phone: 505-394-4300
Address: 9998 W. Highway 176
City: Andrews State: TX Zip: 79714

2. LOCATION OF WELL (A, B, C, or D required, E or F if known):

A. NE 1/4 NW 1/4 NW 1/4 Section: 33 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 30.145 s Longitude: 103 d 04 m 10.962 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number of existing well: _____

I. On land owned by (required): Waste Control Specialists LLC

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 DEC 31 A 9:58

3. WELL INFORMATION:

Approximate depth 75 feet; Outside diameter of casing 2 inches.
Name of well driller and driller license number Jose Salas/#1575

4. ADDITIONAL STATEMENT OR EXPLANATIONS:

This piezometer (TP- 63) is being installed to determine the presence or absence of shallow groundwater in the Ogallala/Antlers/Gatuna formations on top of the Triassic Dockum group "red bed clays" in support of licensing activities by Waste Control Specialists LLC. No pumping or use of groundwater is intended; the piezometer is being installed solely to monitor groundwater levels,if any.

RENAMED " PZ-41"

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2008 FEB 29 P 1:31

Do Not Write Below This Line

File Number: CP-972 Trn Number: 395941
Form: wr-07

File Number: _____
(For OS. Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT
TO DRILL AN EXPLORATORY WELL

ACKNOWLEDGEMENT

(I, We) Mike Burney affirm that the
(Please Print)
foregoing statements are true to the best of my knowledge and belief.

Applicant Signature _____ Applicant Signature _____

ACTION OF STATE ENGINEER

This application is approved~~XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX~~ provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare, and further subject to the following conditions: _____

see attached conditions of approval

Witness my hand and seal this 2nd day of January, 20 08

John R. D'Antonio, Jr., P.E., State Engineer

By: Kenneth M. Fresquez
Kenneth M. Fresquez, Acting District II Supervisor

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2008 FEB 29 A 11:31

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 DEC 31 A 9:58

Do Not Write Below This Line

File Number: CP-972 Trn Number: 395941
Form: wr-07

WL 15
WRB

26

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Waste Control Specialists — Work Phone: 888-789-2783
Contact: Mike Burney — Home Phone: 505-394-4300
Address: 9998 W. Highway 176
City: Andrews — State: TX Zip: 79714

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NW 1/4 NW 1/4 Section: 33 Township: 21S Range: 38E N.M.P.M.
in _____ County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 29 s Longitude: 103 d 04 m 13 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-972

I. On land owned by (required): Waste Control Specialists

STATE ENGINEER OFFICE
2008 FEB 29 A 11:31
RECEIVED

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling, L.P. — Work Phone: 806-467-0607
Agent: Shane Currie — Home Phone: 806-676-8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 1/21/08 ; Completed: 2/9/08 ; Type tools: Air Rotary Rig
Size of hole: 5-5/8 in.; Total depth of well: 99 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-972 — Trn Number: 395941
Form: wr-20 — page 1 of 4

Moxitor

21.38.33.112

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
			Dry	

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
2	Sch 40 PVC	2	0	37	37	N/A	N/A	
2	Sch 40 PVC	2	37	49	12	PVC end cap	37	49

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	5 - 5/8	20		tremie - bentonite/cement
5	35	5 - 5/8	6		poured - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

STATE ENGINEER OFFICE
2009 FEB 29 A 11:31

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

Do Not Write Below This Line

File Number: CP-972
Form: wr-20

Trn Number: 375941

21, 35, 33, 112

Moxitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	Silty Sand, tan
2	7	5	Caliche, Hard, tan
7	30	23	Caliche, Moderate hard, tan
30	45	15	Silty Sand, tan
45	49	5	Clay, reddish

STATE ENGINEER OFFICE
SANTA FE, NEW MEXICO
2000 FEB 29 A 11:31

Do Not Write Below This Line

File Number: CP-972
Form: wr-20

Trn Number: 395941

21, 38, 33, 112

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

STATE ENGINEER OFFICE
RECEIVED
2008 FEB 29 A 11 31

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cie
Driller

02/26/2008
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad _____; FWL _____; FSL _____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-972
Form: wr-20

page 4 of 4

Trn Number: 395941

21.38.33.112

Monitor

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL

John R. D'Antonio, Jr., P.E.
State Engineer

1900 WEST SECOND STREET
ROSWELL, NM 88201
Phone: (575) 622-6521
Fax: (575) 623-8559

January 3, 2008

Waste Control Specialists LLC
% Mike Burney
9998 W. Hwy 176
Andrews, TX 79714

RE: CP-971; CP-972; CP-973: CP-974

Greetings:

Enclosed is your copy of the Exploratory / Monitoring Permits, which have been approved subject to the conditions set forth on the approval page thereof.

In accordance with Condition C, a well record shall be filed in this office twenty days after completion of drilling. The well record is proof of completion of well. IT IS YOUR RESPONSIBILITY TO ASSURE THAT THE WELL LOGS BE FILED WITHIN 20 DAYS OF DRILLING OF THE WELLS.

These permits will expire on or before 01/31/09 unless the wells have been drilled and the well logs filed in this office.

Sincerely,

for Andy Morley
(575) 622-6521, ext 113

Enclosure

cc: Santa Fe Office

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2008 FEB 29 A 11:31

NEW MEXICO STATE ENGINEER
PERMIT TO EXPLORE / MONITOR

SPECIFIC CONDITIONS OF APPROVAL

4 No water shall be appropriated and beneficially used under this permit.

B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-12 New Mexico Statutes Annotated.

C Driller's well record must be filed with the State Engineer within 20 days after the well is drilled or driven. Well record forms will be provided by the State Engineer upon request.

C2 No water shall be diverted from this well except for testing purposes which shall not exceed ten (10) cumulative days, and well shall be plugged or capped on or before 01/31/09, unless a permit to use water from this well is acquired from the Office of the State Engineer.

The well shall be constructed, maintained and operated that each water shall be confined to the aquifer in which it is encountered.

LOG The Point of Diversion CP-972 Monitor Well must be completed and the Well Log filed on or before 01/31/09.

ACTION OF STATE ENGINEER

Notice of Intention Rcvd:		Date Rcvd. Corrected:	
Formal Application Rcvd:	12/31/07	Pub. Of Notice Ordered:	
Date Returned – Correction:		Affidavit of Pub. Filed:	

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 2nd day of January, 2008.

John R. D'Antonio, Jr., P.E., State Engineer

By: Kenneth M. Fresquez
Kenneth M. Fresquez, Acting District II Supervisor

STATE ENGINEER OFFICE
2008 FEB 29 A 11:31

File Nbr: CP-972 Monitor Well

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-101

FILE # 95042.10 SHEET 1 OF 1

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

WATER LEVEL DATA (NE = Not Encountered)
NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/22/97
Completed	11/22/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

GROUND ELEVATION: 3408.62 (Ft., MSL) | Northing: 9800.52 Easting: 9898.97 | Completion Depth: 50.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
		Dark reddish-brown, fine SAND, some roots, no organics	2.0	No	Dry	7.5YR 5/6		
5.0		Reddish-brown, sandy LOAM to poorly cemented loamy SAND, blocky, friable	6.0	No	Dry	7.5YR 6/6		5.0
10.0		Pinkish-white, sandy CALICHE, moderately weak structure, friable nodules of caliche	12.0	Moderate	Dry	2.5YR 8/2		10.0
15.0		Reddish-brown, loamy fine SAND with moist friable sandy nodules, very few calcareous nodules	21.0					15.0
20.0								20.0
25.0		Light red to pink, calcareous pebbly SAND, pebbles are dominantly quartzite, some rose color banded gniess, little chert, angular. Pebbles increase with depth		Moderate	Dry	2.5YR 7/6		25.0
30.0								30.0
35.0		Pink, sandy, pebbly fine GRAVEL, dominantly quartzite, well graded, angular	34.0 36.0	Moderate	Dry	5YR 7/4		35.0
40.0		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky cuttings, some chert pebbles and calcareous clasts, poorly indurated		Slight	Dry	2.5YR 7/3		40.0
45.0				Slight	Barely Damp	2.5YR 4/6		45.0
50.0		BORING TERMINATED AT 50.0'	50.0					50.0

NOTES:
1. Dry monitoring well installed in borehole.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-102

FILE # 95042.10 SHEET 1 OF 1

WATER LEVEL DATA (NE = Not Encountered)

NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/20/97
Completed	11/20/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,392.63 (Ft., MSL) | Northing: 8467.05 Easting: 7193.22 | Completion Depth: 50.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
5.0		Brown, fine to medium SAND with caliche grains, granular structure, some roots, no organics		No	Dry	7.5YR 4/6		5.0
				Minor	Dry	7.5YR 5/6		
			7.0					
10.0		Brownish-white calcareous fine SAND, some calcareous cement sand nodules, not as floury as other caliche, gritty, abundant coarse sand and chert when wetted		Yes	Dry	7.5YR 7/3		10.0
15.0			16.0					15.0
20.0		Pinkish-white sandy CALICHE, many pebbles of hard angular cherty fine sandstone (not friable)		Yes	Dry	7.5YR 7/3		20.0
			21.0					
25.0		Pink, fine to medium SAND, calcareous very small nodules of caliche and cemented sandstone		Yes	Dry	2.5YR 7/3		25.0
			26.0					
30.0		White sandy CALICHE with calcareous sand matrix and abundant chert clasts. Clasts are angular, coarse gravel size, brown, white and black, some quartzite		Yes	Dry	2.5YR 8/2		30.0
			33.0					
35.0		Rose and white PEBBLES, with very little sand, dominantly hard, very angular quartzite. White pebbles are hard limestone with quartzite grains	36.0	Yes	Barely Damp	2.5YR 6/4		35.0
40.0		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaceous clasts infrequently, poorly indurated		Yes	Barely Damp	2.5YR 4/4		40.0
45.0								45.0
50.0		BORING TERMINATED AT 50.0'	50.0	Yes	Barely Damp	2.5YR 4/6		50.0

NOTES: 1. Dry monitoring well installed in borehole.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-103

FILE # 95042.10 SHEET 1 OF 1

WATER LEVEL DATA (NE = Not Encountered)
NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/21/97
Completed	11/21/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,402.54 (Ft., MSL) | Northing: 9711.58 Easting: 8682.07 | Completion Depth: 55.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
0		Reddish-brown, sandy LOAM to poorly cemented loamy SAND, blocky, friable		No	Dry	7.5YR 4/6		0
5.0				No	Barely Damp	7.5YR 5/6		5.0
			6.0					
		Pinkish-white, sandy CALICHE, moderately weak structure, friable nodules of caliche		Yes	Dry	7.5YR 8/4		
10.0								10.0
			14.0					
15.0		Reddish-brown, loamy fine SAND with moist friable sandy nodules, very few calcareous nodules		Yes	Dry	7.5YR 7/3		15.0
20.0								20.0
25.0								25.0
			26.0					
30.0		Light red to pink, calcareous pebbly SAND, pebbles are dominantly quartzite, some rose color banded gniess, little chert, angular. Pebbles increase with depth		Yes	Dry	7.5YR 8/2		30.0
			33.0					
35.0		Rose and white PEBBLES, with very little sand, dominantly hard, very angular quartzite. White pebbles are hard limestone with quartzite grains	36.0	Yes	Dry	2.5YR 7/3		35.0
		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaceous clasts infrequently, poorly indurated		Yes	Barely Damp	2.5YR 4/4		
40.0								40.0
45.0				Slight	Barely Damp	2.5YR 4/4		45.0
50.0								50.0
55.0		BORING TERMINATED AT 55.0'	55.0	No	Barely Damp	2.5YR 4/6		55.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-104

FILE # 95042.10 SHEET 1 OF 1

WATER LEVEL DATA (NE = Not Encountered)

NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/21/97
Completed	11/21/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,404.38 (Ft., MSL) | Northing: 8518.93 Easting: 9678.16 | Completion Depth: 60.0

Depth (FT., bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
0.0		Dark reddish-brown, fine SAND, some roots, no organics	3.0	Slight	Barely Damp	7.5YR 5/4		0.0
5.0		Reddish-brown, sandy LOAM to poorly cemented loamy SAND, blocky, friable	6.0	Slight	Dry	7.5YR 6/4		5.0
10.0		Pinkish-white, sandy CALICHE, moderately weak structure, friable nodules of caliche		Moderate	Dry	2.5YR 8/4		10.0
15.0								15.0
20.0			21.0					20.0
25.0		Light red to pink, calcareous pebbly SAND, pebble are dominantly quartzite, some rose color banded gniess, little chert, angular. Pebbles increase with depth		Moderate	Dry	2.5YR 8/2		25.0
30.0								30.0
35.0								35.0
40.0			40.0					40.0
45.0		Very light brown medium GRAVEL with calcareous sand matrix, gravel is brown when wet, very cherty, angular, white and brown chert, some quartzite	44.0	Moderate	Dry	2.5YR 8/2		45.0
		White to light brown pebbly coarse GRAVEL with some fine calcareous sand matrix. Pebbles are less angular, mostly chert but also gniess and quartzite	46.0					
50.0		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, poorly indurated, cuttings are blocky, some chert pebbles and white calcareous clasts		Moderate	Dry	2.5YR 7/4		50.0
				Moderate	Dry	2.5YR 4/6		
55.0								55.0
60.0				Slight	Barely Damp	2.5YR 5/6	Pitcher Bell Sample obtained at 60.0'	60.0
		BORING TERMINATED AT 60.0'	60.0	Slight	Barely Damp	2.5YR 4/4		

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-105

FILE # 95042.10 SHEET 1 OF 1

WATER LEVEL DATA (NE = Not Encountered)
NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started 11/19/97
Completed 11/19/97
Driller Allan Eades
Helper Freddy
Drilling Method Air Rotary
Sampling Method Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,388.07 (Ft., MSL) Northing: 6609.23 Easting: 7335.60 Completion Depth: 50.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
0		Grayish-brown loamy fine SAND, granular, no organics, few calcareous nodules increasing with depth, small roots, no iron staining, friable cemented sandstone nodules (Windblown Sands)		Yes	Dry	7.5YR 8/2		0
5.0								5.0
10.0								10.0
15.0			14.0					15.0
		Pink fine to medium calcareous SAND, with few calcareous nodules that are friable, no other large clasts		Yes	Dry	7.5YR 7/4		
20.0								20.0
25.0			28.0					25.0
30.0		Pink calcareous fine SAND to very fractured sandy CALICHE, few to no chert or other clasts. Caliche is very hard, not friable (CAPROCK?)						30.0
35.0		White sandy CALICHE with calcareous sand matrix and abundant chert clasts. Clasts are angular, coarse gravel size, brown, white and black, some quartzite	35.0					35.0
		Rose and white PEBBLES, with very little sand, dominantly hard very angular quartzite. White pebbles are hard limestone with quartzite grains.	38.0	Yes	Dry	7.5YR 7/2		40.0
40.0			44.0					
45.0		Reddish-brown sandy LOAM with pebbles of calcareous cemented sandstone (friable).	47.0	Yes	Dry	2.5YR 6/4		45.0
		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky cuttings, some calcareous stains, poor indurated/friable.	50.0	Yes	Dry	2.5YR 6/4		50.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-106

FILE # 95042.10 SHEET 1 OF 1

WATER LEVEL DATA (NE = Not Encountered)

NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/21/97
Completed	11/21/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,401.06 (Ft., MSL) | Northing: 5968.89 Easting: 9285.60 | Completion Depth: 66.5

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
5.0		Grayish-brown loamy fine SAND, granular, no organics, few calcareous nodules increasing with depth, small roots, no iron staining, friable cemented sandstone nodules (Windblown Sands)		No	Dry	7.5YR 5/6		5.0
10.0			11.0	Moderate	Dry	2.5YR 8/3		10.0
15.0		Pink fine to medium calcareous SAND, with few calcareous nodules that are friable, no other large clasts	16.0					15.0
20.0		Pink calcareous fine SAND to very fractured sandy CALICHE, few to no chert or other clasts. Caliche is very hard, not friable (CAPROCK?)		Moderate	Dry	2.5YR 7/6		20.0
25.0								25.0
30.0			33.0					30.0
35.0		White sandy CALICHE with calcareous sand matrix and abundant chert clasts. Clasts are angular, coarse gravel size, brown, white and black, some quartzite		Moderate	Dry	2.5YR 8/3		35.0
40.0								40.0
45.0								45.0
50.0								50.0
55.0								55.0
60.0								60.0
65.0		Rose and white PEBBLES, with very little sand, dominantly hard very angular quartzite. White pebbles are hard limestone with quartzite grains.	63.0	Moderate	Dry	2.5YR 7/3		65.0
		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky cuttings, some calcareous stains, poor indurated/friable.	66.0 66.5	Slight	Dry	2.5YR 5/6		
		BORING TERMINATED AT 66.0'						

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-107

FILE # 95042.10 SHEET 1 OF 2

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

WATER LEVEL DATA (NE = Not Encountered)
NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started 11/22/97
Completed 11/22/97
Driller Allan Eades
Helper Freddy
Drilling Method Air Rotary
Sampling Method Drill Cuttings

GROUND ELEVATION: 3,405.43 (Ft., MSL) Northing: 4016.88 Easting: 9228.40 Completion Depth: 92.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
0.0		Reddish-brown, loamy fine SAND to sandy LOAM, blocky, friable, very few organics, grading to light brown loamy SAND		No	Dry	7.5YR 6/6		0.0
5.0			6.0					5.0
		Reddish-brown, sandy LOAM to poorly cemented loamy SAND, blocky, friable	8.0	No	Dry	7.5YR 5/6		
10.0		Pink, sandy CALICHE, moderately weak with friable nodules of caliche and poorly cemented sand, fewer nodules with depth		Moderate	Dry	2.5YR 8/3		10.0
			13.0					
15.0		Pink, fine to medium SAND, calcareous very small nodules of caliche and cemented sandstone		Moderate	Dry	2.5YR 5/6		15.0
20.0								20.0
25.0								25.0
30.0			31.0					30.0
35.0		Light red to pink, calcareous pebbly SAND, pebbles are dominantly quartzite, some roase color banded gniess, little chert, angular. Pebbles increase with depth		Moderate	Dry	2.5YR 6/4		35.0
40.0								40.0
45.0								45.0
50.0								50.0
55.0								55.0
60.0								60.0
65.0								65.0
70.0								70.0
75.0		Pink, sandy CALICHE with caprock chips (Continued)	75.0	Moderate	Dry	2.5YR 8/3		75.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-107

FILE # 95042.10 SHEET 2 OF 2

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
		(Continued from page 1) Pink, sandy CALICHE with caprock chips	83.0					
85.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, little to no mica		Moderate	Dry	2.5YR 5/6		85.0
				Slight	Barely Damp	2.5YR 7/3		
90.0				Slight	Barely Damp	2.5YR 5/3		90.0
		BORING TERMINATED AT 92.0'	92.0	No	Barely Damp	2.5YR 5/2		

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▽ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-108

FILE # 95042.10 SHEET 1 OF 3

WATER LEVEL DATA (NE = Not Encountered)

NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/20/97
Completed	11/20/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,396.15 (Ft., MSL) | Northing: 9696.33 Easting: 7439.48 | Completion Depth: 215.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
		Brown, fine to medium SAND with caliche grains, granular structure, some roots, no organics	4.0	Yes	Dry	7.5YR 6/3		
5.0		Brownish-white calcareous fine SAND, some calcareous cement sand nodules, not as floury as other caliche, gritty, abundant coarse sand and chert when wetted						5.0
10.0				Strong	Dry	7.5YR 8/2		10.0
15.0			17.0					15.0
20.0		Pinkish-white sandy CALICHE, many pebbles of hard angular cherty fine sandstone (not friable)		Strong	Dry	2.5YR 8/2		20.0
25.0		Pink, very fine SAND, calcareous with occasional pebbles of granite, chert	24.0	Mild	Dry	2.5YR 7/4		25.0
30.0								30.0
35.0		Dark brown sandy CLAYSTONE, weathered, blocky, very few caliche clasts, dry, friable/poorly indurated	33.0	Mild	Dry	2.5YR 6/2		35.0
40.0				Mild	Dry	2.5YR 5/3		40.0
45.0		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaceous clasts infrequently, poorly indurated	46.0	Mild	Dry	2.5YR 5/2		45.0
50.0								50.0
55.0				Mild	Dry	2.5YR 5/3		55.0
60.0				Mild	Dry	2.5YR 7/3	Pitcher Bell Sample obtained at 60.0'	60.0
65.0				Mild	Dry	2.5YR 4/3		65.0
70.0								70.0
75.0		(Continued)						75.0

NOTES:
1. Backfilled with cuttings to 120', grouted to surface with 95 with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-108

FILE # 95042.10 SHEET 2 OF 3

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
		(Continued from page 1)						
85.0		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaccous clasts infrequently, poorly indurated		Mild	Barely Damp	2.5YR 5/3		85.0
90.0								90.0
95.0								95.0
100.0				Mild	Barely Damp	2.5YR 5/3	Pitcher Bell Sample obtained at 100.0'	100.0
105.0								105.0
110.0								110.0
115.0								115.0
120.0								120.0
125.0				Mild	Barely Damp	2.5YR 4/4		125.0
130.0								130.0
135.0				No	Barely Damp	2.5YR 5/6		135.0
140.0								140.0
145.0				No	Barely Damp	2.5YR		145.0
150.0							Pitcher Bell Sample obtained at 150.0'	150.0
155.0								155.0
160.0								160.0
165.0								165.0
170.0		(Continued)		No	Barely Damp	2.5YR 4/3		170.0

NOTES:
1. Backfilled with cuttings to 120', grouted to surf-ce with 95 with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-108

FILE # 95042.10 SHEET 3 OF 3

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
175.0		(Continued from page 2)						175.0
180.0		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaceous clasts infrequently, poorly indurated						180.0
185.0				Mild	Barely Damp	2.5YR 7/2		185.0
190.0			191.0					190.0
195.0		Light reddish-gray SILTSTONE, with green laminae, slick, less sandy, poorly indurated, dry		Mild	Barely Damp	2.5YR 7/1		195.0
200.0			201.0					200.0
205.0		Reddish-brown CLAYSTONE, dry, poorly indurated, no bedding or laminae		Mild	Barely Damp	2.5YR 5/2		205.0
210.0							Pitcher Bell Sample obtained at 215.0'	210.0
215.0		BORING TERMINATED AT 215.0'	215.0	No	Barely Damp	2.5YR 4/3		215.0

NOTES:
1. Backfilled with cuttings to 120', grouted to surface with 95 with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-109

FILE # 95042.10 SHEET 1 OF 2

WATER LEVEL DATA (NE = Not Encountered)

NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/21/97
Completed	11/21/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,404.76 (Ft., MSL) | Northing: 7717.16 Easting: 9920.72 | Completion Depth: 120.0

