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REPORTS

DATE:

STATE OF NEW MEXICO



ENERGY, NEW ERALS AND NATURAL RESOURCES PARTMENT

OIL CONSERVATION DIVISION HOBBS DISTRICT OFFICE

June 9, 1998

POST OFFICE BOX 1980 MOBBS, NEW MEXICO (88241-1980

Mr. Ron Lechwar Titan Resources, Inc (TRI) 500 W Texas Suite 5 0 Midland, Tx 79701

Re:

Preliminary Investigation Work Plan for Open Pits Designated as ATB 1-1 in Lovington Paddock/Lovington San Andres Unit and ATB 33-1 in West Lovington Unit, Operated by Titan Resources, L.P., Lea County, New Mexico.

Dear Mr. Lechwar:

New Mexico Oil Conservation Division (NMOCD) is in receipt of the above referenced document dated April 1998 submitted by Highlander Environmental Corp. NMOCD hereby approves of the Preliminary Investigation Work Plan with the following additional conditions:

- 1. TPH analysis shall be either EPA 418.1 or EPA 8015-M to include GRO & DRO range organics.
- 2. Due to the possibility of hazardous constituents and/or regulated "NORMS" there will be a site safety & health plan before work starts.

Please be advised that NMOCD approval of this plan does not relieve TRI of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD District I approval does not relieve TRI of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you require any further information or assistance please do not hesitate to call (505-393-6161) or write this office.

Sincerely Yours,

Wayne Price-Environmental Engineer

file: wp98/tripits

cc:

Chris Williams-NMOCD District I Supervisor Bill Olson-Environmental Bureau, Santa Fe, NM Mr. Timothy M. Reed- Highlander Environmental Corp. 1910 N. Big Spring Midland, Texas 79705

attachments- 1 cc to Bill Olson

SUBSURFACE INVESTIGATION REPORT TITAN EXPLORATION, INC. LOVINGTON PADDOCK/LOVINGTON SAN ANDRES UNIT ABANDONED PIT, ATB 1-1 LEA COUNTY, NEW MEXICO

1R-272

Prepared for:

Titan Exploration, Inc. 500 W. Texas Suite 500 Midland, Texas

Prepared by:

Highlander Environmental Corp. 1910 North Big Spring Street Midland, Texas

May 1999

Ike Tavarez

Project Manager/Geologist

Timonthy M. Reed

Vice President/Senior Geologist



Highlander Environmental Corp.

Midland, Texas

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Highlander Environmental Corp.

Midland, Texas

SUBSURFACE INVESTIGATION REPORT TITAN EXPLORATION, INC. LOVINGTON PADDOCK/LOVINGTON SAN ANDRES UNIT ABANDONED PIT, ATB 1-1 LEA COUNTY, NEW MEXICO

1.0 INTRODUCTION

Titan Exploration, Inc. (Titan) has retained Highlander Environmental Corp. (Highlander) to conduct a Subsurface Environmental Assessment (Assessment) at an abandoned pit designated ATB 1-1, Titan Lovington Paddock/Lovington San Andres Unit (Site), located in the SE/4, Section 1, Township 17 South, Range 36 East, Lea County, New Mexico. Figure 1 presents a Site location and topographic map. Figure 2 presents a Site drawing.

1.1 Purpose and Scope

The purpose of the Assessment was to evaluate and determine the extent of subsurface impacts, which may have occurred from releases of petroleum hydrocarbons from the abandoned pit. Prior to the assessment of the pit, the sludge material in the pit was characterized and disposed of at an approved disposal facility. The Assessment consisted of the installation of machine air rotary drilled soil borings, collection of soil samples for field and laboratory testing and the placement of permanent monitor wells at the Site to evaluate groundwater quality.

1.2 Regulatory Authority and Action Levels

The New Mexico Oil Conservation Division (NMOCD) has regulatory authority for oil and gas operations in the State of New Mexico. Locally, the NMOCD's Hobbs, New Mexico office regulates oil and gas activity in Lea County, New Mexico. The NMOCD has developed guidelines for closure of unlined surface impoundments (Unlined Surface Impoundment Closure Guidelines, February 1993). The guidelines require a risk-based evaluation of the site to determine recommended remediation action levels (RRAL) for benzene, toluene, ethylbenzene and xylene

(collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. A risk-based evaluation was performed for the Site in accordance with the NMOCD guidelines, and the proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/Kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene and xylene). An RRAL of 1,000 ppm for TPH is proposed for the Site.

The New Mexico Water Quality Control Commission (WQCC) has developed action levels for organic and inorganic contaminants in groundwater and have been published in the document titled, "State of New Mexico Ground and Surface Water Quality Protection Regulation (20 NMAC 6.2) and Utility Operator Certification (20 NMAC 7.4), December 1, 1995".

2.0 SITE SETTING

2.1 Topography

The Site area is located on a moderately flat terrain. The altitude of the ground surface at the site is approximately 3816 feet above mean sea level (MSL). The natural ground surface slopes to the southeast. There are no active or dry creeks or surface impoundments in the vicinity of the the Site.

2.2 Hydrogeology

The Ogallala aquifer underlies the northern part of Lea County, New Mexico. The Tertiary Ogallala Formation is composed of terrigenous deposits such as sands, gravels, and finer sediments. Quaternary deposits cover the aquifer, and it unconformably overlies Cretaceous, Triassic, and Permian rocks. The upper part of the formation consists of several hard, caliche-cemented, erosionally resistant beds called the "Caprock". A windblown cover of fine silt, sand, and soil overlies the Caprock.

Groundwater in the Ogallala Formation generally is unconfined. The groundwater elevation in the vicinity of Lovington Paddock/Lovington San Andres Unit is approximately 3750 feet above MSL. The saturated thickness of the Ogallala in the area is between 100 and 200 feet. Thickness is highly

controlled by the configuration of the sub-Ogallala surface.

Water from the Ogallala Formation in northern Lea County has been used for municipal, irrigation, and industrial purposes for many years. Characteristically, it is hard, high in silica content, and contains sulfate slightly in excess of chloride. The dissolved solids content is generally less than 600 ppm.

Most of the information in this section was derived from "Hydrogeology and Hydrochemistry of the Ogallala Aquifer, Southern High Plains, Texas Panhandle and Eastern New Mexico" by Ronit Nativ, Bureau of Economic Geology Report No. 177, 1988.

Based on depth-to-groundwater measurements from monitor wells installed at the Site from March 29, 1999, groundwater occurs at depths of approximately 61 to 63 feet below ground surface (BGS). The Site water levels from the monitor wells are shown in Table 6. The regional groundwater flow is generally from the northwest to the southeast, however, the Site groundwater flow shows a southwest to northeast hydraulic gradient (0.003 feet per foot). Figure 3 presents a groundwater potentiometric surface map for March 29, 1999.

3.0 ENVIRONMENTAL INVESTIGATION ACTIVITIES

3.1 Waste Characterization and Disposal

The pit area measured approximately 50' x 50' and contained approximately 2' of oily sludge/soil material. On June 18, 1998, Highlander personnel collected a composite sample of the sludge material in the pit for waste characterization. From July 30, 1998 to August 3, 1998, the material was excavated and placed into lined transport trucks. The material was excavated to a depth of 1.5'-2.0' below the original sludge surface where a dense caliche rock was encountered. Currently, the bottom of the pit measures approximately 4-5' below surface. A total of 90 cubic yards of oil sludge/soil material was removed and transported to Control Recovery, Inc. located in Hobbs, New Mexico for disposal. The sludge/soil material is considered exempt oil field waste. The manifests are found in Appendix A.

3.2 Aerial Photograph Review

Aerial photographs were obtained from National Aerial Resources, Inc., Troy, New York, and included photographs for February 2, 1949, October 18, 1954, July 18, 1978 and June 10, 1986. Appendix B presents copies of the aerial photographs.

The February 2, 1949 photograph shows the location of the pit ATB 1-1 and a former tank battery consisting of two (2) tank pads containing aboveground tanks or vessels. Figure 2 shows the approximate location of the former tank battery. The tank battery was located approximately 165 feet south of the pit. No spills are visible around the pit and tanks. The October 18, 1954 photograph shows the pit and only one tank pad. No spills are visible. The July 18, 1978 photograph and June 10, 1986 show only the pit with some overflow spills evident around the pit.

3.3 Water Well Survey

Highlander conducted a review of the New Mexico State Engineer's files to locate water wells within a 1-mile radius of the Site. Sixteen (16 water wells) were found inside the 1-mile radius. The majority of the wells are located northwest and southeast (cross gradient) of the Site. Table 3 presents a summary of the water well drilling and completion details. Figure 4 presents water well inventory map. The water well records are presented in Appendix C.

Referring to Table 3, two (2) City of Lovington water wells, identified as 6 and 9, are located northwest approximately 4,000 feet and 4,800 feet from the Site. The wells identified as 1, 2, 4, 7, 8, 11, 14, and 17 were drilled in about 1952 to 1968. These wells were likely drilled during early development of the oil field and used as a source of water for drilling rigs. The remaining wells appear to be domestic water wells and are unlikely that impacts detected in groundwater at the Site will affect these wells. There were no down gradient receptors identified from the water well search.

4.0 SUBSURFACE ASSESSMENT ACTIVITIES

4.1 Rotary Drilled Soil Borings

Highlander supervised drilling of five air rotary boreholes at the Site. On June 29, 1998 and June 30, 1998, boreholes (BH-1 thru BH-5) were drilled at the pit area to assess the subsurface soil. Boreholes (BH-1 thru BH-4) were installed as close to the pit as possible to a depth of 31 feet BGS. On August 17, 1998, borehole, BH-5 was installed in the center of the pit to a depth of 71 feet BGS. The bottom of the pit is currently 4-5' below surface. The locations of the boreholes are shown in Figure 2. Scarborough Drilling, Inc. of Lamesa, Texas drilled the boreholes using a truck mounted rotary drilling rig. The soil samples were collected with a splitspoon sampler. Soil samples were collected at various depths from each soil boring for potential laboratory testing and headspace gas screening. All samples collected for laboratory analysis were collected and preserved according to EPA protocols, and analyzed within appropriate holding times. A portion of each sample was collected for headspace gas screening using a Thermal 580-B Organic Vapor Meter (OVM) to provide supporting data and determine which samples would be selected for laboratory analysis. Table 4 presents a summary of the soil headspace gas reading. Lithological sample logs were prepared from each borehole are presented in Appendix E.

The splitspoon sampler was washed between boreholes and sampling events using potable water and laboratory grade detergent. The drilling rig and all downhole equipment were washed between borings using a high-pressure hot water washer. Following the completion of the drilling activities, all boreholes were grouted to surface.

4.2 Monitor well Installation

On October 1, 1998, Highlander supervised the installation of four (4) monitor wells (MW-1, MW-2, MW-3 and MW-4 at the Site. After evaluation of groundwater analysis, additional wells (MW-5, MW-6) were installed in January 27, 1999. On March 24, 1999, monitor wells (MW-7, MW-8, and MW-9) were installed to complete the groundwater delineation. A total of nine (9) monitor wells have been installed at the Site. The wells were surveyed for elevation by Piper Surveying, Inc., Gardendale, Texas, a New Mexico licensed professional land surveyor.

The locations of each monitor well are shown in Figure 2. The well construction logs are presented in Appendix D. The monitor well completion details are shown in Table 6.

The monitor wells were constructed with 2-inch diameter schedule 40 PVC threaded casing and screen. The well screen, 20 feet long, was placed in the borehole with 5 feet above and 15 feet below the groundwater surface observed during the drilling. The exterior of screen was packed with 10-20 graded Brady silica sand, which was placed from the bottom of the borehole to about two feet above the screen. A layer of bentonite pellets was placed over the filter sand pack and hydrated with water. The remaining borehole annulus in the monitor wells was filled with cement and bentonite grout to a depth approximately one to two feet below ground. The top of the well was covered with a watertight steel sleeve cover and locking cap.

5.0 ENVIRONMENTAL INVESTIGATION RESULTS

5.1 Soil Sampling and Analysis

One soil sample from the pit was collected for analysis to characterize the sludge material in the pit. The analysis included volatile organic compounds (EPA SW 846-8240), semi-volatile organic compounds (EPA SW 846-8270), and total metals (EPA SW 846-3051,6010,7471). Table 1 and 2 summarizes the results of the sludge/soil material in the pit.

Soil samples from the boreholes (BH-1 through BH-5) and monitor wells (MW-2, MW-3 and MW-4) with elevated OVM readings were selected and analyzed for Total Petroleum Hydrocarbon (TPH) by method modified 8015, Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) by method SW 846-8020 and chloride by method EPA 300.0. The analytical laboratory reports, chain of custody forms, and Quality Assurance/Quality Control samples are shown in Appendix E. Table 4 presents the organic vapor readings. Table 5 summaries the analytical results of the boreholes and monitor wells.

Referring to Tables 4 and 5, the boreholes (BH-1, BH-2, BH-3, and BH-4) drilled outside the pit showed traces of organic vapor ranging from 0 ppm to 17 ppm in the subsurface soil. The soil



samples in BH-2, BH-3 and BH-4 at 15-16' and 30-31' showed TPH and BTEX below the method detection limits. Borehole (BH-1) had traces of TPH at 12.1 mg/kg at 20-21' and 12 mg/kg at 30-31' BGS. A trace of toluene was also detected at 0.57 mg/kg at 20-21' below surface.

Borehole (BH-5) was drilled in center of the pit to a depth of 71'. During the drilling of the borehole, groundwater was encountered at 58'. The organic vapor readings ranged from 240 ppm to 560 ppm above the groundwater and decreased at 60-61' and 70-71' to 115 ppm and 1 ppm, respectively. The soil samples showed TPH (DRO) of 3,940 mg/kg at 10-11' which decreased to 1,709 mg/kg at 50-51' BGS. The TPH (GRO) ranged from 10.1 mg/kg to 397 mg/kg. The total BTEX detected in the impacted soil had decreasing concentrations of 63.55 mg/kg at 10-11', 56.11 mg/kg at 25-26', 27.19 mg/kg at 40-42' and <0.001 mg/kg at 50-51'BGS. The highest benzene level of 0.163 mg/kg was detected at a depth of 25-26'.

Soil samples were collected during the installation of monitor wells (MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8 and MW-9) at 60-61' BGS, immediately above the groundwater. The OVM readings ranged from 0 ppm to 5 ppm, except for MW-4 (60-61') which had an elevated OVM level of 671 ppm. Soil samples from monitor wells (MW-2, MW-3 and MW-4) were selected for analysis of TPH and BTEX. MW-2 and MW-3 showed levels below the method detection limits. A TPH (DRO) at 1,180 mg/kg and a total BTEX of 31.82 mg/kg with no benzene detected in MW-4 at 60-61' BGS. The impacted soil encountered in MW-4, immediately above the groundwater, appears to be from a secondary source in the area.

With the exception of area around MW-4, the impacted soil appears to be confined to the pit. Soil samples from boreholes BH-1, BH-2, BH-3, and BH-4, installed outside the pit, did not exceed the RRAL for TPH and BTEX. Total BTEX levels, which exceeded the RRAL of 50 ppm, were detected in BH-5 with a level of 63.55 mg/kg at 10-11' and 56.11 mg/kg at 25-26'. The benzene concentrations were below the method detection limit, except for one sample in BH-5 at 25-26'BGS of 0.163 mg/kg, This level is below the RRAL of 10 ppm. The proposed

RRAL for TPH (1000 ppm) was only exceeded in samples from borehole (BH-5). The highest TPH concentration reported in soil samples from BH-5 was 3,940 mg/kg (10-11'). The TPH level decreases to 1,709 mg/kg at 50-51' BGS.

The chloride analysis in boreholes (BH-1, BH-2, BH-3, and BH-4) showed levels ranging from 8.9 mg/kg to 210 rng/kg. The soil samples from BH-5, installed in the center of the pit, had a chloride level ranging from 13 mg/kg to 24 mg/kg. The chloride levels showed no impact to the subsurface soil.

5.2 Groundwater Sampling and Analysis

On November 5, 1998, monitor wells (MW-1, MW-2, MW-3 and MW-4) were sampled to evaluate groundwater qualities. On January 28, 1999, two additional monitor wells (MW-5 and MW-6) were sampled as well as monitor wells (MW-1, MW-2, MW-3 and MW-4). On March 25, 1999, three additional monitor wells (MW-7, MW-8 and MW-9) were sampled at the Site. The monitor wells were developed and purged by Scarborough Drilling, Inc. using a 10-foot long rig bailer. Prior to sampling, the wells were purged to remove a minimum of three casing volumes of groundwater. The purge water from the monitor wells were contained and disposed of in the Titan Central Tank Battery sump.

Groundwater samples from the monitor wells were collected using clean disposable bailers. The samples were transferred into labeled and preserved containers provided by the laboratory. The groundwater samples were analyzed for Polynuclear Aromatics Hydrocarbons (PAH) by method EPA SW 846-8270, 3510, Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) by method EPA SW 846 8020, Total Metals by method EPA SW 846-3015, 6010B, and 7470 and Major anions and cations by method EPA 150.1, 300.0, 353.3, 310.1, 160.1. The samples for total metals were field filtered to 0.45 micron using a dedicated disposable filter prior to preservation and shipment to the laboratory. The samples were shipped to Trace Analysis Inc. in Lubbock, Texas. Table 7 presents a summary of the TPH, BTEX and PAH analysis. Table 8 presents a summary of the dissolved metals analysis. Table 9 presents a summary of the anions and cations analysis. Appendix E

presents the laboratory reports. Figure 5 shows the contaminant distribution map. Figure 6 presents the isopleth map of benzene. Figure 7 presents the isopleth map of naphthalene.

Referring to Table 5, detectable benzene concentrations were found in MW-3 (0.102 mg/l), MW-4 (1.85 mg/l), MW-5 (2.73 mg/l) and MW-6 (2.58 mg/l), which are above the WQCC human health standard for benzene of 0.01 mg/l. Monitor well (MW-4) had toluene of 1.89 mg/l and xylene of 0.682 mg/l, above the WQCC human health standard of 0.62 mg/l. The March 25, 1999, sample analyses for MW-7, MW-8 and MW-9 did not show detectable levels of BTEX in MW-7 and MW-8, however, benzene of 0.104 mg/l and toluene of 0.002 mg/l were detected in MW-9. On April 14, 1999, monitor well (MW-9) was resampled and the BTEX levels were below the method detection limit. The first analysis for MW-9 appears to have been the result of induced laboratory error.

Naphthalene was detected in MW-2 (0.001 mg/l), MW-4 (0.002 mg/l), MW-5 (0.034 mg/l) and MW-6 (0.038 mg/l). MW-5 and MW-6 exceeded the WQCC standard for naphthalene of 0.03 mg/l. Figure 8 presents an isopleth map of naphthalene concentrations.

Referring to Table 6, barium was reported at 0.11 mg/L, 0.12 mg/l and 0.11 mg/l, in samples from wells MW-1, MW-4 and MW-7, respectively. The WQCC human health standard for barium is 1.0 mg/L. No other metal parameters were reported in the groundwater samples above the test method detection limits.

Referring to Table 7, the ions and cations parameter reported in the samples did not exceeded WQCC domestic water quality standards. Chloride was below the WQCC standard (250 mg/l) in groundwater from all wells.

Referring to Figures 5 and 6, it appears that two distinct groundwater contaminant plumes were observed at the Site. One plume is due to the impact from the pit and extends northeast from the pit. The groundwater impact from the pit has been defined and appears to be confined to the

immediate area downgradient of the pit.

The second plume is located in the area of MW-4 and MW-6, upgradient from the pit. Referring to aerial photographs and Figure 5, a former tank battery location was present at this location and may be the source of this plume. Based on the field observations during the installation of BH-4 and BH-6, the drill cuttings did not appear to reveal any impact in the subsurface soil. However, MW-4 did show detectable levels of BTEX and TPH (60-61') BGS immediately above the groundwater. Another suspected source for the groundwater plume may be the underground pipeline, operated by Texas New Mexico Pipeline Company, located south of MW-4 and MW-6.

6.0 CONCLUSIONS

- 1. The Ogallala aquifer underlies the northern part of Lea County, New Mexico. Groundwater in the Ogallala Formation generally is unconfined. The groundwater elevation in the vicinity of Lovington Paddock Unit is approximately 3750 feet above MSL. The saturated thickness of the Ogallala in the area is between 60 and 100 feet. Thickness is highly controlled by the configuration of the sub-Ogallala surface. A total of nine (9) monitor wells MW-1 through MW-9, were installed to a depth of approximately 77 feet. The regional groundwater flow is generally from the northwest to the southeast, however, the Site groundwater flow shows a southwest to northeast hydraulic gradient. (0.003 feet per foot).
- 2. A total of 90 cubic yards of oil sludge/soil material was removed from the abandoned pit and transported to Control Recovery, Inc. located in Hobbs, New Mexico for disposal. The sludge material is considered exempt oil field waste.
- 3. The February 2, 1949 aerial photograph shows the location of the pit and a tank battery south of the pit. The tank battery consists of two (2) tank pads with aboveground tanks or vessels.

