Permit Application

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

Volume II





C.K. Disposal, Lea County, New Mexico E & P Landfill and Processing Facility –Permit No. TBD Volume II PSC Project # 01058015

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Attachment G Hydrogeology Report



ATTACHMENT G HYDROGEOLOGY REPORT

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

Eunice, New Mexico

Project No: 15-04-22

Prepared for:

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Prepared by:





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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)
	Quaternary	Holocene		Sand	30
Cenozoic		Pleistocene		Alluvium	400
	Tertiary	Pliocene		Ogallala	300
Mesozoic	Cretaceous			Undifferentiated	35
Mesozoic	Triassic	T -4-	Dockum	Chinle	1,270
		Late	Group	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 southsouthwest. 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

Groundwater Quality Data								
Constituent	Concentration	Unit	Well Location	Source				
BTEX	N/A							
TDS	$11,600^{(1)}$	mg/L	URENCO	New Mexico Environment Dept., 2012				
		Ma	jor 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				
		RC	RA 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	32°26′14.9″ N	103°4'49.9" W	Dry
415643	36	12/5/2008	Chinle	Monitor	32°26′14.9″ N	103°4'45.5" W	Dry
376945	220.5	4/3/2007	Chinle	Monitor	32°26'21.9" N	103°4'27.1" W	178.83
376946	32.2	4/3/2007	Chinle	Monitor	32°26'33.1" N	103°4'27.6" W	Dry
376947	240.9	4/3/2007	Chinle	Monitor	32°26'32.9" N	103°4'39.2" W	Dry
376959	231	3/29/2007	Chinle	Monitor	32°26'16.2" N	103°5'21.2" W	Dry
376958	246.3	3/29/2007	Chinle	Monitor	32°26'23.4" N	103°4'57.8" W	217.14
376949	261.3	3/29/2007	Chinle	Monitor	32°26'33.1" N	103°5'2.1" W	243.31
376948	22	3/30/2007	Ogallala	Monitor	32°26'32.8" N	103°4'59.9" W	Dry
376950	26.9	3/29/2007	Ogallala	Monitor	32°26'33.0" N	103°5'8.3" W	Dry
376952	257.5	3/29/2007	Chinle	Monitor	32°26'32.9" N	103°5'19.3" W	241.26
376954	236.4	3/30/2007	Chinle	Monitor	32°26'27.6" N	103°5'22.7" W	Dry
418652	38	12/5/2008	Chinle	Monitor	32°26'14.8" N	103°4'40.3" W	Dry
418653	39	12/5/2008	Chinle	Monitor	32°26′13.4″ N	103°4'52.2" W	Dry
376955	236	3/29/2007	Chinle	Monitor	32°25'56.9" N	103°5'23.7" W	Dry
415856	43	12/4/2008	Chinle	Monitor	32°26'1.2" N	103°5'5.5" W	Dry
418655	250	12/4/2008	Chinle	Monitor	32°26'1.1" N	103°5'3.1" W	Dry
418654	40	12/4/2008	Chinle	Monitor	32°26'1.1" N	103°5'1.1" W	Dry
376956	237	4/3/2007	Chinle	Monitor	32°25'52.5" N	103°5'7.6" W	Dry
376944	225.8	4/3/2007	Chinle	Monitor	32°26'5.3" N	103°4'26.9" W	220.49
376887	241.2	4/3/2007	Chinle	Monitor	32°25'46.8" N	103°4'31.8" W	Dry
376957	231.4	4/3/2007	Chinle	Monitor	32°25'50.4" N	103°4'52.5" W	Dry
399475	28	2/20/2008	Ogallala	Monitor	32°26'29.0" N	103°3'58.0" W	Dry
396028	2,020	4/29/2008	Santa Rosa	Exploratory	32°25'45.8" N	103°4'20.4" W	1,092
395941	75	Unknown	Chinle	Piezometer	32°26'30.1" N	103°4'10.9" W	Unknown
395941	49	2/9/2008	Chinle	Monitor	32°26'29.0" N	103°4'13.0" 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

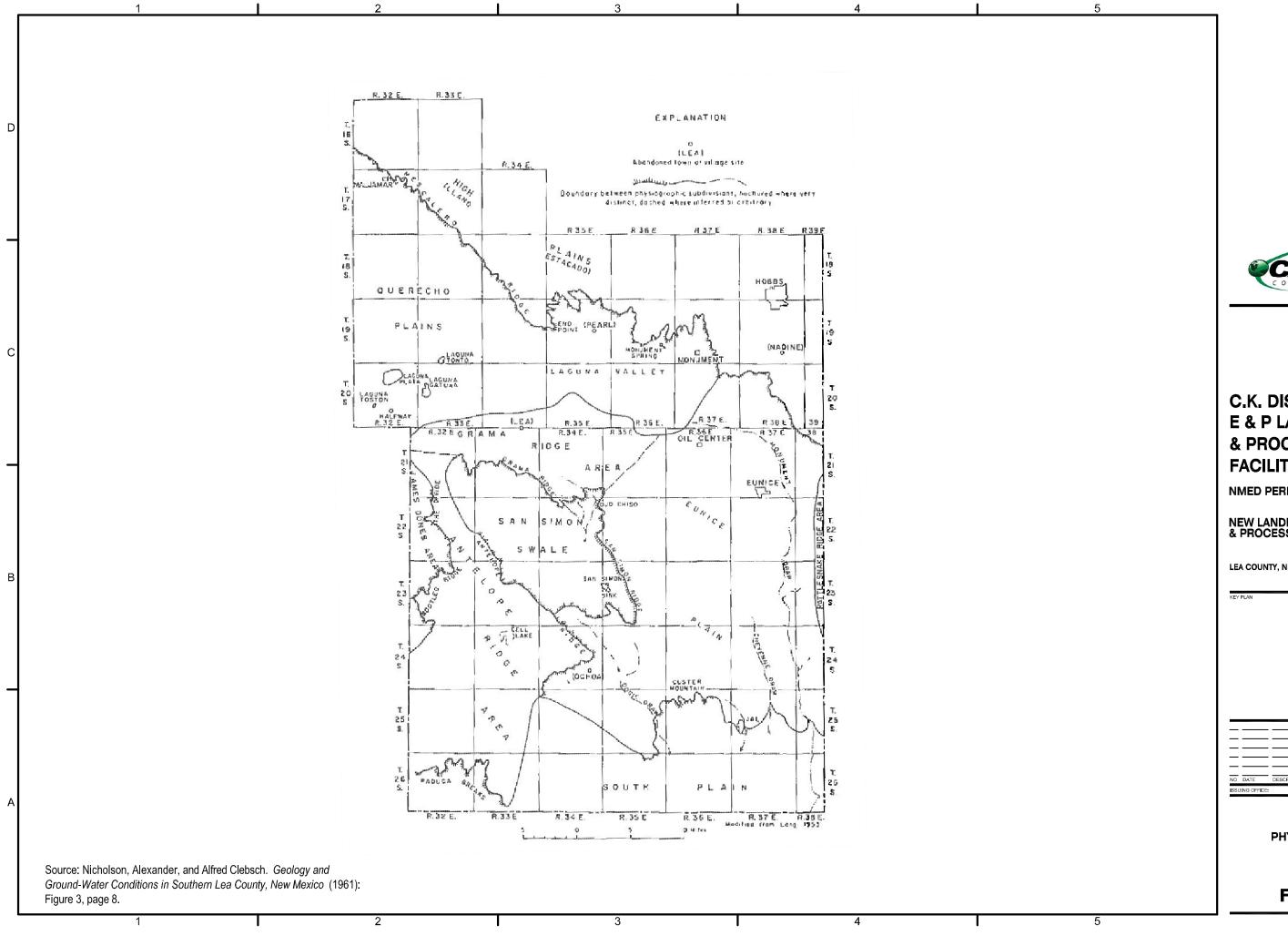
The wells in Table G.5b are located east of the proposed Site. The wells/borings were all drilled to Chinle Formation at varying depths. Two of the borings were converted to vadose zone monitoring points (VMP).

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FIGURES







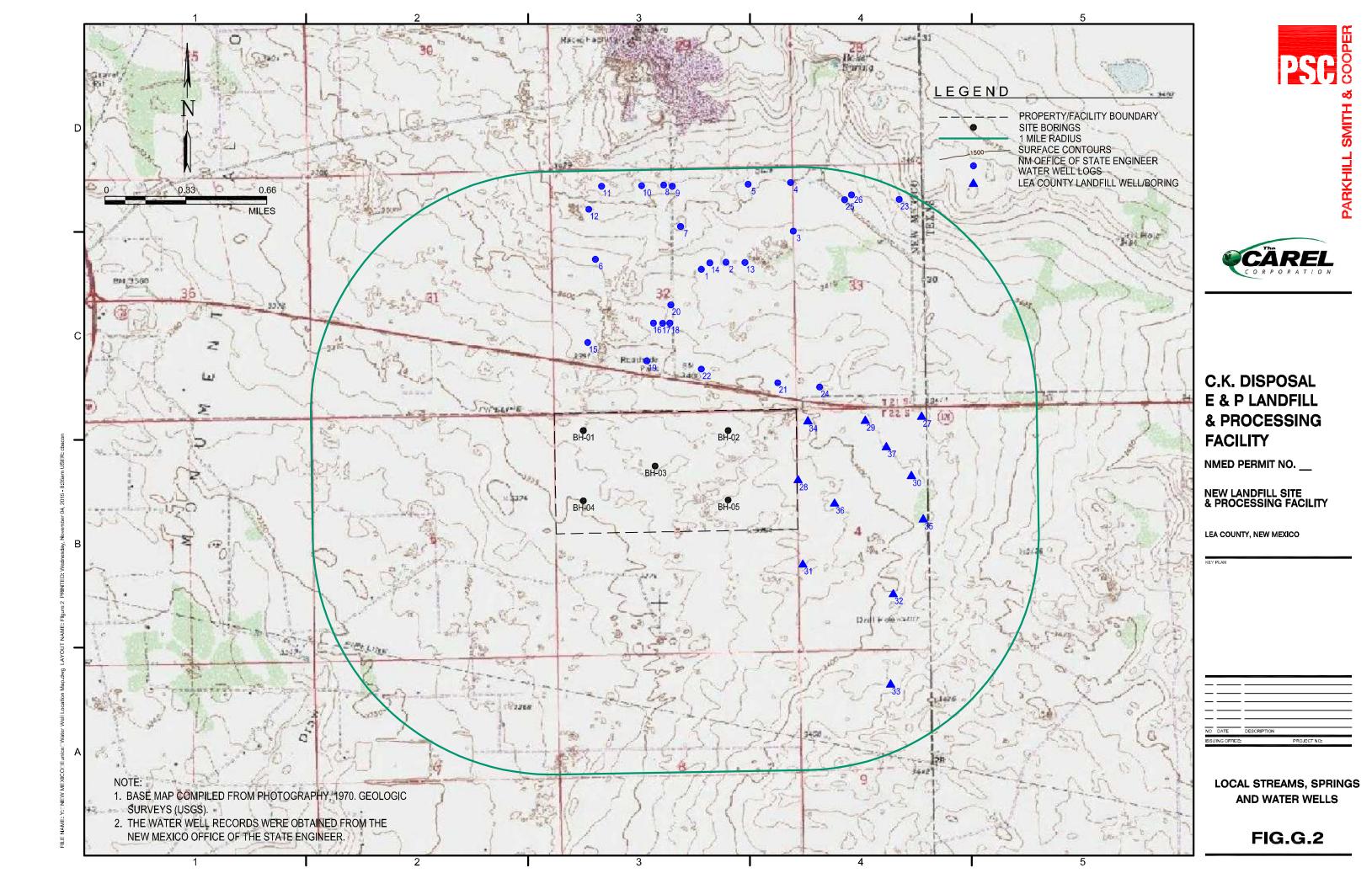
C.K. DISPOSAL **E&PLANDFILL** & PROCESSING **FACILITY**

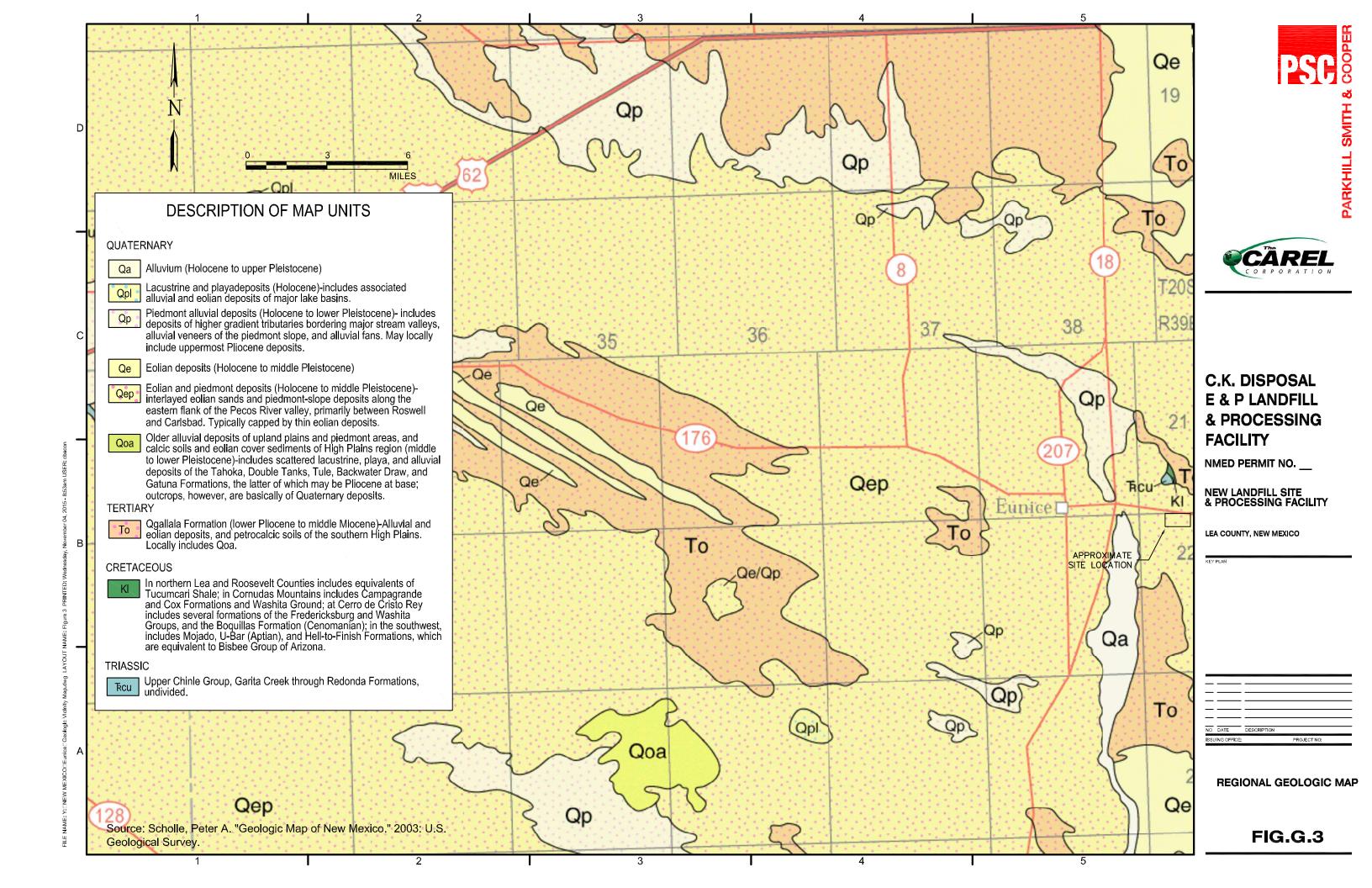
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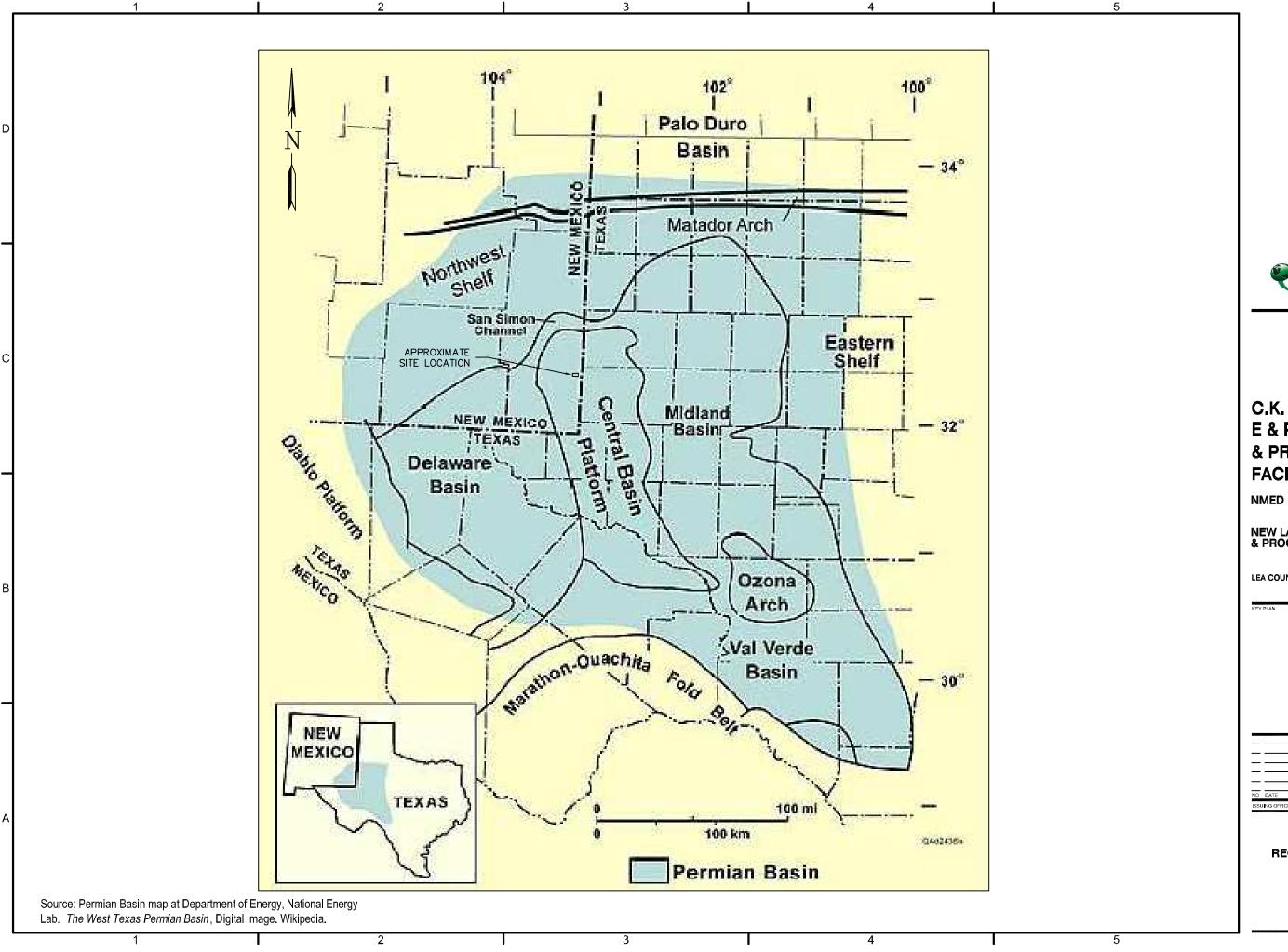
NEW LANDFILL SITE & PROCESSING FACILITY

LEA COUNTY, NEW MEXICO

PHYSIOGRAPHIC FEATURES











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

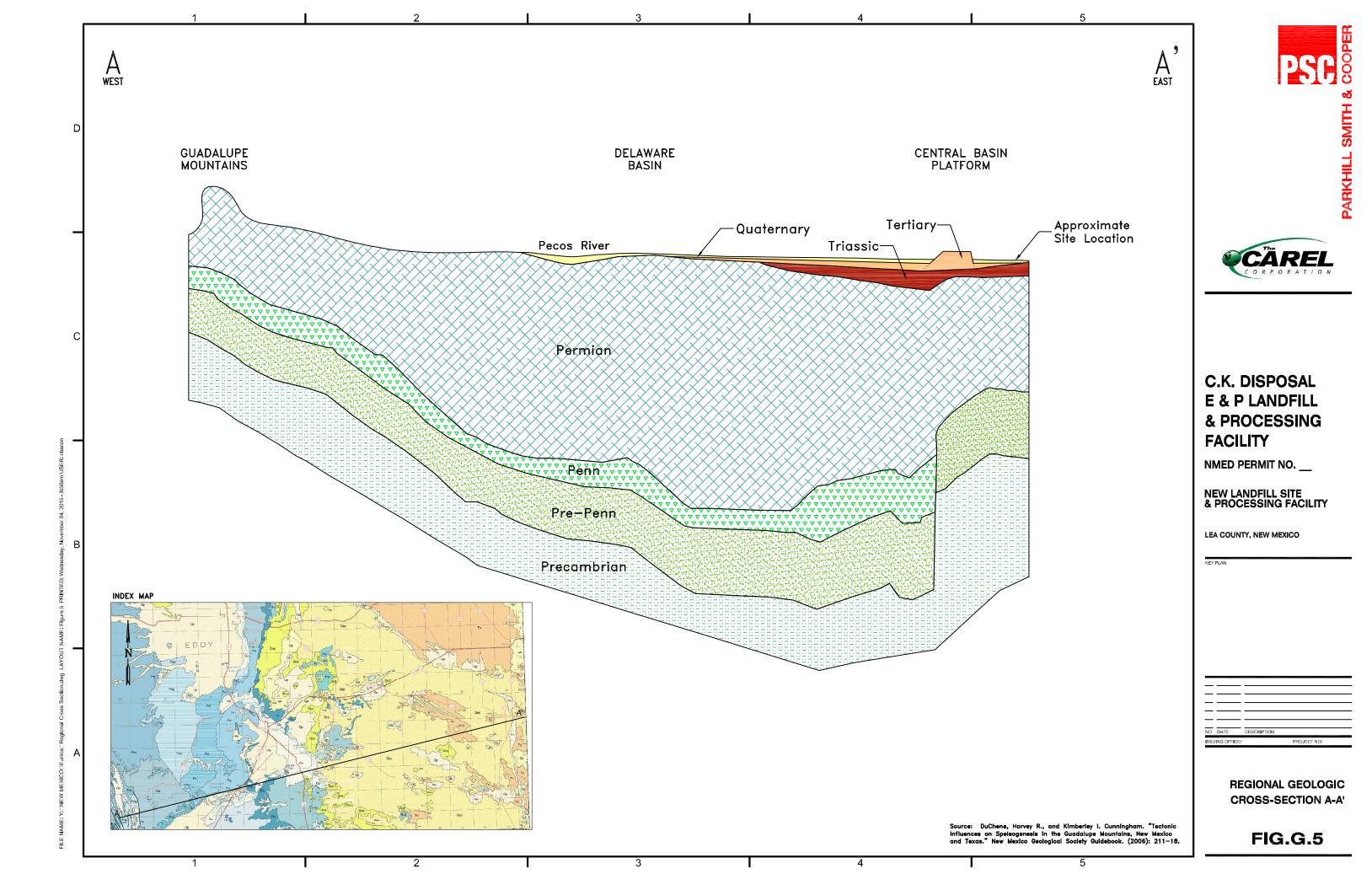
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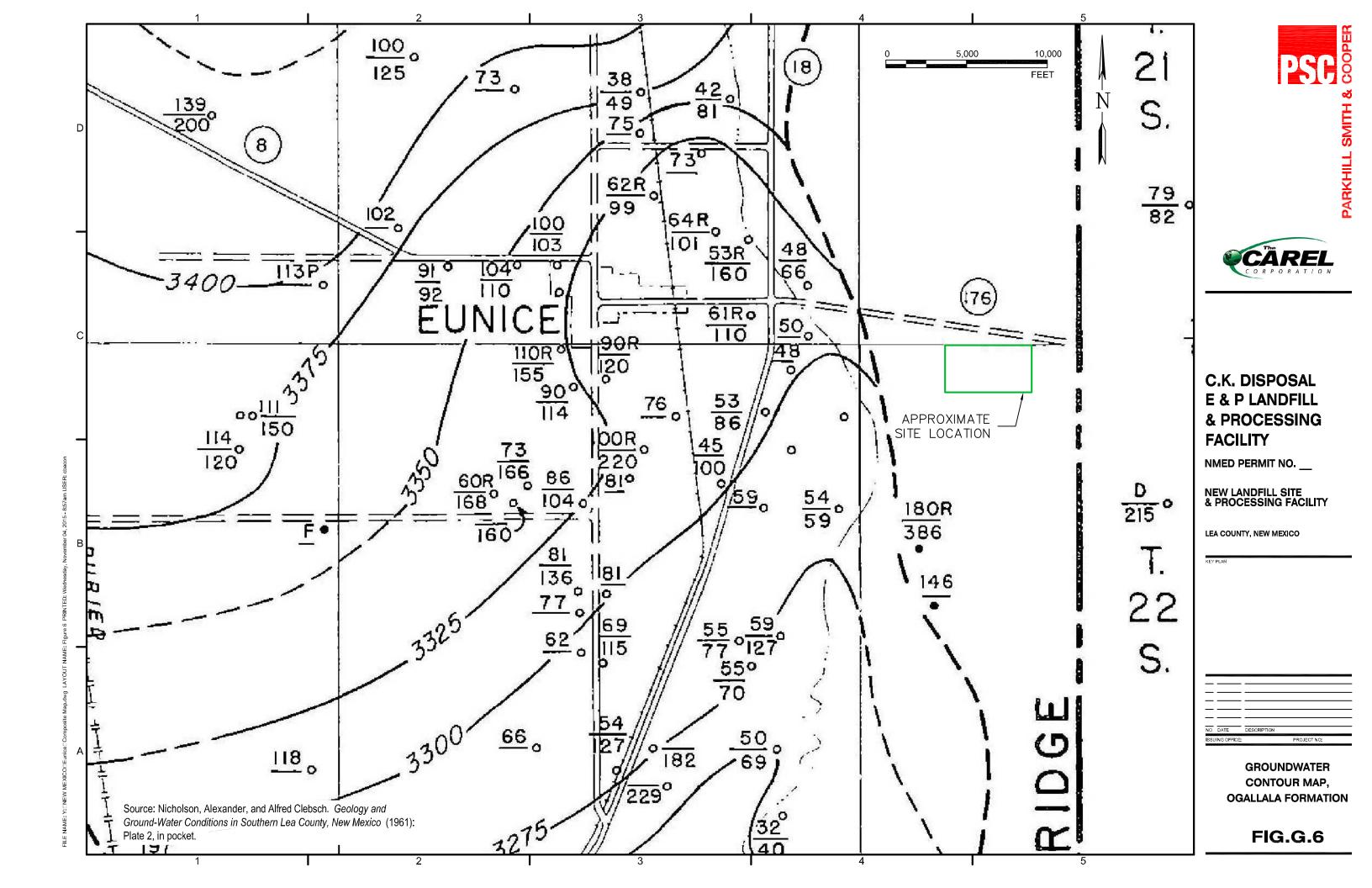
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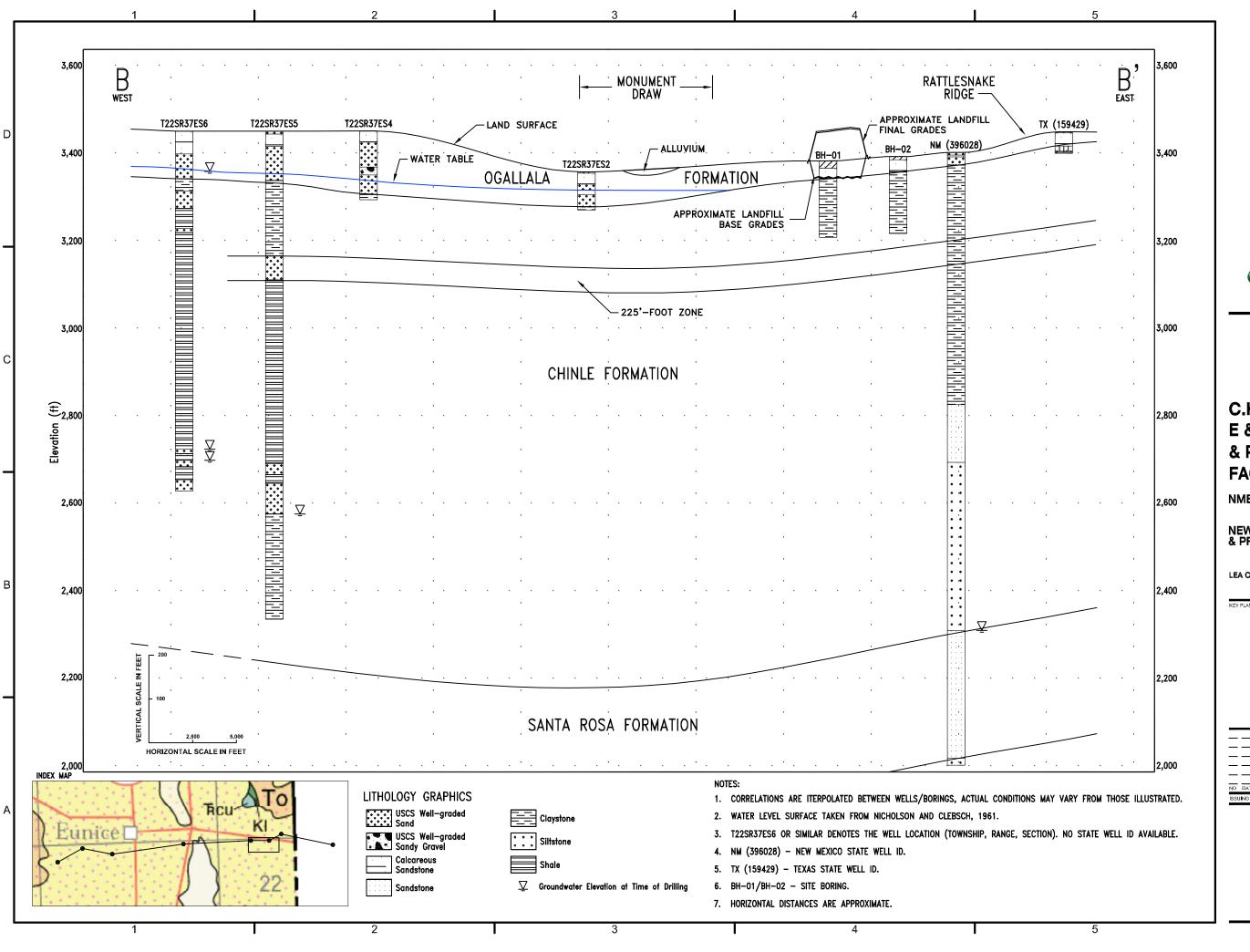
LEA COUNTY, NEW MEXICO

DATE DESCRIPTION
ING OFFICE: PROJECT NO:

REGIONAL STRUCTURAL FEATURES











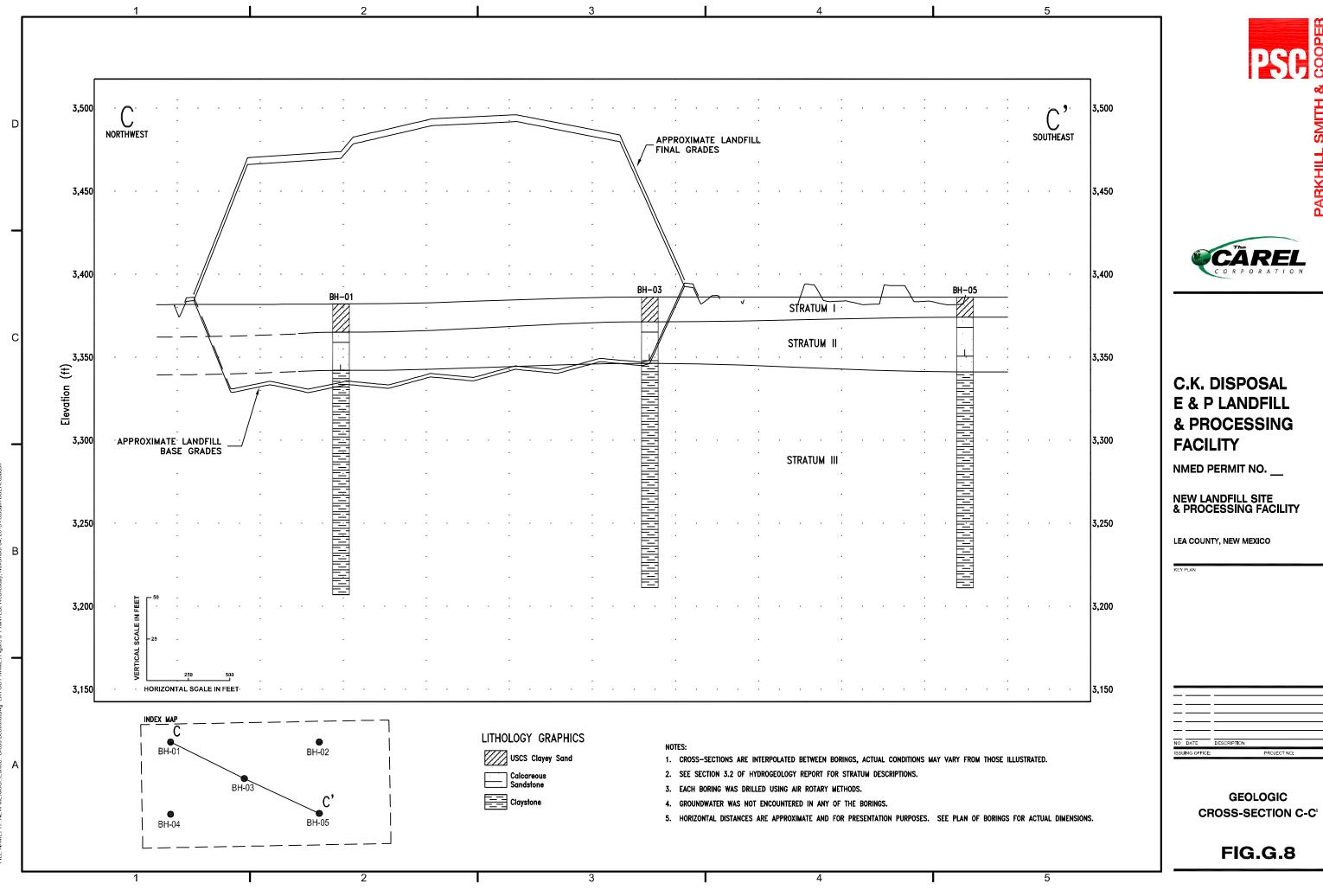
C.K. DISPOSAL **E&PLANDFILL** & PROCESSING **FACILITY**

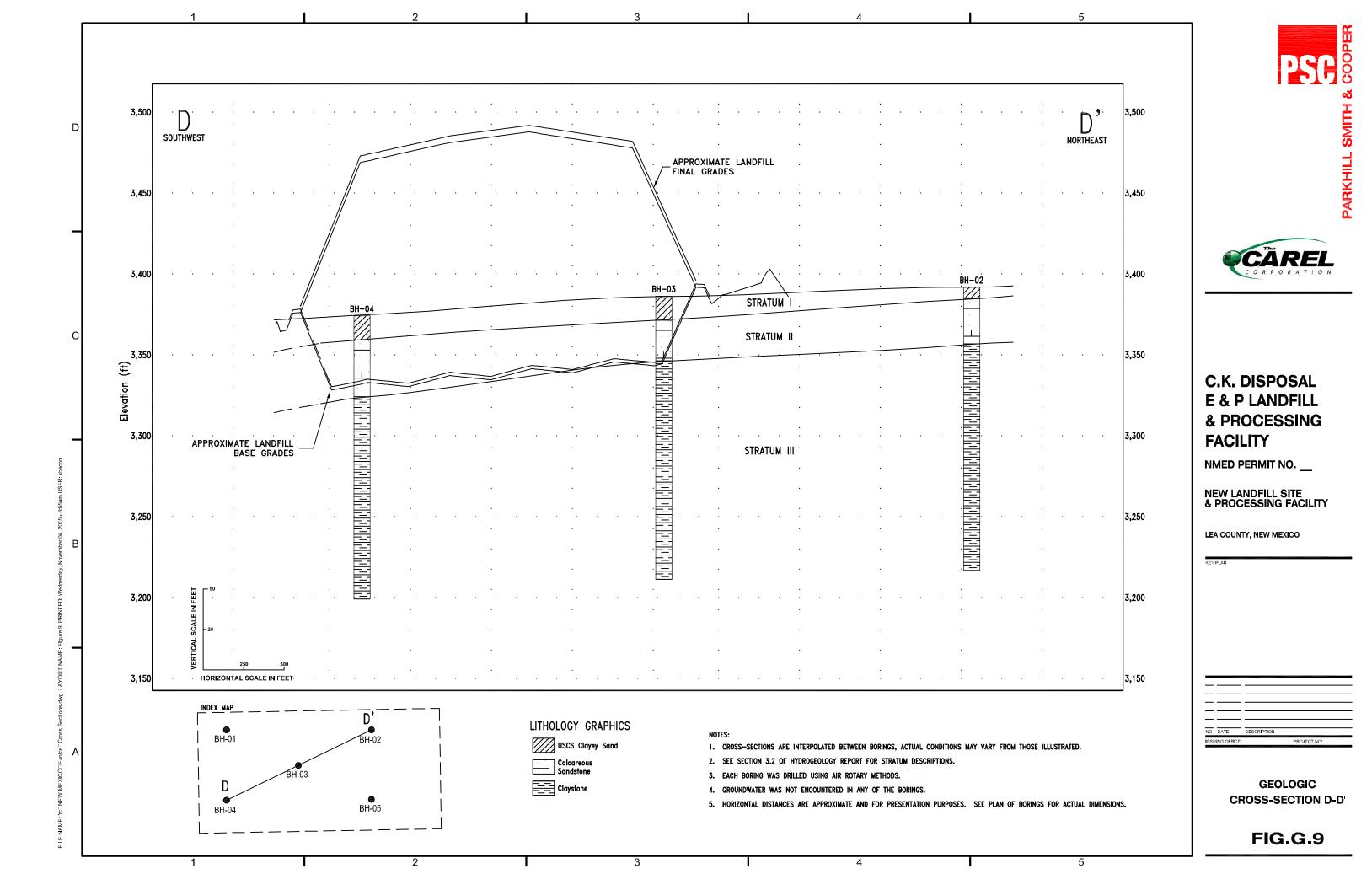
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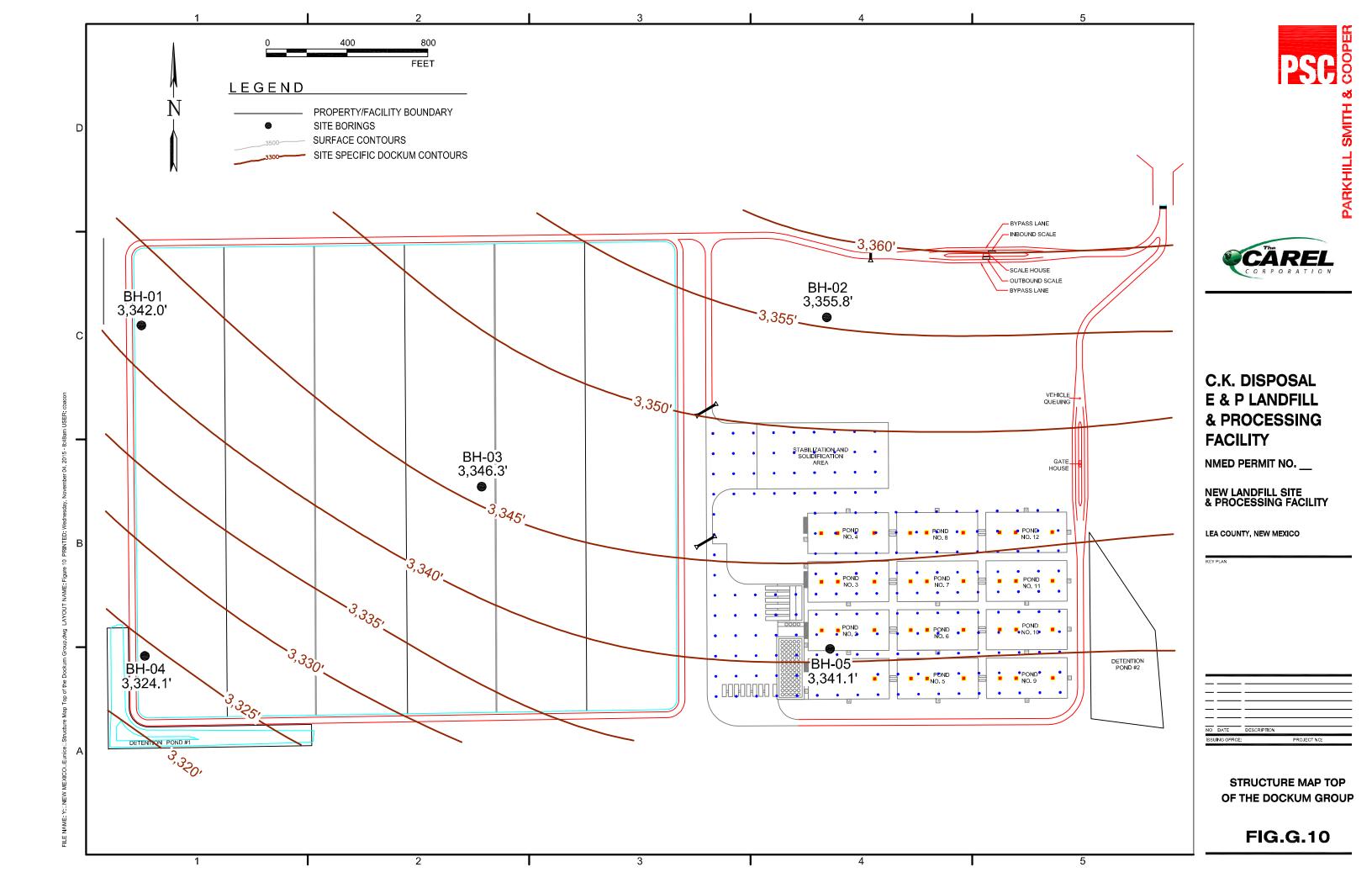
NEW LANDFILL SITE & PROCESSING FACILITY

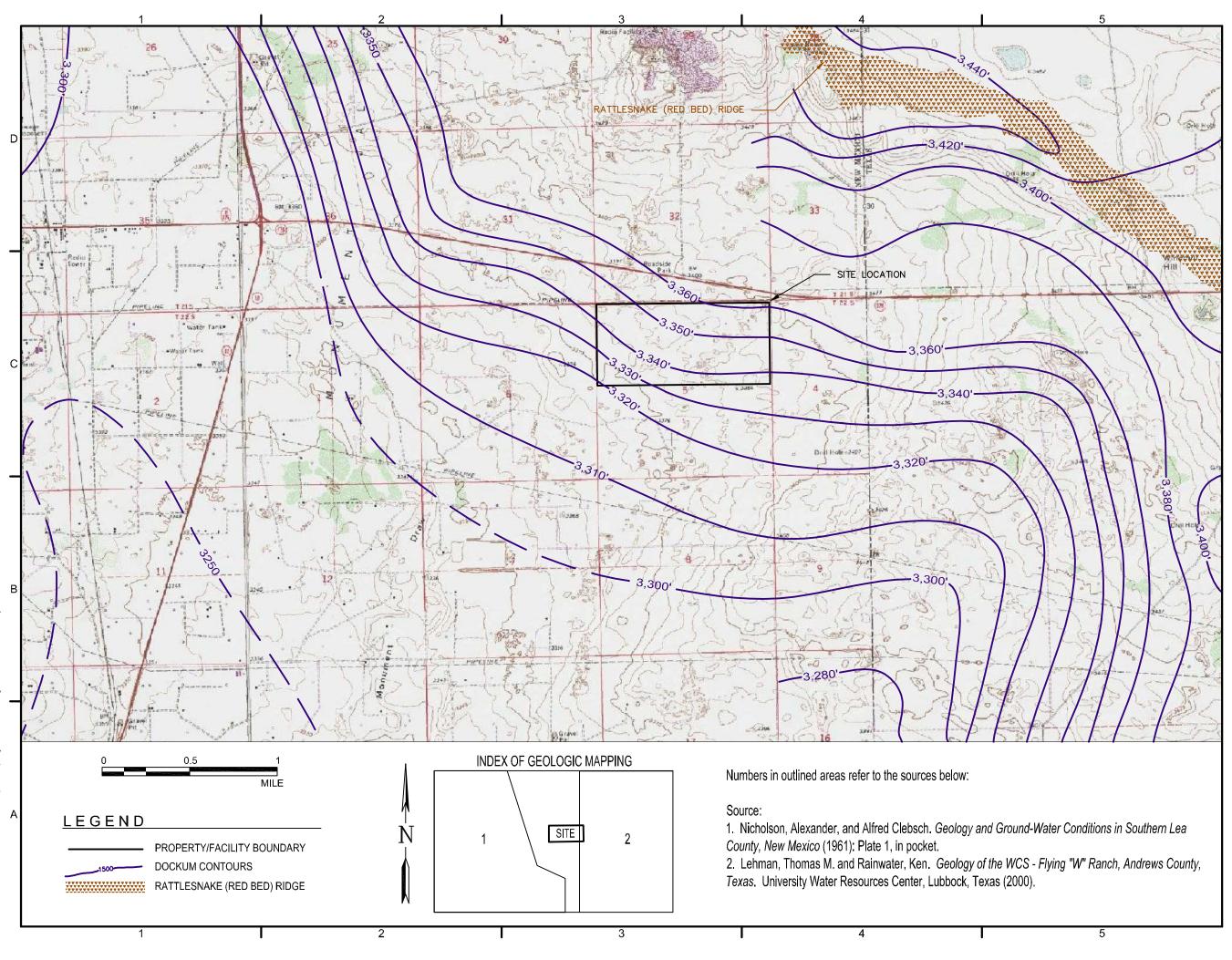
LEA COUNTY, NEW MEXICO

HYDROGEOLOGIC CROSS-SECTION B-B'













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

APPENDICES

APPENDIX G.A WELLS USED ON CROSS-SECTION B-B'

Revised June 1972

STATE ENGINEER OFFICE WELL RECORD

Section 1. GENERAL INFORMATION

Street o	r Post Office A	ddress						er's Well	No	
Well was drille	ed under Permi	t No			and is loo	cated in	the:			
a	¼	V4 V4	¼ of Se	ction	Townsh	nip	Ra	inge		N.M.P.M
b. Trac	t No	of Map No.		ot	the					
		of Block No ed in								
		feet, Y=			, N.M. Coordi					
(B) Drilling	Contractor						License No			
Address	 					 ,				
Drilling Begar)	leted		Туре 100	ols		Siz	e of hole_	in.	
Elevation of l	and surface or .			at	well is		ft. Total dept	h of well	·	ft.
Completed w	oll is 🗀 :	shallow 🗀 a					on completic	on of weil		ft.
Depti	ı in Feet	Sect Thickness			TER-BEARIN				Estimated '	Y ield
From	To	in Feet	1	Description	of Water-Bear	ing For	mation	(ga	llons per t	ninute)
								-		
								-		
			Sectio	n 3. RECOI	RD OF CASIN	NG				
Diameter (inches)	Pounds per foot	Threads per in.	Depth Top	Depth in Feet Length Top Bottom (feet)			Type of Shoe		Perfor From	ations To
										
			····							
			,		1					
		Sactio	n A PECOI	D OF MIR	DDING AND	CEMIZN	TINIC			
	in Feet	Hole	Sack	s	Cubic Feet	CEMEN		od of Pla	scement	
From	То	Diameter	of Ma	ıd	of Cement	-				
'		 				-				
	 	1								
									~~~	
Plugging Cont	ractor			n 5. PLUGC	HNG RECOR	D				
Address					[ N	o.  -	Depth ir			bic Feet
Date Well Plug	-						Тор	Botton	n of	Cement
Plugging appro	oved by:					3			-	
		State Engir	eer Represe	ntative						
Date Received	Typed 1,	/20/78	FOR USE	OF STATE	ENGINEER (	ONLY				
rate Vecelasa	, <u>-</u> ,	-,		Qu	ad		FWL.		FSL.	
File No				Use C	Oil	Lor	ration No. 2	2.37.6	41000	

Section 6 LOG OF HOLE

			Section 6, LOG OF HOLE
Depth		Thickness in Feet	Color and Type of Material Encountered
From	To 55		Caliche and sand
0			Dry sand
55	95	<del></del>	
95	112		Water sand Red bed, shale
1.12	140		
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		Shaje
800	825		Sand
			L S Elev
			Elev of K Tro
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 H	HODDS, N.	. M.
----------------------------------------------------------------------------	-----------	------

Location: 22.37.6.41000 Owner: Gulf Oil Corp.

South Penrose Skelly Unit 109

Record of Casing: 16"

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	

Elevation: 3453' GL

Revised June 1971

## STATE ENGINEER OFFICE WELL RECORD

### Section 1. GENERAL INFORMATION

Street or		ddress				Owne	r's Well No		
Well was drilled	under Permit	No			and is located	in the:			
a	_ ¼ ;	414	¼ of Sc	ction	Township	Rai	nge	N	.M.P.M
b. Tract i	No	of Map No.		of th	he				·
		of Block No			ne				<del></del>
					N.M. Coordinate	System			Zone ir
(B) Drilling C	ontractor					License No,			
Address							· · · · · · · · · · · · · · · · · · ·	<del></del>	
Drilling Began .	· · · · · · · · · · · · · · · · · · ·	· Comp	leted	<del> </del>	Type tools		Size of	hole	in
Elevation of lan	id surface or .	· · · · · · · · · · · · · · · · · · ·		at w	ell is	ft. Total depth	of well		ft
Completed well	is 🗀 s	shallow 🔲 at	rtesian.		Depth to water	upon completion	of well	· · · · · · · · · · · · · · · · · · ·	ft
Depth i	in Feat		ion 2. PRIN	CIPAL WAT	ER-BEARING ST	RATA	T C-41-	nated Yield	
From	То	Thickness in Feet	1	Description o	f Water-Bearing F	ormation		per minu	
								•	
I			Sectio	n 3. RECOR	D OF CASING				
Diameter (inches)	Pounds per foot	Threads per in.		in Feet	Length (feet)	Type of She	o¢ <del></del>	Perforatio	
(mones)	po. 100t	por In.	Тор	Bottom	(1000)		FI	om	То
			· ·· · · · · · · · · ·	<u> </u>					
i		Saction	n A PECOI	SD OF MID	DING AND CEM	FNTING			
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From	То	Diantetes	of M		or centent			<u> </u>	
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Plugging Contra	etor		Sectio	n 5. PLUGG	ING RECORD				
Address					No.	Depth in		Cubic	
Pringging Metho Date Well Plugg					1	Тър	Bottom	of Cer	nent
Plugging approv					2				
		State Engi	ncer Represe	entative	3 4				
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Date Received	Typed 1	./20//8		Qua	ıd	FWL_		FSL	
File No				Use0:	il	Location No. 22	.37.5.120	000	
						~~~		-	

Depth	in Feet	Thickness	Color and Type of Material Encountered
From	To	in Feet	Cotor and Type of Material Encountered
0	12		Cellar
L2	40		Caliche
40	118		Sand
18	290		Red bed
290	345		Sand
345	765		Shale, red rock
765	790		Sand
79 <u>0 </u>	810		Shale
810	880		Sand
880	1120		Red bed (water 220'-235')
<u> </u>			· · · · · · · · · · · · · · · · · · ·
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			29/11/2
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Section 7. REMARKS AND ADDITIONAL INFORMATION

This well	L record i	s an	excerpt	from	Oil	Conservation	Commission	files	at Nob	bs, N.M	•
	: 22.37.5 Gulf Oil C South Pe	orp.		Unit	#10	6	Elevat		3455† 34445*		

Record of Casing: 16" - 288' - 677' 13"

10 3/4"

Cable

660' FNL - 1980' FWL

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.

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

Driller

STATE ENGINEER OFFICE

ELLLU 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	. •		(A) Own	_		Gasoline)	Oil Compan	у
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	-						54and	
1							Twp22	
<u> </u>	 						Licen	-
							State	
							. 15,1972	
			1				. 21, 1972	
(P	lat of 640	acres)	_	-			<u></u>	
							oth of well 1	
State wh	ether we	ll is shall	ow or artesian	shall	OW	Depth to wat	ter upon complet	tion90
Section 2	2		PRIN	ICIPAL WA	ATER-BEAR	ING STRATA		
(Depth is	n Feet	Thickness in	[Their	erintian of Water	-Bearing Formation	•
No.	From	То	Feet		176	scription of water	-Dearing Polimation	
1	87	105	18	E TO TO	ana I	ຣລກດ້		
3		197	10	- Eraye	5.T. CH11.D	Datta.		
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4								······································
				<u> </u>				
5	}		<u> </u>	<u> </u>				
Section 3	3			RECOR	D OF CAS	ING		
Dia in.	Pounds ft.	Threa	nds De	Bottom Feet		Type Shoe	Perfor From	rations j To
85/8	23	10		160	160	none	128	150
				1	1	110110		
Section 4		<u> </u>	RECOR	D OF MUE	DDING AN	D CEMENTING		
Depth	in Feet	Diame	eter Tons	No. Sa	cks of			<u> </u>
From	То	Hole in	in. Clay	Cem	nent		Methods Used	
]							
								· · · · · · · · · · · · · · · · · · ·
	1	1						
,		,						
Section 5					SING REC			
						=	License No.	
							State	
Cons of C	Clay used		Tons of R	oughage u	ısed	Тур	e of roughage	
Plugging	method t	ised				Date Plu	gged	19
lugging	approved	by:				Cement Plug	s were placed as	follows:
					No	Depth of Pl	ug No of	Sacks Used
		٠/٠	Basin Sur	ervisor		From T	0	
	FOR USE	OF STAN	te encimeer o	NLY				
		En. 110	HE EHOMEEY	113 / T				
Date I	Received	- (1 - (1 - (1 - (1 - (1 - (1 - (1 - (1	د زیزا دی باز	 /	_			
		धा ध	HI ECELLI (TM.				
					i '		<u> </u>	
	16 1	0	-11.		aid		A - 0	1/ 2/01
File No.	てたる	77	~	Use	11Vd,	Location	No. 22-37	· 4. 17 th

Section 6

LOG OF WELL

Depth	in Feet	Thickness	Color	Type of Material Encountered			
rom	То	in Feet					
	4	4	brown	soil			
	30	26	gray	caliche			
0	68	38	<u>brown</u>	sand			
8	87	19	brown	tight sand			
·7	105	18	<u>brown</u>	sand & gravel			
Ω5	150	45	hrown	send			
50	162	12	red	clay			
				L S Elev			
				toc. No. 22, 37, 4, 14242 Hydro, Survey Sleid Check X			
<u>.</u>			:	SOURCE OF ALTITUDE GIVEN Interpolated from Topo. Sheet X			
				Daterminad by Inst. Leveling			
				Other			
	_			SAIO, L			
			<u> </u>				
		<u> </u>	:				
	_						
		\					

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.