Depth (FT., bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
5.0		Grayish-brown loamy fine SAND, granular, no organics, few calcareous nodules increasing with depth, small roots, no iron staining, friable cemented sandstone nodules (windblown sands)	8.0					5.0
10.0		Pinkish-white, sandy CALICHE, moderately weak structure, friable nodules of caliche						10.0
15.0								15.0
20.0			21.0					20.0
25.0		Light red to pink, calcareous pebbly SAND, pebbles are dominantly quartzite, some rose color banded gniess, little chert, angular. Pebbles increase with depth						25.0
30.0								30.0
35.0			36.0					35.0
40.0		White, sandy CALICHE with calcareous sand matrix and abundant chert clasts. Clasts are angular, coarse gravel size, brown, white and black, some quartzite						40.0
45.0								45.0
50.0			51.0					50.0
55.0		Rose and white PEBBLES, with very little sand, dominantly hard, very angular quartzite. White pebbles are hard limestone with quartzite grains	56.0					55.0
60.0		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky cuttings, some chert pebbles and calcareous clasts, poorly indurated						60.0
65.0								65.0
70.0								70.0
75.0			76.0					75.0
		Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds					Pitcher Bell Sample	

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-109

FILE # 95042.10 SHEET 2 OF 2

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
		(Continued)					obtained at 80'	
		(Continued from page 1)						
85.0		Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds						85.0
90.0								90.0
95.0								95.0
100.0								100.0
105.0								105.0
110.0								110.0
115.0								115.0
120.0		BORING TERMINATED AT 120'	120.0				Pitcher Bell Sample obtained at 120'	120.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 1 OF 7

WATER LEVEL DATA (NE = Not Encountered)
NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/17/97
Completed	11/19/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,397.38 (Ft., MSL) Northing: 7924.34 Easting: 8019.53 Completion Depth: 600.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
0.0		Yellowish-red to reddish-brown, loamy fine SAND, weak granular structure,	2.0	No	Dry	5YR 5/8		0.0
5.0		Reddish-brown, loamy fine SAND to sandy LOAM, blocky, friable, very few organics, grading to light brown loamy SAND		No	Dry	5YR 6/8		5.0
10.0				No	Dry	5YR 6/8		10.0
			11.0					
15.0		Pink, sandy CALICHE, moderately weak with friable nodules of caliche and poorly cemented sand, fewer nodules with depth		Strong	Dry	5YR 8/4		15.0
20.0				Mild	Dry	5YR 8/3		20.0
			24.0					
25.0		Pink, fine to medium SAND, calcareous very small nodules of caliche and cemented sandstone						25.0
30.0								30.0
35.0								35.0
				Mild	Dry	5YR 8/2		
40.0			39.0					40.0
		Reddish-brown, pebbly, coarse GRAVEL with loamy sand matrix. Pebbles are predominantly chert, white, red, black and rose quartzite, all angular to subangular	43.0	Mild	Dry	2.5YR 6/4		
45.0		Light reddish-brown, CLAYSTONE with trace sand and calcareous cemented sandtone pebbles, cuttings are blocky, some chert						45.0
			49.0	Mild	Dry	2.5YR 6/3		
50.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, little to no mica		Mild	Dry	2.5YR 4/6		50.0
55.0								55.0
				Mild	Dry	2.5YR 6/3		
60.0								60.0
				Mild	Dry	2.5YR 4/6		
65.0								65.0
70.0								70.0
75.0								75.0
		(Continued)		Mild	Dry	2.5YR 6/4		

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 2 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
85.0		(Continued from page 1) Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, little to no mica	84.0					85.0
90.0		Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds		Minor	Barely Damp	2.5YR 4/4	Pitcher Bell Sample obtained at 90'	90.0
95.0								95.0
100.0								100.0
105.0								105.0
110.0			110.0					110.0
115.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, little to no mica		Slight	Barely Damp	2.5YR 4/4		115.0
120.0								120.0
125.0								125.0
130.0				Yes	Barely Damp	2.5YR 3/4		130.0
135.0								135.0
140.0							Pitcher Bell Sample obtained at 140'	140.0
145.0				Yes	Barely Damp	2.5YR 4/4		145.0
150.0								150.0
155.0				No	Barely Damp	2.5YR 4/6		155.0
160.0								160.0
165.0								165.0
170.0		(Continued)						170.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 3 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
175.0		(Continued from page 2)						175.0
		Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, little to no mica						
180.0								180.0
185.0								185.0
190.0			190.0					190.0
		Light reddish-brown MUDSTONE, slick, siltier, no bedding		No	Barely Damp	2.5YR 6/3		
195.0								195.0
200.0								200.0
205.0								205.0
210.0			211.0					210.0
		Reddish-brown MUDSTONE/CLAYSTONE, micaceous, no bedding or laminne						
215.0								215.0
				No	Barely Damp	2.5YR 5/4		
220.0								220.0
225.0				No	Dry	2.5YR 4/6		225.0
230.0							Pitcher Bell Sample obtained at 230'	230.0
235.0								235.0
240.0								240.0
				No	Dry	2.5YR 5/4		
245.0								245.0
250.0				No	Dry	2.5YR 4/6		250.0
255.0								255.0
260.0				No	Dry	2.5YR 6/3		260.0
		(Continued)						

NOTES: 1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Endes Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 4 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
265.0		(Continued from page 3)						265.0
270.0				No	Dry	2.5YR 5/6		270.0
275.0		Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no bedding or laminae						275.0
280.0								280.0
285.0								285.0
290.0				Yes	Dry	2.5YR 5/4		290.0
295.0								295.0
300.0								300.0
305.0								305.0
310.0								310.0
315.0								315.0
320.0								320.0
325.0				No	Dry	2.5YR 4/4		325.0
330.0								330.0
335.0								335.0
340.0								340.0
345.0				Yes	Dry	2.5YR 5/4		345.0
350.0							Pitcher Bell Sample obtained at 350'	350.0
355.0		(Continued)						355.0

NOTES: 1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 5 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
360.0		(Continued from page 4)						360.0
365.0		Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no bedding or laminae		Minor	Dry	2.5YR 4/4		365.0
370.0								370.0
375.0				Minor	Dry	2.5YR 4/6		375.0
380.0								380.0
385.0								385.0
390.0								390.0
395.0								395.0
400.0								400.0
405.0								405.0
410.0								410.0
415.0								415.0
420.0								420.0
425.0								425.0
430.0								430.0
435.0				Minor	Dry	2.5YR 4/8		435.0
440.0								440.0
445.0		(Continued)						445.0

NOTES: 1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 6 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
450.0		(Continued from page 5)						450.0
455.0		Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no bedding or laminae						455.0
460.0								460.0
465.0								465.0
470.0								470.0
475.0								475.0
480.0								480.0
485.0								485.0
490.0								490.0
495.0								495.0
500.0								500.0
505.0								505.0
510.0								510.0
515.0								515.0
520.0				Minor	Dry	2.5YR 5/4		520.0
525.0								525.0
530.0								530.0
535.0		(Continued)						535.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 7 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
545.0		(Continued from page 6)		Minor	Dry	7.5YR 5/4		545.0
		Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no bedding or laminae						
550.0								550.0
555.0				Minor	Dry	2.5YR 4/4		555.0
560.0								560.0
565.0								565.0
				Yes	Dry	2.5YR 6/3		
570.0				Yes	Dry	2.5YR 6/2		570.0
				Yes	Dry	2.5YR 4/4		
575.0			576.0					575.0
580.0		Light reddish-gray, clayey SILTSTONE, gritty, sandy, no bedding		Yes	Dry	2.5YR 6/1		580.0
585.0								585.0
590.0		Reddish-gray, silty SANDSTONE	588.0	Yes	Dry	2.5YR 6/1		590.0
				Yes	Dry	2.5YR 6/1		
595.0		Light reddish-gray, silty SANDSTONE	595.0					595.0
				Yes	Dry	2.5YR 7/1		
600.0		BORING TERMINATED AT 600 FEET	600.0					600.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 1 OF 7

WATER LEVEL DATA
NE = Not Encountered
598.0 FT. W.D.
____ FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/13/97
Completed	11/13/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,404.35 (Ft., MSL) Northing: 9140.96 Easting: 9138.76 Completion Depth: 598.0

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
5.0		Yellowish-red to reddish-brown loamy fine SAND, weak granular structure, friable, very few organics, some roots, increasing caliche nodules with depth and slightly loamier with depth		No	Dry	5YR 5/6		5.0
			8.0					
10.0		Pale red to pinkish-white fine sandy CALICHE, moderately weak, friable nodules of caliche		Strong	Dry	2.5YR 7/2		10.0
			12.0	Mild	Dry	2.5YR 6/6		
15.0		Reddish-brown loamy fine SAND with moist sandy loam nodules, nodules are friable and slightly sticky, very little calcareous concretions						15.0
20.0			20.0	Mild	Dry	2.5YR 6/6		20.0
		Light brown loamy fine SAND, pisolitic, slightly indurated with calcareous concretions and sandy loam nodules, coated with carbonates, some organic matter, one chert pebble						
25.0			25.0					25.0
		Pink to white CALICHE, probably massive, cuttings are very fine, flour-like, few sandy nodules, friable when wet		Strong	Dry	2.5YR 8/1		
30.0								30.0
35.0			35.0	Mild	Dry	2.5YR 8/1		35.0
		Very light brown medium GRAVEL with calcareous sand matrix, gravel is brown when wet, very cherty, angular, white and brown chert, some quartzite	37.0	Mild	Dry	2.5YR 8/3		
40.0		White to light brown pebbly coarse GRAVEL with some fine calcareous sand matrix. Pebbles are less angular, mostly chert but also gniess and quartzite	40.0	Mild	Dry	2.5YR 5/3		40.0
		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, poorly indurated, cuttings are blocky, some chert pebbles and white calcareous clasts	44.0	Mild	Dry	2.5YR 4/4		
45.0								45.0
50.0		Reddish-brown sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated		No	Barely Damp	10R 4/6		50.0
55.0								55.0
60.0								60.0
				Mild	Barely Damp	2.5YR 5/3		
65.0								65.0
70.0								70.0
				Mild	Barely Damp	2.5YR 6/4		
75.0		(Continued)					Pitcher Bell Sample obtained at 80'	75.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 2 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
85.0		(Continued from page 1) Reddish-brown sandy, MUDSTONE/CLAYSTONE, micaceous, especially biotite, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated		Minor	Barely Damp	2.5YR 5/4		85.0
90.0				Slight	Barely Damp	2.5YR 6/3		90.0
95.0								95.0
100.0								100.0
105.0				Yes	Barely Damp	2.5YR 4/4		105.0
110.0								110.0
115.0								115.0
120.0				Yes	Barely Damp	2.5YR 5/3		120.0
125.0								125.0
130.0								130.0
135.0								135.0
140.0				No	Barely Damp	2.5YR 5/3	Pitcher Bell Sample obtained at 140'	140.0
145.0								145.0
150.0								150.0
155.0								155.0
160.0								160.0
165.0								165.0
170.0		(Continued)						170.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 3 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
175.0		(Continued from page 2)						175.0
180.0		Reddish-brown sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated		No	Barely	2.5YR 5/6		180.0
				No	Barely	2.5YR 4/4		
185.0			185.0					185.0
		Light reddish-brown, clayey SILTSONE	187.0	No	Dry	2.5YR 6/4		
190.0		Red, clayey SILTSTONE						190.0
				No	Barely Damp	2.5YR 5/6		
195.0			195.0					195.0
		Pink, clayey SILTSTONE						
200.0				No	Barely Damp	7.5YR 7/3	Pitcher Bell Sample obtained at 200'	200.0
205.0								205.0
210.0			211.0					210.0
215.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated		No	Dry	2.5YR 6/2		215.0
220.0								220.0
225.0								225.0
230.0								230.0
235.0								235.0
240.0								240.0
245.0								245.0
250.0								250.0
				No	Dry	2.5YR 4/6		
255.0								255.0
				Yes	Dry	2.5YR 4/4		
260.0		(Continued)						260.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 4 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
265.0		(Continued from page 3)						265.0
270.0								270.0
275.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated						275.0
280.0								280.0
285.0								285.0
290.0								290.0
295.0				No	Dry	10R 4/6		295.0
300.0								300.0
305.0								305.0
310.0								310.0
315.0								315.0
320.0								320.0
325.0								325.0
330.0				Yes	Dry	10R 4/4		330.0
335.0								335.0
340.0								340.0
345.0								345.0
350.0								350.0
355.0		(Continued)						355.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 5 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
360.0		(Continued from page 4)						360.0
365.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated						365.0
370.0				Minor	Dry	2.5YR 4/6		370.0
375.0								375.0
380.0								380.0
385.0								385.0
390.0				Minor	Dry	2.5YR 5/6		390.0
395.0								395.0
400.0								400.0
405.0								405.0
410.0								410.0
415.0								415.0
420.0								420.0
425.0								425.0
430.0								430.0
435.0				Minor	Dry	2.5YR 4/6		435.0
440.0								440.0
445.0		(Continued)						445.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 6 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
450.0		(Continued from page 5)						450.0
455.0								455.0
460.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated						460.0
465.0								465.0
470.0								470.0
475.0								475.0
480.0								480.0
485.0							Pitcher Bell Sample obtained at 485'	485.0
490.0								490.0
495.0								495.0
500.0								500.0
505.0								505.0
510.0								510.0
515.0								515.0
520.0								520.0
525.0				Minor	Dry	2.5YR 6/4		525.0
530.0								530.0
535.0		(Continued)						535.0

NOTES: 1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 7 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
		(Continued from page 6)						
545.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated						545.0
550.0								550.0
555.0								555.0
560.0				Minor	Dry	2.5YR 6/4		560.0
565.0			566.0					565.0
		Pink CLAYSTONE	568.0	Minor	Dry	2.5YR 8/3		
570.0		Light reddish-gray, clayey SILTSTONE		Yes	Dry	2.5YR 7/1		570.0
575.0			576.0					575.0
		Reddish-gray, sandy SILTSTONE		Yes	Dry	10R 6/1		
580.0			581.0					580.0
		Reddish-gray, silty SANDSTONE		Yes	Dry	10R 6/1		
585.0								585.0
590.0								590.0
595.0								595.0
▽		BORING TERMINATED AT 598 FEET	598.0					

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

APPENDIX G.B

SITE BORING LOGS

LOG OF BORING NO. BH-01

Project Description: CK Disposal

Location: Eunice, NM
Top of PVC El.: feet MSL
Surface El.: 3382 feet MSL
Completion Depth: 175 feet
Date Boring Started: 5/26/2015
Date Boring Completed: 5/26/2015

Northing: 521233.96
Easting: 924924.72

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
5–20			CLAYEY SAND, brown to reddish brown, moderately well sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction		
20–40			SILTY SAND, with caliche, light brown to white, well sorted, well rounded, very fine to fine grained, dry, strong HCL reaction		
40–175			CLAYSTONE, reddish brown some gray, slightly moist to dry, weak HCL reaction		

Drilling Contractor: HCI Drilling
Drilling Method: Air Rotary
Sampling Method: Cuttings
Geologist: Steven J. Wimmer
Project No.: 15-04-22

Groundwater Observations	
Date	Depth to Water (ft)
5/26/15	Dry

Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig

GROUNDWATER WELL - B&W EUNICE.GPJ CAREL2.GDT 9/16/15

LOG OF BORING NO. BH-01
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Water level at time of drilling.
Water level at end of drilling.
Water level after drilling.

LOG OF BORING NO. BH-02

Project Description: CK Disposal

Location: Eunice, NM
Top of PVC El.: feet MSL
Surface El.: 3391.8 feet MSL
Completion Depth: 175 feet
Date Boring Started: 5/26/2015
Date Boring Completed: 5/26/2015

Northing: 521273.70
Easting: 928310.35

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
5			CLAYEY SAND, brown to reddish brown, moderately well sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction		
10					
15			SILTY SAND, with caliche, light brown to white, well sorted, well rounded, very fine to fine grained, dry, strong HCL reaction		
20					
25					
30					
35			CLAYSTONE, reddish brown with gray, dry, weak HCL reaction, some purple		
40					
45					
50					
55					
60					
65					
70			less gray and purple; slightly moist to dry		
75					
80					
85					
90					
95					
100					
105					
110					
115					
120					
125					
130					
135					
140					
145					
150					
155					
160					
165					
170					
175					

Drilling Contractor: HCI Drilling
Drilling Method: Air Rotary
Sampling Method: Cuttings
Geologist: Steven J. Wimmer
Project No.: 15-04-22

Groundwater Observations	
Date	Depth to Water (ft)
5/26/15	Dry

Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig

GROUNDWATER WELL - B&W EUNICE.GPJ CAREL2.GDT 9/16/15

LOG OF BORING NO. BH-02
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Water level at time of drilling.
Water level at end of drilling.
Water level after drilling.

LOG OF BORING NO. BH-03

Project Description: CK Disposal

Location: Eunice, NM
Top of PVC El.: feet MSL
Surface El.: 3386.3 feet MSL
Completion Depth: 175 feet
Date Boring Started: 5/26/2015
Date Boring Completed: 5/26/2015

Northing: 520437.21
Easting: 926605.28

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
5			CLAYEY SAND, reddish brown, moderately well sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction		
10					
15					
20			SILTY SAND, with caliche, light brown to white, well sorted, well rounded, very fine to fine grained, dry, strong HCL reaction		
25					
30					
35					
40			Quartz and Caliche gravel up to 1" in diameter		
45			CLAYSTONE, reddish brown some gray, slightly moist to dry, weak HCL reaction		
50					
55					
60					
65					
70					
75					
80					
85					
90					
95					
100					
105					
110					
115					
120					
125					
130			medium brown from 130' to 135'		
135			reddish brown to brown		
140					
145					
150					
155					
160					
165					
170					
175					

Drilling Contractor: HCI Drilling
Drilling Method: Air Rotary
Sampling Method: Cuttings
Geologist: Steven J. Wimmer
Project No.: 15-04-22

Groundwater Observations	
Date	Depth to Water (ft)
5/26/15	Dry

Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig

GROUNDWATER WELL - B&W EUNICE.GPJ CAREL2.GDT 9/16/15

LOG OF BORING NO. BH-03
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Water level at time of drilling.
Water level at end of drilling.
Water level after drilling.

LOG OF BORING NO. BH-04

Project Description: CK Disposal

Location: Eunice, NM
Top of PVC El.: feet MSL
Surface El.: 3374.1 feet MSL
Completion Depth: 175 feet
Date Boring Started: 5/26/2015
Date Boring Completed: 5/26/2015

Northing: 519600.94
Easting: 924941.30

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
5			CLAYEY SAND, reddish brown, moderately well sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction		
20			SILTY SAND, with caliche, light brown to white, well sorted, well rounded, very fine to fine grained, dry, strong HCL reaction		
35			intermixed reddish brown claystone to 50'		
50			CLAYSTONE, reddish brown to purple, dry, weak HCL reaction		
90			dark brown to reddish brown		

Drilling Contractor: HCI Drilling
Drilling Method: Air Rotary
Sampling Method: Cuttings
Geologist: Steven J. Wimmer
Project No.: 15-04-22

Groundwater Observations	
Date	Depth to Water (ft)

Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig

GROUNDWATER WELL - B&W EUNICE.GPJ CAREL2.GDT 9/16/15

LOG OF BORING NO. BH-04
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Water level at time of drilling.
Water level at end of drilling.
Water level after drilling.

LOG OF BORING NO. BH-05

Project Description: CK Disposal

Location: Eunice, NM
Top of PVC El.: feet MSL
Surface El.: 3386.1 feet MSL
Completion Depth: 175 feet
Date Boring Started: 5/27/2015
Date Boring Completed: 5/27/2015

Northing: 519636.20
Easting: 928326.86

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
5			CLAYEY SAND, reddish brown, moderately well sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction		
10					
15			SILTY SAND, with caliche, light brown to white, well sorted, well rounded, very fine to fine grained, dry, strong HCL reaction		
20					
25					
30			intermixed gravel to 45'		
35					
40					
45			CLAYSTONE, reddish brown, slightly moist to dry, weak HCL reaction		
50					
55					
60					
65					
70					
75					
80					
85					
90			medium brown, some sand		
95					
100			dark brown to reddish brown		
105					
110			dark brown and purple		
115					
120					
125					
130			reddish brown to dark brown		
135					
140					
145					
150					
155					
160			dark brown and purple		
165					
170			reddish brown		
175					

Drilling Contractor: HCI Drilling
Drilling Method: Air Rotary
Sampling Method: Cuttings
Geologist: Steven J. Wimmer
Project No.: 15-04-22

Groundwater Observations	
Date	Depth to Water (ft)

Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig

GROUNDWATER WELL - B&W EUNICE.GPJ CAREL2.GDT 9/16/15

LOG OF BORING NO. BH-05
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Water level at time of drilling.
Water level at end of drilling.
Water level after drilling.

APPENDIX G.C

WATER WELLS WITHIN ONE MILE

WLB

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505-394-5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 SW 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 14.8698 s Longitude: 103 d 04 m 49.8642 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____, of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-993

I. On land owned by (required): Louisiana Energy Services

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/5/08 ; Completed: 12/5/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 231.5 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-993 — Trn Number: 415642
Form: wr-20 — page 1 of 4

Monitor

21.38.32.231

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	231	234	end cap	211	231

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	20	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
20	206	7-7/8	61		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

Do Not Write Below This Line

File Number: CP-993
Form: wr-20

Trn Number: 415642

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	5	5	Sandstone, lightly cemented, burnt orange
5	15	10	Caliche, relatively soft, gray to lt orange
15	30	15	Sand, minor chert gravel, lt orange sand
30	85	55	Claystone, maroon
85	90	5	Siltstone, hard gray
90	210	120	Claystone, dark purple
210	225	15	Sandstone, very fine-grained, hard, gray
225	231	6	Clayston, maroon

STATE ENGINEER OFFICE
11 AM '21

Do Not Write Below This Line

File Number: CP-993 Trn Number: 415642

Form: wr-20

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-20

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cie
Driller

12/28/08
(mm/dd/year)

STATE ENGINEER OFFICE
2008 DEC 31 A 11:51

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-993
Form: wr-20

Trn Number: 415642

WLB

2

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505-394-5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 SW 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 14.9172 s Longitude: 103 d 04 m 45.4866 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-994

I. On land owned by (required): Louisiana Energy Services

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/5/08 ; Completed: 12/5/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 36 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-994 — Trn Number: 415643
Form: wr-20 — page 1 of 4

21.38.32.232

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	36	39	end cap	26	36

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
5	23	7-7/8	5		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

Do Not Write Below This Line

File Number: CP-994
Form: wr-20

Trn Number: 415643

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	Sandstone, lightly cemented, burnt orange
10	23	13	Caliche, hard, gray
23	34	11	Gravelly sand, chert gravel, red sand matrix
34	36	2	Claystone, dark purple

STATE ENGINEER OFFICE
2011 JUL 14 P 3:47
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File Number: CP-994 Trn Number: 415643

Form: wr-20 page 3 of 4

File Number: _____
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NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-21

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

12/29/08
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

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File Number: CP-994
Form: wr-20

Trn Number: 415643

WL B

3

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisianna Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: New Mexico Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SE 1/4 NE 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 21.907 s Longitude: 103 d 04 m 27.079 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-947

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/15/07 ; Completed: 4/03/07 ; Type tools: Air rotary;
Size of hole: 7-7/8 in.; Total depth of well: 220.5 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: 178.43 ft.