- 4. Highlander conducted a review of the New Mexico State Engineer's files to locate water wells within a 1-mile radius of the Site. Sixteen (16) wells were found inside the 1-mile radius. The majority of the wells are located northwest and southeast (cross gradient) of the Site. Two (2) City of Lovington water wells are located northwest approximately 4,000 feet and 4,800 feet from the Site. Some of the wells were likely drilled during early development of the oil field and used as a source of water for the drilling rigs. The remaining wells appear to be domestic water wells and it is unlikely that impacts detected in groundwater at the Site will affect these wells. There were no downgradient receptors identified from the water well search.
- 5. Impacted soil, with the exception of the area around MW-4, appears to be confined to the pit. The boreholes (BH-1, BH-2, BH-3, and BH-4), installed outside the pit, did not exceed the RRAL for TPH and BTEX.
- 6. Soil samples from BH-5 had a total BTEX level, exceeding the RRAL of 50 ppm, of 63.55 mg/kg at 10-11' and 56.11 mg/kg at 25-26'. The benzene concentrations were below the method detection limit, except for one sample at 25-26' BGS of 0.163 mg/kg. This level is below the RRAL of 10 ppm. The highest TPH concentration was reported in BH-5 at 3,940 mg/kg (10-11') and decreased to 1,709 mg/kg at 50-51' BGS. These levels are above the proposed RRAL for TPH (1,000 ppm).
- 7. Soil samples taken during the drilling of MW-4 (60-61') showed an elevated OVM reading of 671 ppm. The sample (60-61') from MW-4 had a TPH (DRO) at 1,180 mg/kg and a total BTEX of 31.82 mg/kg, with no benzene detected in the soil. The impacted soil encountered in MW-4, situated immediately above the groundwater, appears to be from a secondary source in the area. This secondary source appears to be a former tank battery.
- 8. The soil chloride analyses of boreholes (BH-1, BH-2, BH-3, BH-4, and BH-5) showed levels ranging from 8.9 mg/kg to 210 mg/kg. The chloride levels showed little or no

impact to the subsurface soil.

- 9. Benzene was detected in the groundwater samples in MW-3 (0.102 mg/l), MW-4 (1.85 mg/l), MW-5 (2.73 mg/l) and MW-6 (2.58 mg/l), which are above the WQCC human health standard for benzene of 0.01 mg/l. Monitor well (MW-4) showed toluene of 1.89 mg/l and xylene of 0.682 mg/l, above the WQCC human health standard of 0.62 mg/l.
- 10. Naphthalene was detected in the groundwater samples in MW-2 (0.001 mg/l), MW-4 (0.002 mg/l), MW-5 (0.034 mg/l) and MW-6 (0.038 mg/l). MW-5 and MW-6 exceeded the WQCC standard for naphthalene of 0.03 mg/l.
- 11. Barium was reported at 0.11 mg/l, 0.12 mg/l and 0.11 mg/l, in samples from wells MW-1, MW-4 and MW-7, respectively. The samples were below the WQCC human health standard for barium of 1.0 mg/l. No other dissolved metal parameters were reported in the groundwater samples above the test method detection limits. The ions and cations reported in the samples did not exceeded WQCC domestic water quality standards. Chloride levels in the groundwater were below the WQCC standard (250 mg/l) in all the wells.
- 12. Two groundwater hydrocarbon plumes were observed at the Site. One plume is due to the impact from the pit and extends northeast from the pit. The groundwater impact from the pit has been defined and appears to be confined to the immediate area downgradient of the pit.

The second plume is located in the area of MW-4 and MW-6, upgradient from the pit. Referring to aerial photographs and Figure 5, a former tank battery location was present at this location and may be the source of this plume. Based on field observations during the installation of BH-4 and BH-6, the drill cuttings did not reveal any apparent impact in the subsurface soil. However, MW-4 had detectable levels of BTEX and TPH at (60-61') BGS, immediately above the groundwater. Another suspected source for the groundwater

impact may be from an underground pipeline, operated by Texas New Mexico Pipeline Company, located south of MW-4 and MW-6. The pipeline company will be contacted to determine the product carried in this pipeline.

7.0 RECOMMENDATIONS AND REMEDIATION

- 1. The impacted soil encountered in the vicinity of BH-5 in the pit showed total BTEX and TPH levels above the guidelines for closure of unlined surface impoundments. These levels were found from the bottom of the pit to approximately 30' BGS. Titan proposes to cap the pit with a relative impermeable compacted liner consisting of approximately 2 feet of clay. The clay cap will be placed from the bottom of the pit up in six-inch lifts and compacted to 95 % proctor. A surface cover of topsoil will be placed over the cap and seeded with a range grass mixture.
- 2. Groundwater contaminant plume appears to be confined to the immediate area of the pit. Based on a review of records from the New Mexico State Engineer's office, there are no close identifiable groundwater receptors downgradient of the Site. Titan proposes to implement a groundwater recovery program to remediate the levels in the groundwater.

The groundwater recovery system will consist of installing several recovery wells. However, the final determination regarding the number of recovery wells will be based on a pumping test, which will be performed following installation of the initial well. The initial well will be installed in the area of greatest concentration, near the pit. The well will be screened from the bottom of the borehole to approximately five (5) feet above groundwater. The well will be constructed with PVC casing and screen of sufficient diameter for installation of an electric submersible pump. The recovery well will be constructed in accordance with State of New Mexico construction standards. After the evaluation of the pump test data, a workplan will be submitted for the remediation of the groundwater.



Table 1
Titan Exploration, Inc.
Lovington Paddock Unit -Pit
Waste Characterazation

TPH, Volatile Organic and Semi-Volatile Organics

Date Sampled: 6/18/98

	TPH mg/kg	Volatile Organics	Semi-Volatiles
Sample ID	Modified 8015	mg/kg	ng/kg
		Methylene chloride - 1	Not Detected
Ovington Paddock Unit Pit	7,390	Benzene -	99
		Toluene -	130
		Ethylbenzene -	160
		m&p-Xylene -	100
		o-Xylene -	42
		Isopropylbenzene -	26
			43
		1,3,5-Trimethylbenzene -	15
		1,2,4-Trimethylbenzene -	55
		sec-Butylbenzene -	12
		n-Butylbenzene -	22
		Naphthalene -	22

Titan Exploration, Inc. Lovington Paddock Unit

Table 2

Waste Characterization Total Metals

Date Sampled: 6/18/98

Sample ID	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Silver (mg/kg)	Selenium (mg/kg)
Lovington Paddock Pit	<10	240	<2.0	<5.0	14	<0.25	<2.0	<10

Table 3: Summary of Drilling and Completion Details for Water Wells within 1-Mile Titan Exploration Inc.,
Lovington PaddockUnit - Pit
Lea County, New Mexico

Highlander Well Number	Date Drilled	Owner	Legal Description	Drilled Depth, feet BGS 100	Screen Interval feet BGS
1	1968	McVay Drilling Co.	SE/4, NW/4, Sec. 12, T-175, R-36-E	110	68-110
2	1953	Not Given	SE/4NW/4, NE/4, NE/4 Sec 12, T-17-S, R-36-E	110	-
3	1985	Read and Stevens Inc.	NE/4, SW/4 Sec. 13, T-17-S, R-36-E	150	90-150
4	1953	Haynes and V.T. Drilling Co.	SE/4, SE/4, Sec. 2, T-17-S, R-36-E	90	-
5	1957	Jack Clayton	SE/4, NE/4, Sec. 2, T-17-S, R-36-E	75	-
6	1992	City of Lovington	NE/4, NW/4,NW/4, Sec. 1, T-17-S, R-36-E	232	82-232
7	1952	Lee Drilling Co.	NE/4, NW/4, Sec. 1, T-17-S, R-36-E	110	87-109
8	1963	Skelly Oil Co.	NE/4, NW/4, Sec. 1, T-17-S, R-36-E	182	55-178
9	1973	City of Lovington	NE/4, SW/4, NW/4, Sec. 1, T-17-S, R-36-E	225	170-220
10	1956	Jack Clayton	NW/4, NW/4, SW/4, Sec. 1, T-17-S, R-36-E	150	46-150
11	1963	Skelly Oil Co.	SW/4, NE/4, Sec. 1, T-17-S, R-36-E	192	55-190
12	1954	Oth H. Grimes	NE/4, NE/4, NE/4, Sec. 1, T-17-S, R-36-E	120	60-120
13	1955	Mrs. Chloe Stiles	SW/4, SW/4, SW/4, Sec. 1, T-17-S, R-36-E	72	-
14	1954	Lee Drilling Co.	Not Given	100	-
15	1972	Mattie Price	NW/4, NW/4, SE/4, Sec. 6, T-17-S, R-37-E	130	-
16	1966	J. Lynn Walker	40 acre center, SE/4, Sec. 6, T-17-S, R-37-E	120	60-120
17	1952	Simmons Drilling Co.	NW/4, NW/4, Sec. 7, T-17-S, R-37-E	120	60-112
18	1964	E.D. Shipp	N/2, NW/4, Sec. 7, T-17-S, R-37-E	110	-
19	1965	E.D. Shipp	NE/4, NW/4, Sec. 7, T-17-S, R-37-E	111	50-111
20	1961	E.D. Shipp	NE/4, NW/4, NE/4, Sec. 7, T-17-S, R-37-E	95	-
21	1960	Dan Shipp	NW/4, NW/4, NW/4, Sec. 7, T-17-S, R-37-E	150	-
22	1979	Bill Shipp	NW/4, NE/4, Sec. 7, T-17-S, R-37-E	128	70-128
23	1954	Otha H. Grimes	SW/4, SW/4, SW/4, Sec. 31, T-16-S, R-37-E	137	50-137
24	1997	BOC Gas	S/2, SE/4, SW/4, Sec. 31, T-16-S, R-37-E	248	50-248

Notes:

1. BGS:

Denotes depth in feet below ground surface

2. -:

No data available

3. N/S:

No sample collected.

Table 4: Summary of Headspace Gas Analysis from Soil Samples,
Lovington Paddock Unit - Pit, Titan Exploration, Inc.,
Eunice, New Mexico

Sample ID	Date Collected	Depth Interval, Feet BGL	OVM Reading, PPM	Comments
BH-1	6-29-98	5.0 – 6.0	4	Background - Soil: 0.0 ppm Air: 0.0 ppm
		10.0 - 11.0	4	
		15.0 - 16.0	4	
		20.0 – 21.0	4	
		25.0 - 26.0	3	
		30.0 – 31.0	1	-
TD: 31'				
BH-2	6-30-98	5.0 – 6.0	2	Background - Soil: 0.0 ppm Air: 0.0 ppm
		10.0 – 11.0	2	
		15.0 - 16.0	17	
· · · · · · · · · · · · · · · · · · ·		20.0 – 21.0	6	
		25.0 - 26.0	7	
TD: 31'		30.0 – 31.0	3	
BH-3	7-1-98	5.0 - 6.0	0	Background - Soil: 0.0 ppm Air: 0.0 ppm
		10.0 – 11.0	0	
		15.0 – 16.0	3	
		20.0 – 21.0	2	
		25.0 - 26.0	1	
		30.0 – 31.0	2	
TD: 31'				
Notes:	<u> </u>			

Notes:

1. BGL:

Denotes sample depth in feet below ground level.

2. PPM:

Denotes concentration of total ionizable hydrocarbons in parts per million

Table 4 (cont): Summary of Headspace Gas Analysis from Soil Samples, Lovington Paddock Unit Pit, Titan Exploration, Inc., **Eunice**, New Mexico

Sample ID	Date Collected	Depth Interval, Feet BGL	OVM Reading, PPM	Comments
BH-4	7-1-98	5.0 – 6.0	1	Background - Soil: 0.0 ppm Air: 0.0 ppm
		10.0 - 11.0	0	
		15.0 - 16.0	1	
		20.0 – 21.0	1	
		25.0 - 26.0	0	
		30.0 - 31.0	0	
TD: 31'				
BH-5	6-30-98	5.0 - 6.0	520	Background - Soil: 0.0 ppm Air: 0.0 ppm
		10.0 - 11.0	550	
		15.0 – 16.0	388	
		20.0 – 21.0	500	
		25.0 – 26.0	550	
		30.0 – 31.0	240	
		35.0 – 36.0	350	
		40.0 – 41.0	350	
		45.0 – 46.0	490	
		50.0 - 51.0	560	
		60.0 - 61.0	115	
		70.0 – 71.0	ī	
TD: 71'				

Notes:

1. BGL:

2. PPM:

Denotes sample depth in feet below ground level.

Denotes concentration of total ionizable hydrocarbons in parts per million

Table 4 (cont): Summary of Headspace Gas Analysis from Soil Samples,
Lovington Paddock Unit Pit, Titan Exploration, Inc.,
Eunice, New Mexico

Sample ID	Date Collected	Depth Interval, Feet BGL	OVM Reading, PPM	Comments
MW-2	10-1-98	60-61	0	Background - Soil: 0.0 ppm Air: 0.0 ppm
MW-3	10-1-98	60-61	3	
MW-4	10-2-98	60-61	671	
MW-5	1-27-98	60-61	5	
MW-6	1-27-99	60-61	4	
MW-7	3-24-99	60-61	3	
MW-8	3-24-99	60-61	0	
MW-9	3-24-99	60-61	5	

Titan Exploration, Inc. Lovington Paddock Unit TABLE 5
Soil Samples
TPH, BTEX and Chloride

Table 6: Summary of Monitor Well Drilling and Completion Details
Titan Exploration, Inc.,

Legipton Boddon/Son Andrea Unit. ATR 1.1 Bit

Lovington Paddock/San Andres Unit, ATB 1-1, Pit

Lea County, New Mexico

Monitor Well	Installation Date	Drilled Depth, feet BGS	Ground Elevation, feet AMSL	Top of Casing Elevation, feet AMSL	Screen Interval, feet BGS	* Depth-to-Groundwater, feet TOC
MW-1	10/1/98	75.0	3814.96	3817.26	55-75	65.86
MW-2	10/1/98	76.0	3813.91	3816.07	56-76	64.75
MW-3	10/1/98	75.0	3815.32	3817.41	55-75	65.83
MW-4	10/2/98	75.0	3814.64	3816.84	55-75	64.91
MW-5	1/27/99	77	3814.67	3816.23	57-77	65.24
MW-6	1/27/99	77	3814.25	3817.51	57-77	65.36
MW-7	3/24/99	77	3813.94	3816.25	57-77	63.28
MW-8	3/24/99	77	3814.12	3816.38	57-77	66.09
MW-9	3/24/99	77	3813.32	3815.69	57-77	65.55

Notes:

1. BGS: Denotes depth in feet below ground surface

2. AMSL: Denotes elevation in feet above mean sea level

3. TOC: Denotes depth in feet below top of well casing

4. *: Depth-to-groundwater collected on 3/29/99

TABLE 7
Titan Exploration & Production Inc.
Lovington Paddock Unit
Lea County, New Mexico

Groundwater Sample Results TPH, BTEX and PAH

Sample ID	Sample ID Date Sample	TPH	(l/gm)	B	L	E	X	PAH
	ı	DRO	GRO	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MW-1	11/5/98	1	-	<0.001	<0.001	<0.001	<0.001	Not Detected
MW-2	11/5/98	1	1	<0.001	<0.001	<0.001	<0.001	Naphthalene - 0.001
MW-3	11/5/98	ı	1	0.147	<0.001	<0.001	<0.001	Not Detected
MW-4	11/5/98		1	0.882	0.808	0.085	0.214	Naphthalene - 0.002
MW-1	1/28/99	\$	<0.100	<0.001	<0.001	<0.001	0.001	1
MW-2	1/28/99	\$	<0.100	<0.001	<0.001	<0.001	<0.001	
MW-3	1/28/99	\$	<0.100	0.102	<0.001	<0.001	<0.001	1
MW-4	1/28/99	\$	8.07	1.85	<u>(1.89</u>	0.123	(0.682)	•
MW-5	1/28/99	♦	5.18	2.73	0.001	0.002	0.12	Naphthalene - 0.034
9-MM	1/28/99	<5	5.38	2.58	0.003	0.39	0.108	Naphthalene - 0.038
1								
MW-7	3/25/99	\$>	<0.100	<0.001	<0.001	<0.001	<0.001	Not Detected
8-WM	3/25/99	\$>	<0.100	< 0.001	<0.001	<0.001	<0.01	Not Detected
6-MM	3/25/99	\$>	0.155	0.104	<0.001	<0.001	0.002	Not Detected
			-					
6-MM	4/14/99	\$>	<0.100	<0.001	<0.001	<0.001	<0.001	•
							i	

TABLE 8
Titan Exploration Inc.
Lovington Paddock Unit
Lea County, New Mexico

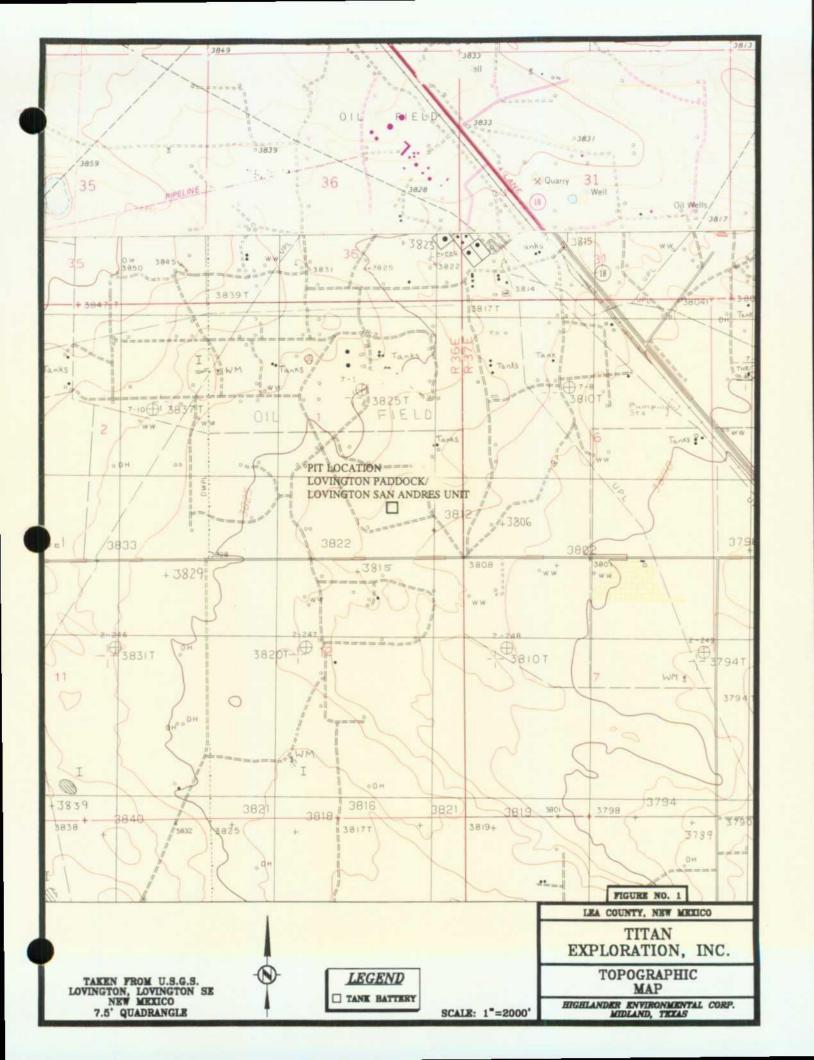
Total Metals

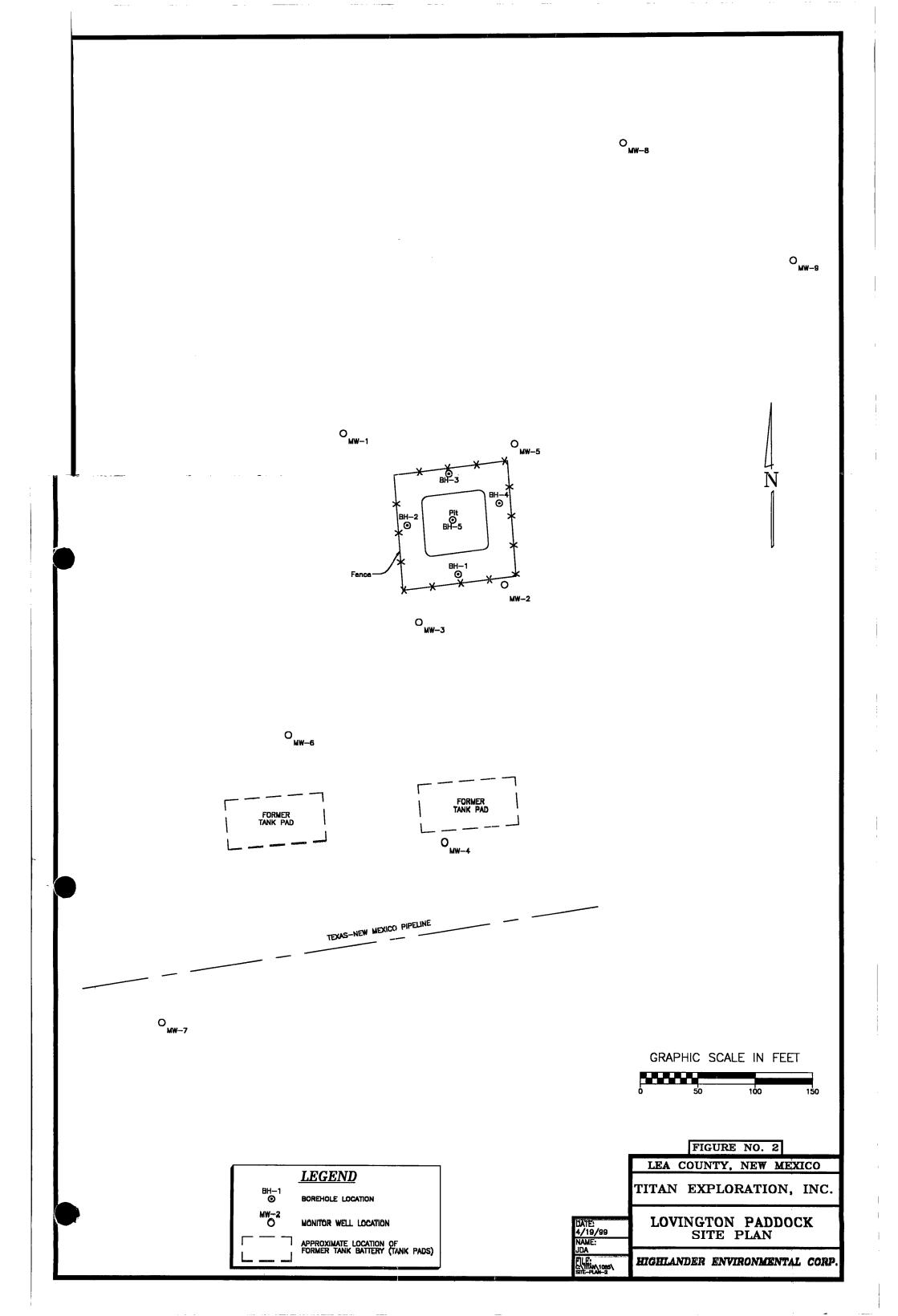
Sample ID	Sample ID Date Sampled	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Silver	Selenium
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MW-1	11/5/98	<0.10	0.11	<0.02	<0.05	<0.10	<0.0010	<0.05	<0.10
MW-2	11/5/98	<0.10	<0.10	<0.02	<0.05	<0.10	<0.0010	<0.05	<0.10
MW-3	11/5/98	<0.10	<0.10	<0.02	<0.05	<0.10	<0.0010	<0.05	<0.10
MW-4	11/5/98	<0.10	0.12	<0.02	<0.05	<0.10	<0.0010	<0.05	<0.10
MW-5	1/28/99	<0.10	<1.0	<0.01	<0.05	<0.05	<0.0010	<0.05	<0.05
9-MW	1/28/99	<0.10	<1.0	<0.01	<0.05	<0.05	<0.0010	<0.05	<0.05
MW-7	3/25/99	<0.10	0.11	<0.02	<0.05	<0.10	<0.0002	<0.05	<0.10
MW-8	3/25/99	<0.10	< 0.10	<0.02	<0.05	< 0.10	<0.0002	<0.05	<0.10
6-MW	3/25/99	<0.10	<0.10	<0.02	<0.05	<0.10	<0.0002	<0.05	<0.10