Drund Gabile

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 pluggir record, only Section 1A and Section 5 need be completed.

			Use			Locatio	on No. 22.	37.2.222 3	0	
FOR US	e of stat	E ENGINE	er only		-					
		Basir	n Superviso	r	No.	i —————		No. of Sacks	Used	
		-								
_				=		_	-	-		
					-					
i										
<u>i</u>	<u> </u>	<u> </u>	<u> </u>		<u> </u>					
									·	
То	note in	ть. С	14Y	Cement	_					
in Feet	.1	I	ı	No. Sacks of				Methods Used		
1		RE	CORD OF	MUDDING	S AN	CEMENTING				
	<u> </u>									
ft. in Top		p Bolt	om 2			From		То		
}			Depth	Feet Type Sho				Perforations		
3			RI	CORD OF	CAS	ING				
				<u>-v</u>						
								··		
From	То	To Feet								
		l	in		Des	cription of Wate	r-Bearing Fo	rmation		
2			PRINCIPA	L WATER-	BEARI	NG STRATA				
nether we	ll is shall	ow or arte	sian			Depth to wa	ater upon c	ompletion		
n at top-c	ر کے f-casing in	n feet abou	ve sea leve	<u> کزکرترہ</u> وا	6. 70	20 Total de	pth of well	87		
lat of 640	acres)								194	
1		1								
		1	_							
		Well	was drille	ed under	Perm	t No		and is lo	cated in t	
		City					Sta	.te		
	Depth is From	Depth in Feet From To Pounds Threa in Pounds It. Diame Hole in An in Feet Diame Hole in Plugging Contract Hole in To Hole in An in Feet Diame Hole in To Hole in To Hole in An in Feet Diame Hole in To Hole in To Hole in An in Feet Diame Hole in To Hole in To Hole in To Hole in To Hole in An in Feet Diame To Hole in To Hole	Street City Well NI (B) Street City Drilli D	Street and Num City Well was drille NE 1/4 N (B) Drilling Control of 640 acres) In at top-of-casing in feet above sea level of the rest in	Street and Number. City Well was drilled under NE 1/4 NE 1/4 NE (B) Drilling Contractor. Street and Number. City Drilling was commenced Drilling was completed. In at top-of-casing in feet above sea level. PRINCIPAL WATER. Depth in Feet Thickness in Feet To To Feet To Bottom RECORD OF MUDDING In Feet Diameter Tons To Clay Cement A RECORD OF MUDDING In Feet Diameter Tons Clay Cement To Hole in in. PLUGGING Plugging Contractor. In Month of Roughage used a paproved by: Basin Supervisor FOR USE OF STATE ENGINEER ONLY Received Copied from USGS W:11 dule by A. Nicholson 10/9/53	Street and Number City Well was drilled under Permi NE 1/4 NE 1/4 NE 1/4 (B) Drilling Contractor. Street and Number City Drilling was commenced. Drilling was completed. Drill	City Well was drilled under Permit No	Street and Number City Well was drilled under Permit No NE 1/4 NE 1/4 NE 1/4 of Section 2 Twp.2 (B) Drilling Contractor E. 2 Burke Street and Number City Street and Number City Drilling was commenced. Drilling was completed Depth to water upon or the street well is shallow or artesian Depth to water upon or Permit No Pounds Threads Depth Depth Tolekness in Peet Tolekness in Peet Tolekness in Peet Tolekness in Peet Tolekness in Description of Water-Bearing Form To No. Sacks of Cement To Hole in in. Clay No. Sacks of Cement To Hole in in. Clay No. Sacks of Cement To Hole in in. Clay Date Plugged Type of rough Type of rough Date Plugged Cement Plugs were pla Basin Supervisor FOR USE OF STATE ENGINEER ONLY Received Copied from USGS W-11 Aute by A. Nicholson 10/9/53	Street and Number City State Well was drilled under Permit No	

22.37.2.222

Humble Oil Co.

Section 6

LOG OF WELL

	in Feet	Thickness	Color	Type of Material Encountered
From	То	in Feet		
0	3			soil
3	28			caliche
28	42			sand
42	52			lime
52	80			sand
80	87	David Andrews Company of the Company of the	and transmitted to the transmitted of	red bed
_	İ			
	 			22 mg × 3357
	 			3358 3357 1356 80 Bert V 7 80 80 Elev of K Trc-3278 3277
	 			Flev of K 1:c3278 3277
	ļ	 		
		_		100 Mg 22, 37, 2, 222314
	_			105 NO 2000, 30 / 12 20 20 1
				Nydro Survey Field Check X
		-		CAUDA OF LANDER OFFI
	ļ			SOURCE OF ALTHUDE GIVEN
	ļ			Interpotent Carrier (12) - Sie te (12)
				Determined by msa, toyoldig
				Other
	_			
 -		_		
		<u> </u>		

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.

Ε.	₽.	Burke	
		Well	Driller

Proje		OF BO Descri	ption: CK Disposal				CAREL
Depth, feet	Samples	Symbol/USCS	Location: Eunice, NM Top of PVC El.: feet MSL Surface El.: 3382 feet MSL Completion Depth: 175 feet Date Boring Started: 5/26/2 Date Boring Completed: 5/2	Ea 015	orthing: 160.00 usting: 1850.00	Monitor Well Construction Details	Monitor Well Description
			MATERIA	L DESCRIPT	ION		
5 10 15 20 25	{		CLAYEY SAND, brown well sorted, subrounded slightly moist, none HCI	to reddish b I, fine to med L reaction	rown, moderately lium grained,		
0 5 0 5			SILTY SAND, with calic sorted, well rounded, ve strong HCL reaction	he, light bro ery fine to fin	wn to white, well e grained, dry,		
5 5 5 5	L		CLAYSTONE, reddish I moist to dry, weak HCL		gray, slightly		
0 5 0 1 5	ĺ						
0 5 0							
5.10							
2Œ	1						
40 45 50							
35 30 65 70		ntractor Method: A Method: Stevere 15-04 BORIN					
75 Ilin	d Co	ntracto	r: HCl Drilling	Groundw	ater Observations	Remarks:	; 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig
illing	g Me	thod: A	ir Rotary	Date	Depth to Water (ft)		
mp	ling (Method	: Cuttings	5/26/15	Dry		
olos nier	gist: :: No	Steven	J. Wimmer 1-22				
ماور	OF.	BORII	NG NO. BH-01	The stratificati	on lines represent approx	mate strata b	oundaries. Water level at time of drilling.

			DRING NO. BH-02 ption: CK Disposal				CAREL
Depth, feet	Samples	Symbol/USCS	Location: Eunice, NM Northing: 521273.70 Top of PVC El.: feet MSL Easting: 928310.35 Surface El.: 3391.8 feet MSL Completion Depth: 175 feet Date Boring Started: 5/26/2015 Date Boring Completed: 5/26/2015		Monitor Well Construction Details	Manitor Well Description	
			MATERIA	L DESCRIP	TION		
5 10 15	Ì		CLAYEY SAND, brown well sorted, subrounded, slightly moist, none HC	d, fine to me			
15 20	}	1	SILTY SAND, with calic sorted, well rounded, ve strong HCL reaction	che, light bro			
25 30	}						
35 40 45 50	1		CLAYSTONE, reddish HCL reaction, some pu		ıray, dry, weak		
55 60	}						
70 75			less gray and purple; s	lightly moist	to dry		
80 85 90	ł						
95 00 05	1						
10 15 20	{						
25 30 35	{						
40 45 50	{						
30 35 40 45 50 55 60 75 75 rilling ampli eolog							
70							
75 rilling	Cor	ntractor	: HCI Drilling	Groundw	ater Observations	Remarks	: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig
rilling	Mei	thod: Ai	ir Rotary	Date	Depth to Water (ft)		
ampli eolo	ing N		: Cuttings J. Wimmer	5/26/15	Dry		
rojec	<u>t No</u>						
				The stratificat	on lines represent approx	imate strata b	oundaries. Water level at time of drilling.



OSE FILE NUMBER	
For OSE Use C,	

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

. PERMIT	HOLDER(S)	SPECIALIS	TS Nam	e:			
Address:	P.O. BC	X 1129		ress:			_
City:	ANDRE	WS	City				_
City: State:TX		14	State	::Zij	p:		
Phone:	(505) 3	94-4300	Phor	ne:			
	MICHAEL						
Contact Phon	e: <u>(505)</u>	394-4300	<u> </u>				
		EFERENCE N LORE,		C.P	. 975		
3. LOCATIO	ON OF WELI	L (The Datum I	s Assumed To	Be WGS 84	Unless Others	vise Specified)	
Latitude:	32	Deg	25	Min	45.8	Sec	
Longitude: _	103	Deg	04	Min	20.4	Sec	
	1	(Enter Lat/Long	g To At Least	1/10 th Of A 5	Second)		
Datum If Not	WGS 84:						
4. DRILLING License Num	G CONTRAG				none: (432)	530-2696	
MID: MIDE	or invito	MILLOX WILL	BERTOE	WOIRT	iono. <u>(432)</u>		
Drill Rig Seri	al Number: _		26	1602			
	e Of Each Dr	ill Rig Supervis	sor That Mana	aged On-Site	Operations Du	ring The Drilling	
Process:			RONNY KI	EITH			
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							<u>-#</u>
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				·			===
5. DRILLING	G RECORD					Ÿ	뎚
Orilling Bega	n:1-21-	08 ; Comp	leted: 4-29	9-08 ; Dr	illing Method	MUD ROTARY	35
Diameter Of I	Bore Hole:	7-7 <u>/</u> 8	(in)-		_		1.1
	•	2,02		(ft);			
Completed W	ell Is (Circle	One): Shallow	Artesian;				
		untered:		(ft);			
Deput to wa	ter Opon Con	pletion Of Wel	II: <u>N/</u>	<u>A</u> (ft).		
	_ D o]	Not Write Belo	w This Line				٠
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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	
				E	1	ļ
	-	<u> </u>			[

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
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8. LOG Minute.	OF HO	LE. For Eacl	n Water Bearing Strata,	Estimate The Yield Of The Formation in Gallons Per		
Dep (fee	t)	Thickness	For Water Bearing			
From	То	(Feet)	Strata Enter The Estimated Yield in GPM	Color and Type of Material Encountered		
			SEE ATTACHED	GEOLOGIC LOG		
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		1.				
		 				
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			-	2019 2019		
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Enter M	[ethod	Used To Estin	mate Yield: $\frac{\nu_A}{A}$			
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Form wr	-20 Ma	y 07	 pag	e 3 of 4		

CP-975 Geolo	ogic log
0-6 ft (y	pad fill and fine brown sand
6-10 ft	white sandy limestone (Mescalero caliche)
. 1	sand, light brown, and brown calcareous sandstone (Gatuña Formation)
	interbedded sandstone, siltstone, and claystone; reddish-brown to gray; bioturbated (Cooper Canyon Formation)
576-708 ft	sandstone and siltstone, gray to reddish brown (Trujillo Formation)
	interbedded very fine sandstone and siltstone, gray to dark reddish brown (Tecovas Formation)
	gray, fine sandstone with interbedded reddish brown and weak red siltstone and claystone (Santa Rosa Formation)
1384-1566 ft	reddish brown, very fine sandstone and siltstone, with some fibrous gypsum in lower part (Dewey Lake Formation)
1566-1602 ft	gray anhydrite beds, with intermediate reddish-brown and gray siltstone (Forty-niner Member of the Rustler Formation)
	gray anhydrite and wavy thin laminae of dolomite (Magenta Dolomite Member of the Rustler Formation)
1609-1736 ft	gray anhydrite beds, with intermediate halite including anhydrite and polyhalite (Tamarisk Member of the Rustler Formation)
1736-1807 ft 213	halite with thin two thin anhydrite beds and basal reddish-brown, very fine sandstone (Los Medaños Member of the Rustler Formation)
	halite with anhydrite/polyhalitic marker beds (MB103 and uppermost MB109) (Salado Formation)

OSE FILE NUMBER	
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9. ADDITIONAL STATEMENTS O	R EXPLANATIONS:	
		······································
	·	
	- Ann	<u> </u>
		<u> </u>
		<u> </u>
		·
		····
The undersigned hereby certifies that, and correct record of the above descrifile this well record with the Office Occumplation of the well drilling.	bed bore hole. The undersigned furth	er certifies that he or she will
Tonny Kent	05-12-08	
Driller /	(mm/dd/year)	
	Do Not Write Below This Line	<u> </u>
Trn Number:		File Number:
Form wr-20 May 07	page 4 of 4	

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.

9/15/2015

Well Report: Tracking #:159429

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

CASING, BLANK PIPE & WELL SCREEN DATA

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. 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:				
	(Fc	r	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. $\frac{NW}{1/4}$ $\frac{SW'}{Lea}$ $\frac{1/4}{Lea}$ $\frac{NE}{1/4}$ Section: 32 Township	:2/S Range:38E N.M.P.M. County.
B. X = feet, Y = fe Zone in the	et, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 14.8698 s Longitude:	<u>103</u> d <u>04</u> m <u>49.8642</u> 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 Subdivision recorded in	of the County.
G. Other:	ूँ आप ूर्व
H. Give State Engineer File Number if existing we	11: <u>CP-993</u> N
I. On land owned by (required): Louisiana Ener	gy Services >
3. DRILLING CONTRACTOR	T 18
License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	Work Phone: 806.467.0607 Home Phone: 806.467.0622
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: 12/5/08; Completed: 12/5/08 Size of hole: 7-7/8 in.; Total depth of well: 231 Completed well is: Monitor (shallow, arto Depth to water upon completion of well: Dry	<u>.</u> 5ft.; esian);
Do Not Write Below This L	ine
	rn Number: 4/5/642
Ma total	21,38,32.231

Q

File	Number	:			
		(For	OSE	Use	Only)

Depth in Feet From To Dry	in feet		Estimated Yield (GPM)
RECORD OF CASIN	G		
Diameter Poun (inches) per 4 PVC Sch	ft. per in. 40 2	Top Bottom (feet)	
RECORD OF MUDE	OING AND CEM	ENTING	
Depth in Feet From To 0 20 20 206	Hole Diameter 7-7/8 7-7/8	of mud of Cement 20 Sacks Trimie	e (Bentonite/Cement (Bentonite chips
PLUGGING RECOR Plugging Contr Ac Plugging M Date Well Pl	actor:		
Plugging appro	oved by:	State Engineer Repr	
	No. Depti Top 1 2	n in Feet Cubic Feetof Cemer Bottom	11.57 nt
	4 5		
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ile Number: C	0-993	Trn Nu page 2 of 4	mber: 415642

File	Number:			
	(For	OSE	Use	Only)

9. LOG OF HOLE

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

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				<u> </u>	
					
	 	-		<u> </u>	15-1
					, ,
The undersigned hereby cert belief, the foregoing is a cole. Driller	true and o	correct	record of the	above des	scribed
				.==== = ==	========
FORS	TATE ENGL	NEER USE	ONLY		
Quad; FWL; FSL;	Use	; Locati	on No	.	
Do	Not Write	Below T	his Line		
Number: CP-993			Trn Numbe	er: <u>4/5</u>	5642

NLB

1. OWNER OF WELL

File	Number	:			
		(For	OSE	Uşe	Only)

Name: Louisiana Energy Services Contact: Laurie Wetherell Address: P.O. Box 1789	Work Phone: <u>505-394-52</u> 04 Home Phone:
City: Eunice	State: <u>NM</u> 2ip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{NE_{1/4}}{\ln \frac{SW}{Lea}}$ 1/4 $\frac{NE_{1/4}}{LEa}$ Section: 32 Township	:2/5 Range:38E N.M.P.M. County.
B. X = feet, Y = fe Zone in the	et, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 14.9172 s Longitude:	<u>103</u> d <u>04</u> m <u>45.4866</u> 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 Subdivision recorded in	of the County.
G. Other:	18.3
H. Give State Engineer File Number if existing wel I. On land owned by (required): Louisiana Energy	1: <u>CP-994</u>
I. On land owned by (required): Louisiana Energ	y Services , . 🖂
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	Work Phone: 806.467.0607 Home Phone: 806.467.0622
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: $12/5/08$; Completed: $12/5/08$; Size of hole: $7-7/8$ in.; Total depth of well: 36 Completed well is: Monitor (shallow, arter Depth to water upon completion of well: Dry	_ ft.; sian);
Do Not Write Below This Li	
Form: wr-20 page 1 of 4	21,38,32,232
Monitor	

File	Number:			
	(For	OSE	Use	Only)

Dry	Thickness in feet	water-b	earing	format		(ted Yi	
			·, -					
ECORD OF CASIN	IG							
Diameter Poun	ds Threads	Depth in	Feet	Length	Type o	f Shoe		
(inches) per	ft. per in.	Top B	ottom	(feet)	end	cap	From 26	то 36
4 PVC Sch								
								
ECORD OF MUDI	ING AND CEM	ENTING						
Depth in Feet	Hole	Sacks	Cubic	Feet	Method	of Pla	cement	
From To	Diameter	of mud	of Ce	ment				
	7-7/8		20 8	Sacks _	Trimie	(Bento	onite/	Cemer
5 23					Poured			
LUGGING RECOR	RD							٠
Plugging Contr	actor:						· · · · · ·	:
Plugging Contr Ad Plugging M	actor:						· · · · · ·	=
Plugging Contr	actor:							= :
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Plugging Contr Ac Plugging M Date Well Pl	ddress: ldress: lethod: lugged:							<u>-</u>
Plugging Contr Ac Plugging M Date Well Pl	ddress:		State	Enginee	er Repres	sentativ		7
Plugging Contr Ac Plugging M Date Well Pl	No. Depti	n in Feet	State	Enginee	er Repres	sentativ		7
Plugging Contr Ac Plugging M Date Well Pl	No. Depth		State	Enginee	er Repres	sentativ		7
Plugging Contr Ac Plugging M Date Well Pl	No. Depti	n in Feet	State	Enginee	er Repres	sentativ		0
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3	n in Feet	State	Enginee	er Repres	sentativ		0
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3 4	n in Feet	State	Enginee	er Repres	sentativ		
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3	n in Feet	State	Enginee	er Repres	sentativ		0
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3 4	n in Feet	State	Enginee	er Repres	sentativ		0
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3 4	n in Feet	State	Enginee	er Repres	sentativ		0
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3 4 5	n in Feet	State	Enginee	er Repres	sentativ		0

File	Number	:			
		(For	OSE	Use	Only)

9. LOG OF HOLE

Depth From	in Feet 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
34			Clayscone, dark purple
			20
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File	Number:			
	(For	r OSE	Use	Only)

MW-21			
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			1.2
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			1
The undersigned	hereby certifies	that, to the best of his	knowledge and
The undersigned belief, the fore	hereby certifies going is a true a	that, to the best of his and correct record of the	knowledge and
The undersigned belief, the fore hole.	hereby certifies going is a true a	that, to the best of his and correct record of the	knowledge and
belief, the fore	hereby certifies going is a true a	and correct record of the	knowledge and above desorbibed
belief, the fore	egoing is a true a	that, to the best of his and correct record of the $\frac{12/24/08}{(mm/dd/year)}$	knowledge and
belief, the fore	hereby certifies going is a true a	and correct record of the	knowledge and above desorbibed
belief, the fore	egoing is a true a	and correct record of the	knowledge and above desorbibed
belief, the fore	egoing is a true a	and correct record of the	knowledge and above desorbibed
belief, the fore	egoing is a true a	and correct record of the	knowledge and above desorbibed
belief, the fore	Driller	12/29/08 (mm/dd/year)	knowledge and above desagibed
belief, the fore	Driller	and correct record of the	knowledge and above desagibed
belief, the fore	Driller	12/29/08 (mm/dd/year)	knowledge and above desagibed
belief, the fore	Driller	12/29/08 (mm/dd/year)	knowledge and above desagibed
belief, the fore	Por STATE E	/2/24/08 // (mm/dd/year) CNGINEER USE ONLY	knowledge and above desorbibed
belief, the fore	Por STATE E	12/29/08 (mm/dd/year)	knowledge and above desorbibed
belief, the fore	Por STATE E	/2/24/08 // (mm/dd/year) CNGINEER USE ONLY	knowledge and above desorbibed
belief, the fore	Por STATE E	/2/24/08 // (mm/dd/year) CNGINEER USE ONLY	knowledge and above desorbibed
belief, the fore	FOR STATE E	/2/24/08 // (mm/dd/year) CNGINEER USE ONLY	knowledge and above desagible

WLB

File	Number:			
	(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisianna Energy Services	Work Phone: <u>505.394,570</u> 4
Contact: Laurie wetherell Address: P.O. Box 1789	Home Phone:
City: Eunice	State: <u>Aiw</u> Zip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{SE}{1/4} \frac{NE}{NE} \frac{1}{4} \frac{NE}{1/4} $ Section: $\frac{32}{32}$ Township	:2/5 Range:38EN.M.P.M. County.
B. X = feet, Y = fee	
· · · · · · · · · · · · · · · · · · ·	
C. Latitude: <u>37</u> d <u>26 m 21.907</u> s Longitude:	103 d 04 m 27.079 s
D. East (m), North (m), UTM :	Zone 13, NAD (27 or 83)
F. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing well	(5) 0117
I. On land owned by (required): Lez County, A	JM
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon LPE Agent: Shake Corrie Mailing Address: 971 N. Bivins	Work Phone: <u>೪೮೬, Կ.67, 060</u> 7 Home Phone: <u>೪೮৫, ೪۲6, ೪</u>
	and the same of the
City: Amarillo	State: TX Zip: 79107
4. DRILLING RECORD	
Drilling began: $3/15/07$; Completed: $4/03/07$; Size of hole: $7-7\%$ in.; Total depth of well: 270.5 Completed well is: 900% (shallow, artes Depth to water upon completion of well: 178.43	itt.;
	81 20
Do Mat Malla p 2	ATE 1817
Do Not Write Below This Line	
File Number: $\frac{CP-947}{\text{Form: wr-20}}$ page 1 of 4	Number: 376945 9
page 1 51 4	Number: 376945 50 11 11 11 11 11 11 11 11 11 11 11 11 11
Mexitor	Number: 376945 PEXICO 2: 00
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File Number:

(For OSE Use Only)

From To in feet 178,83 218.1 39.27	Description of water-bearing formation Claystone & Soltstone	Estimated Yield (GPM) O-5
. RECORD OF CASING		
(inches) per ft. per in. 4 Sch 40 PVC Z	Top Bottom (feet) <u>D 198.1 (98.1)</u>	of Shoe Perforations From To b A A T(S) (
RECORD OF MUDDING AND CEM	FNTING	
Depth in Feet Hole From To Diameter O 15 7-78 15 492 7-78	of mud of Cement 1 20 tremie	of Placement - brutonite /cemen - beutonite chips
PLUGGING RECORD		
Plugging Contractor: Address: Plugging Method: Date Well Plugged:		
Jaco nerr rraggea		
Plugging approved by:		
	State Engineer Repres	entative
Plugging approved by:		entative
		ROSWEILL HER
Plugging approved by: No. Depth Top 1 2 3 4 5	in Feet Cubic Feetof Cement Bottom	2001
Plugging approved by: No. Depth Top 1 2 3 4 5	in Feet Cubic Feetof Cement Bottom Not Write Below This Line Trn Number	ROSWELL, NEW FIEAR

Tile	Number	:		
			 _	_

(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth in F		
From	To in feet	
	<u> </u>	SAND, loose, dry, brown - tan
	25 23	calicité, soft, dry, gray
	50 5	SANDY, gravel dry, orange to tan
	30 <u>100</u>	Ciay, highly plastic, marcon with gray mottling siltstone, pardidry gray with marcon mottling
	<u> </u>	- siltstone, bandidry gray with marcon mottling
	<u> </u>	Claystone, dry maroon w/ gray mottling
	05 10	Silstone, have dry gray wi maroon splotching
	<u>07 </u>	Siltstone with claystone need, gray & maroon
	30 15	Siltstone with clarstone hard, gray & maroon
		claystone, firm dry maroon w/ gray mottling
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pellet,	rsigned he	ing is a tr	ies that, ue and co	rrect rec	pest of hicord of th	e above	dge and describe	d
pellet,	rsigned he	ing is a tr	ue and co	rrect rec	cord of th	e above	dge and describe	d
hole.	the forego	ing is a tr	ue and co	rrect rec	cord of th	e above	edge and describe	d R
hole.	the forego	Driller	ue and co	<u>O'</u> (mm/	cord of th	e above	dge and describe	d No
hole.	the forego	Driller	ue and co	<u>O'</u> (mm/	cord of th	e above	dge and describe	d
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hole.	the forego	Driller FOR STA	TE ENGINE	OH (MM)		e above 1	describe	
hole.	the forego	Driller FOR STA	TE ENGINE	Prrect red Out (mm/	cord of the cord o	e above 1	describe 2001 MPR 27 ⊃ 2:	
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Quad	; FWL	FOR STA	TE ENGINE	ER USE ON	cord of the cord o	e above	191 kps 27 5 2:01	

WLD

File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisianz Energy Services	Work Phone: <u>608.394,82</u> 04
Contact: Laurie wethereil Address: P.C. Box (789	Home Phone:
	-
City: Eunice	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	2/5 Range: 38EN.M.P.M. County.
B. X = feet, Y = fe Zone in the U.S.G.S. Quad Map	et, N.M. Coordinate System Grant.
C. Latitude: 37 d 26 m 33.098 s Longitude:	103 d 04 m 27.582 s
D. East (m), North (m), UTM	
E. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County.
G. Other:	·
H. Give State Engineer File Number if existing well	1: 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	Work Phone: 806.467.0607 Home Phone: 906.676.8770
City: Amarillo	State: 7½ Zip: 79107
4. DRILLING RECORD	
Drilling began: 3/15/07; Completed: 4/03/07; Size of hole: 7-7/y in.; Total depth of well: 37.2 Completed well is: Monitor (shallow, artes Depth to water upon completion of well: DRY	ft.;
Do Not Write Below This Lin	e min
File Number: $\frac{CP-948}{\text{Form: wr-20}}$ page 1 of 4 Monutor	Number: 376946 777 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

File	Number:				
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	n Feet To	Thickness in feet	water- DIZY		format			ated Yi (GPM)		
										_
ECORD O	F CASIN	 IG								
Diamete: (inches) 4 4	per <u>5대 4</u> 0	ft. per in.	Тор	Bottom	(feet) <u>72.2</u> (0	Type of N/A PVC end	(zp	From _ <i>\dif</i>	To	
ECORD O	F MUDD	ING AND CEM	ENTING				·			
0	reet To	Hole Diameter 7-7/8 ~-7/8	Sacks of mud	Cubic of Cer	ment	Method of fremier pour - 1	- be	ntonil	-e/ce ch.jp	<u>'m</u> ı
 LUGGING	RECOR	 D								_
		dress:								
Plugging	approv	red by:		State E	Engineer	Represer	tative			
		No. Depth Top 1 2 3 4 5	in Feet Bottom		: Feetof	Cement			7801 APR 27	NOSWELL, TE
		<u></u>							D 2: 01	2110710
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File Number: _

(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth in Feet	Thickness	Color and Type of Material Encountered	
From To	in feet		
<u> </u>	3	Topsoil - Silt loose; dry brown	
3 30	27	Caliche, hard, dry, tan to gray	
<u> 30 35 </u>	5	Caliche, hard, dry, tantogray	
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ile Number: _ ()	P-948	Trn Number: <u>376946</u>	
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Monitor

21,38,32.222

File	Number	:			
		(For	OSE	Use	Only

				
				
				
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				-
The undersigned hereby certific	es that, to the	e best of his	knowledge a	and
The undersigned hereby certified belief, the foregoing is a true hole. Driller	e and correct r	be best of his record of the $C4 \int 24 \sqrt{2c} \sigma T$ m/dd/year)	knowledge a above descr	and ribed
Driller	e and correct r	ecord of the OU \frac{24\frac{2}{2}CU7}{m/dd/year}	above desci	ribed
Driller	e and correct r	ecord of the	above desci	ribed
pelief, the foregoing is a true nole. Driller FOR STATE	e and correct r	ecord of the ON 24 2cv7 m/od/year) ONLY	above desci	ribed
Pelief, the foregoing is a true nole. Driller FOR STATION OF THE PROPERTY OF	E ENGINEER USE	CY / 24 / 2507 m/dd/year) ONLY on No.	above desci	ribed 7887 AFR 27
FOR STATI	e and correct r	CY 24 2cv7 TM/dd/year) ONLY On No	above desci	Tibed 2001 AFR 27 P

W.B

File	Number:			
	(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisiana Energy Services	Work Phone: <u>505.394.57</u> 04
Contact: Laurie Wethevell Address: P.O. Box 1789	Home Phone:
city: Eunice	
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
	215 20-
A. $NW_{1/4}$ $NE_{1/4}$ $NE_{1/4}$ Section: 32 Township in Lea_{2}	:210 Range:38E N.M.P.M. County.
B. X =feet, Y =fee Zone in the	et, N.M. Coordinate System Grant.
C. Latitude: 37 d 76 m 37-895 s Longitude:	103 d 04 m 39.176 s
D. East (m), North (m), UTM 2	Zone 13, NAD (27 or 83)
E. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the
G. Other:	
H. Give State Engineer File Number if existing well	
I. On land owned by (required): Lea County	
3. DRILLING CONTRACTOR	
License Number: 1575	
Name: Talon /LPF	Work Phone: 806.467.0607
Agent: Shane Curvic Mailing Address: 921 N. Bivins	Home Phone: 806.676.8770
City: Amarillo	State:7X Zip: 79/07
4. DRILLING RECORD	
Drilling began: 3/6/67; Completed: 4/63/07; Size of hole: 7-78 in.; Total depth of well: 240.4 Completed well is: Monitor (shallow, artes Depth to water upon completion of well: DRY	ian);
·	NUS REEN
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2.0	Number: 376947 mg
Form: wr-20 page 1 of 4	~ ≥ +
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	(For	OSE	Use	Only)

	- -	in feet	water- DRY	ption of bearing format	tion 		1)
						<u> </u>	
RECORD	OF CASIN	iG					
4.0	s) per <u>5th 40</u>	rt. per in. 1900 Z 1900 Z	220.9	n Feet Length Bottom (feet) 220.9 270.9 240.9 20	N/A Pro end o	FrA 	om To
RECORD	OF MUDD	ING AND CEMI	ENTING				
Depth From O		Hole Diameter 7-7% 7-7%	Sacks of mud 1	Cubic Feet of Cement ZÜ		- benton	ite Teenco
LUGGIN	 IG RECORI						
Pl	ng Contra Ado ugging Me Well Plu	dress:					
Pluggi	ng approv	red by:		State Enginee	r Represen	tative	
			in Feet Bottom	Cubic Feeto:	f Cement		Tion Tion
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							38 EL RE 27 P 2
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File	Number:						
	(For	OSE	Use	Only)			

9. LOG OF HOLE

From	То	in feet	
_ <u>C</u>	<u> </u>		SAND, loose, dry, orange to light ord
<u> </u>	30	26	CALICITE, moderately hard, chert, dry oranged rec
<u> 30</u>	<u>50</u> .	_ 20	SANDY, Gravel, chert, dry, tan to light orange
50	_115	<u> </u>	Clay, highly plastic, firm, dry, gray of marrion
115	125	10	Silstone, hard moist, gray
125	<u> </u>	55	Claystone, dry, marcon wilgray mottling,
180	190		Siltstone & claystone interbedded dry gray
190	235	45	Claystone hard Orginarpon of gray veining
235	240		Siltstone where to have , dry , gray
240	245	5	Claystone, hard, dry, marcon w/ gray kgram moth
			
			
			
			
			
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a Numba	r: <i>CP-</i>	949	Trn Number: 376947 SA
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FO.	WI-Z	J	
			Monitor 21.38.32.221
			1) Town to

File	Number	:	

(For OSE Use Only)

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The und	ersigned	hereby c	ertifies th	nat, to th	ne best of	his know	ledge and	
The und belief, hole.	dersigned the fore	hereby cogoing is	ertifies the arcondition of the	d_correct	ne best of record of 04/24/0" mm/dd/yea	his know the above	ledge and e describe	d
belief,	dersigned the fore	going is	ertifies the arcondition of the	d_correct	record of	his know the above	ledge and e describe	d
belief, hole.	the fore	going is Oril	a true and	d correct	record of	the above 7 r)	e describe	d ROMENT
belief, hole.	the fore	going is Oril.	ler	d correct	record of D4 / Z4 / O* mm/dd/yea	the above 7 r)	e describe	Roger LL.
belief, hole.	the fore	going is Oril.	a true and	d correct	record of D4 / Z4 / O* mm/dd/yea	the above 7 r)	describe	ROMETLL, MEST
belief, hole.	the fore	going is Dril	ler	GINEER USI	record of O4 / Z4 / O* mm/dd/yea EONLY ion No.	the above 7 r)	describe	ROAWELL, MESS !

WLB

File	Number:			
	(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisiana Energy Services	Work Phone: 505 394.6704
Contact: <u>Laurie Wetherell</u> Address: <u>P. D. Box 1789</u>	Home Phone:
	- -
City: Eunice	_ State: <u>NM</u> Zip: <u>88731_</u>
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 in Lea	0:215 Range: 38 EN.M.P.M. County.
B. X = feet, Y = fe Zone in the U.S.G.S. Quad Map	eet, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 16,2 s Longitude:	103 a 5 m 2/12 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: <u>CP-959</u>
I. On land owned by (required): Lea County	NIM
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon (LPE Agent: Shave Curvie Mailing Address: 921 N. Bivins	
City: Amarillo	State: TX Zip: 79107
4. DRILLING RECORD	
Drilling began: $3/23/07$; Completed: $3/24/07$; Size of hole: $7-7/8$ in.; Total depth of well: $23/6$ Completed well is: $1/6$ Monitor (shallow, artes Depth to water upon completion of well: $1/6$ Depth to water upon completion of well: $1/6$	sian):
Do Not Write Below This Lir	ne D EB
File Number: CP-959 Form: wr-20 page 1 of 4 Moritor	Number: 376959 XXF 21, 38, 32, 131

File	Number:			
	(For	OSE	Use	Only)

From To in feet	water-bearing formation	
Diameter Pounds Threads (inches) per ft. per in. 4	211 211 N/ 211 231 20 PVC	From To A Pend cap 211 231
RECORD OF MUDDING AND CEM		
Depth in Feet Hole From To Diameter O 70 7-78 70 205 7-78	of mud of Cement (S fremie 248 pour -	- bentonite /comen
Plugging Method:		
Plugging approved by:	State Engineer Represe	
	in Feet Cubic Feetof Cement Bottom	STATE ENGINEER WINDS FROSWELL, NEED 27 D 2: C. TO 3: C. T
	Not Write Below This Line	
le Number: CP- 959 Form: wr-20	Trn Numbe page 2 of 4	r: <u>376959</u> 21,38,32,737

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(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Donth	in Feet	Thickness	Colon and There of Makesial Transition
From	To	in feet	Color and Type of Material Encountered
0	2.	7	SAND losse moist overge/brown
7.	15	13	CALICHE SOFT DRY TON
- 15	20	5	Gavelly sand inose cry prange to tan
20	30	10	Claystone w/ siltstone marcon & gray
30	95	65	Clarstone ory marcon w/ year mothing
95	110		Claystone w/ siltstone diry marrows & grar
110	130		claystone, have, dry marcon w/ gosy moth
130	<u> 135</u>	5	Claystone as sitistone dry marrow & gray
135	015	75	clarstone, have dry marcon & grat
210	215	<u> </u>	- Siltstone wi claystone have), gray & marcon
215	<u> 7.40</u>	25	Claystone, moderate hand dry marrond gray
		 .	
			
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	/	P-959	376959 O. O.A
e Number			Trn Number:
For	rm: wr-2	20	page 3 of 4
			21.38.32.131
			This 7

Monitor

					
					
The undersigned belief, the for hole.	hereby certif	ies that, to ue and corre	the best o	of his knowl of the above	Ledge and e described
serrer, the rot	hereby certif egoing is a tr Driller	ies that, to ue and corre	the best of ct record of the country	of his knowled the above $\sqrt{zco\gamma}$	ledge and e described
action, the for	hereby certif egoing is a tr Driller	ies that, to ue and corre	the best of the ct record of the country of the cou	of his knowl f the above ZCO7 ar)	Ledge and e described
serrer, the rot	hereby certif regoing is a tr Driller	ies that, to	the best of the ct record of the country of the cou	of his knowl f the above / <u>zc</u> o7 ar)	ledge and edescribed
hole.	Driller	ue and corre	ct record o	of his knowled the above zco7 ar)	ledge and edescribed
hole.	Driller	ue and corre	Ct record o	of his knowled the above zco7 ar)	described
hole.	Driller	ue and corre	Ct record o	of his knowled the above above ar)	described
hole.	Driller FOR STA	TE ENGINEER	Ct record o	f the above /zco7 ar)	described
hole.	Driller FOR STA	TE ENGINEER	Ct record o	f the above /zco7 ar)	described
hole.	Driller FOR STA	TE ENGINEER	Ct record o	f the above /zco7 ar)	described
hole.	Driller FOR STA	TE ENGINEER	Ct record of	f the above /zco7 ar)	described
Quad; FWL	Driller FOR STA; FSL; Us	TE ENGINEER	Ct record of the cord of the c	the above	described
Quad; FWL	FOR STA ; FSL; Us	TE ENGINEER	Ct record of the cord of the c	the above	described
Quad; FWL	FOR STA ; FSL; Us	TE ENGINEER	Ct record of the cord of the c	f the above /zco7 ar)	described

WLB

File	Number:				
	(1	For	OSE	Use	Only)

Name: Louisiana Energy Services Contact: Laurie Wethereil	Work Phone: <u>505.394.5709</u> Home Phone:
Address: <u>V. O. Box 1789</u>	- Mone Thone.
City: Eunice	State: <u>N/M</u> Zip: <u>8873(</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $SE_{in} = \frac{1/4}{Lea} \frac{NE}{M} = \frac{1/4}{M} \frac{NW}{M} = \frac{32}{M}$ Township	o: <u>218</u> Range: <u>38E</u> N.M.P.M.
B. X =feet, Y =fe	eet, N.M. Coordinate System Grant.
C. Latitude: 3Z d Z6 m 23,387 s Longitude:	103 d 04 m 57.803 s
D. East (m), North (m), UTM	
E. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: <u>CP 958</u>
I. On land owned by (required): Lea County,	
3. DRILLING CONTRACTOR	
License Number: 1575, Name: Talon LPE Agent: Shane Currie Mailing Address: 971 N. Bivins	Work Phone: <u>\$06.467.06</u> 07 Home Phone: <u>\$06.676.87</u> 20
City: Amavillo	State: TV 2in: 79107
4. DRILLING RECORD	ST RO
Drilling began: 3/20/07; Completed: 3/29/07; Size of hole: 7-7/2 in.; Total depth of well: 246. Completed well is: Monitor (shallow, artes Depth to water upon completion of well: 217.14	3ft.;
	P OFF
	0 55
Do Not Write Below This Lin	
an are	Number: 376958

From To in feet	Description of water-bearing formation claysfone wilsTisfone	Estimated Yield (GPM)
RECORD OF CASING		
(inches) per ft. per in.	Depth in Feet Length Type of Top Bottom (feet) D 726.3 726.3 N/V 226.3 246.3 20 PUC Gno	From To 4
RECORD OF MUDDING AND CEME	ENTING	
Depth in Feet Hole From To Diameter 0 70 7- 1/g 70 270 7- 1/g		- cement / bentanila
PLUGGING RECORD		
Plugging Method: Date Well Plugged:		
iragging approved by	State Engineer Repres	entative
No. Depth Top 1 2 3 4 5	in Feet Cubic Feetof Cement Bottom	SIN ER 27 2 2 IN ER 27 2 2
Do	Not Write Below This Line	9
le Number: <i>CP-958</i>	Trn Numbe	er: <u>376958</u>
Form: wr-20	page 2 of 4	21.38,32.124

File Number:	File	Number:	
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(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth i From	То	Thickness in feet	Color and Type of Material Encountered
0	5	5	SAND, loose, damp, burnt orange
<u> </u>	35	30	CALICHE hard dry light orange to way
35	40	5	
40		30	
	<u> </u>		City, Plastic, firm gray & marcon
70	<u>80</u>		Clarstone we siltetime dry marcon & gray
<u>80</u>		145	- daystone, firm, dry marcon wy gray moth
225	245	20	claystone all siltstone avy, light ved
245	<u> </u>		clarstone Stiff, dry marioon W/ gray mottling
			
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			o Not Write Below This Line Trn Number 376958 0 55 page 3 of 4 21,38,32.12
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ranbe.	rm: wr-2	20	TITI NUMBERS TO SE
rQ.	TIM. WT - 4	20	page 3 of 4
			21,38,32.124

ADDITIONAL STATEMENTS (OR EXPLANATIONS:	
The undersigned hereby obelief, the foregoing is	certifies that, to the best of his k	nowledge and
The undersigned hereby obelief, the foregoing is hole.	O4/24/2007 Iler (mm/dd/year)	mowledge and above described
Deller, the foregoing is hole.	O4/24/2007 Iler (mm/dd/year)	bove described ROSUELLIE
Deller, the foregoing is hole. Dril	OY/24/2007 Iler OY/24/2007 (mm/dd/year) OR STATE ENGINEER USE ONLY	mowledge and above described POSTELLING 27 FD 27
Deller, the foregoing is hole. Dril	O4/24/2007 Iler (mm/dd/year)	bove described ROSUELLIE
Deller, the foregoing is hole. Dril	OY/24/2007 Iler OY/24/2007 (mm/dd/year) OR STATE ENGINEER USE ONLY	bove described ROSUELLIE
Political process of the foregoing is hole. Dril FO Quad; FWL; FSL	OY/24/2007 Iler OY/24/2007 ITER (mm/dd/year) OR STATE ENGINEER USE ONLY : Use; Location No Do Not Write Below This Line	bove described ROSUELLIE
Political property of the foregoing is hole. Dril FO Quad; FWL; FSL	OY/24/2007 Iler OY/24/2007 Iler (mm/dd/year) OR STATE ENGINEER USE ONLY : Use; Location No Do Not Write Below This Line Trn Number:	bove described ROSUELLIE

File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	<i>,</i> `		
Contact: LOIDSIANA Ex	nevay Services	_ Work Phone:	505. 394, 5200
Address: P.O. Box 17	neve (Home Phone:	
		-	
City: Eunice		State: MM Zip:	88231
2. LOCATION OF WELL (A, B, C, or	D required, E or F if known)		
A. <u>NE 1/4 NE 1/4 NU</u> in <u>Sea</u>	1/4 Section: 32 Township	: <u>2/5</u> Range: <u>5</u>	SEN.M.P.M. County.
B. X = feet Zone in the U.S.G.S. Quad Map	, Y =fe	eet, N.M. Coordi	nate System Grant.
- 			
	m <u>33.072</u> s Longitude:		
D. East (m), i	North (m), UTM	Zone 13, NAD	(27 or 83)
E. Tract No, Map 1	No of the	Hydrogra	phic Survey
F. Lot No, Block N	No of Unit/Tract Subdivision recorded in		of the County.
G. Other:			
H. Give State Engineer Fi	ile Number if existing wel	1. CP- 951	
	pired): Lea County, /		
3. DRILLING CONTRACTOR			
License Number 1675			
License Number: 1575 Name: Talou Agent: Shawe Mailing Address: 921 N	LPE Curria Bivins	Work Phone: &	36,467.0607 36.676.8220
City: Amas	illo	State: TX Zip:	79107
4. DRILLING RECORD			<u> </u>
Depth to water upon compl	(shallow, artes	g ft.; sian); ft.	STATE ERGINEER OF
$\alpha \alpha \alpha - \alpha$	o Not Write Below This Lin		2 2 X 7 C C C C C C C C C C C C C C C C C C
File Number: P- 43/ Form: wr-20		Number: <u>376</u>	449 Om
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File Number: (For OSE Use Only)

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RECORD OF CASING						
Diameter Pounds Threads (inches) per ft. per in. 4 Sch 40 PVC Z 4 Sch 40 PVC Z	Top	Bottom (feet 241.3 241.3	DVC end		From To)
RECORD OF MUDDING AND CEM	IENTING					
<u>0 75 7-78</u>			tranie i	bentani	te/cem	<u>eu 1</u>
LUGGING RECORD						
Plugging Method:					·	
Plugging approved by:						
		State Enginee	er Represer	itative		
No. Depth Top 1 2 3 4 5	in Feet Bottom	Cubic Feeto	of Cement		7001 年8 27 中 2:03	
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File	Number:			
	(For	OSE	Use	Only)

9. LOG OF HOLE

Depth in		Thickness	Color and Type of Material Encountered
From	To	in feet	
_ <u>() </u>	4	<u> </u>	SAND loose, dry tan-brown
<u> </u>	20		_ CALICHE, soft, chert, dry, tan
<u> 20 </u>	25 45	<u>5</u> 20	CHEVELY SAND, Chevt, orange SAND MUSTIN
45	<u> 5</u>		CIAY, highly plastic, firm, dry maroon
<u> </u>	120	<u> </u>	Sittstone hard dry, gray
	125	5	Claystone, hard dry marcon w/ gray mottling
125	240	115	Claystone, interbedded wi siltstone marcon Claystone dry marcon wi gray mottling
240	260	50	Claystone, dry marcon w/ gray mottling
240	265	5	cizystone, dry, marcon with gray mottling
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File	Number	:			
		(For	OSE	Use	Only)

		
belief, the foregoing is a	rtifies that, to the best of his known true and correct record of the about	owledge and ove described
belief, the foregoing is a	rtifies that, to the best of his known true and correct record of the above $\frac{O4/24/o7}{(mm/dd/year)}$	owledge and ove described
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belief, the foregoing is a hole. Drille	er true and correct record of the about the about the correct record of the correct record of the about the correct record of the correct reco	ve described
FOR	STATE ENGINEER USE ONLY ; Use; Location No	we described
FOR Quad; FWL; FSL	STATE ENGINEER USE ONLY ; Use; Location No	we described
FOR Quad; FWL; FSL	STATE ENGINEER USE ONLY ; Use; Location No Not Write Below This Line Trn Number: page 4 of 4	we described

File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisiana Energy Services	_ Work Phone: <u>506</u> .394,520
Contact: Laurie wetherell Address: P.O. Box 1789	Home Phone:
_	
City: Eunice	State: Num Zip: 88231
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $NE_{1/4}$ $NE_{1/4}$ $NE_{1/4}$ $NE_{1/4}$ Section: 32 Township in $R_{1/4}$	o: <u>215</u> Range: <u>38E</u> N.M.P.M.
B. X =feet, Y =feZone in the	eet, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 3280 s Longitude:	
D. East (m), North (m), UTM	
E. Tract No, Map No of the	
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County.
G. Other:	-
H. Give State Engineer File Number if existing well	1: CP-950
I. On land owned by (required): Lea County, A	JM
3. DRILLING CONTRACTOR	
Name: Talon/LPE Agent: Shave Curve Mailing Address: 921 N. Bivins	Work Phone: 806.467.0607 Home Phone: 806.616.8220
City: Amarillo	State: TX Zip: 79107
4. DRILLING RECORD	
Drilling began: $3/21/07$; Completed: $3/30/07$; Size of hole: $1-7x$ in.; Total depth of well: 27 . Completed well is: $1/21$ (shallow, artes Depth to water upon completion of well: $1/21$	ft.;
	TATE ERGII Noswell. 1397 APR 21
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File Number: <u>CP-950</u> Trn	Number: 376948
Form: wr-20 page 1 of 4	
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File	Number:			
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	in feet	- 	-bearing	format	ion		
Diameter Pound	ds Threads	Depth i	in Feet	Length	Type of Shoe	Perfo:	ration
	ft. per in. ic _ Z					From	Τo
4 5CH 40 P	VC	100	20.1	10:0	PVC end CAP		20.1
ECORD OF MUDDI	ING AND CEM	ENTING					
Depth in Feet		Sacks	Cubic	Feet	Method of Pla	acement	
	Diameter	of mud	of Ce	ment		-1 /	
<u>0</u> 2 -	7-7/8	- 1		<u>></u>	tremie bentoni	nite/c	<u>evnent</u>
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Plugging Me	lress:						
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riugging approv	ea by:		State	Enginee	Representativ		
22 2 11							
23 X							
23 3 11	No. Depth Top	ı in Feet Bottom		c Feetoi	[Cement		- m ⁹
	Top	Bottom					ROS
	Top 2	Bottom	ι			Foot	AUSAE
	Top 1 2 3 4	Bottom	· ———				SUS LUIL
	Top 1 2 3	Bottom	· ———				RÖSVELL. SE
	Top 1 2 3 4	Bottom	· ———			į	
	Top 1 2 3 4	Bottom	· ———			į	27 D
	Top 1 2 3 4 5	Bottom				į	27 P 2:
e Number: (/ p	Top 1 2 3 4 5 Do	Bottom		√ This I	ine		27 D 2 02
	Top 1 2 3 4 5 Do	Bottom		w This I			27 D 2 02

File	Number	:			
		(For	OSE	Use	Only)

9. LOG OF HOLE

Depth in Feet From To C Z IS IS I9 I9 72	in feet Z 3 13 (SAND, loose, moist, tan to brown CALICHE, soft, chevt gravel, moist, orange -tan, Gravelly SAND, light cementation moist red sand Clay, highly plastic; firm, moist, marron w/ gray	mottling
		STATE ENG ROSWELL 7031 APR	
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File Number: Prom. wr-2	-950 °	Trn Number: 3769482 52 page 3 of 4 21,38.32,122 Monutor	1

File	Number:				
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belief,	, the fore	egoing is Dril	ler	and co	rrect re <u>O</u> 4 (mm	cord of	the ab	ove des	scribe	===
belief,	, the fore	Dril	ler	and con	mm ER USE O	cord of	the ab	ove des	scribe	=== 70
belief,	, the fore	Dril	ler	and con	mm ER USE O	cord of	the ab	ove des	scribe	=== 70
belief,	, the fore	Dril	ler	and con	mm ER USE O	cord of	the ab	ove des	scribe	==
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WLB

File	Number: _			
	(For	OSE	Use	Only)

Name: Louisiana Energy Services	Work Phone: 505.394.5204
Contact: <u>Laurie Wetherell</u>	Home Phone:
Address: P. O. Box 1789	-
City: Eunice	State: Zip: <u>8823(</u>
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 in Lea	:215 Range:38EN.M.P.M. County.
B. X = feet, Y = fe Zone in the U.S.G.S. Quad Map	et, N.M. Coordinate System Grant.
o.b.c.c. gada hap	
C. Latitude: $32 d 26 m 33.007 s$ 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel.	1: CP-952
I. On land owned by (required): Lea County , A	
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon / LPE Agent: Shave Curie Mailing Address: 921 Al. Bivins	Work Phone: \$06.467.0607 Home Phone: \$\frac{\$06.676.8770}{200.6076.8770}\$
City: Amarillo	State: TX Zip: 79/07
4. DRILLING RECORD	TATE TO STATE TO STAT
Drilling began: $3/2/07$; Completed: $3/2/07$; Size of hole: $7\cdot\frac{7}{7}$ in.; Total depth of well: $7\cdot\frac{7}{7}$ Completed well is: $1/2$ Monitor (shallow, artest Depth to water upon completion of well: $1/2$ Y	_ ft.;
	P. 38
Do Not Write Below This Line File Number: (19-952) Tro	n Number: 376950
Form: wr-20 page 1 of 4	1 Number. 9 , 9 , - 0
Maritai	21,38,32,121

File	Number	:			_
		(For	OSE	Use	Onlv)

From To	Thickness in feet	Descriptio water-bear	ing formation		ated Yield (GPM)
RECORD OF CASING	G				-
<u>4</u> <u>SCH 401</u>	ft. per in. Pw Z Pvc Z	Top Bott	om (feet) 1 169 7 10 PV	pe of Shoe Nia Ctud cap	From To
RECORD OF MUDDI	ING AND CEM	ENTING			· -
Depth in Feet From To C 4 1-1	Hole Diameter 7-7/g	of mud of	Cement 1 1ve	thod of Pla Puile - Ceme V - benton	
LUGGING RECORI)			-	
Plugging Contra Add Plugging Me Date Well Plu	thod:				
Plugging approv	ed by:				
		Stat	e Engineer Re	presentativ	e
	Top	in Feet Cu Bottom	bic Feetof Ce	ment	ROSVEL 201 AP
	2 3 5				1, 10 P 2: 0
	3 5	Not Write Be	low This Line		5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5
Le Number: (7)	3 5	Not Write Be		Number: 37	5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5

File	Number	:			
		(For	OSE	Üse	Only

9. LOG OF HOLE

Depth i		Thickness	
From	To	in feet	
0		2	SAND, lorse, moist, burnt orange
_ Z	<u> 20</u>	ા ક	CALICHE, realative soft, chert, dry tan - light orange
<u> </u>	<u>27</u>	7	CALICHE, realative soft, chert, dry tan - light orange Gravelly, SAND, chert gravel burnt orange
77	<u> </u>		clay highly plastic, firm, dry marron
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Fo	rm: wr-	20	page 3 of 4
			21,58,52,121

File Number: (For OSE Use Only)

					
					
The undersigned here	eby certifies t	that, to	the best of	his knowle	edge and
The undersigned here pelief, the foregoing noise.	eby certifies to a true are constitution of the constitution of th	that, to	the best of t record of $\frac{U4/Z4/z}{(mm/dd/yea)}$	the above	edge and described
The undersigned here pelief, the foregoing noise.	Driller	e	U4/Z4/Z0 (mm/dd/yea	the above	edge and described
nole.	Driller	e correc	U4/z4/ze (mm/dd/yea	the above	described
nole.	Driller FOR STATE EN	GINEER U	CH/ZH/ZO (mm/dd/yea	the above	described ROSE
nole.	Driller FOR STATE EN	GINEER U	CH/ZH/ZO (mm/dd/yea	the above	RDS RECTION 27
nole.	Driller FOR STATE EN	GINEER U	CH/ZH/ZO (mm/dd/yea	the above	ROSEE CALL
nole.	Driller FOR STATE EN SL; Use	GINEER U	CY /ZY /ZO (mm/dd/yea) SE ONLY ration No	the above	described RNSWE CITE 2:
nole.	FOR STATE EN Do Not Write	GINEER U	CY /ZY /ZO (mm/dd/yea) SE ONLY ation No	the above	described RNSEE CARROLL 27 CO 2: 03