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STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 20 P 2:00

File Number: CP-947
Form: wr-20

page 1 of 4

Trn Number: 376945

Monitor

21.38.32.224

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
178.83	218.1	39.27	claystone & siltstone	0-5

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	sch 40 PVC	2	0	198.1	198.1	N/A	N/A	
4	sch 40 PVC	2	198.1	218.1	20	PVC end cap	198.1	218.1

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie - bentonite/cement
75	192	7-7/8	43		poured - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:00

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File Number: CP-947
Form: wr-20

Trn Number: 376945

21.38.32.224

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	SAND, loose, dry, brown - tan
2	25	23	caliche, soft, dry, gray
25	30	5	SANDY, gravel, dry, orange to tan
30	130	100	clay, highly plastic, maroon with gray mottling
130	140	10	siltstone, hard, dry, gray with maroon mottling
140	195	55	claystone, dry maroon w/ gray mottling
195	205	10	Siltstone, hard, dry gray w/ maroon splotching
205	207	2	claystone, firm dry, maroon w/ gray mottling
207	215	8	Siltstone with claystone hard, gray & maroon
215	230	15	claystone, firm dry maroon w/ gray mottling

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ROSWELL, NEW MEXICO
2001 APR 27 P 2:01

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Form: wr-20

Trn Number: 376945

21.38.32.224

Monitor

File Number: _____
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NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

04/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

FOR STATE ENGINEER USE ONLY

Quad _____; FWL _____; FSL _____; Use _____; Location No. _____

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Form: wr-20

Trn Number: 376945

Monitor

21.38.32.224

WLR

4

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: __ Zip: _____

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 33.098 s Longitude: 103 d 04 m 27.582 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-948

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/15/07 ; Completed: 4/03/07 ; Type tools: Air rotary ;
Size of hole: 7-7/8 in.; Total depth of well: 32.2 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 1:07

Do Not Write Below This Line

File Number: CP-948
Form: wr-20

page 1 of 4

Trn Number: 376946
01

Monitor

21.38.32.222

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
			DRY	

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	22.2	22.2	N/A	N/A	
4	Sch 40 PVC	2	22.2	32.2	10	PVC end cap	22.2	32.2

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	10	7-7/8	1	2.6	tremie - bentonite/cement
10	19	7-7/8	5	N/A	pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

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Form: wr-20

Trn Number: 376946

Monitor 21.38.32.222

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	3	3	Topsoil - silt loose, dry, brown
3	30	27	Caliche, hard, dry, tan to gray
30	35	5	clay, highly plastic, dry, maroon & gray

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:01

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File Number: CP-948
Form: wr-20

Trn Number: 376946

Monitor

21.38.32.222

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

04/24/2007
(mm/dd/year)

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FOR STATE ENGINEER USE ONLY

Quad ____; **FWL** ____; **FSL** ____; **Use** _____; **Location No.** _____

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

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File Number: CP-948
Form: wr-20

Trn Number: 376948

Monitor

21.38.32.222

WLB

5

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505.394.5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 NE 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 32.895 s Longitude: 103 d 04 m 39.176 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-949

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.676.8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/16/07 ; Completed: 4/03/07 ; Type tools: Air Rotary ;
Size of hole: 7-7/8 in.; Total depth of well: 240.4 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:02

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File Number: CP-949
Form: wr-20

Trn Number: 376947

Monitor

21.38.32.221

5

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
			DRY	

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4.0	sch 40 PVC	2	0	220.9	220.9	N/A	N/A	
4.0	sch 40 PVC	2	220.9	240.9	20	PVC end cap	220.9	240.9

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	15	7-7/8	1	20	tremie - bentonite/cement
15	215	7-7/8	53	N/A	pour - bentonite pellets

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 MAR 27 P 2:02

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File Number: CP-949
Form: wr-20

Trn Number: 376947

21.38.32.221

Monitor

5

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in feet	Color and Type of Material Encountered
0	4	4	SAND, loose, dry, orange to light red
4	30	26	CALICHE, moderately hard, chert, dry, orange & red
30	50	20	SANDY, Gravel, chert, dry, tan to light orange
50	115	65	Clay, highly plastic, firm, dry, gray & Maroon
115	125	10	Siltstone, hard, moist, gray
125	180	55	Claystone, dry, maroon w/ gray mottling
180	190	10	Siltstone & claystone interbedded, dry gray
190	235	45	Claystone, hard, dry, maroon w/ gray veining
235	240	5	Siltstone, hard to hard, dry, gray
240	245	5	Claystone, hard, dry, maroon w/ gray & green mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:02

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File Number: CP-949
Form: wr-20

Trn Number: 376947

Monitor

21.38.32.221

5

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Joe Cie
Driller

04/24/07
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:02

FOR STATE ENGINEER USE ONLY

Quad ____; **FWL** ____; **FSL** ____; **Use** _____; **Location No.** _____

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File Number: CP-949
Form: wr-20

Trn Number: 376947

Monitor

21.38.32.221

WLB

6

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231
Work Phone: 505.394.5704
Home Phone: _____

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 SW 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 16.2 s Longitude: 103 d 5 m 21.2 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-959

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107
Work Phone: 806.467.0607
Home Phone: 806.676.8220

4. DRILLING RECORD

Drilling began: 3/23/07; Completed: 3/24/07; Type tools: Air Rotary
Size of hole: 7-7/8 in.; Total depth of well: 231 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

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ROSWELL, NEW MEXICO

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File Number: CP-959
Form: wr-20

Trn Number: 376939

Monitor

21.38.32.131

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	211	211	N/A		
4	Sch 40 PVC	2	211	231	20	PVC end cap	211	231

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	70	7-7/8	1	18	tremie - bentonite/cement
70	205	7-7/8	48		pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

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ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

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File Number: CP-959
Form: wr-20

Trn Number: 376959

Monitor

21.38.32.131

6

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	SAND loose moist orange/brown
2	15	13	CALICHE, soft dry tan
15	20	5	Gravelly sand, loose dry orange to tan
20	30	10	Claystone w/ siltstone maroon & gray
30	95	65	Claystone, dry maroon w/ gray mottling
95	110	15	Claystone w/ siltstone dry maroon & gray
110	130	20	Claystone, hard, dry maroon w/ gray mottling
130	135	5	Claystone w/ siltstone dry maroon & gray
135	210	75	Claystone, hard dry maroon & gray
210	215	5	Siltstone w/ claystone hard, gray & maroon
215	240	25	Claystone, moderate hard dry maroon & gray

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 DEC 27 P 2:17 RECD

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File Number: CP-959
Form: wr-20

Trn Number: 376959

21.38.32.131

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller ~~Driller~~ 04/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 AUG 27 P 2:01

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-959
Form: wr-20

page 4 of 4

Trn Number: 376959

21.38.32.131

Monitor

WLB

7

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SE 1/4 NE 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 23.387 s Longitude: 103 d 04 m 57.803 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP958

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/20/07; Completed: 3/29/07; Type tools: Air rotary
Size of hole: 7-7/8 in.; Total depth of well: 246.3 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: 217.14 ft.

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2007 APR 2 P 2:01
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ROSWELL, NEW MEXICO

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File Number: CP-958
Form: wr-20
Trn Number: 376958
page 1 of 4

Monitor 21.38.32.124

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
217.19	246.3	29.11	claystone w/siltstone	0-5

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	226.3	226.3	N/A	N/A	
4	Sch 40 PVC	2	226.3	246.3	20	PVC End Cap	226.3	246.3

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	70	7-7/8	1	18	tremie - cement/bentonite
70	220	7-7/8	43	n/a	pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 OCT 27 P 2:01

Do Not Write Below This Line

File Number: CP-958
Form: wr-20

Trn Number: 376958

21.38.32.124

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	5	5	SAND, loose, damp, burnt orange
5	35	30	CALICHE, hard, dry light orange to gray
35	40	5	SANDY gravel, gray sand matrix
40	70	30	CLAY, Plastic, firm gray & maroon
70	80	10	claystone w/ siltstone dry maroon & gray
80	225	145	claystone, firm, dry maroon w/ gray mottling
225	245	20	claystone w/ siltstone dry, light red
245	250	5	claystone stiff, dry maroon w/ gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2011 MAR 21 P 2:01

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Form: wr-20

Trn Number: 376958

Monitor

21.38.32.124

File Number: _____
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NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

04/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

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Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

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File Number: CP-958
Form: wr-20

Trn Number: 376958

Monitor

21.38.32.124

WLB

8

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 33.072 s Longitude: 103 d 05 m 2.128 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-951

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon / LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/29/07 ; Completed: 3/29/07 ; Type tools: Air Rotary
Size of hole: 7-7/8 in.; Total depth of well: 261.3 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: 243.31 ft.

STATE ENGINEER OFFICE
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2007 APR 26 P 2:

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File Number: CP-951
Form: wr-20

page 1 of 4

Trn Number: 376949

21.38.32.122

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
243.81	261.3	17.49	Siltstone, hard, gray	0 - 2

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	sch 40 PVC	2	0	241.3	241.3	N/A	N/A	
4	sch 40 PVC	2	241.3	261.3	20	PVC end cap	241.3	261.3

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie bentonite/cement
75	235	7-7/8	65	—	pour bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:03

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Form: wr-20

Trn Number: 376949

Monitor

21.38.32.122

File Number: _____
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NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in feet	Color and Type of Material Encountered
0	4	4	SAND loose, dry tan-brown
4	20	16	CALICHE, soft, chert, dry, tan
20	25	5	Gravelly SAND, chert, orange SAND matrix
25	45	20	CLAY, highly plastic, firm, dry maroon
45	65	20	Siltstone, hard, dry, gray
65	120	55	Claystone, hard, dry, maroon w/ gray mottling
120	125	5	claystone, interbedded w/ siltstone maroon
125	240	115	Claystone, dry maroon w/ gray mottling
240	260	20	Siltstone, hard, damp gray
260	265	5	claystone, dry, maroon with gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
1991 APR 27 P 2:00

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Form: wr-20

Trn Number: 376949

Monitor

21.38.32.122

File Number: _____
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NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller — 04/24/07 (mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:03

FOR STATE ENGINEER USE ONLY

Quad ____; **FWL** ____; **FSL** ____; **Use** _____; **Location No.** _____

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Form: wr-20

Trn Number: 376949

Monitor

21.38.32.122

WL-B

9

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 32.801 s Longitude: 103 d 04 m 59.861 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-950

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/21/07 ; Completed: 3/30/07 ; Type tools: Air rotary ;
Size of hole: 7-7/8 in.; Total depth of well: 22 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: dry ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 2 PM 2:02

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File Number: CP-950
Form: wr-20

page 1 of 4

Trn Number: 376948

Monitor

21.38.32.122

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	SCH 40 PVC	2	0	10.1	10.1	N/A	N/A	
4	SCH 40 PVC	2	10.1	20.1	10.0	PVC end cap	10.1	20.1

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	2	7-7/8	1	0.5	tremie bentonite/cement
2	7	7-7/8	2		pour bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
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Form: wr-20

Trn Number: 376948

Monitor

21.38.32.122

File Number: _____
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NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	SAND, loose, moist, tan to brown
2	15	13	CALICHE, soft, chert gravel, moist, orange-tan,
15	19	4	Gravelly SAND, light cementation, moist red sand
19	22	3	Clay, highly plastic, firm, moist, Maroon w/ gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
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File Number: CP-950 Trn Number: 376948

Form: wr-20 page 3 of 4

21.38.32.122

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cain
Driller

04/24/2007
(mm/dd/year)

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FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
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Form: wr-20

Trn Number: 376948

Monitor

2438.32.122

WLB

10

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505.394.5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: __ Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 NE 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 35.002 s Longitude: 103 d 05 m 8.300 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-952

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.676.8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/21/07 ; Completed: 3/29/07 ; Type tools: Air Rotary
Size of hole: 7-7/8 in.; Total depth of well: 26.9 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:03

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File Number: CP-952 — Trn Number: 376950
Form: wr-20

Monitor

21.38.32.121

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	SCH 40 PVC	2	0	16.9	16.9	N/A	N/A	
4	SCH 40 PVC	2	16.9	26.9	10	PVC end cap	16.9	26.9

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	4	7-7/8	1	1	trewie - cement/bentonite
4	14	7-7/8	4	N/A	pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feet of Cement
1			
2			
3			
4			
5			

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ROSWELL, NEW MEXICO
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File Number: CP-952
Form: wr-20

Trn Number: 376950

Monitor

21.38.32.121

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	SAND, loose, moist, burnt orange
2	20	18	CALICHE, realative soft, chert, dry tan - light orange
20	27	7	Gravelly, SAND, chert gravel burnt orange
27	30	3	Clay highly plastic, firm, dry maroon

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 MAR 27 P 2:01

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Form: wr-20

Trn Number: 376950

21.38.32.121

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

04/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:03

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

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File Number: CP-952
Form: wr-20

Trn Number: 376950

21.38.32.121

WLB

11

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231
Work Phone: 505.394.5204
Home Phone: _____

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NW 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 32.999 s Longitude: 103 d 05 m 19.283 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-953

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107
Work Phone: 806.467.0607
Home Phone: 806.676.8220

4. DRILLING RECORD

Drilling began: 3/22/07 ; Completed: 3/29/07 ; Type tools: Air Rotary
Size of hole: 7-7/8 in.; Total depth of well: 257.5 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: 241.26 ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

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File Number: CP-953
Form: wr-20
Trn Number: 376952
page 1 of 4

Monitor

21.38.32.112

File Number: _____
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NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
241.26	257.5	16.24	Claystone w/ interbedded siltstone	0-2

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	237.5	237.5	N/A	N/A	
4	sch 40 PVC	2	237.5	257.5	20	PVC end cap	237.5	257.5

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie - cement/bentonite
75	230	7-7/8	2/5	N/A	pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:04

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Form: wr-20

Trn Number: 376952

Monitor

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File Number: _____
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NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	5	5	SAND, loose moist burnt orange
5	15	10	CALICHE, hard dry orange
15	35	20	CLAY, high plastic maroon w/ gray mottling
35	50	15	Siltstone, hard dry gray
50	200	150	Claystone, dry, maroon
200	210	10	Claystone, w/ interbedded siltstone, hard dry maroon
210	245	35	Claystone, hard, dry maroon w/ gray splotching
245	255	10	Claystone, w/ interbedded siltstone hard, dry maroon
255	260	5	Claystone, hard, dry maroon gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
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File Number: CP-953 Trn Number: 376952

Form: wr-20 page 3 of 4

Monitor

21.38.32.112

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

4/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2 04

FOR STATE ENGINEER USE ONLY

Quad _____; FWL _____; FSL _____; Use _____; Location No. _____

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Form: wr-20

Trn Number: 376952

Monitor

21.38.32.112

WLB

12

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.5204
Home Phone: _____
State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 NW 1/4 NW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 27.646 s Longitude: 103 d 05 m 22.714 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-954

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon / LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/22/07 ; Completed: 3/30/07 ; Type tools: Air Rotary
Size of hole: 7-7/8 in.; Total depth of well: 236.4 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:01

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File Number: CP-954
Form: wr-20
page 1 of 4
Trn Number: 376954

21.38.32.111

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	216.4	216.4	N/A	N/A	
4	Sch 40 PVC	2	216.4	236.4	20	PVC end cap	216.4	236.4

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	15	7-7/8	1	20	tremie - cement/bentonite
15	210	7-7/8	43		pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 DEC 27 P 2:10

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File Number: CP-954
Form: wr-20

Trn Number: 376954

Monitor

21.39.32.111

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	SAND, fine, loose, moist, burnt orange
10	20	10	CALICHE, soft light orange
20	35	15	Siltstone, hard, dry gray
35	45	10	Claystone, hard dry maroon w/ gray mottling
45	50	5	claystone w/ interbedded siltstone maroon & gray
50	75	25	claystone, dry, maroon w/ gray mottling
75	85	10	siltstone w/ interbedded claystone
85	105	20	Claystone, hard, dry maroon w/ gray mottling
105	110	5	Siltstone w/ interbedded claystone hard dry gray & maroo
110	130	20	Claystone, dry maroon w/ gray mottling
130	160	30	Claystone, with siltstone dry maroon & gray
160	170	10	Claystone, dry maroon to purple w/ gray mottling
170	175	5	Siltstone, hard, dry, gray
175	180	5	Claystone, hard dry, maroon w/ gray mottling
180	190	10	Siltstone w/ Claystone dry gray & maroon
190	215	25	Claystone, hard, dry, maroon w/ gray & maroon
215	235	25	siltstone, hard, dry, gray
235	245	10	claystone, hard, dry maroon w/ gray

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
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File Number: CP-954
Form: wr-20

Trn Number: 376954

Monitor

21.39.3.2.111

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cole
Driller

04/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:04

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-954
Form: wr-20

page 4 of 4

Trn Number: 376954

21.39.32.111

Monitor

JLB

13

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505-394-5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SW 1/4 SW 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 14.8482 s Longitude: 103 d 04 m 40.2564 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County,

G. Other: _____

H. Give State Engineer File Number if existing well: CP-995

I. On land owned by (required): Louisiana Energy Services

STATE ENGINEER OFFICE
DEC 22 2008
LOG

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/5/08 ; Completed: 12/5/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 38 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-995 — Trn Number: 418652
Form: wr-20 — page 1 of 4

21.38.32.233

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	38	41	end cap	28	38

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
5	25	7-7/8	6		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

Do Not Write Below This Line

File Number: CP-995 Trn Number: 418652

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	9	9	Sand, lightly cemented, tan to lt orange
9	24	13	Caliche, relative soft, lt gray
4	36	12	Gravelly sand, chert, tan to lt red matrix
36	38	2	Claystone, purple

02:1 Cl 9 NAL 07
STATE ENGINEER OFFICE

Do Not Write Below This Line

File Number: CP-995 Trn Number: 418652

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-22

OSE DIT JAN 09 PM 1:03 RECEIVED

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cie
Driller

12/29/08
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-995
Form: wr-20

Trn Number: 418652

NLB

14

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services Work Phone: 505-394-5204
Contact: Laurie Wetherell Home Phone: _____
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SW 1/4 SW 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 13.383 s Longitude: 103 d 04 m 52.212 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County

G. Other: _____

H. Give State Engineer File Number if existing well: CP-996

I. On land owned by (required): Louisiana Energy Services

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling Work Phone: 806.467.0607
Agent: Shane Currie Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/5/08 ; Completed: 12/5/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 39 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-996 Trn Number: 418653
Form: wr-20 page 1 of 4

21.38.32.233

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	39	42	end cap	21	36

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
5	20	7-7/8	5		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

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OSE ROSWELL, NM

Do Not Write Below This Line

File Number: CP-996 Trn Number: 418653
Form: wr-20

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	Sandstone, lightly cemented, burnt orange
10	21	11	Caliche, soft, lt orange to tan
21	37	16	Gravelly sand, abundant chert, lt orange-tan
37	39	2	Claystone, purple

STATE ENGINEER OFFICE
2011 DEC -9 P 1:23
RECEIVED

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File Number: CP-996
Form: wr-20

Trn Number: 418653

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-23

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cain
Driller

12/29/08
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-996
Form: wr-20

Trn Number: 418653

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice
Work Phone: 505.394.6704
Home Phone: _____
State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SW 1/4 NW 1/4 SW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 25 m 56.857 s Longitude: 103 d 05 m 23.671 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-955

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo
Work Phone: 806.467.0607
Home Phone: 806.676.8220
State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/23/07 ; Completed: 3/29/07 ; Type tools: Air rotary;
Size of hole: 7-7/8 in.; Total depth of well: 236 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 1:47

Do Not Write Below This Line

File Number: CP-955
Form: wr-20
page 1 of 4
Trn Number: 376955

Monitor 21.38.32.313

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	SCH 40 PVC	2	0	216	216	N/A	N/A	
4	SCH 40 PVC	2	216	236	20	PVC End Cap	216	236

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie - cement/bentonite
75	210	7-7/8	42		pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:00

Do Not Write Below This Line

File Number: CP-955
Form: wr-20

Trn Number: 376955

Monitor

21.38.32.313

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	SAND, loose, damp tan
10	30	20	CALICHE, soft chert gravel with orange pink
30	35	5	SANDY Gravel, chert, dry light red sand
35	55	20	CLAY, highly plastic, firm
55	60	5	Claystone w/ siltstone hard, dry maroon & gray
60	220	160	Claystone, dry maroon w/ gray mottling
220	225	5	Siltstone w/ claystone hard, dry gray & maroon
225	240	15	Silty claystone, dry, light red to dark red/maroon

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
1991 APR 27 P 2:01

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File Number: CP-955 Trn Number: 376955

Form: wr-20 page 3 of 4

Monitor

21.38.32.313

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Jose Cisneros
Driller

04/24/2007
(mm/dd/year)

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:02

Do Not Write Below This Line

File Number: CP-955
Form: wr-20

Trn Number: 376955

Monitor

21.38.32.313

WLB

16

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services Work Phone: 505-394-5204
Contact: Laurie Wetherell Home Phone: _____
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 NE 1/4 SW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 1.1718 s Longitude: 103 d 05 m 5.5062 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-999

I. On land owned by (required): Louisiana Energy Services

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling Work Phone: 806.467.0607
Agent: Shane Currie Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/4/08 ; Completed: 12/4/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 43 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

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File Number: CP-999 Trn Number: 415856
Form: wr-20 page 1 of 4

Monitor 21.38.32.321

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	43	46	end cap	28	43

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
5	22	7-7/8	5		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
2021 OCT 6 PM 1:22

Do Not Write Below This Line

File Number: CP-999
Form: wr-20

Trn Number: 415856

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	11	11	Sand, lightly cemented, burnt orange
11	29	18	Caliche, relatively soft, gray to lt orange
23	34	11	Gravelly sand, chert gravel, red sand matrix
34	36	2	Claystone, dark purple

STATE ENGINEER OFFICE
2021 DEC 17 P 1:25

Do Not Write Below This Line

File Number: CP-999 Trn Number: 415856

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-26

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Crie
Driller

12/24/08
(mm/dd/year)

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2008 DEC 31 PM 1:15
OFFICE OF THE STATE ENGINEER

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FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-999
Form: wr-20

Trn Number: 415856

WLB

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505-394-5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 SW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant. U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 1.071 s Longitude: 103 d 05 m 3.048 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-998

I. On land owned by (required): Louisiana Energy Services

STATE ENGINEER OFFICE 2008 DEC 15 P 12:21

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/4/08 ; Completed: 12/4/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 250 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-998 — Trn Number: 418655
Form: wr-20 — page 1 of 4

Monitor 21.38.32.322

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	250	253	end cap	230	250

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	20	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
20	206	7-7/8	68		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
2021 DEC -3 P 1:21

Do Not Write Below This Line

File Number: CP-998
Form: wr-20

Trn Number: 418655

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	12	12	Sand, lightly cemented, burnt orange
12	25	13	Caliche, relatively soft, gray to lt orange
25	36	11	Sandstone, lightly cemented, burnt orange
36	70	34	Claystone, maroon
70	72	2	Siltstone, hard gray
72	153	81	Claystone, light red with maroon to purple
153	215	62	Claystone, maroon to lt red
215	218	3	Siltstone, interbeded w/claystone, gray
218	230	12	Claystone, interbeded siltstone, maroon-gray
230	235	5	Siltstone, interbeded w/claystone, gray
235	250	15	Claystone, lt red to maroon

STATE ENGINEER OFFICE
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2011 DEC 13 P 1:22

Do Not Write Below This Line

File Number: CP-998
Form: wr-20

Trn Number: 418655

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-25

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cain
Driller

12/29/08
(mm/dd/year)

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FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-998
Form: wr-20

Trn Number: 418655

WLB

18

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505-394-5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SE 1/4 NE 1/4 SW 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in _____ County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 1.0998 s Longitude: 103 d 05 m 1.086 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County

G. Other: _____

H. Give State Engineer File Number if existing well: CP-997

I. On land owned by (required): Louisiana Energy Services

STATE ENGINEER OFFICE 2008 DEC 18 P 1:21

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/4/08 ; Completed: 12/4/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 40 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-997 — Trn Number: 418654
Form: wr-20 — page 1 of 4

Monitor 21.38.32.324

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	40	43	end cap	25	40

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
5	20	7-7/8	5		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
2021 JUL -8 P 1:21

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File Number: CP-997
Form: wr-20

Trn Number: 418654

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	11	11	Sandstone, slight cemented, burnt orange
11	29	18	Caliche, soft, gray to lt orange
29	37	8	Gravelly sand, abundant chert, orange sand
37	40	3	Claystone, maroon

STATE ENGINEER OFFICE
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12 11 01 PM '21

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File Number: CP-997 Trn Number: 418654

File Number: _____
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NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

MW-24

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cie
Driller

12/29/08
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad _____; FWL _____; FSL _____; Use _____; Location No. _____

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File Number: CP-997
Form: wr-20

Trn Number: 418654

JLB

19

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505.394.5704
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 SE 1/4 SW 1/4 Section: 32 Township: 21S Range: 38E .M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 25 m 52.494 s Longitude: 103 d 05 m 7.607 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-956

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.676.8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/28/07 ; Completed: 4/3/07 ; Type tools: Air rotary
Size of hole: 7-7/8 in.; Total depth of well: 237 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

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2007 APR 27 P 2:
STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

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File Number: CP-956 — Trn Number: 376956
Form: wr-20 — page 1 of 4

Monitor

21.38.32.341

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	sch 40 PVC	2	0	217.1	217.1	N/A	N/A	
4	sch 40 PVC	2	217.1	237.1	20	PVC end cap	217.1	237.1

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie - cement / bentonite
		7 7/8	48	n/a	pour - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:05

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File Number: CP-956
Form: wr-20

Trn Number: 376956

Monitor

21.38.32.341

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	5	5	SAND, fine, damp, burnt orange
5	25	20	Caliche, soft, dry, gray to tan
25	40	15	SANDY Gravel, chert, dry, burnt orange
40	60	20	Clay firm, dry, maroon w/ gray mottling
60	85	25	claystone w/ siltstone, hard, dry maroon & gray
85	165	80	claystone, dry, maroon w/ gray mottling
165	190	25	Claystone w/ siltstone, hard, dry maroon
190	220	30	claystone, hard, dry maroon w/ gray mottling
220	235	15	claystone, w/ siltstone hard, dry light red
235	240	15	claystone, hard, dry, maroon w/ gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:05

Do Not Write Below This Line

File Number: CP-956
Form: wr-20

Trn Number: 376956

21.38.32.341

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cie — Driller

04/24/07 — (mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:05

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-956
Form: wr-20

Trn Number: 376956

Monitor

21.38.32.341

WLB

20

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505.394.5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 SE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 5.327 s Longitude: 103 d 04 m 26.985 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-946

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.676.8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/16/07 ; Completed: 4/03/07 ; Type tools: Air Rotary ;
Size of hole: 7-7/8 in.; Total depth of well: 225.8 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: 220.49 ft.