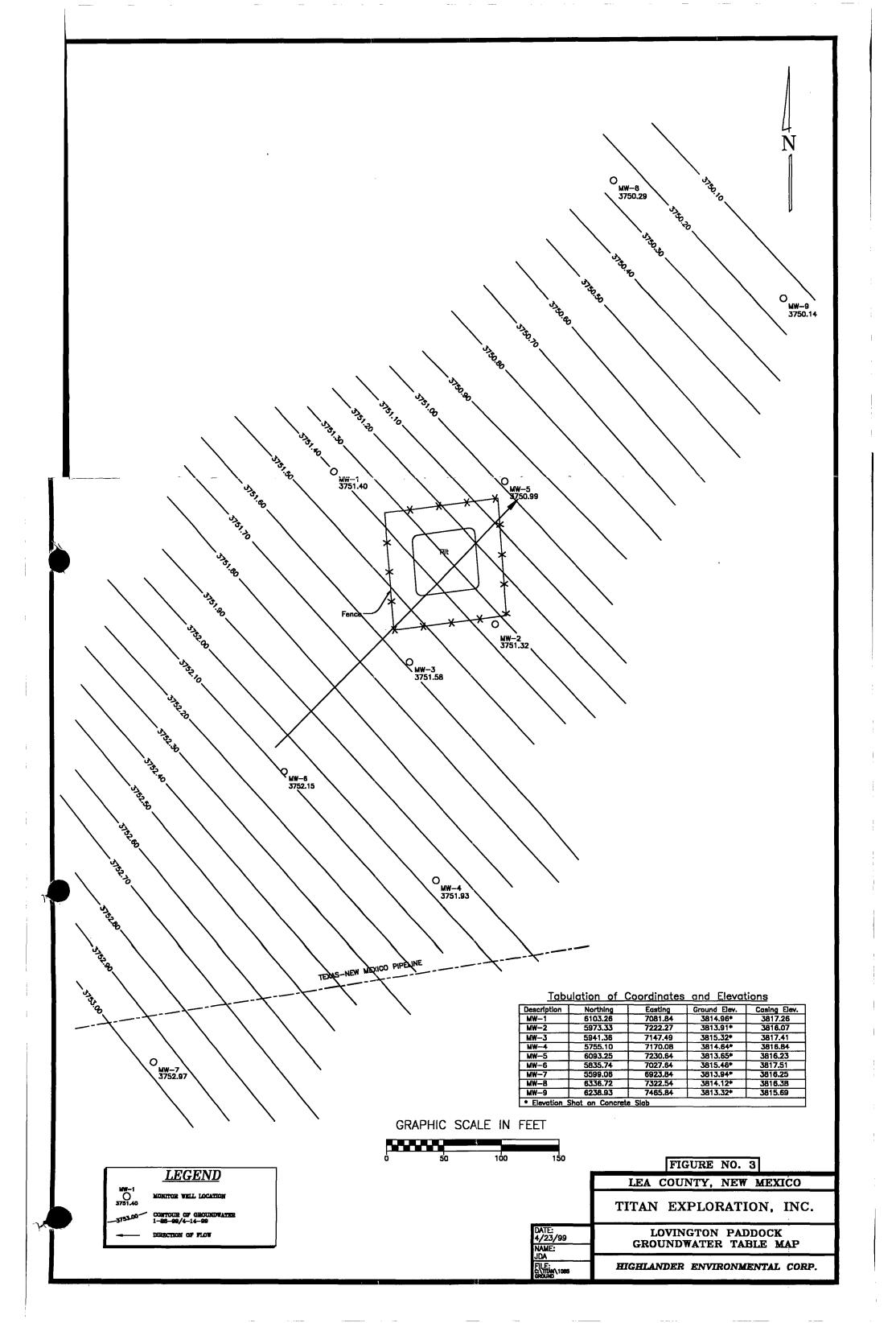
Table 9
Titan Exploration, Inc
Lovington Paddock Unit
Lea County, New Mexico

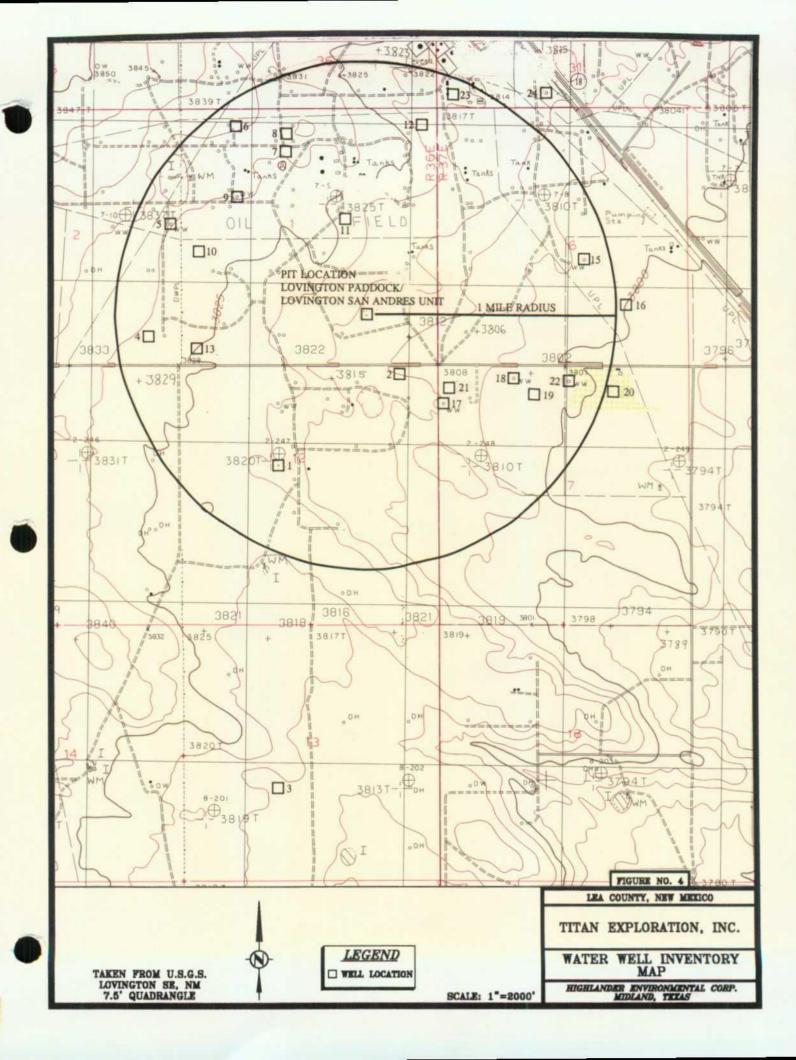
Major Ions

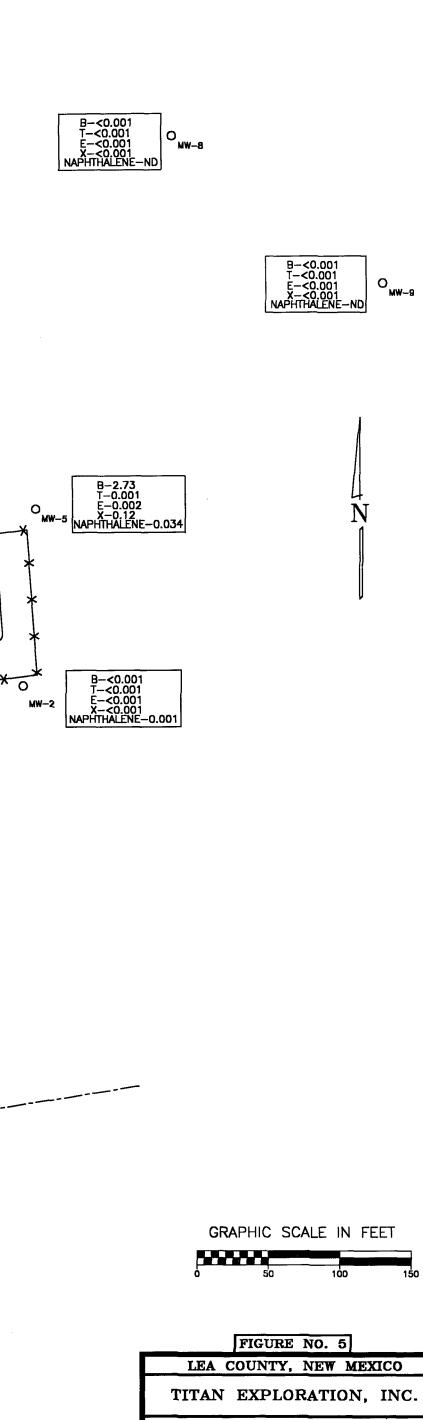
	Date	Potassium	Magnesium	Calcium	Sodium	Chloride	Hardness	Sulfate	Alkalinity	Nitrate	TDS	Ηď
Sample ID	Sampled	(mg/l)	(mg/l)	mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
MW-1	11/5/98	2.6	10	93	39	77	273	59	<1.00/180	1.1	450	7.3
MW-2	11/5/98	2.1	6.1	57	48	22	167	45	<1.00/210	0.99	360	7.2
MW-3	11/5/98	2.0	9.2	78	30	33	233	38	<1.00/210	0.53	380	7.3
MW-4	11/5/98	2.0	14	108	15	71	327	25	<1.00/220	1.2	490	7.3
MW-5	1/28/99	4.9	13	86	569	150	300	78	<1.00/600	3.4	950	7.6
9-MM	1/28/99	3.0	24	991	24	42	510	30	<1.00/500	3.2	590	7.4
MW-7	3/25/99	4.9	10	92	23	28	272	35	0/174	2.7	340	7.8
MW-8	3/25/99	2.3	10	74	43	23	526	80	0/1/0	3.3	390	7.7
6-WW	3/25/99	2.8	15	109	46	95	334	20	0/188	4.8	540	7.8











LEGEND O MONITOR WELL LOCATION CONCENTRATIONS (mg/L) B = BENZENE T = TOLLIENE E = ETHYL BENZENE X = TOTAL XYLENE NAPHTHALENE—ND = NOT DETECTED

B-<0.001 T-<0.001 E-<0.001 X-<0.001 NAPHTHALENE-ND

B-2.58 T-0.003 E-0.39 X-0.108 NAPHTHALENE-0.038

O MW-6

B-<0.001 T-<0.001 E-<0.001 X-0.001 NAPHTHALENE-ND

O_{MW-1}

B-0.102 T-<0.01 E-<0.01 X-<0.01 NAPHTHALENE-ND

B-1.85 T-1.89 E-0.123 X-0.682 NAPHTHALENE-0.002

TEXAS-NEW MEXICO PIPELINE

Pit

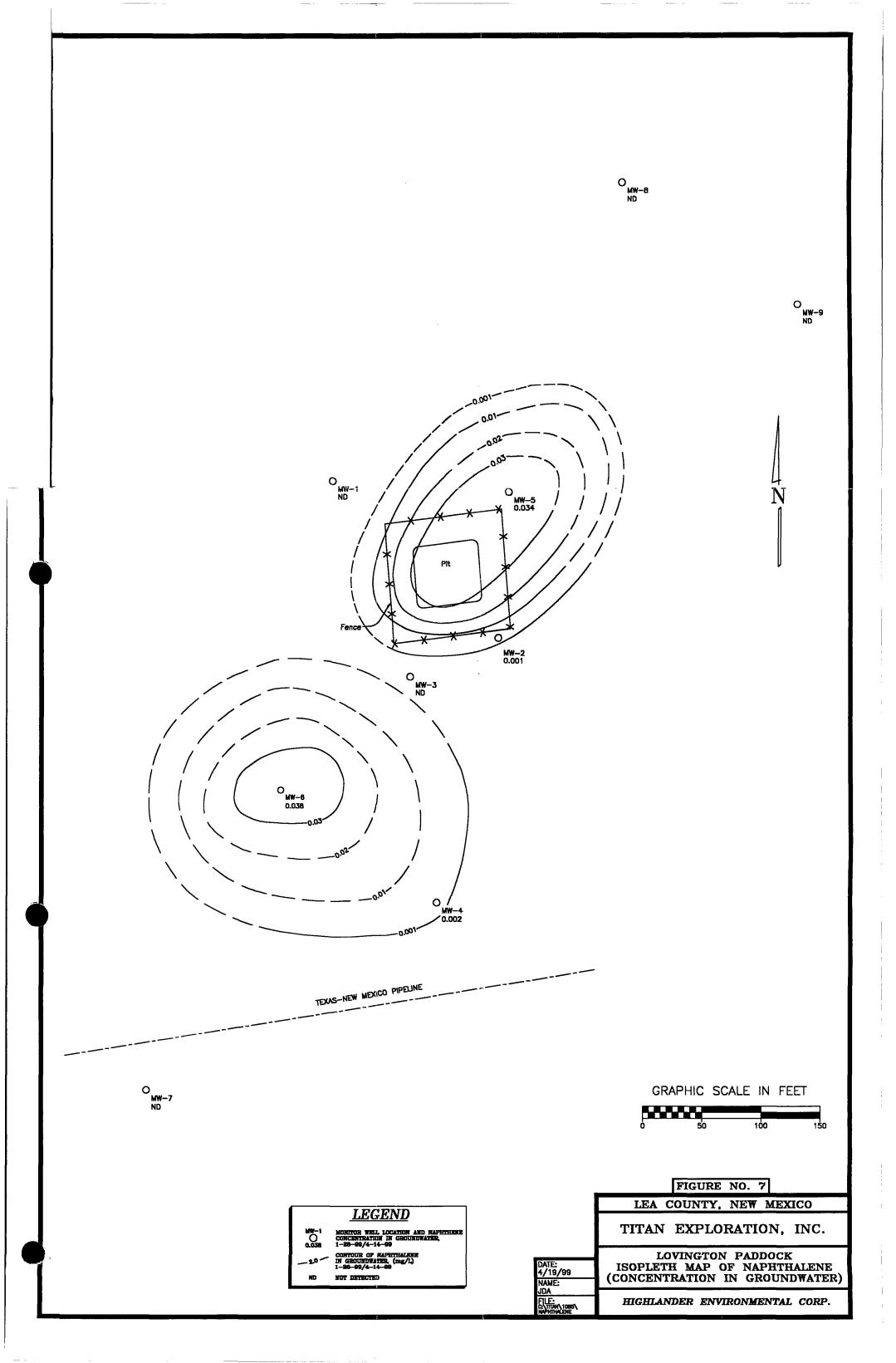
O_{MW-4}

O_{MW-3}

HIGHLANDER ENVIRONMENTAL CORP.

LOVINGTON PADDOCK CONTAMINANT CONCENTRATION DATE: 4/23/99 DISTRIBUTION MAP NAME: JDA

O MW-8 <0.001 O MW-9 <0.001 O MW-1 <0.001 MW-2 <0.001 O MW-3 0.102 O MW-4 1.85 TEXAS-NEW MEXICO PIECE O MW-7 <0.001 GRAPHIC SCALE IN FEET FIGURE NO. 6 LEA COUNTY, NEW MEXICO LEGEND TITAN EXPLORATION, INC. ₩-1 0 2.73 MONITOR WELL LOCATION AND HENZENE CONCENTRATION IN GROUNDWATER, 1-28-99/4-14-69 LOVINGTON PADDOCK ISOPLETH MAP OF BENZENE (CONCENTRATION IN GROUNDWATER) DATE: 4/23/99 NAME: JDA FILE: CATHAMA 1085A HIGHLANDER ENVIRONMENTAL CORP.



APPENDIX A

Manifest

Address: COMPANY/GENERATOR:: LEASE NAME: TRUCKING COMPANY: DATE: TYPE OF MATERIAL [] DRILLING FLUIDS [] COMPLETION FLUIDS [] GAS PLANT WASTE	TIME: 10:37 AM-PM
TRUCKING COMPANY: / PX a S CASE WALLS DATE: 7-30-36 VEHICLE No.: TYPE OF MATERIAL [] DRILLING FLUIDS [] TANK BOTTOMS	TIME: 10:37 AM-PM
TRUCKING COMPANY: / PX a S CASE WALLS DATE: 7-30-36 VEHICLE No.: TYPE OF MATERIAL [] DRILLING FLUIDS [] TANK BOTTOMS	TIME: / O : 3 T AM - PM
DATE: 7-33- VEHICLE No.: TYPE OF MATERIAL [] DRILLING FLUIDS [] TANK BOTTOMS	
TYPE OF MATERIAL [] DRILLING FLUIDS [] TANK BOTTOMS	DRIVER No.:
[] DRILLING FLUIDS [] TANK BOTTOMS	
···	
[] COMPLETION FLUIDS [] GAS PLANT WASTE	[] EXEMPT FLUIDS
	[] C-117 No.:
CONTAMINATED SOIL [] OTHER MATERIAL	[] Pit No.:
DESCRIPTION	
	Mon 27 #2
· · · · · · · · · · · · · · · · · · ·	
	SA
	<u>'</u>
	GALLONS
[] WASH OUT [] AFTER HOU	RS [] DEBRIS CHARGE
I, represent and warrant that the wastes are: generated from oil and gas explored Resource Conservation and Recover Act (RCRA) Subtitle C Regulations; and AGENT: (SIGNATURE) (SIGNATURE)	
TANK NO.	OFFICE USE:
OIL LEVELS FEET INCHES GROSS BBLS. DEDUCT	rions
1ST GAUGE NET BB	LS.
2ND GAUGE	05-98-500-4pt#27501
EASURE RECEIVED	NIO STOA
BS& W %	№ 27 518
FREE WATER BBLS.	