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File	Number:				
	(For	OSE	Use	Only

1. OWNER OF WELL	CAF PAUL FOAU
Name: Louisiana Energy Services	Work Phone: 503, 514.509 Home Phone:
Contact: Laurie Wetherell Address: P.O. Box 1789	nome Thome.
city: Eunice	State://m Zip: <u>\$823(</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $NE_{1/4} NU_{1/4} NU_{1/4}$ Section: 32 Township in Lea	o: <u>2/5</u> ' Range: <u>38</u> E N.M.P.M.
B. X = feet, Y =	eet, N.M. Coordinate System Grant.
C. Latitude: <u>32</u> d <u>26</u> m <u>32.999</u> s Longitude:	783 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: <i>CP-9</i> 53
I. On land owned by (required): Lea County , i	
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Tolon/LPE Agent: Shane Currie Mailing Address: 121 V. Bivins	Work Phone: 806.467.0607 Home Phone: 806.676.8720
City: _Amarillo	- State:: TV 2in: 79/07
	- 110 j
4. DRILLING RECORD	Type tools: At. Dilang
Drilling began: $3/22/07$; Completed: $3/29/07$; Size of hole: $7-\frac{7}{8}$ in.; Total depth of well: 257 . Completed well is: M_{ON} (shallow, arte Depth to water upon completion of well: $24/.26$	7 ft.; 27 Ft. 27 Ft.
	TO 2:
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Form: wr-20 page 1 of 4	n Number: 376950 0 m 21.38.32.112
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Depth in From T	0	Thickness in feet 16.24	water-	ption o bearing car ω/	format.	ion Jed Sill-Shoue	stimated Y (GPM) O-Z	ield
RECORD OF	CASING							
4_	per ft Sch 40PV	Threads per in.	Top	Bottom 237.5	(feet) 1375		From 	To
RECORD OF	MUDDIN	G AND CEMI	ENTING					
Depth in From To	D. 75	Hole iameter 7-7/8 1-7/8	Sacks of mud		ment	Method of fivence - Co		
LUGGING I	RECORD							
	Contract Addre ing Meth ll Pluge	ess:		· · · · · · · · · · · · · · · · · · ·				
Plugging	approved	d by:					50	ROS
				State I	Engineer	Representa	ative ,	MPR 27
	1 2 3	No. Depth Top	in Feet Bottom	Cubic	Feetof	Cement	- -	7 P 2: 04
	4 5						- - -	<u>.</u>
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e Number: Form	<i>CP</i> - : wr-20	953		page 2	Ť:	rn Number:	<u> 3769:</u>	52
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File Number:

(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth in Feet From To C S S IS IS 35 35 50 50 200 700 210 210 245 745 255 755 260	Thickness in feet 5 10 20 /5 /50 /0 35 /0 5	SAND, loose moist bount orange CALICHE, hard dry orange CIAY, high plastic marron w/ gray motiling Sitstone, hard dry gray Claystone, wi interbedded siltstone, hard dry marron Claystone, bard, dry marron w/ gray splothing Claystone, wi interbedded siltstone, hard dry marron Claystone, bard, dry marron w/ gray splothing Claystone, w/ interbedded siltstone hard, dry marron Claystone, w/ interbedded siltstone hard, dry marron Claystone, hard, dry marron gray motiling
		STATE TO SEE
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Trn Number: 376952

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belief, the fo	d hereby certifing regoing is a tropic of the control of the certific of the c	e and corre	the best of the cent record of the cent record of the cent of the	f his knowl f the above / 2 <i>00</i> 7 ar)	edge and described ROSWELL, NEW 27 7 2
belief, the fo	Driller	e and corre	ect record o	f his knowl f the above / 2007 ar)	described ROSWELL, NEW 27 D 20
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Quad; FWL	priller FOR STATE Do Not	TE ENGINEER	USE ONLY cocation No.	f the above / 2 <i>co</i> 7 ar)	described ROSWELL, NEW 704
belief, the fo	priller FOR STATE ; FSL; Use	re engineer	USE ONLY cocation No.	f the above / 2 <i>co</i> 7 ar)	described ROSWELL, NEW 27 D 20

WY B

File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: <u>Louisiana Energy Services</u> Contact: <u>Laurie Wetherell</u>	Home Phone: 503.394,6204
Address: P. O. Box 1789	
City: <u>Eunice</u>	State:NM Zip: <u>88231</u>
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	215 Range: 38 N.M.P.M. County.
B. X = feet, Y = fe Zone in the U.S.G.S. Quad Map	et, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 27.146 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: CP-954
I. On land owned by (required): Lea County	NM
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon / LPE Agent: Shant Courte Mailing Address: 921 N. Bivins	Work Phone: 806.447.0607 Home Phone: 806.676.8770
city: Amavillo	State: TX Zip: 79/07
4. DRILLING RECORD	π_{α}
Drilling began: $3/22/07$; Completed: $3/30/07$; Size of hole: $7-7/8$ in.; Total depth of well: 236.00 Completed well is: $1/20$ (shallow, arter Depth to water upon completion of well: $1/20$ Depth to water upon completion of well $1/20$ Depth to water upon c	4 ft.;
	2: C
File Number: <u>CPG54</u> Trn	n Number: 376954
Form: wr-20 page 1 of 4	21,38,32,111

File	Number	:			
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PRY	ness Description of eet water-bearing fo	ormation 	Estimated Yield (GPM)
			
RECORD OF CASING			
Diameter Pounds Thre (inches) per ft. per 	eads Depth in Feet Le in. Top Bottom (f	ength Type of Teet)	Shoe Perforation From To
4 Sch 40 PUC 2	2 216.4 236.4	<u>20 PVL end</u>	CRD 2/6.4 2360
RECORD OF MUDDING AND	CEMENTING		
Depth in Fect Hole From To Diamete	Sacks Cubic Fe er of mud of Cemen	t	
10 7-7/8	1 20	_ Pour - bo	cement/bentoni
PLUGGING RECORD			
Plugging Contractor: _ Address: _ Plugging Method:			
Plugging approved by:			
	State Eng	ineer Represen	tative
	epth in Feet Cubic Fo Bottom	eetof Cement	
Top 1 2 3			ROSWE
1 2			ROSWELL.
Top 1 2 3 4			ROSWELL, HEV ZOOT APR 27
Top 1 2 3 4			ROSWELL, HEWME
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Top 1 2 3 4		nis Line Trn Number	المسارة

File	Number	:			
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9. LOG OF HOLE

	in Feet	Thickness	Color and Type of Material Encountered
From	To	in feet	- 1 1 1 1
<u>C</u>	20		SAND, fine losse moist, burnt orange
_1.O _ 7.O	35	<u></u>	_ CALICILE SOFT light arange
35	25_		
45	90		
_50	75	25	claystone dry, marcon wi gray motiling
75	35		. Siltstone we interfer devictione
<u> 85 </u>	105		Claystone, have dry marron u/gray mostling
105	110		Sitt from w Interpresed (134 Stone hard dry grave maroci
$-\left(\frac{1}{2} \frac{C}{C} \right)$	130		- Clarstone, any marrow w/ gray mottling
160	160	3D 10	Clarstone, with siltstone dry marcon & gray
170	<u> 170</u> _/75	5	Clarstone, dry marron to purple w/ gray mottling
175	180		Claretone, hard dry marrow wil gray mothing
180	190	10	Claystone, hard diry marroon w/ gray mottling Siltstone w/ Claystone dry gray & marroon
190	215	25	Claystone, hard, dry, marcon w/ gray & marron
215	235	25	silt Home, hard. dry, gray
235	245	10	claystone, hard, dry maronn w/ conav
			
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Trn Number: <u>376954</u> 21,39,32,111 page 3 of 4

File Number: (For OSE Use Only)

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File	Number	:			
		(For	OSE	Use	Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

1. OWNER OF WELL	505 304 5304
Name: Louisiana Energy Services	Work Phone: 505-394-5204
Contact: Laurie Wetherell Address: P.O. Box 1789	Home Phone:
Address: F.O. BOX 1783	
City: Eunice	State: <u>NM</u> Zip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{SW}{in} = \frac{1/4}{e^{\alpha}} \frac{SW}{e^{\alpha}} = \frac{1/4}{e^{\alpha}} \frac{NE}{e^{\alpha}} = \frac{1/4}{e^{\alpha}} \frac{SE}{e^{\alpha}} =$:215 Range: 386 N.M.P.M. County.
B. X = feet, Y = fe	et, N.M. Coordinate System Grant.
U.S.G.S. Quad Map	
C. Latitude: <u>32</u> d <u>26</u> m <u>14.8482</u> s Longitude:	<u>103</u> d <u>04</u> m <u>40.2564</u> s
D. East (m), North (m), UTM	.თ.
E. Tract No, Map No of the	:
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County,
G. Other:	-0 [語
H. Give State Engineer File Number if existing wel	1: <u>CP-995</u> 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
I. On land owned by (required): Louisiana Energ	gy Services 2 5
3. DRILLING CONTRACTOR	
License Number: 1575	_
Name: Talon Drilling	Work Phone: 806.467.0607
Agent: Shane Currie Mailing Address: 921 N. Bivins	Home Phone: <u>806.467.06</u> 22 -
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: 12/5/08; Completed: 12/5/08; Size of hole: 7-7/8 in.; Total depth of well: 38 Completed well is: Monitor (shallow, arted Depth to water upon completion of well: Dry	ft.; esian);
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File Number: $\frac{CP-995}{\text{Form: wr-20}}$ page 1 of 4	21,38,32,233
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Monitor

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File	Number	:			
		(For	OSE	Use	Only)

Depth in Feet From To	in feet	water-b	earing	formati			ted Yio GPM)	eld
<u>Dry</u>								
RECORD OF CASIN	G							
Diameter Poun	ds Threads	Depth ir	. Feet	Length	Type o	f Shoe	Perfo	rations
(inches) per 4 PVC Sch	40 2	+3	38	41		cap	From28	To 38
								
RECORD OF MUDD	ING AND CEM	ENTING						
Depth in Feet From To	Hole Diameter	Sacks		Feet	Method	of Pla	acement	
From To 0 5	7-7/8		20 8	Sacks 1	rimie	(Bento	onite/	Cemen
5 25	7-7/8	6		<u>F</u>	oured	(Bento	nite	chips)
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PLUGGING RECOR	RD						;	
Plugging Contr	actor:							<u> </u>
Ad	ldress:							1
Plugging M Date Well Pl	Method:							00
								
Plugging appro	oved by:		State	Enginee	r Repres	sentati:		
			Juace	Briginee	I Nepres	, en eu e s	• •	0
	Top	n in Feet Bottom		ic Feeto	f Cement	:		
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NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth in Feet	Thickness	Color and Type of Material Encountered
From To	in feet	
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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page 3 of 4

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The undersigned hereby certifies the	at, to the best of his knowledge are correct record of the above descri	ıd bəd
berrer, the foregoing is a true and	Coffect fection of the above descri	neu
hole.	· · ·	,
hole.	15/1/2	
hole.	12/29/08	
bole. Driller	12/29/08 (mm/dd/year)	
hole.		
hole.		
hole.		
Driller	(mm/dd/year)	
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FOR STATE ENC	(mm/dd/year) GINEER USE ONLY ; Location No	
FOR STATE ENC	(mm/dd/year)	

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File	Number:				
	(F	or	OSE	Ųse	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: <u>NM</u> Zip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{5W_{1/4}}{\ln Lea} \frac{5W}{1/4} \frac{NE}{NE} \frac{1/4}{1/4} $ Section: $\frac{32}{32}$ Township	: <u>2/5</u> Range: <u>38</u> N.M.P.M. County.
B. X = feet, Y = fe Zone in the	eet, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 13.383 s Longitude:	103 d 04 m 52.212 s
D. East (m), North (m), UTM	
E. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the gounty
G. Other:	
H. Give State Engineer File Number if existing we	gy Services
I. On land owned by (required): Louisiana Ener	gy Services
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	Work Phone: 806.467.0607 Home Phone: 806.467.0622
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: $\underline{12/5/08}$; Completed: $\underline{12/5/08}$ Size of hole: $\underline{7-7/8}$ in.; Total depth of well: $\underline{39}$ Completed well is: $\underline{Monitor}$ (shallow, art Depth to water upon completion of well: \underline{Dry}	ft.; esian);
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File	Number:			
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Depth in Feet Thickness From To in feet Dry		water-be	water-bearing formation				Estimated Yield (GPM)		
DECORD OF CASING	7				,				
RECORD OF CASING									
Diameter Pound (inches) per f 4 PVC Sch 4	t. per in.	Top Bo		end	cap	From	то 36		
RECORD OF MUDDI	NG AND CEM	ENTING							
Depth in Feet	Hole	- •	Cubic Feet	Method	of Plac	ement			
	Diameter 7-7/8	of mud	of Cement 20 Sacks T	rimie (Rento	nite/C	'emen		
$\frac{0}{5}$ $\frac{3}{20}$ -	7-7/8 7-7/8	5	20 Sacks I						
LUGGING RECORI)								
Plugging Contra	ctor:								
Ado	lress:								
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Plugging approv	red by:		State Enginee:	r Penres	antativ		301 1771		
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	No. Depth	n in Feet	Cubic Feeto:	f Cement		Ū.			
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le Number: <u>CP</u> Form: wr-2	-996		page 2 of 4	Trn Numbe	er:	4184	65C		

File	Number:			
	(For	OSE	Use	Only)

9. LOG OF HOLE

Depth in Fo	eet Thickness To in feet	Color and Type of Material Encountered
0 10	10	Sandstone, lightly cemented, burnt orange Caliche, soft, lt orange to tan Gravelly sand, abundant chert, lt orange-tan
10 21	11	Caliche, soft, it orange to tan
$\frac{10}{21}$ $\frac{21}{37}$	16	Gravelly sand, abundant chert, lt orange-tan
$\frac{21}{37}$ $\frac{37}{39}$		Claystone, purple
31 33		Clayscone, parpie
		
		
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			5.4 1
The undersigned hereby cert	ifies that, t	o the best of his }	nowledge and
hole.	true and corr	ect record of the a	move described
belief, the foregoing is a	true and corr	ect record of the a $\frac{17/29/08}{\text{(mm/dd/year)}}$	æove described
belief, the foregoing is a hole. Driller	true and corr	12/29/08/ (mm/dd/year)	above described
belief, the foregoing is a hole. Driller	TATE ENGINEE	/Z/Z9/08/ (mm/dd/year)	above described
FOR S Quad; FWL; FSL	TATE ENGINEE	/Z/Z9/O8 (mm/dd/year) R USE ONLY Location No. Ow This Line	
FOR S Quad; FWL; FSL	TATE ENGINEED	/Z/Z9/O8 (mm/dd/year) R USE ONLY Location No. Ow This Line	above described

1/1

File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisiana Energy Services	Work Phone: 505.394.6704
Contact: Laurie Wetherell Address: P. C. Box 1789	Home Phone:
City: Eunice	State: <u>VM</u> Zip: <u>\$873</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\underline{SW}_{1/4} \underline{NW}_{1/4} \underline{SW}_{1/4} $ Section: $\underline{32}$ Townshin \underline{Lea}	ip: <u>3/5</u> Range:38€ N.M.P.M.
B. X = feet, Y = 1 Zone in the U.S.G.S. Quad Map	feet, N.M. Coordinate System Grant.
C. Latitude: 32 d 25 m 56.857 s Longitude	
D. East (m), North (m), UTN	4 Zone 13, NAD (27 or 83)
E. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing we	
I. On land owned by (required): Lea County	
3. DRILLING CONTRACTOR	
S. Z. L. L. Z. L. C. C. L. L. L. C. C. L. L. C. C. L.	
License Number: 1575 Name: Tolon/LPE Agent: Shane Currie	Work Phone: <u>806.467.06</u> 07 Home Phone: <u>806.676.87</u> 20
License Number: 1575 Name: Talon/LPE Agent: Shane Corrie Mailing Address: 921 N. Bivins	_
License Number: 1575 Name: Tolon/LPE Agent: Shane Currie	_
License Number: 1575 Name: Talon/LPC Agent: Shane Currie Mailing Address: 921 A). Bivins City: Amarillo 4. DRILLING RECORD Drilling began: 3/23/07; Completed: 3/29/07 Size of hole: 7-7/x in.; Total depth of well: 23 Completed well is: Monitor (shallow, art Depth to water upon completion of well: DRY	State: TX Zip: 79107 ; Type tools: Air Cotary; 6 ft.; esian); ft.
License Number: 1575 Name: Talon/LPE Agent: Shane Corrie Mailing Address: 921 A). Bivins City: Amarillo 4. DRILLING RECORD Drilling began: 3/23/07; Completed: 3/29/07 Size of hole: 7-7/x in.; Total depth of well: 23 Completed well is: Manifor (shallow, art Depth to water upon completion of well: DRY	State: TX Zip: 79107 ; Type tools: Air Votary; esian); ft. ine
License Number: 1575 Name: Talon/LPE Agent: Shane Corrie Mailing Address: 921 A). Bivins City: Amarillo 4. DRILLING RECORD Drilling began: 3/23/07; Completed: 3/29/07 Size of hole: 7-7/x in.; Total depth of well: 23 Completed well is: Manifor (shallow, art Depth to water upon completion of well: DRY	State: TX Zip: 79107 ; Type tools: Air Cotary; 6 ft.; esian); ft.

From To DRY	Thickness in feet	water-l	bearing	f format	ion		ted Yield GPM)
RECORD OF CASIN	G						
<u>4</u> 504 401	ds Threads ft. per in. PVC Z PVC 2	Top F	21 b 236	(feet) 216 20	PUC END	Cap	From To
RECORD OF MUDD	ING AND CEM	ENTING					
Depth in Feet From To O 75 TS ZIO CLUGGING RECORI	Hole Diameter 7-7/8 7-7/8	1	of Cer 긴	ment S	tremie	- Ceme	cement ut / bonto aile Chip
Plugging Contra							
Add Plugging Me Date Well Plu	ethod:						
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Plugging Me Date Well Plu Plugging approv	No. Depth Top 1 2 3 4 5	in Feet	State F	Feeto.	r Represe	ntative	1997 LPR 27 P 2:

File	Number	:			
		(For	OSE	Use	Only

9. LOG OF HOLE

Depth in Feet	Thickness	Color and Type of Material Encountered
From To	in feet	
0 10	10	SAND, loose damp tan
10 30	<u> </u>	CALICHE, soft chert gravel with orange pink
_3035		SANDY Gravelichent, dry light red sand
35 55 55 60	<u> 20</u>	Clay, highly plastic. firm
$\frac{-55}{60} - \frac{60}{270}$	160	Claystone wi sitistone hard dry marcon & gray Claystone dry marcon wil gray mottling
220 225		Siltstone w/ claystone party dry grava marcon
225 240	15	Silty claystone, dry light red to dark red/marcon
		Sittle Color of the Color of th
		
		
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File Number: <u>CP-955</u>
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21.38.32.313

Trn Number: <u>376955</u>

page 3 of 4

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ellet, the foregoing is	ertifies that, to the best of his kn a true and correct record of the algorithm $\frac{04/24/2007}{\text{(mm/dd/year)}}$	nowledge and pove described
eller, the foregoing is ole.	a true and correct record of the algorithm $\frac{04/24/2007}{\text{(mm/dd/year)}}$	nowledge and nove described
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WYB

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: <u>505-394-52</u> 04
Contact: Laurie Wetherell	_ Home Phone:
Address: P.O. Box 1789	
City: Eunice	_ State: <u>NM</u> Zip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $NW_{1/4} = NE_{1/4} = SW_{1/4} = Section: 32$ Townshi	p: <u>2/</u> 5 Range: <u>38 E</u> N.M.P.M. County.
B. X = feet, Y = f Zone in the U.S.G.S. Quad Map	eet, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 1.1718 s Longitude	: <u>103</u> d <u>05</u> m <u>5.5062</u> 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 _ Subdivision recorded in	of√the Coûnty.
G. Other:	
H. Give State Engineer File Number if existing we	11: <u>CP-999</u>
I. On land owned by (required): Louisiana Ener	gy Services 7
3. DRILLING CONTRACTOR	- 22 - 22
License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: $12/4/08$; Completed: $12/4/08$ Size of hole: $7-7/8$ in.; Total depth of well: 43 Completed well is: Monitor (shallow, art Depth to water upon completion of well: Dry	ft.; esian);
Do Not Write Below This L	ine
File Number: $\frac{CP-999}{\text{Form: wr-20}}$ page 1 of 4	rn Number: 4/5856

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File	Number	:			
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Depth in Feet Hole Sacks Cubic Feet Method of Placement From To Diameter of mud of Cement 0 5 7-7/8 20 Sacks Trimie (Bentonite/Ceme 5 22 7-7/8 5 Poured (Bentonite chip LUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: State Engineer Representative	Depth in Feet From To Dry	in feet	water-b	earing ———	formati	on (ted Yie GPM)	eld
Diameter Pounds Threads Depth in Feet Length Type of Shoe Perforation (inches) per ft. per in. Top Bottom (feet) From To Diameter of Mud Diameter Diameter of Mud Diameter Diameter of Mud Diameter Of Cement Diameter Of Top Diameter Doured (Bentonite Ceme Doured (Bentonite Chip Diameter Representative Diameter Representative Diameter Representative Diameter Representative Diameter Representative Diameter Top Bottom Diameter Cubic Feetof Cement Diameter Representative Diameter Diameter Representative Diameter Diameter Representative Diameter Diameter Representative Diameter Diameter Diameter Di								
(inches) per ft. per in. Top Bottom (feet) From To 4 PVC Sch 40 2 +3 43 46 end cap 28 43 ECORD OF MUDDING AND CEMENTING Depth in Feet Hole Sacks Cubic Feet Method of Placement From To Diameter of mud of Cement 0 5 7-7/8 20 Sacks Trimie (Bentonite/Ceme 5 22 7-7/8 5 Poured (Bentonite chip 20 Sacks Plugging Method: Date Well Plugged: Plugging approved by: State Engineer Representative No. Depth in Feet Cubic Feetof Cement Top Bottom 1	ECORD OF CASIN	≀G						
Depth in Feet Hole Sacks Cubic Feet Method of Placement From To Diameter of mud of Cement 0 5 7-7/8 20 Sacks Trimie (Bentonite/Ceme 5 22 7-7/8 5 Poured (Bentonite chip LUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: State Engineer Representative No. Depth in Feet Cubic Feetof Cement Top Bottom 1 1 2 3 4 5 5 5 5 6 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 7 8 7 7 7 7 7 7 7 7 7 8 7 7 7 7 7 8 7 7 7 7 7 8 7	(inches) per	ft. per in.	Top B	ottom 43	(feet) 46	end cap	From 28	To 43
From To Diameter of mud of Cement 0 5 7-7/8 20 Sacks Trimie (Bentonite/Ceme 5 22 7-7/8 5 Poured (Bentonite chip LUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: State Engineer Representative No. Depth in Feet Cubic Feetof Cement Top Bottom 1 2 3 4 5 5 5 7-7/8	ECORD OF MUDE	DING AND CEM	ENTING					
Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: State Engineer Representative No. Depth in Feet Cubic Feetof Cement Top Bottom 1 2 3 4	From To 0 5	Diameter 7-7/8 7-7/8	of mud	of Ce 20 S	ment Backs I	rimie (Bento	onite/	<u>Cemer</u>
Plugging approved by: State Engineer Representative No. Depth in Feet Cubic Feetof Cement Top Bottom 1 2 3 4	Plugging Contr Ad Plugging M	actor:			<u> </u>			
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page 2 of 4

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9. LOG OF HOLE

	in Feet	Thickness	Color and Type of Material Encountered
From	To	in feet	
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
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The undersigned hereby certifies that, to the	best of his knowledge	and ·
pelief, the foregoing is a true and correct re	ecord of the above desc	
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sole.		ribe
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Driller (m	Z/24/08 (S)	`:
sole.	Z/24/08 (S)	`:
Driller (m	Z/24/08 (S)	`:
Driller (m) FOR STATE ENGINEER USE O	Z/24/08 (S) m/dd/year) DNLY	`:
Driller (m) FOR STATE ENGINEER USE O	Z/24/08 (S) m/dd/year) DNLY	`:
Driller (m) FOR STATE ENGINEER USE O	Z/24/08 (S) m/dd/year) DNLY	`:
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Who

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		(For	OSE	Use	Only

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

Name: Louisiana Energy Services	Work Phone:	505-394-5204
Contact: Jaurie Wetherell	Home Phone:	303 331 32
Contact: Laurie Wetherell Address: P.O. Box 1789		
City: Eunice	State: NM Zip	: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)		
A. $\frac{NE}{1/4}$ $\frac{NE}{2}$ $\frac{1/4}{2}$ $\frac{SW}{2}$ $\frac{1/4}{4}$ Section: $\frac{32}{32}$ Township	: <u>2/5</u> Range:	38E N.M.P.M. County.
B. X = feet, Y = feet Zone in the U.S.G.S. Quad Map	et, N.M. Coord	inate System Grant.
C. Latitude: 32 d 26 m 1.071 s Longitude:	<u>103</u> d <u>05</u>	m <u>3.048</u> s
D. East (m), North (m), UTM	Zone 13, NAD _	_ (27 or 83)
E. Tract No, Map No of the	Hydrogr	aphic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in		of the
G. Other:		in in
H. Give State Engineer File Number if existing wel	1: <u>CP-998</u>	<u> </u>
I. On land owned by (required): Louisiana Energ	y Services	7 3
I. On land owned by (required): Louisiana Energy 3. DRILLING CONTRACTOR	y Services	ROFFICE P 1: 21
	Work Phone:	1: net 1
3. DRILLING CONTRACTOR License Number: 1575 Name: Talon Drilling Agent: Shane Currie	Work Phone: Home Phone:	806.467.0607 806.467.0622
3. DRILLING CONTRACTOR License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	Work Phone: Home Phone:	806.467.0607 806.467.0622
3. DRILLING CONTRACTOR License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins City: Amarillo	Work Phone: Home Phone: State: TX Zip Type tools: A ft.; sian);	806.467.0607 806.467.0622 9: 79107
3. DRILLING CONTRACTOR License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins City: Amarillo 4. DRILLING RECORD Drilling began: 12/4/08; Completed: 12/4/08; Size of hole: 7-7/8 in.; Total depth of well: 250 Completed well is: Monitor (shallow, arte	Work Phone: Home Phone: State: TX Zip Type tools: A ft.; sian); ft.	806.467.0607 806.467.0622 9: 79107
3. DRILLING CONTRACTOR License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins City: Amarillo 4. DRILLING RECORD Drilling began: 12/4/08; Completed: 12/4/08; Size of hole: 7-7/8 in.; Total depth of well: 250 Completed well is: Monitor (shallow, arte Depth to water upon completion of well: Dry	Work Phone: Home Phone: State: TX Zip Type tools: A ft.; sian); ft.	806.467.0607 806.467.0622 9: 79107

Monitor 21,38,32,32

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

From To	in feet	water-b	earing	f formati	on	•	GPM)	
Dry								
	_	-						
RECORD OF CASIN	iG							
Diameter Poun	ds Threads	Depth in	n Feet	Length	Type o	f Shoe	Perfo	ration
(inches) per	ft. per in.	Top H	Bottom	(feet)			From	
4 PVC Sch				253				
RECORD OF MUDI						·		
Depth in Feet			Cubic	Feet	Method	of Pla	acement	:
From To	Diameter	of mud	of Ce	ment				
0 20	7-7/8		20 8	Sacks <u>T</u>	<u>rimie</u>	(Bento	onite,	/Cemer
<u>20</u> <u>206</u>	7-7/8	68		<u>P</u>	<u>oured</u>	(Bento	<u>nite</u>	<u>chips</u>
					 			
PLUGGING RECOR								
Plugging Contr Ad Plugging M	RD mactor: ddress: Method:							
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Plugging Contr Ac Plugging M Date Well Pl	RD ractor: ddress: Method: ugged:							1
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page 2 of 4

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9. LOG OF HOLE

Depth in From 0 12 25 36 70 72 153 215 218 230 235	To 12 25 36 70 72 153 215 218 230 235 250	Thickness in feet 12 13 11 34 2 81 62 3 12 5 15	Sand, lightly cemented, burnt orange Caliche, relatively soft, gray to lt orange Sandstone, lightly cemented, burnt orange Claystone, maroon Siltstone, hard gray Claystone, light red with maroon to purple Claystone, maroon to lt red Siltstone, interbeded w/claystone, gray Claystone, interbeded siltstone, maroon-gray Siltstone, interbeded w/claystone, gray Claystone, interbeded w/claystone, gray Claystone, interbeded w/claystone, gray Claystone, lt red to maroon
			
			
			
			
			
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belief, the foregoing is a true and o			d of the		ge and	
belief, the foregoing is a true and on those. Driller	correct 	/ Z / Z (mm/dd)	d of the $\frac{2}{3}$ $\frac{1}{3}$ $\frac{1}{$	above d	ge a <u>n</u> d escrib	e
belief, the foregoing is a true and on hole. Driller	correct	12/2 (mm/dd	d of the	above d	ge a <u>n</u> d escrib	e
belief, the foregoing is a true and on hole. Driller FOR STATE ENGIN	correct	record 12/2 (mm/dd	d of the	above d	ge a <u>n</u> d escrib	e
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WB

File	Number	:			
		(For	OSE	Use	Only)

Name: Louisiana Energy Services Contact: Laurie Wetherell Address: P.O. Box 1789	Work Phone: 505-394-5204 Home Phone:
City: Eunice	
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{3E}{1/4}$ $\frac{NE}{NE}$ 1/4 Section: $\frac{32}{32}$ Township	:2/S Range:38EN.M.P.M. County.
B. X - feet, Y = feet, U.S.G.S. Quad Map	eet, N.M. Coordinate System Grant.
C. Latitude: <u>32</u> d <u>26</u> m <u>1.0998</u> s Longitude:	: <u>103</u> d <u>05</u> m <u>1.086</u> 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 Subdivision recorded in	of the County 2
G. Other:	्राच्या । विकास
H. Give State Engineer File Number if existing we	11: <u>CP-997</u>
I. On land owned by (required): Louisiana Ener	gy Services
	dy pervices
3. DRILLING CONTRACTOR	7
License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	Work Phone: 806.467.060 Home Phone: 806.467.062
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: $12/4/08$; Completed: $12/4/08$ Size of hole: $7-7/8$ in.; Total depth of well: 40 Completed well is: Monitor (shallow, art Depth to water upon completion of well: Dry	<u>) </u>
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From To	in feet		(GPM)
ECORD OF CASE	NG		
(inches) per	ft. per in.	Depth in Feet Length Type of Shoe Top Bottom (feet)	rom To
4 PVC Sch	402	+3 40 43 end cap	
ECORD OF MUD	DING AND CEM	ENTING	
Depth in Feet	Hole	Sacks Cubic Feet Method of Pl	acement
From To	Diameter	of mud of Cement	anita/Camar
$-\frac{0}{5}$ $\frac{5}{20}$	7-7/8	20 Sacks Trimie (Bent 5 Poured (Bent	onite chips
LUGGING RECO	RD		
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File	Number	:			
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9. LOG OF HOLE

Depth From	in Feet 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	Caliche, soft, gray to lt orange Gravelly sand, abundant chert, orange sand
37	40	3	Claystone, maroon
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The undersigned hereb belief, the foregoing nole.	is a true and	correct r	ecord of the $\frac{2}{2}$	above desc ri bec ∴
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Quad; FWL; FS	FOR STATE ENC	GINEER USE	ONLY	
Quad; FWL; FS e Number: CP-90	FOR STATE ENC L; Use Do_Not_Writ	GINEER USE	ONLY on No	

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File	Number:			
	(For	OSE	Use	Only)

1. OWNER OF WELL	
1. OWNER OF WELL Name: Louisiana Energy Services Contact: Lange Well and	Work Phone: 505. 394, 5704
Address: P.O. Box 1789	
City: Eunice	State: N M Zip: 8823(
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{NW_{1/4}}{\ln \frac{SE}{Lea}} = \frac{1/4}{SW} \frac{SW}{1/4}$ Section: 32 Towns	hip: 2/5 Range: 38 E. M.P.M. County.
B. X = feet, Y = Zone in the U.S.G.S. Quad Map	
C. Latitude: 37 d 25m 52.499 s Longitu	de: <u>/03</u> d <u>05</u> m <u>7,607</u> s
D. East (m), North (m), U	
E. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing	well: $CP-95L$
I. On land owned by (required): Lez County,	_ `
3. DRILLING CONTRACTOR	
Licence Numbers 1575	
License Number: 1575 Name: Taken / LPG	Work Phone: Will 417 0:07
Name: Talon/LPG Agent: SHANE CULVIE Mailing Address: 921 N. Bivins	Home Phone: 806. 676. 8720
City: Amavillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: 3/28/07; Completed: 4/3/07 Size of hole: 7-7y in.; Total depth of well: 2 Completed well is: Monitor (shallow, a Depth to water upon completion of well: DRY	rtesian);
Do Not Write Paler This	TO ER O
Do Not Write Below This	
File Number: $(P-956)$ Form: wr-20 page 1 of 4	Trn Number: 37698655
m1 · 1	21.38.32.341

Depth in Feet Thickness From To in feet D2Y		Estimated Yield (GPM)
RECORD OF CASING		
Diameter Pounds Threads (inches) per ft. per in. 4	Top Bottom (feet) C 217.1 217.1 V/	From To
RECORD OF MUDDING AND CEN	MENTING	
Depth in Feet Hole From To Diameter O 15 7-7/8 7 7/8	of mud of Cement i ZO France	of Placement - <u>Cerneut / bentoni</u> bentonite chips
PLUGGING RECORD		
Plugging Contractor: Address: Plugging Method: Date Well Plugged:		
Plugging approved by:		
	State Engineer Repres	entative
Top 1	h in Feet Cubic Feetof Cement Bottom	ROSWELL F
2 3 4 5		
3		1 0 2 05
3 4 5 	o Not Write Below This Line	2: 05
3 4 5		

File	Number	:			
		(For	OSE	Use	Only

9. LOG OF HOLE

Depth in Fee From T	et Thickness To in feet	Color and Type of Material Encountered	
0 5	5	SAND, fine, damp, burnt orange	
5 25	20	Caliche, soft, dry, gray to tau	
75 40	15	SANDY Gravel, rhert, dry, burnt orange	
40 60	20	Clay firm, dry, marron w/ grav motifine	-1
<u>_60 </u>			9001
<u>85 165</u>		- Claystone , dry marcon w/ gray mottling	,
165 190		. Claystone wil siltstone, hard, dry maroon	
<u> </u>		claystone, hard, dry marcon w/ gray mottly	29
235 240 235 240		Clarstone, w/ siltstone hard, dry light and	11.
273 241)	claustone, hard, dry, marcon ill gray mot	tring
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File Number:	P-956	Trn Number: 376956	
Form: w	r-20	Dade 3 OI 4	
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The undersign belief, the factor hole.	ed hereby ce oregoing is	rtifies that a true and c	c, to the best correct record	of his know	wledge and we described	
belief, the f	ed hereby ce oregoing is	a true and o	to the best correct record $\frac{04/24}{(mm/dd/}$	of the abov	wledge and ve described	
belief, the f	ed hereby ce oregoing is	a true and o	correct record	of the abov	wledge and ve described	
belief, the f	oregoing is	a true and o	O4/24	of the abov	wledge and ve described	STAT
belief, the f hole.	oregoing is	a true and o	O4/24 (num/dd/	of the abov	ve described	STATE E
belief, the f hole.	oregoing is	a true and o	O4/24	of the abov	ve described	STATE ENGLISH
belief, the finole.	oregoing is Drill	er	OY/24 (num/dd/	of the above your property of the second sec	ve described	STATE Education
belief, the finole.	oregoing is Drill	er	O4/24 (num/dd/	of the above your property of the second sec	ve described	STATE ENGINEED ME
belief, the finole.	oregoing is Drill	er	OY/24 (num/dd/	of the above your property of the second sec	ve described	STATE ENLISH MEXICO
Delief, the final hole.	oregoing is	er R STATE ENGIN	OY/24 (num/dd/	d of the above 1/07 (year)	ve described	STATE ENGINE XICO
belief, the finole.	oregoing is Orill Drill FOF FOF P-956	er R STATE ENGIN	OY /24 (mm/dd/ NEER USE ONLY ; Location No	of the above the property of t	ve described	



File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisiana Energy Services	Work Phone: 505.394.5204
Contact: Laurie Wetherell Address: P.O. Box 1789	Home Phone:
1002 cos. 7. 0. 668 1187	-
City: Eunice	State: NM Zip: <u>88231</u>
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 in Lea	o: <u>2/</u> 5 Range: <u>38E</u> N.M.P.M. County.
B. X = feet, Y = feet. Zone in the feet.	eet, N.M. Coordinate System Grant.
C. Latitude: 32 d Z6 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: CP-946
I. On land owned by (required): Lez County,	NM
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Taicn/LPE Agent: Shave Curre Mailing Address: 97(A) Bivins	Work Phone: 806.467.0601 Home Phone: 806.676.8220
City: Amavillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: 3/16/01; Completed: 4/03/07; Size of hole: 7-1/x in.; Total depth of well: 225. Completed well is: Monitor (shallow, arted Depth to water upon completion of well: 220.49	と ft.; ssian); ssian
Do Not Write Below This Li	ne J ES
File Number: $\frac{CP-946}{\text{Form: wr-20}}$ page 1 of 4	n Number: 37694457 21,38,32,422
Meritar	21.38,32.422

File	Number	:			
		(For	OSE	Use	Only)

From To in feet 720.49 225.8 5.31		Estimated Yield (GPM) 0-
RECORD OF CASING		
Diameter Pounds Threads (inches) per ft. per in. 4 \$\section 40 PVC Z 4 \$\section 40 PVC Z 7		From To
RECORD OF MUDDING AND CEM	ENTING	
Depth in Feet Hole From To Diameter 0 15 1-7/6 15 200 1-7/8	of mud of Cement	of Placement -bentouite/cemen - bentouite/pellet
LUGGING RECORD		
Plugging Method:		
Plugging approved by:		
	State Engineer Represe	entative
	in Feet Cubic Feetof Cement Bottom	ROSVELL EXAME 2007 APR 27 PG
Top 1 2 3 4 5	Bottom	27 in 2:
Top 1 2 3 4 5	Not Write Below This Line	27 io 2:

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		(For	OSE	Use	Only)	

9. LOG OF HOLE

Depth	in Feet	Thickness	Color and Type of Material Encountered
From	То	in feet	
	_ Z		SAND, longe day, boant orange
_ Z	_ 25	18	CALICHE, Mcdarately hand, dry gray
	35	15	Gravely SAND, fine arrived light array
35	<u> 70</u>	35	CLAY, highly plastic, firm, dry, margon
	<u> </u>	10	CHAY Stones ory light red cuttings
60	95	15	Claystone, or maroon with gray and green mottling
- 45	100	5	Claystone, ory maroon with gray and green mottling claystone, interbedded silfstone, ory maroont gray
<u> 100 </u>	115		Claystone, firm dry marcon f and
125	125	i-0 50	claystone, interpedded sittstone marcon
175	185	10	Claystone, dry marony
182	195		The state of the s
195		5	Siltstone, hard dry gray Siltstone, hard dry gray
200	215	15	claystone, hard dry mavoon
215		5	siltstone, damp, gray
220			claystone, firm, dry, marcon
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		Do	O Not Write Below This Line
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	orm: wr-2		Trn Number: 376944
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			21,38,32,422
			Moniter 21,38,32,422
			romer
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File	Number:				
	(Fo	r	OSE	Use	Only

The undersigned hereby certifies that, to the best of his knobelief, the foregoing is a true and correct record of the alphole.	nowledge and bove described
belief, the foregoing is a true and correct record of the al	nowledge and bove described
belief, the foregoing is a true and correct record of the al	nowledge and bove described
belief, the foregoing is a true and correct record of the al	nowledge and bove described
belief, the foregoing is a true and correct record of the al	nowledge and bove described
belief, the foregoing is a true and correct record of the all hole. $ \frac{O4/z4/o7}{\text{Driller}} $ Driller $ \frac{O4/z4/o7}{\text{(mm/dd/year)}} $	bove described
Driller FOR STATE ENGINEER USE ONLY	bove described
Driller Driller Driller Driller Driller	bove described
Driller FOR STATE ENGINEER USE ONLY	bove described ROS
Driller FOR STATE ENGINEER USE ONLY	bove described ROSNELL FR 27
FOR STATE ENGINEER USE ONLY Quad; FWL; FSL; Use; Location No Do Not Write Below This Line	bove described ROS
FOR STATE ENGINEER USE ONLY Quad; FWL; FSL; Use; Location No Do Not Write Below This Line Trn Number:	bove described ROS
FOR STATE ENGINEER USE ONLY Quad; FWL; FSL; Use; Location No Do Not Write Below This Line Trn Number: Form: wr-20 Page 4 of 4	ROSNELL ROSNELL CONTROL CONTRO



File	Number:			
	(For	OSE	Use	Only)

1. OWNER OF WELL Name: Louisiana Energy Services Contact: Laurie Wethereil Address: P.O. Box 1789	Work Phone: 505-314.5204 Home Phone:
City: Eunice	State: NIM Zip: 88231
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{SE}{1/4}$ $\frac{SE}{1/4}$ $\frac{SE}{1/4}$ Section: $\frac{32}{32}$ Township	:2/5 Range:38EN.M.P.M.
B. X = feet, Y = fe Zone in the	et, N.M. Coordinate System Grant.
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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: <u>CP-945</u>
I. On land owned by (required): Lea County,	NM
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Taion/LPE Agent: Shave Carrie Mailing Address: 921 N. Bivins	Work Phone: 806,467.0607 Home Phone: 806.676.8720
City: Amarillo	State: TX Zip: 79107
4. DRILLING RECORD	STA ROS 700
Drilling began: 3/14/01; Completed: 4/3/07; Size of hole: 1/8 in.; Total depth of well: 241. Completed well is: Monitor (shallow, arted Depth to water upon completion of well: D2Y	Type tools: Air Retark E
Do Not Write Below This Li	
File Number: $\frac{CP-945}{\text{Form: wr-20}}$ page 1 of 4	n Number: <u>376887</u>
	21,38,32,444

(inches) per ft. per in. T Y Yh Ych Ych	TING sacks of mud	Cubic of Cem	(feet)	pvc cu	of Pla	From NA ZZI.Z	To Z41.	2.Z
Diameter Pounds Threads D (inches) per ft. per in. T Ly Sch 40 PW Z RECORD OF MUDDING AND CEMEN Depth in Feet Hole S From To Diameter of T-7/8 TS T-7/8 PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: No. Depth in Top 1 2 3 4 5	TING acks f mud	Cubic of Cem	(feet)	PVC CH Method	of Pla	From NA ZZI.Z	To Z41.	2.Z
Diameter Pounds Threads D (inches) per ft. per in. T Y Sth YO PK Z U Sth YO PK Z RECORD OF MUDDING AND CEMEN Depth in Feet Hole S From To Diameter of T-7/8 TS T-7/8 PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: No. Depth in Top 1 2 3 4 5	TING acks f mud	Cubic of Cem	(feet)	PVC CH Method	of Pla	From NA ZZI.Z	To Z41.	2.Z
(inches) per ft. per in. T Y Yh Ych Ych	TING acks f mud	Cubic of Cem	(feet)	PVC CH Method	of Pla	From NA ZZI.Z	To Z41.	2.Z
Style of the style	TING sacks of mud	221, 2 <u>241, 2</u> Cubic of Cen <u>20</u> <u>1/4</u>	20 Feet nent -	PVC cu	of Pla	N/A ZZI.Z	z41,	n+
PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: No. Depth is Top 1 2 3 4 5 1 1 2 3 4 5	TING Facks of mud	Cubic of Cen	Feet ment	PVC cu	of Pla	icement	cemei	n \
Depth in Feet Hole S From To Diameter of T-1/y T-5 Z(5 T-1/y PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Feet Hole S Top 1 2 3 4 5	TING Tacks of mud	Cubic of Cen	Feet nent	Method	of Pla	icement	cemei	n \
Depth in Feet Hole S From To Diameter of O 15 7-1/y 75 Z(5 7-1/y PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Top 1 2 3 4 5	acks of mud 48	of Cen	nent)	Ironie	- bent	onite/	cemer	1
Depth in Feet Hole S From To Diameter of O 15 1-1/y T5 Z(5 7-1/y T5 Z(5 7-1/y PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Top 1 2 3 4 5	acks of mud 48	of Cen	nent)	Ironie	- bent	onite/	cemer	<u>a 1</u>
From To Diameter of 15 1-7/8 1	f mud	of Cen	nent)	Ironie	- bent	onite/	cemer	n 1
From To Diameter of 15 1-7/8 1	f mud	of Cen	nent)	Ironie	- bent	onite/	cemer	<u>a f</u>
C 15 7-1/8 75 215 7-1/4 PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Top 1 2 3 4 5	। 4 <u>४</u>		4	tremie	- bent	onite/	cemer cinips	<u>n</u>
Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Top 1 2 3 4 5				<u></u>	- bent	onite i	<u>cinips</u>	
Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Top 1 2 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5				-				
Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Top 1 2 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5					_	-		
Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Top 1 2 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5								
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NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

From	То	in feet	
0	10		SAND, fine-grained, loose dry, brown to light orange cariche, moderately soft, dry, orange and white clay, stiff dry, gray and marcon, mottled
10	25	15	CALICLE McDevately soft, dry, orange and while
-10	(۵۵	35	Clay Stiff dry, orall and majoon, mottled
60	14 6		claretone, dry marcon
	200	10	Siltstone, hard damp : light gray
<u>190</u> 700	260	<u> </u>	claystone, firm dry marron
	<u> </u>	<u>(6 ()</u>	CLAUSTONE) FIRME ON Y MAINTI
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File Numb	er: <u>(</u>	11743	Trn Number: 376887
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pelief, nole.	, the fore	going is Dril	a true ar ler PR STATE EN; Use Do Not Wr	NGINEER U	O4 24 (mm/dd/)	of the a	bove de	scribed 201 APR 27 12 1:
Quad	, the fore	going is C (Dril:	a true ar ler PR STATE EN; Use Do Not Wr	NGINEER U	O4 24 (mm/dd/)	ne	bove de	scribed



File	Number: _			
	(For	OSE	Use	Only)

1. OWNER OF WELL . Name: Louisiana Energy Services	Work Phone: <u>505. 394.6</u> 204
Contact: Laurie Wetherpil	
Address: P.O. Box 1789	-
City: Eunice	State:NM Zip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{NW}{in}$ 1/4 $\frac{SW}{Lea}$ 1/4 $\frac{SE}{Lea}$ 1/4 Section: $\frac{32}{Lea}$ Township	:3/5 Range:38EN.M.P.M. County.
B. X = feet, Y = fe Zone in the U.S.G.S. Quad Map	et, N.M. Coordinate System Grant.
C. Latitude: 37 d 25 m 50.439 s Longitude:	103 d 04 m 57.541 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: CP-957
I. On land owned by (required): Lea County	
3. DRILLING CONTRACTOR	•
License Number: 1575 Name: Taion / LPE Agent: Shave Corre Mailing Address: 921 N. Bivins	Work Phone: 806.467.0607 Home Phone: 806.676.8270
City: Amarillo	State: 7X Zip: 79107
4. DRILLING RECORD	
Drilling began: $3/20/07$; Completed: $4/3/07$; Size of hole: $7-7/8$ in.; Total depth of well: 231.1 Completed well is: 900 (shallow, arte Depth to water upon completion of well: 98.1	<u>4</u> ft.;
Do Not Write Below This Li	TATE ENGLY ROSWELL, THE APR 2
File Number: $\frac{CP-957}{\text{Form: wr-20}}$ page 1 of 4	n Number: 376957
Monitor	

File Number:

(For OSE Use Only)

From To in feet	Description of water-bearing formation	
RECORD OF CASING		
(inches) per ft. per in. <u>4 </u>	Depth in Feet Length Type of Top Bottom (feet) O 211.4 21.4 1.4 20 PUC en	From To 1A
RECORD OF MUDDING AND CEM	ENTING	
Depth in Feet Hole From To Diameter $ \begin{array}{cccccccccccccccccccccccccccccccccc$	of mud of Cement	of Placement - coment/benton - bentonite chips
PLUGGING RECORD		
Address:		
Plugging approved by:		
	State Engineer Repres	encative
_	in Feet Cubic Feetof Cement	STATE ETA HETA POSWELL HETA 27 TO
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ile Number: <u>CP-957</u> Form: wr-20	Not Write Below This Line Trn Numb page 2 of 4	er: <u>376957</u>
		1,38,32,431

File Number:

(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth i		Thickness	Color and Type of Material Encountered
From	То	in feet	Carlo Contract
	10	10	SAND fine, loose, dry overnge to tan
10	<u>35</u> 40	<u>25</u>	SANDY GRAVEL, MEROON
<u>35</u> 40	_ 85	45	Clay, highly plastic firm dry maroon
85	95	10	Siltstone haird ory 9724
95	105	(0	clarstone, light red
105	100	4	siltstone w/ claystone gray & marcou
110	170	60	claystone, dry maroous whorzy motiling
170	_175	5.5	Siltstone wil claystone have dry gray & marcon
195	220	25	Claystone, Ory Marcon
230	<u>230</u> _240	10	siltstone w/ Claystone dry gray & marron
070	<u>~40</u>	<u> </u>	Clarstone il some silt marrora il gray mottling
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			21,38,32,431
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File	Number:			
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elief, the fole.	oregoing is	ler	and corre	4/3 (mm/dd	rd of the	above o	described
elief, the fole.	oregoing is Dril	ler OR STATE	and corre	4/3 (mm/do	rd of the Zy /ZW	e above (described
elief, the fole.	oregoing is Dril	ler OR STATE	and corre	4/3 (mm/do	rd of the Zy /ZW	e above (described
elief, the fole.	oregoing is Dril	ler OR STATE	and corre	4/3 (mm/do	rd of the Zy /ZW	e above (described
elief, the fole.	FC.,; FSL	ler OR STATE:	and corre	WE ONL	rd of the ZY /ZW d/year) Y	above 6	described
elief, the fole.	FO; FSL_	ler OR STATE:	and corre	WE ONL	rd of the ZY /ZW d/year) Y	above 6	described



File	Number	:			
		(For	OSE	Use	Only

1. OWNER OF WELL Name: Waste Control Specialists, LLC Contact: Mike Burney Address: 9998 w Highway 176 Home Phone: 868-789-2183 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: 21 S Range: 38 E N.M.P.M. County.
B. X = feet, Y = feet, N.M. Coordinate System Zone in the Grant. U.S.G.S. Quad Map
C. Latitude: 3Z d Z6 m Z9 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 Subdivision recorded in sounty.
G. Other:
H. Give State Engineer File Number if existing well: $\frac{CP-979}{CP-979}$
I. On land owned by (required): Waste Control Specialists, LE
3. DRILLING CONTRACTOR
License Number: 1575 Name: Talon Drilling, L.P. Work Phone: 806-467-0607 Agent: Shane Currie. Home Phone: 806-676-8220
City: Amarillo State: TX Zip: 79107
4. DRILLING RECORD
Drilling began: \(\frac{2\lambda 08}{8}\); Completed: \(\frac{2\lambda 08}{8}\); Type tools: \(\frac{\lambda \cdot \text{Rotary Rig}}{\text{Size of hole: } \frac{5\lambda}{8}\) in.; Total depth of well: \(\frac{2\text{S}}{2\text{S}}\) ft.; Completed well is: \(\frac{\text{Monitor}}{\text{Completion of well: } \frac{\text{Dry}}{\text{ft}}\) ft.
Do Not Write Below This Line
File Number: <u>CP-979</u> page 1 of 4 Trn Number: <u>399475</u>
Meniter 21.38.33,122

File	Number:				
	(F	or	OSE	Use	Only)

	Thickness in feet	Water- Dyy	-bearing	formati			GPM)	
RECORD OF CASING		-					-	 -
	Threads per in.	Top	Bottom 28	(feet) <u>28</u>	Puc end	сар	From 13	TO _Z8
RECORD OF MUDDING	-							
From To Di			of Ce	<u></u>	remie -	- beat	onite/	cemei chlp
PLUGGING RECORD	ort							
ELUGGING CONCLECT	···							
Plugging Contract Addre Plugging Meth Date Well Plugg	ess:							
Adare	ed:							
Addre Plugging Meth Date Well Plugg	ed:							
Plugging Meth Date Well Plugg Plugging approved	ed:		State :	Engineer	Represe		9	
Plugging Meth Date Well Plugg Plugging approved	by:	in Feet	State :	Engineer	Represe		9	
Plugging Meth Date Well Plugg Plugging approved	No. Depth Top	in Feet	State :	Engineer C Feetof	Represe		9	

File	Number:				
	(Fc	r	OSE	Ŭsе	Only)

9. LOG OF HOLE

0.5	L -	in feet	Surface Soil
D. D	<u> 0.5</u>	14,5	
15	15	2	Gravelly Sand
17	75		Clavey Silty Sand
25	28.5	3-5	gray szudstone
	<u></u>		521921000

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The undersigned hereby cerbelief, the foregoing is a hole. Drille	true and	correct	e best of hi record of th OS/03/200 mm/dd/year)	s knowled e above d	lge and lescribe
		======	z========		
	 STATE ENGI				
FOR	STATE ENGI	INEER USE	ONLY		
FOR	STATE ENGI	NEER USE	ONLY on No		
FOR : Quad; FWL; FSL	STATE ENGI _; Use	NEER USE	ONLY on No.		