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2007 APR 27 P 12:00
STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

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File Number: CP-946
Form: wr-20

page 1 of 4

Trn Number: 376944

Monitor

21.38.32.422

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
220.49	225.8	5.31	claystone	0-1

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	sch 40 PVC	2	0	205.8	205.8	N/A	N/A	
4	sch 40 PVC	2	205.8	225.8	20	PVC end cap	205.8	225.8

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	15	7-7/8	1	20	tremie - bentonite/cement
15	200	7-7/8	48	N/A	Poured - bentonite pellets

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 2:00

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Form: wr-20

Trn Number: 376944

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21.38.32.422

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	SAND, loose dry, burnt orange
2	20	18	CALICHE, Moderately hard, dry gray
20	35	15	Gravely SAND, fine grained light gray
35	70	35	CLAY, highly plastic, firm, dry, maroon
70	80	10	CLAYstone, dry light red cuttings
80	95	15	CLAYstone, dry maroon with gray and green mottling
95	100	5	claystone, interbedded siltstone, dry, maroon & gray
100	115	15	claystone, firm dry maroon & gray
115	125	10	claystone, interbedded siltstone maroon
125	175	50	claystone, dry maroon
175	185	10	claystone, interbedded w/ siltstone, dry maroon
185	195	10	siltstone, hard dry gray
195	200	5	siltstone, hard dry gray
200	215	15	claystone, hard dry maroon
215	220	5	siltstone, damp, gray
220	235	15	claystone, firm, dry, maroon

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 1:27

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Form: wr-20

Trn Number: 376944
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Monitor

21.38.32.422

File Number: _____
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NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cline
Driller

04/24/07
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:00

FOR STATE ENGINEER USE ONLY

Quad ____; **FWL** ____; **FSL** ____; **Use** _____; **Location No.** _____

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Form: wr-20

Trn Number: 376944

21.38.32.422

Monitor

WLB

21

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services Work Phone: 505.394.5204
Contact: Laurie Wethereil Home Phone: _____
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SE 1/4 SE 1/4 SE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 25 m 46.785 s Longitude: 103 d 4 m 31.815 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-945

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE Work Phone: 806.467.0607
Agent: Shane Currie Home Phone: 806.676.8220
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 3/14/07 ; Completed: 4/3/07 ; Type tools: Air Rotary
Size of hole: 7 7/8 in.; Total depth of well: 241.2 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 1:58

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File Number: CP-945 Trn Number: 376887
Form: wr-20 page 1 of 4

Monitor 21.38.32.444

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
			DRY	

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	sch 40 PVC	2	0	221.2	221.2	N/A	N/A	
4	sch 40 PVC	2	221.2	241.2	20	PVC end cap	221.2	241.2

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	75	7-7/8	1	20	tremie - bentonite/cement
75	215	7-7/8	48	N/A	poured - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2001 APR 27 P 1:5

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File Number: CP-945
Form: wr-20

Trn Number: 376887

Monitor

21.38.32.444

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	SAND, fine-grained, loose dry, brown to light orange
10	25	15	Caliche, moderately soft, dry, orange and white
25	60	35	Clay, stiff dry, gray and maroon, mottled
60	190	130	claystone, dry maroon
190	200	10	Siltstone, hard damp; light gray
200	260	60	claystone, firm dry maroon

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 4:51

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File Number: CP-945
Form: wr-20

Trn Number: 376887

Monitor

21.38.32.444

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Craig — Driller — 04/24/2007 (mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 1:58

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File Number: CP-945 Trn Number: 376887

Form: wr-20 page 4 of 4

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21.38.32.444

22

WLB

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services
Contact: Laurie Wetherell
Address: P.O. Box 1789
City: Eunice State: NM Zip: 88231
Work Phone: 505.394.5204
Home Phone: _____

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 SW 1/4 SE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant. U.S.G.S. Quad Map _____

C. Latitude: 32 d 25 m 50.439 s Longitude: 103 d 04 m 52.541 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-957

I. On land owned by (required): Lea County, NM

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon/LPE
Agent: Shane Currie
Mailing Address: 921 N. Bivins
City: Amarillo State: TX Zip: 79107
Work Phone: 806.467.0607
Home Phone: 806.676.8220

4. DRILLING RECORD

Drilling began: 3/20/07; Completed: 4/3/07; Type tools: Air rotary;
Size of hole: 7-7/8 in.; Total depth of well: 231.4 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: DRY ft.

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2007 APR 12 P 2:03
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ROSWELL, NEW MEXICO

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File Number: CP-957
Form: wr-20
page 1 of 4
Trn Number: 376957

Monitor 21.38.32.431

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
DRY				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4	Sch 40 PVC	2	0	211.4	211.4	N/A	N/A	
4	Sch 40 PVC	2	211.4	231.4	20	PVC end cap	211.4	231.4

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	15	7-7/8	1	20	tremie - cement/bentonite
15	205	7-7/8	48		poored - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 DEC 27 P 2:00

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File Number: CP-957
Form: wr-20

Trn Number: 376957

Monitor

21.38.32.431

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	10	10	SAND fine, loose, dry orange to tan
10	35	25	CALICHE, hard dry, orange & gray
35	40	5	SANDY gravel, maroon
40	85	45	Clay, highly plastic firm dry maroon
85	95	10	Siltstone, hard dry gray
95	105	10	Claystone, light red
105	110	5	Siltstone w/ claystone gray & maroon
110	170	60	claystone, dry maroon w/ gray mottling
170	195	25	Siltstone w/ claystone hard dry gray & maroon
195	220	25	Claystone, dry, maroon
220	230	10	Siltstone w/ Claystone dry gray & maroon
230	240	10	Claystone w/ some silt maroon w/ gray mottling

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 MAR 27 P 2:

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File Number: CP-957 Trn Number: 376957

Form: wr-20 page 3 of 4

Monitor 21.38.32.431

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cole
Driller

4/24/2007
(mm/dd/year)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 APR 27 P 2:0

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-957
Form: wr-20

Trn Number: 376957

21.38.32.431

Monitor

WLB

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Waste Control Specialists, LLC — Work Phone: 888-789-2783
Contact: Mike Burney — Home Phone: 505-394-4300
Address: 9998 W. Highway 176
City: Andrews — State: TX Zip: 79714

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NE 1/4 NW 1/4 Section: 33 Township: 21S Range: 38E N.M.P.M.
in _____ County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 29 s Longitude: 103 d 03 m 58 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County

G. Other: _____

H. Give State Engineer File Number if existing well: CP-979

I. On land owned by (required): Waste Control Specialists, LLC

STATE ENGINEER OFFICE
2008 MAR -6 A 11:33

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling, L.P. — Work Phone: 806-467-0607
Agent: Shane Currie — Home Phone: 806-676-8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 2/20/08 ; Completed: 2/20/08 ; Type tools: Air Rotary Rig
Size of hole: 5 6/8 in.; Total depth of well: 28 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-979 — Trn Number: 399475
Form: wr-20 — page 1 of 4

Monitor

21.38.33.122

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
			Dry	

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
2	Sch 40 PVC	2	0	28	28	PVC end cap	13	28

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	5-5/8	20		tremie - bentonite/cement
5	10	5-5/8	2		poured - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

STATE ENGINEER OFFICE
2007 MAR -6 A 11:33

Do Not Write Below This Line

File Number: CP-979
Form: wr-20

Trn Number: _____

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in feet	Color and Type of Material Encountered
0	0.5	0.5	Surface Soil
0.5	15	14.5	Caliche
15	17	2	Gravelly sand
17	25	8	clayey silty sand
25	28.5	3.5	gray sandstone

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2009 MAR -6 A 11:33

Do Not Write Below This Line

File Number: CP-979 Trn Number: _____

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2008 MAR -6 A 11:33

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cline
Driller

03/03/2008
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-979
Form: wr-20

Trn Number: _____

WDB

24

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD and DRILLING LOG

1. PERMIT HOLDER(S)

Name: WASTE CONTROL SPECIALISTS
Address: P.O. BOX 1129
City: ANDREWS
State: TX Zip: 79714
Phone: (505) 394-4300
Contact: MICHAEL BURNEY
Contact Phone: (505) 394-4300

Name: _____
Address: _____
City: _____
State: _____ Zip: _____
Phone: _____

2. STATE ENGINEER REFERENCE NUMBERS:

File # CP 975 EXPLORE, Well # C.P. 975

3. LOCATION OF WELL (The Datum Is Assumed To Be WGS 84 Unless Otherwise Specified)

Latitude: 32 Deg 25 Min 45.8 Sec
Longitude: 103 Deg 04 Min 20.4 Sec
(Enter Lat/Long To At Least 1/10th Of A Second)
Datum If Not WGS 84: _____

Santa Rosa

4. DRILLING CONTRACTOR

License Number: WD1184
Name: WEST TEXAS WATER WELL SERVICE Work Phone: (432) 530-2696

Drill Rig Serial Number: 261602

List The Name Of Each Drill Rig Supervisor That Managed On-Site Operations During The Drilling Process:

RONNY KEITH

STATE ENGINEER OFFICE
2008 MAY 14 P 2:

5. DRILLING RECORD

Drilling Began: 1-21-08 ; Completed: 4-29-08 ; Drilling Method MUD ROTARY

Diameter Of Bore Hole: 7-7/8 (in);

Total Depth Of Well: 2,020 (ft);

Completed Well Is (Circle One): Shallow / (Artesian);

Depth To Water First Encountered: 1,092 (ft);

Depth To Water Upon Completion Of Well: N/A (ft).

Do Not Write Below This Line

TRN Number: 396028
Form: wr-20 May 07

File Number: CP-975

21.38.33.333

Explore

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD and DRILLING LOG

6. RECORD OF CASING

Diameter (inches)	Pounds (per ft.)	Threads (per inch)	Depth (feet)	Length Top to Bottom (feet)	Type of Shoe	Perforations (from to)
13-3/8	48	8	2' AGL	40'		
8-5/8	24	8	3' AGL	1,440'	FLOAT GUIDE	

7. RECORD OF MUDDING AND CEMENTING

Depth (feet)	Hole (diameter)	Mud Used (# of sacks)	Cement (cubic feet)	Method of Placement
0 - 40	17-1/2		35	TRIMMIE
0 - 1,440	12-1/4		574	POSITIVE
1,380-2,020	7-7/8		275	TRIMMIE

STATE ENGINEER OFFICE
2013 MAY 14 P 2:03

Do Not Write Below This Line

Trn Number: _____ File Number: _____
Form: wr-20 May 07

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

8. LOG OF HOLE. For Each Water Bearing Strata, Estimate The Yield Of The Formation In Gallons Per Minute.

Depth (feet) From	Depth (feet) To	Thickness (Feet)	For Water Bearing Strata Enter The Estimated Yield in GPM	Color and Type of Material Encountered
			SEE ATTACHED GEOLOGIC LOG	

STATE ENGINEER OFFICE
2008 NOV 10 P 2 04

Enter Method Used To Estimate Yield: N/A

Do Not Write Below This Line

Trn Number: _____ File Number: _____

CP-975 Geologic log

0-6 ft 6 pad fill and fine brown sand

6-10 ft 4 white sandy limestone (Mescalero caliche) Ogalala

10-29 ft 19 sand, light brown, and brown calcareous sandstone (Gatuña Formation) ? Ogalala

29-576 ft 547 interbedded sandstone, siltstone, and claystone; reddish-brown to gray; bioturbated (Cooper Canyon Formation)

576-708 ft 132 sandstone and siltstone, gray to reddish brown (Trujillo Formation)

708-1092 ft 384 interbedded very fine sandstone and siltstone, gray to dark reddish brown (Tecovas Formation)

1092-1384 ft 292 gray, fine sandstone with interbedded reddish brown and weak red siltstone and claystone (Santa Rosa Formation)

1400

1384-1566 ft 182 reddish brown, very fine sandstone and siltstone, with some fibrous gypsum in lower part (Dewey Lake Formation)

1566-1602 ft 34 gray anhydrite beds, with intermediate reddish-brown and gray siltstone (Forty-niner Member of the Rustler Formation)

1602-1609 ft 7 gray anhydrite and wavy thin laminae of dolomite (Magenta Dolomite Member of the Rustler Formation)

1609-1736 ft 127 gray anhydrite beds, with intermediate halite including anhydrite and polyhalite (Tamarisk Member of the Rustler Formation)

1736-1807 ft 71 halite with thin two thin anhydrite beds and basal reddish-brown, very fine sandstone (Los Medaños Member of the Rustler Formation)

1807-2020 ft 213 halite with anhydrite/polyhalitic marker beds (MB103 and uppermost MB109) (Salado Formation)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2000 MAY 11 P 2:06

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. ADDITIONAL STATEMENTS OR EXPLANATIONS:

2008 MAY 14 P 2 06

STATE ENGINEER OFFICE

The undersigned hereby certifies that, to the best of his or her knowledge and belief, the foregoing is a true and correct record of the above described bore hole. The undersigned further certifies that he or she will file this well record with the Office Of The State Engineer and permit holder within 20 days after completion of the well drilling.

Tommy Keith
Driller

05-12-08
(mm/dd/year)

Do Not Write Below This Line

Trn Number: _____ File Number: _____

File Number: _____ (For OSE Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT
TO DRILL AN EXPLORATORY WELL

2-24674
B20

1. APPLICANT:

Name: Waste Control Specialists LLC Work Phone: 888-789-2783
Contact: Mike Burney Home Phone: 505-394-4300
Address: 9998 W. Highway 176
City: Andrews State: TX Zip: 79714

2. LOCATION OF WELL (A, B, C, or D required, E or F if known):

A. NE 1/4 NW 1/4 NW 1/4 Section: 33 Township: 21S Range: 38E N.M.P.M. in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 30.145 s Longitude: 103 d 04 m 10.962 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number of existing well: _____

I. On land owned by (required): Waste Control Specialists LLC

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 DEC 31 A 9:58

3. WELL INFORMATION:

Approximate depth 75 feet; Outside diameter of casing 2 inches.
Name of well driller and driller license number Jose Salas/#1575

4. ADDITIONAL STATEMENT OR EXPLANATIONS:

This piezometer (TP- 63) is being installed to determine the presence or absence of shallow groundwater in the Ogallala/Antlers/Gatuna formations on top of the Triassic Dockum group "red bed clays" in support of licensing activities by Waste Control Specialists LLC. No pumping or use of groundwater is intended; the piezometer is being installed solely to monitor groundwater levels,if any.

RENAMED " PZ-41"

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2008 FEB 29 P 1:31

Do Not Write Below This Line

File Number: CP-972 Trn Number: 395941
Form: wr-07

File Number: _____
(For OS. Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT
TO DRILL AN EXPLORATORY WELL

ACKNOWLEDGEMENT

(I, We) Mike Burney affirm that the
(Please Print)
foregoing statements are true to the best of my knowledge and belief.

Applicant Signature _____ Applicant Signature _____

ACTION OF STATE ENGINEER

This application is approved~~XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX~~ provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare, and further subject to the following conditions: _____

see attached conditions of approval

Witness my hand and seal this 2nd day of January, 20 08

John R. D'Antonio, Jr., P.E., State Engineer

By: Kenneth M. Fresquez
Kenneth M. Fresquez, Acting District II Supervisor

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2008 FEB 29 A 11:31

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2007 DEC 31 A 9:58

Do Not Write Below This Line

File Number: CP-972 Trn Number: 395941
Form: wr-07

WL 15
WRB

26

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Waste Control Specialists — Work Phone: 888-789-2783
Contact: Mike Burney — Home Phone: 505-394-4300
Address: 9998 W. Highway 176
City: Andrews — State: TX Zip: 79714

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NE 1/4 NW 1/4 NW 1/4 Section: 33 Township: 21S Range: 38E N.M.P.M.
in _____ County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 29 s Longitude: 103 d 04 m 13 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-972

I. On land owned by (required): Waste Control Specialists

STATE ENGINEER OFFICE
2008 FEB 29 A 11:31
RECEIVED

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling, L.P. — Work Phone: 806-467-0607
Agent: Shane Currie — Home Phone: 806-676-8220
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 1/21/08 ; Completed: 2/9/08 ; Type tools: Air Rotary Rig
Size of hole: 5-5/8 in.; Total depth of well: 99 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-972 — Trn Number: 395941
Form: wr-20 — page 1 of 4

Moxitor

21.38.33.112

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
			Dry	

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
2	Sch 40 PVC	2	0	37	37	N/A	N/A	
2	Sch 40 PVC	2	37	49	12	PVC end cap	37	49

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	5	5 - 5/8	20		tremie - bentonite/cement
5	35	5 - 5/8	6		poured - bentonite chips

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

STATE ENGINEER OFFICE
2009 FEB 29 A 11:31

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

Do Not Write Below This Line

File Number: CP-972
Form: wr-20

Trn Number: 375941

21, 35, 33, 112

Moxitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	2	2	Silty Sand, tan
2	7	5	Caliche, Hard, tan
7	30	23	Caliche, Moderate hard, tan
30	45	15	Silty Sand, tan
45	49	5	Clay, reddish

STATE ENGINEER OFFICE
SANTA FE, NEW MEXICO
2000 FEB 29 A 11:31

Do Not Write Below This Line

File Number: CP-972
Form: wr-20

Trn Number: 395941

21, 38, 33, 112

Monitor

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:

STATE ENGINEER OFFICE
RECEIVED
2008 FEB 29 A 11 31

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Steve Cie
Driller

02/26/2008
(mm/dd/year)

==========

FOR STATE ENGINEER USE ONLY

Quad _____; FWL _____; FSL _____; Use _____; Location No. _____

Do Not Write Below This Line

File Number: CP-972
Form: wr-20

page 4 of 4

Trn Number: 395941

21.38.33.112

Monitor

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL

John R. D'Antonio, Jr., P.E.
State Engineer

1900 WEST SECOND STREET
ROSWELL, NM 88201
Phone: (575) 622-6521
Fax: (575) 623-8559

January 3, 2008

Waste Control Specialists LLC
% Mike Burney
9998 W. Hwy 176
Andrews, TX 79714

RE: CP-971; CP-972; CP-973: CP-974

Greetings:

Enclosed is your copy of the Exploratory / Monitoring Permits, which have been approved subject to the conditions set forth on the approval page thereof.

In accordance with Condition C, a well record shall be filed in this office twenty days after completion of drilling. The well record is proof of completion of well. IT IS YOUR RESPONSIBILITY TO ASSURE THAT THE WELL LOGS BE FILED WITHIN 20 DAYS OF DRILLING OF THE WELLS.

These permits will expire on or before 01/31/09 unless the wells have been drilled and the well logs filed in this office.

Sincerely,

for Andy Morley
(575) 622-6521, ext 113

Enclosure

cc: Santa Fe Office

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2008 FEB 29 A 11:31

NEW MEXICO STATE ENGINEER
PERMIT TO EXPLORE / MONITOR

SPECIFIC CONDITIONS OF APPROVAL

4 No water shall be appropriated and beneficially used under this permit.

B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-12 New Mexico Statutes Annotated.

C Driller's well record must be filed with the State Engineer within 20 days after the well is drilled or driven. Well record forms will be provided by the State Engineer upon request.

C2 No water shall be diverted from this well except for testing purposes which shall not exceed ten (10) cumulative days, and well shall be plugged or capped on or before 01/31/09, unless a permit to use water from this well is acquired from the Office of the State Engineer.

The well shall be constructed, maintained and operated that each water shall be confined to the aquifer in which it is encountered.

LOG The Point of Diversion CP-972 Monitor Well must be completed and the Well Log filed on or before 01/31/09.

ACTION OF STATE ENGINEER

Notice of Intention Rcvd:		Date Rcvd. Corrected:	
Formal Application Rcvd:	12/31/07	Pub. Of Notice Ordered:	
Date Returned – Correction:		Affidavit of Pub. Filed:	

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 2nd day of January, 2008.