	Generator_	Titan Exploration Inc.	
	Address	500 W. Texas, Suite 500	(915 <u>) 682-6612</u>
	City/State_	Midland, Texas 79701	Telephone No.
ORGINAT	ION OF WAS	STE:	
Operation		itan Exploration/Lovington Unit, ea County, New Mexico	Permit No
Property N	lame (1) <u>L</u>	ovington Paddock/San Andres Unit	(Pit-ATB 1-1)
	(2) We	(Well, Tank Battery, Plant, Facility) est Lovington Unit (Pit-ATB 33-1)	·
WASTE IDE		AND AMOUNT (BARRELS, YARDS, TONS, CI	
Drilling Fluid	le .	Tank Bottoms	Exempt Fluids
Completion F	_	Gas Plant Waste	C117 No.
Conteminated		× Other Material	Pit No.
Coffisionses		Other Material	FR 190.
		DESCRIPTION / NOTES	
	PCPA Exampt	- Soil/Sludge 12 uds	
	KCKA EXEMPT	- 3011/31uage 100 400 5	
	-		
4.		Y	
CERTIFIC	CATION: T	7	Part 261 and was consigned to the transporter
CERTIFIC		he waste described above is not hazardous pursuant to 40 CFR	- · · · · · · · · · · · · · · · · · · ·
CERTIFIC	ن م ر ن	he waste described above is not hazardous pursuant to 40 CFR amed below. I certify the the foregoing is true and correct to the	ne best of my knowledge.
CERTIFIC	ن م ر ن	he waste described above is not hazardous pursuant to 40 CFR amed below. I certify the the foregoing is true and correct to the AME (1) and a curl for Sitan Explore	to best of my knowledge. 10 1-30:98
CÉRTIFIC	ن م ر ن	he waste described above is not hazardous pursuant to 40 CFR amed below. I certify the the foregoing is true and correct to the	ne best of my knowledge.
	4	The waste described above is not hazardous pursuant to 40 CFR amod below. I certify the the foregoing is true and correct to the Man a curl for Sitan Explore Signature of Generator's Authorized Agent	Date and time of Shipment
CERTIFIC	4	he waste described above is not hazardous pursuant to 40 CFR amed below. I certify the the foregoing is true and correct to the AME (1) and a curl for Sitan Explore	Date and time of Shipment
	TRANSPO	The waste described above is not bazardous pursuant to 40 CFR amed below. I certify the the foregoing is true and correct to the Signature of Generator's Authorized Agent ORTER: (To be completed in full by Tr	Date and time of Shipment ransporter)
***************************************	TRANSPO Name	The waste described above is not bazardous pursuant to 40 CFR and below. I certify the the foregoing is true and correct to the signature of Generator's Authorized Agent ORTER: (To be completed in full by True X25 / 25e Works	Date and time of Shipment (9/5) 580-0508
***************************************	TRANSPO Name	The waste described above is not hazardous pursuant to 40 CFR and below. I certify the the foregoing is true and correct to the Man Wald a sure to differ Explore Signature of Generator's Authorized Agent ORTER: (To be completed in full by Transcott State of State	Date and time of Shipment (9/5) 580-0508 Telephone No.
***************************************	TRANSPO Name	The waste described above is not bazardous pursuant to 40 CFR and below. I certify the the foregoing is true and correct to the signature of Generator's Authorized Agent ORTER: (To be completed in full by True X25 / 25e Works	Date and time of Shipment (9/5)580-0508 Telephone No. 526
PART II:	TRANSPO Name Address City/State	The waste described above is not bazardous pursuant to 40 CFR amed below. I certify the the foregoing is true and correct to the Night of Actual of Signature of Generator's Authorized Agent ORTER: (To be completed in full by Transcott of Signature of Generator's Authorized Agent ORTER: (To be completed in full by Transcott of Signature of Generator's Authorized Agent ORTER: (To be completed in full by Transcott of Signature of Generator's Authorized Agent	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No.
PART II:	TRANSPO Name Address City/State	The waste described above is not hazardous pursuant to 40 CFR amed below. I certify the the foregoing is true and correct to the Signature of Generator's Authorized Agent ORTER: (To be completed in full by True X35 1035 100 KS T-20 West Co Rd. OCCUPSO TX.	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No.
PART II:	TRANSPO Name Address City/State	The waste described above is not hazardous pursuant to 40 CFR and below. I certify the the foregoing is true and correct to the Name of Generators' Authorized Agent ORTER: (To be completed in full by True (1985)	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No. This part of the destination below. 7-30-98
PART II:	TRANSPO Name Address City/State	The waste described above is not hazardous pursuant to 40 CFR amed below. I certify the the foregoing is true and correct to the Signature of Generator's Authorized Agent ORTER: (To be completed in full by True X35 1035 100 KS T-20 West Co Rd. OCCUPSO TX.	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No.
PART II:	TRANSPO Name Address City/State	The waste described above is not hazardous pursuant to 40 CFR and below. I certify the the foregoing is true and correct to the Name of Generators' Authorized Agent ORTER: (To be completed in full by True (1985)	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No. rehipment to the destination below. 7-30-98
PART II:	TRANSPO Name Address City/State	The waste described above is not hazardous pursuant to 40 CFR amed below. I certify the the foregoing is true and correct to the Mandage of Generator's Authorized Agent ORTER: (To be completed in full by True X35 1038 1000 KS T-20 W051 Co Rd. OCCUPANT X certify that the waste in quantity above was received by me for Signature of Transporter's Agent	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No. rehipment to the destination below. 7-30-98
PART II:	TRANSPO Name Address S City/State	The waste described above is not hazardous pursuant to 40 CFR and below. I certify the the foregoing is true and correct to the Man I land a sure for Signature of Generators' Authorized Agent ORTER: (To be completed in full by Transporters of Rd. ORTER: West Co Rd. ORTESSA TX: certify that the waste in quantity above was received by me for Signature of Transporter's Agent L OR RECLAMATION SITE:	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No. rahipment to the destination below. 7-30-98 Date and time of Received
PART II:	Name Address City/State CATION: I	The waste described above is not bazardous pursuant to 40 CFR and below. I certify the the foregoing is true and correct to the Mandage of Generator's Authorized Agent ORTER: (To be completed in full by Transporter's Agent Certify that the waste in quantity above was received by me for Signature of Transporter's Agent L OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No. rehipment to the destination below. 2-30-98 Date and time of Received
PART II:	Name Address City/State CATION: DISPOSA Name Address	The waste described above is not bazardous pursuant to 40 CFR amed below. I certify the the foregoing is true and correct to the signature of Generator's Authorized Agent ORTER: (To be completed in full by True Controlled Recovery, Inc.	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No. rahipment to the destination below. 2-30-98 Date and time of Received
PART III:	Name Address City/State DISPOSA Name Address City/State	The waste described above is not bazardous pursuant to 40 CFR and below. I certify the the foregoing is true and correct to the Mandage of Generator's Authorized Agent ORTER: (To be completed in full by Transporter's Agent Certify that the waste in quantity above was received by me for Signature of Transporter's Agent L OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No. r shipment to the destination below. 2-30-98 Date and time of Received (505)393-1079 Telephone No.
	Name Address City/State DISPOSA Name Address City/State	The waste described above is not hazardous pursuant to 40 CFR and below. I certify the the foregoing is true and correct to the Man Land a curley of Signature of Generator's Authorized Agent ORTER: (To be completed in full by Transporter's Agent Corresponding to the waste in quantity above was received by the for Signature of Transporter's Agent L OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388 Hobbs, NM 88241	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No. r shipment to the destination below. 2-30-98 Date and time of Received (505)393-1079 Telephone No.
PART II:	Name Address City/State DISPOSA Name Address City/State	The waste described above is not hazardous pursuant to 40 CFR and below. I certify the the foregoing is true and correct to the Man Land a curley of Signature of Generator's Authorized Agent ORTER: (To be completed in full by Transporter's Agent Corresponding to the waste in quantity above was received by the for Signature of Transporter's Agent L OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388 Hobbs, NM 88241	Date and time of Shipment (9/5) 580-0508 Telephone No. 526 Truck No. r shipment to the destination below. 2-30-98 Date and time of Received (505)393-1079 Telephone No.

P. O. BOX 388 • HOBBS, NEW MEXICO 88241-0388 (505) 393-1079

Bill To:						
Address:	···			· · · · · · · · · · · · · · · · · · ·		
COMPANY/GENERATOR:: /	1700	Pos	r) u r mp5			
LEASE NAME: Live of	1 1 1	1 darl	700	Hoders	Unit	FHATEL-
TRUCKING COMPANY:	10m 5	1001	P War	· tc	TIME:/	AM) PM
DATE: 0-33.94	v	EHICLE No.:			DRIVER No	.:
	_	TYF	E OF MATER	IAL		
[] DRILLING FLUIDS		[]TANK	воттомѕ	[]	EXEMPT F	LUIDS
[] COMPLETION FLUIDS		[]GASP	LANT WASTE	[]	C-117 No.:	· · · · · · · · · · · · · · · · · · ·
CONTAMINATED SOIL			R MATERIAL	[]] Pit No.:	
			DESCRIPTION			
				R	Toni+	est# (1)
	 					
	··· · · · · · · · · · · · · · · · · ·					
		<u>-</u>				
						<u> </u>
VOLUME OF MATERIAL	[]BBLS.		YARD	1: 5/	1 GALLON	
[] WASH OUT	[]CAL	LOUI	[]AF1	ER HOURS	l] DEBRIS CHARGE
•						
I, represent and warrant that t						
Resource Conservation and			otitle C Regulat	ions; and not mixe	d with non-ex	kempt wastes.
AGENT: Transcent	11 Or	20GL	Z			
(SIGNATURE)	7					
CRI REPRESENTATIVE:		4M2				
(8	IGNATURE)					
TANK NO.					OFFICE	E USE:
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS		
1ST GAUGE				NET BBLS.		
2ND GAUGE						05-98-500-4pt#27501
EASURE RECEIVED				1	10 00	7047
BS& W	%			j , ,	¹⁰ 02	7617
FREE WATER	/6	BBLS.		1		
TILE WATER	·	BBLS.		J		

Pink - CRI Plant

Gold - Transporter

White - CRI

Canary - CRI Accounting

		Titan Exploration Inc.	
	Address	500 W. Texas, Suite 500	(915 <u>) 682-6612</u>
·	City/State_	Midland, Texas 79701	Telephone No.
ORGINAT	TON OF WAS	STE:	
Operation	s Center L	itan Exploration/Lovington Unit, ea County, New Mexico	Permit No.
Property N	Name (1) L	ovington Paddock/San Andres Unit	(Pit-ATB 1-1)
	(2) We	(Well, Tank Battery, Plant, Facility) est Lovington Unit (Pit-ATB 33-1) ·
WASTE IDE		ND AMOUNT (BARRELS, YARDS, TONS, C	
n 90 Pl.:	9	Tank Bottoms	Format Maida
Drilling Fluid			Exempt Fluids
Completion F	-	Gas Plant Waste	C117 No.
Contaminated	d Soil	X Other Material	Pit No.
		DESCRIPTION / NOTES	
	DCDA Franch	Co.:1 (Cl. do.	· · · · · · · · · · · · · · · · · · ·
	KUKA EXEMPT	- Soil/Sludge 12 yds	
CERTIFIC	CATION: T	he waste described above is not bazardous purpuant to 40 CF.	R Part 261 and was consigned to the transporter
CERTIFIC	, DI	he waste described above is not hazardous pursuant to 40 CF amed below. I certify the the foregoing is true and correct to the support of Generator's Authorized Acent	the best of my knowledge. Here him $7-30.98$
	na -	Signature of Generator's Authorized Agent	Date and time of Shipment
	na -	amed below. I certify the the foregoing is true and correct to t	Date and time of Shipment
	TRANSPO	Signature of Generator's Authorized Agent PRTER: (To be completed in full by T	Date and time of Shipment
	TRANSPO	Signature of Generator's Authorized Agent PRTER: (To be completed in full by T	Date and time of Shipment Transporter)
	TRANSPO Name Address	Signature of Generator's Authorized Agent ORTER: (To be completed in full by T	Teansporter) 105-580-0508
PART II:	TRANSPO Name Address City/State	Signature of Generator's Authorized Agent ORTER: (To be completed in full by T	Teansporter) 105-580-0508
PART II:	TRANSPO Name Address City/State	Signature of Generator's Authorized Agent ORTER: (To be completed in full by T	Truck No. Telephone to the destination below.
PART II:	TRANSPO Name Address City/State	Signature of Generator's Authorized Agent ORTER: (To be completed in full by T Toxas lease works 20 4.657 7 x	Telephone No. Truck No.
PART II:	TRANSPO Name Address City/State	Signature of Generator's Authorized Agent ORTER: (To be completed in full by T Toxas lease works 20 4.657 7 x	Truck No. Telephone to the destination below.
	TRANSPO Name Address City/State CATION:	Signature of Generator's Authorized Agent PRTER: (To be completed in full by T Toxas least Co.Rd October T X certify that the waste in quantity above was received by me for the complete of the complete of the certify that the waste in quantity above was received by me for the certify that the waste in quantity above was received by me for the certify that the waste in quantity above was received by me for the certify that the waste in quantity above was received by the certify that the waste in quantity above was received by the formation of the certify that the waste in quantity above was received by the certify that the waste in quantity above was received by the certify that the waste in quantity above was received by the certify that the waste in quantity above was received by the certify that the waste in quantity above was received by the certify that the waste in quantity above was received by the certify that the certification of the certification o	Telephone No. Truck No. Telephone to the destination below. 7-30-93 Truck No.
PART II:	TRANSPO Name Address City/State CATION:	Signature of Generator's Authorized Agent PRTER: (To be completed in full by T TOXAS (PASE (NO) KS 20 4.857 CO.Rd Oxiosopa T Signature of Transporter's Agent	Telephone No. Truck No. Telephone to the destination below. 7-30-93 Truck No.
PART II:	TRANSPO Name Address City/State CATION: DISPOSAL	Signature of Generator's Authorized Agent PRTER: (To be completed in full by T TOYAS (230 WOXKS 20 4.037 Co.Rd Certify that the waste in quantity above was received by me for the complete of Transporter's Agent OR RECLAMATION SITE:	Telephone No. Truck No. Truck No. The shipment to the destination below.
CERTIFIC	TRANSPO Name Address City/State CATION: DISPOSAL Name	Signature of Generator's Authorized Agent PRTER: (To be completed in full by T TOXAS (PASE WOXKS 20 4.857 CO.Rd October TX Certify that the waste in quantity above was received by me for the complete of Transporter's Agent OR RECLAMATION SITE: Controlled Recovery, Inc.	Tansporter) 15-58-0508 Telephone No. 520 Truck No. Truck No. Truck No. Tals and time of Received (505)393-1079
PART II:	TRANSPO Name Address City/State DISPOSAL Name Address City/State	Signature of Generator's Authorized Agent PRTER: (To be completed in full by T ORTER: (To be completed in	Tansporter) 15-58-0508 Telephone No. 520 Truck No. Truck No. Tansporter Truck No. Tansporter Truck No. Truck No.
PART II:	TRANSPO Name Address City/State DISPOSAL Name Address City/State	Signature of Generator's Authorized Agent PRTER: (To be completed in full by T ORTER: (CO CONTROLLED TO CONTROLL	Tansporter) 15-58-0508 Telephone No. 520 Truck No. Truck No. Tansporter Truck No. Tansporter Truck No. Truck No.
PART II:	TRANSPO Name Address City/State DISPOSAL Name Address City/State	Signature of Generator's Authorized Agent PRTER: (To be completed in full by T ORTER: (To be completed in	Telephone No. (505)393-1079 Telephone No.

Bill To:					***************************************	
Address:				— 11. 31	<u> </u>	
COMPANY/GENERATOR:: 1	Han 1	Regon	1665			
LEASE NAME:	jugton	Pag	Hick	San And	105 U	nit it-ATD.
TRUCKING COMPANY:	xas L	1 895c	Wer	K's	TIME: /	15 AM PM
DATE: 7-30 -	78 V	EHICLE No.:	520		DRIVER No.:	
	- IN	TYP	E OF MATER	AL		
[] DRILLING FLUIDS		[]TANK	BOTTOMS	[] [EXEMPT FL	UIDS
[] COMPLETION FLUID	S	[]GASP	LANT WASTE	5.7	C-117 No.: .	
CONTAMINATED SO	IL	[]OTHER	RMATERIAL	1741	Pit No.:	C//
, , , , , , , , , , , , , , , , , , , ,			DESCRIPTION			
				11/4/11	FEST	F. # 3
	<u> </u>				<u>.</u>	
						<u></u>
			10			
VOLUME OF MATERIAL	[]BBLS.			1:] GALLON	S
[] WASH OUT	[]CAL	L OUT	, []AFT	ER HOURS	. [] DEBRIS CHARGE
				• · ·		
I, represent and warrant th	at the wastes a	re: denerated	t from oil and a	as evoloration and n	oduction on	erations: evennt from
Resource Conservation ar						
AGENT:	146	Kandy	· 62			
(SIGNATURE)	1		, /			
CRI REPRESENTATIVE:	Dogue	ya,	Joseph 1	·		
, *	(SIGNATURE)	7	-			
1	i					
TANK NO.					OFFICE	USE:
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS		
1ST GAUGE				NET BBLS.		
ND GAUGE						05-98-500-4pt#27501
MEASURE RECEIVED				∫	2 007	rc1 0
BS& W	%			1	- UZ1	7619
FREE WATER		BBLS.		1		
				J		

#3

Date and time of Received

	Address 50		
	Add 655	O W. Texas, Suite 500	(915 <u>) 682-6612</u>
	City/State Mi	dland, Texas 79701	Telephone No.
ORGINATI	ON OF WASTE:		
Operations		Exploration/Lovington Unounty, New Mexico	Permit No
Property N	ame √(1) Lovin	gton Paddock/San Andres U (Well, Tank Battery, Plant, Facility)	nit (Pit-ATB 1-1)
	(2) West l	Lovington Unit (Pit-ATB 3	3-1)
WASTE IDEN	NTIFICATION AND A	AMOUNT (BARRELS, YARDS, TO)	S, CU.FT.,LBS., UNITS, ETC.)
D.:1112 - 17113.		Tank Bottoms	Et Eluida
Drilling Fluids Completion Fl	***************************************	Gas Plant Waste	Exempt Fluids C117 No.
Completion Fi Contaminated		Other Material	Pit No.
Mistillineni			FR NO.
		DESCRIPTION / NOTE	s .
			
	CRA Exempt - So	il/Sludge 12 (ıds
K			
ĸ			
R			
	named be	elow. I certify the the foregoing is true and corre	
	named be	clow. I certify the the foregoing is true and corre	to the best of my knowledge. Light Chipher 130-98
	named be	elow. I certify the the foregoing is true and corre	at to the best of my knowledge.
CERTIFIC	TRANSPORTE	clow. I certify the the foregoing is true and corre	Let to the best of my knowledge. Let Explication 730-98 Dete and time of Shipmen
CERTIFIC	TRANSPORTE Name 78.22	ER: (To be completed in full to	Let to the best of my knowledge. Let Explication 730-98 Dete and time of Shipmen
CERTIFIC	TRANSPORTE Name Address	ER: (To be completed in full to be sent to the complete of Generator's Authorized Agent	Detc and time of Shipmen Telephone No.
CERTIFIC	TRANSPORTE Name 78.22	ER: (To be completed in full to be sent to the completed of the complete	Date and time of Shipmen Telephone No. 5 20
CERTIFIC	TRANSPORTE Name Transport Address I 20 City/State O de	ER: (To be completed in full to be completed in full t	Detc and time of Shipmen Telephone No. 5 20 Truck No.
CERTIFIC	TRANSPORTE Name Transport Address I contify ATION: I centify	ER: (To be completed in full to the same of the complete of th	Detc and time of Shipmen Telephone No. 5 20 Truck No.
CERTIFIC	TRANSPORTE Name Transporte Address I contify ATION: I centify T.B. Type	elow. I certify the the foregoing is true and correct the foregoing is tru	Telephone No. 5 20 Truck No. The for shipment to the destination below. 7 30-98 Total Truck No. The formula of Shipment to the destination below. 7 30-98 Truck No.
CERTIFIC	TRANSPORTE Name Transporte Address I contify ATION: I centify T.B. Type	ER: (To be completed in full to the same of the complete of th	Detc and time of Shipmen Telephone No. 5 20 Truck No.
CERTIFIC PART II:	TRANSPORTE Name Translate Address I to City/State Ode ATION: I certify T.B. Type	elow. I certify the the foregoing is true and correct the foregoing is tru	Telephone No. 5 20 Truck No. The for shipment to the destination below. 7 30-98 Total Truck No. The formula of Shipment to the destination below. 7 30-98 Truck No.
CERTIFIC PART II:	TRANSPORTE Name Translate Address I to City/State Ode ATION: I certify T.B. Type	elow. I certify the the foregoing is true and correct the foregoing is true and correct the following of Generator's Authorized Agent ER: (To be completed in full to be the following for the following foll	Telephone No. 5 20 Truck No. The for shipment to the destination below. 7 30-98 Total Truck No. The formula of Shipment to the destination below. 7 30-98 Truck No.
	TRANSPORTE Name Address City/State Officeration DISPOSAL OR	elow. I certify the the foregoing is true and correct to the day of the sature of Generator's Authorized Agent ER: (To be completed in full to the sature of Generator's Authorized Agent EX: (To be completed in full to the sature of Transporter's Agent RECLAMATION SITE:	Date and time of Received To the best of my knowledge. To 30-98 Date and time of Shipmen Telephone No. 520 Truck No. Truck No. Date and time of Received
CERTIFIC	TRANSPORTE Name Transport Address I 20 City/State O de	ER: (To be completed in full to be completed in full t	Detc and time of Shipmen Telephone No. 5 20 Truck No.
CERTIFIC	TRANSPORTE Name Transporte Address I contify ATION: I centify T.B. Type	elow. I certify the the foregoing is true and correct the foregoing is tru	Telephone No. 5 20 Truck No. The for shipment to the destination below. 7 30-98 Total Truck No. The formula of Shipment to the destination below. 7 30-98 Truck No.
CERTIFIC PART II:	TRANSPORTE Name Translate Address I to City/State Ode ATION: I certify T.B. Type	elow. I certify the the foregoing is true and correct the foregoing is true and correct the following of Generator's Authorized Agent ER: (To be completed in full to be the following for the following foll	Telephone No. 5 20 Truck No. The for shipment to the destination below. 7 30-98 Total Truck No. The formula of Shipment to the destination below. 7 30-98 Truck No.
CERTIFIC PART II:	TRANSPORTE Name Translate Address I to City/State Ode ATION: I certify T.B. Type	elow. I certify the the foregoing is true and correct the foregoing is true and correct the following of Generator's Authorized Agent ER: (To be completed in full to be the following for the following foll	Telephone No. 5 20 Truck No. The for shipment to the destination below. 7 30-98 Total Truck No. The formula of Shipment to the destination below. 7 30-98 Truck No.
CERTIFIC PART II:	TRANSPORTE Name Translate Address I to City/State Ode ATION: I certify T.B. Type	elow. I certify the the foregoing is true and correct the foregoing is true and correct the following of Generator's Authorized Agent ER: (To be completed in full to be the following for the following foll	Telephone No. 5 20 Truck No. The for shipment to the destination below. 7 30-98 Total Truck No. The formula of Shipment to the destination below. 7 30-98 Truck No.
CERTIFIC PART II:	TRANSPORTE Name TEXE Address I contify City/State Ode ATION: I centify DISPOSAL OR Name	elow. I certify the the foregoing is true and correct to the day of the sature of Generator's Authorized Agent ER: (To be completed in full to the sature of Generator's Authorized Agent EX: (To be completed in full to the sature of Transporter's Agent RECLAMATION SITE:	Date and time of Received To the best of my knowledge. To 30-98 Date and time of Shipmen Telephone No. 520 Truck No. Truck No. Date and time of Received
CERTIFIC PART II:	TRANSPORTE Name TEXE Address I contify City/State Ode ATION: I centify DISPOSAL OR Name	that the waste in quantity above was received by CRECLAMATION SITE: Controlled Recovery, Inc.	Telephone No. Truck No. Truck No. Total and time of Reserved (505)393-1079