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	Name:
City: ANDREWS	Address:City:
State: TX Zip: 79714	City: State:Zip:
Phone: (505) 394-4300	Phone:
Contact: MICHAEL BURNEY	
Contact Phone: (505) 394-4300	
2. STATE ENGINEER REFERENCE NUMBE File # CP 975 EXPLORE , Well	RS: #C.P. 975
3. LOCATION OF WELL (The Datum Is Assur	ed To Be WGS 84 Unless Otherwise Specified)
Lafitude: 32 Deg 25	Min 45.8 Sec
Longitude: 103 Deg 04	Min
(Enter Lat/Long To At I	Least 1/10th Of A Second)
Datum If Not WGS 84:	Min 20.4 Sec Least 1/10 th Of A Second)
4. DRILLING CONTRACTOR	
License Number: WD1184	77. 77. 77. (100) 500,000
Name: WEST TEXAS WATER WELL SERV	1CE 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:	· · · · · · · · · · · · · · · · · · ·
RONN	Y KEITH
	_ ; 5
	The same of the sa
5. DRILLING RECORD	2. ②
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 Artesia	ns)
Depth To Water First Encountered: 1,092	(ft);
Depth To Water Upon Completion Of Well:	N/A (ft).
TRN Number: 396028 Form: wr-20 May 07	Line File Number:
pa	ge I of 4 21,38,33,333
>	21.38.33.333 Notere

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

6. RECORD OF CASING

	Pounds	Threads	Depth	Length	Type of	Perforations
Diameter (inches)	(per ft.)	(per inch)	(feet)	Top to Bottom (feet)	Shoe	(from to)
13-3/8	48	8	2' AGL	40'		
8-5/8	24	8	3' AGL	1,440'	FLOAT GUIDE	
			ļ <u></u>			
			ļ			
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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
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8. LOG OF HOLE. For Each Water Bearing Strata, Estimate The Yield Of The Formation In Gallons Per

Minute.						
Dept					•	
(fee		Thickness	For Water Bearing			
From	То	(Feet)	Strata	Color	and Type of Material Encoun	ntered
		;	Enter The Estimated			
			Yield in GPM		 -	
			SEE ATTACHED	GEOLOGIC	LOG	
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Enter M	ethod (Jsed To Estin	nate Yield:/A	- .	-	
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CP-975 Geologic log 0-6 ft (a) pad fill and fine brown sand 6-10 ft 4 white sandy limestone (Mescalero caliche) sand, light brown, and brown calcareous sandstone (Gatuña Formation) 10-29 ft 19 29-576 ft interbedded sandstone, siltstone, and claystone; reddish-brown to gray; bioturbated (Cooper Canyon Formation) 576-708 ft sandstone and siltstone, gray to reddish brown (Trujillo Formation) 708-1092 ft interbedded very fine sandstone and siltstone, gray to dark reddish brown (Tecovas Formation) 1092-1384 ft gray, fine sandstone with interbedded reddish brown and weak red siltstone and claystone (Santa Rosa Formation) 1384-1566 ft reddish brown, very fine sandstone and siltstone, with some fibrous gypsum in lower part (Dewey Lake Formation) 1566-1602 ft gray anhydrite beds, with intermediate reddish-brown and gray siltstone (Forty-niner Member of the Rustler Formation) 1602-1609 ft gray anhydrite and wavy thin laminae of dolomite (Magenta Dolomite Member of the Rustler Formation) 1609-1736 ft gray anhydrite beds, with intermediate halite including anhydrite and polyhalite (Tamarisk Member of the Rustler Formation) 711736-1807 ft halite with thin two thin anhydrite beds and basal reddish-brown, very fine sandstone (Los Medaños Member of the Rustler Formation) 1807-2020 ft halite with anhydrite/polyhalitic marker beds (MB103 and uppermost MB109) (Salado Formation)

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9. ADDITIONAL STATEMEN	TS OR EXPLANATIONS:	
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and correct record of the above d	that, to the best of his or her knowledge a escribed bore hole. The undersigned furtice Of The State Engineer and permit hold	her certifies that he or she will
Tonny leith	05-12-08	
Driller /	(mm/dd/year)	
	Do Not Write Below This Line	
Trn Number:		File Number:
Form wr-20 May 07	page 4 of 4	The Humber,

File Number: For OS Godly'

NEW MEXICO OFFICE OF THE STATE ENGINEER APPLICATION FOR PERMIT TO DRILL AN EXPLORATORY WELL

2	-24674
	132000

1. APPLICANT: Weste Control Specialists LLC	Work Phone:	888-789	I-2783	
Name: Waste Control Specialists LLC Contact: Mike Burney	Home Phone:	505-394	-4300	
Contact: Mike Burney Address: 9998 W. Highway 176	neme in the			
City: Andrews	State: TX Zig	p: 7971	4	-
2. LOCATION OF WELL (A, B, C, or D required, E or F if known):				
A. NE 1/4 NW 1/4 NICh/4 Section: 33 Township in Lea	: <u>2/5</u> Range:	<i>38€</i> N.	M.P.M. County.	
B. X = feet, Y = fe	et, N.M. Coord	dinate	System	n
U.S.G.S. Quad Map				
C. Latitude: 32 d 26 m 30.145 s Longitude:	103 d 04	_m 10.96	§2s	3
D. East (m), North (m), UTM	Zone 13, NAD	(27	or 83)	ļ
E. Tract No, Map No of the	нуагод	rapnic	Survey	7
F. Lot No, Block No of Unit/Tract Subdivision recorded in		c	of the County.	Э
G. Other:			299	PO X
H. Give State Engineer File Number of existing wel	.1:) <u>S</u> A
I. On land owned by (required): Waste Control Specialists	LLC)](C	1
1. On Tand Owned by (Tequired).			$\overline{\omega}$	
3. WELL INFORMATION:				清清
Approximate depth 75 feet; Outside diameter of o	easing 2 inc	hes.	\supset :	E E
Name of well driller and driller license number J	ose Salas/#1575		<u>-</u> o [产品
4. ADDITIONAL STATEMENT OR EXPLANATIONS:			53	
This piezometer (TP-63) is being installed to determine the presence or abs Ogallala/Antlers/Gatuna formations on top of the Triassic Dockum group "recactivities by Waste Control Specialists LLC. No pumping or use of groundwateristalled solely to monitor groundwater levels, if any.	d bed clays" in suppo	ort of licen	ising	g
RENAMED " PZ-41"				
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Form: wr-07 page 1 of 2			= [무
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NEW MEXICO OFFICE OF THE STATE ENGINEER APPLICATION FOR PERMIT TO DRILL AN EXPLORATORY WELL

ACKNOWLEDGEMENT

(I, We) Mike Burney		irm that the
(Please	Frint)	
Muhal L	to the best of my knowledge and be.	lief.
Applicant Signature	Applicant Signature	· <u></u>
ACTIO	N OF STATE ENGINEER	
This application is approved XXX	*XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	it is not
	any others having existing rights, f water in New Mexico nor detrimen	
	oject to the following conditions:	
		
		N :
see attached o	conditions of approval	`
		- 3
	0 0	<u> </u>
Witness my hand and seal this	2nlday of _January,	20 08
ohn R. D'Artonjo, Jr., P.E, s	tate Engineer	
	tate Engineer	
By: Munatto W. dre	so her	769 769
enneth M. Fresquez, Acting Di	strfict 10 Supervisor	
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5	The state of the s	
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le Number: <u>CP-972</u>	Trn Number:3	45441
Form: wr-07	page 2 of 2	



File	Number	:			
		(For	OSE	Use	Only

1. OWNER OF WELL Name: Waste Control Specialists	Work Phone: 888-789-2783
Contact: Mike Burney Address: 998 W. Highway 176	Home Phone: 505 - 394 - 4300
City: Andrews	State: <u>TX</u> Zip: <u>797/4</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. <u>NE 1/4 NW 1/4 NW 1/4 Section: 33</u> Township in	: <u>215</u> Range: <u>386</u> N.M.P.M. County.
B. X =feet, Y =fe Zone in the	et, N.M. Coordinate System Grant.
C. Latitude: 37 d 26 m 29 s Longitude:	<u>103</u> d <u>04</u> m <u>.13</u> ;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 Subdivision recorded in	of the County A
G. Other:	
H. Give State Engineer File Number if existing wel	
I. On land owned by (required): _ waste Contro	Specialists > 3
3. DRILLING CONTRACTOR	H. S
License Number: 1575 Name: Talon Drilling, L.P. Agent: Shane Currie Mailing Address: 921 At. Bivins	Work Phone: 806-467-0607
city: Amavilla	State: TX Zip: 79107
4. DRILLING RECORD	
Drilling began: 1/21/08; Completed: 2/4/08; Size of hole: 5-5/2 in.; Total depth of well: 49 Completed well is: Monitor (shallow, arte Depth to water upon completion of well: Dry	Type tools: Air Rodary Rig ft.; sian); ft.
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Form: wr-20 page 1 of 4	n Number: <u>395941</u> 21,38,33,112
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File	Number	:			
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Depth in Feet From To	Thickness in feet	water-	-	formati		GPM)	
ECORD OF CASIN	IG						
Diameter Poun (inches) per	ds Threads ft. per in. 7VL 2	Top	n Feet Bottom	(feet)	Type of Shoe	Perfo From ぶん	То
Z 5kh 40			49	_12	PVC end cap	31	49
ECORD OF MUDE	OING AND CEM	ENTING					
Depth in Feet	Hole	Sacks	Cubic		Method of Pla	cement	
From To 0 5 5 35	Diameter 5 - 5/8 5 - 5/9	25			tremie - be		
LUGGING RECOR	RD						
Plugging Contr Ad Plugging M Date Well Pl	ldress:			<u> </u>			1 8817 1 8817 1 8817 1 8817
Plugging appro					r Representativ	re	FEB 29
							> 100
	No. Depth Top 1	n in Feet Bottor		c Feeto	f Cement		1.31 EXECUTE:
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e Number:	4 5 P-972	o Not Wr:	ite Belo	2 of 4	Trn Number:		3 <u>41</u> 3,112

File	Number:			
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9. LOG OF HOLE

Depth in Feet	Thickness	Color and Type of Material Encountered
From To	in_feet	n:11 - n \ 1 - 1
<u>0</u> Z		Silly Sand, tan Caliche, Hard, tan
2 1	5	Caliche, Hard, Tax
<u> </u>	23	1 7 1 2 M P
30 45	15	Silty Sand, tan Clay, reddish
45 49	5	CIRY I FEBRUSIA
		
		
		
		
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belief,	ersigned he the forego	reby certif	Fies that, rue and com	to the	best of	his knowl the above	edge and describe	ed
belief,	ersigned he the forego	reby certifing is a tr	Fies that, rue and cor	rrect r	ecord of	his knowl the above	edge and describe	ed
belief,	ersigned he the forego	Driller	rue and cor		ecord of Z Z Z (2 m/dd/year	oos	e describe	
belief, hole.	the forego	Driller FOR STA	THE ENGINE	rect r	ecord of Z Z Z L Z m/dd/year	<u>oo</u> %)	e describe	
belief, hole.	the forego	Driller FOR STA	THE ENGINE	ER USE	ecord of Z Z Z L Z m/dd/year ONLY on No. is Line	<u>O</u> O%)	e describe	



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,

Andy Morley

(575) 622-6521, ext 113

Enclosure

cc: Santa Fe Office

2011 FEB 29 A ||. 3|

OSUTI LENGINEER OFFICE

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 Royd. 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 Luday of January, 2008.

John R. D'Antonio, Jr., P.E., State Engineer

Kenneth M. Fresquez, Acting District II Supervisor

File Nbr: CP-972 Monitor Well

W		WEAVER BOO	OS CONSULT	ANTS, INC		LO	G OF SO	OIL BO	RING N	O. <u>B-1</u>	01_
B	BC .	200 S. MICHIGAN AVI (312) 922-1030 * * IND	ENUE, CHICAGO IL,	60604		FILE				SHEET	1 OF 1
	VÄTE	R LEVEL DATA Not Encountered	Started	11/22/97		LOCAT	ION Propo	sed Lca Cou	nty Landfill		
-	FT.		Completed	11/22/97 Allan Eades)						
NE	_ FT.	AT COMPLETION	Driller — Helper —	Freddy	_			e, New Mexi		<u> </u>	——
 	_ FT.	-	Drilling Method	Air Rotary Drill Cuttings	<u> </u>	CLIEN		no Real Land nd Park, No			
	_ FT.		Sampling Method	ling: 9800.52	Comple				PLE DATA		
(580	GRO	OUND ELEVATION: 3408	.62 (Ft., MSL) Easti	ng: 9898.97	Depth:					<u> </u>	\$
Depth (FT.,bgs)	56	STI	RATA DEPTH			Strata Depth (FT.,bgs)					Depth (FT.,bgs)
th Ch	Lithology Type		DESCRIPTION			FT.,b	Calcareous	Moisture	Munsell	Notes	epth
Deg	;;	GR	APHIC LOG			180					Ω
ļ	-	Dark reddish-brown, fin	e SAND, some roots,	no organics		2.0	No	Dry	7.5YR 5/6		
-		Reddish-brown, sandy L	OAM to poorly ceme	nted loamy SANI	>,		No	Dry	7.5YR 6/6		5.0
- 5.0 -		blocky, friable Pinkish-white, sandy CA	LICHE moderately	weak structure, fr	iable	6.0					F = 1
10.0	臺	nodules of caliche	incidential, incurrency	noun our remain			ı	ļ			[10.0]
						12.0	Moderate	Dry	2.5YR 8/2		
15.0	-‡∷:	Reddish-brown, loamy f	ine SAND with moist nodules	friable sandy not	iules,						15.0
Ę						1					20.0
20.0	1					21.0					[20.0]
ŀ		Light red to pink, calcar quartzite, some rose	reous pebbly SAND,	pebbles are domir	antly		 Moderate	Dry	2,5YR 7/6		25.0
25.0		quartzite, some rose Pebbles increase will	color banded gniess, h depth	little chert, angula	ar.		I TOUGHT				<u> </u>
-											30.0
30.0							Moderate	Dry	5YR 7/4		F 3
ŀ }- 35.0		Pink, sandy, pebbly fine	e GRAVEL, dominan	tly quartzite, well	gradeo	34.0					35.0
. 55.0		angular				ا0.0د	Slight	Dry	2.5YR 7/3		
40.0		Reddish-brown MUDS	TONE/CLAYSTONE pebbles and calcareo	, sandy, dry, bloc	cky indurate	ed					- 40.0
Ē		edinigs, some energ	peoples and carearee	uo oneone, peers, -			Slight	Barely Damp	2.5YR 4/6		[[]
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ŀ						50.0					50.0
- 50.0		BORING TERMINATI	ED AT 50.0'			7 30.0				ļ 	
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NO	res:_	1. Dry monitoring well in	istalled in borchole.		. —	EGEND					
		2. Drilling Company: Eac	des Drilling and Pump	Service.	立	W.D W	TILE DRILLING	₹ A.D AFT	TER DRILLING	♥ HOUR(S) AFTE	R DRILLING
'											

WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604					G OF S	B-10	2		
-	C	(312) 922-1030 * * INDIANA (219) 923-9609		FILE				SHEET 1	OF 1
		ER LEVEL DATA = Not Encountered Started 11/20/97 Completed 11/20/97	L	OCA'	TION Propo	osed Lea Cou	inty Landfill		
NE NE	_	Driller Allan Eades			Eunic	e, New Mex	 ico		
NB	- FT. FT.	Helper	· c	LIEN		no Real Lan			
	FT.		[]		Sunla	nd Park, Ne	w Mexico	<u> </u>	
	GRO	OUND ELEVATION: 3,392.63 (Ft., MSL) Northing: 8467.05 Colored Easting: 7193.22 Dep	mpletlo	n		SAM	PLE DATA		\\ \tilde{\omega}
Depth (FT.,bgs)	h	Easting: /193,22 De		{					Depth (FT.,bgs)
(FT	6 83	STRATA DEPTH	ءَ عُ	oco (sgq					(F)
žpth	Lithology Type	SOIL DESCRIPTION GRAPHIC LOG	1	Surata Deput (FT.,bgs)	Calcareous	Moisture	Munsell	Notes	epth
Ă		GRAI IIIC EOG	0	ñ					
: :		Brown, fine to medium SAND with caliche grains, granular structu	ıre,		No	Dry	7.5YR 4/6		
5.0		some roots, no organics	-		Minor	Dry	7.5YR 5/6		5.0
				7.0					= =
10.0 -		Brownish-white calcarcous fine SAND, some calcareous cement sa nodules, not as floury as other caliche, gritty, abundant coarse s	nd		Yes	Dry	7.5YR 7/3		10.0
		and chert when wetted	Jana				·		E =
- 15.0 -				16.0					15.0
	E	Pinkish-white sandy CALICHE, many pebbles of hard angular che	- 1	10.0	Yes	Dry	7.5YR 7/3		
20.0 -		fine sandstone (not frlable)	1	21.0					20.0
-		Pink, fine to medium SAND, calcareous very small nodules of cali	- 1	21.0	Yes	Dry	2.5YR 7/3		
25.0 -		and cemented sandstone		26,0					25.0
-	臺	White sandy CALICHE with calcareous sand matrix and abundant				_			
30.0 -	营	chert clasts. Clasts are angular, coarse gravel size, brown, whit and black, some quartzite	ie		Yes	Dry	2.5YR 8/2		30.0
Ę				33.0	l		0.5370.644		
35.0 -	****	Rose and white PEBBLES, with very little sand, dominantly hard, angular quartzite. White pebbles are hard limestone with quart	zite /	36.0	Yes	Barely Damp	2.5YR 6/4		35.0
£	▤	Teddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally							40.0
- 40.0 -		sandy, micaceous clasts infrequently, poorly indurated			1/22	Dtu	2.5YR 4/4		40.0
45.0			Ì		Yes	Barely Damp	2.51R 4/4		- 45.0-
F 43.0 ·									- 12.5
50.0				50.0	Yes	Barely	2.5YR 4/6		50.0
30.0		BORING TERMINATED AT 50.0'	}		Į	Damp			
		•.							
			ĺ						
	}				1				
1			}						
			}						
NOTE	 :S:	Dry monitoring well installed in borehole.	LEGEN	ש		• .			
		2. Drilling Company: Eades Drilling and Pump Service.	₩.D.	WH	ILE DRILLING	¥ A.D AFTE	R DRILLING Y	IOUR(S) AFTER DR	ILLING
1		.							

W	3	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604	LOG OF BOIL BORING NO					
NE NE		(312) 922-1030 * * INDIANA (219) 923-9609 ER LEVEL DATA = Not Encountered W.D. Started 11/21/97 Completed 11/21/97	FILE	···		ınty Landfill		
NE_		Driller Allan Eades			e, New Mex			
	_ FT.	AT HR. A.D. Drilling Method Air Rolary	CLIEN		no Real Lan nd Park, Ne			
<u></u>	FT.	Northing: 9711.58 Comple	etion	Sunta		PLE DATA		一
(sgq'	GRO	Depth:			1			, bgs
Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Surta Depth (FT.,bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
5.0 -		Reddish-brown, sandy LOAM to poorly cemented loamy SAND, blocky, friable	6.0	No No	Dry Barely Damp	7.5YR 4/6 7.5YR 5/6		5.0
10.0 -		Pinkish-white, sandy CALICHE, moderately weak structure, friable nodules of caliche	0.0	Yes	Dry	7.5YR 8/4		10,0
- 15.0 -		Reddish-brown, loamy fine SAND with moist friable sandy nodules, very few calcareous nodules	14.0	Yes	Dry	7.5YR 7/3		15.0
20,0 -								20.0
25.0			26.0					25.0
30.0 -		Light red to pink, calcareous pebbly SAND, pebbles are dominantly quartzite, some rose color banded goiess, little chert, angular. Pebbles increase with depth	33.0	Yes	Dry	7.5YR 8/2		30.0
₹ }- 35.0 -	₩	Rose and white PEBBLES, with very little sand, dominandy hard, very angular quartzite. White pebbles are hard limestone with quartzite		Yes	Dry	2.5YR 7/3		- 35.0
40.0		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaceous clasts infrequently, poorly indurated	/ 50.0	Yes	Barely Damp	2.5YR 4/4		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-
			1					
моті		and 5% bentonite.	END ,D WH	ILE DRILLING	¥ A.D AFTE	R DRILLING	V HOUR(S) AFTER D	RILLING
l İ								

W	3	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					
NE NE	NE : _ FT.	ER LEVEL DATA Started 11/21/97 Not Encountered Completed 11/21/97 W.D. Driller Allan Eades AT COMPLETION Helper Freddy AT HR, A.D. Drilling Method Air Rolary	LOCATION Proposed Lea County Landfill Eunice, New Mexico CLIENT Camino Real Landfill Sunland Park, New Mexico					
	_ FT.	N. M.C., 0719.02 Canal	ullon	Sunta	ind Park, No	w Mexico		
(\$8)	GR	DUND ELEVATION: 3,404.38 (Ft., MSL) Northing: 8518.93 Complete		SAM	PLE DATA		(SS)	
Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
		Dark reddish-brown, fine SAND, some roots, no organics	_	Slight	Barely	7,5YR 5/4		<u> </u>
5.0 -		Reddish-brown, sandy LOAM to poorly cemented loanty SAND, blocky, friable	3.0	Slight	Damp Dry	7.5YR 6/4		5.0
	를	Pinkish-white, sandy CALICHE, moderately weak structure, friable	6.0			<u> </u>		
10.0 -		nodules of caliche		Moderate	Dry	2.5YR 8/4		[10.0]
	를							
- 15.0 -								- 15.0
								F]
- 20.0 -	橿		21.0					20.0
	层	Light red to pink, calcareous pebbly SAND, pebble are dominantly quartzite, some rose color banded gniess, little chert, angular.		Moderate	Dry	2.5YR 8/2		
├- 25.0 - -		Pebbles increase with depth		1770deraie	2.,	2.5111 0/2		25.0
- 20 0 -	巨]			ļ	•	30.0
- 30.0 -	国							- 50.0
├ 								35.0
; 33.0 - f							,	- 55.0
- 40.0 -			40.0	ļ	}			40.0
		Very light brown medium GRAVEL with calcareous sand matrix, gravel is brown when wel, very cherty, angular, white and brown		Moderate	Dry	2.5YR 8/2		
45.0 -	<u>=</u>	chert, some quartzite White to light brown pebbly coarse GRAVEL with some fine	/ 44.0 46.0					45.0
ŧ	E	calcareous sand matrix. Pebbles are less angular, mostly chert but	∫ 40.0					
50.0		also gniess and quartzite Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, poorly	'	Moderate	Dry	2.5YR 7/4		50.0
-		indurated, cuttings are blocky, some chert pebbles and white calcareous clasts		Moderate	Dry	2.5YR 4/6		
55.0		·						55.0
<u>.</u>				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	2.5YR 4/4		- 60.0
1					Damp		}	
				1				
								1
						1		
	<u>L</u> .				٠.	1		
NOTE	S:_	Boring grouted after completion with 95% portland cement and 5% bentonite. LEG LEG	END					
		and 5% bentonite. 2. Drilling Company: Eades Drilling and Pump Service.	/.D WH	ILE DRILLING	🛂 A.D AFTI	ZR DRILLING	♥ HOUR(S) AFTER DR	ILLING
1								

W		WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604			RING NO.	B-105 SHEET 1 OF 1		
	NE =	(312) 922-1030 * * INDIANA (219) 923-9609 ER DEVEL DATA Started 11/19/97 11/19/97	LOCA	# 95042 TION Propo		inty Landfill	SHEELLOF	_
NE NE	_ FT. FT.	W.D. Completion Driller Allan Eades Freddy		Eunic	e, New Mex	ico		_
	FT.	AT HR. A.D. Drilling Method Air Rotary	CLIEN		no Real Lan			
	FT.	Northing, 6600 22 Compl	ction	Sunla	nd Park, Ne			
(88)	GRO	OUND ELEVATION: 3,388.07 (Ft., MSL) Rottling: 0003.25 Compt.	50.0		SAM	PLE DATA		(pgg)
Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	Calcareous	Moisture	Munseli	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)		Yes	Dry	7.5YR 8/2	- - - -	5.0
- 10.0 ·			14.0				-	10.0
- 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
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?)	35.0				- - -	30.0
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 Rose and white PEBBLES, with very little sand, dominantly hard very	38.0				<u>.</u>	40.0
15.0		angular quartzite. While pebbles are hard limestone with quartzite grains. Reddish-brown sandy LOAM with pebbles of calcareous cemented	44.0	Yes	Dry	7.5YR 7/2	[- - - -	45.0
- 45.0		sandstone (friable). Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky	47.0	Yes	Dry	2.5YR 6/4	Ē	:
50.0		cuttings, some calcareous stains, poor indurated/friable.	50.0	Yes	Ту	2.5YR 6/4	[-	50,0
		• .						
		}						
NOT	ES:	Z, Bolling Bloaded anter complete or Ferminal Complete or Fermina Complete or Ferminal Complete or Fermina Complete or Fermina Complete or Fermina Complete	GEND_	.1	<u></u>			
	_	and 5% henronite	W.D WI	HILE DRILLING	₹ A.D AFT	er drilling 🧷 h	iour(s) after drili	LING

W		WEAVER BOO		•	C.	LO	G OF S	RING NO.	!		
	C_	(312) 922-1030 * * IND				FILE				SHEET	1 OF 1
	NE :	ER LEVEL DATA = Not Encountered	Started . Completed .	11/21/97 11/21/97		LOCA'	FION Prope	osed Lea Cor	unty Landfill		
NE NE	_	W.D. AT COMPLETION	Driller .	Allan Eades Freddy	<u>s</u>		Eunic	ce, New Mex	ico	.,	
<u> </u>	FT.		Helper Drilling Method	Air Rotary	— <u> </u>	CLIEN		ino Real Lau			
	_ FT.		Sampling Method	Drill Cutting	<u>s</u>		Sunla	and Park, No	w Mexico		
	GRO	OUND ELEVATION: 3,401	.06 (Ft., MSL) No	rthing: 5968.89 sting: 9285.60		oletion 1: 66.5		SAM	IPLE DATA		- G
Depth (FT.,bgs)	$\vdash \neg$			Stutg: 9203.00 }	Debrii				<u> </u>	· -	Depth (FT.,bgs)
ET.	ogy e		RATA DEPTH			Septi					臣
pth	Lithology Type		DESCRIPTION APHIC LOG	!		Strata Depth (FT.,bgs)	Calcareous	Moisture	Munsell	Notes	th de
ದ		GR	APRIC LOG			S			}		Ă
		Grayish-brown loamy fin	e SAND, granular,	no organics, few							
		calcareous nodules inc staining, friable ceme	nted sandstone nod	, small roots, no it ules (Windblown S	ands)		No	Dry	7.5YR 5/6		F =
- 5.0 -]	7.5 1 2.0		5.0
											10.0
- 10.0 -						11.0	Moderate	Dry	2.5YR 8/3		10.0
- 15.0 -		Pink fine to medium calc that are friable, no ou	areous SAND, with	n few calcareous no	odules		Moderate) Di,	2.518 6/3		15.0
ļ 13.0		mat are made, no or	int large villan			16.0					E
- - 20.0 -		Pink calcareous fine SAN	ND to war frontier	d candy CALICUE	Fan I	10	Moderate	Dry	2.5YR 7/6		20.0
		no chert or other class	ts. Caliche is very	hard, not friable	3, 16W						E 3
<u>-</u> - 25.0 -		(CAPROCK?)									25.0
30.0 -											30.0
[33.0					= =
35.0 -	擡	White sandy CALICHE	with calcareous san	d matrix and abun	dant				j		35.0
į.	量	chert clasts. Clasts ar and black, some quar	e angular, coarse g. itzite	ravel size, brown,	white		Moderate	Dry	2.5YR 8/3		
40.0											40.0
E	蒫										
45.0	揰										45.0
-	澅										E
- 50.0 ·						}					50.0
	를		٠.								E
- 55,0 ·	畫										- 55.0 -
60.0											60.0
- 60.0	臺					62.0	Moderate	Dry	2.5YR 7/3		
65.0	****	Rose and white PEBBLI angular quartzite. W	ES, with very little	sand, dominantly h	ard ve	-	Moderate	5,,	2.511 //5		65.0
55.5	777	grains.	-		-	66.0	Slight	Dry	2.5YR 5/6		
1	1	Reddish-brown MUDST cuttings, some calcar	reous stains, poor in	E, sandy, dry, blo idurated/friable.	ску	╝					
		BORING TERMINATE	D AT 66.0'			_					
1											
<u></u>						<u>. l</u>	L				
NOTE		 Boring grouted after con and 5% bentonite. 	•			GEND		V			
		2. Drilling Company: Eade	s Drilling and Pump	Service.	<u>\times</u>	W.D WH	ILE DRILLING	¥ A.D AFTE	ER DRILLING .V H	OUR(S) AFTER I	RILLING
İ											

W	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604						LOG OF SOIL BORING NOB				
	$^{\circ}$ C	(312) 922-1030 * * INI				FILE				SHEET 1	— i
	VATI NE	ER LEVEL DATA Not Encountered	Started	11/22/97			···	sed Lea Co	onty Landfill		
NE	_	W.D.	Completed Driller	11/22/97 Allan Ead						.	
NE	_ FT.		Helper	Freddy		CIV TYON		e, New Mex			
	_ FT.		Drining Method	Air Rotar Drill Cuttir		CLIEN		no Real Lan ind Park, No			
<u></u>	_ FT.	OUND ELEVATION: 3,405	Nort Nort	hlng: 4016.88	Compl		Onna		PLE DATA		
Depth (FT.,bgs)	GIN	JOHO EGE YATTON: 5,403	East	ing: 9228.40	Depth:			JAM.	T T		Depth (FT.,bgs)
Į Ę	<u>53</u>	sm	RATA DEPTH			Stratz Depth (FT., bgs)					ET.
) fild	Lithology Type	SOIL	DESCRIPTION			TE D	Calcareous	Moisture	Munsell	Notes	pth (
နိ		GR	APHIC LOG			S		_			Ď
		Reddish-brown, loamy fi	ine SAND to sandy L	OAM, blocky,	friable,		No	Dry	7,5YR 6/6		
5.0		very few organics, gr	ading to light brown	loamy SAND			110	2.,	7,511 0.0		5.0
		Reddish-brown, sandy L blocky, friable	OAM to poorly ceme	ented loamy SA	ND,	6.0	No	Dry	7.5YR 5/6		
10.0	The State of the Cart Court was a state of the cartain and the					/	Moderate	Dry	2.5YR 8/3		10.0
	른					13.0		(
15.0 -							Moderate	Dry	2.5YR 5/6		15.0
	}	Pink, fine to medium SA and cemented sandsto	ND, calcareous very	small nodules	of caliche						[=]
20.0	}										20.0
25.0											25.0
25.0						ĺ		{			- 23.0
30.0 -							!				30.0
-						31.0					
35.0 -	害	Light red to pink, calcar quartzite, some roase	eous pebbly SAND,	pebbles are don	ninantly		Moderate	Dry	2.5YR 6/4		35.0
-	占	quartzite, some roase Pebbles increase with	color banded gniess depth	, little chert, an	gular.						
40.0	宣					}					40.0
-	丰										
45.0											45.0
50.0											50.0
- 50.0	擇										- 50.0
55.0			٠								- 55.0 -
ļ.											
60.0						[60.0
ŀ	崖							1			Ė :
65,0	E										- 65.0
[崇										
70.0	亖										70.0
75,0						75,0					75.0
} /3,3	這	Pink, sandy CALICHE (Continued)	with caprock chips			15,0	Moderate	Dry	2.5YR 8/3		E :
<u></u>	壹	·	· · ·		1			1			<u></u>
NOTE	<u>:S:</u>	 Boring grouted after con and 5% bentonite. 	npletion with 95% por	tland cement	1	END		~ ,		Ø	
		2. Drilling Company: Eade	s Drilling and Pump S	Service,	\\ \bar{A} \\ \bar{A}	.D WII	ile drilling	¥ A.D AF∏	CR DRILLING	♥ HOUR(S) AFTER DI	ULLING
ļ											
İ											
j					}						

W	 3C	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LO		2.10	RING NO	SHEET 2 OF 2	
Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	SAM Moisture	Munsell	Notes	Depth (FT., bgs)
90.0		(Continued from page 1) Pink, sandy CALICHE with caprock chips Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, litt to no mica BORING TERMINATED AT 92.0'	83.0 le 92.0	Moderate Slight Slight No	Dry Barely Damp Barely Damp Barely Damp	2.5YR 5/6 2.5YR 7/3 2.5YR 5/3 2.5YR 5/2		- 85.0 - 90.0
					:			
NOT	ES:	and 5% hantonite	W.D WI	THE DRILLING	₹ A.D AFT	ER DRILLING	V hour(s) after dr	ILLING
ĺ								

W _r	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604					LOG OF SOIL BORING NO B-108					
	$^{\circ}$ C	200 S, MICHIGAN AV (312) 922-1030 * * INI				FILE		2.10	_	SHEET 1	
	VATI NE	ER LEVEL DATA = Not Encountered	Started	11/20/9		LOCA	TION Prope	osed Lea Co	unty Landfi	11	
		W.D.	Completed Driller	11/20/9 Allan Eac							
NE_	_ FT.		Helper	Freddy		GI ID.		ce, New Mex			
	_ FT.		Drilling Methor			CLIEN		ino Real Lan and Park, No		·····	
	FT.	OUND ELEVATION: 3,396	· · · · · · · · · · · · · · · · · · ·	Northing: 9696.33	Comp		Sums		IPLE DATA		\top
(sgq	GAC	7011D BEBY WITOIT: 3,390).15 (Ft., MDL)	Easting: 7439.48	Depth	215.0		J. J.	TEDAIA		bgs)
Depth (FT.,bgs)	23	STI	RATA DEPT	H		Strata Depth (FT.,bgs)					Depth (FT.,bgs)
pth (Lithology Type		DESCRIPTION			ara D	Calcareous	Moisture	Munsell	Notes) th
ద్		GR	APHIC LOG	r		Su					ا مّ
		Brown, fine to medium Some roots, no organi		he grains, granular	structure,			_			
5.0	Jane 1					4.0	Yes	Dry	7.5YR 6/3		5.0
[3.0]		Brownish-white calcareous nodules, not as floury	as other calich	some calcareous cen e, gritty, abundant c	oarse sand	4					- 3.0
10.0	and chert when wetted						Strong	Dry	7.5YR 8/2		[0.0]
È :											= =
15.0											15.0
		Pinkish-white sandy CAI	LICHE, many p	ebbles of hard angul	lar cherty	17.0					
20.0 -		fine sandstone (not fr	iadie)				Strong	Dry	2.5YR 8/2		20.0
						24.0	Crons	, ,,			[]
25.0 -		Pink, very fine SAND, c	calcareous with	occasional pebbles o	f granite,			_	0 53m 5/4		25.0
- 30.0 -							Mild	Dry	2.5YR 7/4		30.0
-						33.0					- 30.0
35.0 -		Dark brown sandy CLA	YSTONE, weat	hered, blocky, very	few calicl				İ		35.0
		clasts, dry, friable/po	orty indurated				Mild	Dгy	2.5YR 6/2		-
40.0											40.0
							Mild	Dry	2.5YR 5/3		
45.0 -						46.0					- 45.0 -
-		Reddish-brown MUDST sandy, micaceous cla	ONE/CLAYSTORIST ONE/CLAYSTORIS	ONE, slicky, occasio , poorly indurated	onally		Mild	Dry	2.5YR 5/2	}	
50.0 -								2.,	2.5 110 5/2		50.0
55.0 -			· .								55.0
-							Mild	Dry	2.5YR 5/3		
60.0							Mild	Dry	2.5YR 7/3	Pitcher Bell Sample	60.0
										Pitcher Bell Sample obtained at 60.0'	= =
65.0 -							Mild	Dry	2.5YR 4/3		65.0
70.0 -		•						i.			70.0
75,0 -											75.0
		(Continued)									75.0
Ē				 			<u> </u>	<u></u>			F
NOTE	<u>S:</u> 1	l. Backfilled with cuttings t with 95% portland cemen	to 120', grouted in and 5% bentor	to surf-ce with 95 nite.	-	END		_			
	2	with 95% portland cemer 2. Drilling Company: Eader	s Drilling and Pu	mp Service.	Å Ν	7.D WH	ILE DRILLING	¥ A.D ANTE	R DRILLING	♥ HOUR(S) AFTER DR	ILLING
					ļ						
1					1						

$\mathbb{W}_{\mathrm{B}_{\mathbf{C}}}$	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	C. LOG OF SOIL BORING NO. B-108 FILE # 95042,10 SHEET 2 0					
bgs)				SAN	IPLE DATA] <u>S</u>
Depth (FT., b Limology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
85.0	(Continued from page 1) Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaccous clasts infrequently, poorly indurated		Mild	Barely Damp	2.5YR 5/3		85.0
95.0			Mild	Barely Damp	2.5YR 5/3	Pitcher Bell Sample obtained at 100.0'	95.0
-115.0							110.0
125.0			Mild	Barely Damp	2.5YR 4/4		-125.0
135.0			No	Barely Damp	2.5YR 5/6		-140.0
-145.0 -150.0	••		No	Barely Damp	2.5YR	Pitcher Beil Sample	145.0-
155.0							-155.0- -150.0-
-165.0							165.0-
	(Continued) Backfilled with cuttings to 120', grouted to surf-ce with 95 with 95% portland cement and 5% bentonite. Drilling Company: Eades Drilling and Pump Service.	LEGEND W.D WHI	No LE DRILLING	Barely Damp Lamp	2.5YR 4/3	♥ HOUR(5) AFTER DR	170.0
				n	· · · · · · · · · · · · · · · · · · ·		<u></u>

WB	C	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LOG OF SOIL BORING NO						
Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	SAM Moisture	PLE DATA Munsell	Notes	Depth (FT., bgs)	
-185.0- -185.0- -195.0- -205.0- -210.0-		(Continued from page 2) Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaccous clasts infrequently, poorly indurated Light reddish-gray SILTSTONE, with green laminae, slick, less sandy, poorly indurated, dry Reddish-brown CLAYSTONE, dry, poorly indurated, no bedding or laminae BÖRING TERMINATED AT 215.0	201.0	Mild Mild Mild	Barely Damp Barely Damp Barely Damp	2.5YR 7/2 2.5YR 7/1 2.5YR 5/2	Pitcher Bell Sample obtained at 215.0'	-185.0- -180.0- -185.0- -190.0- -200.0- -205.0- -210.0-	
NOTES	3:	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.		ILE DRILLING	. A.D AFTE	R DRILLING	[™] HOUR(S) AFTER DI	RILLING	

Ç,

W	 }	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604	LOG OF SOIL BORING NO. B-109						
	<u>C</u>	(312) 922-1030 * * INDIANA (219) 923-9609		FILE	#9504	12.10		SHEET 1	OF 2
v	NE :	ER LEVEL DATA = Not Encountered Started 11/21/97 Completed 11/21/97	. г	OCA	TION Prop	osed Lea Co	ınty Landfi	11	
NE_	FT.	W.D. Allan Eades							
NE	FT.	AT COMPLETION Helper Freddy				ce, New Mex			
<u> </u>	_ FT.	Driving Medical	. '	CLIEN		ino Real Lan			
<u> </u>	_ FT.	50 00 888 44 0	. mpletic	on	Suin	and Park, No			╤═┤
(\$2)	GRO		pth: 12			SAM	PLE DATA		(sgs)
Depth (FT.,bgs)	25	STRATA DEPTH	{ .	म् भू			}		Depth (FT.,bgs)
1 H	Lithology Type	SOIL DESCRIPTION	، [а Де рg	Calcareous	Moisture	Munsell	Notes	tj
Рер	13.	GRAPHIC LOG	١,	Strata Depth (FT.,bgs)					Dep
<u> </u>						ļ	-		
		Grayish-brown loamy fine SAND, granular, no organics, few							
5.0		calcareous nodules increasing with depth, small roots, no iron staining, friable cemented sandstone nodules (windblown sands)	,						5.0
				8.0			1		F 3
10.0		Pinkish-white, sandy CALICHE, moderately weak structure, friabl nodules of caliche	e						10.0
[:		induites of carrette							
15.0									15.0
:									-
20.0				21.0					20.0
ļ: :		Light red to pink, calcareous pebbly SAND, pebbles are dominant					}		1
25.0	\equiv	quartzite, some rose color banded gniess, little chert, angular. Pebbles increase with depth							25.0
			1						
30.0									30.0
}									
35.0				36.0					35.0
ļ :		White, sandy CALICHE with calcarcous sand matrix and abundan	1					}	
40.0		chen clasts. Clasts are angular, coarse gravel size, brown, white and black, some quantite	.6					+	40.0
ŧ :									
45.0 -									- 45.0 -
50.0 -	<u>=</u>			51.0					- 50.0 -
-	****	Rose and white PEBBLES, with very little sand, dominantly hard, angular quartzite. White pebbles are hard limestone with quart	very zite						
55.0	***	grains		56.0					- 55.0 -
Į.		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky cuttings, some chert pebbles and calcareous clasts, poorly industrials.	rated			}	-		E :
60.0		g,				İ			- 60.0
65.0 -						'	}		- 65.0
70.0							1		70.0
ļ								}	:
⊢ 75.0 -				76.0	1				- 75.0 -
-		Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds						Pitcher Bell Sample	- :
NOTE	S:_	Boring grouted after completion with 95% portland cement	LEGEN	4D	•	· · · · · · · · · · · · · · · · · · ·	<u> </u>	-	
	-	and 5% bentonite. 2. Drilling Company: Eades Drilling and Pump Service.	W.D	WH	ILE DRILL I NG	🛂 A.D AFTE	R DRILLING	. Hour(s) after dr	ILLING

$^{\mathrm{W}}_{\mathrm{B}_{\mathrm{C}}}$	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 O						
Depth (FT., bgs) Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)	
- 95.0 - 105.0 - 115.0	Continued) Continued from page 1) Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds BORING TERMINATED AT 120'	120.	0			Pitcher Bell Sample obtained at 120'	95.0	
NOTES: 1.	Boring grouted after completion with 95% portland cement and 5% bentonite. Drilling Company: Eades Drilling and Pump Service.	LEGEND W.D W	HILE DRILLING	₹ A.D AFTE	CR DRILLING	♥ HOUR(S) AFTER D	RILLING	

WE	 }_	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVBNUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LOG OF SOIL BORING NO. B-110 FILE #95042.10 SHEET 1 OF 7						
NE	NE:	R LEVEL DATA Started 11/17/97 Not Encountered Started 11/19/97 W.D. Completed 11/19/97		TION Propo	osed Lea Cou	ınty Landfill			
NE NE	_ FT.	AT COMPLETION Helper Freddy	GT 173		e, New Mex	• •			
ļ	_ FT. FT.		CLIEN		<u>no Real Lan</u> ind Park, Ne	•••			
		DUND BY EVALUAN 3 397 38 (Ft Mgt) Northing: 7924,34 Comple			· · · · · · · · · · · · · · · · · · ·	IPLE DATA	~ <u>~~~~</u>		
.,bgs		Eusting: 6019.55 Depth:	T					-, bg	
Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)	
: :		Yellowish-red to reddish-brown, loamy fine SAND, weak granular	2.0	No	Dry	5YR 5/8	· · · · · ·		
5.0		structure, Reddish-brown, loamy fine SAND to sandy LOAM, blocky, friable, yery few organics, grading to light brown loamy SAND		No	Dry	5YR 6/8		5.0	
10.0		•		No	Dry	5YR 6/8		10.0	
15.0		Pink, sandy CALICHE, moderately weak with friable nodules of caliche and poorly cemented sand, fewer nodules with depth	11.0	Strong	Dry	5YR 8/4		15.0	
					ļ	.			
20.0				Mild	Dry	5YR 8/3		20.0	
25.0 -		Pink, fine to medium SAND, calcareous very small nodules of caliche and cemented sandstone	24.0					25.0	
30.0								30.0	
25.0					}			35.0	
35.0 -			39.0	Mild	Dry	5YR 8/2			
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		- 40.0	
45.0 -		Light reddish-brown, CLAYSTONE with trace sand and calcareous cemented sandtone pebbles, cuttings are blocky, some chert						45.0	
- 50.0 -			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	اء	Mild	Dry	2.5YR 4/6		Ė	
55.0 -		to no mica						55.0	
60.0				Mild	Dry	2.5YR 6/3		-	
60.0 -				Mild	Dry	2.5YR 4/6		- 60.0 -	
65.0				MINU	219	2.512.470		65.0	
70.0 -								70.0	
75.0 -								75.0	
F /3.0 -	擅			Mild	Dry	2.5YR 6/4		E '3.0	
<u> </u>		(Continued)						-	
NOTE		and 5% pentonite.	END ,D WII	ILE DRILLING	¥ A.D AFTE	R DRILLING .V	IIOUR(S) AFTER D	RILLING	
}									

WB	C	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	ì	LO				NO. B-1	2 OF 7
Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	5	Strate Depth (FT., bgs)	Calcareous	SAM Moisture	Munsell	Notes	Depth (FT., bgs)
90.0		(Continued from page 1) Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, I to no mica Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds	ittle	84.0	Minor	Barely Damp	2.5YR 4/4	Pitcher Bell Sample obtained at 90'	90.0
-100.0 -105.0 -110.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly		110.0					100.0-
-115.0- -120.0- -125.0-		Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, l to no mica	litde		Slight	Barely Damp	2.5YR 4/4		115.0
-130.0- -135.0- -140.0-					Yes	Barely Damp	2.5YR 3/4	Pitcher Bell Sample obtained at 140'	-130.0- -135.0- -135.0- -140.0-
-145.0- -150.0-		••			Yes No	Barely Damp Barcly Damp	2.5YR 4/4		145.0-
-160.0- -165.0-		(Continued)				,			165.0
NOTE		. Boring grouted after completion with 95% portland cement and 5% bentonite. . Drilling Company: Eades Drilling and Pump Service. □	W.D	_	LE DRILLING	¥ A.D AFTE	R DRILLING	♥ hour(s) after di	RILLING

WBG	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604	1	G OF S		RING N		
$\frac{C}{C}$	(312) 922-1030 * * INDIANA (219) 923-9609	FILI	E#9504	42.10 SAN	IPLE DATA	SHEET	
Depth (FT., bgs) Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strate Depth (FT., bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
-185.0 -185.0 -190.0 -205.0	(Continued from page 2) Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous comented sandstone nodules, is to no mica Light reddish-brown MUDSTONE, slick, siltier, no bedding	190.0	No	Barely Damp	2.5YR 6/3		-175.0- -185.0- -195.0- -205.0- -210.0-
215.0	Reddish-brown MUDSTONE/CLAYSTONE, micaceous, no beddi or laminne	211.0	No	Barely Damp	2.5YR 5/4		-210.0- -215.0- -220.0-
-225.0 -230.0 -235.0			No	Dry	2.5YR 4/6	Pitcher Bell Sample obtained at 230'	-225.0 -230.0 -235.0
-245.0-			No	Dry	2.5YR 5/4		-240.0 -245.0
-250.0 -255.0 -260.0			No	Dry	2.5YR 4/6		-250.0- -255.0- -260.0-
200.0	(Continued)			,			
NOTES:	and 5% hentonite	EGEND W.D WI	IILE DRILLING	▼ A.D AFTE	ER DRILLING	♥ HOUR(S) AFTER D	F

$^{\mathrm{W}}_{\mathrm{B}}$ C	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LO	G OF SO	2.10		O. <u>B-11</u> SHEET 4	OF 7
Depth (FT., bgs) Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depuh (FT., bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
-270.0	(Continued from page 3)		No	Dry	2.5YR 5/6	·	-265.0- -270.0-
280.0	Reddish-brown, MUDSTONE/CLAYSTONE, micaccous, no bedding or laminae						275.0
-295.0 -290.0			Yes	Dry	2.5YR 5/4		-285.0- -290.0- -295.0-
-300.0				<u> </u>			300.0
-310.0							-310.0 -315.0
-320.0			No	Dry	2.5YR 4/4		-320.0- -325.0-
-335.0	• ·.						330.0
-345.0-			Yes	Dry	2.5YR 5/4		-340.0 -345.0
-355.0- NOTES:	(Continued) 1. Boring grouted after completion with 95% portland cement and 5% bentonite.	GEND		:.		Pitcher Bell Sample obtained at 350'	-355.0
	and 5% bentonite. 2. Drilling Company: Eades Drilling and Pump Service.		ULE DRILLING	A.D AFTE	ER DRILLING	♥ HOUR(S) AFTER DE	ULLING

WE	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609 LOG OF SOIL BORING NO FILE #95042.10							10 5 OF 7
Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	SAM Moisture	Munscil	Notes	Depth (FT., bgs)
-360.0		(Continued from page 4)						360.0
-365.0-		Reddish-brown, MUDSTONE/CLAYSTONE, micaccous, no bedding or laminae		Minor	Đry	2.5YR 4/4		-365.0
-370.0-					i			370.0
-375.0-				Minor	Dry	2.5YR 4/6		- -375.0-
-380.0				ļ	-			380.0
385.0								-385.0
-390.0-								390.0
-395.0-								-395,0-
-400.0-								400.0
-405.0-						}		-405,0-
415.0								-410.0
-415.0-								-415.0- - - - - - - - - - - - - - - - - - -
-425,0-		·						-425.0-
-430.0-								-430.0
-435.0				Minor	Ðгу	2.5YR 4/8		435.0
440.0								-440.0
445.0		(Continued)						-445.0-
NOTE	<u>S:</u>	and 5% hentonite	 <u>END</u> ',D, - W1I	ILE DRILLING	₹ A.D AFTE	R DRILLING	♥ HOUR(S) AFTER DI	RILLING

$W_{B_{C}}$	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	i i	O	G OF SO		SHEET 6 OF 7		
Depth (FT., bgs) Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strate Depth	(FT., bgs)	Calcareous	" SAM	Munsell	Notes	Depth (FT., bgs)
-465.0 -465.0 -470.0 -475.0 -485.0 -490.0 -500.0 -510.0 -515.0	(Continued from page 5) Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no bedd or laminae	ding		Minor	Dry	2.5YR 5/4		-450.0- -455.0- -460.0- -465.0- -475.0- -475.0- -480.0- -485.0- -495.0- -505.0- -505.0- -510.0- -520.0-
-525.0- -530.0- -535.0- NOTES:	(Continued) 1. Boring grouted after completion with 95% portland cement and 5% bentonite. 2. Drilling Company: Eades Drilling and Pump Service.	LEGEND W.D		ILE DRILLING	₹ a.d afte	ER DRILLING	♥ iiour(s) after d	-530.0- -535.0-

$\overline{W}_{\mathrm{B}}$	3	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604	- 1			RING N	NO. <u>B-11</u>	
	$\frac{\mathbf{C}}{\mathbf{C}}$	(312) 922-1030 * * INDIANA (219) 923-9609	FILE	5# <u>950</u>	42.10	(D) E D (M)	SHEET 7	
bgs					SAN	IPLE DATA		bgs
Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strate Depth (FI., bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
				Minor	Dry	7.5YR 5/4		<u> </u>
-545.0-		(Continued from page 6) Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no beddor laminae	ding	·				545.0
-555.0- -560.0-				Minor	Dry	2.5YR 4/4		-555.0 -555.0 - -560.0
-565.0-				Yes Yes Yes	Dry Dry Dry	2.5YR 6/3 2.5YR 6/2 2.5YR 4/4		-565.0- -565.0- -570.0-
-575.0- -580.0-		Light reddish-gray, clayey SILTSTONE, gritty, sandy, no bedding	576.0	Yes	Dry	2.5YR 6/1		-575.0- -580.0-
-585.0-		Reddish-gray, silty SANDSTONE	588.0	Yes	Dry	2,5YR 6/1		-585.0- -590.0-
-595.0-		Light reddish-gray, silty SANDSTONE	595.0	Yes Yes	Dry	2.5YR 6/1 2.5YR 7/1		-595.0
-600.0-		BORING TERMINATED AT 600 FEET	600.0		f			-600.0-
NOTE	<u>S:</u>	and 5% bentonite.	LEGEND W.D WH	LE DRILLING	▼ A.D AFTE	R DRILLING	♥ HOUR(S) AFTER DR	ILLING

\overline{W}_{r})	WEAVER BO		•	IC.	LO	G OF S	OIL BO	RING N	ЮB-13	1_
Į į	C	200 S. MICHIGAN AV (312) 922-1030 * * INE				FILE	#9504	2.10		SHEET 1	OF 7
,	YĀT! NE	ER LEVEL DATA = Not Encountered	Started	11/13/97		LOCA	TION Prop	osed Lea Co	unty Landfil]1	
598.0			Completed	11/13/97 Allan Ead							
Ì	_ FT.	AT COMPLETION	Driller Helper	Freddy			·	ce, New Mex			
l	_ FT.		Drilling Method	Air Rolar	<u> </u>	CLIEN		ino Real Lan		·	
	-	AT HR. A.D.	Sampling Method	Drill Cutting: 9140.96		oletion	Sunia	ind Park, No			
(Sgo	GRO	OUND ELEVATION: 3,404		stlng: 9138.76		1: 598.0		SAM	IPLE DATA) (Sgc
Depth (FT.,bgs)	b.	ST	RATA DEPTH			Pth S)					Depth (FT.,bgs)
fi f)	Lithology Type		DESCRIPTION	Į		n De	Calcareous	Moisture	Munsell	Notes	(j.
Dep.	13.	GR	APHIC LOG			Strata Depth (FT.,bgs)					[원
						-					
				0121D							E =
- 5.0	}	Yellowish-red to reddish- structure, friable, ver	y few organics, son	ne roots, increasi	nuiar ng calich	ie	No	Dry	5YR 5/6		5.0
		nodules with depth an	d slightly loamier	with depth		8.0			i		‡ = 1
10.0		Pale red to pinkish-white friable nodules of cali	Tine sandy CALIC	HE, moderately	wcak,		Strong	Dry	-2.5YR 7/2		[-0.0]
: :						12.0	Mild	Dry	2.5YR 6/6		F =
15.0		Reddish-brown loamy fir nodules are friable an	ne SAND with mois	st sandy loam nod	lules, us			i			15.0
j: :		concretions	a singitury strong,	., ,				İ			F 7
20.0		7 1-1-1	G 1 2 17 17 17 17 17 17 17 17 17 17 17 17 17			20.0	Mild	Dry	2.5YR 6/6		20.0
		Light brown loamy fine to calcareous concretion	is and sandy loam n	iodules, coated w	itle						E
- 25.0 -		carbonates, some organized Pink to white CALICHE			v line	25.0					25.0
		flour-like, few sandy	nodules, friable wh	, cuttings are very len wet	y 11/10,		Strong	Dry	2.5YR 8/1		E = 1
30.0											30.0
t :											E 3
35.0 -		Very light brown mediur	n GRAVEL with ca	alcarcous sand ma	atrix,	35.0	Mild	Dry	2.5YR 8/1		35.0
	-E	grayel is brown when chert, some quartzite		_		1	Mild	Dry	2.5YR 8/3		
40.0 -	=	White to light brown peb calcareous sand matri	bly coarse GRAVE ix. Pebbles are less	EL with some fine angular, mostly of	; chert but	40.0	Mild	Dry	2.5YR 5/3		40.0
		also gniess and quart Reddish-brown MUDST	zite			44.0	Mild	Dry	2.5YR 4/4		<u> </u>
45.0 -		indurated, cuttings are	e błocky, some che	rt pebbles and wi	nite	\parallel	MIII) Diy	2.51 K 4/4		45.0
		Reddish-brown sandy M	UDSTONE/CLAY	STONE, micaceo	us,						+
- 50.0 -		especially biotile, occ beds, otherwise mass	ive, very few lamin	s, occasional gree lac or bedding, m	oderatel	y		_ ,	105.44		50.0
		indurated	٠.				No No	Barely Damp	10R 4/6		55.0
- 55.0 -										ļ	E 33.0
60.0 -											60.0
- 00.0							Mild	Barely	2.5YR 5/3		= "=
- 65.0 -							i ivilia	Damp	2.518 5/5		65.0
								-			= =
70.0 -						-	}			}	70.0
[Mild	Barely	2.5YR 6/4		
75.0 -								Damp		Ditcher Pall Cain	- - 75.0
		(Continued)								Pitcher Bell Sample obtained at 80'	E =
							<u> </u>		1	L	_ <u></u> =
NOTE	<u>S:</u>	 Boring grouted after con- and 5% bentonite. 	ipletion with 95% po	ortland cement		GEND		_			ļ
	2	2. Drilling Company: Eade:	s Dritting and Pump	Service,	\frac{\frac}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\fin}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\fir}}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\fin}}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{	Y.D \YIJI	LE DRILLING	¥ A.D AFTE	R DRILLING	♥ HOUR(S) AFTER DR	ILLING
;											