John R. D'Antonio, Jr., P.E., State Engineer

By: Kenneth M. Fresquez
Kenneth M. Fresquez, Acting District II Supervisor

STATE ENGINEER OFFICE
2008 FEB 29 A 11:31

File Nbr: CP-972 Monitor Well

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-101

FILE # 95042.10 SHEET 1 OF 1

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

WATER LEVEL DATA (NE = Not Encountered)
NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/22/97
Completed	11/22/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

GROUND ELEVATION: 3408.62 (Ft., MSL) | Northing: 9800.52 Easting: 9898.97 | Completion Depth: 50.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
		Dark reddish-brown, fine SAND, some roots, no organics	2.0	No	Dry	7.5YR 5/6		
5.0		Reddish-brown, sandy LOAM to poorly cemented loamy SAND, blocky, friable	6.0	No	Dry	7.5YR 6/6		5.0
10.0		Pinkish-white, sandy CALICHE, moderately weak structure, friable nodules of caliche	12.0	Moderate	Dry	2.5YR 8/2		10.0
15.0		Reddish-brown, loamy fine SAND with moist friable sandy nodules, very few calcareous nodules	21.0					15.0
20.0								20.0
25.0		Light red to pink, calcareous pebbly SAND, pebbles are dominantly quartzite, some rose color banded gniess, little chert, angular. Pebbles increase with depth		Moderate	Dry	2.5YR 7/6		25.0
30.0								30.0
35.0		Pink, sandy, pebbly fine GRAVEL, dominantly quartzite, well graded, angular	34.0 36.0	Moderate	Dry	5YR 7/4		35.0
40.0		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky cuttings, some chert pebbles and calcareous clasts, poorly indurated		Slight	Dry	2.5YR 7/3		40.0
45.0				Slight	Barely Damp	2.5YR 4/6		45.0
50.0		BORING TERMINATED AT 50.0'	50.0					50.0

NOTES:
1. Dry monitoring well installed in borehole.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-102

FILE # 95042.10 SHEET 1 OF 1

WATER LEVEL DATA (NE = Not Encountered)

NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/20/97
Completed	11/20/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,392.63 (Ft., MSL) | Northing: 8467.05 Easting: 7193.22 | Completion Depth: 50.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
5.0		Brown, fine to medium SAND with caliche grains, granular structure, some roots, no organics		No	Dry	7.5YR 4/6		5.0
				Minor	Dry	7.5YR 5/6		
			7.0					
10.0		Brownish-white calcareous fine SAND, some calcareous cement sand nodules, not as floury as other caliche, gritty, abundant coarse sand and chert when wetted		Yes	Dry	7.5YR 7/3		10.0
15.0			16.0					15.0
20.0		Pinkish-white sandy CALICHE, many pebbles of hard angular cherty fine sandstone (not friable)		Yes	Dry	7.5YR 7/3		20.0
			21.0					
25.0		Pink, fine to medium SAND, calcareous very small nodules of caliche and cemented sandstone		Yes	Dry	2.5YR 7/3		25.0
			26.0					
30.0		White sandy CALICHE with calcareous sand matrix and abundant chert clasts. Clasts are angular, coarse gravel size, brown, white and black, some quartzite		Yes	Dry	2.5YR 8/2		30.0
			33.0					
35.0		Rose and white PEBBLES, with very little sand, dominantly hard, very angular quartzite. White pebbles are hard limestone with quartzite grains	36.0	Yes	Barely Damp	2.5YR 6/4		35.0
40.0		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaceous clasts infrequently, poorly indurated		Yes	Barely Damp	2.5YR 4/4		40.0
45.0								45.0
50.0		BORING TERMINATED AT 50.0'	50.0	Yes	Barely Damp	2.5YR 4/6		50.0

NOTES: 1. Dry monitoring well installed in borehole.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-103

FILE # 95042.10 SHEET 1 OF 1

WATER LEVEL DATA (NE = Not Encountered)
NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/21/97
Completed	11/21/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,402.54 (Ft., MSL) | Northing: 9711.58 Easting: 8682.07 | Completion Depth: 55.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
0		Reddish-brown, sandy LOAM to poorly cemented loamy SAND, blocky, friable		No	Dry	7.5YR 4/6		0
5.0				No	Barely Damp	7.5YR 5/6		5.0
			6.0					
		Pinkish-white, sandy CALICHE, moderately weak structure, friable nodules of caliche		Yes	Dry	7.5YR 8/4		
10.0								10.0
			14.0					
15.0		Reddish-brown, loamy fine SAND with moist friable sandy nodules, very few calcareous nodules		Yes	Dry	7.5YR 7/3		15.0
20.0								20.0
25.0								25.0
			26.0					
30.0		Light red to pink, calcareous pebbly SAND, pebbles are dominantly quartzite, some rose color banded gniess, little chert, angular. Pebbles increase with depth		Yes	Dry	7.5YR 8/2		30.0
			33.0					
35.0		Rose and white PEBBLES, with very little sand, dominantly hard, very angular quartzite. White pebbles are hard limestone with quartzite grains	36.0	Yes	Dry	2.5YR 7/3		35.0
		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaceous clasts infrequently, poorly indurated		Yes	Barely Damp	2.5YR 4/4		
40.0								40.0
45.0				Slight	Barely Damp	2.5YR 4/4		45.0
50.0								50.0
55.0		BORING TERMINATED AT 55.0'	55.0	No	Barely Damp	2.5YR 4/6		55.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-104

FILE # 95042.10 SHEET 1 OF 1

WATER LEVEL DATA (NE = Not Encountered)

NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/21/97
Completed	11/21/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,404.38 (Ft., MSL) | Northing: 8518.93 Easting: 9678.16 | Completion Depth: 60.0

Depth (FT., bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
0.0		Dark reddish-brown, fine SAND, some roots, no organics	3.0	Slight	Barely Damp	7.5YR 5/4		0.0
5.0		Reddish-brown, sandy LOAM to poorly cemented loamy SAND, blocky, friable	6.0	Slight	Dry	7.5YR 6/4		5.0
10.0		Pinkish-white, sandy CALICHE, moderately weak structure, friable nodules of caliche		Moderate	Dry	2.5YR 8/4		10.0
15.0								15.0
20.0			21.0					20.0
25.0		Light red to pink, calcareous pebbly SAND, pebble are dominantly quartzite, some rose color banded gniess, little chert, angular. Pebbles increase with depth		Moderate	Dry	2.5YR 8/2		25.0
30.0								30.0
35.0								35.0
40.0			40.0					40.0
45.0		Very light brown medium GRAVEL with calcareous sand matrix, gravel is brown when wet, very cherty, angular, white and brown chert, some quartzite	44.0	Moderate	Dry	2.5YR 8/2		45.0
		White to light brown pebbly coarse GRAVEL with some fine calcareous sand matrix. Pebbles are less angular, mostly chert but also gniess and quartzite	46.0					
50.0		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, poorly indurated, cuttings are blocky, some chert pebbles and white calcareous clasts		Moderate	Dry	2.5YR 7/4		50.0
				Moderate	Dry	2.5YR 4/6		
55.0								55.0
60.0				Slight	Barely Damp	2.5YR 5/6	Pitcher Bell Sample obtained at 60.0'	60.0
		BORING TERMINATED AT 60.0'	60.0	Slight	Barely Damp	2.5YR 4/4		

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-105

FILE # 95042.10 SHEET 1 OF 1

WATER LEVEL DATA (NE = Not Encountered)
NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started 11/19/97
Completed 11/19/97
Driller Allan Eades
Helper Freddy
Drilling Method Air Rotary
Sampling Method Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,388.07 (Ft., MSL) Northing: 6609.23 Easting: 7335.60 Completion Depth: 50.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
0		Grayish-brown loamy fine SAND, granular, no organics, few calcareous nodules increasing with depth, small roots, no iron staining, friable cemented sandstone nodules (Windblown Sands)		Yes	Dry	7.5YR 8/2		0
5.0								5.0
10.0								10.0
15.0			14.0					15.0
		Pink fine to medium calcareous SAND, with few calcareous nodules that are friable, no other large clasts		Yes	Dry	7.5YR 7/4		
20.0								20.0
25.0			28.0					25.0
30.0		Pink calcareous fine SAND to very fractured sandy CALICHE, few to no chert or other clasts. Caliche is very hard, not friable (CAPROCK?)						30.0
35.0		White sandy CALICHE with calcareous sand matrix and abundant chert clasts. Clasts are angular, coarse gravel size, brown, white and black, some quartzite	35.0					35.0
		Rose and white PEBBLES, with very little sand, dominantly hard very angular quartzite. White pebbles are hard limestone with quartzite grains.	38.0	Yes	Dry	7.5YR 7/2		40.0
40.0			44.0					
45.0		Reddish-brown sandy LOAM with pebbles of calcareous cemented sandstone (friable).	47.0	Yes	Dry	2.5YR 6/4		45.0
		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky cuttings, some calcareous stains, poor indurated/friable.	50.0	Yes	Dry	2.5YR 6/4		50.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
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(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-106

FILE # 95042.10 SHEET 1 OF 1

WATER LEVEL DATA (NE = Not Encountered)

NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/21/97
Completed	11/21/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,401.06 (Ft., MSL) | Northing: 5968.89 Easting: 9285.60 | Completion Depth: 66.5

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
5.0		Grayish-brown loamy fine SAND, granular, no organics, few calcareous nodules increasing with depth, small roots, no iron staining, friable cemented sandstone nodules (Windblown Sands)		No	Dry	7.5YR 5/6		5.0
10.0			11.0	Moderate	Dry	2.5YR 8/3		10.0
15.0		Pink fine to medium calcareous SAND, with few calcareous nodules that are friable, no other large clasts	16.0					15.0
20.0		Pink calcareous fine SAND to very fractured sandy CALICHE, few to no chert or other clasts. Caliche is very hard, not friable (CAPROCK?)		Moderate	Dry	2.5YR 7/6		20.0
25.0								25.0
30.0			33.0					30.0
35.0		White sandy CALICHE with calcareous sand matrix and abundant chert clasts. Clasts are angular, coarse gravel size, brown, white and black, some quartzite		Moderate	Dry	2.5YR 8/3		35.0
40.0								40.0
45.0								45.0
50.0								50.0
55.0								55.0
60.0								60.0
65.0		Rose and white PEBBLES, with very little sand, dominantly hard very angular quartzite. White pebbles are hard limestone with quartzite grains.	63.0	Moderate	Dry	2.5YR 7/3		65.0
		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky cuttings, some calcareous stains, poor indurated/friable.	66.0 66.5	Slight	Dry	2.5YR 5/6		
		BORING TERMINATED AT 66.0'						

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
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(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-107

FILE # 95042.10 SHEET 1 OF 2

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

WATER LEVEL DATA (NE = Not Encountered)
NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started 11/22/97
Completed 11/22/97
Driller Allan Eades
Helper Freddy
Drilling Method Air Rotary
Sampling Method Drill Cuttings

GROUND ELEVATION: 3,405.43 (Ft., MSL) Northing: 4016.88 Easting: 9228.40 Completion Depth: 92.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
0.0		Reddish-brown, loamy fine SAND to sandy LOAM, blocky, friable, very few organics, grading to light brown loamy SAND		No	Dry	7.5YR 6/6		0.0
5.0			6.0					5.0
		Reddish-brown, sandy LOAM to poorly cemented loamy SAND, blocky, friable	8.0	No	Dry	7.5YR 5/6		
10.0		Pink, sandy CALICHE, moderately weak with friable nodules of caliche and poorly cemented sand, fewer nodules with depth		Moderate	Dry	2.5YR 8/3		10.0
			13.0					
15.0		Pink, fine to medium SAND, calcareous very small nodules of caliche and cemented sandstone		Moderate	Dry	2.5YR 5/6		15.0
20.0								20.0
25.0								25.0
30.0			31.0					30.0
35.0		Light red to pink, calcareous pebbly SAND, pebbles are dominantly quartzite, some roase color banded gniess, little chert, angular. Pebbles increase with depth		Moderate	Dry	2.5YR 6/4		35.0
40.0								40.0
45.0								45.0
50.0								50.0
55.0								55.0
60.0								60.0
65.0								65.0
70.0								70.0
75.0		Pink, sandy CALICHE with caprock chips (Continued)	75.0	Moderate	Dry	2.5YR 8/3		75.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-107

FILE # 95042.10 SHEET 2 OF 2

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
		(Continued from page 1) Pink, sandy CALICHE with caprock chips	83.0					
85.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, little to no mica		Moderate	Dry	2.5YR 5/6		85.0
				Slight	Barely Damp	2.5YR 7/3		
90.0				Slight	Barely Damp	2.5YR 5/3		90.0
		BORING TERMINATED AT 92.0'	92.0	No	Barely Damp	2.5YR 5/2		

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▽ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
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(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-108

FILE # 95042.10 SHEET 1 OF 3

WATER LEVEL DATA (NE = Not Encountered)

NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/20/97
Completed	11/20/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,396.15 (Ft., MSL) | Northing: 9696.33 Easting: 7439.48 | Completion Depth: 215.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
		Brown, fine to medium SAND with caliche grains, granular structure, some roots, no organics	4.0	Yes	Dry	7.5YR 6/3		
5.0		Brownish-white calcareous fine SAND, some calcareous cement sand nodules, not as floury as other caliche, gritty, abundant coarse sand and chert when wetted						5.0
10.0				Strong	Dry	7.5YR 8/2		10.0
15.0			17.0					15.0
20.0		Pinkish-white sandy CALICHE, many pebbles of hard angular cherty fine sandstone (not friable)		Strong	Dry	2.5YR 8/2		20.0
25.0		Pink, very fine SAND, calcareous with occasional pebbles of granite, chert	24.0	Mild	Dry	2.5YR 7/4		25.0
30.0								30.0
35.0		Dark brown sandy CLAYSTONE, weathered, blocky, very few caliche clasts, dry, friable/poorly indurated	33.0	Mild	Dry	2.5YR 6/2		35.0
40.0				Mild	Dry	2.5YR 5/3		40.0
45.0		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaceous clasts infrequently, poorly indurated	46.0	Mild	Dry	2.5YR 5/2		45.0
50.0								50.0
55.0				Mild	Dry	2.5YR 5/3		55.0
60.0				Mild	Dry	2.5YR 7/3	Pitcher Bell Sample obtained at 60.0'	60.0
65.0				Mild	Dry	2.5YR 4/3		65.0
70.0								70.0
75.0		(Continued)						75.0

NOTES:
1. Backfilled with cuttings to 120', grouted to surface with 95 with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
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LOG OF SOIL BORING NO. B-108

FILE # 95042.10 SHEET 2 OF 3

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
		(Continued from page 1)						
85.0		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaccous clasts infrequently, poorly indurated		Mild	Barely Damp	2.5YR 5/3		85.0
90.0								90.0
95.0								95.0
100.0				Mild	Barely Damp	2.5YR 5/3	Pitcher Bell Sample obtained at 100.0'	100.0
105.0								105.0
110.0								110.0
115.0								115.0
120.0								120.0
125.0				Mild	Barely Damp	2.5YR 4/4		125.0
130.0								130.0
135.0				No	Barely Damp	2.5YR 5/6		135.0
140.0								140.0
145.0				No	Barely Damp	2.5YR		145.0
150.0							Pitcher Bell Sample obtained at 150.0'	150.0
155.0								155.0
160.0								160.0
165.0								165.0
170.0		(Continued)		No	Barely Damp	2.5YR 4/3		170.0

NOTES:
1. Backfilled with cuttings to 120', grouted to surf-ce with 95 with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
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LOG OF SOIL BORING NO. B-108

FILE # 95042.10 SHEET 3 OF 3

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
175.0		(Continued from page 2)						175.0
180.0		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaceous clasts infrequently, poorly indurated						180.0
185.0				Mild	Barely Damp	2.5YR 7/2		185.0
190.0			191.0					190.0
195.0		Light reddish-gray SILTSTONE, with green laminae, slick, less sandy, poorly indurated, dry		Mild	Barely Damp	2.5YR 7/1		195.0
200.0			201.0					200.0
205.0		Reddish-brown CLAYSTONE, dry, poorly indurated, no bedding or laminae		Mild	Barely Damp	2.5YR 5/2		205.0
210.0							Pitcher Bell Sample obtained at 215.0'	210.0
215.0		BORING TERMINATED AT 215.0'	215.0	No	Barely Damp	2.5YR 4/3		215.0

NOTES:
1. Backfilled with cuttings to 120', grouted to surface with 95 with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-109

FILE # 95042.10 SHEET 1 OF 2

WATER LEVEL DATA (NE = Not Encountered)

NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/21/97
Completed	11/21/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,404.76 (Ft., MSL) | Northing: 7717.16 Easting: 9920.72 | Completion Depth: 120.0

Depth (FT., bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
5.0		Grayish-brown loamy fine SAND, granular, no organics, few calcareous nodules increasing with depth, small roots, no iron staining, friable cemented sandstone nodules (windblown sands)	8.0					5.0
10.0		Pinkish-white, sandy CALICHE, moderately weak structure, friable nodules of caliche						10.0
15.0								15.0
20.0			21.0					20.0
25.0		Light red to pink, calcareous pebbly SAND, pebbles are dominantly quartzite, some rose color banded gniess, little chert, angular. Pebbles increase with depth						25.0
30.0								30.0
35.0			36.0					35.0
40.0		White, sandy CALICHE with calcareous sand matrix and abundant chert clasts. Clasts are angular, coarse gravel size, brown, white and black, some quartzite						40.0
45.0								45.0
50.0			51.0					50.0
55.0		Rose and white PEBBLES, with very little sand, dominantly hard, very angular quartzite. White pebbles are hard limestone with quartzite grains	56.0					55.0
60.0		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky cuttings, some chert pebbles and calcareous clasts, poorly indurated						60.0
65.0								65.0
70.0								70.0
75.0			76.0					75.0
		Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds					Pitcher Bell Sample	

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-109

FILE # 95042.10 SHEET 2 OF 2

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
		(Continued)					obtained at 80'	
		(Continued from page 1)						
85.0		Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds						85.0
90.0								90.0
95.0								95.0
100.0								100.0
105.0								105.0
110.0								110.0
115.0								115.0
120.0		BORING TERMINATED AT 120'	120.0				Pitcher Bell Sample obtained at 120'	120.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 1 OF 7

WATER LEVEL DATA (NE = Not Encountered)
NE FT. W.D.
NE FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/17/97
Completed	11/19/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,397.38 (Ft., MSL) Northing: 7924.34 Easting: 8019.53 Completion Depth: 600.0

Depth (FT.,bgs)	Lithology Type	STRATA DEPTH / SOIL DESCRIPTION / GRAPHIC LOG	Strata Depth (FT.,bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
0.0		Yellowish-red to reddish-brown, loamy fine SAND, weak granular structure,	2.0	No	Dry	5YR 5/8		0.0
5.0		Reddish-brown, loamy fine SAND to sandy LOAM, blocky, friable, very few organics, grading to light brown loamy SAND		No	Dry	5YR 6/8		5.0
10.0				No	Dry	5YR 6/8		10.0
			11.0					
15.0		Pink, sandy CALICHE, moderately weak with friable nodules of caliche and poorly cemented sand, fewer nodules with depth		Strong	Dry	5YR 8/4		15.0
20.0				Mild	Dry	5YR 8/3		20.0
			24.0					
25.0		Pink, fine to medium SAND, calcareous very small nodules of caliche and cemented sandstone						25.0
30.0								30.0
35.0								35.0
				Mild	Dry	5YR 8/2		
40.0			39.0					40.0
		Reddish-brown, pebbly, coarse GRAVEL with loamy sand matrix. Pebbles are predominantly chert, white, red, black and rose quartzite, all angular to subangular	43.0	Mild	Dry	2.5YR 6/4		
45.0		Light reddish-brown, CLAYSTONE with trace sand and calcareous cemented sandtone pebbles, cuttings are blocky, some chert						45.0
			49.0	Mild	Dry	2.5YR 6/3		
50.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, little to no mica		Mild	Dry	2.5YR 4/6		50.0
55.0								55.0
				Mild	Dry	2.5YR 6/3		
60.0								60.0
				Mild	Dry	2.5YR 4/6		
65.0								65.0
70.0								70.0
75.0								75.0
		(Continued)		Mild	Dry	2.5YR 6/4		

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 2 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
85.0		(Continued from page 1) Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, little to no mica	84.0					85.0
90.0		Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds		Minor	Barely Damp	2.5YR 4/4	Pitcher Bell Sample obtained at 90'	90.0
95.0								95.0
100.0								100.0
105.0								105.0
110.0			110.0					110.0
115.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, little to no mica		Slight	Barely Damp	2.5YR 4/4		115.0
120.0								120.0
125.0								125.0
130.0				Yes	Barely Damp	2.5YR 3/4		130.0
135.0								135.0
140.0							Pitcher Bell Sample obtained at 140'	140.0
145.0				Yes	Barely Damp	2.5YR 4/4		145.0
150.0								150.0
155.0				No	Barely Damp	2.5YR 4/6		155.0
160.0								160.0
165.0								165.0
170.0		(Continued)						170.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 3 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
175.0		(Continued from page 2)						175.0
		Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, little to no mica						
180.0								180.0
185.0								185.0
190.0			190.0					190.0
		Light reddish-brown MUDSTONE, slick, siltier, no bedding		No	Barely Damp	2.5YR 6/3		
195.0								195.0
200.0								200.0
205.0								205.0
210.0			211.0					210.0
		Reddish-brown MUDSTONE/CLAYSTONE, micaceous, no bedding or laminne						
215.0								215.0
				No	Barely Damp	2.5YR 5/4		
220.0								220.0
225.0				No	Dry	2.5YR 4/6		225.0
230.0							Pitcher Bell Sample obtained at 230'	230.0
235.0								235.0
240.0								240.0
				No	Dry	2.5YR 5/4		
245.0								245.0
250.0				No	Dry	2.5YR 4/6		250.0
255.0								255.0
260.0				No	Dry	2.5YR 6/3		260.0
		(Continued)						

NOTES: 1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Endes Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 4 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
265.0		(Continued from page 3)						265.0
270.0				No	Dry	2.5YR 5/6		270.0
275.0		Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no bedding or laminae						275.0
280.0								280.0
285.0								285.0
290.0				Yes	Dry	2.5YR 5/4		290.0
295.0								295.0
300.0								300.0
305.0								305.0
310.0								310.0
315.0								315.0
320.0								320.0
325.0				No	Dry	2.5YR 4/4		325.0
330.0								330.0
335.0								335.0
340.0								340.0
345.0				Yes	Dry	2.5YR 5/4		345.0
350.0							Pitcher Bell Sample obtained at 350'	350.0
355.0		(Continued)						355.0

NOTES: 1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
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LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 5 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
360.0		(Continued from page 4)						360.0
365.0		Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no bedding or laminae		Minor	Dry	2.5YR 4/4		365.0
370.0								370.0
375.0				Minor	Dry	2.5YR 4/6		375.0
380.0								380.0
385.0								385.0
390.0								390.0
395.0								395.0
400.0								400.0
405.0								405.0
410.0								410.0
415.0								415.0
420.0								420.0
425.0								425.0
430.0								430.0
435.0				Minor	Dry	2.5YR 4/8		435.0
440.0								440.0
445.0		(Continued)						445.0

NOTES: 1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
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LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 6 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
450.0		(Continued from page 5)						450.0
455.0		Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no bedding or laminae						455.0
460.0								460.0
465.0								465.0
470.0								470.0
475.0								475.0
480.0								480.0
485.0								485.0
490.0								490.0
495.0								495.0
500.0								500.0
505.0								505.0
510.0								510.0
515.0								515.0
520.0				Minor	Dry	2.5YR 5/4		520.0
525.0								525.0
530.0								530.0
535.0		(Continued)						535.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-110

FILE # 95042.10 SHEET 7 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
545.0		(Continued from page 6)		Minor	Dry	7.5YR 5/4		545.0
		Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no bedding or laminae						
550.0								550.0
555.0				Minor	Dry	2.5YR 4/4		555.0
560.0								560.0
565.0								565.0
				Yes	Dry	2.5YR 6/3		
570.0				Yes	Dry	2.5YR 6/2		570.0
				Yes	Dry	2.5YR 4/4		
575.0			576.0					575.0
580.0		Light reddish-gray, clayey SILTSTONE, gritty, sandy, no bedding		Yes	Dry	2.5YR 6/1		580.0
585.0								585.0
590.0		Reddish-gray, silty SANDSTONE	588.0	Yes	Dry	2.5YR 6/1		590.0
				Yes	Dry	2.5YR 6/1		
595.0		Light reddish-gray, silty SANDSTONE	595.0					595.0
				Yes	Dry	2.5YR 7/1		
600.0		BORING TERMINATED AT 600 FEET	600.0					600.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 1 OF 7

WATER LEVEL DATA
NE = Not Encountered
598.0 FT. W.D.
____ FT. AT COMPLETION
____ FT. AT ____ HR. A.D.
____ FT. AT ____ HR. A.D.