Signature of Facility Agent

Bill To:						
Address:	,	<u>-</u> -				
COMPANY/GENERATOR:: 7,	tan K	1 e 500 /	C 6/			
LEASE NAME: LOVINGTO	12 Pack	lock S.	an Arm	les Unit	1.1.1	1 T/3-1-1
TRUCKING COMPANY:	4115 L	6050	work.	4	TIME: /;	ZO AM PM
DATE: 1-30-98		EHICLE No.:			DRIVER No.	:
		TYP	E OF MATER	IAL		
[] DRILLING FLUIDS		[]TANK	воттомѕ] EXEMPT FI	LUIDS
[/] COMPLETION FLUIDS		[]GASP	LANT WASTE	ι,] C-117 No.:	
CONTAMINATED SOIL		[]OTHER	R MATERIAL	. X	Į Pit No.: 🛆	CD
*		[DESCRIPTION		· · · · · · · · · · · · · · · · · · ·	
					Mani	Fort#4
						23/ 7
			····			
		 				
<u></u>						
						<u> </u>
VOLUME OF MATERIAL	<u> </u>		2/2/200			
VOLUME OF MATERIAL	[] BBLS.		:LXFYAHL) <u>_/7</u> :	GALLON	S
[] WASH OUT	[] CAL	L OUT	'[]AFT	ER HOURS	[] DEBRIS CHARGE
						•
I, represent and warrant that	the wastes ar	o denerated	d from oil and a	as exploration and	production or	nerations: exempt from
Resource Conservation and						
AGENT:	المحر المستويد	j				
		- 				
ODI DEDDECENTATIVE	1	ale	2. Don			
(SIGNATURE) CRI REPRESENTATIVE:	SIGNATURE	77.1.0	e eyect		·	
Support "	·					
**********					055.05	
TANK NO.		<u> </u>	<u> </u>		OFFICE	USE:
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS		-
1ST GAUGE			<u> </u>	NET BBLS.		
2ND GAUGE						05-98-500-4pt#27501
EASURE RECEIVED				1	√ ∘ 03.	7620
BS& W	%			ì	. 02	1020
FREE WATER		BBLS.		1		
		<u> </u>	<u> </u>	1		

PART I:	Generator_	Titan Exploration Inc.	/ 015 \ 000 5010
	Address _	500 W. Texas, Suite 500	(915 <u>) 682-6612</u>
	City/State_	Midland, Texas 79701	Telephone No.
ORGINAT	ION OF WAS	STE:	
Operation		itan Exploration/Lovington Unit, ea County, <u>New Mexico</u>	Permit No.
Property N		ovington Paddock/San Andres Unit (Pi+_ΔTR 1_1)
r topeity t		(Well, Tank Battery, Plant, Facility)	,
		est Lovington Unit (Pit -ATB 33-1)	
WASTE IDE	NTIFICATION A	AND AMOUNT (BARRELS, YARDS, TONS, CU.	FT.,LBS., UNITS, ETC.)
Drilling Fluid	is	Tank Bottoms	Exempt Fluids
Completion I		Gas Plant Waste	C117 No.
Contaminated		X Other Material	Pit No.
		DESCRIPTION / NOTES	• • • • • • • • • • • • • • • • • • • •
			10 113/
	RCRA Exempt	- Soil/Sludge	12 yd 3
		simed below. I certify the the foregoing is true and correct to the temporary of Generator's Authorized Agent	•
		or Brance Ar Oderstrone a Montageror Albert	create activate of Ortophistor
PART II:	TRANSPO	RTER: (To be completed in full by Tra	nsporter)
	Name -	TEXAS LOSSE WOLKS	
	Address	F20 West to Rd.	Telephone No.
	City/State	Odessa X	326
	•		Truck No.
CERTIFIC	CATION: 1	certify that the waste in quantity above was received by me for sh	ipment to the destination below.
	J18-	Hosario Fluicin	7-30-98
		Signature of Transporter's Agent	Date and time of Received
PART III:			
	DISPOSA	OR RECLAMATION SITE	
171111111111111111111111111111111111111		L OR RECLAMATION SITE:	(505)393-1079
7 7 11 111.	Name	Controlled Recovery, Inc.	(505)393-1079
174(1) 111.	Name Address	Controlled Recovery, Inc. P.O. Box 388	(505)393-1079 Telephone No.
TANT III.	Name	Controlled Recovery, Inc.	
CERTIFIC	Name Address City/State	Controlled Recovery, Inc. P.O. Box 388 Hobbs, NM 88241 certify that the waste described in Part I was received by me via to	Telephone No.
	Name Address City/State	Controlled Recovery, Inc. P.O. Box 388 Hobbs, NM 88241	Telephone No.

Bill To:		-				
Address:			3			
COMPANY/GENERATOR::	n Puddock	6/1	Explose Andres	Unit	INC Pit A	TB 1-1
TRUCKING COMPANY:	7-445	Louge	West	\$	TIME:	400 AM PM
DATE: 730	98 V	EHICLE No.:	SZ	20	DRIVER N	lo.:
[] DRILLING FLUIDS [] COMPLETION FLUID [CONTAMINATED SO	•	[]TANK []GAS P []OTHE	PE OF MATERI BOTTOMS PLANT WASTE R MATERIAL DESCRIPTION		[] EXEMPT [] C-117 No.	
	<u> </u>	<u> </u>	-	<u> </u>		
					# <	>
				:		
VOLUME OF MATERIAL [] WASH OUT I, represent and warrant the Resource Conservation and the second	[] BBLS. [] CAL at the wastes ar nd Recover Act	L OUT re: generated (RÇRA) Sub	d from oil and g	ER HOURS	nd production	DEBRIS CHARGE
AGENT: (SIGNATURE)	unt In C	<u> </u>	10	-A//		
CRI REPRESENTATIVE:	(SIGNATURE)					
TANK NO.					OFFIC	CE USE:
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS		
1ST GAUGE	<i>x</i>			NET BBLS.		
2ND GAUGE						05-98-500-4pt#27501
MEASURE RECEIVED					Nº Ω2	7622
BS& W	%				02	. 1924
FREE WATER		BBLS.				

	Address	500 W. Texas, Suite 500	(915 <u>) 682-6612</u>
	City/State	Midland, Texas 79701	Telephone No.
	•		
RGINAT	ION OF W	ASTE:	
perations	e Center	Titan Exploration/Lovington Unit, Lea County, New Mexico	Permit No.
peracon		Lea County, New Mexico	- Citiativa
mnerty N	iame! /(1)	Lovington Paddock/San Andres Unit ('Di+_ATR 1_1\
roporty i	(1)	(Well, Tank Battery, Plant, Facility)	TITO THEY
	(2)	West Lovington Unit (Pit -ATB 33-1)	
7A COTE TINE			ET IDE INITE ETC)
ASIEDE	NIIFICATIO	N AND AMOUNT (BARRELS, YARDS, TONS, CU.	.F1.,LB3., UNITS, E1C.)
rilling Fluid		Tank Bottoms	Exempt Fluids
Completion F		Gas Plant Waste	C117 No.
contaminated	l Soil	X Other Material	Pit No.
	<i>P</i>		
		DESCRIPTION / NOTES	
	, a		
	RCRA Exemp	t-Soil/Sludge 12 yds-	
		3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	
			
ERTIFIC	ATION:	The waste described above is not hazardous pursuant to 40 CFR P.	
SERTIFIC	ATION:	manned below. I certify the the foregoing is true and correct to the man a gent for Lita Ex,	best of my knowledge. Olerahier 7-30-18
CERTIFIC	ATION:	named below. I certify the the foregoing is true and correct to the	best of my knowledge.
All regions	A.	named below. I certify the the foregoing is true and correct to the many way of the target of Generator's Authorized Agent	best of my knowledge. Oleration 7-30-18 Date and time of Shipment
All regions	A.	manned below. I certify the the foregoing is true and correct to the man a gent for Lita Ex,	best of my knowledge. Oleration 7-30-18 Date and time of Shipment
All regions	TRANSF	signature of Generator's Authorized Agent PORTER: (To be completed in full by Tra	best of my knowledge. plenation 7-30-18 Date and time of Shipment Ansporter)
Air on your	TRANSF	signature of Generator's Authorized Agent PORTER: (To be completed in full by Tra	best of my knowledge. plenation 7-30-18 Date and time of Shipment Insporter) 715-580-0508
Air on your	TRANSF Name Address	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Tra Texas Pase Works To west Co. Rd.	best of my knowledge. oloration 7-30-18 Date and time of Shipment Insporter) 7/5-580-0508 Telephone No.
Since y	TRANSF Name Address	signature of Generator's Authorized Agent PORTER: (To be completed in full by Tra	best of my knowledge. plenation 7-30-18 Date and time of Shipment Insporter) 715-580-0508
PART II:	TRANSF Name Address City/Stat	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Tra Texas Pase Works To west Co. Rd.	best of my knowledge. oloration 7-30-18 Date and time of Shipment Insporter) 7/5-580-0508 Telephone No.
PART II:	TRANSF Name Address City/Stat	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Tra Texas Pase Works To west Co. Rd.	Date and time of Shipment Insporter) 7-30-18 Date and time of Shipment Telephone No. 520 Truck No. hipment to the destination below.
PART II:	TRANSF Name Address City/Stat	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Tra Texas lease works To west Co. Rd. e odessa Txi	Date and time of Shipment 7-30-18 Date and time of Shipment 7-580-0508 Telephone No. 520 Truck No.
PART II:	TRANSF Name Address City/Stat	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Tra Texas lease works To west Co. Rd. e odessa Txi	Date and time of Shipment Insporter) 7-30-18 Date and time of Shipment Telephone No. 520 Truck No. hipment to the destination below.
PART II:	TRANSF Name Address City/Stat	PORTER: (To be completed in full by Tra Texas lease works I actify that the waste in quartity above for received by me for at Navel 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Date and time of Shipment Ansporter) 7-30-18 Part and time of Shipment 7-580-0508 Telephone No. 520 Truck No. hipment to the destination below. 7-30-78
PART II:	TRANSF Name Address City/State CATION: J.B.	PORTER: (To be completed in full by Tra Texas lease works I actify that the waste in quartity above for received by me for at Navel 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Date and time of Shipment Ansporter) 7-30-18 Part and time of Shipment 7-580-0508 Telephone No. 520 Truck No. hipment to the destination below. 7-30-78
PART II:	TRANSF Name Address City/State CATION: J.B.	Signature of Generator's Authorized Agent ORTER: (To be completed in full by Tra Texas lease works To west co. Rd. e odessa Txi Signature of Transporter's Agent AL OR RECLAMATION SITE:	Date and time of Shipment 7-30-18 Date and time of Shipment 7-580-0508 Telephone No. 520 Truck No. hipment to the destination below. 7/30-78 Date and time of Received
PART II:	TRANSF Name Address City/State CATION: J.B. DISPOS Name	Signature of Generator's Authorized Agent PORTER: (To be completed in full by Tra Texas lease works To west co. Rd. Codessa Txi Signature of Transporter's Agent AL OR RECLAMATION SITE: Controlled Recovery, Inc.	Date and time of Shipment 7-30-18 Date and time of Shipment 7-580-0508 Telephone No. 520 Truck No. hipment to the destination below. 7/30-78 Date and time of Received
PART II:	Name Address City/State CATION: J.B. DISPOS Name Address	I certify that the waste in quantity above for received by me for at Signature of Transporter's Agent I certify that the waste in quantity above for received by me for at Signature of Transporter's Agent AL OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388	Date and time of Shipment 7-30-18 Date and time of Shipment 7-580-0508 Telephone No. 520 Truck No. hipment to the destination below. 7/30-78 Date and time of Received
PART II:	TRANSF Name Address City/State CATION: J.B. DISPOS Name	I certify that the waste in quantity above for received by the foregoing is true and correct to the foregoing is true and	Date and time of Shipment 7-30-18 Date and time of Shipment 7-580-0508 Telephone No. 520 Truck No. hipment to the destination below. 7/30-78 Date and time of Received
PART II:	Name Address City/State CATION: J.B. DISPOS Name Address City/State	I certify that the weste in quantity above for received by the foregoing is true and correct to the foregoing is true and	Date and time of Shipment P19-580-0508 Telephone No. 520 Truck No. hipment to the destination below. 7/30-78 Date and time of Received (505)393-1079 Telephone No.
PART II:	Name Address City/State CATION: J.B. DISPOS Name Address City/State	I certify that the weste in quantity above for received by the foregoing is true and correct to the foregoing is true and	Date and time of Shipment 7-30-18 Date and time of Shipment 7-580-0508 Telephone No. 520 Truck No. hipment to the destination below. 7/30-78 Date and time of Received
PART III:	Name Address City/State CATION: J.B. DISPOS Name Address City/State	I certify that the weste in quantity above for received by the foregoing is true and correct to the foregoing is true and	Date and time of Shipment P19-580-0508 Telephone No. 520 Truck No. hipment to the destination below. 7/30-78 Date and time of Received (505)393-1079 Telephone No.

Bill To:						
Address:			,			
COMPANY/GENERATOR::	Titor on Pollo	Exp.	vation andies	Inc Unit Pi	+ ATI	3 1-1
TRUCKING COMPANY:	70	YasLe	se Wo	155	TIME:	400 AM - PM
DATE: 7 30	98 1	EHICLE No.:	520	· •	DRIVER No	<u>:</u>
[] DRILLING FLUIDS [] COMPLETION FLUID [] CONTAMINATED SO		[]TANK []GAS P []OTHER	PE OF MATERI BOTTOMS LANT WASTE R MATERIAL DESCRIPTION	! [<i>[</i>] EXEMPT F] C-117 No.:	
<u></u>			DESCRIPTION			
					(()	Δ-
						<u> </u>
	<u> </u>					
				17		
VOLUME OF MATERIAL	[]BBLS.		_://YARD	10	[] GALLON	IS
[] WASH OUT	[]CAL	L OUT	/ AFT	ER HOURS	· [] DEBRIS CHARGE
I, represent and warrant the Resource Conservation and AGENT: (SIGNATURE) CRI REPRESENTATIVE:	at the wastes and Recover Act	e: generated (RCRA) Sub	d from oil and ga otitle C Regulati	as exploration and ions; and not mixe	production of d with non-ex	perations; exempt from cempt wastes.
TANK NO.					OFFICE	- USE·
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS		
1ST GAUGE	1 44	, INONES	GROOS BBLS.			
2ND GAUGE			 	NET BBLS.	 .	05-98-500-4pt#27501
EASURE RECEIVED	<u> </u>			-		2000
	0/		 		Nº 02	7623
BS& W	%		 	1		
FREE WATER	L	BBLS.	<u>L</u>]		

PART I:	Generato	Titan Exploration Inc.	
	Address	500 W. Texas, Suite 500	(915) 682-6612
	City/State		Telephone No.
			·
ORGINATI	ON OF WA	ASTE:	
Operations		Titan Exploration/Lovington Unit, Lea County, New Mexico	Permit No.
Property N	ame(1)	Lovington Paddock/San Andres Unit	(Pit-ATB 1-1)
V	1	(Well, Tank Battery, Plant, Facility)	
		West Lovington Unit (Pit-ATB 33-1	
WASTE IDE	VIIFICATION	AND AMOUNT (BARRELS, YARDS, TONS, C	JU.F1.,LBS., UNITS, ETC.)
Drilling Fluids		Tank Bottoms	Exempt Fluids
Completion F	•	Gas Plant Waste	C117 No.
Contaminated		X Other Material	Pit No.
		DESCRIPTION / NOTES_	
		· · · · · · · · · · · · · · · · · · ·	
R	CRA Exempt	z - Soil/Sludgez yds	
			
			
CERTIFIC	()	The waste described above is not hazardous pursuant to 40 CF named below. I certify the the foregoing is true and correct to the signature of Generator's Authorized Agent	the best of my knowledge.
PART II:	J.	ORTER: (To be completed in full by T	ransporter)
	Name _	·	915-580-0500
	Address	tas lease tooks	Telephone No.
	City/State	30 WEST (0	526
,	011,701011	1633A TX	Truck No.
CERTIFIC	ATION:	I certify that the waste in quantity above was received by me for	or chipment to the destination below.
		0 1	7-30-98
	JIB,	0.59 Signature of Transporter's Agent	Date and time of Received
D. D	DIOREC		
PART III:		AL OR RECLAMATION SITE:	(E0E)202 4070
	Name	Controlled Recovery, Inc.	(505)393-1079
	Address City/State	P.O. Box 388	Telephone No.
	LITV/STATE		
	Oily/Oldic	Hobbs, NM 88241	
CERTIFIC	•	mat /	uie the transporter described in Part II
CERTIFIC	•	wall.	via the transporter described in Part II.
CERTIFIC	•	mat /	via the transporter described in Part II. 730 98 Date and time of Received

P. O. BOX 388 • HOBBS, NEW MEXICO 88241-0388 (505) 393-1079

Bill To:					*******		
Address:			· · · · · · · · · · · · · · · · · · ·				
COMPANY/GENERATOR::	Titar ton Pall	1. 6 111	lolation	Inc Unit	PIT ATB	· /-/	
TRUCKING COMPANY:	Texa	7,	,	4		835	AM - PM
DATE: 7 3/9		EHIĈLE No.:	520		DRIVER No.		
	<u> </u>	TYF	PE OF MATER				
[] DRILLING FLUIDS			воттомѕ] EXEMPT FI	LUIDS	
[] COMPLETION FLUID	S		LANT WASTE	=] C-117 No.:		
SONTAMINATED SO	L	[]OTHER	R MATERIAL	[6	Pit No.: 0	<u> </u>	
			DESCRIPTION				
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		<u></u>			-		
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VOLUME OF MATERIAL	[] BBLS.		YARD		[] GALLON	IS	
[] WASH OUT	[]CAL	LOUT	1 AFT	ER HOURS	ſ] DEBRIS	CHARGE
	[] 0/12	2001	1 1 1,		·	,0200	O, 1,
I, represent and warrant the Resource Conservation ar							
-	Dir CX	· 3		1/1/11			
AGENT: (SIGNATURE)	14 × 00	weld	<u> </u>	<i>\{\}\\\</i>			
•					\		
CRI REPRESENTATIVE:	(SIGNATURE)		-/	J			
TANK NO.					OFFICE	= 110=-	
		11101150	Toposo para	Lacquerious		T	
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS			
1ST GAUGE			 	NET BBLS.		05-98-500-4	pt#27501
2ND GAUGE				-		00 00 000	
EASURE RECEIVED				. I	Vº 02	7624	
BS& W	%					·	
FREE WATER		BBLS.	<u>L</u>]			

Pink - CRI Plant

Gold - Transporter

White - CRI

Canary - CRI Accounting

		Titan Exploration Inc.	
	Address	500 W. Texas, Suite 500	(915 <u>) 682-6612</u>
	City/State_	Midland, Texas 79701	Telephone No.
ORGINAT	ION OF WAS	TE:	
Operations		itan Exploration/Lovington Unit ea County, New Mexico	Permit No
Property N	lame V(1) Lo	ovington Paddock/San Andres Uni	t (Pit-ATB 1-1)
	(2) We	(Well, Tank Battery, Plant, Facility) est Lovington Unit (Pit - ATB 33-	1)
WASTE IDE		ND AMOUNT (BARRELS, YARDS, TONS,	
Drilling Fluid		Tank Bottoms	Exempt Fluids
_			C117 No.
Completion F		Gas Plant Waste	
Contaminated		X Other Material	Pit No.
		DESCRIPTION / NOTES	
	CDA Fuent	Co.2.1/Cldo.	12183
<u> </u>	RUKA EXEMPT	- Soil/Sludge	12/0/
			