WB	C	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LO		OIL BO	RING I	NO. B-1	:
୍ଦ୍ର ।		V-17,100 11-1				IPLE DATA		
Depth (FT., bgs)	Lirhalogy Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
90.0		(Continued from page 1) Reddish-brown sandy, MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated		Minor Slight Yes	Barely Damp Barely Damp Barely Damp	2.5YR 5/4 2.5YR 6/3 2.5YR 4/4		90.0
-120.0 -125.0 -130.0 -135.0				Yes	Barely Damp	2.5YR 5/3		125.0-
-140.0- -145.0- -155.0- -165.0-				No	Barely Damp	2.5YR 5/3	Pitcher Bell Sample obtained at 140'	-140.0 -145.0 -150.0 -155.0
-170.0-E		(Continued)						-170.0
NOTES		Boring grouted after completion with 95% portland cement and 5% bentonite. Drilling Company: Eades Drilling and Pump Service. □ W.	_	LE DRILLING	₹ A.D AFTEI	R DRILLING	V HOUR(S) AFTER DI	RILLING

W _B	}	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604	LO	G OF S	OIL BO	RING I	NO. <u>B-1</u>	
	<u>C</u>	(312) 922-1030 * * INDIANA (219) 923-9609	FILE	,# 950	42.10		SHEET	
bgs)					SAM	IPLE DATA	· ·	(Sg.
1 - 1	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	Moisterc	Munsell	Notes	Depth (FT., bgs)
175.0		(Continued from page 2)			<u> </u>			175.0
-180.0-		Reddish-brown sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone buds, otherwise massive, very few laminae or bedding, moderately		Мо	Barely	2.5YR 5/6		-180.0-
185.0-		indurated	185.0	Nο	Barely	2.5YR 4/4		- 185.0
		Light reddish-brown, clayey SILTSONE Red, clayey SILTSTONE	187.0	No	Dry	2.5YR 6/4	{	-190.0-
190.0			195.0	No	Barely Damp	2.5YR 5/6		-195.0-
195.0		Pink, clayey SILTSTONE	175.0	No	Barely	7.5YR 7/3		-200.0
-205.0-				·	Damp		Pitcher Bell Sample obtained at 200'	-205.0
-210.0-								-210.0
-215.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green situstone	211.0	No	Dry	2.5YR 6/2		-215.0
-220.0-		especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated					<u> </u>	-220.0
-225.0-								-225.0
-230.0-				!				-230,0
-235.0-								235.0
-240.0-						 		-240.0
- 2 45.0-								 - 245.0-
250.0		•						-250.0-
-255.0		,		No	Dry	2.5YR 4/6		-255.0-
-260.0				Yes	Dry	2.5YR 4/4		-260.0-
<u> </u>		(Continued)	<u> </u>	L	J	<u> </u>		_
NOTES		1. Boring grouted after completion with 95% portland cement and 5% bentonite. 2. Drilling Company: Eades Drilling and Pump Service. LEGI W.		LE DRILLING	₹ a.d afte	R DRILLING	♥ HOUR(S) AFTER DI	RILLING

WE	3 C	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LC		SOIL BO		NO. B-1	4 OF 7
Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	Moisture	Munsell	Nates	Depth (FT., bgs)
-265.0- -270.0-		(Continued from page 3)						-265.0- -270.0-
-275.0 -280.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltsto beds, otherwise massive, very few laminae or bedding, moderate indurated	one ly					-275.0- -280.0-
-285.0 -285.0 -290.0			ı					-285.0- -290.0-
-295.0- -300.0-		,		No	Dry	10R 4/6		-295.0
-305.0-								305.0- -310.0-
-315.0-								-315.0- -320.0-
-325.0 -330.0		٠.		Yes	Dry	10R 4/4		-325.0 -325.0 -330.0
-335.0 - -340.0 -								-335.0 -340.0
-345.0 -350.0								-345.0 -350.0
-355.0- NOTE:		(Continued) 1. Baring ground after completion with 95% portland coment.	GEND					-355.0-
NOTE		and 5% bandanite		ile drii.Ling	▼ A.D AFTE	R DRILLING	V HOUR(S) AFTER D	RILLING
								

B 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 C (312) 922-1030 * * INDIANA (219) 923-9609 SAMPLE DATA STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG (Continued from page 4) (Continued from page 4) Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately	SHEET 5 OF 7 Sign (L) Notes
STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG (Continued from page 4)	Septh (FT., bgs)
(Continued from page 4)	salos Salos
-360.0	
-365.0 Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone especially biotile, occasional chert pieces, occasional green siltstone	= = = = = = = = = = = = = = = = = = =
hade athenuise measure were fund lemines or hadding moderatolic	
beds, otherwise massive, very few lanninae or bedding, moderately indurated Minor Dry 2.5YR 4/6	- 3 -370.0-
-375.0	375.0
-380.0	-380.0-
-385.0 Miner Dry 2.5YR 5/6	-385.0- -390.0-
-395.0	 - 395.0-
400.0	- -400.0-
405.0	 -405.0-
410.0	410.0
-415.0	415.0
-425.0	-420.0- - - -425.0-
-430.0	- - -430.0
-435.0 - Dry 2.5YR 4/6	-435.0 -
-440.0	
-445.0 (Continued)	 445.0 -
NOTES: 1. Boring grouted after completion with 95% portland cement and 5% bentonite. LEGEND W.D WHILE DRILLING A.D AFTER DRILLING H.D WHILE DRILLING W.D W.D WHILE DRILLING W.D.	IOUR(S) AFTER DRILLING

ANA (210) 027 DEOD DEUT # DEDA2 10 CHEET # /	1
ANA (219) 923-9609 FILE # 95042.10 SHEET 6 (
ATA DEPTH ESCRIPTION PHIC LOG Calcareous Moisture Munsell Notes	Depth (FT., bgs)
. Minor Dry 2.5YR 6/4	-455.0 -465.0 -465.0 -475.0 -475.0 -485.0 -485.0 -485.0 -485.0 -505.0 -505.0 -505.0 -510.0 -525.0
	· ·

W _B _C	WEAVER BOOS CONSULTANTS, INC. 206 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * "INDIANA (219) 923-9609	LO		OIL BO	RING N	NO. <u>B-11</u> SHEET 7	OF 7
Depth (FT., bgs) Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Całcarcous	Moisture	Munsell	Notes	Depth (FT., bgs)
-545.0- -550.0- -565.0-	(Continued from page 6) Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated Pink CLAYSTONE Light reddish-gray, clayey SILTSTONE Reddish-gray, sandy SILTSTONE Reddish-gray, silty SANDSTONE BORING TERMINATED AT 598 FEET	566.0 568.0 576.0 581.0	Minor Yes Yes	Dry Dry Dry	2.5YR 6/4 2.5YR 8/3 2.5YR 7/1 10R 6/1		-545.0- -550.0- -565.0- -565.0- -565.0- -585.0- -595.0- -595.0-
	. Boring grouted after completion with 95% portland cement and 5% bentonite Drilling Company: Eades Drilling and Pump Service. ☑ W		ILE DRILLING	₹ a.d apte	R DRILLING	♥ Hour(s) after dri	LLING

APPENDIX G.B SITE BORING LOGS

LOG OF BORING NO. BH-01 CAREL Project Description: CK Disposal Northing: 521233.96 Location: Eunice, NM Top of PVC El.: feet MSL Easting: 924924.72 Symbol/USCS Monitor Well Construction Details Depth, feet Surface El.: 3382 feet MSL Samples Completion Depth: 175 feet Monitor Well Description Date Boring Started: 5/26/2015 Date Boring Completed: 5/26/2015 MATERIAL DESCRIPTION CLAYEY SAND, brown to reddish brown, moderately 5 🗏 5 10 well sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction 15 =20= SILTY SAND, with caliche, light brown to white, well sorted, well rounded, very fine to fine grained, dry, 25 strong HCL reaction 30Ξ 35 40 CLAYSTONE, reddish brown some gray, slightly 45 moist to dry, weak HCL reaction <u>=</u>50∃ =55∃ 60 65 70 **∃75** <u>=</u>80 **=**85≡ 90= 95 100 105 **⊟**110⊟ 115 120 CAREL2.GDT 9/16/15 **⊨**150**Ξ** 155 160 Total Trobation of the Contractor of the Contrac **Groundwater Observations** Drilling Contractor: HCI Drilling Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig Drilling Method: Air Rotary Date Depth to Water (ft) Sampling Method: Cuttings Dry 5/26/15 Geologist: Steven J. Wimmer

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

EUNICE.GPJ

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

LOG OF BORING NO. BH-02 CAREL Project Description: CK Disposal Northing: 521273.70 Location: Eunice, NM Top of PVC El.: feet MSL Easting: 928310.35 Symbol/USCS Monitor Well Construction Details Depth, feet Surface El.: 3391.8 feet MSL Samples Completion Depth: 175 feet Monitor Well Description Date Boring Started: 5/26/2015 Date Boring Completed: 5/26/2015 MATERIAL DESCRIPTION CLAYEY SAND, brown to reddish brown, moderately 5 5 10 well sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction SILTY SAND, with caliche, light brown to white, well <u></u>15∃ sorted, well rounded, very fine to fine grained, dry, 20= strong HCL reaction 25 30Ξ 35 CLAYSTONE, reddish brown with gray, dry, weak 40 HCL reaction, some purple 45 <u>=</u>50∃ =55∃ 60 65 less gray and purple; slightly moist to dry 70 **∃75 =**80 **=**85≡ 90= 95 100 105 **⊟**110⊟ 115 120 CAREL2.GDT 9/16/15 150 155 160 Total Trobation of the Contractor of the Contrac **Groundwater Observations** Drilling Contractor: HCI Drilling Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig Drilling Method: Air Rotary Date Depth to Water (ft) Sampling Method: Cuttings Dry 5/26/15 Geologist: Steven J. Wimmer

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

EUNICE.GPJ

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

LOG OF BORING NO. BH-03 CAREL Project Description: CK Disposal Location: Eunice, NM Northing: 520437.21 Top of PVC El.: feet MSL Easting: 926605.28 Symbol/USCS Monitor Well Construction Details Depth, feet Surface El.: 3386.3 feet MSL Samples Completion Depth: 175 feet Monitor Well Description Date Boring Started: 5/26/2015 Date Boring Completed: 5/26/2015 MATERIAL DESCRIPTION CLAYEY SAND, reddish brown, moderately well 5 🗏 sorted, subrounded, fine to medium grained, slightly 10 moist, none HCL reaction <u></u>15∃ SILTY SAND, with caliche, light brown to white, well 20= sorted, well rounded, very fine to fine grained, dry, strong HCL reaction 25 30Ξ 35 Quartz and Caliche gravel up to 1" in diameter 40 CLAYSTONE, reddish brown some gray, slightly 45 moist to dry, weak HCL reaction 50 =55∃ 60 65 70 **∃75 =**80 **=**85≡ 90= 95 100 105 **⊟**110⊟ 115 120 125 medium brown from 130' to 135' 135 reddish brown to brown 140≡ **=**145= **=**150**=** 155 160 Total Trobation of the Contractor of the Contrac **Groundwater Observations** Drilling Contractor: HCI Drilling Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig Depth to Water (ft) Drilling Method: Air Rotary Date Sampling Method: Cuttings Dry 5/26/15 Geologist: Steven J. Wimmer

LOG OF BORING NO. BH-03 PAGE 1 of 1

CAREL2.GDT

EUNICE.GPJ

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

LOG OF BORING NO. BH-04 CAREL Project Description: CK Disposal Northing: 519600.94 Location: Eunice, NM Top of PVC El.: feet MSL Easting: 924941.30 Symbol/USCS Monitor Well Construction Details Depth, feet Surface El.: 3374.1 feet MSL Samples Completion Depth: 175 feet Monitor Well Description Date Boring Started: 5/26/2015 Date Boring Completed: 5/26/2015 MATERIAL DESCRIPTION CLAYEY SAND, reddish brown, moderately well 5 5 10 sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction <u></u>15∃ SILTY SAND, with caliche, light brown to white, well 20= sorted, well rounded, very fine to fine grained, dry, strong HCL reaction 25 30Ξ 35 intermixed reddish brown claystone to 50' 40 45 **=**50≡ CLAYSTONE, reddish brown to purple, dry, weak =55∃ HCL reaction 60 65 70 **∃75 =**80 **■85**■ 90= dark brown to reddish brown 95 100 105 **⊟**110⊟ 115⊒ 120 CAREL2.GDT 9/16/15 **⊨**150**Ξ** 155 160 Total Trobation of the Contractor of the Contrac **Groundwater Observations** Drilling Contractor: HCI Drilling Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig Drilling Method: Air Rotary Date Depth to Water (ft) Sampling Method: Cuttings Geologist: Steven J. Wimmer

LOG OF BORING NO. BH-04 PAGE 1 of 1

EUNICE.GPJ

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

LOG OF BORING NO. BH-05 CAREL Project Description: CK Disposal Location: Eunice, NM Northing: 519636.20 Top of PVC El.: feet MSL Easting: 928326.86 Symbol/USCS Monitor Well Construction Details Depth, feet Surface El.: 3386.1 feet MSL Samples Completion Depth: 175 feet Monitor Well Description Date Boring Started: 5/27/2015 Date Boring Completed: 5/27/2015 MATERIAL DESCRIPTION CLAYEY SAND, reddish brown, moderately well 5 sorted, subrounded, fine to medium grained, slightly moist, none HCL reaction <u></u>10≣ <u></u>15∃ SILTY SAND, with caliche, light brown to white, well sorted, well rounded, very fine to fine grained, dry, 20= strong HCL reaction 25 30Ξ intermixed gravel to 45' 35 40 =45= CLAYSTONE, reddish brown, slightly moist to dry, 50 weak HCL reaction =55∃ 60 65 70 **∃75 =**80 **=**85≡ 90= medium brown, some sand 95 dark brown to reddish brown 100 105 dark brown and purple **⊟**110⊟ 115 120 CAREL2.GDT 9/16/15 reddish brown to dark brown **=**150**=** 155 160 dark brown and purple Total Troining Method: Air Roin Sampling Method: Cutt Geologist: Steven J. Project No.: 15-04-22 reddish brown **Groundwater Observations** Drilling Contractor: HCI Drilling Remarks: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig Date Depth to Water (ft) Drilling Method: Air Rotary Sampling Method: Cuttings Geologist: Steven J. Wimmer

LOG OF BORING NO. BH-05 PAGE 1 of 1

EUNICE.GPJ

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

APPENDIX G.C WATER WELLS WITHIN ONE MILE

WLB

File	Number:				
	(Fc	r	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. $\frac{NW}{1/4} = \frac{5W'}{4} = \frac{1/4}{4} = \frac{32}{4} = \frac{1}{4} = \frac{32}{4} = \frac{1}{4} = \frac{32}{4} = \frac{1}{4} = \frac{32}{4} = \frac{1}{4} = \frac{1}{4} = \frac{1}{4} = \frac{32}{4} = \frac{1}{4} =$:2/S Range:38E N.M.P.M. County.
B. X = feet, Y = fe Zone in the	et, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 14.8698 s Longitude:	<u>103</u> d <u>04</u> m <u>49.8642</u> 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 Subdivision recorded in	of the County.
G. Other:	ूँ आप ूर्व
H. Give State Engineer File Number if existing we	11: <u>CP-993</u> N
I. On land owned by (required): Louisiana Ener	gy Services >
3. DRILLING CONTRACTOR	T 18
License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	Work Phone: 806.467.0607 Home Phone: 806.467.0622
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: 12/5/08; Completed: 12/5/08 Size of hole: 7-7/8 in.; Total depth of well: 231 Completed well is: Monitor (shallow, arto Depth to water upon completion of well: Dry	<u>.</u> 5ft.; esian);
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	rn Number: 4/5/642
Ma total	21,38,32.231

Q

File	Number	:			
		(For	OSE	Use	Only)

Depth in Feet From To Dry	in feet		Estimated Yield (GPM)
RECORD OF CASIN	G		
Diameter Poun (inches) per 4 PVC Sch	ft. per in. 40 2	Top Bottom (feet)	
RECORD OF MUDE	OING AND CEM	ENTING	
Depth in Feet From To 0 20 20 206	Hole Diameter 7-7/8 7-7/8	of mud of Cement 20 Sacks Trimie	e (Bentonite/Cement (Bentonite chips
PLUGGING RECOR Plugging Contr Ac Plugging M Date Well Pl	actor:		
Plugging appro	oved by:	State Engineer Repr	
	No. Depti Top 1 2	n in Feet Cubic Feetof Cemer Bottom	11.57 nt
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ile Number: C	0-993	Trn Nu page 2 of 4	mber: 415642

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	(For	OSE	Use	Only)

9. LOG OF HOLE

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

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	 	-		<u> </u>	15-1
					, ,
The undersigned hereby cert belief, the foregoing is a cole. Driller	true and o	correct	record of the	above des	scribed
				.==== = ==	========
FORS	TATE ENGL	NEER USE	ONLY		
Quad; FWL; FSL;	Use	; Locati	on No.	.	
Do	Not Write	Below T	his Line		
Number: CP-993			Trn Numbe	er: <u>4/5</u>	5642

NLB

1. OWNER OF WELL

File	Number	:			
		(For	OSE	Uşe	Only)

Name: Louisiana Energy Services Contact: Laurie Wetherell Address: P.O. Box 1789	Work Phone: <u>505-394-52</u> 04 Home Phone:
City: Eunice	State: <u>NM</u> 2ip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{NE_{1/4}}{\ln \frac{SW}{Lea}}$ 1/4 $\frac{NE_{1/4}}{LEa}$ Section: 32 Township	:2/5 Range:38E N.M.P.M. County.
B. X = feet, Y = fe Zone in the	et, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 14.9172 s Longitude:	<u>103</u> d <u>04</u> m <u>45.4866</u> 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 Subdivision recorded in	of the County.
G. Other:	18.3
H. Give State Engineer File Number if existing wel I. On land owned by (required): Louisiana Energy	1: <u>CP-994</u>
I. On land owned by (required): Louisiana Energ	y Services , . 🖂
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	Work Phone: 806.467.0607 Home Phone: 806.467.0622
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: $12/5/08$; Completed: $12/5/08$; Size of hole: $7-7/8$ in.; Total depth of well: 36 Completed well is: Monitor (shallow, arter Depth to water upon completion of well: Dry	_ ft.; sian);
Do Not Write Below This Li	
Form: wr-20 page 1 of 4	21,38,32,232
Monitor	

File	Number:			
	(For	OSE	Use	Only)

Dry	Thickness in feet	water-b	earing	format		(ted Yi	
			·, -					
ECORD OF CASIN	IG							
Diameter Poun	ds Threads	Depth in	Feet	Length	Type o	f Shoe		
(inches) per	ft. per in.	Top B	ottom	(feet)	end	cap	From 26	то 36
4 PVC Sch								
								
ECORD OF MUDI	ING AND CEM	ENTING						
Depth in Feet	Hole	Sacks	Cubic	Feet	Method	of Pla	cement	
From To	Diameter	of mud	of Ce	ment				
	7-7/8		20 8	Sacks _	Trimie	(Bento	onite/	Cemer
5 23					Poured			
LUGGING RECOR	RD							٠
Plugging Contr	actor:						· · · · · ·	:
Plugging Contr Ad Plugging M	actor:						· · · · · ·	=
Plugging Contr	actor:							= :
Plugging Contr Ad Plugging M	ddress: ldress: lethod: lugged:							<u>-</u>
Plugging Contr Ac Plugging M Date Well Pl	ddress: ldress: lethod: lugged:							
Plugging Contr Ac Plugging M Date Well Pl	ddress: ldress: lethod: lugged:							<u>-</u>
Plugging Contr Ac Plugging M Date Well Pl	ddress:		State	Enginee	er Repres	sentativ		7
Plugging Contr Ac Plugging M Date Well Pl	No. Depti	n in Feet	State	Enginee	er Repres	sentativ		7
Plugging Contr Ac Plugging M Date Well Pl	No. Depth		State	Enginee	er Repres	sentativ		7
Plugging Contr Ac Plugging M Date Well Pl	No. Depti	n in Feet	State	Enginee	er Repres	sentativ		7
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3	n in Feet	State	Enginee	er Repres	sentativ		0
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3 4	n in Feet	State	Enginee	er Repres	sentativ		
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3	n in Feet	State	Enginee	er Repres	sentativ		0
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3 4	n in Feet	State	Enginee	er Repres	sentativ		7
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3 4	n in Feet	State	Enginee	er Repres	sentativ		0
Plugging Contr Ac Plugging M Date Well Pl	No. Depth Top 1 2 3 4 5	n in Feet	State	Enginee	er Repres	sentativ		0

File	Number	:			
		(For	OSE	Use	Only)

9. LOG OF HOLE

Depth From	in Feet 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
34			Clayscone, dark purple
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	(For	r OSE	Use	Only)

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The undersigned	hereby certifies	that, to the best of his	knowledge and
The undersigned belief, the fore	hereby certifies going is a true a	that, to the best of his and correct record of the	knowledge and
The undersigned belief, the fore hole.	hereby certifies going is a true a	that, to the best of his and correct record of the	knowledge and
belief, the fore	hereby certifies going is a true a	and correct record of the	knowledge and above desorbibed
belief, the fore	egoing is a true a	that, to the best of his and correct record of the $\frac{12/24/08}{(mm/dd/year)}$	knowledge and
belief, the fore	hereby certifies going is a true a	and correct record of the	knowledge and above desorbibed
belief, the fore	egoing is a true a	and correct record of the	knowledge and above desorbibed
belief, the fore	egoing is a true a	and correct record of the	knowledge and above desorbibed
belief, the fore	egoing is a true a	and correct record of the	knowledge and above desorbibed
belief, the fore	Driller	12/29/08 (mm/dd/year)	knowledge and above desagibed
belief, the fore	Driller	and correct record of the	knowledge and above desagibed
belief, the fore	Driller	12/29/08 (mm/dd/year)	knowledge and above desagibed
belief, the fore	Driller	12/29/08 (mm/dd/year)	knowledge and above desagibed
belief, the fore	Por STATE E	/2/24/08 // (mm/dd/year) CNGINEER USE ONLY	knowledge and above desorbibed
belief, the fore	Por STATE E	12/29/08 (mm/dd/year)	knowledge and above desorbibed
belief, the fore	Por STATE E	/2/24/08 // (mm/dd/year) CNGINEER USE ONLY	knowledge and above desorbibed
belief, the fore	Por STATE E	/2/24/08 // (mm/dd/year) CNGINEER USE ONLY	knowledge and above desorbibed
belief, the fore	FOR STATE E	/2/24/08 // (mm/dd/year) CNGINEER USE ONLY	knowledge and above desagible

WLB

File	Number:			
	(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisianna Energy Services	Work Phone: <u>505.394,570</u> 4
Contact: Laurie wetherell Address: P.O. Box 1789	Home Phone:
City: Eunice	State: <u>Aiw</u> Zip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{SE}{1/4} \frac{NE}{NE} \frac{1}{4} \frac{NE}{1/4} $ Section: $\frac{32}{32}$ Township	:2/5 Range:38EN.M.P.M. County.
B. X = feet, Y = fee	
· · · · · · · · · · · · · · · · · · ·	
C. Latitude: <u>37</u> d <u>26 m 21.907</u> s Longitude:	103 d 04 m 27.079 s
D. East (m), North (m), UTM :	Zone 13, NAD (27 or 83)
F. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing well	(5) 0117
I. On land owned by (required): Lez County, A	JM
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon LPE Agent: Shake Corrie Mailing Address: 971 N. Bivins	Work Phone: <u>೪೮೬, Կ.67, 060</u> 7 Home Phone: <u>೪೮৫, ೪۲6, ೪</u>
	and the same of the
City: Amarillo	State: TX Zip: 79107
4. DRILLING RECORD	
Drilling began: $3/15/07$; Completed: $4/03/07$; Size of hole: $7-7\%$ in.; Total depth of well: 270.5 Completed well is: 900% (shallow, artes Depth to water upon completion of well: 178.43	itt.;
	81 20
Do Mat Malla p 2	ATE 1817
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page 1 51 4	Number: 376945 50 11 11 11 11 11 11 11 11 11 11 11 11 11
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File Number:

(For OSE Use Only)

From To in feet 178,83 218.1 39.27	Description of water-bearing formation Claystone & Soltstone	Estimated Yield (GPM) O-5
. RECORD OF CASING		
(inches) per ft. per in. 4 Sch 40 PVC Z	Top Bottom (feet) <u>D 198.1 (98.1)</u>	of Shoe Perforations From To b A A T(S) (
RECORD OF MUDDING AND CEM	FNTING	
Depth in Feet Hole From To Diameter O 15 7-78 15 492 7-78	of mud of Cement 1 20 tremie	of Placement - brutonite /cemen - beutonite chips
PLUGGING RECORD		
Plugging Contractor: Address: Plugging Method: Date Well Plugged:		
Jaco nerr rraggea		
Plugging approved by:		
	State Engineer Repres	entative
Plugging approved by:		entative
		ROSWEILL HER
Plugging approved by: No. Depth Top 1 2 3 4 5	in Feet Cubic Feetof Cement Bottom	2001
Plugging approved by: No. Depth Top 1 2 3 4 5	in Feet Cubic Feetof Cement Bottom Not Write Below This Line Trn Number	ROSWELL, NEW FIEAR

Tile	Number	:		
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(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth in F		
From	To in feet	
	<u> </u>	SAND, loose, dry, brown - tan
	25 23	calicité, soft, dry, gray
	50 5	SANDY, gravel dry, orange to tan
	30 <u>100</u>	Ciay, highly plastic, marcon with gray mottling siltstone, pardidry gray with marcon mottling
	<u> </u>	- siltstone, bandidry gray with marcon mottling
	<u> </u>	Claystone, dry maroon w/ gray mottling
	05 10	Silstone, have dry gray wi maroon splotching
	<u>07 </u>	Siltstone with claystone need, gray & maroon
	30 15	Siltstone with clarstone hard, gray & maroon
		claystone, firm dry maroon w/ gray mottling
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pellet,	rsigned he	ing is a tr	ies that, ue and co	rrect rec	pest of hicord of th	e above	dge and describe	d
pellet,	rsigned he	ing is a tr	ue and co	rrect rec	cord of th	e above	dge and describe	d
hole.	the forego	ing is a tr	ue and co	rrect rec	cord of th	e above	edge and describe	d R
hole.	the forego	Driller	ue and co	<u>O'</u> (mm/	cord of th	e above	dge and describe	d No
hole.	the forego	Driller	ue and co	<u>O'</u> (mm/	cord of th	e above	dge and describe	d
hole.	the forego	Driller	TE ENGINE	O' (mm/		e above 1	describe	
hole.	the forego	Driller FOR STA	TE ENGINE	O' (mm/		e above 1	describe	
hole.	the forego	Driller FOR STA	TE ENGINE	Prrect red Out (mm/	cord of the cord o	e above 1	describe 2001 MPR 27 ⊃ 2:	
Quad	; FWL	FOR STA	TE ENGINE	ER USE ON	/24/zoo- /dd/year) No Line	e above	191 kps 27 5 2:01	
Quad	; FWL	FOR STA	TE ENGINE	ER USE ON	cord of the cord o	e above	191 kps 27 5 2:01	

WLD

File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisianz Energy Services	Work Phone: <u>608.394,52</u> 04
Contact: Laurie wethereil Address: P.C. Box (789	Home Phone:
	-
City: Eunice	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	2/5 Range: 38EN.M.P.M. County.
B. X = feet, Y = fe Zone in the U.S.G.S. Quad Map	et, N.M. Coordinate System Grant.
C. Latitude: 37 d 26 m 33.098 s Longitude:	103 d 04 m 27.582 s
D. East (m), North (m), UTM	
E. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County.
G. Other:	·
H. Give State Engineer File Number if existing well	1: 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	Work Phone: 806.467.0607 Home Phone: 906.676.8770
City: Amarillo	State: 7½ Zip: 79107
4. DRILLING RECORD	
Drilling began: 3/15/07; Completed: 4/03/07; Size of hole: 7-7/y in.; Total depth of well: 37.2 Completed well is: Monitor (shallow, artes Depth to water upon completion of well: DRY	ft.;
Do Not Write Below This Lin	e min
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File	Number:				
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	n Feet To	Thickness in feet	water- DIZY		format			ated Yi (GPM)		
										_
ECORD O	F CASIN	 IG								
Diamete: (inches) 4 4	per <u>5대 4</u> 0	ft. per in.	Тор	Bottom	(feet) <u>72.2</u> (0	Type of N/A PVC end	(zp	From _ <i>\dif</i>	To	
ECORD O	F MUDD	ING AND CEM	ENTING				·			
0	reet To	Hole Diameter 7-7/8 ~-7/8	Sacks of mud	Cubic of Cer	ment	Method of fremier pour - 1	<u>- be</u>	ntonil	-e/ce ch.jp	<u>'m</u> ı
 LUGGING	RECOR	 D								_
		dress:								
Plugging	approv	red by:		State E	Engineer	Represer	tative			
		No. Depth Top 1 2 3 4 5	in Feet Bottom		: Feetof	Cement			7801 APR 27	NOSWELL, TE
		<u></u>							D 2: 01	2110710
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File Number: _

(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth in Feet	Thickness	Color and Type of Material Encountered	
From To	in feet		
<u> </u>	3	Topsoil - Silt loose; dry brown	
3 30	27	Caliche, hard, dry, tan to gray	
<u> 30 35 </u>	5	Caliche, hard, dry, tantogray	
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ile Number: _ ()	P-948	Trn Number: <u>376946</u>	
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Monitor

21,38,32.222

File	Number	:			
		(For	OSE	Use	Only

				
				
				
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				-
The undersigned hereby certified	es that, to the	e best of his	knowledge a	and
The undersigned hereby certified belief, the foregoing is a true hole. Driller	e and correct r	be best of his record of the $C4 \int 24 \sqrt{2c} \sigma T$ m/dd/year)	knowledge a above descr	and ribed
Driller	e and correct r	ecord of the OU \frac{24\frac{2}{2}CU7}{m/dd/year}	above desci	ribed
Driller	e and correct r	ecord of the	above desci	ribed
pelief, the foregoing is a true nole. Driller FOR STATE	e and correct r	ecord of the ON Second of the second of the	above desci	ribed
Pelief, the foregoing is a true nole. Driller FOR STATION OF THE PROPERTY OF	E ENGINEER USE	CY / 24 / 2507 m/dd/year) ONLY on No.	above desci	ribed 7887 AFR 27
FOR STATI	e and correct r	CY 24 2cv7 TM/dd/year) ONLY On No	above desci	Tibed 2001 AFR 27 P

July B

File	Number:			
	(For	OSE	Use	Only)

1. OWNER OF WELL				
Name: Louis	iana Energy	Services	Work Phone	: <u>505.394.57</u> 04
Contact: Laur	ie wethero	11	Home Phone	:
Address: V. O.	BOX 1789			
City: Eur	ice		State: NM Z	ip: _8873/
2. LOCATION OF WELL	. (A, B, C, or D requ	ired, E or F if known)		
A. <u>NW</u> 1/4 <u>NE</u> in <u>Lea</u>	1/4 <u>NE</u> 1/4 s	ection: <u>32</u> Town	ship: <u>2/5</u> Range	:38En.M.P.M.
B. X = Zone U.S.G.S. Quad	feet, Y = in the	-	_ feet, N.M. Coo	rdinate SystemGrant.
C. Latitude: 3	Z d <u>Z6</u> m <u>3</u> 7	<u> 2-895</u> s Longit	ude: <u>103</u> d <u>04</u>	m 39.176 s
D. East	(m), North	(m),	UTM Zone 13, NAD	(27 or 83)
E. Tract No	, Map No	of the	Hydro	graphic Survey
F. Lot No.	, Block No.	of Unit/Trac ision recorded i	tn	of the County.
G. Other:				
H. Give State En	gineer File Nu	mber if existing	well: <u>CP-9</u>	49
I. On land owned	by (required)	: Lea Count	y NM	
3. DRILLING CONTRAC	TOR	·		
License Number: Name: Agent: Mailing Address:	Talon /LPE Shane Cur	rit ins	Work Phone:	806.467.0607 806.676.8720
City:	Amarillo		State:7 <u>X</u> Zi	p: <u>79/07</u>
4. DRILLING RECORD				
Drilling began: Size of hole: ٦- Completed well in Depth to water up	S: Plouttor	(shallow, a	artesian):	STATE EN ROSWELL 2001 ACR
	D- M -	Market B. J. Street		R 27
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		Monitor	11 28	32,221

File	Number:			
	(For	OSE	Use	Only)

	To		water- _ <u>DRY</u> - ———	ption of bearing forma	ation		M)
							
RECORD	OF CASIN	lG					
4.0	s) per <u>56440</u>	11. per 1n. 1906 _ Z 1906 _ Z	220.4	n Feet Lengt Bottom (feet 220.9 270.9 240.9 20	1 N/A PVC end	(3p Z	rom To
RECORD	OF MUDD	OING AND CEM	ENTING				
Depth From O 15		Hole Diameter 7-7% 7-7%	Sacks of mud	Cubic Feet of Cement ZO N/A		of Placem <u>bentou</u> Utonite	ite /cenca
LUGGIN	 IG RECOR	 D			.		
Pl	ng Contra Ado ugging Mo Well Plu	dress:					
	ng appro	ved by:		State Enginee	er Represer	ntative	
Pluggi							
Pluggi							
Pluggi		Top 1 2	in Feet Bottom	Cubic Feeto	of Cement		731 KGI 1213 SON
Pluggi		Top		Cubic Feet	of Cement	 	ROSELL RETURNED (
Pluggi		Top 1 2 3 4 5	Bottom	Cubic Feeto		 	
e Numbe	er: CF	Top 1 2 3 4 5 Do	Bottom	e Below This		: <u>3</u> 76	27 P 2:02

File	Number:				
	(F	or	OSE	Use	Only)

9. LOG OF HOLE

Depth in Feet	Thickness	Color and Type of Material Encountered
From To	in feet	and Type of Macolina Engodificated
O U	Ц	SAND. loose, dry, orange to light and
ч 30	26	CALICHE, moderately hand, chest, dry oranged red
30 50	20	
_50115	65	
_05125		Clay, highly plastic, firm dry, gray of marcion
125 (70		Silstone, hard moist, gray
	55	Claystone, dry, marcon wilgray mottling
180 190 -		Siltstone & claystone interbedded dry gray
<u> 190 235 </u>	45	Claystone have Dry margon w/ gray veining
235 240 -		Siltstone whard to hard, evry avay
240 245	5	Claystone, hard, dry, marcon w/ gray kgran mottling
		
		
		
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		nin t
		Monitor 21.38.32.221

File	Number	:	

(For OSE Use Only)

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The und	ersigned	hereby c	ertifies th	nat, to th	ne best of	his know	ledge and	
The und belief, hole.	dersigned the fore	hereby cogoing is	ertifies the arcondition of the	d_correct	ne best of record of 04/24/0" mm/dd/yea	his know the above	ledge and e describe	d
belief,	dersigned the fore	going is	ertifies the arcondition of the	d_correct	record of	his know the above	ledge and e describe	d
belief, hole.	the fore	going is Oril	a true and	d correct	record of	the above 7 r)	e describe	d ROMENT
belief, hole.	the fore	going is Oril.	ler	d correct	record of D4 / Z4 / O* mm/dd/yea	the above 7 r)	e describe	Roger LL.
belief, hole.	the fore	going is Oril.	a true and	d correct	record of D4 / Z4 / O* mm/dd/yea	the above 7 r)	describe	ROWELL, MEST
belief, hole.	the fore	going is Dril	ler	GINEER USI	record of O4 / Z4 / O" mm/dd/yea	the above 7 r)	describe	ROAWELL, MESS !

WLB

File	Number:			
	(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisiana Energy Services	Work Phone: 505 394.6704
Contact: <u>Laurie Wetherell</u> Address: <u>P. D. Box 1789</u>	Home Phone:
	- -
City: Eunice	_ State: <u>NM</u> Zip: <u>88731_</u>
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 in Lea	0:215 Range: 38 EN.M.P.M. County.
B. X = feet, Y = fe Zone in the U.S.G.S. Quad Map	eet, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 16,2 s Longitude:	103 a 5 m 2/12 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: <u>CP-959</u>
I. On land owned by (required): Lea County	NIM
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon (LPE Agent: Shave Curvie Mailing Address: 921 N. Bivins	
City: Amarillo	State: TX Zip: 79107
4. DRILLING RECORD	
Drilling began: $3/23/07$; Completed: $3/24/07$; Size of hole: $7-7/8$ in.; Total depth of well: $23/6$ Completed well is: $1/6$ Monitor (shallow, artes Depth to water upon completion of well: $1/6$ Depth to water upon completion of well: $1/6$	sian):
Do Not Write Below This Lir	ne D EB
File Number: CP-959 Form: wr-20 page 1 of 4 Moritor	Number: 376959 XXF 21, 38, 32, 131

File	Number:			
	(For	OSE	Use	Only)

From To in feet	water-bearing formation	
Diameter Pounds Threads (inches) per ft. per in. 4	211 211 N/ 211 231 20 PVC	From To A Pend cap 211 231
RECORD OF MUDDING AND CEM		
Depth in Feet Hole From To Diameter O 70 7-78 70 205 7-78	of mud of Cement (8 fremie 28 pour -	- bentonite /conen
Plugging Method:		
Plugging approved by:	State Engineer Represe	
	in Feet Cubic Feetof Cement Bottom	STATE ENGINEER WINDS FROSWELL, NEED 27 D 2: C. TO 3: C. T
	Not Write Below This Line	
le Number: CP- 959 Form: wr-20	Trn Numbe page 2 of 4	r: <u>376959</u> 21,38,32,131

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(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Donth	in Feet	Thickness	Colon and There of Material Transport
From	To	in feet	Color and Type of Material Encountered
0	2.	7	SAND loose moist overge/brown
7.	15	13	CALICHE SOFT DRY TON
- 15	20	5	Gavelly sand inose dry prange to tan
20	30	10	Claystone w/ siltstone marcon & gray
30	95	6.5	Clarstone ory marcon w/ year mothing
95	110		Claystone w/ siltstone diry marrows & grar
110	130		claystone, have, dry marcon w/ good mottle
130	<u> 135</u>	5	Claystone us sitistone dry marrow & gray
135	015	75	clarstone, have dry marcon & gray
210	215		- Siltstone wi claystone have, gray & marcon
215	<u> 7.40</u>	25	Claystone, moderate hand dry marron & gray
			
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~~	ersigned the fore	hereby coegoing is	ertifies a true	s that, t	o the bect rec	est of hi ord of the $\frac{2\sqrt{zco}}{dd/year}$	s knowled	dge and described	ď
	ersigned the fore	hereby cegoing is	ertifies a true	that, t	o the recent recent from the contract of the c	est of hi ord of the $\frac{2\sqrt{zco}}{dd/year}$	s knowled e above d	dge and described	d
hole.	<u> </u>	Dril	der	that, t	ect rec 	est of hi ord of the $\frac{2\sqrt{zco}}{dd/year}$	s knowled e above d	dge and described	d
hole.	<u> </u>	Dril	der	and corr	ect rec 	ord of the state o	s knowled	described	d
hole.	<u> </u>	Dril	d true	ENGINEER		ord of the state o	e above d	described	d
hole.	<u> </u>	Drill	d true	ENGINEER		ord of the state o	e above d	describe	
hole.	<u> </u>	Drill FO; FSL	rer R STATE:	ENGINEER	(mm/	ord of the	e above d	described	
hole.	; FWL	Drill FO; FSL	rer R STATE:	ENGINEER	ect reconstruction No.	ord of the state o	e above o	described to 2:07	
Quad	; FWL	Drill FO; FSL	rer R STATE:	ENGINEER	ect reconstruction No.	ord of the	e above o	described to 2:07	

WLB

File	Number:				
	(1	For	OSE	Use	Only)

Name: Louisiana Energy Services Contact: Laurie Wethereil	Work Phone: <u>505.394.5709</u> Home Phone:
Address: <u>V. O. Box 1789</u>	- Mone Thone.
City: Eunice	State: <u>N/M</u> Zip: <u>8873(</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $SE_{in} = \frac{1/4}{Lea} \frac{NE}{M} = \frac{1/4}{M} \frac{NW}{M} = \frac{32}{M}$ Township	o: <u>218</u> Range: <u>38E</u> N.M.P.M.
B. X =feet, Y =fe	eet, N.M. Coordinate System Grant.
C. Latitude: 3Z d Z6 m 23,387 s Longitude:	103 d 04 m 57.803 s
D. East (m), North (m), UTM	
E. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: <u>CP 958</u>
I. On land owned by (required): Lea County,	
3. DRILLING CONTRACTOR	
License Number: 1575, Name: Talon LPE Agent: Shane Currie Mailing Address: 971 N. Bivins	Work Phone: <u>\$06.467.06</u> 07 Home Phone: <u>\$06.676.87</u> 20
City: Amavillo	State: 77 % in: 79107
4. DRILLING RECORD	ST RO
Drilling began: 3/20/07; Completed: 3/29/07; Size of hole: 7-7/2 in.; Total depth of well: 246. Completed well is: Monitor (shallow, artes Depth to water upon completion of well: 217.14	3ft.;
	P OFF
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an are	Number: 376958

From To in feet	Description of water-bearing formation claysfone wilsTisfone	Estimated Yield (GPM)
RECORD OF CASING		
(inches) per ft. per in.	Depth in Feet Length Type of Top Bottom (feet) D 726.3 726.3 N/V 226.3 246.3 20 PUC Gno	From To 4
RECORD OF MUDDING AND CEME	ENTING	
Depth in Feet Hole From To Diameter 0 70 7- 1/g 70 270 7- 1/g		- cement / bentanila
PLUGGING RECORD		
Plugging Method: Date Well Plugged:		
iragging approved by	State Engineer Repres	entative
No. Depth Top 1 2 3 4 5	in Feet Cubic Feetof Cement Bottom	SIN ER 27 2 2 IN ER 27 2 2
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le Number: <i>CP-958</i>	Trn Numbe	er: <u>376958</u>
Form: wr-20	page 2 of 4	21.38,32.124

File Number:	File	Number:	
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(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth i From	То	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 way
35	40	5	
40		30	
	<u> </u>		City, Plastic, firm gray & marcon
70	<u>80</u>		Clarstone we siltetime dry marcon & gray
<u>80</u>		145	- daystone, firm, dry marcon wy gray moth
225	245	20	claystone all siltstone avy, light ved
245	<u> </u>		clarstone Stiff, dry marioon W/ gray mottling
			
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			o Not Write Below This Line Trn Number 376958 0 55 page 3 of 4 21,38,32.12
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rQ.	TIM. WT - 4	20	page 3 of 4
			21,38,32.124

ADDITIONAL STATEMENTS (OR EXPLANATIONS:	
The undersigned hereby obelief, the foregoing is	certifies that, to the best of his k	nowledge and
The undersigned hereby obelief, the foregoing is hole.	O4/24/2007 Iler (mm/dd/year)	mowledge and above described
Deller, the foregoing is hole.	O4/24/2007 Iler (mm/dd/year)	bove described ROSUELLIE
Deller, the foregoing is hole. Dril	OY/24/2007 Iler OY/24/2007 (mm/dd/year) OR STATE ENGINEER USE ONLY	mowledge and above described POSTELLING 27 FD 27
Deller, the foregoing is hole. Dril	O4/24/2007 Iler (mm/dd/year)	bove described ROSUELLIE
Deller, the foregoing is hole. Dril	OY/24/2007 Iler OY/24/2007 (mm/dd/year) OR STATE ENGINEER USE ONLY	bove described ROSUELLIE
Political process of the foregoing is hole. Dril FO Quad; FWL; FSL	OY/24/2007 Iler OY/24/2007 ITER (mm/dd/year) OR STATE ENGINEER USE ONLY : Use; Location No Do Not Write Below This Line	bove described ROSUELLIE
Political property of the foregoing is hole. Dril FO Quad; FWL; FSL	OY/24/2007 Iler OY/24/2007 Iler (mm/dd/year) OR STATE ENGINEER USE ONLY : Use; Location No Do Not Write Below This Line Trn Number:	bove described ROSUELLIE

File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	<i>,</i> `		
Contact: LOIDSIANA Ex	nevay Services	_ Work Phone:	505. 394, 5200
Address: P.O. Box 17	neve (Home Phone:	
		-	
City: <u>Eunice</u>		State: MM Zip:	88231
2. LOCATION OF WELL (A, B, C, or	D required, E or F if known)		
A. <u>NE 1/4 NE 1/4 NU</u> in <u>Sea</u>	1/4 Section: 32 Township	: <u>2/5</u> Range: <u>5</u>	SEN.M.P.M. County.
B. X = feet Zone in the U.S.G.S. Quad Map	, Y =fe	eet, N.M. Coordi	nate System Grant.
- 			
	m <u>33.072</u> s Longitude:		
D. East (m), i	North (m), UTM	Zone 13, NAD	(27 or 83)
E. Tract No, Map 1	No of the	Hydrogra	phic Survey
F. Lot No, Block N	No of Unit/Tract Subdivision recorded in		of the County.
G. Other:			
H. Give State Engineer Fi	ile Number if existing wel	1. CP- 951	
	pired): Lea County, /		
3. DRILLING CONTRACTOR			
License Number 1675			
License Number: 1575 Name: Talou Agent: Shawe Mailing Address: 921 N	LPE Curria Bivins	Work Phone: &	36,467.0607 36.676.8220
City: Amas	illo	State: TX Zip:	79107
4. DRILLING RECORD			<u> </u>
Depth to water upon compl	(shallow, artes	g ft.; sian); ft.	STATE ERGINEER OF
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RECORD OF CASING						
Diameter Pounds Threads (inches) per ft. per in. 4 Sch 40 PVC Z 4 Sch 40 PVC Z	Top	Bottom (feet 241.3 241.3	DVC end		From To)
RECORD OF MUDDING AND CEM	IENTING					
<u>0 75 7-78</u>			tranie i	bentani	te/cem	<u>eu 1</u>
LUGGING RECORD						
Plugging Method:					·	
Plugging approved by:						
		State Enginee	er Represer	itative		
No. Depth Top 1 2 3 4 5	in Feet Bottom	Cubic Feeto	of Cement		7001 年8 27 中 2:03	
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File	Number:			
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9. LOG OF HOLE

Depth in		Thickness	Color and Type of Material Encountered
From	To	in feet	
_ <u>() </u>	4	<u> 4 </u>	SAND loose, dry tan-brown
<u> </u>	20		_ CALICHE, soft, chert, dry, tan
<u> 20 </u>	25 45	<u>5</u> 20	CHEVELY SAND, Chevt, orange SAND MUSTIN
45	<u> 5</u>		CIAY, highly plastic, firm, dry maroon
<u> </u>	120	<u> </u>	Sittstone hard dry, gray
	125	5	Claystone, hard dry marcon w/ gray mottling
125	240	115	Claystone, interbedded wi siltstone marcon Claystone dry marcon wi gray mottling
240	260	50	Claystone, dry marcon w/ gray mottling
240	265	5	cizystone, dry, marcon with gray mottling
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belief, the foregoing is a	er true and correct record of the above $\frac{04/24/07}{\text{(mm/dd/year)}}$	owledge and ove described
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belief, the foregoing is a hole. Drille	er true and correct record of the about the about the correct record of the correct record of the about the correct record of the correct reco	ve described
FOR	STATE ENGINEER USE ONLY ; Use; Location No	we described
FOR Quad; FWL; FSL	STATE ENGINEER USE ONLY ; Use; Location No	we described
FOR Quad; FWL; FSL	STATE ENGINEER USE ONLY ; Use; Location No Not Write Below This Line Trn Number: page 4 of 4	we described

File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisiana Energy Services	_ Work Phone: <u>506</u> .394,520
Contact: Laurie wetherell Address: P.O. Box 1789	Home Phone:
_	
City: Eunice	State: Num Zip: 88231
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $NE_{1/4}$ $NE_{1/4}$ $NE_{1/4}$ $NE_{1/4}$ Section: 32 Township in $R_{1/4}$	o: <u>215</u> Range: <u>38E</u> N.M.P.M.
B. X =feet, Y =feZone in the	eet, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 3280 s Longitude:	
D. East (m), North (m), UTM	
E. Tract No, Map No of the	
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County.
G. Other:	-
H. Give State Engineer File Number if existing well	1: CP-950
I. On land owned by (required): Lea County, A	JM
3. DRILLING CONTRACTOR	
Name: Talon/LPE Agent: Shave Curve Mailing Address: 921 N. Bivins	Work Phone: 806.467.0607 Home Phone: 806.616.8220
City: Amarillo	State: TX Zip: 79107
4. DRILLING RECORD	
Drilling began: $3/21/07$; Completed: $3/30/07$; Size of hole: $7-7x$ in.; Total depth of well: 7 0 Completed well is: $1/2$ 0 (shallow, artes Depth to water upon completion of well: $1/2$ 0	ft.;
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	in feet	- 	-bearing	format	ion		
Diameter Pound	ds Threads	Depth i	in Feet	Length	Type of Shoe	Perfo:	ration
	ft. per in. ic _ Z					From	Τo
4 5CH 40 P	VC	100	20.1	10:0	PVC end CAP		20.1
ECORD OF MUDDI	ING AND CEM	ENTING					
Depth in Feet		Sacks	Cubic	Feet	Method of Pla	acement	
	Diameter	of mud	of Ce	ment		-1 /	
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riugging approv	ea by:		State	Enginee	Representativ		
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	Top	Bottom					ROS
	Top 1	Bottom	ι			Foot	AUSAE
	Top 1 2 3 4	Bottom	· ———				SUS LUIL SUSSELL
	Top 1 2 3	Bottom	· ———				RÖSVELL. SE
	Top 1 2 3 4	Bottom	· ———			į	
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9. LOG OF HOLE

Depth in Feet From To C Z IS IS I9 I9 72	in feet Z 3 13 (SAND, loose, moist, tan to brown CALICHE, soft, chevt gravel, moist, orange -tan, Gravelly SAND, light cementation moist red sand Clay, highly plastic; firm, moist, marron w/ gray	mottling
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WLB

File	Number: _			
	(For	OSE	Use	Only)

Name: Louisiana Energy Services	Work Phone: 505.394.5204
Contact: <u>Laurie Wetherell</u>	Home Phone:
Address: P. O. Box 1789	-
City: Eunice	State: Zip: <u>8823(</u>
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 in Lea	:215 Range:38EN.M.P.M. County.
B. X = feet, Y = fe Zone in the U.S.G.S. Quad Map	et, N.M. Coordinate System Grant.
o.b.c.c. gada hap	
C. Latitude: $32 d 26 m 33.007 s$ 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel.	1: CP-952
I. On land owned by (required): Lea County , A	
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon / LPE Agent: Shave Curie Mailing Address: 921 Al. Bivins	Work Phone: \$06.467.0607 Home Phone: \$\frac{\$06.676.8770}{200.6076.8770}\$
City: Amarillo	State: TX Zip: 79/07
4. DRILLING RECORD	TATE TO STAT
Drilling began: $3/2/07$; Completed: $3/2/07$; Size of hole: $7\cdot\frac{7}{7}$ in.; Total depth of well: $7\cdot\frac{7}{7}$ Completed well is: $1/2$ Monitor (shallow, artest Depth to water upon completion of well: $1/2$ Y	_ ft.;
	P 38
Do Not Write Below This Line File Number: (19-952) Transport	n Number: 376950
Form: wr-20 page 1 of 4	1 Number. 9 , 9 , - 0
Maritai	21,38,32,121

File	Number	:			_
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From To	Thickness in feet	Descriptio water-bear	ing formation		ated Yield (GPM)
RECORD OF CASING	G				-
<u>4</u> <u>SCH 401</u>	ft. per in. Pw Z Pvc Z	Top Bott	om (feet) 1 169 7 10 PV	pe of Shoe Nia Ctud cap	From To
RECORD OF MUDDI	ING AND CEM	ENTING			·
Depth in Feet From To C 4 1-1	Hole Diameter 7-7/g	of mud of	Cement 1 1ve	thod of Pla Puile - Ceme V - benton	
LUGGING RECORI)			-	
Plugging Contra Add Plugging Me Date Well Plu	thod:				
Plugging approv	ed by:				
		Stat	e Engineer Re	presentativ	e
	Top	in Feet Cu Bottom	bic Feetof Ce	ment	ROSVEL 201 AP
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Le Number: (7)	3 5	Not Write Be		Number: 37	5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5