Started	11/13/97
Completed	11/13/97
Driller	Allan Eades
Helper	Freddy
Drilling Method	Air Rotary
Sampling Method	Drill Cuttings

LOCATION Proposed Lea County Landfill
Eunice, New Mexico
CLIENT Camino Real Landfill
Sunland Park, New Mexico

GROUND ELEVATION: 3,404.35 (Ft., MSL) Northing: 9140.96 Easting: 9138.76 Completion Depth: 598.0

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA: Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
5.0		Yellowish-red to reddish-brown loamy fine SAND, weak granular structure, friable, very few organics, some roots, increasing caliche nodules with depth and slightly loamier with depth		No	Dry	5YR 5/6		5.0
			8.0					
10.0		Pale red to pinkish-white fine sandy CALICHE, moderately weak, friable nodules of caliche		Strong	Dry	2.5YR 7/2		10.0
			12.0	Mild	Dry	2.5YR 6/6		
15.0		Reddish-brown loamy fine SAND with moist sandy loam nodules, nodules are friable and slightly sticky, very little calcareous concretions						15.0
20.0			20.0	Mild	Dry	2.5YR 6/6		20.0
		Light brown loamy fine SAND, pisolitic, slightly indurated with calcareous concretions and sandy loam nodules, coated with carbonates, some organic matter, one chert pebble						
25.0			25.0					25.0
		Pink to white CALICHE, probably massive, cuttings are very fine, flour-like, few sandy nodules, friable when wet		Strong	Dry	2.5YR 8/1		
30.0								30.0
35.0			35.0	Mild	Dry	2.5YR 8/1		35.0
		Very light brown medium GRAVEL with calcareous sand matrix, gravel is brown when wet, very cherty, angular, white and brown chert, some quartzite	37.0	Mild	Dry	2.5YR 8/3		
40.0		White to light brown pebbly coarse GRAVEL with some fine calcareous sand matrix. Pebbles are less angular, mostly chert but also gniess and quartzite	40.0	Mild	Dry	2.5YR 5/3		40.0
		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, poorly indurated, cuttings are blocky, some chert pebbles and white calcareous clasts	44.0	Mild	Dry	2.5YR 4/4		
45.0								45.0
50.0		Reddish-brown sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated		No	Barely Damp	10R 4/6		50.0
55.0								55.0
60.0								60.0
				Mild	Barely Damp	2.5YR 5/3		
65.0								65.0
70.0								70.0
				Mild	Barely Damp	2.5YR 6/4		
75.0		(Continued)					Pitcher Bell Sample obtained at 80'	75.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND
W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 2 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
85.0		(Continued from page 1) Reddish-brown sandy, MUDSTONE/CLAYSTONE, micaceous, especially biotite, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated		Minor	Barely Damp	2.5YR 5/4		85.0
90.0				Slight	Barely Damp	2.5YR 6/3		90.0
95.0								95.0
100.0								100.0
105.0				Yes	Barely Damp	2.5YR 4/4		105.0
110.0								110.0
115.0								115.0
120.0				Yes	Barely Damp	2.5YR 5/3		120.0
125.0								125.0
130.0								130.0
135.0								135.0
140.0				No	Barely Damp	2.5YR 5/3	Pitcher Bell Sample obtained at 140'	140.0
145.0								145.0
150.0								150.0
155.0								155.0
160.0								160.0
165.0								165.0
170.0		(Continued)						170.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
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LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 3 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
175.0		(Continued from page 2)						175.0
180.0		Reddish-brown sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated		No	Barely	2.5YR 5/6		180.0
				No	Barely	2.5YR 4/4		
185.0			185.0					185.0
		Light reddish-brown, clayey SILTSONE	187.0	No	Dry	2.5YR 6/4		
190.0		Red, clayey SILTSTONE						190.0
				No	Barely Damp	2.5YR 5/6		
195.0			195.0					195.0
		Pink, clayey SILTSTONE						
200.0				No	Barely Damp	7.5YR 7/3	Pitcher Bell Sample obtained at 200'	200.0
205.0								205.0
210.0			211.0					210.0
215.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated		No	Dry	2.5YR 6/2		215.0
220.0								220.0
225.0								225.0
230.0								230.0
235.0								235.0
240.0								240.0
245.0								245.0
250.0								250.0
				No	Dry	2.5YR 4/6		
255.0								255.0
				Yes	Dry	2.5YR 4/4		
260.0		(Continued)						260.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
(312) 922-1030 * * INDIANA (219) 923-9609

LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 4 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
265.0		(Continued from page 3)						265.0
270.0								270.0
275.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated						275.0
280.0								280.0
285.0								285.0
290.0								290.0
295.0				No	Dry	10R 4/6		295.0
300.0								300.0
305.0								305.0
310.0								310.0
315.0								315.0
320.0								320.0
325.0								325.0
330.0				Yes	Dry	10R 4/4		330.0
335.0								335.0
340.0								340.0
345.0								345.0
350.0								350.0
355.0		(Continued)						355.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
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LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 5 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
360.0		(Continued from page 4)						360.0
365.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated						365.0
370.0				Minor	Dry	2.5YR 4/6		370.0
375.0								375.0
380.0								380.0
385.0								385.0
390.0				Minor	Dry	2.5YR 5/6		390.0
395.0								395.0
400.0								400.0
405.0								405.0
410.0								410.0
415.0								415.0
420.0								420.0
425.0								425.0
430.0								430.0
435.0				Minor	Dry	2.5YR 4/6		435.0
440.0								440.0
445.0		(Continued)						445.0

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
200 S. MICHIGAN AVENUE, CHICAGO IL, 60604
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LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 6 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
450.0		(Continued from page 5)						450.0
455.0								455.0
460.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated						460.0
465.0								465.0
470.0								470.0
475.0								475.0
480.0								480.0
485.0							Pitcher Bell Sample obtained at 485'	485.0
490.0								490.0
495.0								495.0
500.0								500.0
505.0								505.0
510.0								510.0
515.0								515.0
520.0								520.0
525.0				Minor	Dry	2.5YR 6/4		525.0
530.0								530.0
535.0		(Continued)						535.0

NOTES: 1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

W.D. - WHILE DRILLING A.D. - AFTER DRILLING HOUR(S) AFTER DRILLING

WEAVER BOOS CONSULTANTS, INC.
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LOG OF SOIL BORING NO. B-111

FILE # 95042.10 SHEET 7 OF 7

Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	SAMPLE DATA Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
		(Continued from page 6)						
545.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated						545.0
550.0								550.0
555.0								555.0
560.0				Minor	Dry	2.5YR 6/4		560.0
565.0			566.0					565.0
		Pink CLAYSTONE	568.0	Minor	Dry	2.5YR 8/3		
570.0		Light reddish-gray, clayey SILTSTONE		Yes	Dry	2.5YR 7/1		570.0
575.0			576.0					575.0
		Reddish-gray, sandy SILTSTONE		Yes	Dry	10R 6/1		
580.0			581.0					580.0
		Reddish-gray, silty SANDSTONE		Yes	Dry	10R 6/1		
585.0								585.0
590.0								590.0
595.0								595.0
▽		BORING TERMINATED AT 598 FEET	598.0					

NOTES:
1. Boring grouted after completion with 95% portland cement and 5% bentonite.
2. Drilling Company: Eades Drilling and Pump Service.

LEGEND

▽ W.D. - WHILE DRILLING ▼ A.D. - AFTER DRILLING ▽ HOUR(S) AFTER DRILLING

Permit Application

Lea County, New Mexico

C.K. Disposal E & P Landfill and Processing Facility

Permit No. TBD

Attachment H

Vadose Monitoring Plan

November 2015

PSC Project # 01058015

PARKHILLSMITH&COOPER

ATTACHMENT H
VADOSE ZONE MONITORING PLAN

PROPOSED C.K. DISPOSAL E&P LANDFILL AND PROCESSING FACILITY

Eunice, New Mexico

Project No: 15-04-22

Prepared for:

C.K. Disposal LLC

October 2015

Prepared by:

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TABLES, FIGURES, AND APPENDICES

FIGURES

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APPENDICES

1.0 INTRODUCTION

The proposed C.K. Disposal E&P Landfill and Processing Facility, henceforth known as the "Site", is a proposed Surface Waste Management Facility for oilfield waste processing and disposal services. The proposed Site is subject to Title 19 Chapter 15 Part 36 of the New Mexico Administrative Code (NMAC). Specifically the facility is subject to 19.15.36 NMAC, which is administered by the Oil Conservation Division (OCD).

The proposed tract of land encompasses approximately 316.97 acres and is located in the north half of Section 5, Township 22 South, Range 38 East in Southern Lea County, New Mexico. It is situated approximately 4.16 miles east of the town of Eunice and one-half mile west of the New Mexico-Texas state border south of Highway 234.

Per 19.15.36.13.A(1) NMAC, landfills are restricted where groundwater is less than 100 feet below the lowest elevation of the design depth at which oil field waste will be placed. Additionally, 19.15.36.14.B NMAC requires groundwater monitoring at facilities where "fresh groundwater" exists, unless otherwise approved by the division. Fresh groundwater is typically defined as groundwater that contains less than 10,000 mg/L of total dissolved solids. Based on site-specific criteria discussed in the following sections, a vadose monitoring plan is proposed. Vadose zone monitoring has been employed at other landfills around the country and in New Mexico where hydrogeologic conditions warrant. Of special interest, a recently approved oilfield waste disposal site (similar to the proposed Site) in Lea County and the Lea County Landfill, which adjoins the proposed Site on the eastern property boundary, both perform vadose zone monitoring. This Vadose Zone Monitoring Plan has been prepared by Kevin T. Carel P.G., a qualified groundwater scientist, for the C.K. Disposal LLC.

2.0 SITE HYDROGEOLOGY

The hydrogeologic setting is thoroughly discussed in the Hydrogeology Report located in Attachment G of the C.K. Disposal E&P Landfill and Processing Facility permit application. The proposed Site is underlain by strata deposited during the Holocene Series to middle Pleistocene of the Quaternary System, Scholle, 2003. The Quaternary strata is mostly composed of interlayered sands and was deposited by eolian processes. The regional stratigraphy includes geologic units (listed from oldest to youngest) of the Santa Rosa Formation and the Chinle Formation of the Triassic Dockum Group, Cretaceous rocks undifferentiated, the Tertiary Ogallala Formation, and various Holocene to Pleistocene age deposits. Locally the proposed Site is located on the west flank of a topographic high known as Rattlesnake Ridge. Rattlesnake Ridge, also known as the Dockum Red Bed Ridge or Red Bed Ridge, in adjacent Andrews County, Texas is a northwest-southeast trending topographic high. The ridge has a local influence on the occurrence of groundwater in the vicinity of the proposed Site.

According to Nicholson and Clebsch, (1961) the potable groundwater used in southern Lea County is derived from three principal geologic units, the Dockum Group, the Ogallala Formation, and Quaternary Alluvium. Most wells are completed in the shallowest zone that will produce the desired quantity of water because the shallow groundwater in the Quaternary Alluvium and the Ogallala Formation is of better chemical quality than that from the rocks of the Dockum Group and the younger rocks are more permeable and therefore permit greater well yields. Potable groundwater is not available below the Dockum Group.

The proposed Site is located where groundwater resources are limited. A groundwater contour map of the Ogallala Formation and the Quaternary alluvium in the vicinity of the proposed Site is provided as Figure H.1. The map's authors, Nicholson and Clebsch (1961), state that the groundwater contours are generalized, and in areas with limited subsurface data their contours are dashed where approximated. The overall groundwater flow pattern is toward the Southeast. The boundaries of the aquifer are shown by heavy dashed lines, which delineate the areas in which the Dockum Group and overlying strata project above the water table. The map indicates that the Ogallala Formation is not saturated beneath the proposed Site. This is due to the fact that as the Ogallala Formation rises in elevation toward the crest of Rattlesnake Ridge, its entire section projects above the water table. Based on information provided by Lehman and Rainwater (2000), the strata above the Dockum Group becomes saturated again on the northeast flank of the ridge approximately two miles east of the proposed Site in Andrews County, Texas where it plunges back below the saturated zone.

An east-west oriented hydrogeologic cross-section B-B' (Figure H.2), was constructed using information from two site borings (BH-01 and BH-02) and six (6) other wells located in the general vicinity of the proposed Site. The well logs are provided in Appendix H.A. The surface geology was taken from Scholle (2003) and the elevation of the water table within the Ogallala was taken from Nicholson and Clebsch (1961). The cross-section illustrates how the Ogallala Formation rises above the saturated zone along the southwest flank of Rattlesnake Ridge in the vicinity of the proposed Site.

Five (5) borings were advanced each to a depth of 175-feet below ground surface (bgs). No groundwater was observed in the cuttings obtained during advancement of the borings, nor was any groundwater observed in any of the bore holes after a 24-hour period. No groundwater is

present within the upper 175-feet of the Ogallala Formation or Chinle Formation because they rise above the saturated zone of the Ogallala Formation as illustrated in Figure H.1 and Figure H.2.

A low-level radioactive waste disposal site operated by Waste Control Specialists (WCS) is located approximately one-mile northeast of the proposed Site. The WCS site identifies a saturated zone termed the 225-foot zone as the uppermost aquifer beneath the disposal facility. The 225-foot zone is situated within the Chinle Formation. This zone is also identified as the uppermost aquifer in a RCRA hazardous waste permit adjacent to the low-level radioactive waste site. Similarly, the URENCO facility located immediately north of the proposed Site across Highway 234, identifies the shallowest saturated zone as being between 214 to 222 feet bgs. While not encountered by site borings, the 225-foot zone is considered to be the shallowest fresh water aquifer beneath the proposed Site as required by 19.15.36.8.C.15(c) NMAC. However, it should be noted that the total dissolved solids (TDS) concentration available for the URENCO facility is 11,600 mg/L. The concentration is reportedly the maximum detected concentration through April 2011 and is the only known information available for groundwater in close proximity and specifically for the apparent uppermost saturated zone. As previously stated, fresh groundwater is defined as groundwater that contains less than 10,000 mg/L of TDS. Therefore, the groundwater within the 225-foot zone may not meet the criteria for fresh groundwater.

3.0 MONITORING SYSTEM DESIGN CONSIDERATIONS

3.1 Critical Receptors

Critical receptors to groundwater flow downgradient of any landfill could include public drinking water supply wells, individual drinking water or livestock wells, and surface water bodies used for drinking water supply. A search was conducted for water wells within a one-mile radius of the proposed Site. Several groundwater monitoring wells, geotechnical borings and vadose zone monitoring wells are located at two facilities located north and east of the proposed Site. The wells/borings are illustrated on Figure H.3. and the well logs are provided in Appendix H.B.

Some of the groundwater monitor wells illustrated on Figure H.3 appear to monitor the vadose zone while others monitor a zone within the Chinle Formation known as the 225-foot zone at the WCS Facility in Andrews County, Texas. As previously stated, the TDS concentration for this groundwater zone is known to be elevated (i.e. the maximum detected concentration through April 2011 is reportedly 11,600 mg/L). Therefore, this groundwater zone may not be potable. On the basis of available information, no wells are known to exist in the vicinity of the proposed Site that provide potable groundwater. Additionally, there are no surface water bodies used for drinking water supply in the vicinity of the proposed Site.

3.2 Containment System

The landfill at the proposed Site is designed with a double HDPE liner with intervening geonet leak detection layer. The landfill liner is designed to drain liquids to 12 separate leachate collection sumps as illustrated on Figure H.4. Leachate will be pumped out of the sumps. While a leak from a double lined landfill is unlikely, leachate collection sumps are often viewed as the more likely location of a leak. This is because they are the lowest elevation of the lining system and may retain liquids for longer periods of time than other portions of the lining system. Therefore, where possible the monitor wells have been located down-slope of the leachate collection sumps.

3.3 Site Stratigraphy

Three stratigraphic units have been identified at the site based on soil borings installed during a subsurface investigation. They are described in detail below. The boring logs can be found in Appendix H.C.

3.3.1 Stratum I – Clayey Sand

This stratum is composed of brown to reddish brown clayey sand. This stratum represents Quaternary aged eolian and piedmont deposits (Scholle, 2003) or drift sand (Nicholson and Clebsch, 1961). Stratum I was deposited by eolian (i.e. wind) processes. The materials observed are composed largely of quartz and secondary feldspar minerals.

3.3.2 Stratum II – Silty Sand with Caliche

Stratum II is composed of light brown to white silty clayey sand with caliche. This stratum represents the Ogallala Formation. Similar to Stratum I, Stratum II is also composed largely of quartz and secondary feldspar minerals. Two of the borings, BH-03 and BH-05,

contained gravels composed of quartz and caliche nodules up to one inch in diameter. Stratum II was fully penetrated by each of the five (5) borings.

3.3.3 Stratum III - Claystone

Stratum III is described as a reddish brown claystone. The claystone contains some silt and sand layers. The color is predominantly reddish brown but changes to brown, dark brown and purple. This claystone belongs to the Triassic Chinle Formation of the Dockum Group and is locally referred to as "Red Bed". According to Nicholson and Clebsch (1961), the Chinle Formation is as much as 1,270 feet thick.

Each of the five borings encountered Stratum III at depths ranging from 35 to 50 feet bgs. Figure H.5 is a structure map of the top of the Dockum Group that was prepared from the boring information. The structure map indicates that the surface of the Stratum III has a gentle arcuate shape that generally dips to the west-southwest. The surface does not conform to the regional dip in southern Lea County which is easterly toward the Delaware Basin. Thus the surface of Stratum III appears to be the result of the Site's proximity to Rattlesnake Ridge.

3.4 Contaminant Migration Pathway Analysis

In the improbable incident of a leachate release (i.e., failure of several redundant containment systems such as double HDPE liner with leak detection and a leachate collection system), it would move laterally within the more permeable portion of the Ogallala Formation and along the slope of the top of the Dockum Group. Based on the structure map of the top of the Dockum Group, Figure H.5, the leachate flow direction would be to the south and southwest. The potential leachate flow directions at each sump are illustrated by blue flow vectors on Figure H.6. Vadose zone monitor wells VW-3 through VW-8 and VW-11 are positioned down-slope of proximal leachate collection sumps. Wells VW-9 and VW-10 are positioned to detect contaminant migration from other areas of the proposed landfill including the more distal up-slope leachate sumps. A point of compliance has been established and is shown on Figure H.6, that encompasses the potential flow directions. The north and east sides of the site are the considered up-slope portions of the site and the south and west sides are considered the down-slope sides with regard to potential contaminant flow.

4.0 PROPOSED VADOSE ZONE MONITORING SYSTEM

A vadose monitoring system has been designed for the facility based on site specific technical information. The design considered the thickness, stratigraphy, lithology, and hydraulic characteristics of the geologic units, the depth to groundwater, TDS concentration, critical receptors and the contaminant migration pathway analysis.

The presence of groundwater in the vadose zone monitoring wells may not necessarily be the result of leakage from the facility. Rather, other sources such as infiltration of surface water during excavation of the landfill cells or infiltration from proximal storm water detention ponds may cause temporary saturation and water to be detected in down-slope vadose zone wells. Chemical analysis of water samples, if present, and comparison to leachate samples and/or samples from a leak detection system will be used to determine whether the water is a result of a potential release from the facility.

4.1 Proposed Monitoring Well Locations

Nine vadose zone monitoring wells have been designed along a point of compliance that has been identified on the site perimeter, Figure H.6. The compliance monitoring well locations are generally located down-slope of the leachate collection sumps. In addition, two background (up-slope) monitoring wells have been designed along the north side of the facility. The background wells represent the quality of background (up-slope) water (if present) that cannot be affected by leakage from a landfill.

During construction of the initial landfill unit, wells VW-1, VW-2 and VW-3 will be constructed. An initial sample of water (if present) will be collected prior to acceptance of any waste at the facility. Other vadose zone monitoring wells will be installed according to the schedule provided in Table H.1. An initial sample of water (if present) should be collected prior to acceptance of waste in the stated landfill units.

Table H.1
C.K. Disposal E&P Landfill and Processing Facility
Vadose Zone Monitor Well Schedule

Well ID	Function	Northing[2]	Easting[2]	Surface Elev. (msl)	Depth[1][2] (bgs)	Screen Interval[2] (bgs)	Sequence[3]
VW-1	Background	521651.81	929755.58	3398.4	41	31-41	Phase I, Unit 1
VW-2	Background	521728.91	927830.19	3394.2	38	28-38	Phase I, Unit 1
VW-3	Compliance	519221.99	927237.78	3383.1	51	41-51	Phase I, Unit 1
VW-4	Compliance	519216.78	926746.45	3379.6	50	40-50	Phase I, Unit 2
VW-5	Compliance	519213.21	926300.99	3375.9	50	40-50	Phase II, Unit 3
VW-6	Compliance	519208.53	925836.00	3373.5	50.5	40.5-50.5	Phase II, Unit 4
VW-7	Compliance	519261.27	925358.87	3370.8	50	40-50	Phase III, Unit 5
VW-8	Compliance	519265.14	924911.85	3371.4	54	44-54	Phase III, Unit 6
VW-9	Compliance	519947.76	924800.59	3374.3	51	41-51	Phase III, Unit 6
VW-10	Compliance	520495.93	924793.61	3376.3	46	36-46	Phase III, Unit 6
VW-11	Compliance	520996.46	924782.82	3376.8	51	41-51	Phase III, Unit 6

Notes:
1. All wells to be drilled through the Ogallala approximately three (3) feet into the Dockum Group (Chinle Formation).
2. Values are approximate and may be modified based on field conditions as long as the wells fully penetrate the Ogallala Formation.
3. Wells to be installed and an initial sample collected prior to the acceptance of waste in listed unit.

After the first year, the wells will be monitored semi-annually for the life of the landfill and for a period of 30 years after closure in accordance with the Closure/Post Closure Care Plan Attachment L.

4.2 Monitor Well Design and Construction

The vadose zone monitor wells will be constructed to the specifications listed below and illustrated on Figure H.7.