CERTIFIC		he waste described above is not hazardous pursuant to 40 C	
CERTIFIC		med below. I certify the the foregoing is true and correct to	the best of my knowledge. 7-31-98
CERTIFIC		med below. I certify the the foregoing is true and correct to	the best of my knowledge.
CERTIFIC	na /	med below. I certify the the foregoing is true and correct to	Date and time of Shipment
***************************************	TRANSPO	Signature of Generator's Authorized Agent RTER: (To be completed in full by	Transporter)
***************************************	TRANSPO Name 7	Signature of Generator's Authorized Agent RTER: (To be completed in full by	Transporter) 915-580-0508
•	TRANSPO Name Z	Signature of Generator's Authorized Agent RTER: (To be completed in full by EXA 3 PASP WOY 15 TO WOST CO RE-	Transporter)
•	TRANSPO Name 7	Signature of Generator's Authorized Agent RTER: (To be completed in full by EXA 3 PASP WOY 15 TO WOST CO RE-	Transporter) 9/5-580-0508 Telephone No.
•	TRANSPO Name Address City/State	Signature of Generator's Authorized Agent RTER: (To be completed in full by EXXX PASE WOYKS 1 20 West Co Rt. Odessa TX	Transporter) 915-580-0508 Truck No. 5 20
PART II:	TRANSPO Name Address City/State	Signature of Generator's Authorized Agent RTER: (To be completed in full by EXA 3 PASP WOY 15 TO WOST CO RE-	Transporter) 915-580-0508 Truck No. 5 20
PART II:	TRANSPO Name Address City/State	Signature of Generator's Authorized Agent RTER: (To be completed in full by EXXX PASE WOYKS 1 20 West Co Rt. Odessa TX	Transporter) 9/5-580-0508 Telephone No. Truck No. 5 20 for shipment to the destination below.
PART II:	TRANSPO Name Address City/State CATION:	Signature of Generator's Authorized Agent RTER: (To be completed in full by ' EXA 2 PASE WOYKS CLOSSA TX certify that the waste in quantity above was poseived by me Signature of Transporter's Agent	Transporter) 9/5-580-0508 Telephone No. Truck No. 5 20 for shipment to the destination below. 7-3/-78
PART II:	TRANSPO Name Address Acity/State City/State DISPOSAL	Signature of Generator's Authorized Agent RTER: (To be completed in full by CX23 / P25P WOY/(S) DOWNST CO RT. Odessa TX Description that the waste in quantity above was pocified by me Manual Manual Carlla Signature of Transporter's Agent OR RECLAMATION SITE:	Transporter) 9/5-580-0508 Telephone No. Truck No. 5 20 for shipment to the destination below. 7-3/-78 Date and time of Received
PART II:	TRANSPO Name Z Address Z City/State CATION: 10 J.B. DISPOSAL Name	Signature of Generator's Authorized Agent RTER: (To be completed in full by EXXX PASE WOYKS COLOSTO TX Description that the waste in quantity above was received by me Signature of Transporter's Agent OR RECLAMATION SITE: Controlled Recovery, Inc.	Transporter) 9/5-580-0508 Telephone No. Truck No. 5 20 for shipment to the destination below. 7-3/-78 Date and time of Received
PART II:	TRANSPO Name Address City/State CATION: J.B DISPOSAL Name Address	Signature of Generator's Authorized Agent RTER: (To be completed in full by CX22 / P25P WOY / S CONTROL OF TX Description of Transporter's Agent OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388	Transporter) 9/5-580-0508 Telephone No. Truck No. 5 20 for shipment to the destination below. 7-3/-78 Date and time of Received
PART II:	TRANSPO Name Z Address Z City/State CATION: 10 J.B. DISPOSAL Name	Signature of Generator's Authorized Agent RTER: (To be completed in full by EXXX PASE WOYKS COLOSTO TX Description that the waste in quantity above was received by me Signature of Transporter's Agent OR RECLAMATION SITE: Controlled Recovery, Inc.	Transporter) 9/5-580-0508 Telephone No. Truck No. 5 20 To shipment to the destination below. 7-3/-78 Date and time of Received
PART II: CERTIFIC PART III:	TRANSPO Name Address City/State DISPOSAL Name Address City/State	Signature of Generator's Authorized Agent RTER: (To be completed in full by Signature of Generator's Authorized Agent RTER: (To be completed in full by Signature of Transporter's Agent OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388 Hobbs, NM788241	Transporter) 1 - 3 - 98 Date and time of Shipment
PART II:	TRANSPO Name Address City/State DISPOSAL Name Address City/State	Signature of Generator's Authorized Agent RTER: (To be completed in full by CX22 / P25P WOY / S CONTROL OF TX Description of Transporter's Agent OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388	Transporter) 1 - 3 - 98 Date and time of Shipment
PART II: CERTIFIC PART III:	TRANSPO Name Address City/State DISPOSAL Name Address City/State	Signature of Generator's Authorized Agent RTER: (To be completed in full by Signature of Generator's Authorized Agent RTER: (To be completed in full by Signature of Transporter's Agent OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388 Hobbs, NM788241	Transporter) 9/5-580-0508 Telephone No. Truck No. 5 20 for shipment to the destination below. 7-3/-78 Date and time of Received (505)393-1079 Telephone No.

Bill To:							
Address:				•			
COMPANY/GENERATOR::	Tit.	Frials	14'- 7	7		· · · · · · · · · · · · · · · · · · ·	
	11/4m	L 1/0	lation 1	nc /	D+ A	7011	
LEASE NAME: Louise	on follo	0 / Xg	n Andles	Unit		15/-1	_
TRUCKING COMPANY:	76		ease W	6/15	TIME:	8 YU /	AM PM
DATE: 7 31	98 1	EHICLE No.:	526	9	DRIVER N	0.:	
		TY	PE OF MATERI	IAL			
[] DRILLING FLUIDS		[] TANK	воттомѕ] EXEMPT	FLUIDS	
[] COMPLETION FLUIDS	8	[]GASP	PLANT WASTE	. [J C-117 No.		
CONTAMINATED SOI	L		R MATERIAL	J	Pit No.:		· · · · · · · · · · · · · · · · · · ·
7		.	DESCRIPTION				
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VOLUME OF MATERIAL	[] DDI 0		AKWARR	$-/\sim$	1 20410	<u> </u>	· ·
VOLUME OF MATERIAL	[] BBLS.		YARD		:[]GALLO	NS	
[] WASH OUT	[]CAL	L OUT] AFT	ER HOURS	[] DEBRIS CH	IARGE
			,				
I, represent and warrant tha	at the wastes ar	o: apporato	d from oil and a:	as evaloration as	nd production	porations: ove	nnt from
Resource Conservation an	d Recover Act	(RCRA) Sub	btitle C Regulati	ions; and not mi	xed with non-e	exempt wastes.	припош
17	- J - L			•	5/\		
AGENT: (SIGNATURE)	1 Aug	<u>a</u>		- AH)			
,				(11)		•	
CRI REPRESENTATIVE:	(SIGNATURE)	-			5		·············
	(· · · · · · · · · · · · · · · · · · ·						
				,			
TANK NO.					OFFIC	E USE:	
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS			
1ST GAUGE				NET BBLS.			
2ND GAUGE						05-98-500-4pt#	27501
EASURE RECEIVED					Nº Ω2	700F	
BS& W	%			·*·	in- U 2	7625	
FREE WATER		BBLS.		†		7	
THE WAILE		DDLO.	<u> </u>	j			

PART I:	Generator	Titan Exploration Inc.		
	Address	500 W. Texas, Suite 500	(915 .	<u>) 682-6612</u>
	City/State	Midland, Texas 79701		Telephone No.
ORGINATI	ON OF WA	STE:		
	•	Titan Exploration/Lovington Unit.		
Operations		Lea County, New Mexico	Permit No.	<u> </u>
Property N	ame (1)	Lovington Paddock/San Andres Unit	(Pit-ATB 1-1)	
·	/o\ ı	(Well, Tank Battery, Plant, Facility)		
MA CTE IDEI		West Lovington Unit (Pit -ATB 33-1) AND AMOUNT (BARRELS, YARDS, TONS, C		ETC
WASTEIDER	NIFICATION	AND AMOUNT (BARRELS, TARDS, TONS, C	U.F 1.,LDS., UNITS,	,EIC.)
Drilling Fluids	R ·	Tank Bottoms	Exempt Flui	ds
Completion FI	-	Gas Plant Waste	C117 No.	l
Contaminated	· .	X Other Material	Pit No.	
	·	DESCRIPTION / NOTES		
			/	
R	CRA Exempt	- Soil/Sludge	12403	

	4	named below. I certify the the foregoing is true and correct to the support of the support of the support of Generator's Authorized Agent		7-31-98 Date and time of Shipment
		V		
PART II:	TRANSP	ORTER: (To be completed in full by Ti	ransporter)	•
•		TO 100 0 100 110 110 110 110 110 110 110		
		Texas lease works	7	5-580-0508
		I 20 West CoRd.		Telephone No.
	City/State	odessa Tx,		326
AFRICIA	ATION:			Truck No.
CERTIFIC	· ·	I certify that the waste in quantity above was received by me for	shipment to the destination	
	J1031	Mosario V. Lujan		7-31-98
		Signature of Transporter's Agent		Date and time of Received
PART III:	DISPOSA	AL OR RECLAMATION SITE:		
	Name	Controlled Recovery, Inc.	(505)393-	-1079
	Address	P.O. Box 388	Telephone I	
	City/State		r grahmana r	
CERTIFIC	ATION:	I certify that the water attention in Part I was received by me v	ia the transporter describo	í in Part II.
		I KILL	- · · · · · · · · · · · · · · · · · · ·	77198 841
	•	Sygnature of Facility Agent		Date and time of Received

Bill To:		· <u> </u>					
Address:			······································				
COMPANY/GENERATOR::	-tan	XDOR	at all	<u> </u>			
LEASE NAME: LOUINGTO		1	4	do as al	- 112	1-1	
		7	SAN AM	ikes pit	TIME: //	1. 10	₩ PN
	MAS Leas		rs room		 	-/3	AM JPM
DATE: 7-31-99	I V	EHICLE No.:			DRIVER No.	; , 	
			E OF MATERI	AL ,	LEVELIOT C	LUDO	٠.
[] DRILLING FLUIDS [] COMPLETION FLUIDS	, i		BOTTOMS	[r.ba	EXEMPT FI E-117 No.:		
· . []			LANT WASTE	A	Pit No.:	300	• • •
CONTAMINATED SOIL			R MATERIAL	<u> </u>	PIL NO.:		
	===		DESCRIPTION			<u> </u>	· · · · · · · · · · · · · · · · · · ·
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			-/-		<u> </u>		
VOLUME OF MATERIAL	[]BBLS.		YARD	<u> </u>] GALLON	s	
[] WASH OUT	[] CALI	L OUT	$T_{[-]AFT}$	ER HOURS	[] DEBRIS (CHARGE
			• -				
I, represent and warrant tha	t the wester ar	o: aonoratos	t from oil and a	as evaloration and	production or	orations: ov	omnt from
Resource Conservation and							
AGENT: 1/1/2000	100	ce 15/0	di:				
(SIGNATURE)					-		
CRI REPRESENTATIVE: _	Na		10				. ;
	(SIGNATURE)						.4
TANK NO.					OFFICE	USE:	
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS		T	
1ST GAUGE				NET BBLS.			
2ND GAUGE						05-98-500-4p	t#27501
MEASURE RECEIVED				1 .	10 00	7004	
BS& W	%	·		,	№ 02	7631	
FREE WATER		BBLS.	† 	1			
		L		J			

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PART I:	Generator Titan Exploration Inc.	•
	Address 500 W. Texas, Suite 500	(915 <u>) 682-6612</u>
	City/State Midland, Texas 79701	Telephone No.
SPOINAT	ON OF WASTE:	
JAGINAI		
Operations	Titan Exploration/Lovington Unit, Lea County, New Mexico	Permit No
Property N	ame (1) Lovington Paddock/San Andres Unit	(Pit-ATB 1-1)
	(Well, Tank Battery, Plant, Facility) (2) West Lovington Unit (Pit-ATB 33-1)	
WASTE THE	NTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CL	
WANTE IDE	THE PROPERTY OF THE PROPERTY O	74 1,420, 0.1110,210,
Drilling Fluid	Tank Bottoms	Exempt Fluids
Completion F		C117 No.
Contaminated		Pit No.
	DESCRIPTION / NOTES	
<u> </u>	RCRA Exempt - Soil/Sludge 12 yd5	
	· · · · · · · · · · · · · · · · · · ·	
	named below. I certify the the foregoing is true and correct to the	
PART II:	TRANSPORTER: (To be completed in full by Tr	ansnorter)
. /	Transfer Sitters. (10 be completed in fail by the	ansporter,
	Name Texas FASE WOLKS	
	Address I 20 West Co Rd.	Telephone No.
	City/State Odessa 721	520
		Truck No.
CERTIFIC		· · · · · · · · · · · · · · · · · · ·
	J.B. Marin Ja Parco	7-31-98
	Signature of Transporter's Agent	Date and time of Received
PART III:	DISDOSAL OR RECLAMATION SITE.	
1 VIZ 1 III.	DISPOSAL OR RECLAMATION SITE: Name Controlled Recovery, Inc.	(505)393-1079
	Address P.O. Box 388	Telephone No.
•	City/State Hobbs, NM 88241	i cicpitotic 140.
	(1000), 1111 00241	
CERTIFIC	ATION: I certify that the waste described in Part J was received by me vis	a the transporter described in Part II.
	Mato Alice	7.31-98 10
	Signature of Facility Asset	Data and time of Descriped

P. O. BOX 388 • HOBBS, NEW MEXICO 88241-0388 (505) 393-1079

g**v**is

Bill To:						
Address:			٧			
COMPANY/GENERATOR:: 7	HAN E	XOloRI	Ation			
LEASE NAME: LOUINATO	v Padde			res UNI	+ P+-	A+B 1-1
	XAS Ced	· '/	Warks		TIME:	(M)PM
DATE: 7.31-98		EHICLE No.:	526		DRIVER No.	:
		TYF	PE OF MATER	AL		
[] DRILLING FLUIDS		[]TANK	BOTTOMS	Ţ] EXEMPT F	LUIDS
COMPLETION FLUIDS	3	[]GASP	LANT WASTE]] C-117 No.:	
CONTAMINATED SOI	L	[]OTHE	R MATERIAL	<u> </u>	Pit No.:	# OCD
			DESCRIPTION		V .	
			¥-,		1/ 1/	7
					71-10	
						- 20 -
			<u> </u>			
			(/	19	·	
VOLUME OF MATERIAL	[]BBLS.		:[_YARD	19	[]GALLON	S
[] WASH OUT	[] CAL	LOUT	[]AFT	ER HOURS] DEBRIS CHARGE
•						
1, represent and warrant tha						
Resource Conservation an	d Recover Act	(RCRA) Sul	btitle C Regulat	ions; and not mixe	ed with non-ex	empt wastes.
AGENT: Tocari	d Recover Act				·	
(SIGNATURE)			11			
CRI REPRESENTATIVE:	Mar	61	200			
	(SIGNATURE)					
TANK NO.	·				OFFICE	USE:
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS		
1ST GAUGE	· · · · · · · · · · · · · · · · · · ·			NET BBLS.		<u> </u>
2ND GAUGE						05-98-500-4pt#27501
EASURE RESEIVED					Nº ⊹⊘*	7C 2O
BS& W	. %				ب الله الله	7632
FREE WATER		BBLS.]		

Pink - CRI Plant

Gold - Transporter

White - CRI

Canary - CRI Accounting

#10

		TTCUIT CAPT	<u>oration Inc</u>			_
	Address		as, Suite 50	00	(915	<u>) 682-6612</u>
	City/State_	Midland, T	exas 79701			Telephone No.
ORGINAT	ION OF WAS	ITE:		•		
Operations		itan Explora ea County, N			Permit No.	·
Property N	lame V(1) Lo	ovington Pad	dock/San An	dres Unit (P	it-ATB 1-1)
	(0) 11		Bettery, Plant, Facility	and the second s		
WASTE IDE		est Lovington			T LBS UNITS	(ETC)
WASTE IDE	MILICATIONA	TAD MAJOON 1 (I	balders, Tak	DB, 101(8, CO.)	1.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, 210.)
Drilling Fluid	ls	Ţ	ank Bottoms		Exempt Flu	ids
Completion F			as Plant Waste		C117 No.	
Contaminated		x c	Other Material		Pit No.	
		·	DESCRIPTION	/NOTES		
						
	RCRA Exempt	- Soil/Sludg	ie /	2405		
L			N	-		
CERTIFIC	~ · · · · · · · ·			e and correct to the be		gned to the transporter
	Tym_	CWand	agut.	for Ditan E	xploration	- 7.31-98 Date and time of Shiroment
	The state of the s	CWand	agu-	for ditan E	xploration	7.31-98 Date and time of Shipment
PART II:	tym_	CWand	aguit .	dt	x ploration	
PART II:	TRANSPO	Signature of General PRTER: (To b	a guntariorized Age	in full by Trar	x ploration	Date and time of Shipment
PART II:	TRANSPO Name Z	Signature of General PRTER: (To b	a gunt mor's Authorized Age be completed SE Work	in full by Trar	x ploration	9/5-580-0503
PART II:	TRANSPO Name 7 Address	Signature of General PRTER: (To be Texas less 120 less	a gunt more Authorized Age be completed SE Work ST CO-18	in full by Trar	x ploration	Date and time of Shipment
PART II:	TRANSPO Name 7 Address	Signature of General PRTER: (To b	a gunt more Authorized Age be completed SE Work ST CO-18	in full by Trar	x ploration	P/5-580-0503 Telephone No. 526
PART II:	TRANSPO Name 7 Address 7 City/State	Signature of General PRTER: (To be To Located To Colongo To To Colongo To Col	a gunt more Authorized Age de completed SE Work ST CO-166	in full by Trar	esporter)	Plic and time of Shipment 9/5-580-0508 Telephone No. 526 Truck No.
	TRANSPO Name 7 Address 7 City/State	Signature of General PRTER: (To be Texas less 120 less	a quality above was	in full by Tran	esporter)	Plic and time of Shipment 9/5-580-0508 Telephone No. 526 Truck No.
	TRANSPO Name Z Address Z City/State	Signature of General PRTER: (To be Carried to describe that the waste in Roschia	a gunt more Authorized Age de completed SE Work ST CO-166	in full by Tran	esporter)	Paic and time of Shipment 9/5-580-0508 Telephone No. 526 Truck No. ion below.
CERTIFIC	TRANSPO Name Z Address Z City/State	Signature of General Parties (To be Code 222 To certify that the waste in Poschio Signature of Tra	a guetant and Agent	in full by Tran	esporter)	Plicand time of Shipment 9/5-580-0508 Telephone No. 526 Truck No. ion below. 7-31-78
	TRANSPO Name Z Address Z City/State CATION: 10	Signature of General PRTER: (To be Control of True of	a quality above was maporter's Agent	in full by Tran	exploration isporter)	7/5-580-0508 Telephone No. 526 Truck No. ion below. 7-31-78 Date and time of Received
CERTIFIC	TRANSPO Name Z Address Z City/State CATION: II J. B. DISPOSAL Name	Signature of General PRTER: (To be CARS CONTROLLED CONT	a quality above was paraporter's Agent MATION SIT	in full by Tran	esporter) present to the destinate (505)393	7/5-580-0503 Telephone No. 526 Truck No. ion below. 7-31-78 Date and time of Received
CERTIFIC	TRANSPO Name Z Address Z City/State CATION: 10 J. B DISPOSAL Name Address	Signature of General PRTER: (To be see that the waste in Signature of Tree Control	a guil- stor's Authorized Age of Conference of Co	in full by Trar	exploration isporter)	7/5-580-0503 Telephone No. 526 Truck No. ion below. 7-31-78 Date and time of Received
CERTIFIC	TRANSPO Name Z Address Z City/State CATION: II J. B. DISPOSAL Name	Signature of General PRTER: (To be see that the waste in Signature of Tree Control	a quality above was paraporter's Agent MATION SIT	in full by Trar	esporter) present to the destinate (505)393	7/5-580-0503 Telephone No. 526 Truck No. ion below. 7-31-78 Date and time of Received
PART III:	TRANSPO Name Z Address Z City/State DISPOSAL Name Address City/State	Signature of General PRTER: (To be Control Control Signature of General Poscinia Transporter of Transporter o	a quantity above was processed agent with the completed of the control of the con	in full by Tran	exploration sporter) perent to the destinate (505)393 Telephone	7/5-580-0503 Telephone No. 526 Truck No. ion below. 7-31-78 Date and time of Received 3-1079 No.
CERTIFIC	TRANSPO Name Z Address Z City/State DISPOSAL Name Address City/State	Signature of General PRTER: (To be see that the waste in Signature of Tree Control	a quantity above was processed agent with the completed of the control of the con	in full by Tran	exploration sporter) perent to the destinate (505)393 Telephone	7/5-580-0503 Telephone No. 526 Truck No. ion below. 7-31-78 Date and time of Received 3-1079 No.