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		(For	OSE	Üse	Only

9. LOG OF HOLE

Depth i		Thickness	
From	To	in feet	
0		2	SAND, lorse, moist, burnt orange
_ Z	<u> 20</u>	ા ક	CALICHE, realative soft, chert, dry tan - light orange
<u> </u>	<u>27</u>	7	CALICHE, realative soft, chert, dry tan - light orange Gravelly, SAND, chert gravel burnt orange
77	<u> </u>		clay highly plastic, firm, dry marron
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			21,58,52,121

File Number: (For OSE Use Only)

					
					
The undersigned here	eby certifies t	that, to	the best of	his knowle	edge and
The undersigned here pelief, the foregoing noise.	eby certifies to a true are constant of the co	that, to	the best of t record of $\frac{U4/Z4/z}{(mm/dd/yea)}$	the above	edge and described
The undersigned here pelief, the foregoing noise.	Driller	e	U4/Z4/Z0 (mm/dd/yea	the above	edge and described
nole.	Driller	e correc	U4/z4/ze (mm/dd/yea	the above	described
nole.	Driller FOR STATE EN	GINEER U	CH/ZH/ZO (mm/dd/yea	the above	described ROSE
nole.	Driller FOR STATE EN	GINEER U	CH/ZH/ZO (mm/dd/yea	the above	RDS RELEASE COLUMN 27
nole.	Driller FOR STATE EN	GINEER U	CH/ZH/ZO (mm/dd/yea	the above	ROSEE CALL
nole.	Driller FOR STATE EN SL; Use	GINEER U	CY /ZY /ZO (mm/dd/yea) SE ONLY ration No	the above	described RNSWE CITE 2:
nole.	FOR STATE EN Do Not Write	GINEER U	CY /ZY /ZO (mm/dd/yea) SE ONLY ation No	the above	described RNSEE CARROLL 27 CO 2: 03

QvG

File	Number:				
	(For	OSE	Use	Only

1. OWNER OF WELL	CAF PAUL FOAU
Name: Louisiana Energy Services	Work Phone: 503, 514.509 Home Phone:
Contact: Laurie Wetherell Address: P.O. Box 1789	nome Thome.
city: Eunice	State://m Zip: <u>\$823(</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $NE_{1/4} NU_{1/4} NU_{1/4}$ Section: 32 Township in Lea	o: <u>2/5</u> ' Range: <u>38</u> E N.M.P.M.
B. X = feet, Y =	eet, N.M. Coordinate System Grant.
C. Latitude: <u>32</u> d <u>26</u> m <u>32.999</u> s Longitude:	783 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: <i>CP-9</i> 53
I. On land owned by (required): Lea County , i	
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Tolon/LPE Agent: Shane Currie Mailing Address: 121 V. Bivins	Work Phone: 806.467.0607 Home Phone: 806.676.8720
City: _Amarillo	- State:: TV 2in: 79/07
	- 110 j
4. DRILLING RECORD	Type tools: At. Dilang
Drilling began: $3/22/07$; Completed: $3/29/07$; Size of hole: $7-\frac{7}{8}$ in.; Total depth of well: 257 . Completed well is: M_{ON} (shallow, arte Depth to water upon completion of well: $24/.26$	7 ft.; 27 Ft. 27 Ft.
	TO 2:
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Form: wr-20 page 1 of 4	n Number: 376950 0 m 21.38.32.112
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Depth in From T	0	Thickness in feet 16.24	water-	ption o bearing car ω/	format.	ion Jed Sill-Shoue	stimated Y (GPM) O-Z	ield
RECORD OF	CASING							
4_	per ft Sch 40PV	Threads per in.	Top	Bottom 237.5	(feet) 1375		From 	To
RECORD OF	MUDDIN	G AND CEMI	ENTING					
Depth in From To	D. 75	Hole iameter 7-7/8 1-7/8	Sacks of mud		ment	Method of fivence - Co		
LUGGING I	RECORD							
	Contract Addre ing Meth ll Pluge	ess:		· · · · · · · · · · · · · · · · · · ·				
Plugging	approved	d by:					50	ROS
				State I	Engineer	Representa	ative ,	MPR 27
	1 2 3	No. Depth Top	in Feet Bottom	Cubic	Feetof	Cement	- -	7 P 2: 04
	4 5						- - -	<u>.</u>
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e Number: Form	<i>CP</i> - : wr-20	953		page 2	Ť:	rn Number:	<u> 3769:</u>	52
			77	Posite	- ・	.21.	38. 3.7.	//2

File Number:

(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth in Feet From To C S S IS IS 35 35 50 50 200 700 210 210 245 745 255 755 260	Thickness in feet 5 10 20 /5 /50 /0 35 /0 5	SAND, loose moist bount orange CALICHE, hard dry orange CIAY, high plastic marron w/ gray motiling Sitstone, hard dry gray Claystone, wi interbedded siltstone, hard dry marron Claystone, bard, dry marron w/ gray splothing Claystone, wi interbedded siltstone, hard dry marron Claystone, bard, dry marron w/ gray splothing Claystone, w/ interbedded siltstone hard, dry marron Claystone, w/ interbedded siltstone hard, dry marron Claystone, hard, dry marron gray motiling
		STATE TO SEE
		P 27 5 2: 0

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Form: wr-20

Trn Number: 376952

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belief, the fo	d hereby certifing regoing is a tropic of the control of the certific of the c	e and corre	the best of the cent record of the cent record of the cent of the	f his knowl f the above / 2 <i>00</i> 7 ar)	edge and described ROSWELL, NEW 27 72 2
belief, the fo	Driller	e and corre	ect record o	f his knowl f the above / 2007 ar)	described ROSWELL, NEW 27 D 20
belief, the fo	Driller	TE ENGINEER	use only	f the above / 2 <i>0</i> 07 ar)	described ROSWELL, NEW 27 D 20
Quad; FWL	priller FOR STATE Do Not	TE ENGINEER	USE ONLY cocation No.	f the above / 2 <i>co</i> 7 ar)	described ROSWELL, NEW 704
belief, the fo	priller FOR STATE ; FSL; Use	re engineer	USE ONLY cocation No.	f the above / 2 <i>co</i> 7 ar)	described ROSWELL, NEW 27 D 20

WY B

File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: <u>Louisiana Energy Services</u> Contact: <u>Laurie wetherell</u>	Home Phone: 503.394,6204
Address: P. O. Box 1789	
City: <u>Eunice</u>	State:NM Zip: <u>88231</u>
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	215 Range: 38 N.M.P.M. County.
B. X = feet, Y = fe Zone in the U.S.G.S. Quad Map	et, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 27.146 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: CP-954
I. On land owned by (required): Lea County,	NM
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon / LPE Agent: Shant Courte Mailing Address: 921 N. Bivins	Work Phone: 806.447.0607 Home Phone: 806.676.8770
city: Amavillo	State: TX Zip: 79/07
4. DRILLING RECORD	π_{α}
Drilling began: $3/22/07$; Completed: $3/30/07$; Size of hole: $7-7/8$ in.; Total depth of well: 236.00 Completed well is: $1/20$ (shallow, arter Depth to water upon completion of well: $1/20$ Depth to water upon completion of well $1/20$ Depth to water upon completion of well $1/20$ Depth to water upon completion of well $1/20$ Depth to water upon completion of well $1/20$ Depth to water upon c	4 ft.;
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File Number: <u>CPG54</u> Trn	n Number: 376954
Form: wr-20 page 1 of 4	21,38,32,111

File	Number	:			
		(For	OSE	Use	Only

PRY in fe	ness Description of eet water-bearing fo	ormation 	Estimated Yield (GPM)
			
RECORD OF CASING			
Diameter Pounds Thre (inches) per ft. per 	eads Depth in Feet Le in. Top Bottom (f	ength Type of Teet)	Shoe Perforation From To
4 Sch 40 PUC 2	2 216.4 236.4	<u>20 PVL end</u>	CRD 2/6.4 2360
RECORD OF MUDDING AND	CEMENTING		
Depth in Fect Hole From To Diamete	Sacks Cubic Fe er of mud of Cemen	t	
10 7-7/8	1 20	_ Pour - bo	cement/bentoni
PLUGGING RECORD			
Plugging Contractor: _ Address: _ Plugging Method:			
Plugging approved by:			
	State Eng	ineer Represen	tative
	epth in Feet Cubic Fo Bottom	eetof Cement	
Top 1 2 3			ROSWE
1 2			ROSWELL.
Top 1 2 3 4			ROSWELL, HEV ZOOT APR 27
Top 1 2 3 4			ROSWELL, HEWME
Top 1 2 3 4 5		nis Line	T P 2: [
Top 1 2 3 4		nis Line Trn Number	المسارة المسارة المسارة المسارة المسارة المسارة المسارة المسارة المسارة المسارة المسارة المسارة المسارة المسارة

File	Number	:			
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9. LOG OF HOLE

	in Feet	Thickness	Color and Type of Material Encountered
From	To	in feet	- 1 1 1 1
<u>C</u>	20		SAND, fine losse moist, burnt orange
_1.O _ 7.O	35	<u></u>	_ CALICILE SOFT light arange
35	25_		
45	90		
_50	75	25	claystone dry, marcon wi gray motiling
75	35		. Siltstone we interfer devictione
<u> 85 </u>	105		Claystone, have dry marron u/gray mostling
105	110		Sitt from w Interpresed (134 Stone hard dry grave maroci
$-\left(\frac{1}{2} \frac{C}{C} \right)$	130		- Clarstone, any marrow w/ gray mottling
160	160	3D 10	Clarstone, with siltstone dry marcon & gray
170	<u> 170</u> _/75	5	Clarstone, dry marron to purple w/ gray mottling
175	180		Claretone, hard dry marrow wil gray mothing
180	190	10	Claystone, hard diry marroon w/ gray mottling Siltstone w/ Claystone dry gray & marroon
190	215	25	Claystone, hard, dry, marcon w/ gray & marron
215	235	25	silt Home, hard. dry, gray
235	245	10	claystone, hard, dry maronn w/ conav
			
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Trn Number: <u>376954</u> 21,39,32,111 page 3 of 4

File Number: (For OSE Use Only)

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		STALE ROSWELL
FOR STATE ENGL		STATE FIELD IN ROSWELL III
FOR STATE ENGI	NEER USE ONLY	
	NEER USE ONLY	
FOR STATE ENGI	NEER USE ONLY	HEWNEXI 27 P 2:
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FOR STATE ENGI	NEER USE ONLY; Location No Below This Line Trn Number: 3	76954
FOR STATE ENGINGE Quad; FWL; FSL; Use Do Not Write le Number:	NEER USE ONLY; Location No Below This Line Trn Number: 3	HEW NEXICO

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File	Number	:			
		(For	OSE	Use	Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

1. OWNER OF WELL	505 304 5304
Name: Louisiana Energy Services	Work Phone: 505-394-5204
Contact: Laurie Wetherell Address: P.O. Box 1789	Home Phone:
Address: F.O. BOX 1783	
City: Eunice	State: <u>NM</u> Zip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{SW}{in} = \frac{1/4}{e^{\alpha}} \frac{SW}{e^{\alpha}} = \frac{1/4}{e^{\alpha}} \frac{NE}{e^{\alpha}} = \frac{1/4}{e^{\alpha}} \frac{SE}{e^{\alpha}} =$:215 Range: 386 N.M.P.M. County.
B. X = feet, Y = fe	et, N.M. Coordinate System Grant.
U.S.G.S. Quad Map	
C. Latitude: <u>32</u> d <u>26</u> m <u>14.8482</u> s Longitude:	<u>103</u> d <u>04</u> m <u>40.2564</u> s
D. East (m), North (m), UTM	.თ.
E. Tract No, Map No of the	:
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County,
G. Other:	-0 [語
H. Give State Engineer File Number if existing wel	1: <u>CP-995</u>
I. On land owned by (required): Louisiana Energ	gy Services 2 5
3. DRILLING CONTRACTOR	
License Number: 1575	_
Name: Talon Drilling	Work Phone: 806.467.0607
Agent: Shane Currie Mailing Address: 921 N. Bivins	Home Phone: <u>806.467.06</u> 22 -
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: 12/5/08; Completed: 12/5/08; Size of hole: 7-7/8 in.; Total depth of well: 38 Completed well is: Monitor (shallow, arted Depth to water upon completion of well: Dry	ft.; esian);
Do Not Write Below This Li	
File Number: $\frac{CP-995}{\text{Form: wr-20}}$ page 1 of 4	21,38,32,233
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Monitor

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File	Number	:			
		(For	OSE	Use	Only)

Depth in Feet From To	in feet	water-b	earing	formati			ted Yio GPM)	eld
<u>Dry</u>								
RECORD OF CASIN	G							
Diameter Poun	ds Threads	Depth ir	. Feet	Length	Type o	f Shoe	Perfo	rations
(inches) per 4 PVC Sch	40 2	+3	38	41		cap	From28	To 38
								
RECORD OF MUDD	ING AND CEM	ENTING						
Depth in Feet From To	Hole Diameter	Sacks		Feet	Method	of Pla	acement	
From To 0 5	7-7/8		20 8	Sacks 1	rimie	(Bento	onite/	Cemen
5 25	7-7/8	6		<u>F</u>	oured	(Bento	nite	chips)
						_		
PLUGGING RECOR	RD						;	
Plugging Contr	actor:							<u> </u>
Ad	ldress:							1
Plugging M Date Well Pl	Method:							00
								
Plugging appro	oved by:		State	Enginee	r Repres	sentati:		
			Juace	Briginee	I Nepres	, en eu e s	• •	0
	Top	n in Feet Bottom		ic Feeto	f Cement	:		
	1							
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	4 5	-						
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	0-995				Trn Numl	ber:	4186	252
Form: wr-	-20		page :	2 of 4				

File	Number:	
	4 -	

(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth in Feet	Thickness	Color and Type of Material Encountered
From To	in feet	
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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page 3 of 4

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	Ū,	
The undersigned hereby certifies the	at, to the best of his knowledge are correct record of the above descri	ıd bəd
berrer, the foregoing is a true and	Coffect fection of the above descri	neu
hole.	· · ·	,
hole.	15/1/2	
hole.	12/29/08	
bole. Driller	12/29/08 (mm/dd/year)	
hole.		
hole.		
hole.		
Driller	(mm/dd/year)	
Driller		
Driller	(mm/dd/year)	
Driller	(mm/dd/year))
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Driller FOR STATE ENG	(mm/dd/year))
Driller FOR STATE ENG	(mm/dd/year)	
Driller FOR STATE ENG	(mm/dd/year)	
FOR STATE ENC	(mm/dd/year) GINEER USE ONLY ; Location No	
FOR STATE ENC	(mm/dd/year)	

NLB

File	Number:				
	(F	or	OSE	Ųse	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: <u>NM</u> Zip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{5W_{1/4}}{\ln Lea} \frac{5W}{1/4} \frac{NE}{NE} \frac{1/4}{1/4} $ Section: $\frac{32}{32}$ Township	: <u>2/5</u> Range: <u>38</u> E _{N.M.P.M.} County.
B. X = feet, Y = fe Zone in the	eet, N.M. Coordinate System Grant.
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	
F. Lot No, Block No of Unit/Tract Subdivision recorded in	
G. Other:	
H. Give State Engineer File Number if existing well	gy Services
I. On land owned by (required): Louisiana Ener	gy Services
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	Work Phone: 806.467.0607 Home Phone: 806.467.0622
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: 12/5/08; Completed: 12/5/08 Size of hole: 7-7/8in.; Total depth of well: 39 Completed well is: Monitor (shallow, arthogen began	ft.; esian);
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File	Number:			
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Dry RECORD OF CASING Diameter Pound (inches) per f 4 PVC Sch 4	s Threads	Depth in				
Diameter Pound (inches) per f	s Threads t. per in.	Depth in				
Diameter Pound (inches) per f	s Threads t. per in.			, , , , ,		
Diameter Pound (inches) per f	s Threads t. per in.					
(inches) per f	t. per in.					
	0 2	+3		end ca		то 36
RECORD OF MUDDI	— ONG AND CEM	ENTING				
Depth in Feet	Hole	Sacks	Cubic Feet	Method of	Placement	
	Diameter 7-7/8	of mud	of Cement 20 Sacks T	rimia (Be	ntonite/	Cemen
	7-7/8 7-7/8	5	<u>20 3acks 1</u> P			
				··		
LUGGING RECORI)					
Plugging Contra	ctor:					
Add	ress:					
Plugging Me Date Well Plu						- क
Date Well Flu	iggea					
Plugging approv	red by:		State Enginee	. Donragant		50% 7 69%
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	_	n in Feet Bottom	Cubic Feeto:	E Cement		,
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File	Number:			
	(For	OSE	Use	Only)

9. LOG OF HOLE

Depth in Feet From To 0 10 10 21 21 37 37 39	Thickness in feet 10 11 16 2	Sandstone, lightly cemented, burnt orange Caliche, soft, lt orange to tan Gravelly sand, abundant chert, lt orange-tan Claystone, purple
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		- 11-
		
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			5.4 1
The undersigned hereby cert	ifies that, t	o the best of his }	nowledge and
hole.	true and corr	ect record of the a	move described
belief, the foregoing is a	true and corr	ect record of the a $\frac{17/29/08}{\text{(mm/dd/year)}}$	æove described
belief, the foregoing is a hole. Driller	true and corr	12/29/08/ (mm/dd/year)	above described
belief, the foregoing is a hole. Driller	TATE ENGINEE	/Z/Z9/08/ (mm/dd/year)	above described
FOR S Quad; FWL; FSL	TATE ENGINEE	/Z/Z9/O8 (mm/dd/year) R USE ONLY Location No. Ow This Line	
FOR S Quad; FWL; FSL	TATE ENGINEED	/Z/Z9/O8 (mm/dd/year) R USE ONLY Location No. Ow This Line	above described

1/1

File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisiana Energy Services	Work Phone: 505.394.6704
Contact: Laurie Wetherell Address: P. C. Box 1789	Home Phone:
City: Eunice	State: <u>NM</u> Zip: <u>\$823</u> 1
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $SW_{1/4} NW_{1/4} SW_{1/4} Section: 32$ Townshin Lea	ip:3/5 Range:38€ N.M.P.M. County.
B. X = feet, Y = 1 Zone in the U.S.G.S. Quad Map	feet, N.M. Coordinate System Grant.
C. Latitude: 32 d 25 m 56.857 s Longitude	
D. East (m), North (m), UTN	4 Zone 13, NAD (27 or 83)
E. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in _	of theCounty.
G. Other:	
H. Give State Engineer File Number if existing we	
I. On land owned by (required): Lea County	
3. DRILLING CONTRACTOR	
3. DIALLING CONTRACTOR	
License Number: 1575 Name: Tolon/LPE Agent: Shane Currie	Work Phone: <u>806.467.06</u> 07 Home Phone: <u>806.676.87</u> 20
License Number: 1575 Name: Talon/LPE Agent: Shane Corrie Mailing Address: 921 N. Bivins	_
License Number: 1575 Name: Tolon/LPE Agent: Shane Currie	_
License Number: 1575 Name: Talon/LPC Agent: Shane Currie Mailing Address: 921 A). Bivins City: Amarillo 4. DRILLING RECORD Drilling began: 3/23/07; Completed: 3/29/07 Size of hole: 7-7/x in.; Total depth of well: 23 Completed well is: Monitor (shallow, art Depth to water upon completion of well: DRY	State: TX Zip: 79107 Type tools: Air Cotary; of ft.; esian); ft.
License Number: 1575 Name: Talon/LPE Agent: Shane Corrie Mailing Address: 921 A). Bivins City: Amarillo 4. DRILLING RECORD Drilling began: 3/23/07; Completed: 3/29/07 Size of hole: 7-7/x in.; Total depth of well: 23 Completed well is: Manifor (shallow, art Depth to water upon completion of well: DRY	State: TX Zip: 79107 ; Type tools: Air Votary; esian); ft. ine
License Number: 1575 Name: Talon/LPE Agent: Shane Corrie Mailing Address: 921 A). Bivins City: Amarillo 4. DRILLING RECORD Drilling began: 3/23/07; Completed: 3/29/07 Size of hole: 7-7/x in.; Total depth of well: 23 Completed well is: Manifor (shallow, art Depth to water upon completion of well: DRY	State: TX Zip: 79107 Type tools: Air Cotary; of ft.; esian); ft.

File Number: (For OSE Use Only)

	0	hickness in feet	water-	bearing	format	ion	(ted Yield GPM)
RECORD O	F CASING							
(inches)	per ft.	per in. 	Top	Bottom 21 b 236	(feet) - <u>216</u> - <u>20</u>	11/14	Сар	Perforation From To N/A ZIG 23
RECORD OI	F MUDDING	AND CEM	ENTING	,				
Depth in From To	o Dia 75 7 210 7	Hole ameter - 7/8 - 7/8	Sacks of mud i -42			Method dremie -	- Ceme	nt/bonto
PLUGGING								
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Plugg Date We	Addres ging Metho	ss: od: ed:						
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Plugg Date We	Addresging Methored approved 1 - 2 - 3 - 4 - 4	ss:	in Feet	State Cubi	Enginee: c Feeto:	r Represer	ntative	1997 LPR 27 P

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9. LOG OF HOLE

Depth in Feet	Thickness	Color and Type of Material Encountered
From To	in feet	
0 10	10	SAND, loose damp tan
10 30	<u> </u>	CALICHE, soft chert gravel with crange pink
_3035		SANDY Gravelichert, dry light red sand
35 55 55 60	<u> 20</u>	CLAY, highly plastic. firm
$\frac{-55}{60} - \frac{60}{270}$	160	Claystone wi siltstone hard dry marcon & gray Claystone dry marcon wil gray mottling
220 225		Siltstone w/ claystone have, dry gery & marcon
225 240	15	Sulty claystone, dry light red to dank red/marcon
		Site (10) 100 - 100 11 190 100 100 100 100 100 100 100
		
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page 3 of 4

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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: <u>505-394-52</u> 04
Contact: Laurie Wetherell	_ Home Phone:
Address: P.O. Box 1789	
City: Eunice	_ State: <u>NM</u> Zip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $NW_{1/4} = NE_{1/4} = SW_{1/4} = Section: 32$ Townshi	p: <u>2/</u> 5 Range: <u>38 E</u> N.M.P.M. County.
B. X = feet, Y = f Zone in the U.S.G.S. Quad Map	eet, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 1.1718 s Longitude	: <u>103</u> d <u>05</u> m <u>5.5062</u> 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 _ Subdivision recorded in	of√the Coûnty.
G. Other:	
H. Give State Engineer File Number if existing we	11: <u>CP-999</u>
I. On land owned by (required): Louisiana Ener	gy Services 7
3. DRILLING CONTRACTOR	- 22 - 22
License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: $12/4/08$; Completed: $12/4/08$ Size of hole: $7-7/8$ in.; Total depth of well: 43 Completed well is: Monitor (shallow, art Depth to water upon completion of well: Dry	ft.; esian);
Do Not Write Below This L	ine
File Number: $\frac{CP-999}{\text{Form: wr-20}}$ page 1 of 4	rn Number: 4/5856

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File	Number	:			
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Depth in Feet Hole Sacks Cubic Feet Method of Placement From To Diameter of mud of Cement 0 5 7-7/8 20 Sacks Trimie (Bentonite/Ceme 5 22 7-7/8 5 Poured (Bentonite chip LUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: State Engineer Representative	Depth in Feet From To Dry	in feet	water-b	earing ———	formati	on (ted Yie GPM)	eld
Diameter Pounds Threads Depth in Feet Length Type of Shoe Perforation (inches) per ft. per in. Top Bottom (feet) From To From To From To From To From To From To From To Diameter of Mud Diameter of Mud Diameter of Mud Diameter of Mud Diameter of Mud Diameter of Mud Diameter of Mud Diameter of Mud Diameter of Mud Diameter of Mud Diameter of Mud Diameter of Mud Diameter Diameter of Mud Diameter Diameter of Mud Diameter Of Cement Diameter Of Top Diameter Doured (Bentonite Ceme Doured (Bentonite Chip Diameter Representative Diameter Representative Diameter Representative Diameter Representative Diameter Representative Diameter Top Bottom Diameter Cubic Feetof Cement Diameter Representative Diameter Diameter Representative Diameter Diameter Representative Diameter Diameter Representative Diameter Diameter Diameter Di								
(inches) per ft. per in. Top Bottom (feet) From To 4 PVC Sch 40 2 +3 43 46 end cap 28 43 ECORD OF MUDDING AND CEMENTING Depth in Feet Hole Sacks Cubic Feet Method of Placement From To Diameter of mud of Cement 0 5 7-7/8 20 Sacks Trimie (Bentonite/Ceme 5 22 7-7/8 5 Poured (Bentonite chip 20 Sacks Plugging Method: Date Well Plugged: Plugging approved by: State Engineer Representative No. Depth in Feet Cubic Feetof Cement Top Bottom 1	ECORD OF CASIN	≀G						
Depth in Feet Hole Sacks Cubic Feet Method of Placement From To Diameter of mud of Cement 0 5 7-7/8 20 Sacks Trimie (Bentonite/Ceme 5 22 7-7/8 5 Poured (Bentonite chip LUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: State Engineer Representative No. Depth in Feet Cubic Feetof Cement Top Bottom 1 2 3 4 5 5 5 5 6 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 8 7 7 7 7 8 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 7 8 7 7 7 8 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 8 7 7 7 7 7 7 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 8 7	(inches) per	ft. per in.	Top B	ottom 43	(feet) 46	end cap	From 28	To 43
From To Diameter of mud of Cement 0 5 7-7/8 20 Sacks Trimie (Bentonite/Ceme 5 22 7-7/8 5 Poured (Bentonite chip LUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: State Engineer Representative No. Depth in Feet Cubic Feetof Cement Top Bottom 1 2 3 4 5 5 5 7-7/8	ECORD OF MUDE	DING AND CEM	ENTING					
Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: State Engineer Representative No. Depth in Feet Cubic Feetof Cement Top Bottom 1 2 3 4	From To 0 5	Diameter 7-7/8 7-7/8	of mud	of Ce 20 S	ment Backs I	rimie (Bento	onite/	<u>Cemer</u>
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9. LOG OF HOLE

	in Feet	Thickness	Color and Type of Material Encountered
From	To	in feet	
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
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The undersigned hereby certifies that, to the	best of his knowledge	and ·
pelief, the foregoing is a true and correct re	ecord of the above desc	
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sole.	Z/24/08 (S)	`:
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Driller (m) FOR STATE ENGINEER USE O	Z/24/08 (S) m/dd/year) DNLY	`:
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Who

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		(For	OSE	Use	Only

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

Name: Louisiana Energy Services	Work Phone:	505-394-5204
Contact: Jaurie Wetherell	Home Phone:	303 331 32
Contact: Laurie Wetherell Address: P.O. Box 1789		
City: Eunice	State: NM Zip	: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)		
A. $\frac{NE}{1/4}$ $\frac{NE}{2}$ $\frac{1/4}{2}$ $\frac{SW}{2}$ $\frac{1/4}{4}$ Section: $\frac{32}{32}$ Township	: <u>2/5</u> Range:	38E N.M.P.M. County.
B. X = feet, Y = feet Zone in the U.S.G.S. Quad Map	et, N.M. Coord	inate System Grant.
C. Latitude: 32 d 26 m 1.071 s Longitude:	<u>103</u> d <u>05</u>	m <u>3.048</u> s
D. East (m), North (m), UTM	Zone 13, NAD _	_ (27 or 83)
E. Tract No, Map No of the	Hydrogr	aphic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in		of the
G. Other:		in in
H. Give State Engineer File Number if existing wel	1: <u>CP-998</u>	<u> </u>
I. On land owned by (required): Louisiana Energ	y Services	7 3
I. On land owned by (required): Louisiana Energy 3. DRILLING CONTRACTOR	y Services	ROFFICE P 1: 21
	Work Phone:	1: net 1
3. DRILLING CONTRACTOR License Number: 1575 Name: Talon Drilling Agent: Shane Currie	Work Phone: Home Phone:	806.467.0607 806.467.0622
3. DRILLING CONTRACTOR License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	Work Phone: Home Phone:	806.467.0607 806.467.0622
3. DRILLING CONTRACTOR License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins City: Amarillo	Work Phone: Home Phone: State: TX Zip Type tools: A ft.; sian);	806.467.0607 806.467.0622 9: 79107
3. DRILLING CONTRACTOR License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins City: Amarillo 4. DRILLING RECORD Drilling began: 12/4/08; Completed: 12/4/08; Size of hole: 7-7/8 in.; Total depth of well: 250 Completed well is: Monitor (shallow, arte	Work Phone: Home Phone: State: TX Zip Type tools: A ft.; sian); ft.	806.467.0607 806.467.0622 9: 79107
3. DRILLING CONTRACTOR License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins City: Amarillo 4. DRILLING RECORD Drilling began: 12/4/08; Completed: 12/4/08; Size of hole: 7-7/8 in.; Total depth of well: 250 Completed well is: Monitor (shallow, arte Depth to water upon completion of well: Dry	Work Phone: Home Phone: State: TX Zip Type tools: A ft.; sian); ft.	806.467.0607 806.467.0622 9: 79107

Monitor 21,38,32,32

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

From To	in feet	water-b	earing	f formati	on	•	GPM)	
Dry								
	_	-						
RECORD OF CASIN	iG							
Diameter Poun	ds Threads	Depth in	n Feet	Length	Type o	f Shoe	Perfo	ration
(inches) per	ft. per in.	Top H	Bottom	(feet)			From	
4 PVC Sch				253				
RECORD OF MUDI						·		
Depth in Feet			Cubic	Feet	Method	of Pla	acement	:
From To	Diameter	of mud	of Ce	ment				
0 20	7-7/8		20 8	Sacks <u>T</u>	<u>rimie</u>	(Bento	onite,	/Cemer
<u>20</u> <u>206</u>	7-7/8	68		<u>P</u>	<u>oured</u>	(Bento	<u>nite</u>	<u>chips</u>
					 			
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page 2 of 4

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9. LOG OF HOLE

Depth in From 0 12 25 36 70 72 153 215 218 230 235	To 12 25 36 70 72 153 215 218 230 235 250	Thickness in feet 12 13 11 34 2 81 62 3 12 5 15	Sand, lightly cemented, burnt orange Caliche, relatively soft, gray to lt orange Sandstone, lightly cemented, burnt orange Claystone, maroon Siltstone, hard gray Claystone, light red with maroon to purple Claystone, maroon to lt red Siltstone, interbeded w/claystone, gray Claystone, interbeded siltstone, maroon-gray Siltstone, interbeded w/claystone, gray Claystone, interbeded w/claystone, gray Claystone, interbeded w/claystone, gray Claystone, lt red to maroon
			
			
			
			
			
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File	Number	:			
		(For	OSE	Use	Only)

Name: Louisiana Energy Services Contact: Laurie Wetherell Address: P.O. Box 1789	Work Phone: 505-394-5204 Home Phone:
City: Eunice	
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{3E}{1/4}$ $\frac{NE}{NE}$ 1/4 Section: $\frac{32}{32}$ Township	:2/S Range:38EN.M.P.M. County.
B. X - feet, Y = feet, U.S.G.S. Quad Map	eet, N.M. Coordinate System Grant.
C. Latitude: 32 d 26 m 1.0998 s Longitude	: <u>103</u> d <u>05</u> m <u>1.086</u> 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 Subdivision recorded in	of the County 2
G. Other:	्राच्या । विकास
H. Give State Engineer File Number if existing we	11: <u>CP-997</u>
I. On land owned by (required): Louisiana Ener	gy Services
	dy pervices
3. DRILLING CONTRACTOR	7
License Number: 1575 Name: Talon Drilling Agent: Shane Currie Mailing Address: 921 N. Bivins	Work Phone: 806.467.060 Home Phone: 806.467.062
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: $12/4/08$; Completed: $12/4/08$ Size of hole: $7-7/8$ in.; Total depth of well: 40 Completed well is: Monitor (shallow, art Depth to water upon completion of well: Dry	<u>) </u>
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ECORD OF CASE	NG		
(inches) per	ft. per in.	Depth in Feet Length Type of Shoe Top Bottom (feet)	rom To
4 PVC Sch	402	+3 40 43 end cap	
ECORD OF MUD	DING AND CEM	ENTING	
Depth in Feet	Hole	Sacks Cubic Feet Method of Pl	acement
From To	Diameter	of mud of Cement	anita/Camar
$-\frac{0}{5}$ $\frac{5}{20}$	7-7/8	20 Sacks Trimie (Bent 5 Poured (Bent	onite chips
LUGGING RECO	RD		
Plugging Cont	ractor:		
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9. LOG OF HOLE

Depth From	in Feet 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	Caliche, soft, gray to lt orange Gravelly sand, abundant chert, orange sand
37	40	3	Claystone, maroon
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The undersigned hereb belief, the foregoing nole.	is a true and	correct r	ecord of the $\frac{2}{2}$	above desc <u>#</u> ±bec <u>~</u> -
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Quad; FWL; FS	FOR STATE ENC	GINEER USE	ONLY	
Quad; FWL; FS e Number: CP-90	FOR STATE ENC L; Use Do_Not_Writ	GINEER USE	ONLY on No	

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File	Number:			
	(For	OSE	Use	Only)

1. OWNER OF WELL	
1. OWNER OF WELL Name: Louisiana Energy Services Contact: Lange Well and	Work Phone: 505. 394, 5704
Address: P.O. Box 1789	
City: Eunice	State: N M Zip: 8823(
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{NW_{1/4}}{\ln \frac{SE}{Lea}} = \frac{1/4}{SW} \frac{SW}{1/4}$ Section: 32 Towns	hip: 2/5 Range: 38 E. M.P.M. County.
B. X = feet, Y = Zone in the U.S.G.S. Quad Map	
C. Latitude: 37 d 25m 52.499 s Longitu	de: <u>/03</u> d <u>05</u> m <u>7,607</u> s
D. East (m), North (m), U	
E. Tract No, Map No of the	Hydrographic Survey
F. Lot No, Block No of Unit/Tract Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing	well: $CP-95L$
I. On land owned by (required): Lez County,	_ `
3. DRILLING CONTRACTOR	
Licence Numbers 1575	
License Number: 1575 Name: Taken / LPG	Work Phone: XII 417 A:07
Name: Talon/LPG Agent: SHANE CULVIE Mailing Address: 921 N. Bivins	Home Phone: 806. 676. 8720
City: Amavillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: 3/28/07; Completed: 4/2/07 Size of hole: 7-7y in.; Total depth of well: 2 Completed well is: Monitor (shallow, a Depth to water upon completion of well: DRY	rtesian);
Do Not Write Paler This	TO ER O
Do Not Write Below This	
File Number: $(P-956)$ Form: wr-20 page 1 of 4	Trn Number: 37698655
m1 · 1	21.38.32.341

Depth in Feet Thickness From To in feet D2Y		Estimated Yield (GPM)
RECORD OF CASING		
Diameter Pounds Threads (inches) per ft. per in. 4	Top Bottom (feet) C 217.1 217.1 V/2	From To
RECORD OF MUDDING AND CEN	MENTING	
Depth in Feet Hole From To Diameter O 15 7-7/8 7 7/8	of mud of Cement i ZO France	of Placement - <u>Cerneut / bentoni</u> bentonite chips
PLUGGING RECORD		
Plugging Contractor: Address: Plugging Method: Date Well Plugged:		
Plugging approved by:		
	State Engineer Repres	entative
Top 1	h in Feet Cubic Feetof Cement Bottom	ROSWELL F
2 3 4 5		
3		1 0 2 05
3 4 5 	o Not Write Below This Line	2: 05
3 4 5		

File	Number	:			
		(For	OSE	Use	Only

9. LOG OF HOLE

Depth in Fee From T	et Thickness To in feet	Color and Type of Material Encountered	
0 5	5	SAND, fine, damp, burnt orange	
5 25	20	Caliche, soft, dry, gray to tau	
75 40	15	SANDY Gravel, rhert, dry, burnt orange	
40 60	20	Clay firm, dry, marron w/ grav motiline	-1
<u> 60 85</u>			9001
<u>85 165</u>		- Claystone , dry marcon w/ gray mottling	,
165 190		. Claystone wil siltstone, hard, dry maroon	
<u> </u>		claystone, hard, dry marcon w/ gray mottly	29
235 240 235 240		Clarstone, w/ siltstone hard, dry light and	11.
273 241)	claustone, hard, dry, marcon ill gray mot	trug
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File Number:	P-956	Trn Number: 376956	
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The undersign belief, the factor hole.	ed hereby ce oregoing is	rtifies that a true and c	c, to the best correct record	of his know	wledge and ve described	
belief, the f	ed hereby ce oregoing is	a true and o	to the best correct record $\frac{04/24}{(mm/dd/}$	of the abov	wledge and ve described	
belief, the f	ed hereby ce oregoing is	a true and o	correct record	of the abov	wledge and ve described	
belief, the f	oregoing is	a true and o	O4/24	of the abov	wledge and ve described	I I
belief, the f hole.	oregoing is	a true and o	O4/24 (num/dd/	of the abov	ve described	STATE E
belief, the f hole.	oregoing is	a true and o	O4/24	of the abov	ve described	STATE ENGLISH
belief, the finole.	oregoing is Drill	er	OY/24 (num/dd/	of the above your property of the above your pro	ve described	STATE Education
belief, the finole.	oregoing is Drill	er	O4/24 (num/dd/	of the above your property of the above your pro	ve described	STATE ENGINEED ME
belief, the finole.	oregoing is Drill	er	OY/24 (num/dd/	of the above your property of the above your pro	ve described	STATE ENLISH MEXICO
Delief, the final hole.	oregoing is	er R STATE ENGIN	OY/24 (num/dd/	d of the above 1/07 (year)	ve described	STATE ENGINE XICO
belief, the finole.	oregoing is Orill Drill FOF FOF P-956	er R STATE ENGIN	OY /24 (mm/dd/ NEER USE ONLY ; Location No	of the above the property of t	ve described	



File	Number	:			
		(For	OSE	Use	Only)

1. OWNER OF WELL	
Name: Louisiana Energy Services	Work Phone: 505.394.5204
Contact: Laurie Wetherell Address: P.O. Box 1789	Home Phone:
1002 cos. 7. 0. 668 1187	-
City: Eunice	State: NM Zip: <u>88231</u>
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 in Lea	o: <u>2/</u> 5 Range: <u>38E</u> N.M.P.M. County.
B. X = feet, Y = feet. Zone in the feet.	eet, N.M. Coordinate System Grant.
C. Latitude: 32 d Z6 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: CP-946
I. On land owned by (required): Lez County,	NM
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Taicn/LPE Agent: Shave Curre Mailing Address: 97(A) Bivins	Work Phone: 806.467.0601 Home Phone: 806.676.8220
City: Amavillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: 3/16/01; Completed: 4/03/07; Size of hole: 7-1/x in.; Total depth of well: 225. Completed well is: Monitor (shallow, arted Depth to water upon completion of well: 220.49	と ft.; ssian); ssian
Do Not Write Below This Li	ne J ES
File Number: $\frac{CP-946}{\text{Form: wr-20}}$ page 1 of 4	n Number: 37694457 21,38,32,422
Meritar	21.38,32.422

File	Number	:			
		(For	OSE	Use	Only)

From To in feet 720.49 225.8 5.31		Estimated Yield (GPM) 0-
RECORD OF CASING		
Diameter Pounds Threads (inches) per ft. per in. 4 \$\section 40 PVC Z 4 \$\section 40 PVC Z 7		From To
RECORD OF MUDDING AND CEM	ENTING	
Depth in Feet Hole From To Diameter 0 15 1-7/6 15 200 1-7/8	of mud of Cement	of Placement -bentouite/cemen - bentouite/pellet
LUGGING RECORD		
Plugging Method:		
Plugging approved by:		
	State Engineer Represe	entative
	in Feet Cubic Feetof Cement Bottom	ROSVELL EXAME 2007 APR 27 PG
Top 1 2 3 4 5	Bottom	27 in 2:
Top 1 2 3 4 5	Not Write Below This Line	27 io 2:

File	Number	:				
		(For	OSE	Use	Only)	

9. LOG OF HOLE

Depth	in Feet	Thickness	Color and Type of Material Encountered
From	То	in feet	
	_ Z		SAND, longe day, boant orange
_ Z	_ 25	18	CALICHE, Mcdarately hand, dry gray
	35	15	Gravely SAND, fine arrived light array
35	<u> 70</u>	35	CLAY, highly plastic, firm, dry, marcon
	<u> 80</u>	10	CHAY Stones ory light red cuttings
60	95	15	Claystone, or maroon with gray and green mottling
- 45	100	5	Claystone, ory maroon with gray and green mottling claystone, interbedded silfstone, ory maroont gray
<u> 100 </u>	115		Claystone, firm dry marcon f and
125	125	i-0 50	claystone, interpedded sittstone marcon
175	185	10	Claystone, dry marony
182	195		The state of the s
195		5	Siltstone, hard dry gray Siltstone, hard dry gray
200	215	15	claystone, hard dry mavoon
215		5	siltstone, damp, gray
220			claystone, firm, dry, marcon
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		Do	O Not Write Below This Line
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	orm: wr-2		Trn Number: 376944
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			21,38,32,422
			Moniter 21,38,32,422
			romer
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File	Number:				
	(Fo	r	OSE	Use	Only

The undersigned hereby certifies that, to the best of his knobelief, the foregoing is a true and correct record of the alphole.	nowledge and bove described
belief, the foregoing is a true and correct record of the al	nowledge and bove described
belief, the foregoing is a true and correct record of the al	nowledge and bove described
belief, the foregoing is a true and correct record of the al	nowledge and bove described
belief, the foregoing is a true and correct record of the al	nowledge and bove described
belief, the foregoing is a true and correct record of the all hole. $ \frac{O4/z4/o7}{\text{Driller}} $ Driller $ \frac{O4/z4/o7}{\text{(mm/dd/year)}} $	bove described
Driller FOR STATE ENGINEER USE ONLY	bove described
Driller Driller Driller Driller Driller	bove described
Driller FOR STATE ENGINEER USE ONLY	bove described ROS ROS ROS ROS ROS ROS ROS ROS ROS ROS
Driller FOR STATE ENGINEER USE ONLY	bove described ROSNELL FR 27
FOR STATE ENGINEER USE ONLY Quad; FWL; FSL; Use; Location No Do Not Write Below This Line	bove described ROS ROS ROS ROS ROS ROS ROS ROS ROS ROS
FOR STATE ENGINEER USE ONLY Quad; FWL; FSL; Use; Location No Do Not Write Below This Line Trn Number:	bove described ROS ROS ROS ROS ROS ROS ROS ROS ROS ROS
FOR STATE ENGINEER USE ONLY Quad; FWL; FSL; Use; Location No Do Not Write Below This Line Trn Number: Form: wr-20 Page 4 of 4	ROSNELL ROSNELL CONTRO



File	Number:			
	(For	OSE	Use	Only)

1. OWNER OF WELL Name: Louisiana Energy Services Contact: Laurie Wethereil Address: P.O. Box 1789	Work Phone: 505-314.5204 Home Phone:
City: Eunice	State: NIM Zip: 88231
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{SE}{1/4}$ $\frac{SE}{1/4}$ $\frac{SE}{1/4}$ Section: $\frac{32}{32}$ Township	:2/5 Range:38EN.M.P.M.
B. X = feet, Y = fe Zone in the	et, N.M. Coordinate System Grant.
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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: <u>CP-945</u>
I. On land owned by (required): Lea County,	NM
3. DRILLING CONTRACTOR	
License Number: 1575 Name: Taion/LPE Agent: Shave Carrie Mailing Address: 921 N. Bivins	Work Phone: 806,467.0607 Home Phone: 806.676.8720
City: Amarillo	State: TX Zip: 79107
4. DRILLING RECORD	STA ROS 700
Drilling began: 3/14/01; Completed: 4/3/07; Size of hole: 1/8 in.; Total depth of well: 241. Completed well is: Monitor (shallow, arted Depth to water upon completion of well: D2Y	Type tools: Air Retark E
Do Not Write Below This Li	
File Number: $\frac{CP-945}{\text{Form: wr-20}}$ page 1 of 4	n Number: <u>376887</u>
	21,38,32,444

(inches) per ft. per in. T Y Yh Ych	TING sacks of mud	Cubic of Cem	(feet)	pvc cu	of Pla	From NA ZZI.Z	To Z41.	2.Z
Diameter Pounds Threads D (inches) per ft. per in. T Ly Sch 40 PW Z RECORD OF MUDDING AND CEMEN Depth in Feet Hole S From To Diameter of T-7/8 TS T-7/8 PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: No. Depth in Top 1 2 3 4 5	TING acks f mud	Cubic of Cem	(feet)	PVC CH Method	of Pla	From NA ZZI.Z	To Z41.	2.Z
Diameter Pounds Threads D (inches) per ft. per in. T Y Sth YO PK Z U Sth YO PK Z RECORD OF MUDDING AND CEMEN Depth in Feet Hole S From To Diameter of T-7/8 TS T-7/8 PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: No. Depth in Top 1 2 3 4 5	TING acks f mud	Cubic of Cem	(feet)	PVC CH Method	of Pla	From NA ZZI.Z	To Z41.	2.Z
(inches) per ft. per in. T Y Yh Ych	TING acks f mud	Cubic of Cem	(feet)	PVC CH Method	of Pla	From NA ZZI.Z	To Z41.	2.Z
Style of the style	TING sacks of mud	221, 2 <u>241, 2</u> Cubic of Cen <u>20</u> <u>1/4</u>	20 Feet nent -	PVC cu	of Pla	N/A ZZI.Z	z41,	n+
PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: No. Depth is Top 1 2 3 4 5 1 1 2 3 4 5	TING acks of mud	Cubic of Cen	Feet ment	PVC cu	of Pla	icement	cemei	n \
Depth in Feet Hole S From To Diameter of T-1/y T-5 Z(5 T-1/y PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Feet Hole S Top 1 2 3 4 5	TING Tacks of mud	Cubic of Cen	Feet nent	Method	of Pla	icement	cemei	n \
Depth in Feet Hole S From To Diameter of O 15 7-1/y 75 Z(5 7-1/y PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Top 1 2 3 4 5	acks of mud 48	of Cen	nent)	Ironie	- bent	onite/	cemer	1
Depth in Feet Hole S From To Diameter of O 15 1-1/y T5 Z(5 7-1/y T5 Z(5 7-1/y PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Top 1 2 3 4 5	acks of mud 48	of Cen	nent)	Ironie	- bent	onite/	cemer	<u>a 1</u>
From To Diameter of 15 1-7/8 1	f mud	of Cen	nent)	Ironie	- bent	onite/	cemer	n 1
From To Diameter of 15 1-7/8 1	f mud	of Cen	nent)	Ironie	- bent	onite/	cemer	<u>a f</u>
C 15 7-1/8 75 215 7-1/4 PLUGGING RECORD Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Top 1 2 3 4 5	। 4 <u>४</u>		4	tremie	- bent	onite/	cemer cinips	<u>n</u>
Plugging Contractor: Address: Plugging Method: Date Well Plugged: Plugging approved by: No. Depth in Top 1 2 3 4 5				<u></u>	- bent	onite i	<u>cinips</u>	
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NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

From	То	in feet	
0	10		SAND, fine-grained, loose dry, brown to light orange Cariche, moderately soft, dry, orange and white clay, stiff dry, gray and marcon, mottled
10	25	15	CALICLE McDevately soft, dry, orange and while
-10	(۵۵	35	Clay Stiff dry, orall and majoon, mottled
60	14 6		claretone, dry marcon
	200	10	Siltstone, hard damp : light gray
<u>190</u> 700	260	<u> </u>	claystone, firm dry marron
	<u> </u>	<u>(6 ()</u>	CLAUSTONE) FIRME ON Y MAINTI
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File Numb	er: <u>(</u>	11743	Trn Number: 376887
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pelief, nole.	, the fore	going is Dril	a true ar ler PR STATE EN; Use Do Not Wr	NGINEER U	O4 24 (mm/dd/)	of the a	bove de	scribed 201 APR 27 12 1:
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File	Number: _			
	(For	OSE	Use	Only)

1. OWNER OF WELL . Name: Louisiana Energy Services	Work Phone: <u>505. 394.6</u> 204
Contact: Laurie Wetherpil	
Address: P.O. Box 1789	-
City: Eunice	State:NM Zip: <u>88231</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{NW}{in}$ 1/4 $\frac{SW}{Lea}$ 1/4 $\frac{SE}{Lea}$ 1/4 Section: $\frac{32}{Lea}$ Township	:3/5 Range:38EN.M.P.M. County.
B. X = feet, Y = fe Zone in the U.S.G.S. Quad Map	et, N.M. Coordinate System Grant.
C. Latitude: 37 d 25 m 50.439 s Longitude:	103 d 04 m 57.541 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 Subdivision recorded in	of the County.
G. Other:	
H. Give State Engineer File Number if existing wel	1: CP-957
I. On land owned by (required): Lea County	
3. DRILLING CONTRACTOR	•
License Number: 1575 Name: Taion / LPE Agent: Shave Corre Mailing Address: 921 N. Bivins	Work Phone: 806.467.0607 Home Phone: 806.676.8270
City: Amarillo	State: 7X Zip: 79107
4. DRILLING RECORD	
Drilling began: $3/20/07$; Completed: $4/3/07$; Size of hole: $7-7/8$ in.; Total depth of well: 231.1 Completed well is: 900 (shallow, arte Depth to water upon completion of well: 98.1	<u>4</u> ft.;
Do Not Write Below This Li	TATE ENGLY ROSWELL, THE APR 2
File Number: $\frac{CP-957}{\text{Form: wr-20}}$ page 1 of 4	n Number: 376957
Monitor	

File Number:

(For OSE Use Only)

From To in feet	Description of water-bearing formation	
RECORD OF CASING		
(inches) per ft. per in. <u>4 </u>	Depth in Feet Length Type of Top Bottom (feet) O 211.4 21.4 1.4 20 PUC en	From To 1A
RECORD OF MUDDING AND CEM	ENTING	
Depth in Feet Hole From To Diameter $ \begin{array}{cccccccccccccccccccccccccccccccccc$	of mud of Cement	of Placement - coment/benton - bentonite chips
PLUGGING RECORD		
Address:		
Plugging approved by:		
	State Engineer Repres	encative
_	in Feet Cubic Feetof Cement	STATE ETA HETA POSWELL HETA 27 TO
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ile Number: <u>CP-957</u> Form: wr-20	Not Write Below This Line Trn Numb page 2 of 4	er: <u>376957</u>
		1,38,32,431

File Number:

(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

Depth i		Thickness	Color and Type of Material Encountered
From	То	in feet	Carlo Contract
	10	10	SAND fine, loose, dry overnge to tan
10	<u>35</u> 40	<u>25</u>	SANDY GRAVEL, MEROON
<u>35</u> 40	_ 85	45	Clay, highly plastic firm dry maroon
85	95	10	Siltstone haird ory 9724
95	105	(0	clarstone, light red
105	100	4	siltstone w/ claystone gray & marcou
110	170	60	claystone, dry maroous whorzy motiling
170	_175	5.5	Siltstone wil claystone have dry gray & marcon
132	720	25	Claystone, Ory Marcon
230	<u>230</u> _240	10	siltstone w/ Claystone dry gray & marron
070	<u>~40</u>	<u> </u>	Clarstone il some silt marrora il gray mottling
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elief, the fole.	oregoing is	ler	and corre	4/3 (mm/dd	rd of the zy /ZW d/year)	above o	described
elief, the fole.	oregoing is	ler	and corre	4/3 (mm/dd	rd of the zy /ZW d/year)	above o	described
elief, the fole.	oregoing is Dril	ler OR STATE	and corre	4/3 (mm/do	rd of the Zy /ZW /ZW /ZW /ZW /ZW /ZW /ZW /ZW /ZW /ZW	e above (described
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elief, the fole.	FO; FSL_	ler OR STATE:	and corre	WE ONL	rd of the ZY /ZW d/year) Y	above 6	described



File	Number	:			
		(For	OSE	Use	Only

1. OWNER OF WELL Name: Waste Control Specialists, LLC Contact: Mike Burney Address: 9998 w Highway 176 Home Phone: 868-789-2183 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: 21 S Range: 38 E N.M.P.M. County.
B. X = feet, Y = feet, N.M. Coordinate System Zone in the Grant. U.S.G.S. Quad Map
C. Latitude: 3Z d Z6 m Z9 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 Subdivision recorded in sounty.
G. Other:
H. Give State Engineer File Number if existing well: $\frac{CP-979}{CP-979}$
I. On land owned by (required): Waste Control Specialists, L年 页异
3. DRILLING CONTRACTOR
License Number: 1575 Name: Talon Drilling, L.P. Work Phone: 806-467-0607 Agent: Shane Currie. Home Phone: 806-676-8220
City: Amarillo State: TX Zip: 79107
4. DRILLING RECORD
Drilling began: \(\frac{2\lambda 08}{8}\); Completed: \(\frac{2\lambda 08}{8}\); Type tools: \(\frac{\lambda \cdot \text{Rotary Rig}}{\text{Size of hole: } \frac{5\lambda}{8}\) in.; Total depth of well: \(\frac{2\text{S}}{2\text{S}}\) ft.; Completed well is: \(\frac{\text{Monitor}}{\text{Completion of well: } \frac{\text{Dry}}{\text{ft}}\) ft.
Do Not Write Below This Line
File Number: <u>CP-979</u> Trn Number: <u>399475</u> page 1 of 4
Meniter 21.38.33,122

File	Number:				
	(F	or	OSE	Use	Only)

	Thickness in feet	Water- Dyy	-bearing		on		GPM)	
RECORD OF CASING		-					-	 -
	Threads per in.	Top	Bottom 28	(feet) _ <u>28</u> _	Puc end	саР	From <u>13</u>	To 28
RECORD OF MUDDING								
From To Di			of Ce	<u></u>	remie -	- beat	onite/	ceme
PLUGGING RECORD								
Plugging Contract								
Plugging Contract Addre Plugging Meth Date Well Plugg	ss:							
Adare	od: ed:							E 0
Addre Plugging Meth Date Well Plugg	od: ed:						e	
Plugging Meth Date Well Plugg Plugging approved	od: ed:		State :	Engineer	Represe		e	
Plugging Meth Date Well Plugg Plugging approved	ss: od: ed: by:	in Feet	State :	Engineer	Represe		e	
Plugging Meth Date Well Plugg Plugging approved	by:	in Feet	State :	Engineer C Feetof	Represe		e	

File	Number:				
	(Fc	r	OSE	Ŭsе	Only)

9. LOG OF HOLE

0.5		in feet	Surface Soil
15	0.5	14,5	
	15	2	Gravelly Sand
17	75		Clavey Silty Sand
25	28.5	3-5	gray sandstone
	<u></u>		52.142.101.6
			
			
			
			(C) (C) (C) (C) (C) (C) (C) (C) (C) (C)
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The undersigned hereby cerbelief, the foregoing is a hole. Drille	true and	correct	e best of hi record of th OS/03/200 mm/dd/year)	s knowled e above d	lge and lescribe
		======	z========		
	 STATE ENGI				
FOR	STATE ENGI	INEER USE	ONLY		
FOR	STATE ENGI	NEER USE	ONLY on No		
FOR : Quad; FWL; FSL	STATE ENGI _; Use	NEER USE	ONLY on No.		