Table H.2
C.K. Disposal E&P Landfill and Processing Facility
Vadose Zone Monitor Well Specifications

Drill Depth	See Table H.1
Well Materials	4-inch diameter sched. 40 PVC, flush threaded with screw joints, and o-rings.
Screen	Ten-foot section, machine slotted with 0.010" slots. A one foot sump shall be placed beneath the screen.
Filter Pack	Inert 10-20 silica sand extending 2-feet above top of screen.
Annular Seal	Minimum three feet of hydrated sodium bentonite pellets above top of filter pack.
Casing Seal	High solids bentonite grout (Volclay Grout) to within three feet of ground surface.
Concrete Pad	A 4' x 4' x 6" steel reinforced concrete pad extending to grout below surface.
Protective Casing and Barrier	Steel locking protective casing and four yellow bollards placed outside of concrete pad.

Prior to installation of the vadose zone monitoring wells, drilling permits will be obtained from the New Mexico Office of the State Engineer (NMOSE). A drilling contractor licensed in the State of New Mexico will install the monitoring wells in accordance with the applicable regulations. Wells will be drilled by a method that will not introduce contaminants into the borehole or casing. A licensed professional geoscientist or engineer who is familiar with the geology of the area will supervise monitoring well installation and will provide a log of the boring. A registered professional land surveyor will survey the as-built well location, top of concrete pad elevation and top of casing elevation, at a minimum.

If any fluid is required in the drilling of monitoring wells, clean, treated water shall be used and a sample will be collected for chemical analysis of the constituents required in the facility Sampling and Analysis Plan, Attachment I. No glue or solvents will be used in monitoring well construction.

Within 60 days of completion of a vadose zone monitoring well or any other part of a monitoring system, an installation report will be submitted to the Oil Conservation Division (OCD). The report will include a lithologic log and construction details for each well, a site map drawn to scale showing the location of all monitoring wells, well elevations to the nearest 0.01 foot above msl (with year of datum shown), latitude and longitude and/or state plane coordinates of each well, and copies of driller's reports required by other agencies.

All parts of the vadose zone monitoring system will be operated and maintained so that they perform at least to design specifications through the life of the vadose zone monitoring program.

4.3 Sampling and Analysis Procedures

A Sampling and Analysis Plan is provided in Attachment I that contains the general requirements, sampling procedures and reporting procedures.

5.0 REFERENCES

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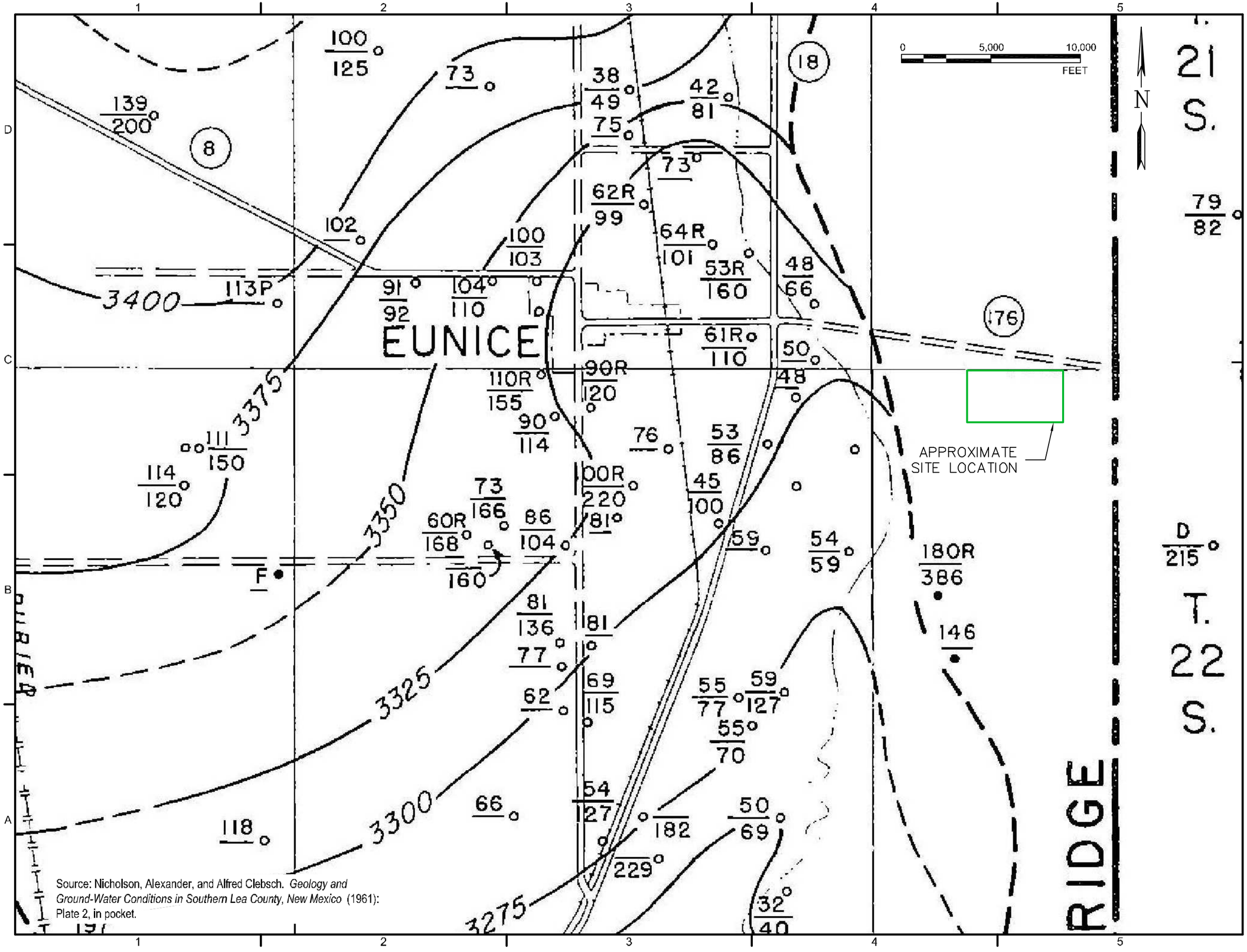
FIGURES



PSC
PARKHILL SMITH & COOPER

The CAREL CORPORATION

C.K. DISPOSAL E & P LANDFILL & PROCESSING FACILITY

NMED PERMIT NO. __

NEW LANDFILL SITE & PROCESSING FACILITY

LEA COUNTY, NEW MEXICO

KEY PLAN

NO	DATE	DESCRIPTION
ISSUING OFFICE:		PROJECT NO:

GROUNDWATER CONTOUR MAP, OGALLALA FORMATION

FIG.H.1

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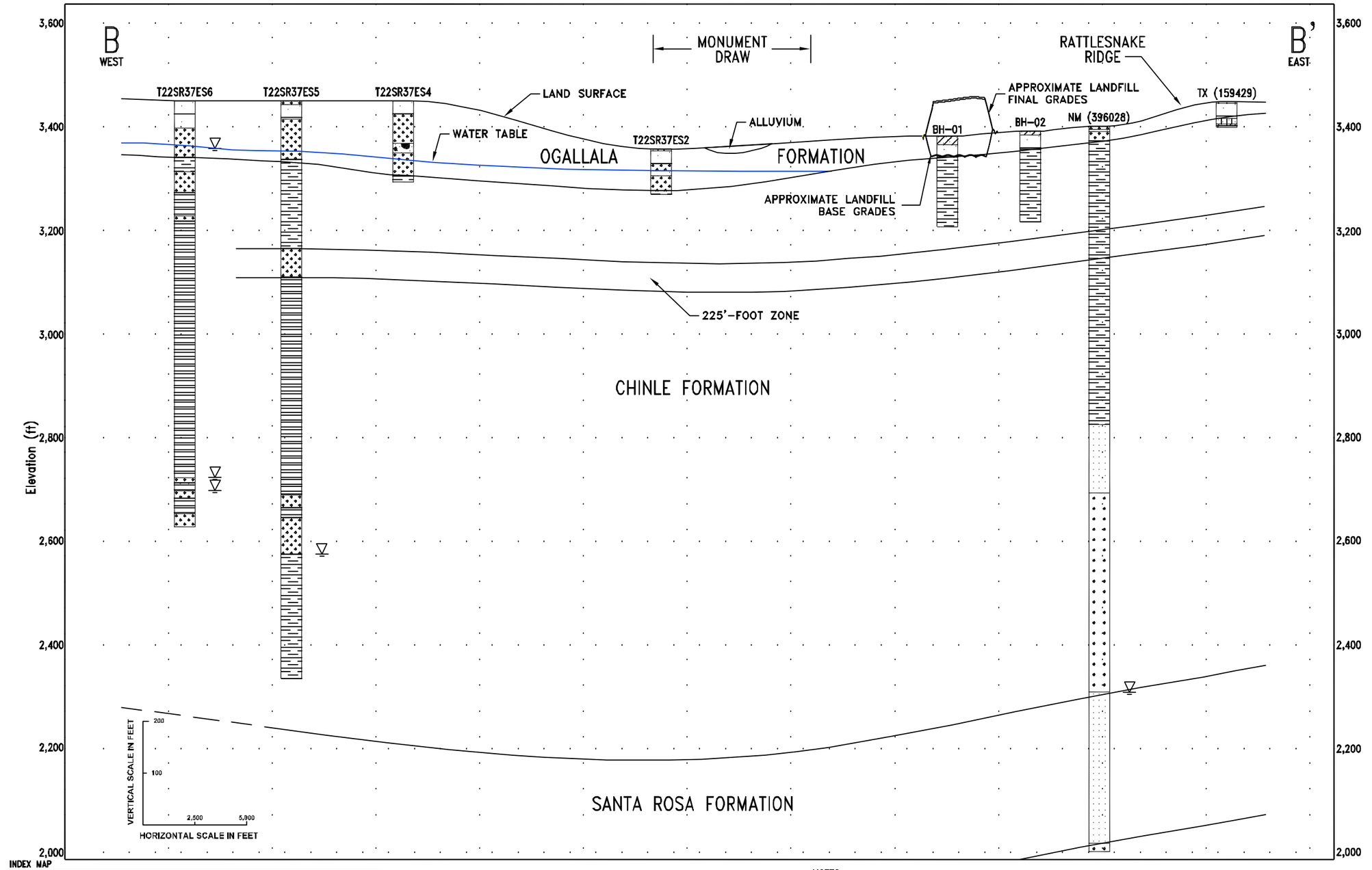
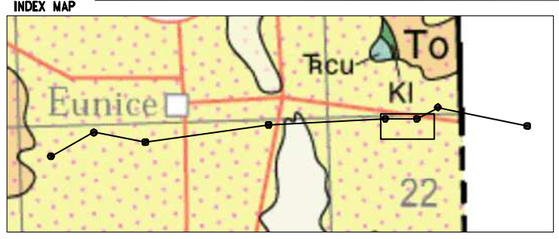


INDEX MAP



LITHOLOGY GRAPHICS

- USCS Well-graded Sand
- USCS Well-graded Sandy Gravel
- Calcareous Sandstone
- Sandstone
- Claystone
- Siltstone
- Shale
- Groundwater Elevation at Time of Drilling

NOTES:

1. CORRELATIONS ARE ITERPOLATED BETWEEN WELLS/BORINGS, ACTUAL CONDITIONS MAY VARY FROM THOSE ILLUSTRATED.
2. WATER LEVEL SURFACE TAKEN FROM NICHOLSON AND CLEBSCH, 1961.
3. T22SR37ES6 OR SIMILAR DENOTES THE WELL LOCATION (TOWNSHIP, RANGE, SECTION). NO STATE WELL ID AVAILABLE.
4. NM (396028) – NEW MEXICO STATE WELL ID.
5. TX (159429) – TEXAS STATE WELL ID.
6. BH-01/BH-02 – SITE BORING.
7. HORIZONTAL DISTANCES ARE APPROXIMATE.

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NEW LANDFILL SITE & PROCESSING FACILITY

LEA COUNTY, NEW MEXICO

KEY PLAN

NO	DATE	DESCRIPTION

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HYDROGEOLOGIC CROSS-SECTION B-B'

FIG.H.2

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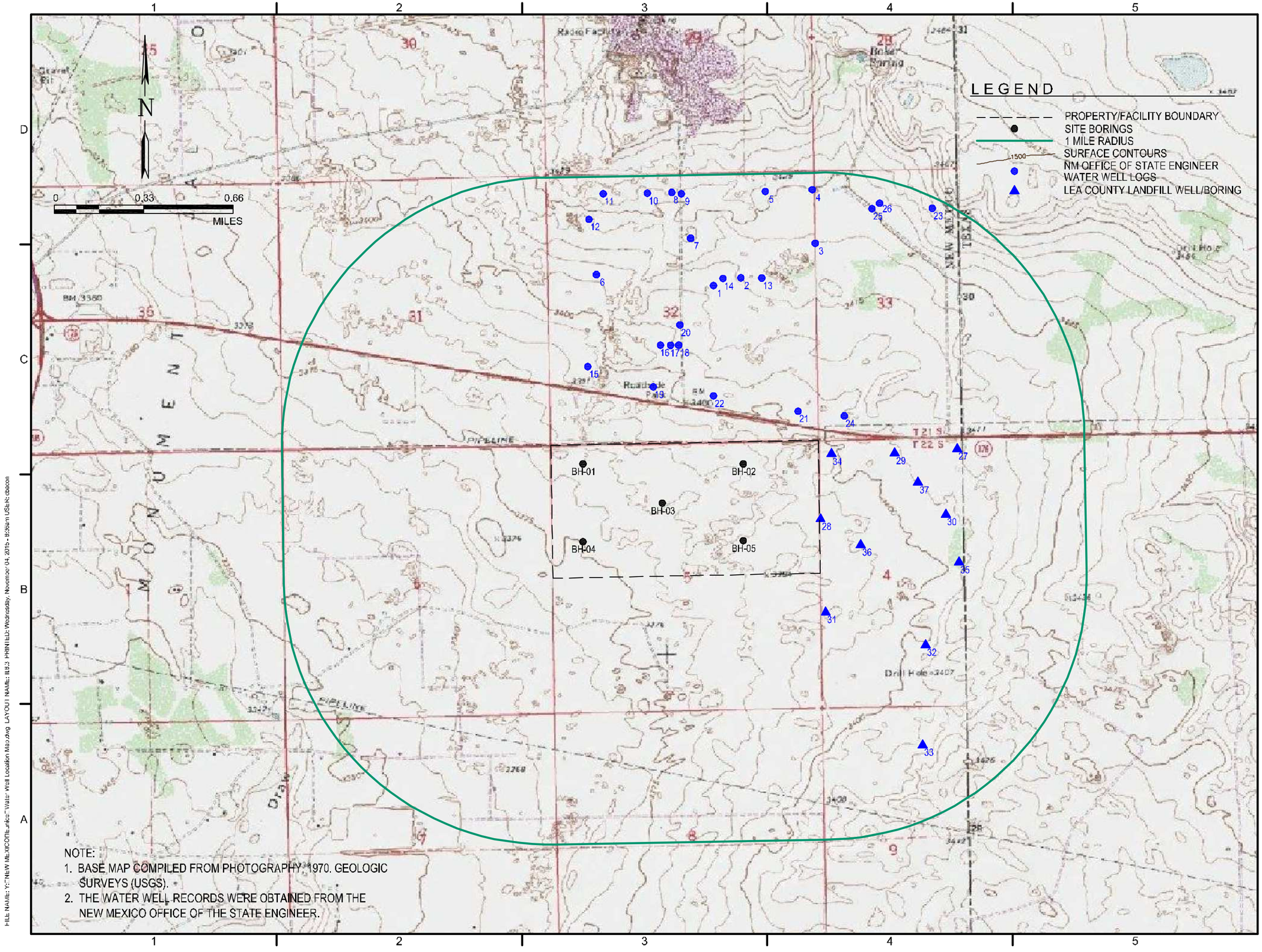

FILE NAME: Y:\New Mexico\Projects\Water Well Location Map.dwg LAYOUT NAME: ltr3 PRINTED: Wednesday, November 04, 2015 - 8:36am USER: dbacon

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NEW LANDFILL SITE & PROCESSING FACILITY

LEA COUNTY, NEW MEXICO

KEY PLAN

NO	DATE	DESCRIPTION
ISSUING OFFICE:		PROJECT NO:

WATER WELL LOCATION MAP

FIG.H.3

0 400 800
FEET

N

LEGEND

PROPERTY/FACILITY BOUNDARY

PROPOSED VADOSE ZONE MONITORING WELLS

VW-1 VW-2 VW-3 VW-4 VW-5 VW-6 VW-7 VW-8 VW-9 VW-10 VW-11

SUMP 1A SUMP 2A SUMP 3A SUMP 4A SUMP 5A SUMP 6A

SUMP 1B SUMP 2B SUMP 3B SUMP 4B SUMP 5B SUMP 6B

3380 3360 3340

PHASE I PHASE II PHASE III

UNIT 1 (23.6± ACRES) UNIT 2 (23.8± ACRES) UNIT 3 (23.5± ACRES) UNIT 4 (23.9± ACRES) UNIT 5 (23.4± ACRES) UNIT 6 (23.5± ACRES)

316.97 ACRES

ANDREWS HIGHWAY

BYPASS LANE
INBOUND SCALE
SCALE HOUSE
OUTBOUND SCALE
BYPASS LANE

LOCKHEART #1 P&A
LATHE W/HUB & TACK RACE #1
VEHICLE QUEUING
CLEARED AREA
GATE HOUSE

STABILIZATION AND SOLIDIFICATION AREA

PROCESSING AREA

POND NO. 1 POND NO. 2 POND NO. 3 POND NO. 4 POND NO. 5 POND NO. 6 POND NO. 7 POND NO. 8 POND NO. 9 POND NO. 10 POND NO. 11 POND NO. 12

PHASE I PHASE III PHASE IV

DETENTION POND #2

NEW CALICHE ROAD

Notes: See Table III.8.1, in Volume III Section 8, for well installation schedule and Table III.8.2 for well construction specifications.

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C.K. DISPOSAL E & P LANDFILL & PROCESSING FACILITY

NMED PERMIT NO. __

NEW LANDFILL SITE & PROCESSING FACILITY

LEA COUNTY, NEW MEXICO

KEY PLAN

NO DATE DESCRIPTION

ISSUING OFFICE: PROJECT NO:

SITE PLAN

FIG.H.4

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0 400 800
FEET

N

LEGEND

- PROPERTY/FACILITY BOUNDARY
- SITE BORINGS
- 3300 SITE SPECIFIC DOCKUM CONTOURS

BH-01
3,342.0'

BH-02
3,355.8'

BH-03
3,346.3'

BH-04
3,324.1'

BH-05
3,341.1'

3,360'
3,355'
3,350'
3,345'
3,340'
3,335'
3,330'
3,325'
3,320'

BYPASS LANE
INBOUND SCALE
SCALE HOUSE
OUTBOUND SCALE
BYPASS LANE

VEHICLE QUEUING

GATE HOUSE

STABILIZATION AND SOLIDIFICATION AREA

POND NO. 4
POND NO. 8
POND NO. 12
POND NO. 3
POND NO. 7
POND NO. 11
POND NO. 2
POND NO. 6
POND NO. 10
POND NO. 5
POND NO. 9

DETENTION POND #1
DETENTION POND #2

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C.K. DISPOSAL E & P LANDFILL & PROCESSING FACILITY

NMED PERMIT NO. __

NEW LANDFILL SITE & PROCESSING FACILITY

LEA COUNTY, NEW MEXICO

KEY PLAN

NO	DATE	DESCRIPTION

ISSUING OFFICE: PROJECT NO:

STRUCTURE MAP: TOP OF THE DOCKUM GROUP

FIG.H.5

0 400 800
FEET

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LEGEND

- PROPERTY/FACILITY BOUNDARY
- LANDFILL BORING
- PROPOSED VADOSE ZONE MONITORING WELLS
- 3300 SITE SPECIFIC DOCKUM CONTOURS
- POTENTIAL LEACHATE FLOW VECTOR

ANDREWS HIGHWAY

VW-1 3,360.5'
VW-2 3,359.0'
BH-01 3,342.0'
BH-02 3,355.8'
BH-03 3,346.3'
BH-04 3,324.1'
BH-05 3,341.1'
VW-3 3,335.0'
VW-4 3,332.5'
VW-5 3,329.0'
VW-6 3,326.0'
VW-7 3,323.5'
VW-8 3,320.5'
VW-9 3,326.5'
VW-10 3,333.0'
VW-11 3,328.5'

3,360'
3,355'
3,350'
3,345'
3,340'
3,335'
3,330'
3,325'
3,320'

SUMP 1A SUMP 2A SUMP 3A SUMP 4A SUMP 5A SUMP 6A
SUMP 1B SUMP 2B SUMP 3B SUMP 4B SUMP 5B SUMP 6B

3380
3360
3340

316.97 ACRES

PHASE I
PHASE II
PHASE III

UNIT 1 (23.6± ACRES)
UNIT 2 (23.8± ACRES)
UNIT 3 (23.5± ACRES)
UNIT 4 (23.9± ACRES)
UNIT 5 (23.4± ACRES)
UNIT 6 (23.5± ACRES)

BYPASS LANE
INBOUND SCALE
SCALE HOUSE
OUTBOUND SCALE
BYPASS LANE
LOCKHEART #1 P&A
LATHE W/HUB & TACK RICE #1
VEHICLE QUEUING
CLEARED AREA
GATE HOUSE
STABILIZATION AND SOLIDIFICATION AREA
PROCESSING AREA
POND NO. 1
POND NO. 2
POND NO. 3
POND NO. 4
POND NO. 5
POND NO. 6
POND NO. 7
POND NO. 8
POND NO. 9
POND NO. 10
POND NO. 11
POND NO. 12
DETENTION POND #2
NEW CALICHE ROAD

Notes: See Table III.8.1, in Volume III Section 8, for well installation schedule and Table III.8.2 for well construction specifications.