Bill To:						
Address:		<u>.</u>				
COMPANY/GENERATOR::	itan	Ex	plorat	and		· · · · · · · · · · · · · · · · · · ·
LEASE NAME: LOVICE	<i>i</i>	dela		Andres	p +	A 18 1-1
TRUCKING COMPANY:	Xas C	race	Work		TIME: /	AM PM
DATE: 7		EHICLE No.:		7	DRIVER No.	-
	· · · · · · · · · · · · · · · · · · ·	TYP	E OF MATER	AL		
[] DRILLING FLUIDS		[]TANKI	воттомѕ	. []	EXEMPT FL	LUIDS
[] COMPLETION FLUIDS	į	[]GASP	LANT WASTE	[]	C-117 No.:	
- CONTAMINATED SOIL	• ,	[]OTHER	R MATERIAL	[]	Pit No.:	
			DESCRIPTION			
	· · · · · · · · · · · · · · · · · · ·	. `		m_	FAR	7 11
						
						
						
				*		
VOLUME OF MATERIAL	[] BBLS.		JYARD	1:] GALLON	S
[] WASH OUT	[]CALI	L OUT	[]AFT	ER HOURS	[] DEBRIS CHARGE
						* *
I, represent and warrant tha	t the wastes ar	e: denerated	d from oil and a	as exploration and n	roduction or	perations: exempt from
Resource Conservation and	Recover Act	(RCŔA) Sub				
AGENT: 77777	. 6 16	Has	C 10			
(SIGNATURE))			
CRI REPRESENTATIVE: _	- form	Jack		Mo,		
	(SIGNATURE)					
TANK NO.					OFFICE	USE:
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS		1
1ST GAUGE				NET BBLS.		
2ND GAUGE						05-98-500-4pt#27501
EASURE RECEIVED				,	0 00=	root.
BS& W	%			N'	- 027	634
FREE WATER		BBLS.	-	***		
				j		

PART I: Ger	nerato <u>r</u>	Titan Exploration Inc.	
	dress	500 W. Texas, Suite 500	(915 <u>) 682-6612</u>
City	//State	Midland, Texas 79701	Telephone No.
ORGINATION C	OF WAS	TE:	
Operations Cent		tan Exploration/Lovington Unit, a County, New Mexico	Permit No.
•	_		
Property Name\	\angle (1) Lo	vington Paddock/San Andres Unit	(Pit-ATB 1-1)
	(2) Wes	(Well Tank Battery, Plant, Facility) st Lovington Unit (Pit - ATB 33-1)
WASTE IDENTIFIC		ND AMOUNT (BARRELS, YARDS, TONS, C	
Drilling Fluids		Tank Bottoms	Exempt Fluids
Completion Fluids		Gas Plant Waste	C117 No.
Contaminated Soil		X Other Material	Pit No.
		DESCRIPTION / NOTES	
		DECOM HONTHOLES	
RCRA I	Exempt -	Soil/Sludge /2 Uds.	
	ON: The	waste described above is not hazardous pursuant to 40 CF.	R Part 261 and was consigned to the transporter
CERTIFICATIO		ned below. I certify the the foregoing is true and correct to the work of the distance of the	he best of my knowledge. Explandia 7.31-98
		ned below. I certify the the foregoing is true and correct to t	he best of my knowledge.
CERTIFICATIO	Syp	ned below. I certify the the foregoing is true and correct to the work of the Signature of Generator's Authorized Agent	he best of my knowledge. Explosive 7.31-98 Date and time of Shipment
CERTIFICATIO	Syp	ned below. I certify the the foregoing is true and correct to the work of the distance of the	Date and time of Shipment ransporter)
CERTIFICATIO	ANSPOR	ned below. I certify the the foregoing is true and correct to the work of the Signature of Generator's Authorized Agent	he best of my knowledge. Explosive 7.31-98 Date and time of Shipment
CERTIFICATIO PART II: TR	ANSPOR	Signature of Generator's Authorized Agent RTER: (To be completed in full by T	Date and time of Shipment ransporter)
PART II: TR.	ANSPOR	Signature of Generator's Authorized Agent RTER: (To be completed in full by T CX35 (C35) WOYKS 20 WOST CORL	Templostics 7.31-98 Date and time of Shipment Transporter) 7.51-98 Date and time of Shipment
PART II: TR.	ANSPOR	Signature of Generator's Authorized Agent RTER: (To be completed in full by T	Telephone No.
PART II: TR.	ANSPORMe Zanger	Signature of Generator's Authorized Agent RTER: (To be completed in full by T CX35 (C35) WOYKS 20 WOST CORL	Telephone No. Truck No.
PART II: TR. Nai Add City	ANSPORMe Zanger	Signature of Generator's Authorized Agent RTER: (To be completed in full by T EXAS (CASE WOYKS 20 (1)057 Co Rd.	Telephone No. Truck No.
PART II: TR. Nai Add City	ANSPORME Zarante Zaran	Signature of Generator's Authorized Agent RTER: (To be completed in full by T CX35 C35 W07K5 20 W05T C0 Rd. critisy that the waste in quantity above was received by me for	Telephone No. Truck No.
PART II: TR. National Additional City CERTIFICATIO	ANSPORME Zig/State Zig/Sta	Signature of Generator's Authorized Agent CKAS CASE WORKS 20 (1065) CORD. Criticity that the waste in quantity above was received by me for the complete of Transporter's Agent	Telephone No. 5 20 Truck No.
PART III: DIS	ANSPORME TO ANSPOR	Signature of Generator's Authorized Agent RTER: (To be completed in full by T CX35 C35 W07K5 20 (10057 C0 Rd. CX35 TX. British that the waste in quantity above was received by me for signature of Transporter's Agent OR RECLAMATION SITE:	Telephone No. 5 20 Truck No. Truck No. Truck No. Truck No. Truck No. Truck No.
PART II: TR. Nai Add City	ANSPORME TO ANSPOR	Signature of Generator's Authorized Agent CKAS CASE WORKS 20 (1065) CORD. Criticity that the waste in quantity above was received by me for the complete of Transporter's Agent	Telephone No. 5 20 Truck No. Truck No. Truck No. Truck No. Truck No. Truck No.
PART III: DIS	ANSPORME TO ANSPOR	Signature of Generator's Authorized Agent RTER: (To be completed in full by T CX35 C35 W07K5 20 (10057 C0 Rd. CX35 TX. British that the waste in quantity above was received by me for signature of Transporter's Agent OR RECLAMATION SITE:	Date and time of Shipment Telephone No. 570 Truck No. Truck No. Date and time of Received
PART III: DIS Nai Add	ANSPORME Zig/State Zig/State Zig/State Zig/State Zig/Sposal me	Signature of Generator's Authorized Agent RTER: (To be completed in full by T CXAS CASE WOYKS 20 (1005) Co Rd. CHOSTA TX CHIEF TAIL CHIEF TAIL CHIEF TAIL CHIEF TAIL CONTROLLED TO STEE CONTROLLED T	Date and time of Shipment Transporter) 7.31-98 Date and time of Shipment Telephone No. 520 Truck No. Truck No. Date and time of Received (505)393-1079
PART III: DIS Nai Add City	ANSPORME Zay/State Zay/State Zay/State Zay/State Zay/State	Signature of Generator's Authorized Agent RTER: (To be completed in full by T CX35 C35 W07K5 20 W05T C0 Rd. Signature of Transporter's Agent OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388 Hobbs, NM 88241	Date and time of Shipment Transporter) 7.51-98 Date and time of Shipment Telephone No. 520 Truck No. Truck No. The shipment to the destination below. 7.31-98 Date and time of Received (505)393-1079 Telephone No.
PART III: DIS Nai Add	ANSPORME Zay/State Zay/State Zay/State Zay/State Zay/State	Signature of Generator's Authorized Agent RTER: (To be completed in full by T CXAS CASE WOYKS 20 (1005) Co Rd. Designature of Transporter's Agent OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388	Date and time of Shipment Transporter) 7.51-98 Date and time of Shipment Telephone No. 520 Truck No. Truck No. The shipment to the destination below. 7.31-98 Date and time of Received (505)393-1079 Telephone No.
PART III: DIS Nai Add City	ANSPORME Zay/State Zay/State Zay/State Zay/State Zay/State	Signature of Generator's Authorized Agent RTER: (To be completed in full by T CX35 C35 W07K5 20 W05T C0 Rd. Signature of Transporter's Agent OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388 Hobbs, NM 88241	Date and time of Shipment Transporter) 7.51-98 Date and time of Shipment Telephone No. 520 Truck No. Truck No. The shipment to the destination below. 7.31-98 Date and time of Received (505)393-1079 Telephone No.

Bill To:								
Address:								
COMPANY/GENERATOR:: +in	IAN E	XDlor 1	Ation					
LEASE NAME: LOUINE		Paddo	ck Isan	ANDRE	S	Ate	3-1-1	
TRUCKING COMPANY: +ex	15 6	ASC	WORK	S	TIM	ME:	15	AM A
DATE: 7-3/-98	V	EHICLE No.:	526		Di	RIVER No.:		
		TYI	PE OF MATER	IAL	•			
[] DRILLING FLUIDS		[] TANK	воттомѕ	. [] EX	EMPT FL	UIDS	
[/] COMPLETION FLUIDS		[]GASF	PLANT WASTE	. [17 No.: _	001	
LX1CONTAMINATED SOIL			R MATERIAL	أسأ	A.Pit	No.:	UCL	<u>/</u>
			DESCRIPTION		1			
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					ű	# 10	7	
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			1/	10			•	
VOLUME OF MATERIAL	[]BBLS.		TYARD	12	:[]	BALLONS		<u> </u>
[] WASH OUT	[]CAL	L OUT	[] AFT	ER HOURS		[]	DEBRIS	CHARGE
I represent and warrant that t	ho wastos ar	ro: gonoroto	d from oil and a	aa avalaratian a	-d ==-d	uation one	arationa, a	vomnt from
I, represent and warrant that t Resource Conservation and	Recover Act	(RCRA) Sul	btitle C Regulat	as exploration ar ions; and not mi	na proa xed wit	uction ope h non-exe	erations; e empt waste	xempunom es.
and the same of th			•				•	
(SIGNATURE)	7 3 3	4			O.			
CRI REPRESENTATIVE:	11	Same of the same o	1/10)				
	IGNATURE)				· j			
						·		
TANK NO.						OFFICE	USE:	
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS				
1ST GAUGE			\$	NET BBLS.	.			
2ND GAUGE				(ACT 0000.			05-98-500-4	lpt#27501
MEASURE RECEIVED			<u> </u>	1		~		
	0/		<u> </u>		Νº	527	633	٠
BS& W	<u></u> %		<u> </u>	-				•
FREE WATER		BBLS.]				

Address 500 W. Texas, Suite 500 (915) 682-6 City/State Midland, Texas 79701 Telephone N ORGINATION OF WASTE:	612
	
ORGINATION OF WASTE	o.
ALIMITAL AL ALLANDO	
Operations Center Titan Exploration/Lovington Unit, Lea County, New Mexico Permit No.	·
Property Name (1) Lovington Paddock/San Andres Unit (Pit-ATB 1-1)	
(Well, Tank Bettery, Plant, Facility) (2) West Lovington Unit (Pit-ATB 33-1)	in an
WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT.,LBS., UNITS, ETC.)	
Will and the first of the first	
Drilling Fluids Tank Bottoms Exempt Fluids	
Completion Fluids Gas Plant Waste C117 No.	
Contaminated Soil X Other Material Pit No.	
DECODIOTION (MOTES	
DESCRIPTION / NOTES	
RCRA Exempt - Soil/Sludge /2 ydS	
	. 1
CERTIFICATION: The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the tran	psporter
named below. I certify the the foregoing is true and correct to the best of my knowledge. The Ward agent for Sitan Exploration 7:3	· ·
named below. I certify the the foregoing is true and correct to the best of my knowledge. The Ward agent for Litan Exploration 7:3	31-98
named below. I certify the the foregoing is true and correct to the best of my knowledge. Ward agent in Litan Exploration 7-3	31-98 hime of Shipment
named below. I certify the the foregoing is true and correct to the best of my knowledge. The Ward agent of The Exploration 7.3	31-98 time of Shipment
named below. I certify the the foregoing is true and correct to the best of my knowledge. The Complete Compl	31-98 time of Shipment 20-0508
PART II: TRANSPORTER: (To be completed in full by Transporter) Name Tass 1975 Works Address I 20 West Co Rd. City/State Od=222 Tx. City/State Od=222 Tx.	31-98 hime of Shipment 20-0508 ne No. 26
PART II: TRANSPORTER: (To be completed in full by Transporter) Name Texas least works Address I 20 west co Rd. City/State od-222 Tx. Truck	31-98 hime of Shipment 20-0508 ne No. 26
PART II: TRANSPORTER: (To be completed in full by Transporter) Name TXAS PART Completed PART PAR	31-98 hime of Shipment 20-0508 ne No. 26
PART II: TRANSPORTER: (To be completed in full by Transporter) Name TXAS PART World PART	31-98 hime of Shipment 20-0508 ne No. 26
PART II: TRANSPORTER: (To be completed in full by Transporter) Name TXAS PART Construction PART	31-98 hime of Shipment 20-0508 ne No. 26 c No.
PART II: I certify that the waste in quantity above was received by me for shipment to the destination below. The property of the property of the period of	31-98 hime of Shipment 20-0508 ne No. 26 c No.
PART II: I certify that the waste in quantity above was received by me for shipment to the destination below. The part of Transporter's Authorized Agent Transporter To the part of the best of my knowledge. The part of the best of my knowledge. The part of the best of my knowledge. The part of Transporter's Authorized Agent To the best of my knowledge. The part of Transporter's Authorized Agent To the best of my knowledge. The part of Transporter's Authorized Agent To the best of my knowledge. The part of Transporter's Authorized Agent Transporter's Agent Transporter's Agent To the best of my knowledge. The part of Transporter's Authorized Agent Transporter's Agent To the best of my knowledge. The part of Transporter's Authorized Agent To the best of my knowledge. The part of Transporter's Authorized Agent To the best of my knowledge. The part of Transporter's Authorized Agent To the best of my knowledge. The part of Transporter's Agent To the best of my knowledge. The part of Transporter's Authorized Agent To the best of my knowledge. The part of Transporter's Authorized Agent To the best of my knowledge. The part of Transporter's Authorized Agent To the part of Transporter's Agent To the part of Transporter's Authorized Agent To the part of Transporter's Authorized Agent To the part of Transporter's Ag	31-98 hime of Shipment 20-0508 ne No. 26 c No.
PART III: DISPOSAL OR RECLAMATION SITE: Name Controlled Recovery, Inc. C	31-98 hime of Shipment 20-0508 ne No. 26 c No.
PART II: I certify that the waste in quantity above was received by me for shipment to the destination below. The part of the best of my knowledge. Signature of Generator's Authorized Agent Date and the part of Transporter Date and the part of Transporter's Agent	31-98 hime of Shipment 20-0508 ne No. 26 c No.
named below. I certify the the foregoing is true and correct to the best of my knowledge. Ward agent In Liter Exploration 7-3	inne of Shipment 20-0508 ne No. 26 No. 1-98 me of Received
named below. I certify the the foregoing is true and correct to the best of my knowledge. Signature of Generator's Authorized Agent	inne of Shipment 60-0568 ne No. 1-98 me of Received

Bill To:	·						
Address:			<u>"</u>		<u>-</u>		
COMPANY/GENERATOR::	T/ Fa.	NA	Posour	CES			<u> </u>
LEASE NAME: // //	notal	Pad	dock	Con Ano	1-56	Lot K	HE!
TRUCKING COMPANY:	×as.	1 fo (P 1N3	rks	TIME:	2: 30	AM PM
DATE: 7.3/9	- in	EHICLE No.:			DRIVER		
		TYF	E OF MATER	AL			
[] DRILLING FLUIDS		[]TANK	воттомѕ	[]	EXEMPT	FLUIDS	
[] COMPLETION FLUIDS	}	[]GASP	LANT WASTE	[]	C-117 No).: <u> </u>	
SCONTAMINATED SOIL		[]OTHER	R MATERIAL	[]	Pit No.: _		-
		1	DESCRIPTION				
		· · · · · · · · · · · · · · · · · · ·		Ma	14	7 4	- /2
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		·					
			·				
VOLUME OF MATERIAL	[]BBLS.]::[] GALLO	ONS	
[] WASH OUT	[]CALI	LOUT	[] AFT	ER HOURS		[] DEBRIS	CHARGE
(SIGNATURE) CRI REPRESENTATIVE: _	Recover Act		otitle C Regulat				
TANK NO.					OFFI	CE USE:	
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS			
1ST GAUGE			A	NET BBLS.			
2ND GAUGE			<u> </u>			05-98-500-4	lpt#27501
EASURE RECEIVED					n .		
BS& W	%		 	N N	° 02	27636	
FREE WATER	/6	BBLS.	 	And the			
THE WATER		BBLO.	<u> </u>	J			

#13

PART I:			. / 015 / 600 6610
	Address	500 W. Texas, Suite 500	(915 <u>) 682-6612</u>
	City/State	Midland, Texas 79701	Telephone No.
		4.10	
ORGINAT	ION OF WA	ISTE:	
		Titan Exploration/Lovington Unit,	
Operations	s Center	Lea County, New Mexico	Permit No.
			• •
Property N	lame ✓(1)	Lovington Paddock/San Andres Unit	(Pit-ATB 1-1)
	. (0)	(Well, Tank Battery, Plant, Facility)	
		West Lovington Unit (Pit-ATB 33-1	
WASTE IDE	NTIFICATION	I AND AMOUNT (BARRELS, YARDS, TONS, C	U.FT.,LBS., UNITS, ETC.)
Drilling Fluid		Tank Bottoms	Exempt Fluids
Completion F	•	Gas Plant Waste	C117 No
Contaminated	Soil	X Other Material	Pit No.
			<u> </u>
		DESCRIPTION / NOTES	
	· · · · · · · · · · · · · · · · · · ·		
	RCRA Exempt	t - Soil/Sludge 12 ydS	
			·
CERTIFIC	ATION:	The waste described above is not hazardous pursuant to 40 CFI	
CERTIFIC	ATION:	named below. I certify the the foregoing is true and correct to the	plojeh
CERTIFIC	ATION:	named below. I certify the the foregoing is true and correct to the	ne best of my knowledge.
	Lym	named below. I certify the the foregoing is true and correct to the whole with the foregoing is true and correct to the fo	ploud 7-31-98 Date and time of Shipme
	Lym	named below. I certify the the foregoing is true and correct to the	ploud 7-31-98 Date and time of Shipme
CERTIFIC	TRANSP	named below. I certify the the foregoing is true and correct to the hour of a factor of the hour of Generator's Authorized Agent PORTER: (To be completed in full by T	ploud 7-31-98 Date and time of Shipme
	TRANSP Name	named below. I certify the the foregoing is true and correct to the Complete of Generator's Authorized Agent ORTER: (To be completed in full by T	Date and time of Shipmer
	TRANSP Name Address	named below. I certify the the foregoing is true and correct to the whole a function of the signature of Generator's Authorized Agent ORTER: (To be completed in full by T T(xa) case works T 20 word Co Reli	Date and time of Shipme Telephone No.
	TRANSP Name Address	named below. I certify the the foregoing is true and correct to the Complete of Generator's Authorized Agent ORTER: (To be completed in full by T	Date and time of Shipmer Telephone No.
PART II:	TRANSP Name Address City/State	named below. I certify the the foregoing is true and correct to the whole a function with far. Ex. Signature of Generator's Authorized Agent PORTER: (To be completed in full by T TO XAX PASE LEDYKS F 20 LEGT CO Kelle OCCOST TX.	Date and time of Shipme Telephone No. 520 Truck No.
PART II:	TRANSP Name Address City/State	named below. I certify the the foregoing is true and correct to the waste in quantity above was received by me for	Date and time of Shipme Telephone No. 520 Truck No.
PART II:	TRANSP Name Address City/State	named below. I certify the the foregoing is true and correct to the Complete of Generator's Authorized Agent ORTER: (To be completed in full by T TO AND LONG TO Kell OCHOSO TX. I certify that the waste in quantity above was received by me for the Complete of the Com	Telephone No. 520 Truck No. rahipment to the destination below. 7-31-98 Telephone No. 520 Truck No.
PART II:	TRANSP Name Address City/State	named below. I certify the the foregoing is true and correct to the waste in quantity above was received by me for	Date and time of Shipme Telephone No. 520 Truck No.
PART II:	TRANSP Name Address City/State CATION: J.B.	named below. I certify the the foregoing is true and correct to the Complete of Generator's Authorized Agent PORTER: (To be completed in full by T TO AND LONG LONG) FROM CONTROL C	Telephone No. 520 Truck No. rahipment to the destination below. 7-31-98 Telephone No. 520 Truck No.
	TRANSP Name Address City/State CATION: J.B.	named below. I certify the the foregoing is true and correct to the Complete of Generator's Authorized Agent PORTER: (To be completed in full by T TO AND LONG LONG) TO LONG TO KILL I certify that the waste in quantity above was received by me for the complete of Transporter's Agent AL OR RECLAMATION SITE:	Telephone No. 520 Truck No. rahipment to the destination below. 7-31-98 Telephone No. 520 Truck No.
PART II:	TRANSP Name Address City/State CATION: J.B. DISPOSE Name	named below. I certify the the foregoing is true and correct to the Control of th	Telephone No. 520 Truck No. r shipment to the destination below. 7-31-98 Date and time of Shipment to the destination below. 7-31-7 Date and time of Received.
PART II:	TRANSP Name Address City/State CATION: J.B. DISPOSE Name Address	named below. I certify the the foregoing is true and correct to the Complete of Generator's Authorized Agent ORTER: (To be completed in full by The Complete of Tensporter's Agent I certify that the waste in quantity above was received by me for the Complete of Transporter's Agent AL OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388	Telephone No. 520 Truck No. rahipment to the destination below. 7-31-98 Date and time of Shipment and time of Receives
PART II:	TRANSP Name Address City/State CATION: J.B. DISPOSE Name	named below. I certify the the foregoing is true and correct to the Complete of Generator's Authorized Agent ORTER: (To be completed in full by The Complete of Tensporter's Agent I certify that the waste in quantity above was received by me for the Complete of Transporter's Agent AL OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388	Telephone No. 520 Truck No. r shipment to the destination below. 7-31-98 Date and time of Shipment to the destination below. 7-31-7 Date and time of Received.
PART II:	TRANSP Name Address City/State CATION: DISPOSE Name Address City/State	named below. I certify the the foregoing is true and correct to the Complete of Generator's Authorized Agent PORTER: (To be completed in full by The Complete of Full by The Complete of Tenerator's Authorized Agent PORTER: (To be completed in full by The Complete of Tenerator's Agent I certify that the waste in quantity above was received by me for the Complete of Transporter's Agent AL OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388 Hobbs, NM 88241	Telephone No. Telephone No. Salar and time of Shipment to the destination below. Telephone No. Truck No. Truck No. The shipment to the destination below. The shipment to the shipment to the destination below. The shipment to the s
PART II:	TRANSP Name Address City/State CATION: DISPOSE Name Address City/State	named below. I certify the the foregoing is true and correct to the Complete of Generator's Authorized Agent ORTER: (To be completed in full by The Complete of Tensporter's Agent I certify that the waste in quantity above was received by me for the Complete of Transporter's Agent AL OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388	Telephone No. Telephone No. Salar and time of Shipment to the destination below. Telephone No. Truck No. Truck No. The shipment to the destination below. The shipment to the shipment to the destination below. The shipment to the s
PART II:	TRANSP Name Address City/State CATION: DISPOSE Name Address City/State	Named below. I certify the the foregoing is true and correct to the Complete of Generator's Authorized Agent PORTER: (To be completed in full by T TO STATE LEOYING TO STATE LEOYING TO SIGNATURE OF TRANSPORTER'S Agent AL OR RECLAMATION SITE: Controlled Recovery, Inc. P.O. Box 388 Hobbs, NM 88241 I certify that the waste described in Part I was received by me v	Telephone No. Telephone No. Salar and time of Shipment to the destination below. Telephone No. Truck No. Truck No. The shipment to the destination below. The shipment to the shipment to the destination below. The shipment to the s