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

1. PERMIT HOLDER(S)	
Name: WASTE CONTRÔL SPECIALISTS Address: P.O. BOX 1129	Name:
City: ANDREWS	Address:City:
State: TX Zip: 79714	City: State:Zip:
Phone: (505) 394-4300	Phone:
Contact: MICHAEL BURNEY	
Contact Phone: (505) 394-4300	
2. STATE ENGINEER REFERENCE NUMBE File # CP 975 EXPLORE , Well	RS: #C.P. 975
3. LOCATION OF WELL (The Datum Is Assum	ed To Be WGS 84 Unless Otherwise Specified)
Lafitude: 32 Deg 25	Min 45.8 Sec
Longitude: 103 Deg 04	Min
(Enter Lat/Long To At I	Least 1/10th Of A Second)
Datum If Not WGS 84:	Min 20.4 Sec Least 1/10 th Of A Second)
4. DRILLING CONTRACTOR	
License Number: WD1184	77. 77. 77. (100) 500,000
Name: WEST TEXAS WATER WELL SERV	1CE 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:	· · · · · · · · · · · · · · · · · · ·
RONN	Y KEITH
	_ ; 5
	The same of the sa
5. DRILLING RECORD	2. ②
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 Artesia	ns)
Depth To Water First Encountered: 1,092	(ft);
Depth To Water Upon Completion Of Well:	N/A (ft).
TRN Number: 396028 Form: wr-20 May 07	Line File Number:
pa	ge I of 4 21,38,33,333
>	21.38.33.333 Notere

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

6. RECORD OF CASING

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

7. RECORD OF MUDDING AND CEMENTING

Depth (feet)	Hole (diameter)	Mud Used (# of sacks)	Cement (cubic feet)	Method of Placement TRIMMIE POSITIVE	
0 - 40	17-1/2		35		
0 - 1,440	12-1/4		574		
1,380-2,020	7-7/8		275	TRIMMIE	
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8. LOG OF HOLE. For Each Water Bearing Strata, Estimate The Yield Of The Formation In Gallons Per

Minute.						
Dept					•	
(fee		Thickness	For Water Bearing			
From	To	(Feet)	Strata	Color	and Type of Material Encour	ntered
		;	Enter The Estimated			
			Yield in GPM	ļ	 -	
			SEE ATTACHED	GEOLOGIC	LOG	
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Enter M	ethod (Jsed To Estin	nate Yield: <u>"/</u> A		_	
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Tm Num	ber:				File Number:	
Form wr-20 May 07		page	3 of 4			

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CP-975 Geologic log 0-6 ft (a) pad fill and fine brown sand 6-10 ft 4 white sandy limestone (Mescalero caliche) sand, light brown, and brown calcareous sandstone (Gatuña Formation) 10-29 ft 19 29-576 ft interbedded sandstone, siltstone, and claystone; reddish-brown to gray; bioturbated (Cooper Canyon Formation) 576-708 ft sandstone and siltstone, gray to reddish brown (Trujillo Formation) 708-1092 ft interbedded very fine sandstone and siltstone, gray to dark reddish brown (Tecovas Formation) 1092-1384 ft gray, fine sandstone with interbedded reddish brown and weak red siltstone and claystone (Santa Rosa Formation) 1384-1566 ft reddish brown, very fine sandstone and siltstone, with some fibrous gypsum in lower part (Dewey Lake Formation) 1566-1602 ft gray anhydrite beds, with intermediate reddish-brown and gray siltstone (Forty-niner Member of the Rustler Formation) 1602-1609 ft gray anhydrite and wavy thin laminae of dolomite (Magenta Dolomite Member of the Rustler Formation) 1609-1736 ft gray anhydrite beds, with intermediate halite including anhydrite and polyhalite (Tamarisk Member of the Rustler Formation) 711736-1807 ft halite with thin two thin anhydrite beds and basal reddish-brown, very fine sandstone (Los Medaños Member of the Rustler Formation) 1807-2020 ft halite with anhydrite/polyhalitic marker beds (MB103 and uppermost MB109) (Salado Formation)

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9. ADDITIONAL STATEMEN	TS OR EXPLANATIONS:	
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and correct record of the above d	that, to the best of his or her knowledge a escribed bore hole. The undersigned furtice Of The State Engineer and permit hold	her certifies that he or she will
tonny text	05-12-08	
Driller /	(mm/dd/year)	
	Do Not Write Below This Line	
Trn Number:		File Number:
Form wr-20 May 07	page 4 of 4	The Hunder,

File Number: For OS Godly'

NEW MEXICO OFFICE OF THE STATE ENGINEER APPLICATION FOR PERMIT TO DRILL AN EXPLORATORY WELL

2	-24674
	132000

1. APPLICANT: Weste Control Specialists LLC	Work Phone:	888-789	I-2783	
Name: Waste Control Specialists LLC Contact: Mike Burney	Home Phone:	505-394	-4300	
Contact: Mike Burney Address: 9998 W. Highway 176	neme in the			
City: Andrews	State: TX Zig	p: 7971	4	-
2. LOCATION OF WELL (A, B, C, or D required, E or F if known):				
A. NE 1/4 NW 1/4 NICh/4 Section: 33 Township in Lea	: <u>2/5</u> Range:	<i>38€</i> N.	M.P.M. County.	
B. X = feet, Y = fe	et, N.M. Coord	dinate	System	n
U.S.G.S. Quad Map				
C. Latitude: 32 d 26 m 30.145 s Longitude:	103 d 04	_m 10.96	§2s	3
D. East (m), North (m), UTM	Zone 13, NAD	(27	or 83)	ļ
E. Tract No, Map No of the	нуагод	rapnic	Survey	7
F. Lot No, Block No of Unit/Tract Subdivision recorded in		c	of the County.	Э
G. Other:			299	PO X
H. Give State Engineer File Number of existing wel	.1:) <u>S</u> A
I. On land owned by (required): Waste Control Specialists	LLC)](C	1
1. On Tand Owned by (Tequired).			$\overline{\omega}$	
3. WELL INFORMATION:				清清
Approximate depth 75 feet; Outside diameter of o	easing 2 inc	hes.	\supset :	E E
Name of well driller and driller license number J	ose Salas/#1575		<u>-</u> o [产品
4. ADDITIONAL STATEMENT OR EXPLANATIONS:			53	
This piezometer (TP-63) is being installed to determine the presence or abs Ogallala/Antlers/Gatuna formations on top of the Triassic Dockum group "recactivities by Waste Control Specialists LLC. No pumping or use of groundwateristalled solely to monitor groundwater levels, if any.	d bed clays" in suppo	ort of licen	ising	g
RENAMED " PZ-41"				
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Form: wr-07 page 1 of 2			= [무
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NEW MEXICO OFFICE OF THE STATE ENGINEER APPLICATION FOR PERMIT TO DRILL AN EXPLORATORY WELL

ACKNOWLEDGEMENT

(I, We) Mike Burney		irm that the
(Please	Frint)	
Muhal L	to the best of my knowledge and be.	lief.
Applicant Signature	Applicant Signature	· <u></u>
ACTIO	N OF STATE ENGINEER	
This application is approved XXX	*XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	it is not
	any others having existing rights, f water in New Mexico nor detrimen	
	oject to the following conditions:	
		
		N :
see attached o	conditions of approval	`
		- 3
	0 0	<u> </u>
Witness my hand and seal this	2nlday of _January,	20 08
ohn R. D'Artonjo, Jr., P.E, s	tate Engineer	
	tate Engineer	
By: Munatto W. dre	so her	769 769
enneth M. Fresquez, Acting Di	strfict 10 Supervisor	
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le Number: <u>CP-972</u>	Trn Number:3	45441
Form: wr-07	page 2 of 2	



File	Number	:			
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1. OWNER OF WELL Name: Waste Control Specialists	Work Phone: 888-789-2783
Contact: Mike Burney Address: 998 W. Highway 176	Home Phone: 505 - 394 - 4300
City: Andrews	State: <u>TX</u> Zip: <u>797/4</u>
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. <u>NE 1/4 NW 1/4 NW 1/4 Section: 33</u> Township in	: <u>215</u> Range: <u>38 6</u> N.M.P.M. County.
B. X =feet, Y =fe Zone in the	et, N.M. Coordinate System Grant.
C. Latitude: 37 d 26 m 29 s Longitude:	<u>103</u> d <u>04</u> m <u>.13</u> ;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 Subdivision recorded in	of the County A
G. Other:	
H. Give State Engineer File Number if existing wel	
I. On land owned by (required): _ waste Contro	Specialists > 3
3. DRILLING CONTRACTOR	H. S
License Number: 1575 Name: Talon Drilling, L.P. Agent: Shane Currie Mailing Address: 921 At. Bivins	Work Phone: 806-467-0607
city: Amavilla	State: TX Zip: 79107
4. DRILLING RECORD	
Drilling began: 1/21/08; Completed: 2/4/08; Size of hole: 5-5/2 in.; Total depth of well: 49 Completed well is: Monitor (shallow, arte Depth to water upon completion of well: Dry	Type tools: Air Rodary Rig ft.; sian); ft.
Do Not Write Below This Li	ne
Form: wr-20 page 1 of 4	n Number: <u>395941</u> 21,38,33,112
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File	Number	:			
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Depth in Feet From To	Thickness in feet	water-	-	formati		GPM)	
ECORD OF CASIN	IG						
Diameter Poun (inches) per	ds Threads ft. per in. 7VL 2	Top	n Feet Bottom	(feet)	Type of Shoe	Perfo From ぶん	То
Z 5kh 40			49	_12	PVC end cap	31	49
ECORD OF MUDE	OING AND CEM	ENTING					
Depth in Feet	Hole	Sacks	Cubic		Method of Pla	cement	
From To 0 5 5 35	Diameter 5 - 5/8 5 - 5/9	25			tremie - be		
LUGGING RECOR	RD						
Plugging Contr Ad Plugging M Date Well Pl	ldress:			<u> </u>			1 8817 1 8817 1 8817 1 8817
Plugging appro					r Representativ	re	FEB 29
							> 100
	No. Depth Top 1	n in Feet Bottor		c Feeto	f Cement		1.31 EXECUTE:
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	3						
	3 4 5						
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9. LOG OF HOLE

Depth in Feet	Thickness	Color and Type of Material Encountered
From To	in_feet	n:11 - n \ 1 - 1
<u>0</u> Z		Silly Sand, tan Caliche, Hard, tan
2 1	5	Caliche, Hard, Tax
<u> </u>	23	1 7 1 2 M P
30 45	15	Silty Sand, tan Clay, reddish
45 49	5	CIRY I FFOR ISW
		
		
		
		
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belief,	ersigned he the forego	reby certif	Fies that, rue and com	to the	best of	his knowl the above	edge and describe	ed
belief,	ersigned he the forego	reby certifing is a tr	Fies that, rue and cor	rrect r	ecord of	his knowl the above	edge and describe	ed
belief,	ersigned he the forego	Driller	rue and cor		ecord of Z Z Z (2 m/dd/year	oos	e describe	
belief,	the forego	Driller FOR STA	THE ENGINE	rect r	ecord of Z Z Z L Z m/dd/year	<u>oo</u> %)	e describe	
belief, hole.	the forego	Driller FOR STA	THE ENGINE	ER USE	ecord of Z Z Z L Z m/dd/year ONLY on No. is Line	<u>O</u> O%)	e describe	



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,

Andy Morley

(575) 622-6521, ext 113

Enclosure

cc: Santa Fe Office

2011 FEB 29 A ||. 3|

OSUTI LENGINEER OFFICE

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 Royd. 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 Luday of January, 2008.

John R. D'Antonio, Jr., P.E., State Engineer

Kenneth M. Fresquez, Acting District II Supervisor

File Nbr: CP-972 Monitor Well

W		WEAVER BOO	OS CONSULT	ANTS, INC		LO	G OF SO	OIL BO	RING N	O. <u>B-1</u>	01_
B	3	200 S. MICHIGAN AVI (312) 922-1030 * * IND	ENUE, CHICAGO IL,	60604		FILE				SHEET	1 OF 1
	VÄTE	R LEVEL DATA Not Encountered	Started	11/22/97		LOCAT	ION Propo	sed Lca Cou	nty Landfill		
-	FT.		Completed	11/22/97 Allan Eades)						
NE	_ FT.	AT COMPLETION	Driller — Helper —	Freddy	_			e, New Mexi		<u> </u>	——
l	_ FT.	-	Drilling Method	Air Rotary Drill Cuttings	<u> </u>	CLIEN		no Real Land nd Park, No			
	_ FT.		Sampling Method	ling: 9800.52	Comple				PLE DATA		
(580	GRO	OUND ELEVATION: 3408	.62 (Ft., MSL) Easti	ng: 9898.97	Depth:					<u> </u>	\$
Depth (FT.,bgs)	56	STI	RATA DEPTH			Strata Depth (FT.,bgs)					Depth (FT.,bgs)
th Ch	Lithology Type		DESCRIPTION			FT.,b	Calcareous	Moisture	Munsell	Notes	epth
Deg		GR	APHIC LOG			180					Ω
ļ	-	Dark reddish-brown, fin	e SAND, some roots,	no organics		2.0	No	Dry	7.5YR 5/6		
-		Reddish-brown, sandy L	OAM to poorly ceme	nted loamy SANI	>,		No	Dry	7.5YR 6/6		5.0
- 5.0 -		blocky, friable Pinkish-white, sandy CA	LICHE moderately	weak structure, fr	iable	6.0					F = 1
10.0	臺	nodules of caliche	incidential, incurrency	noun our remain			ı	ļ			[10.0]
						12.0	Moderate	Dry	2.5YR 8/2		
15.0	-‡∷:	Reddish-brown, loamy f	ine SAND with moist nodules	friable sandy not	iules,						15.0
Ę						1					20.0
20.0	1					21.0					[20.0]
ŀ		Light red to pink, calcar quartzite, some rose	reous pebbly SAND,	pebbles are domir	antly		 Moderate	Dry	2,5YR 7/6		25.0
25.0		quartzite, some rose Pebbles increase will	color banded gniess, h depth	little chert, angula	ar.		I TOUGHT				E = 3
-											30.0
30.0							Moderate	Dry	5YR 7/4		F 3
ŀ }- 35.0		Pink, sandy, pebbly fine	e GRAVEL, dominan	tly quartzite, well	gradeo	34.0					35.0
. 55.0		angular				ا0.0د	Slight	Dry	2.5YR 7/3		
40.0		Reddish-brown MUDS	TONE/CLAYSTONE pebbles and calcareo	, sandy, dry, bloc	cky indurate	ed					- 40.0
Ē		edinigs, some energ	peoples and carearee	uo oneone, peers, -			Slight	Barely Damp	2.5YR 4/6		[[]
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							<u> </u>			<u> </u>	
NO	res:_	1. Dry monitoring well in	istalled in borchole.		. —	EGEND					
		2. Drilling Company: Eac	des Drilling and Pump	Service.	立	W.D W	TILE DRILLING	₹ A.D AFT	TER DRILLING	♥ HOUR(S) AFTE	R DRILLING
'											

W	·····	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604]	LO	G OF S	OIL BO	RING NO.	B-10	2
-	C	(312) 922-1030 * * INDIANA (219) 923-9609		FILE				SHEET 1	OF 1
		ER LEVEL DATA = Not Encountered Started 11/20/97 Completed 11/20/97	L	OCA'	TION Propo	osed Lea Cou	inty Landfill		
NE NE	_	Driller Allan Eades			Eunic	e, New Mex	 ico		
NB	- FT. FT.	Helper	· c	LIEN		no Real Lan			
	FT.		[]		Sunla	nd Park, Ne	w Mexico	<u> </u>	
	GRO	OUND ELEVATION: 3,392.63 (Ft., MSL) Northing: 8467.05 Colored Easting: 7193.22 Dep	mpletlo	n		SAM	PLE DATA		\\ \tilde{\omega}
Depth (FT.,bgs)	h	Easting: /193,22 De		{					Depth (FT.,bgs)
(FT	6 83	STRATA DEPTH	ءَ عُ	oco (sgq					(F)
žpth	Lithology Type	SOIL DESCRIPTION GRAPHIC LOG	1	Surata Deput (FT.,bgs)	Calcareous	Moisture	Munsell	Notes	epth
Ă		GRAI IIIC EOG	0	ñ					
: :		Brown, fine to medium SAND with caliche grains, granular structu	ıre,		No	Dry	7.5YR 4/6		
5.0		some roots, no organics	-		Minor	Dry	7.5YR 5/6		5.0
				7.0					= =
10.0 -		Brownish-white calcarcous fine SAND, some calcareous cement sa nodules, not as floury as other caliche, gritty, abundant coarse s	nd		Yes	Dry	7.5YR 7/3		10.0
		and chert when wetted	Jana						E =
- 15.0 -				16.0					15.0
	E	Pinkish-white sandy CALICHE, many pebbles of hard angular che	- 1	10.0	Yes	Dry	7.5YR 7/3		
20.0 -		fine sandstone (not frlable)	1	21.0					20.0
-		Pink, fine to medium SAND, calcareous very small nodules of cali	- 1	21.0	Yes	Dry	2.5YR 7/3		
25.0		and cemented sandstone		26,0					25.0
-	臺	White sandy CALICHE with calcareous sand matrix and abundant				_			
30.0 -	营	chert clasts. Clasts are angular, coarse gravel size, brown, whit and black, some quartzite	ie		Yes	Dry	2.5YR 8/2		30.0
Ę				33.0	l .,		0.5370.644		
35.0 -	<u></u>	Rose and white PEBBLES, with very little sand, dominantly hard, angular quartzite. White pebbles are hard limestone with quart	zite /	36.0	Yes	Barely Damp	2.5YR 6/4		35.0
£	▤	Teddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally							40.0
- 40.0 -		sandy, micaceous clasts infrequently, poorly indurated			1/22	Dtu	2.5YR 4/4		40.0
45.0			Ì		Yes	Barely Damp	2.51R 4/4		- 45.0-
F 43.0 ·									- 12.5
50.0				50.0	Yes	Barely	2.5YR 4/6		50.0
30.0		BORING TERMINATED AT 50.0'	}		Į	Damp			
		•.							
			ĺ						
	}				1				
1			}						
			}						
NOTE	 :S:	Dry monitoring well installed in borehole.	LEGEN	ש		• .			
		2. Drilling Company: Eades Drilling and Pump Service.	₩.D.	WH	ILE DRILLING	¥ A.D AFTE	R DRILLING Y	IOUR(S) AFTER DR	ILLING
1		.							

W	3	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604				RING N	O. <u>B-10</u>	
NE NE		(312) 922-1030 * * INDIANA (219) 923-9609 ER LEVEL DATA = Not Encountered W.D. Started 11/21/97 Completed 11/21/97	FILE	···		onty Landfill		OFI
NE_		Driller Allan Eades			e, New Mex			
	_ FT.	AT HR. A.D. Drilling Method Air Rolary	CLIEN		no Real Lan nd Park, Ne			
<u></u>	FT.	Northing: 9711.58 Comple	etion	Sunta		PLE DATA		一
(sgq'	GRO	Depth:			1			, bgs
Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Surta Depth (FT.,bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
5.0 -		Reddish-brown, sandy LOAM to poorly cemented loamy SAND, blocky, friable	6.0	No No	Dry Barely Damp	7.5YR 4/6 7.5YR 5/6		5.0
10.0 -		Pinkish-white, sandy CALICHE, moderately weak structure, friable nodules of caliche	0.0	Yes	Dry	7.5YR 8/4		10,0
- 15.0 -		Reddish-brown, loamy fine SAND with moist friable sandy nodules, very few calcareous nodules	14.0	Yes	Dry	7.5YR 7/3		15.0
20,0 -								20.0
25.0			26.0					25.0
30.0 -		Light red to pink, calcareous pebbly SAND, pebbles are dominantly quartzite, some rose color banded goiess, little chert, angular. Pebbles increase with depth	33.0	Yes	Dry	7.5YR 8/2		30.0
₹ }- 35.0 -	₩	Rose and white PEBBLES, with very little sand, dominandy hard, very angular quartzite. White pebbles are hard limestone with quartzite		Yes	Dry	2.5YR 7/3		- 35.0
40.0		Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaceous clasts infrequently, poorly indurated	/ 50.0	Yes	Barely Damp	2.5YR 4/4		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-
			1					
моті		and 5% bentonite.	END ,D WH	ILE DRILLING	¥ A.D AFTE	R DRILLING	V HOUR(S) AFTER D	RILLING
l İ								

W	3	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LO	G OF SO		RING N	O. <u>B-10</u>	{
NE NE	NE : _ FT.	ER LEVEL DATA Started 11/21/97 Not Encountered Completed 11/21/97 W.D. Driller Allan Eades AT COMPLETION Helper Freddy AT HR, A.D. Drilling Method Air Rolary		TION Propo Eunio	osed Lea Cou ce, New Mex ino Real Lan	ico dfill	· · · · · · · · · · · · · · · · · · ·	
	_ FT.	N. M.C., 0719.02 Canal	ullon	Sunta	nd Park, No	w Mexico		
(\$8)	GR	DUND ELEVATION: 3,404.38 (Ft., MSL) Northing: 8518.93 Complete			SAM	PLE DATA		(SS)
Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
		Dark reddish-brown, fine SAND, some roots, no organics	_	Slight	Barely	7,5YR 5/4		<u> </u>
5.0 -		Reddish-brown, sandy LOAM to poorly cemented loanty SAND, blocky, friable	3.0	Slight	Damp Dry	7.5YR 6/4		5.0
	를	Pinkish-white, sandy CALICHE, moderately weak structure, friable	6.0			<u> </u>		
10.0 -		nodules of caliche		Moderate	Dry	2.5YR 8/4		10.0
	를							
- 15.0 -								- 15.0
								F]
- 20.0 -	橿		21.0					20.0
	层	Light red to pink, calcareous pebbly SAND, pebble are dominantly quartzite, some rose color banded gniess, little chert, angular.		Moderate	Dry	2.5YR 8/2		
├- 25.0 - -		Pebbles increase with depth		1770deraic	2.7	2.511 0/2		25.0
- 20 0 -	巨]			ļ	•	30.0
- 30.0 -	国							- 50.0
├ 								35.0
; 33.0 - f							,	- 55.0
- 40.0 -			40.0	ļ	}			40.0
		Very light brown medium GRAVEL with calcareous sand matrix, gravel is brown when wel, very cherty, angular, white and brown		Moderate	Dry	2.5YR 8/2		
45.0 -	<u>=</u>	chert, some quartzite White to light brown pebbly coarse GRAVEL with some fine	/ 44.0 46.0					45.0
ŧ	E	calcareous sand matrix. Pebbles are less angular, mostly chert but	∫ 40.0					
50.0		also gniess and quartzite Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, poorly	'	Moderate	Dry	2.5YR 7/4		50.0
-		indurated, cuttings are blocky, some chert pebbles and white calcareous clasts		Moderate	Dry	2.5YR 4/6		
55.0		·						55.0
<u>.</u>				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	2.5YR 4/4		- 60.0
1					Damp		}	
				1				
								1
						1		
	<u>L</u> .				٠.	1		
NOTE	S:_	Boring grouted after completion with 95% portland cement and 5% bentonite. LEG LEG	END					
		and 5% bentonite. 2. Drilling Company: Eades Drilling and Pump Service.	/.D WH	ILE DRILLING	🛂 A.D AFTI	ZR DRILLING	♥ HOUR(S) AFTER DR	ILLING
1								

W		WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604				RING NO.		_
	NE =	(312) 922-1030 * * INDIANA (219) 923-9609 ER DEVEL DATA Started 11/19/97 11/19/97	LOCA	# 95042 TION Propo		inty Landfill	SHEET 1 OF	_
NE NE	_ FT. FT.	W.D. Completion Driller Allan Eades Freddy		Eunic	e, New Mex	ico		_
	FT.	AT HR. A.D. Drilling Method Air Rotary	CLIEN		no Real Lan			
	FT.	Northing, 6600 22 Compl	ction	Sunla	nd Park, Ne			
(88)	GRO	OUND ELEVATION: 3,388.07 (Ft., MSL) Rottling: 0003.25 Compt.	50.0		SAM	PLE DATA		(pgg)
Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	Calcareous	Moisture	Munseli	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)		Yes	Dry	7.5YR 8/2	- - - -	5.0
- 10.0 ·			14.0				-	10.0
- 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
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?)	35.0				- - -	30.0
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 Rose and white PEBBLES, with very little sand, dominantly hard very	38.0				<u>.</u>	40.0
15.0		angular quartzite. While pebbles are hard limestone with quartzite grains. Reddish-brown sandy LOAM with pebbles of calcareous cemented	44.0	Yes	Dry	7.5YR 7/2	[- - - -	45.0
- 45.0		sandstone (friable). Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky	47.0	Yes	Dry	2.5YR 6/4	Ē	:
50.0		cuttings, some calcareous stains, poor indurated/friable.	50.0	Yes	Ту	2.5YR 6/4	[-	50,0
		• .						
		}						
NOT	ES:	Z, Bolling Bloaded anter completely with the French Particular and the	GEND_	.1	<u> </u>			
	_	and 5% henronite	W.D WI	HILE DRILLING	₹ A.D AFT	er drilling 🧷 h	iour(s) after drili	LING

W		WEAVER BOO		•	C.	LO	G OF S	OIL BO	RING NO.	<u>B-1</u>	06
	C_	(312) 922-1030 * * IND				FILE				SHEET	1 OF 1
	NE :	ER LEVEL DATA = Not Encountered	Started . Completed .	11/21/97 11/21/97		LOCA'	FION Prope	osed Lea Cor	unty Landfill		
NE NE	_	W.D. AT COMPLETION	Driller .	Allan Eades Freddy	<u>s</u>		Eunic	ce, New Mex	ico	.,	
<u> </u>	FT.		Helper Drilling Method	Air Rotary	— <u> </u>	CLIEN		ino Real Lau			
	_ FT.		Sampling Method	Drill Cutting	<u>s</u>		Sunla	and Park, No	w Mexico		
	GRO	OUND ELEVATION: 3,401	.06 (Ft., MSL) No	rthing: 5968.89 sting: 9285.60		oletion 1: 66.5		SAM	IPLE DATA		- G
Depth (FT.,bgs)	$\vdash \neg$			Stutg: 9203.00 }	Debrii				<u> </u>	· -	Depth (FT.,bgs)
ET.	ogy e		RATA DEPTH			Septi					臣
pth	Lithology Type		DESCRIPTION APHIC LOG	!		Strata Depth (FT.,bgs)	Calcareous	Moisture	Munsell	Notes	th de
ದ		GR	APRIC LOG			S			}		Ă
		Grayish-brown loamy fin	e SAND, granular,	no organics, few							
		calcareous nodules inc staining, friable ceme	nted sandstone nod	, small roots, no it ules (Windblown S	ands)		No	Dry	7.5YR 5/6		F =
- 5.0 -]	7.5 1 2.0		5.0
											10.0
- 10.0 -						11.0	Moderate	Dry	2.5YR 8/3		10.0
- 15.0 -		Pink fine to medium calc	areous SAND, with	n few calcareous no	odules		Moderate) Di,	2.518 6/3		15.0
ļ 13.0		mat are made, no or	int large villan			16.0					E 3
- - 20.0 -		Pink calcareous fine SAN	ND to war frontier	d candy CALICUE	Fan I	10	Moderate	Dry	2.5YR 7/6		20.0
		no chert or other class	ts. Caliche is very	hard, not friable	3, 16W						E 3
<u>-</u> - 25.0 -		(CAPROCK?)									25.0
30.0 -											30.0
[33.0					= =
35.0 -	擡	White sandy CALICHE	with calcareous san	d matrix and abun	dant				j		35.0
į.	量	chert clasts. Clasts ar and black, some quar	e angular, coarse g. itzite	ravel size, brown,	white		Moderate	Dry	2.5YR 8/3		
40.0											40.0
E	蒫										
45.0	揰										45.0
-	澅										E
- 50.0 ·						}					50.0
	를		٠.								E
- 55,0 ·	畫										- 55.0 -
60.0											60.0
- 60.0	臺					62.0	Moderate	Dry	2.5YR 7/3		
65.0	****	Rose and white PEBBLI angular quartzite. W	ES, with very little	sand, dominantly h	ard ve	-	Moderate	51,	2.511 //5		65.0
55.5	777	grains.	-		-	66.0	Slight	Dry	2.5YR 5/6		
1	1	Reddish-brown MUDST cuttings, some calcar	reous stains, poor in	E, sandy, dry, blo idurated/friable.	ску	╝					
		BORING TERMINATE	D AT 66.0'			_					
1											
<u></u>						<u>. l</u>	L				
NOTE		 Boring grouted after con and 5% bentonite. 	•			GEND		▼			
		2. Drilling Company: Eade	s Drilling and Pump	Service.	<u>\times</u>	W.D WH	ILE DRILLING	¥ A.D AFTE	ER DRILLING .V H	OUR(S) AFTER I	RILLING
İ											

W	`	WEAVER BO			īC.	LO	G OF SO	OIL BO	RING N	O. B-10	07
	$^{\circ}$ C	200 S. MICHIGAN AV (312) 922-1030 * * INI				FILE				SHEET 1	— i
	VATI NE	ER LEVEL DATA Not Encountered	Started	11/22/97			···	sed Lea Co	onty Landfill		
NE	_	W.D.	Completed Driller	11/22/97 Allan Ead						.	
NE	_ FT.		Helper	Freddy		CIV TYON		e, New Mex			
	_ FT.		Drining Method	Air Rotar Drill Cuttir	·	CLIEN		no Real Lan ind Park, No			
<u></u>	_ FT.	OUND ELEVATION: 3,405	Nort Nort	hlng: 4016.88	Compl		Onna		PLE DATA		
Depth (FT.,bgs)	GIK	JOHO EGE YATTON: 5,403	East	ing: 9228.40	Depth:			JAM.	T T		Depth (FT.,bgs)
Į Ę	<u>53</u>	sm	RATA DEPTH			Stratz Depth (FT., bgs)					ET.
) fild	Lithology Type	SOIL	DESCRIPTION			TE D	Calcareous	Moisture	Munsell	Notes	pth (
နိ		GR	APHIC LOG			S		_			Ď
		Reddish-brown, loamy fi	ine SAND to sandy L	OAM, blocky,	friable,		No	Dry	7,5YR 6/6		
5.0		very few organics, gr	ading to light brown	loamy SAND			110	2.,	7,511 0.0		5.0
		Reddish-brown, sandy L blocky, friable	OAM to poorly ceme	ented loamy SA	ND,	6.0	No	Dry	7.5YR 5/6		
10.0		Pink, sandy CALICHE, caliche and poorly ce	moderately weak wit	h friable nodule	es of	/	Moderate	Dry	2.5YR 8/3		10.0
	른					13.0		(
15.0 -							Moderate	Dry	2.5YR 5/6		15.0
	}	Pink, fine to medium SA and cemented sandsto	ND, calcareous very	small nodules	of caliche						[=]
20.0	}										20.0
25.0											25.0
25.0						ĺ		{			- 23.0
30.0 -							!				30.0
-						31.0					
35.0 -	害	Light red to pink, calcar quartzite, some roase	eous pebbly SAND,	pebbles are don	ninantly		Moderate	Dry	2.5YR 6/4		35.0
-	占	quartzite, some roase Pebbles increase with	color banded gniess depth	, little chert, an	gular.						
40.0	宣										40.0
-	丰										
45.0											45.0
50.0											50.0
- 50.0	擇										- 50.0
55.0			٠								- 55.0 -
ļ.											
60.0						[60.0
ŀ	崖							1			Ė :
65,0	E										- 65.0
[崇										
70.0	亖										70.0
75,0						75,0					75.0
} /3,3	這	Pink, sandy CALICHE (Continued)	with caprock chips			15,0	Moderate	Dry	2.5YR 8/3		E :
<u></u>	壹	·	· · ·		1			1			<u></u>
NOTE	<u>:S:</u>	 Boring grouted after con and 5% bentonite. 	npletion with 95% por	tland cement	1	END		~ ,		Ø	
		2. Drilling Company: Eade	s Drilling and Pump S	Service,	\\ \bar{A} \\ \bar{A}	.D WII	ile drilling	¥ A.D AF∏	CR DRILLING	♥ HOUR(S) AFTER DI	ULLING
ļ											
İ											
j					}						

W	 3C	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609		OG OF SOIL BORING I			O. <u>B-10</u> SHEET 2	OF 2
Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	SAM Moisture	Munsell	Notes	Depth (FT., bgs)
90.0		(Continued from page 1) Pink, sandy CALICHE with caprock chips Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, litt to no mica BORING TERMINATED AT 92.0'	83.0 le 92.0	Moderate Slight Slight No	Dry Barely Damp Barely Damp Barely Damp	2.5YR 5/6 2.5YR 7/3 2.5YR 5/3 2.5YR 5/2		- 85.0 - 90.0
NOT	ES:	and 5% hantonite	W.D WI	THE DRILLING	₹ A.D AFT	ER DRILLING	V hour(s) after dr	ILLING
ĺ								

W _r)	WEAVER BO			√C.	LO	G OF S	OIL BO	RING N	NO. B-10)8
E	$^{\circ}$ C	200 S, MICHIGAN AV (312) 922-1030 * * INI				FILE		2.10	_	SHEET 1	
	VATI NE	ER LEVEL DATA = Not Encountered	Started	11/20/9		LOCA	TION Prope	osed Lea Co	unty Landfi	11	
		W.D.	Completed Driller	11/20/9 Allan Eac							
NE_	_ FT.		Helper	Freddy		GI ID.		ce, New Mex			
	_ FT.		Drilling Methor			CLIEN		ino Real Lan and Park, No		·····	
	FT.	OUND ELEVATION: 3,396	· · · · · · · · · · · · · · · · · · ·	Northing: 9696.33	Comp		Sums		IPLE DATA		\top
(sgq	GAC	7011D BEBY WITO11: 3,390).15 (Ft., MDL)	Easting: 7439.48	Depth	215.0		J. J. J.	TEDAIA		bgs)
Depth (FT.,bgs)	23	STI	RATA DEPT	H		Strata Depth (FT.,bgs)					Depth (FT.,bgs)
pth (Lithology Type		DESCRIPTION			ara D	Calcareous	Moisture	Munsell	Notes) th
ద్		GR	APHIC LOG	r		Su					ا مّ
		Brown, fine to medium Some roots, no organi		he grains, granular	structure,			_			
5.0	Jane 1					4.0	Yes	Dry	7.5YR 6/3		5.0
[3.0]		Brownish-white calcareous nodules, not as floury	as other calich	some calcareous cen e, gritty, abundant c	oarse sand	4					- 3.0
10.0		and chert when wetter	ŭ				Strong	Dry	7.5YR 8/2		[10.0]
È :											= =
15.0											15.0
		Pinkish-white sandy CAI	LICHE, many p	ebbles of hard angul	lar cherty	17.0					
20.0 -		fine sandstone (not fr	iadie)				Strong	Dry	2.5YR 8/2		20.0
						24.0	Crons	, ,,			[]
25.0 -		Pink, very fine SAND, c	calcareous with	occasional pebbles o	f granite,			_	0 53m 5/4		25.0
- 30.0 -							Mild	Dry	2.5YR 7/4		30.0
-						33.0					- 30.0
35.0 -		Dark brown sandy CLA	YSTONE, weat	hered, blocky, very	few calicl				İ		35.0
		clasts, dry, friable/po	orty indurated				Mild	Dгy	2.5YR 6/2		-
40.0											40.0
							Mild	Dry	2.5YR 5/3		
45.0 -						46.0					- 45.0 -
-		Reddish-brown MUDST sandy, micaceous cla	ONE/CLAYSTORIST ONE/CLAYSTORIS	ONE, slicky, occasio , poorly indurated	onally		Mild	Dry	2.5YR 5/2	}	
50.0 ~								2.,	2.5 110 5/2		50.0
55.0 -			· .								55.0
-							Mild	Dry	2.5YR 5/3		
60.0							Mild	Dry	2.5YR 7/3	Pitcher Bell Sample	60.0
										Pitcher Bell Sample obtained at 60.0'	= =
65.0 -							Mild	Dry	2.5YR 4/3		65.0
70.0 -		•						i.			70.0
75,0 -											75.0
		(Continued)									75.0
Ē				 			<u> </u>	<u></u>			F
NOTE	<u>S:</u> 1	l. Backfilled with cuttings t with 95% portland cemen	to 120', grouted in and 5% bentor	to surf-ce with 95 nite.	-	END		_			
	2	with 95% portland cemer 2. Drilling Company: Eader	s Drilling and Pu	mp Service.	출 <i>M</i>	7.D WH	ILE DRILLING	¥ A.D ANTE	R DRILLING	♥ HOUR(S) AFTER DR	ILLING
					ļ						
1					1						

$\mathbb{W}_{\mathrm{B}_{\mathbf{C}}}$	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LO		OIL BO	RING I	NO. B-1	
bgs)				SAM	IPLE DATA] <u>S</u>
Depth (FT., b Limology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
85.0	(Continued from page 1) Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaccous clasts infrequently, poorly indurated		Mild	Barely Damp	2.5YR 5/3		85.0
95.0			Mild	Barely Damp	2.5YR 5/3	Pitcher Bell Sample obtained at 100.0'	95.0
-115.0							110.0
125.0			Mild	Barely Damp	2.5YR 4/4		-125.0
135.0			No	Barely Damp	2.5YR 5/6		-140.0
-145.0	••		No	Barely Damp	2.5YR	Pitcher Beil Sample	145.0-
155.0							-155.0- -150.0-
-165.0							165.0-
	(Continued) Backfilled with cuttings to 120', grouted to surf-ce with 95 with 95% portland cement and 5% bentonite. Drilling Company: Eades Drilling and Pump Service.	LEGEND W.D WHI	No LE DRILLING	Barely Damp Lamp	2.5YR 4/3	♥ HOUR(5) AFTER DR	170.0
				n	· · · · · · · · · · · · · · · · · · ·		<u></u>

WE	 3 C	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LO		OIL BO	RING I	NO. B-1	
bgs)	<u> </u>					PLE DATA		
Depth (FT., b	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcarcous	Moisture	Munsell	Notes	Depth (FT., bgs)
175.0-		(Continued from page 2) Reddish-brown MUDSTONE/CLAYSTONE, slicky, occasionally sandy, micaccous clasts infrequently, poorly indurated	 					-175.0- -175.0- -180.0-
-185.0- -190.0-			191.0	Mild	Barely Damp	2.5YR 7/2		-185.0- -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- -205.0-		Reddish-brown CLAYSTONE, dry, poorly indurated, no bedding or laminae	201.0	Mild	Barely Damp	2.5YR 5/2		200.0
210.0-							Pitcher Bell Sample obtained at 215.0'	210.0
215.0-		BÖRING TERMINATED AT 215.0'	215.0	No	Barely Damp	2.5YR 4/3		-215.0-
							:	
		· .			i i			£
NOTE	<u>s:</u> _	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.		ILE DRILLING	¥ A.D AFTE	R DRILLING	₹ HOUR(S) AFTER DE	RILLING

W	 }	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604	Ţ	LO	G OF S	OIL BO	RING N	NO. <u>B-10</u>	9_
	<u>C</u>	(312) 922-1030 * * INDIANA (219) 923-9609		FILE	#9504	12.10		SHEET 1	OF 2
v	NE :	ER LEVEL DATA = Not Encountered Started 11/21/97 Completed 11/21/97	. г	OCA	TION Prop	osed Lea Co	ınty Landfi	11	
NE_	FT.	W.D. Allan Eades							
NE	FT.	AT COMPLETION Helper Freddy				ce, New Mex			
<u> </u>	_ FT.	Driving Medical	. '	CLIEN		ino Real Lan			
<u> </u>	_ FT.	50 00 888 44 0	. mpletic	on	Suin	and Park, No			╤═┤
(\$2)	GRO		pth: 12			SAM	PLE DATA	 	(sgs)
Depth (FT.,bgs)	25	STRATA DEPTH	{ .	म् भू			}		Depth (FT.,bgs)
1 H	Lithology Type	SOIL DESCRIPTION	، [a De L'bg	Calcareous	Moisture	Munsell	Notes	tj
Рер	13.	GRAPHIC LOG	١,	Strata Depth (FT.,bgs)					Dep
<u> </u>						ļ	-		
		Grayish-brown loamy fine SAND, granular, no organics, few							
5.0		calcareous nodules increasing with depth, small roots, no iron staining, friable cemented sandstone nodules (windblown sands)	,						5.0
				8.0			1		F 3
10.0		Pinkish-white, sandy CALICHE, moderately weak structure, friabl nodules of caliche	e						10.0
[:		induites of carrette							
15.0									15.0
:									-
20.0				21.0					20.0
ļ: :		Light red to pink, calcareous pebbly SAND, pebbles are dominant					}		1
25.0	\equiv	quartzite, some rose color banded gniess, little chert, angular. Pebbles increase with depth							25.0
			1						
30.0									30.0
}									
35.0				36.0					35.0
ļ :		White, sandy CALICHE with calcarcous sand matrix and abundan	1					}	
40.0		chen clasts. Clasts are angular, coarse gravel size, brown, whit and black, some quantzite	.6					+	40.0
ŧ :									
45.0 -									- 45.0 -
50.0 -	<u>=</u>			51.0					- 50.0 -
-	****	Rose and white PEBBLES, with very little sand, dominantly hard, angular quartzite. White pebbles are hard limestone with quart	very zite						
55.0	***	grains		56.0					- 55.0 -
Į.		Reddish-brown MUDSTONE/CLAYSTONE, sandy, dry, blocky cuttings, some chert pebbles and calcareous clasts, poorly industrials.	rated			}	-		E :
60.0		g,,				İ			- 60.0
65.0 -						'	}		- 65.0
70.0							1		70.0
ļ								}	:
⊢ 75.0 -				76.0	1				75.0
-		Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds						Pitcher Bell Sample	- :
NOTE	S:_	Boring grouted after completion with 95% portland cement	LEGEN	4D	•	· · · · · · · · · · · · · · · · · · ·	<u> </u>	-	
	-	and 5% bentonite. 2. Drilling Company: Eades Drilling and Pump Service.	W.D	WH	ILE DRILL I NG	🛂 A.D AFTE	R DRILLING	. Hour(s) after dr	ILLING

$^{\mathrm{W}}_{\mathrm{B}_{\mathrm{C}}}$	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LOG OF SOIL BORING NO. B-1							
Depth (FT., bgs) Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)		
- 95.0 - 105.0 - 115.0	Continued) Continued from page 1) Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds BORING TERMINATED AT 120'	120.	0			Pitcher Bell Sample obtained at 120'	95.0		
NOTES: 1.	Boring grouted after completion with 95% portland cement and 5% bentonite. Drilling Company: Eades Drilling and Pump Service.	LEGEND W.D W	HILE DRILLING	₹ A.D AFTE	CR DRILLING	♥ HOUR(S) AFTER D	RILLING		

WE	 }_	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVBNUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LO			RING NO). <u>B-1</u>	
NE	NE:	R LEVEL DATA Started 11/17/97 Not Encountered Started 11/19/97 W.D. Completed 11/19/97		TION Propo	osed Lea Cou	ınty Landfill		
NE_	_ FT.	AT COMPLETION Helper Freddy	GT 173		e, New Mex	• •		
ļ	_ FT. FT.		CLIEN		<u>no Real Lan</u> ind Park, Ne	•••		
		DUND BY EVALUAN 3 397 38 (Ft Mgt) Northing: 7924.34 Comple			· · · · · · · · · · · · · · · · · · ·	IPLE DATA	~ <u>~~~~</u>	
.,bgs		Eusting: 6019.55 Depth:	T					-, bg
Depth (FT.,bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT.,bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT.,bgs)
: :		Yellowish-red to reddish-brown, loamy fine SAND, weak granular	2.0	No	Dry	5YR 5/8	· · · · · ·	
5.0		structure, Reddish-brown, loamy fine SAND to sandy LOAM, blocky, friable, yery few organics, grading to light brown loamy SAND		No	Dry	5YR 6/8		5.0
10.0		•		No	Dry	5YR 6/8		10.0
15.0		Pink, sandy CALICHE, moderately weak with friable nodules of caliche and poorly cemented sand, fewer nodules with depth	11.0	Strong	Dry	5YR 8/4		15.0
					ļ	.		
20.0				Mild	Dry	5YR 8/3		20.0
25.0 -		Pink, fine to medium SAND, calcareous very small nodules of caliche and cemented sandstone	24.0					25.0
30.0								30.0
25.0					}			35.0
35.0 -			39.0	Mild	Dry	5YR 8/2		
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		- 40.0
45.0 -		Light reddish-brown, CLAYSTONE with trace sand and calcareous cemented sandtone pebbles, cuttings are blocky, some chert						45.0
- 50.0 -			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	اء	Mild	Dry	2.5YR 4/6		Ė
55.0 -		to no mica						55.0
60.0				Mild	Dry	2.5YR 6/3		-
60.0 -				Mild	Dry	2.5YR 4/6		- 60.0 -
65.0				MINU	219	2.512.470		65.0
70.0 -								70.0
75.0 -								75.0
F /3.0 -	擅			Mild	Dry	2.5YR 6/4		E '3.0
<u> </u>		(Continued)						-
NOTE		and 5% pentonite.	END ,D WII	ILE DRILLING	¥ A.D AFTE	R DRILLING .	IIOUR(S) AFTER D	RILLING
}								

WB	C	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						2 OF 7
Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	e e	Strata Depth (FT., bgs)	Calcareous	SAM Moisture	Munsell	Notes	Depth (FT., bgs)
90.0		(Continued from page 1) Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, I to no mica Reddish-brown, sandy CLAYSTONE, micaceous with occasional green siltstone beds	iitle	84.0	Minor	Barely Damp	2.5YR 4/4	Pitcher Bell Sample obtained at 90'	90.0
-100.0- -105.0-		Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorty indurated, some small calcareous comented sandstone nodules, l		110.0					100.0-
-120.0 -125.0		indurated, some small calcareous cemented sandstone nodules, le to no mica	little		Slight Yes	Barely Damp	2.5YR 4/4		115.0
-135.0- -140.0-					Yes	Barely Damp	2.5YR 4/4	Pitcher Bell Sample obtained at 140'	-130.0- -135.0- -135.0- -140.0-
-145.0- -150.0-					No	Barely Damp Barcly Damp	2.5YR 4/6		145.0- -150.0- -155.0-
-165.0- -170.0-		(Continued) Boring grouted after completion with 95% portland cement	LEGEN	α					-160.0-
		and 5% bentonite. Drilling Company: Eades Drilling and Pump Service. □			LE DRILLING	¥ a.d afte	R DRILLING	♥ HOUR(S) AFTER DI	RILLING

W	3	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604		G OF S		RING N		
	C	(312) 922-1030 * * INDIANA (219) 923-9609	FILI	E#9504	12.10 SAN	IPLE DATA	SHEET	
 Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
-185.0- -185.0- -195.0- -195.0- -205.0-		(Continued from page 2) Reddish-brown, sandy MUDSTONE/CLAYSTONE, dry, poorly indurated, some small calcareous cemented sandstone nodules, litt to no mica Light reddish-brown MUDSTONE, slick, siltier, no bedding	190.0	No	Barely Damp	2.5YR 6/3		175.0- -185.0- -195.0- -205.0- -210.0-
-210.0· -215.0· -220.0·		Reddish-brown MUDSTONE/CLAYSTONE, micaceous, no bedding or laminne	211.0	No	Barely Damp	2.5YR 5/4		-210.0-
-225.0 -230.0 -235.0				No	Dry	2.5YR 4/6	Pitcher Bell Sample obtained at 230'	-225.0 -230.0 -235.0
-240.0 -245.0		·		No	Dry	2.5YR 5/4		-240.0 -245.0
-250.0 -255.0 -260.0				No	Dry	2.5YR 4/6		-250.0 -255.0 -260.0
£ 200.0		(Castinual)]			200.0
NOTI	<u>:</u>	and 5% hentonite	GEND W.D WI	EILE DRILLING	▼ A.D AFTE	ER DRILLING	V hour(s) after d	F F

$^{\mathrm{W}}_{\mathrm{B}}$ C	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	LO FILE	G OF SO	O. <u>B-11</u> SHEET 4	OF 7		
Depth (FT., bgs) Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depuh (FT., bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
-270.0	(Continued from page 3)		No	Dry	2.5YR 5/6	·	-265.0- -270.0-
280.0	Reddish-brown, MUDSTONE/CLAYSTONE, micaecous, no bedding or laminae						-275.0
-295.0 -290.0	•		Yes	Dry	2.5YR 5/4		-285.0- -290.0- -295.0-
-300.0				<u> </u>			300.0
-310.0							-310.0 -315.0
-320.0	•		No	Dry	2.5YR 4/4		-320.0- -325.0-
-335.0							330.0
-345.0-			Yes	Dry	2.5YR 5/4		-340.0 -345.0
-355.0- NOTES:	(Continued) 1. Boring grouted after completion with 95% portland cement and 5% bentonite.	GEND		:-		Pitcher Bell Sample obtained at 350'	-355.0
	and 5% bentonite. 2. Drilling Company: Eades Drilling and Pump Service.		OLE DRILLING	A.D AFTE	ER DRILLING	♥ HOUR(S) AFTER DE	ULLING

WE	3 Ċ	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)	Calcareous	SAM Moisture	PLE DATA Munscil	Notes	Depth (FT., bgs)
-360.0		(Continued from page 4)						360.0
-365.0-		Reddish-brown, MUDSTONE/CLAYSTONE, micaccous, no bedding or laminae		Minor	Đry	2.5YR 4/4		-365.0
-370.0-					i			370.0
-375.0-				Minor	Dry	2.5YR 4/6		- -375.0-
-380.0				ļ	-			380.0
385.0								-385.0
-390.0-								390.0
-395.0-								-395,0-
-400.0-								400.0
-405.0-						}		-405,0-
415.0								-410.0
-415.0-								-415.0- - - - - - - - - - - - - - - - - - -
-425,0-		·						-425.0-
-430.0-								-430.0
-435.0				Minor	Ðгу	2.5YR 4/8		435.0
440.0								-440.0
445.0		(Continued)						-445.0-
NOTE	<u>S:</u>	and 5% hentonite	 <u>END</u> ',D, - W1I	ILE DRILLING	₹ A.D AFTE	R DRILLING	♥ HOUR(S) AFTER DI	RILLING

$W_{B_{C}}$	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 (312) 922-1030 * * INDIANA (219) 923-9609	i i	OG OF S	42.10		VO. B-1	6 OF 7
Depth (FT., bgs) Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth	Calcareous	. Moisture	Munsell	Notes	Depth (FT., bgs)
-465.0 -465.0 -470.0 -475.0 -485.0 -490.0 -500.0 -510.0 -515.0	(Continued from page 5) Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no bedd or laminae	ding	Minor	Dry	2.5YR 5/4		450.0- -455.0- -465.0- -465.0- -470.0- -470.0- -475.0- -480.0- -495.0- -500.0- -500.0- -510.0- -510.0- -510.0-
-525.0 -530.0 -535.0 NOTES:	and 5% bentonite	LEGEND W.D V	VHILE DRILLING	▼ A.D AFT	ER DRILLING	♥ HOUR(S) AFTER D	-525.0- -530.0- -535.0- -535.0-

$\overline{W}_{\mathrm{B}}$	3	WEAVER BOOS CONSULTANTS, INC. 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604				RING N	VO. <u>B-11</u>	
	$\frac{\mathbf{C}}{\mathbf{C}}$	(312) 922-1030 * * INDIANA (219) 923-9609	FILI	5 # 9504	42.10		SHEET 7	
bgs					SAN	IPLE DATA		bgs
Depth (FT., bgs)	Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	Moisture	Munsell	Notes	Depth (FT., bgs)
				Minor	Dry	7.5YR 5/4		╆╼┪
-545.0-		(Continued from page 6) Reddish-brown, MUDSTONE/CLAYSTONE, micaceous, no beddoor laminae	ding	;				-545.0- -550.0-
-555.0- -560.0-		·		Minor	Dry	2.5YR 4/4		-555.0- -555.0- -560.0-
-565.0- -570.0-			,	Yes Yes Yes	Dry Dry Dry	2.5YR 6/3 2.5YR 6/2 2.5YR 4/4		-565.0- -565.0- 570.0-
575.0			576.0		}			-575.0-
-580.0-		Light reddish-gray, clayey SILTSTONE, gritty, sandy, no beddin		Yes	Dry	2.5YR 6/1		~580.0= -585.0=
-590.0-	- <u> </u>	Reddish-gray, silty SANDSTONE	588.0	Yes	Dry	2.5YR 6/1		590.0
-595.0-		Light reddish-gray, silty SANDSTONE	595.0	Yes	Dry	2.5YR 6/1		-595.0-
-600.0-		BORING TERMINATED AT 600 FEET		Yes	Dry	2.5YR 7/1		-600.0-
					•			
NOTE	<u>S:</u>	1. Boring grouted after completion with 95% portland cement and 5% bentonite. 2. Drilling Company: Eades Drilling and Pump Service.	LEGEND W.D WH	LE DRILLING	¥ a.d afte	R DRILLING	♥ HOUR(S) AFTER DR	ILLING

\overline{W}_{r})	WEAVER BO		IC.	LOG OF SOIL BORING NO. B-111						
Į į	C	200 S. MICHIGAN AV (312) 922-1030 * * INE				FILE	#9504	2.10		SHEET 1	OF 7
,	YĀT! NE	ER LEVEL DATA = Not Encountered	Started	11/13/97		LOCA	TION Prop	osed Lea Co	unty Landfil]1	
598.0			Completed	11/13/97 Allan Ead							
İ	_ FT.	AT COMPLETION	Driller Helper	Freddy			·	ce, New Mex			
	_ FT.		Drilling Method	Air Rolar	<u> </u>	CLIEN		ino Real Lan		·	
	-	AT HR. A.D.	Sampling Method	Drill Cutting: 9140.96		oletion	Sunla				
(Sgo	GRO	OUND ELEVATION: 3,404		stlng: 9138.76		1: 598.0		SAM	IPLE DATA) (Sgc
Depth (FT.,bgs)	b.	ST	RATA DEPTH			Pth S)					Depth (FT.,bgs)
l fi	Lithology Type		DESCRIPTION	Į		n De	Calcareous	Moisture	Munsell	Notes	(I)
Dep	135	GR	APHIC LOG			Strata Depth (FT.,bgs)					원
	<u> </u>					-	1				
				0121D							E =
- 5.0	}	Yellowish-red to reddish- structure, friable, ver	y few organics, son	ne roots, increasi	nuiar ng calich	ie	No	Dry	5YR 5/6		5.0
		nodules with depth an	d slightly loamier	with depth		8.0			i		‡ = 1
10.0		Pale red to pinkish-white friable nodules of cali	Tine sandy CALIC	HE, moderately	wcak,		Strong	Dry	-2.5YR 7/2		[-0.0]
: :						12.0	Mild	Dry	2.5YR 6/6		F =
15.0		Reddish-brown loamy fir nodules are friable an	ne SAND with mois	st sandy loam nod	lules, us			i			15.0
j: :		concretions	a singitury strong,	., ,				İ			F 7
20.0		7 1-1-1	G. N. N			20.0	Mild	Dry	2.5YR 6/6		20.0
		Light brown loamy fine to calcareous concretion	is and sandy loam n	iodules, coated w	itle						E
- 25.0 -		carbonates, some organized Pink to white CALICHE			v line	25.0					25.0
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35.0 -		Very light brown mediur	n GRAVEL with ca	alcarcous sand ma	atrix,	35.0	Mild	Dry	2.5YR 8/1		35.0
	-E	grayel is brown when chert, some quartzite		_		1	Mild	Dry	2.5YR 8/3		
40.0 -	=	White to light brown peb calcareous sand matri	bly coarse GRAVE ix. Pebbles are less	EL with some fine angular, mostly of	; chert but	40.0	Mild	Dry	2.5YR 5/3		40.0
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45.0 -		indurated, cuttings are	e błocky, some che	rt pebbles and wi	nite	1	MIII) Diy	2.51 K 4/4		45.0
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		(Continued from page 1)						F 3		
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175.0		(Continued from page 2)			<u> </u>			175.0
-180.0-		Reddish-brown sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone buds, otherwise massive, very few laminae or bedding, moderately		Мо	Barely	2.5YR 5/6		-180.0-
185.0-		indurated	185.0	Nο	Barely	2.5YR 4/4		- 185.0
		Light reddish-brown, clayey SILTSONE Red, clayey SILTSTONE	187.0	No	Dry	2.5YR 6/4	{	-190.0-
190.0			195.0	No	Barely Damp	2.5YR 5/6		-195.0-
195.0		Pink, clayey SILTSTONE	175.0	No	Barely	7.5YR 7/3		-200.0
-205.0-				·	Damp		Pitcher Bell Sample obtained at 200'	-205.0
-210.0-								-210.0
-215.0		Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green situstone	211.0	No	Dry	2.5YR 6/2		-215.0
-220.0-		especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated					<u> </u>	-220.0
-225.0-								-225.0
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-260.0				Yes	Dry	2.5YR 4/4		-260.0-
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NOTES		1. Boring grouted after completion with 95% portland cement and 5% bentonite. 2. Drilling Company: Eades Drilling and Pump Service. LEGI W.		LE DRILLING	₹ a.d afte	R DRILLING	♥ HOUR(S) AFTER DI	RILLING

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	(Continued from page 3)						-265.0- -270.0-
	Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltston beds, otherwise massive, very few laminae or bedding, moderately indurated	e					-275.0-
							-285.0- -290.0-
	,		No	Dry	10R 4/6		-295.0- -295.0-
							305.0
							-315.0- -315.0- -320.0-
	٠.		Yes	ргу	10R 4/4		-325.0 -325.0 -330.0
							-335.0 -340.0
							-345.0- -350.0-
	(Continued) 1. Boring ground after completion with 95% portland comens. LEG	END		<u> </u>			-355.0-
	and 5% bentonite.		LE DRILLING	▼ A.D AFTEI	R DRILLING	♥ HOUR(S) AFTER DR	ILLING
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B 200 S. MICHIGAN AVENUE, CHICAGO IL, 60604 C (312) 922-1030 * * INDIANA (219) 923-9609 STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG (Continued from page 4) (Continued from page 4) Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately	NO. <u>B-111</u>	
STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG (Continued from page 4)	SHEET 5 OF 7	
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-365.0 - Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone	- -360.0-	
beds, otherwise massive, very few laminae or bedding, moderately indurated Minor Dry 2.5YR 4/6	- 3 -370.0-	
-375.0	375.0	
-380.0	-380.0- 	
-385.0 Miner Dry 2.5YR 5/6	-385.0- -390.0-	
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-415.0	415.0	
-425.0	-420.0- - - -425.0-	
-430.0	- - -430.0	
-435.0 - Dry 2.5YR 4/6	-435.0 -	
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Depth (FT., bgs) Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Calcareous	Moisture	MPLE DATA Munsell	Notes	Depth (FT., bgs)
-455.0 -455.0 -465.0 -475.0 -475.0 -485.0 -485.0 -495.0 -500.0 -510.0 -510.0 -520.0 -525.0 -535.0	(Continued) Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biolic, occasional chert pieces, occasional green siltstorbeds, otherwise massive, very few laminae or bedding, moderately indurated (Continued) (Continued)		Minor	Dry	2.5YR 6/4	Pitcher Bell Sample obtained at 485'	450.0- -455.0- -465.0- -475.0- -475.0- -485.0- -485.0- -490.0- -515.0- -510.0- -515.0- -515.0- -535.0- -535.0-
-515.0 -520.0 -525.0 -530.0 -535.0	(Continued) 1. Boring grouted after completion with 95% portland coment and 5% heavenite.	GEND Y.D WH		Dry ▼ A.D AFTE		♥ iiour(s) after d	

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Depth (FT., bgs) Lithology Type	STRATA DEPTH SOIL DESCRIPTION GRAPHIC LOG	Strata Depth (FT., bgs)	Całcarcous	Moisture	Munsell	Notes	Depth (FT., bgs)
-545.0- -550.0- -565.0-	(Continued from page 6) Reddish-brown, sandy MUDSTONE/CLAYSTONE, micaceous, especially biotile, occasional chert pieces, occasional green siltstone beds, otherwise massive, very few laminae or bedding, moderately indurated Pink CLAYSTONE Light reddish-gray, clayey SILTSTONE Reddish-gray, sandy SILTSTONE Reddish-gray, silty SANDSTONE BORING TERMINATED AT 598 FEET	566.0 568.0 576.0 581.0	Minor Yes Yes	Dry Dry Dry	2.5YR 6/4 2.5YR 8/3 2.5YR 7/1 10R 6/1		-545.0- -550.0- -565.0- -565.0- -565.0- -588.0- -595.0- -595.0-
	. Boring grouted after completion with 95% portland cement and 5% bentonite Drilling Company: Eades Drilling and Pump Service. ☑ W		ILE DRILLING	₹ a.d apte	R DRILLING	♥ Hour(s) after dri	LLING

Permit Application

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

Attachment H
Vadose Monitoring Plan



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:





136 Pecan Street Keller, Texas 76248 (817) 337-0112

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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 aguifer 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 asbuilt 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.