PARKHILL SMITH & COOPER

The CAREL CORPORATION

C.K. DISPOSAL E & P LANDFILL & PROCESSING FACILITY

NMED PERMIT NO. __

NEW LANDFILL SITE & PROCESSING FACILITY

LEA COUNTY, NEW MEXICO

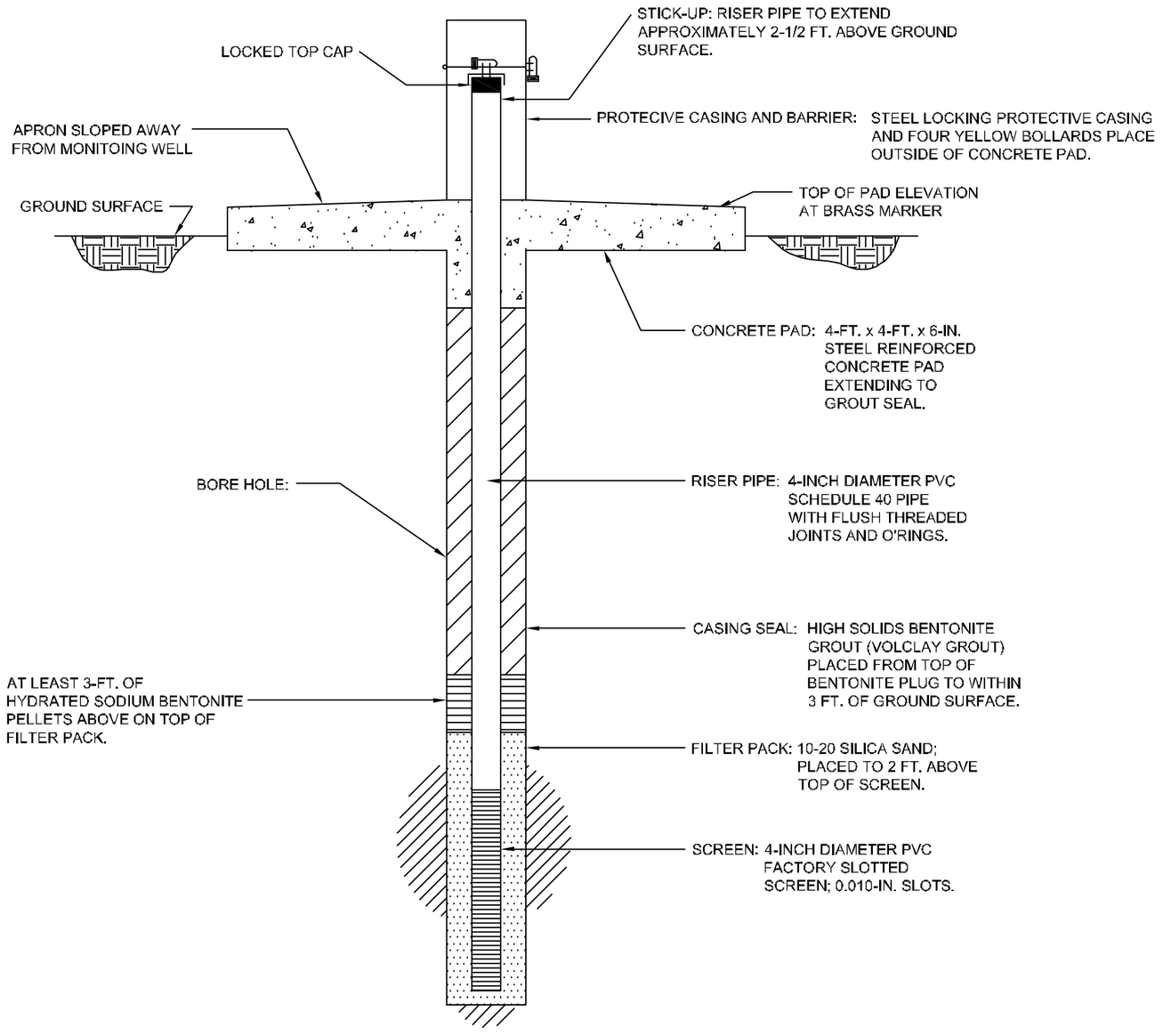
KEY PLAN

NO	DATE	DESCRIPTION
ISSUING OFFICE:		PROJECT NO:

VADOSE ZONE MONITORING NETWORK

FIG.H.6

FILE NAME: Y:\...\NEW MEXICO\ENLinke\...\Monitor Well Plan Figure.dwg LAYOUT NAME: 8.8.8 PRINTED: Wednesday, November 04, 2015 - 8:52am USER: cbarron



NOT TO SCALE

FILE NAME: Y:\NEW MEXICO\Eunice\Typical Vadose Zone Monitoring Well.DWG LAYOUT NAME: Layout1 PRINTED: Wednesday, November 04, 2015 - 8:38am USER: dbacon

PARKHILL SMITH & COOPER

The CAREL CORPORATION

C.K. DISPOSAL E & P LANDFILL & PROCESSING FACILITY

NMED PERMIT NO. __

NEW LANDFILL SITE & PROCESSING FACILITY

LEA COUNTY, NEW MEXICO

KEY PLAN

NO	DATE	DESCRIPTION

ISSUING OFFICE: PROJECT NO:

TYPICAL VADOSE ZONE MONITORING WELL

FIG.H.7

APPENDICES

APPENDIX H.A

WELLS USED ON CROSS-SECTION B-B’

T22S R37E S6

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well _____ Owner's Well No. _____
Street or Post Office Address _____
City and State _____

Well was drilled under Permit No. _____ and is located in the:

a. _____ ¼ _____ ¼ _____ ¼ _____ ¼ of Section _____ Township _____ Range _____ N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor _____ License No. _____

Address _____

Drilling Began _____ Completed _____ Type tools _____ Size of hole _____ in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well _____ ft.

Completed well is ☐ shallow ☐ artesian. Depth to water upon completion of well _____ ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor _____
Address _____
Plugging Method _____
Date Well Plugged _____
Plugging approved by:

_____
State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received Typed 1/20/78

Quad _____ FWL _____ FSL _____

File No. _____ Use Oil Location No. 22.37.6.41000

T22SR37ES6

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	55		Caliche and sand
55	95		Dry sand
95	112		Water sand
112	140		Red bed, shale
140	180		Sand
180	225		Shale
225	235		Sand
235	730		Shale, red rock
730	740		Water sand
740	755		Shale
755	770		Water sand
770	800		Shale
800	825		Sand
			L S Elev 3445
			Depth to K Trc 1240
			Elev of K Trc 3335
Water -	95'-112'		
	770'-775'	2 BWPH	

Section 7. REMARKS AND ADDITIONAL INFORMATION

This well record is an exceprt from Oil Conservation Commission files at Hobbs, N.M.

Location: 22.37.6.41000
Owner: Gulf Oil Corp.
South Penrose Skelly Unit 109
Record of Casing: 16" - 115'

Elevation: 3453' GL

Cable

1980' FSL - 1980' FEL

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All ons, except Section 5, shall be answered as completely and accurat possible when any well is

T22SR37ES5

Revised June 1971

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well _____ Owner's Well No. _____
Street or Post Office Address _____
City and State _____

Well was drilled under Permit No. _____ and is located in the:

a. _____ ¼ _____ ¼ _____ ¼ _____ ¼ of Section _____ Township _____ Range _____ N.M.P.M

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in
the _____ Grant

(B) Drilling Contractor _____ License No. _____

Address _____

Drilling Began _____ Completed _____ Type tools _____ Size of hole _____ in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well _____ ft.

Completed well is ☐ shallow ☐ artesian. Depth to water upon completion of well _____ ft

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor _____
Address _____
Plugging Method _____
Date Well Plugged _____
Plugging approved by:

_____
State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received Typed 1/20/78

Quad _____ FWL _____ FSL _____

File No. _____ Use Oil Location No. 22.37.5.12000

T22SR37ES5

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	12		Cellar
12	40		Caliche
40	118		Sand
118	290		Red bed
290	345		Sand
345	765		Shale, red rock
765	790		Sand
790	810		Shale
810	880		Sand
880	1120		Red bed (water 220'-235')
			L S Elev ~~3444~~ 3445
			Depth to K ~~1116~~ Trc 1116
			Elev of K ~~2328~~ Trc 2329

Section 7. REMARKS AND ADDITIONAL INFORMATION

This well record is an excerpt from Oil Conservation Commission files at Hobbs, N.M.

Location: 22.37.5.12000
Owner: Gulf Oil Corp.
South Penrose Skelly Unit #106
Record of Casing: 16" - 122'
13" - 288'
10 3/4" - 677'
Cable

660' FNL - 1980' FWL

Elevation: 3455' GL
~~3444~~ 3445

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All ons, except Section 5, shall be answered as completely and accurat possible when any well is

T22SR37ES4

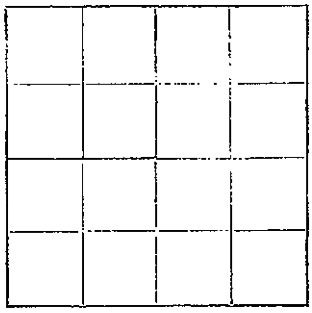
Form WR-23 STATE ENGINEER OFFICE

ELLW ENGR. LOG

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Skelly Gasoline) Oil Company

Street and Number Box 1257

City Eunice, N.M. State

Well was drilled under Permit No. CP-254 and is located in the NE ¼ SE ¼ NW ¼ of Section 4 Twp. 22 Rge. 37

(B) Drilling Contractor Abbott Bros. License No. WD-46

Street and Number Box 637

City Hobbs, N.M. State

Drilling was commenced FX Jan. 15,1972 19

Drilling was completed Jan. 21, 1972 19

Elevation at top of casing in feet above sea level 3455 Total depth of well 162

State whether well is shallow or artesian shallow Depth to water upon completion 90

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1	87	105	18	gravel and sand
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
85/8	23	10	1	160	160	none	128	150

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used

Section 5 PLUGGING RECORD

Name of Plugging Contractor License No.

Street and Number City State

Tons of Clay used Tons of Roughage used Type of roughage

Plugging method used Date Plugged 19

Plugging approved by:

Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

STATE ENGINEER OFFICE

Date Received

1972 MAR 23 AM 8:18

File No. CP-254 Use IND. Location No. 22.37.4.1421

T22SR37ES4

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	4	4	brown	soil
4	30	26	gray	caliche
30	68	38	brown	sand
68	87	19	brown	tight sand
87	105	18	brown	sand & gravel
105	150	45	brown	sand
150	162	12	red	clay

L S Elev 3455 ✓
Depth to K Trc 150 ✓
Elev of K Trc 3305 ✓

Loc. No. 22.37.4.14242
Hydro. Survey Field Check X

SOURCE OF ALTITUDE GIVEN
Interpolated from Topo. Sheet X
Determined by Inst. Leveling
Other

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

Burnell Cobb
Well Driller

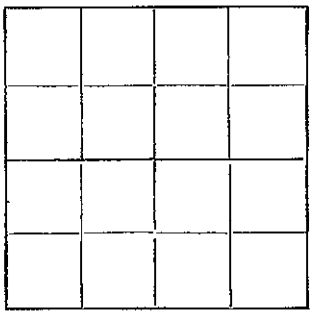
T22SR37ES2

Form WR-23 STATE ENGINEER OFFICE

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to t nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely a accurately as possible when any well is drilled, repaired or deepened. When this form is used as a pluggi record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Humble Oil Co.

Street and Number

City State

Well was drilled under Permit No. and is located in t

NE ¼ NE ¼ NE ¼ of Section 2 Twp. 22S Rge. 37E

(B) Drilling Contractor E. B. Burke License No.

Street and Number

City State

Drilling was commenced 19

Drilling was completed Jan. 19 4

Elevation at top of casing in feet above sea level 3357.7 (+1.5) Total depth of well 87

State whether well is shallow or artesian Depth to water upon completion

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1				
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used

Section 5 PLUGGING RECORD

Name of Plugging Contractor License No.

Street and Number City State

Tons of Clay used Tons of Roughage used Type of roughage

Plugging method used Date Plugged 19

Plugging approved by:

Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

Date Received Copied from USGS Well

Schedule by A. Nicholson 10/9/53

File No. Use Location No. 22.37.2.222 30

T22SR37ES2

22.37.2.222

Humble Oil Co.

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	3			soil
3	28			caliche
28	42			sand
42	52			lime
52	80			sand
80	87			red bed

U S Elev 3358' 3357
Depth in K Tra 80' 80
Elev of K Tra 3278' 3277

Loc. No. 22,37,2,222314

Hydro Survey Field Check X

SOURCE OF ALTITUDE GIVEN

Interpolated from topographic map X

Determined by instrumental leveling

Other

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

E. B. Burke
Well Driller

BH-01

LOG OF BORING NO. BH-01

Project Description: CK Disposal

Location: Eunice, NM
Top of PVC EL: feet MSL
Surface EL: 3382 feet MSL
Completion Depth: 175 feet
Date Boring Started: 5/26/2015
Date Boring Completed: 5/26/2015

Northing: 160.00
Easting: 1850.00

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
5–15			CLAYEY SAND, brown to reddish brown, moderately well sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction		
20–35			SILTY SAND, with caliche, light brown to white, well sorted, well rounded, very fine to fine grained, dry, strong HCL reaction		
40–175			CLAYSTONE, reddish brown some gray, slightly moist to dry, weak HCL reaction		

Drilling Contractor: HCI Drilling
Drilling Method: Air Rotary
Sampling Method: Cuttings
Geologist: Steven J. Wimmer
Project No.: 15-04-22

Groundwater Observations	
Date	Depth to Water (ft)
5/26/15	Dry

Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig

GROUNDWATER WELL - B&W EUNICE.GPJ CAREL2.GDT 9/14/15

LOG OF BORING NO. BH-01
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Water level at time of drilling.
Water level at end of drilling.
Water level after drilling.

BH-02

LOG OF BORING NO. BH-02

Project Description: CK Disposal

CAREL

Location: Eunice, NM
Top of PVC EL: feet MSL
Surface EL: 3391.8 feet MSL
Completion Depth: 175 feet
Date Boring Started: 5/26/2015
Date Boring Completed: 5/26/2015

Northing: 521273.70
Easting: 928310.35

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
5–10			CLAYEY SAND, brown to reddish brown, moderately well sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction		
10–35			SILTY SAND, with caliche, light brown to white, well sorted, well rounded, very fine to fine grained, dry, strong HCL reaction		
35–70			CLAYSTONE, reddish brown with gray, dry, weak HCL reaction, some purple		
70–175			less gray and purple; slightly moist to dry		

GROUNDWATER WELL - B&W EUNICE.GPJ CAREL2.GDT 9/16/15

Drilling Contractor: HCI Drilling
Drilling Method: Air Rotary
Sampling Method: Cuttings
Geologist: Steven J. Wimmer
Project No.: 15-04-22

Groundwater Observations	
Date	Depth to Water (ft)
5/26/15	Dry

Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig

LOG OF BORING NO. BH-02
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

▽ Water level at time of drilling.
▼ Water level at end of drilling.
▽ Water level after drilling.

NM (396028)

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD and DRILLING LOG

1. PERMIT HOLDER(S)

Name: WASTE CONTROL SPECIALISTS
Address: P.O. BOX 1129
City: ANDREWS
State: TX Zip: 79714
Phone: (505) 394-4300
Contact: MICHAEL BURNEY
Contact Phone: (505) 394-4300

Name: _____
Address: _____
City: _____
State: _____ Zip: _____
Phone: _____

2. STATE ENGINEER REFERENCE NUMBERS:

File # CP 975 EXPLORE, Well # C.P. 975

3. LOCATION OF WELL (The Datum Is Assumed To Be WGS 84 Unless Otherwise Specified)

Latitude: 32 Deg 25 Min 45.8 Sec
Longitude: 103 Deg 04 Min 20.4 Sec
(Enter Lat/Long To At Least 1/10th Of A Second)
Datum If Not WGS 84: _____

4. DRILLING CONTRACTOR

License Number: WD1184
Name: WEST TEXAS WATER WELL SERVICE Work Phone: (432) 530-2696

Drill Rig Serial Number: 261602

List The Name Of Each Drill Rig Supervisor That Managed On-Site Operations During The Drilling Process:

RONNY KEITH

STATE ENGINEER OFFICE
2007 MAY 11 P 2:

5. DRILLING RECORD

Drilling Began: 1-21-08 ; Completed: 4-29-08 ; Drilling Method MUD ROTARY

Diameter Of Bore Hole: 7-7/8 (in);

Total Depth Of Well: 2,020 (ft);

Completed Well Is (Circle One): Shallow / (Artesian);

Depth To Water First Encountered: 1,092 (ft);

Depth To Water Upon Completion Of Well: N/A (ft).

Do Not Write Below This Line

TRN Number: 396028
Form: wr-20 May 07

File Number: CP-975

21.38.33.333

Explore

NM(396028)

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD and DRILLING LOG

6. RECORD OF CASING

Diameter (inches)	Pounds (per ft.)	Threads (per inch)	Depth (feet)	Length Top to Bottom (feet)	Type of Shoe	Perforations (from to)
13-3/8	48	8	2' AGL	40'		
8-5/8	24	8	3' AGL	1,440'	FLOAT GUIDE	

7. RECORD OF MUDDING AND CEMENTING

Depth (feet)	Hole (diameter)	Mud Used (# of sacks)	Cement (cubic feet)	Method of Placement
0 - 40	17-1/2		35	TRIMMIE
0 - 1,440	12-1/4		574	POSITIVE
1,380-2,020	7-7/8		275	TRIMMIE

STATE ENGINEER OFFICE
2013 MAY 14 P 2:05

Do Not Write Below This Line

Trn Number: _____ File Number: _____
Form: wr-20 May 07

NM(396028)

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

8. LOG OF HOLE. For Each Water Bearing Strata, Estimate The Yield Of The Formation In Gallons Per Minute.

Depth (feet) From	Depth (feet) To	Thickness (Feet)	For Water Bearing Strata Enter The Estimated Yield in GPM	Color and Type of Material Encountered
			SEE ATTACHED	GEOLOGIC LOG

STATE ENGINEER OFFICE
2003 MAY 14 P 2 04

Enter Method Used To Estimate Yield: N/A

Do Not Write Below This Line

Trn Number: _____ File Number: _____

NM(396028)

CP-975 Geologic log

0-6 ft 6 pad fill and fine brown sand

6-10 ft 4 white sandy limestone (Mescalero caliche)

10-29 ft 19 sand, light brown, and brown calcareous sandstone (Gatuña Formation)

29-576 ft 547 interbedded sandstone, siltstone, and claystone; reddish-brown to gray; bioturbated (Cooper Canyon Formation)

576-708 ft 132 sandstone and siltstone, gray to reddish brown (Trujillo Formation)

708-1092 ft 384 interbedded very fine sandstone and siltstone, gray to dark reddish brown (Tecovas Formation)

1092-1384 ft 292 gray, fine sandstone with interbedded reddish brown and weak red siltstone and claystone (Santa Rosa Formation)

1384-1566 ft 182 reddish brown, very fine sandstone and siltstone, with some fibrous gypsum in lower part (Dewey Lake Formation)

1566-1602 ft 34 gray anhydrite beds, with intermediate reddish-brown and gray siltstone (Forty-niner Member of the Rustler Formation)

1602-1609 ft 7 gray anhydrite and wavy thin laminae of dolomite (Magenta Dolomite Member of the Rustler Formation)

1609-1736 ft 127 gray anhydrite beds, with intermediate halite including anhydrite and polyhalite (Tamarisk Member of the Rustler Formation)

1736-1807 ft 71 halite with thin two thin anhydrite beds and basal reddish-brown, very fine sandstone (Los Medaños Member of the Rustler Formation)

1807-2020 ft 213 halite with anhydrite/polyhalitic marker beds (MB103 and uppermost MB109) (Salado Formation)

STATE ENGINEER OFFICE
SANTA FE, NEW MEXICO
2008 MAY 14 P 2:06

NM (396028)

OSE FILE NUMBER _____ _____
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. ADDITIONAL STATEMENTS OR EXPLANATIONS:

2008 MAY 14 P 2 05

STATE ENGINEER OFFICE
SANTA FE, NEW MEXICO

The undersigned hereby certifies that, to the best of his or her knowledge and belief, the foregoing is a true and correct record of the above described bore hole. The undersigned further certifies that he or she will file this well record with the Office Of The State Engineer and permit holder within 20 days after completion of the well drilling.

Tommy Veitt
Driller

05-12-08
(mm/dd/year)

Do Not Write Below This Line

Trn Number: _____ File Number: _____

TX (159429)

STATE OF TEXAS WELL REPORT for Tracking #159429

Owner:	**Waste Control Specialists**	Owner Well #:	**TP-62**
Address:	**P.O. Box 1129** **Andrews , TX 79714**	Grid #:	**26-40-5**
Well Location:	**30 Miles NW of Andrews** **Andrews , TX 79714**	Latitude:	**32° 25' 21" N**
Well County:	**Andrews**	Longitude:	**103° 02' 59" W**
Elevation:	**No Data**	GPS Brand Used:	**Garmin etrex**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Date: Started: **1/10/2008**
Completed: **1/10/2008**

Diameter of Hole: Diameter: **5.625 in From Surface To 49 ft**

Drilling Method: **Air Rotary**

Borehole Completion: Gravel Packed From: **35 ft to 49 ft**
Gravel Pack Size: **8/16**

Annular Seal Data: 1st Interval: **From 0 ft to 5 ft with 20 Cement (#sacks and material)**
2nd Interval: **From 5 ft to 35 ft with 10 bentonite (#sacks and material)**
3rd Interval: **No Data**
Method Used: **poured**
Cemented By: **Talon**
Distance to Septic Field or other Concentrated Contamination: **No Data**
Distance to Property Line: **No Data**
Method of Verification: **No Data**
Approved by Variance: **No Data**

Surface Completion: **Surface Slab Installed**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **fresh**
Depth of Strata: **No Data**
Chemical Analysis Made: **No**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

TX (159429)

Company Information:	**Talon Drilling, LP** **921 N Bivins** **Amarillo , TX 79107**
Driller License Number:	**54499**
Licensed Well Driller Signature:	**Shane Currie**
Registered Driller Apprentice Signature:	**No Data**
Apprentice Registration Number:	**No Data**
Comments:	**No Data**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking #**159429**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0 to 2 Sandy SILT, tan.
2 to 32 CALICHE, light gray to tan.
32 to 43 Silty SAND, tan.
43 to 46.25 Sandy GRAVEL, various colored chert.
46.25 to 49 CLAY, maroon with gray mottling.

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
2 new pvc casing 0 to 39 sch 40
2 new pvc screening 39 to 49 slot 0.010

APPENDIX H.B

WATER WELLS WITHIN ONE MILE

WLB

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Louisiana Energy Services — Work Phone: 505-394-5204
Contact: Laurie Wetherell — Home Phone: _____
Address: P.O. Box 1789
City: Eunice — State: NM Zip: 88231

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. NW 1/4 SW 1/4 NE 1/4 Section: 32 Township: 21S Range: 38E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 32 d 26 m 14.8698 s Longitude: 103 d 04 m 49.8642 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____, of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: CP-993

I. On land owned by (required): Louisiana Energy Services

3. DRILLING CONTRACTOR

License Number: 1575
Name: Talon Drilling — Work Phone: 806.467.0607
Agent: Shane Currie — Home Phone: 806.467.0622
Mailing Address: 921 N. Bivins
City: Amarillo — State: TX Zip: 79107

4. DRILLING RECORD

Drilling began: 12/5/08 ; Completed: 12/5/08 ; Type tools: Air-Rotary;
Size of hole: 7-7/8 in.; Total depth of well: 231.5 ft.;
Completed well is: Monitor (shallow, artesian);
Depth to water upon completion of well: Dry ft.

Do Not Write Below This Line

File Number: CP-993 — Trn Number: 415642
Form: wr-20 — page 1 of 4

Monitor

21.38.32.231

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
Dry				

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
4 PVC	Sch 40	2	+3	231	234	end cap	211	231

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	20	7-7/8		20 Sacks	Trimie (Bentonite/Cement)
20	206	7-7/8	61		Poured (Bentonite chips)

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

Do Not Write Below This Line

File Number: CP-993
Form: wr-20

Trn Number: 415642

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	5	5	Sandstone, lightly cemented, burnt orange
5	15	10	Caliche, relatively soft, gray to lt orange
15	30	15	Sand, minor chert gravel, lt orange sand
30	85	55	Claystone, maroon
85	90	5	Siltstone, hard gray
90	210	120	Claystone, dark purple
210	225	15	Sandstone, very fine-grained, hard, gray
225	231	6	Clayston, maroon

STATE ENGINEER OFFICE
11 AM '21

Do Not Write Below This Line

File Number: CP-993 Trn Number: 415642

Form: wr-20