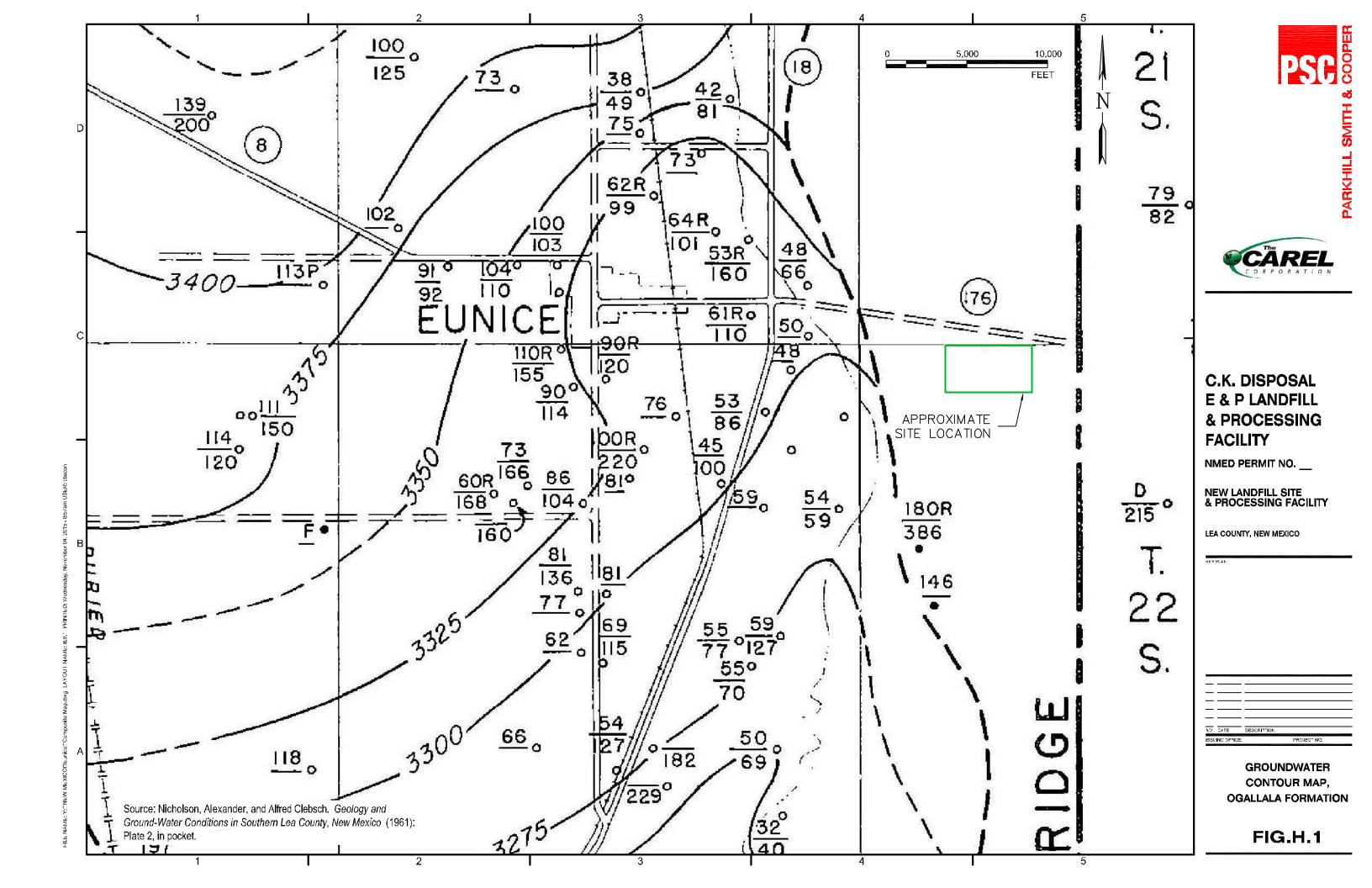
4.3 Sampling and Analysis Procedures

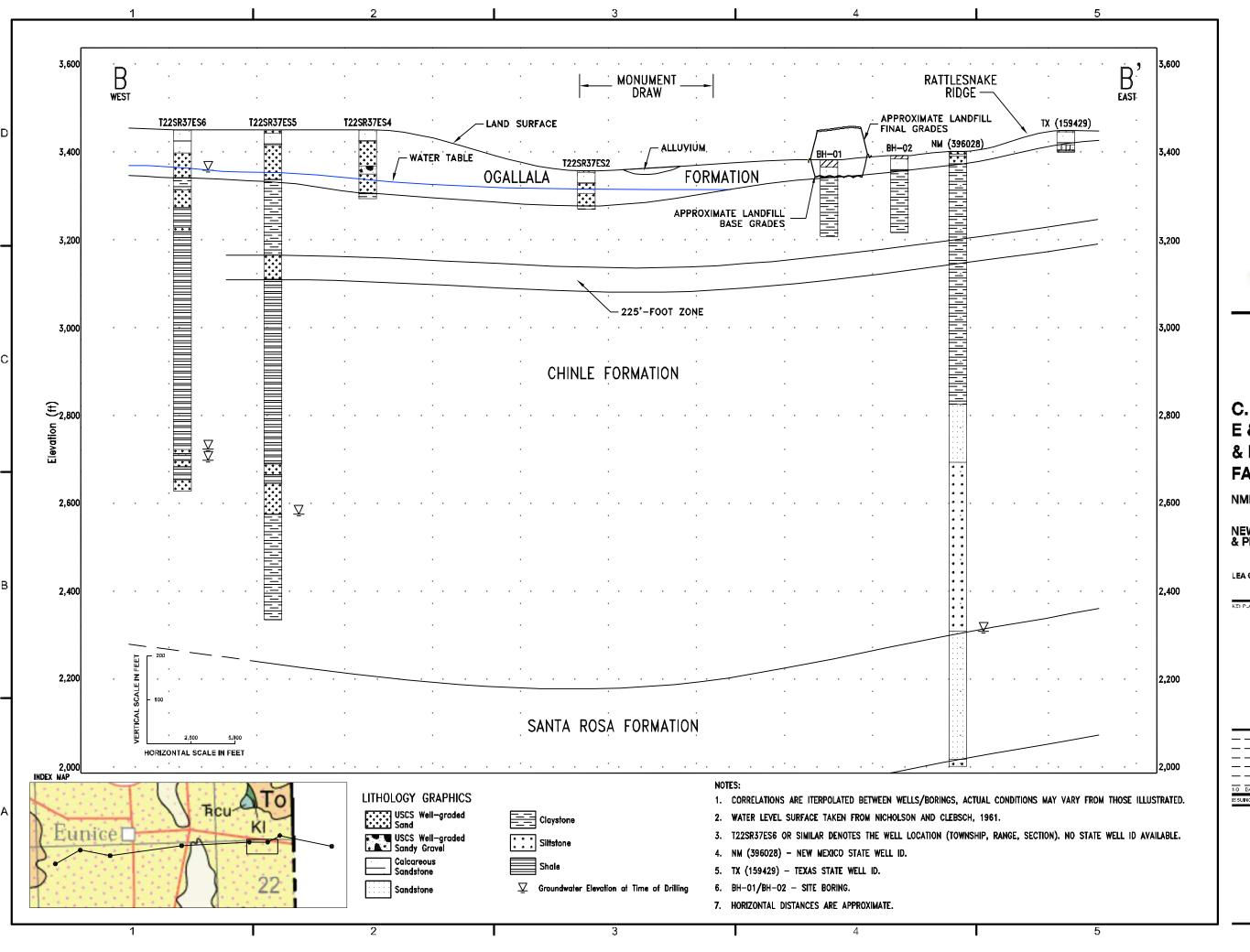
A Sampling and Analysis Plan is provided in Attachment I that contains the general requirements, sampling procedures and reporting procedures.

5.0 REFERENCES

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FIGURES









C.K. DISPOSAL **E&PLANDFILL** & PROCESSING **FACILITY**

NMED PERMIT NO.

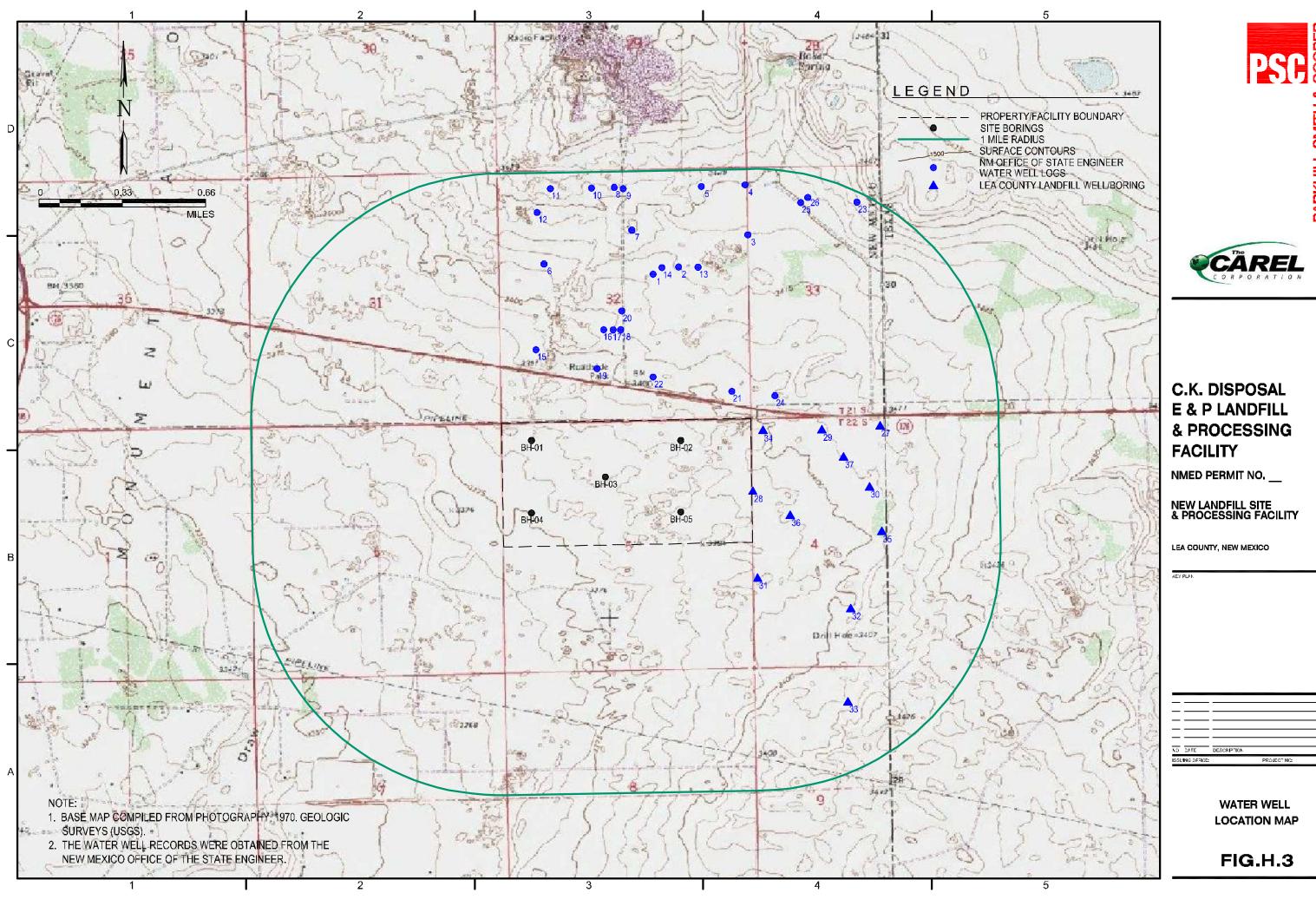
NEW LANDFILL SITE & PROCESSING FACILITY

LEA COUNTY, NEW MEXICO

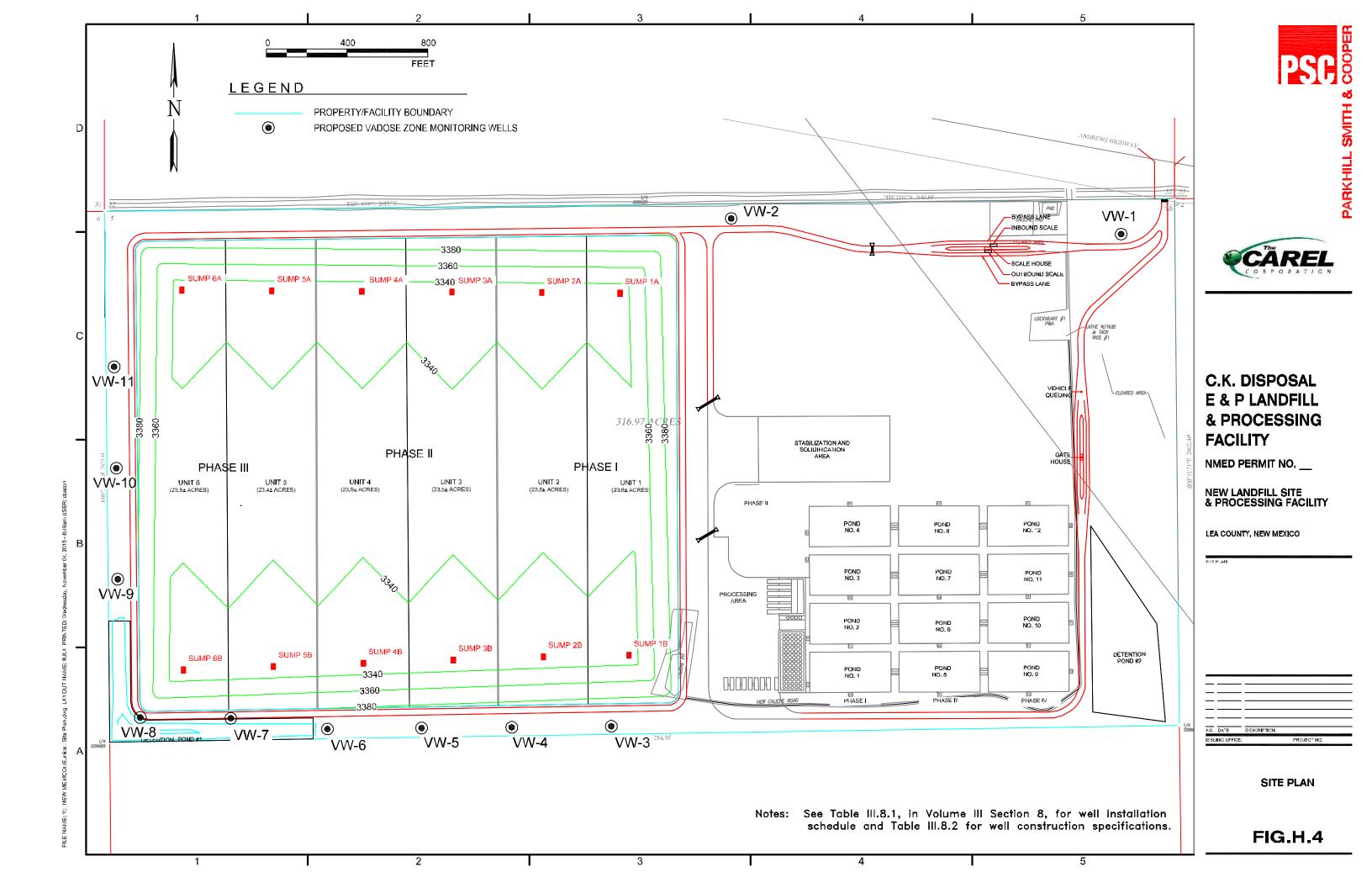
KEY PLAN

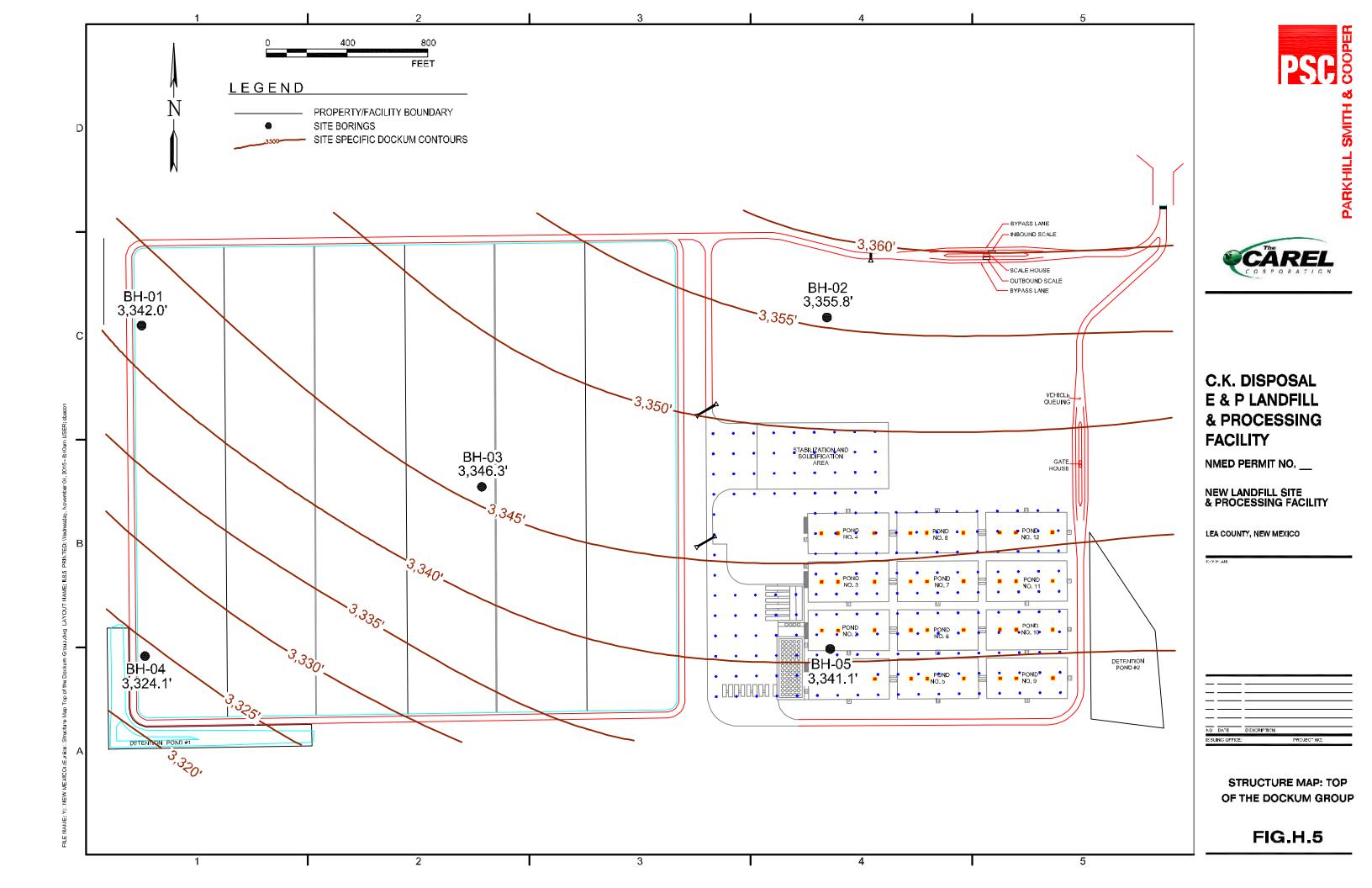
HYDROGEOLOGIC CROSS-SECTION B-B'

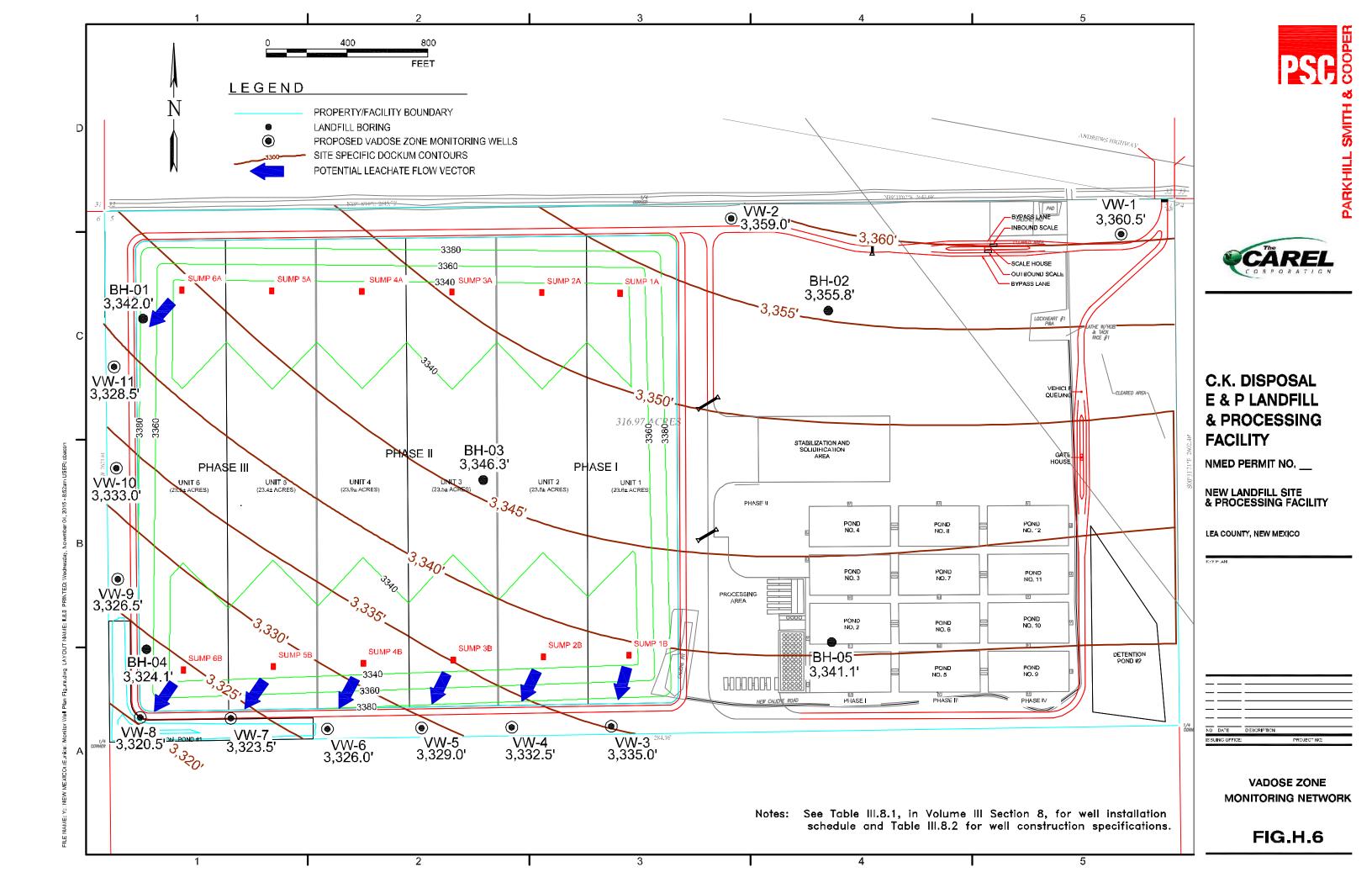
FIG.H.2

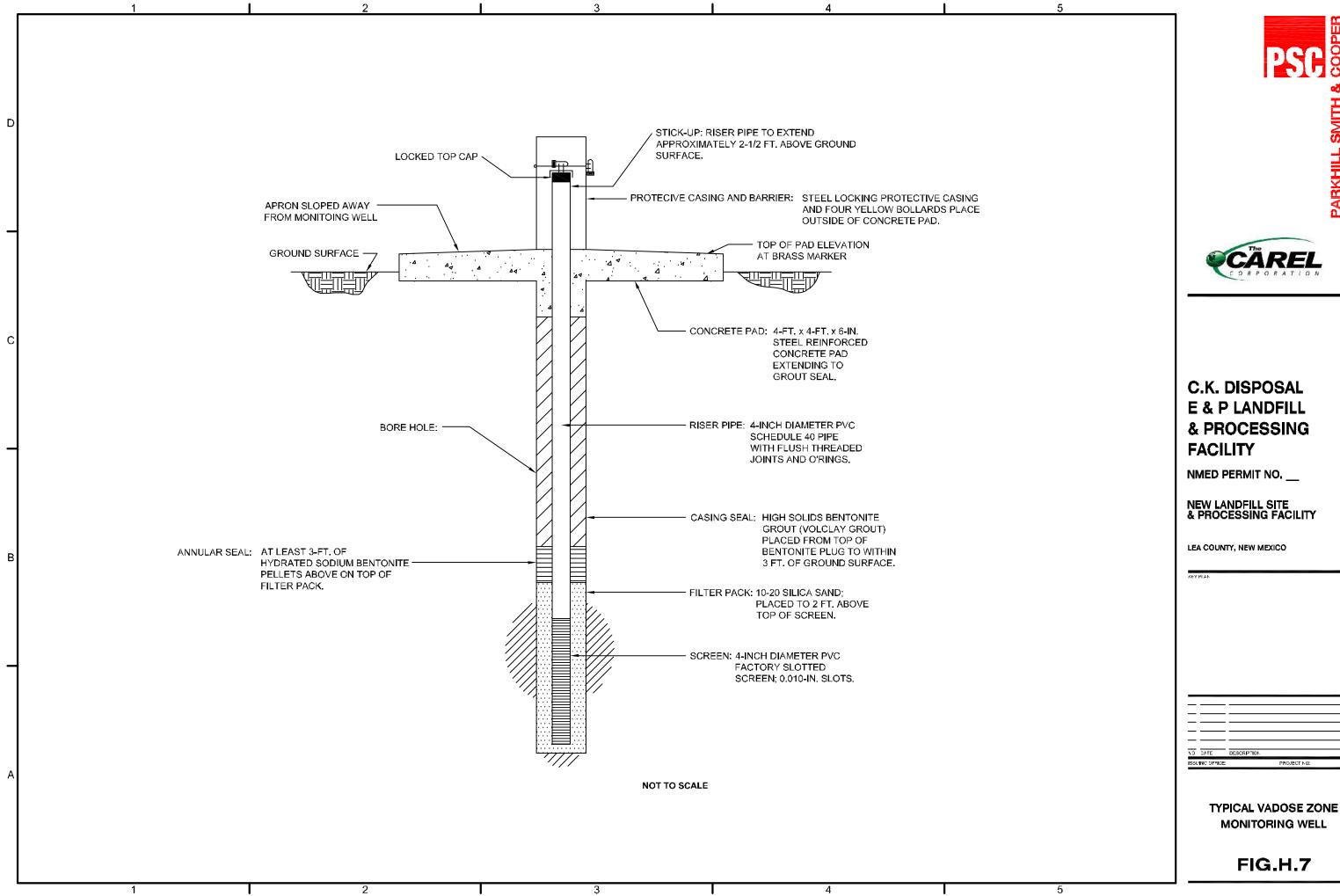














APPENDICES

APPENDIX H.A WELLS USED ON CROSS-SECTION B-B'

Revised June 1972

STATE ENGINEER OFFICE WELL RECORD

Section 1. GENERAL INFORMATION

Street or	Post Office A	ddress				Owne			
Well was drille	d under Permi	t No			and is located	in the:			
a,	¼	¼ ¼	¼ of Se	ction	Township_	Rar	nge		I.M.P.N
b. Tract	No	of Map No.		ot th	e				
		of Block No							
						System			
B) Drilling	Contractor				•	License No			
\ddress								-,	
Orilling Began		Comp	leted		Type tools		Size o	f hole	ir
ilevation of la	nd surface or .			at w	ell is	ft. Total depth	of well		f:
Completed we	ll is 🗀 :	shallow 🗀 a				upon completion	of well		f
Depth	in Feet	Sect Thickness			ER-BEARING ST		Est	imated Yiel	d
From	To	in Feet	1	Description of	Water-Bearing F	ormation	(gallo	ns per minu	ite)
					·				
-							-		

Diameter	Pounds	Threads	Section Depth		OF CASING	Ι	- 1	Perforation	
(inches)	per foot	per in.	Тор	Bottom	Length (feet)	Type of Sho	ne F	remoratio	To
									
			·						
		Sectio	n 4. RECOF	D OF MUDI	ING AND CEM	ENTING		. 1	
Depth From	in Feet To	Hole Diameter	Sack of Mi		ubic Feet of Coment	Metho	od of Place	ment	
			<u> </u>						
	<u> </u>								
				5. PLUGGR	NG RECORD				
ddress					No.	Depth in	Fret	Cubic	Feet
lugging Metho ate Well Plug					No.	Тор	Bottom	of Cen	nent
lugging appro	ved by:				2				
		State Engir	ieer Represe	ntative	<u>3</u> 4			<u> </u>	
Na. 19	Typed 1,	/20/78	FOR USE	OF STATE E	NGINEER ONL	Y			
ate Received	lypau I	, 20, 70		Quad		FWL _	<u>.</u>	_ FSL	
File No				Use Oi	1.	Location No. 22	2.37.6.4	41000	

			Section 6, LOG OF HOLE
Depth i	n Feet	Thickness	Color and Type of Material Encountered
From	То	in Feet	Cotor and Type
0	55	·——-	Caliche and sand
55	95		Dry sand
95	112		Water sand
1.12	140		Red bed, shale
140	180		Sand
180	225		Shale
225	235		Sand
235	730		Shale, red rock
730	740	<u> </u>	Water sand
740	755		Shale
755	770		Water sand
770	800		Shaje
800	825		Sand
	<u> </u>		3.443°
			L S Elev
			Depth to KTrc
Water -	95'-112		
	770!-775	2 BWPH	
		<u> </u>	
	1		

Section 7. REMARKS AND ADDITIONAL INFORMATION

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

Location: 22.37.6.41000 Owner: Gulf Oil Corp.

South Penrose Skelly Unit 109

Record of Casing: 16"

Cable

1980' FSL - 1980' FEL

Elevation: 3453' GL

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.

•	ח	riller	

Revised June 1977

STATE ENGINEER OFFICE WELL RECORD

Section 1. GENERAL INFORMATION

Street or		ddress					ier's Weil No.		
Vell was drilled	under Permit	No,			_ and is located	in the:			
a	_ ¼ ;	4 ¼	¼ of Sco	ction	Township	R	ange		_N.M.P.1
b. Tract ì	No	of Map No.		of th	e				
		of Block No			e				
					I.M. Coordinate				
vddress									
Orilling Began .	 	Comp	leted	·	Type tools		Size of	hole	i
levation of lar	ıd surface or .	 	 	at w	ell is	ft. Total dep	th of well		
'ompleted well	tis □ s	shallow 🔲 ar	rtesian.		Depth to water	upon completi	on of well		
		Sect	ion 2, PRIN	CIPAL WATE	ER-BEARING ST	`RATA			
Depth From	in Feet To	Thickness in Feet	1	Description of	Water-Bearing F	ormation		mated Yi	
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Diameter	Pounds	Threads	•	n 3. RECORU in Feet	OF CASING Length			Perforat	tions
(inches)	per foot	per in.	Тор	Bottom	(feet)	Type of S	hoe F	rom	То
		Section	 n 4 REC∩!	I OF MIDI	DING AND CEM	FNTING			
Depth		Hole	Sack	(s (Cubic Feet		hod of Places	ment	
From	То	Diameter	of M	ud o	of Cement				
						·			
			Sectio	л 5. PLUGGI	NG RECORD				
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.ddress lugging Metho					No.	Depth Top	n Feel Bottom		ic Feet Cement
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File No				Use	.1	Location No. 2	2.37.5.12	000	
110 110,						SCORLION INC.			

			Section 6. LOG OF HOLE
	in Feet	Thickness	Color and Type of Material Encountered
From	To	in Feet	
0	12	ļ <u>.</u>	Cellar
12	40		Caliche
40	118		Sand
118	290		Red bed
290	345		Sand
345	7.6.5		Shale, red rock
<u> 765</u>	790		Sand
790	810		Shale
810	880		Sand
880	1120		Red bed (water 220'-235')
	İ		
			·
	7		L S Elev
			Depth to KTrc
	<u> </u>		
			
		 	
			

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.	Elevation:	34551 1GL 344511685	
South Penrose Skelly Unit #106		•	

13"

10 3/4"

Cable

660' FNL - 1980' FWL

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.

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

Driller

STATE ENGINEER OFFICE

ELLLU 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			(4) 0	2	Skelly	Casoline)	Oil Compan	у
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		Ì						···
 	<u>-</u>							is located in the
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			i i				-	se No. WD-46
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	-							19
							. 21, 1972	
(P	lat of 640 a	icres)	_					
Elevation	at top of	casing i	n feet above s	sea level	455 0	Total dep	oth of well 1	62
							ter upon complet	
Section 2						NG STRATA		-
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110.	From	То	Feet					
1	87	105	18	grave	l and	ຣລກດ້		
2				- BISIYS	C. L	Dam.		<u></u>
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Section 3	<u> </u>			RECOR	D OF CAS	ING		
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	<u> </u>			<u> </u>	<u> </u>			<u> </u>
Section 4			RECC	RD OF MUE	DDING AN	D CEMENTING		
	in Feet	Diame		II			Methods Used	
From	То	Hole in	in. Clay	Cem	ent			
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	<u> </u>							
	<u>i · </u>	<u> </u>						
r Fastian E		1		BUIGO	SING REC	חפר		
Section 5							*	
							License No.	
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						•	gged	
Plugging	approved	by:				Cement Plug	gs were placed as	follows:
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File No	(" f-1	77	h-f-:	Use	11Vd,	Location	n No. 22-37	4.1742

Section 6

LOG OF WELL

	in Feet	Thickness in Feet	Color	Type of Material Encountered		
rom	То	- In reci				
}	4	4	brown	soil		
	30	26	gray	caliche		
<u> </u>	68	38	<u>brown</u>	sand		
Sa	87	19	<u>brown</u>	tight sand		
37	105	18	brown	sand & gravel		
 LO5	150	45	brown	send		
150	162	12	red	clay		
				L S Elev		
				L S Elev		
	-			Depth to K Tree 3305		
	<u> </u>			Elev of Carrier		
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_ `				SOURCE OF ALTITUDE GIVEN		
				Interpolated from Topo. Sheet X		
				Determined by Inst. Leveling		
				Other		
		1	!			
			<u> </u>			
						
		I				

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.

July III

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 pluggir record, only Section 1A and Section 5 need be completed.

	- 	 -		(A) Owne	er of well.	Ht.	ımble Oil Co.			
}										
				City					State	
	1						mit No			
ļ		1					1/4 of Section			
		İ		(B) Drilli	ng Contra	actor	E. 🕰 Burk	.e	License	No
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	<u> </u>			-						
				Drilling w	as comm	enced				19
<u></u>	Plat of 640	acres)		Drilling w	as comple	ted			Jan	19
			n foe	et ahove se	a level cz	المراج تذكيرا	Total d	enth of	well 87	
							Depth to w			
Jeate Wi	ICMEI WE	:II 19 311011	.0 ** **					user upo	compicator	***************************************
Section :	<u>2</u>			PRIN	CIPAL WA	TER-BEA	RING STRATA			
No.	Depth From	in Feet To	Th	ickness in Feet		מ	escription of Wat	er-Bearin	g Formation	
1									•	
2			1							
3	······									
4			 							
5			1-		_ · · - ·					
		1	I	1						
Section :	3				RECOR	D OF CA	ASING			
Dia	Pounds					Feet	t Type Shoe		Perforations	
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				ļ						
	ļ			<u>-</u>						
	<u> </u>	!		!		<u> </u>	_!			-
Section •	4			RECORI	D OF MUE	DING A	ND CEMENTING	i		
Deptl	n in Feet	Diame	eter	Tons	No. Sa	cks of				
From	To	Hole in	ı in.	Clay	Cem	ent		Metho	ods Used	
	, 			<u> </u>	<u> </u>					
	2				DILLOC	ING REC	2000			
Section 5		. .								
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ınggıng	approve	а Бу:					Cement Ph	igs were	placed as fo	uows:
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TTC 710					 			10		

22.37.2.222

Humble Oil Co.

Section 6

LOG OF WELL

	in Feet	Thickness		Type of Material Encountered		
From	То	in Feet				
0	3			soil		
3	28	<u> </u>		galiche		
_28	42			sand		
42	52			1ime		
52	80			sand		
80	87	egyani yangangan estat iyanganyanya — mesa tanah dar	en in a september of the part of the september of the sep	red bed		
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				Hydro Survey Field Check X		
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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 well.

Ε.	₽.	Burke	
		Well	Driller

Proje		OF BO Descri	ption: CK Disposal				CAREL
Depth, feet	Samples	Symbol/USCS	Location: Eunice, NM Top of PVC El.: feet MSL Surface El.: 3382 feet MSL Completion Depth: 175 feet Date Boring Started: 5/26/2 Date Boring Completed: 5/2	Ea 015	orthing: 160.00 usting: 1850.00	Monitor Well Construction Details	Monitor Well Description
			MATERIA	L DESCRIPT	ION		
5 10 15 20 25	{		CLAYEY SAND, brown well sorted, subrounded slightly moist, none HCl	to reddish b l, fine to med L reaction	rown, moderately lium grained,		
0 5 0 5			SILTY SAND, with calic sorted, well rounded, ve strong HCL reaction	he, light bro ery fine to fin	wn to white, well e grained, dry,		
5 5 6 6 5	L		CLAYSTONE, reddish I moist to dry, weak HCL		gray, slightly		
0 5 0 1 5	ĺ						
0 5 0							
5.10							
2Œ	1						
40 45 50							
35 30 65 70		ntractor Method: A Method: Stevere 15-04 BORINE					
75 Ilin	d Co	ntracto	r: HCl Drilling	Groundw	ater Observations	Remarks:	; 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig
illing	g Me	thod: A	ir Rotary	Date	Depth to Water (ft)		
mp	ling (Method	: Cuttings	5/26/15	Dry		
olos nier	gist: :t Mo	Steven	J. Wimmer 1-22				
ماور	OF.	BORII	NG NO. BH-01	The stratificati	on lines represent approx	mate strata b	oundaries. Water level at time of drilling.

			DRING NO. BH-02 ption: CK Disposal				CAREL
Depth, feet	Samples	Symbol/USCS	Location: Eunice, NM Northing: 521273.70 Top of PVC El.: feet MSL Easting: 928310.35 Surface El.: 3391.8 feet MSL Completion Depth: 175 feet Date Boring Started: 5/26/2015 Date Boring Completed: 5/26/2015			Monitor Well Construction Details	Manitor Well Description
			MATERIA	L DESCRIP	TION		
5 10 15	Ì		CLAYEY SAND, brown well sorted, subrounded, slightly moist, none HC	d, fine to me			
15 20	}	1	SILTY SAND, with calic sorted, well rounded, ve strong HCL reaction	che, light bro			
25 30	}						
35 40 45 50	1		CLAYSTONE, reddish HCL reaction, some pu		ıray, dry, weak		
55 60	}						
70 75			less gray and purple; s	lightly moist	to dry		
80 85 90	ł						
95 00 05	1						
10 15 20	{						
25 30 35	{						
40 45 50	{						
30 35 40 45 50 55 60 75 75 rilling ampli eolog							
70							
75 rilling	Cor	ntractor	: HCI Drilling	Groundw	ater Observations	Remarks	: 5 1/8" diameter boring; TH60 Atlas Copco Drill Rig
rilling	Mei	thod: Ai	ir Rotary	Date	Depth to Water (ft)		
ampli eolo	ing N		: Cuttings J. Wimmer	5/26/15	Dry		
rojec	<u>t No</u>	.: 15-04					
			IG NO. BH-02	The stratificat	on lines represent approx	imate strata b	oundaries. Water level at time of drilling.



OSE FILE NUMBER	
For OSE Use C,	

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

. PERMIT HOLDER(S)	
Name:WASTE CONTROL SPECIALISTS	
Address: P.O. BOX 1129	Address:
City: ANDREWS State: TX Zip: 79714	City: State:Zip:
State: TX Zip: 79714 Phone: (505) 394-4300	Phone:
Contact: MICHAEL BURNEY	i notto.
Contact Phone: (505) 394-4300	
Marketing and Company of the Company	
2. STATE ENGINEER REFERENCE NUMB	
File # CP 975 EXPLORE , Wel	£#C.P. 975
3. LOCATION OF WELL (The Datum Is Assu	med To Be WGS 84 Unless Otherwise Specified)
Latitude: 32 Deg 2	5 Min 45.8 Sec
	4 Min 20.4 Sec
(Enter Lat/Long To A	t Least 1/10th Of A Second)
Datum If Not WGS 84:	
A DDH I BIG CONTED A CYPOT	
4. DRILLING CONTRACTOR License Number: WD1184	
	VICE Work Phone: (432) 530-2696
	,
Drill Rig Serial Number:	261602
Control Name Of Park Dall Drive Or and a mile	and a local control of the party
cist the Name Of Each Drill Rig Supervisor tha Process:	at Managed On-Site Operations During The Drilling
RON	NY KEITH
	S 2I
	L sem
	ب برد -
5. DRILLING RECORD	2: OFF
Orilling Began: 1-21-08; Completed:	4-29-08 ; Drilling Method MUD ROTARY
Diameter Of Bore Hole: 7-7/8 (in);	 श्ति
	403
Total Depth Of Well: 2,020	(ft);
Completed Well Is (Circle One): Shallow Artes	·
Depth To Water First Encountered:1,09	<u>2(ft);</u>
Depth To Water Upon Completion Of Well:	N/A (ft).
Do Not White Delem The	o Y i
TRN Number:	File Number:
FRN Number: 396028	THE NUMBER.
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F	page 1 of 4
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	For OSE Use City	

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

6. RECORD OF CASING

6. RECORD			Y-1			1 70
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 ^r		
8-5/8	24	8	3' AGL	1,440'	FLOAT GUIDE	
						ļ

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
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Form: wr-20 May 07			

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NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

8. LOG Minute.	OF HO	LE. For Eac	n water Bearing Strata,	Estimate The Yield Of The Formation in Gallons Per
		Thickness (Feet)	For Water Bearing Strata	Color and Type of Material Encountered
710111	10	(1 000)	Enter The Estimated Yield in GPM	
<u> </u>			SEE ATTACHED	GEOLOGIC LOG
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		-		
		_		
		 		2 SEC
				<u> </u>
Enter M	 ethod	Used To Esti	mate Yield:	
				Below This Line
Tm Nun				File Number:
Form wr	-20 Ma	y 07	 pag	ge 3 of 4

CP-975 Geolo	ogic log
0-6 ft (y	pad fill and fine brown sand
6-10 ft	white sandy limestone (Mescalero caliche)
. 1	sand, light brown, and brown calcareous sandstone (Gatuña Formation)
	interbedded sandstone, siltstone, and claystone; reddish-brown to gray; bioturbated (Cooper Canyon Formation)
576-708 ft	sandstone and siltstone, gray to reddish brown (Trujillo Formation)
	interbedded very fine sandstone and siltstone, gray to dark reddish brown (Tecovas Formation)
	gray, fine sandstone with interbedded reddish brown and weak red siltstone and claystone (Santa Rosa Formation)
1384-1566 ft	reddish brown, very fine sandstone and siltstone, with some fibrous gypsum in lower part (Dewey Lake Formation)
1566-1602 ft	gray anhydrite beds, with intermediate reddish-brown and gray siltstone (Forty-niner Member of the Rustler Formation)
	gray anhydrite and wavy thin laminae of dolomite (Magenta Dolomite Member of the Rustler Formation)
1609-1736 ft	gray anhydrite beds, with intermediate halite including anhydrite and polyhalite (Tamarisk Member of the Rustler Formation)
1736-1807 ft 213	halite with thin two thin anhydrite beds and basal reddish-brown, very fine sandstone (Los Medaños Member of the Rustler Formation)
	halite with anhydrite/polyhalitic marker beds (MB103 and uppermost MB109) (Salado Formation)

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NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. ADDITIONAL STATEMENTS O	R EXPLANATIONS:	
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	- Ann	<u> </u>
		<u> </u>
		<u> </u>
		·
		····
The undersigned hereby certifies that, and correct record of the above descrifile this well record with the Office Occumplation of the well drilling.	bed bore hole. The undersigned furth	er certifies that he or she will
Tonny Kent	05-12-08	
Driller /	(mm/dd/year)	
	Do Not Write Below This Line	<u> </u>
Trn Number:		File Number:
Form wr-20 May 07	page 4 of 4	

STATE OF TEXAS WELL REPORT for Tracking #159429

Owner:

Waste Control Specialists

Owner Well #:

TP-62

Address:

P.O. Box 1129

Grid #:

26-40-5

Well Location:

Andrews, TX 79714

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Andrews, TX 79714

30 Miles NW of Andrews

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.

9/15/2015

Well Report: Tracking #:159429

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

CASING, BLANK PIPE & WELL SCREEN DATA

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. 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:				
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NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

OWNER OF WELL	Work Phone: 505-394-5204
Name: Louisiana Energy Services	Home Phone:
Contact: Laurie Wetherell Address: P.O. Box 1789	
City: Eunice	_
•	-
2. LOCATION OF WELL (A, B, C, or D required, E or F if known)	
A. $\frac{NW}{1/4} = \frac{SW}{LCa} = \frac{1/4}{1/4} = \frac{SE}{1/4} = \frac{1/4}{1/4} = $	0:2/S Range:38E N.M.P.M. County.
B. X = feet, Y = fe	eet, N.M. Coordinate System Grant.
U.S.G.S. Quad Map	
C. Latitude: 32 d 26 m 14.8698 s Longitude	: <u>103</u> d <u>04</u> m <u>49.8642</u> 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 Subdivision recorded in	, of the
Subdivision recorded in _	County
G. Other:	
	<u></u>
H. Give State Engineer File Number if existing we	11: <u>CP-993</u> <u>N</u>
I. On land owned by (required): Louisiana Ener	gy Services > ==
3. DRILLING CONTRACTOR	gy Services > 5
License Number: 1575	
Name: Talon Drilling	Work Phone: 806.467.060
Agent: Shane Currie	Home Phone: 806.467.062
Mailing Address: 921 N. Bivins	_
City: Amarillo	State: <u>TX</u> Zip: <u>79107</u>
4. DRILLING RECORD	
Drilling began: 12/5/08; Completed: 12/5/08 Size of hole: 7-7/8 in.; Total depth of well: 231 Completed well is: Monitor (shallow, art Depth to water upon completion of well: Dry	<u>l.</u> 5ft.; esian);
25pm 00 m200 Spm 00mp2010m 01 m211 <u>227</u>	1
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NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

Depth in Feet From To Dry	in feet		Estimated Yield (GPM)
RECORD OF CASIN	G		
Diameter Poun (inches) per 4 PVC Sch	ft. per in. 40 2	Top Bottom (feet)	
RECORD OF MUDE	OING AND CEM	ENTING	
Depth in Feet From To 0 20 20 206	Hole Diameter 7-7/8 7-7/8	of mud of Cement 20 Sacks Trimie	e (Bentonite/Cement (Bentonite chips
PLUGGING RECOR Plugging Contr Ac Plugging M Date Well Pl	actor:		
Plugging appro	oved by:	State Engineer Repr	
	No. Depti Top 1 2	n in Feet Cubic Feetof Cemer Bottom	11.57 nt
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NEW MEXICO OFFICE OF THE STATE ENGINEER WELL RECORD

9. LOG OF HOLE

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