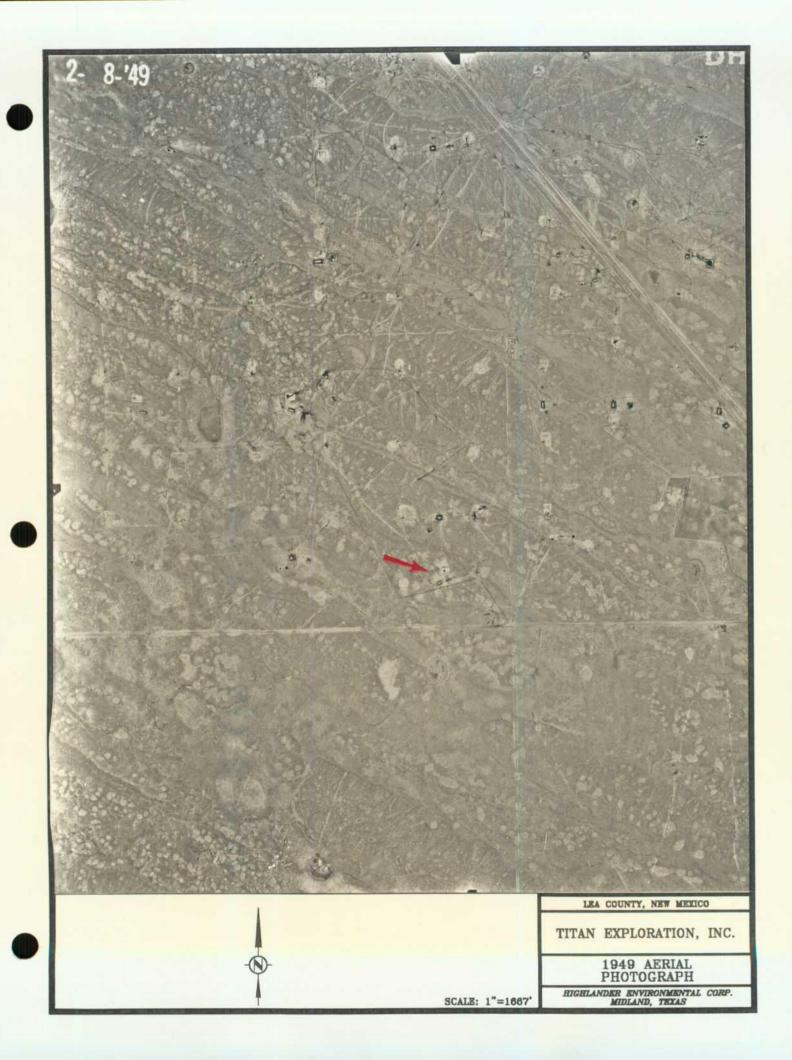
Bill To:						
Address:			 			
		,	· · · · · · · · · · · · · · · · · · ·			
COMPANY/GENERATOR::	4 And	RE	OURCE!			
LEASE NAME: LOUINE	X081 -	Dallo	CK SAN	And RIC	unit	7+ A12-1-
TRUCKING COMPANY:	AC LI	AST 11	net-C		TIME: //	DO AM PM
DATE: 7-31.98	V	EHICLE No.:			DRIVER No.	:
		TYF	PE OF MATER	AL		
DRILLING FLUIDS		[] TANK	воттомѕ	[]	EXEMPT FL	LUIDS
OMPLETION FLUIDS		[]GASP	LANT WASTE	[.]	C-117 No.:	
CONTAMINATED SOIL	*	[]OTHE	R MATERIAL	[]	Pit No.:	
		·	DESCRIPTION			
		: "				
					MAN	is Boot 4/11
				<u> </u>	INIMO	THE CONTRACTOR
					·	
		·				
				· · · · · · · · · · · · · · · · · · ·	 	
		,				
VOLUME OF MATERIAL	[]BBLS.		: HAYARD	12] GALLON	<u> </u>
						· · · · · · · · · · · · · · · · · · ·
[] WASH OUT	[] CALI	LOUT	[]AFT	ER HOURS	[] DEBRIS CHARGE
I, represent and warrant that the	ne wastes ar	e: generated	d from oil and g	as exploration and p	roduction op	erations; exempt from
Resource Conservation and F	Recover Act	(RCRA) Sub	otitle C Regulat	ions; and not mixed	with non-ex	empt wastes.
AGENT: Moscrie 7	Tavia	• •		· .		
(SIGNATURE)	, _			,		•
CRI REPRESENTATIVE:	2	Theen	9			
(Si	GNATURE)	, , ,				
TANK NO.					OFFICE	USE:
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS		2 3
1ST GAUGE				NET BBLS.		, , , , , , , , , , , , , , , , , , ,
2ND GAUGE						05-98-500-4pt#27501
MEASURE RECEIVED			 	1	_	
				N	° 027	637
BS& W	%					
FREE WATER		BBLS.		1 4 2		

PART I:		Titan Exploration Inc.	(915) 682-6612	
		Midland, Texas, 301te 500	Telephone No.	
ORGINAT	ION OF WASTI			
Operations		an Exploration/Lovington Unit, County, New Mexico	Permit No	
Property N	the state of the s	ington Paddock/San Andres Unit (Well, Tank Battery, Plant, Facility) Lovington Unit (Pit-ATB 33-1)	(Pit-ATB 1-1)	, * * * *
WASTE IDE		AMOUNT (BARRELS, YARDS, TONS, CL	LFT.,LBS., UNITS, ETC.)	
Drilling Fluid Completion F	luids	Tank Bottoms Gas Plant Waste	Exempt Fluids C117 No.	
Contaminated	Soil x	Other Material	Pit No.	
		DESCRIPTION / NOTES		
	RCRA Exempt -	Soil/Sludge 12 425		
				
			s <u>la la l</u>	
CERTIFIC		raste described above is not hazardous pursuant to 40 CFR		VI. 757
		t below. I certify the the foregoing is true and correct to the MA acut for Litan Expl		
		ignature of Generator's Authorized Agent	Date and time of Shipment	
PART II:	TRANSPOR	TER: (To be completed in full by Tra	ansporter)	
	Name <u>JE</u> Address J	XAS LEASE WORKS	(915) 580-0508	
	City/State	dessA, TX 79765	Telephone No.	
CERTIFIC	ATION: / I certi	fy that the waste in quantity above was received by me for	Truck No. thipment to the destination below.	
	/1/h-	No.Sar. O. F. Xu (an) Signature of Transporter's Agent	7-3/-98 Date and time of Received	. 7 •
PART III:		OR RECLAMATION SITE:		
	Name Address	Controlled Recovery, Inc.	(505)393-1079	
	Address City/State	P.O. Box 388 Hobbs, NM 88241	Telephone No.	
	•			
CERTIFIC	A TIOAL			
	AHON: I certi	fy that the waste described in Part I was received by me via	the transporter described in Part II.	۱۸
	AHON: I certi	fy that the waste described in Part I was received by me via Signature of Facility Agent	the transporter described in Part II. Z-3/-2 Date and time of Received	ريمرد

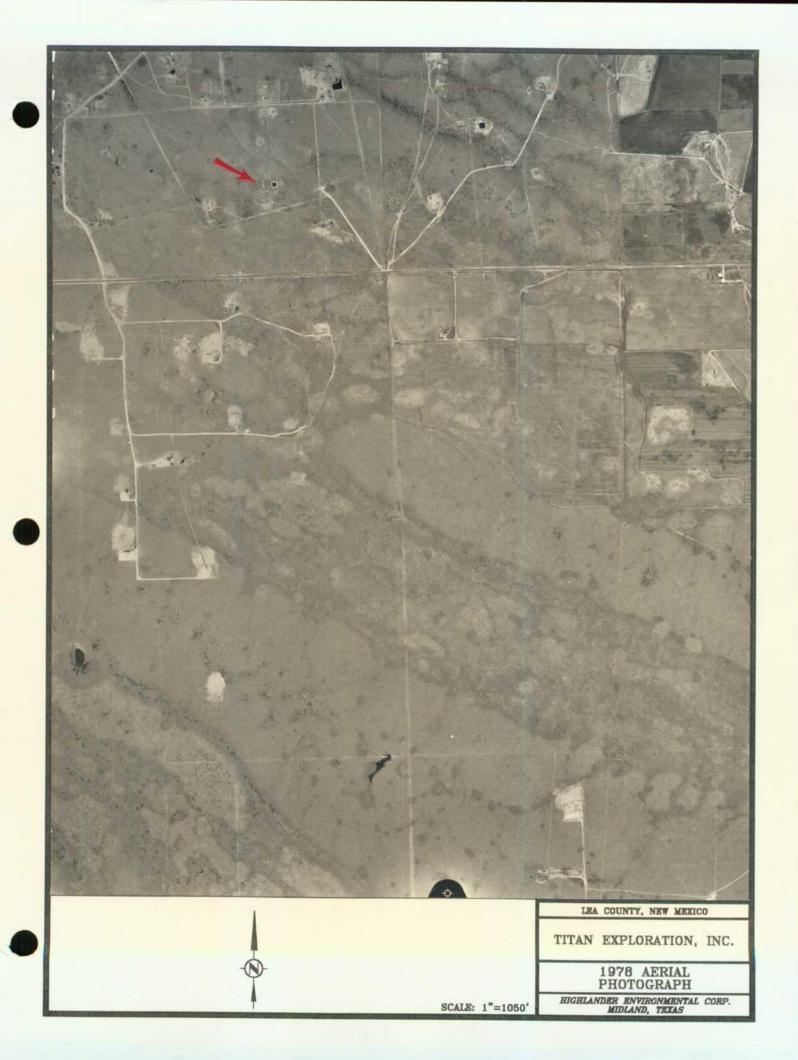
Bill To:								
Address:			<u> </u>					·
COMPANY/GENERATOR::	. 7:	tan,	FXDler	ation ;	Inc	·		
EASE NAME Louing toin	Pallo	K/5	n Andre	s Unit	Pi	7 17	BA	1
RUCKING COMPANY:	· · · · · · · · · · · · · · · · · · ·	Texas	Lease U	, , ,	TIM	NE:	710	AM) PN
DATE: Q 3		EHICLE No.:	52		DF	RIVER No.	:	
	· • · · · · · · · · · · · · · · · · · ·	TYF	PE OF MATERI					
] DRILLING FLUIDS		[]TANK	воттомѕ		[] EXE	EMPT FI	LUIDS	
] COMPLETION FLUIDS		[]GASP	PLANT WASTE		[] C-1	17 No.:		
CONTAMINATED SOIL		[]OTHE	R MATERIAL		PAN	No.: _&	CD	
	*.	•	DESCRIPTION		1.0			
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	<u></u>		1	12				
VOLUME OF MATERIAL	[]BBLS.		YYARD		:[]G	ALLON	s	··
[] WASH OUT	[] CALI	LOUT	I LAFT	ER HOURS	•	1	1 DEBRIS	CHARGE
111/1011001	[] 01.12.		í (1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	2111100110		ŗ	10200	0.1
						_		. 4
I, represent and warrant that Resource Conservation and	the wastes ar Recover Act	e: generate (BCRA) Sul	d from oil and ga bfitle C Regulati	as exploration a ions: and pot⊿d	ne produ ked/with	uction op non-ex	perations; e rempt wast	exempt fron es.
	1 4		*	1///	77	111011 02	O pt viast	
AGENT: 7 / Car care (SIGNATURE)		Borl	Calinai /	//////	/			
				XX		•		
CRI REPRESENTATIVE:	SIGNATURE)		/	(Carry)				
TANK NO.						OFFICE	THOE:	
			T	l			T 03E.	
OIL LEVELS	FEET	INCHES	GROSS BBLS.	DEDUCTIONS			-	
1ST GAUGE				NET BBLS.			05.08.500	4pt#27501
2ND GAUGE	<u></u>			-			00-90-000-	
MEASURE RECEIVED					Nº	027	7640	
BS& W	%		<u> ` </u>			y (v vero eroppe r	
FREE WATER		BBLS.						

PART I:	Generator Titan Exploration Inc.	
	Address 500 W. Texas, Suite 500	(915 <u>) 682-6612</u>
	City/State Midland, Texas 79701	Telephone No.
ORGINAT	ION OF WASTE:	
	Titan Exploration/Lovington Un	it,
Operation	Lea County, New Mexico	Permit No.
Property N	lame (1) Lovington Paddock/San Andres U	nit (Pit-ATB 1-1)
	(Well, Tank Bettery, Plant, Facility) (2) West Lovington Unit (Pit - ATB 3	3-1)
WASTE IDE	NTIFICATION AND AMOUNT (BARRELS, YARDS, TO)	
		7
Drilling Fluid		Exempt Fluids
Completion I	·	C117 No.
Contaminated	Soil X Other Material	Pit No.
	DESCRIPTION / NOTE	S
	2000 5	
	RCRA Exempt - Soil/Sludge 12 405	
	named below. I certify the the foregoing is true and correction of the supplied of the supplied agent (1) 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	Lexico the dest of my knowledge. Lexico The Series of Shipment Date and time of Shipment
PART II:	TRANSPORTER: (To be completed in full t	ov Transporter)
1 / 11 11.	Transition of the talk to be completed in talk	of transportery
	Name Texas lease york	911 100 -5-51
		915-580-0508
	Address # 20 Wost cold,	Telephone No.
	City/State Odessa Txi	
OFFICIA	City/State Odessa Txi	Telephone No. 520 Truck No.
CERTIFIC	City/State Ode 55 2 TX 1 CATION: I certify that the waste in quantity above year received by	Telephone No. 520 Truck No. me for shipment to the destination below.
CERTIFIC	City/State Ode 55 2 TX 1 CATION: I certify that the waste in quantity above year received by J13. Themsell Carel	Telephone No. 520 Truck No. me for shipment to the destination below. 8-3-98
CERTIFIC	City/State Ode 55 2 TX 1 CATION: I certify that the waste in quantity above year received by	Telephone No. 520 Truck No. me for shipment to the destination below.
CERTIFIC	City/State Ode 55 2 TX 1 CATION: I certify that the waste in quantity above year received by J13. Themsell Carel	Telephone No. 520 Truck No. me for shipment to the destination below. 8-3-98
	City/State Ode 55 2 TX 1 CATION: I certify that the waste in quartity above was received by J13. The Man II Company (Signature of Transporter's Agent	Telephone No. 520 Truck No. me for shipment to the destination below. 8-3-98
	City/State Ode 55 7 7x1 CATION: I certify that the waste in quantity above has received by J113. The Man July Control Signature of Transporter's Agent DISPOSAL OR RECLAMATION SITE:	Telephone No. 520 Truck No. me for shipment to the destination below. 8-3-78 Date and time of Received
-	City/State Odessa TXI CATION: I certify that the waste in quartity above (as received by JII3. All CATION: The control of Transporter's Agent DISPOSAL OR RECLAMATION SITE: Name Controlled Recovery, Inc.	Telephone No. S20 Truck No. Truck No. Me for shipment to the destination below. B-3-78 Date and time of Received (505)393-1079
PART III:	City/State Ode 55 2 7x1 CATION: I certify that the waste in quantity above was received by J13. The care of Transporter's Agent DISPOSAL OR RECLAMATION SITE: Name Controlled Recovery, Inc. Address P.O. Box 388 City/State Hobbs, NM 88241	Telephone No. \$\frac{520}{\text{Truck No.}}\$ Truck No. Truck No. 8-3-78 Date and time of Received (505)393-1079 Telephone No.
	City/State Odessa TXI CATION: I certify that the waste in quartity above (as received by JII3. All CATION: The control of Transporter's Agent Signature of Transporter's Agent Signature of Transporter's Agent Controlled Recovery, Inc. Address P.O. Box 388 City/State Hobbs, NM 88241	Telephone No. \$\frac{520}{\text{Truck No.}}\$ Truck No. The for shipment to the destination below. \$\frac{8-3-78}{\text{Date and time of Received}}\$ (505)393-1079 Telephone No.
PART III:	City/State Ode 55 2 7x1 CATION: I certify that the waste in quantity above was received by J13. The care of Transporter's Agent DISPOSAL OR RECLAMATION SITE: Name Controlled Recovery, Inc. Address P.O. Box 388 City/State Hobbs, NM 88241	Telephone No. \$\frac{520}{\text{Truck No.}}\$ Truck No. The for shipment to the destination below. \$\frac{8-3-78}{\text{Date and time of Received}}\$ (505)393-1079 Telephone No.

APPENDIX B Aerial Photographs









APPENDIX C

Water Well Records

EIELD ENGAL 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	1				- ••	Hallar	· red 11daa	a		
	т т		- 7 ((A) Owne	r of well	Movay	prilling	<u>U0.</u>		
\ '										
			c	<i>H</i>	lobbs 8	8240			state Ne	w Nextco
		-								is located in the
										Rge. 36E
	1									e No. <i>WD-46</i>
-	1 /						Box 637			
	1		- 0	City <i>I</i>	lobbe 8	8240		£	StateN	ew Mexico
			1	Drilling w	was comme	enced	October	19		19
L				Drilling w	vas comple	eted	October	19		19 68
(F	Plat of 640	acres)		_				:		
Elevatio	n at top, c	of casing in	n feet	above sea	a level		Total dep	pth of w	ell	2
State wi	hether we	ell is shalle	ow or	r artesian_	Shall.	oω	Depth to wa	ter upon	completion	on 47
Section :	2			PRIN	ICIPAL W/	ATER-BEAR	ING STRATA			
No.	I	in Feet		ckness in		De	scription of Water	r-Bearing	Formation	
No.	From	То		Feet				*		
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2	85	112	+	27				***************************************		
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4	l'	<u> </u>		!						
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Section !	5				PLUG	GING REC	חפ∩			
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					*******************		Date Plu			
Plugging	g approved	d by:					Cement Plug	gs were r	olaced as f	iollows:
		•970 t (L. [†]]	71115	∩rBasin Sur	nervisor	No.	Depth of P	Plug	No. of	Sacks Used
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File No	s. K- 4	7/0	(0	<u>-</u>	Use <u>L</u>	-1W1-	Locatio	n No. /	1.36	-12-140

ell was drilled	under Permit	No			_ and is located	in the:		
						Rang	e	N.M.P.
		d in					. ,	
		_ feet, Y=			.M. Coordinate	System		Zone
B) Drilling C	ontractor					License No		
Address		· · · · · · · · · · · · · · · · · · ·				1		· ·
Orilling Began .		Comp	leted		_ Type tools	,	Size of h	ole
						ft. Total depth o		
Completed well	lis □ sl	hallow 🗀 ai	rtesian.		Depth to water	upon completion	of well	
		Sect			R-BEARING ST	TRATA		
Depth From	in Feet To	Thickness in Feet	1	Description of	Water-Bearing F	Formation		nted Yield per minute)
Pions	10					:		
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(inches)	per foot	per in.	Тор	Bottom	(feet)		Fro	m To
		 			ļ			
						<u></u>		
Depth	in Feet	Section Hote	on 4. RECOF		ING AND CEM			
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:								
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			Section	n 5, PLUGGIN	NG RECORD			
							·	
	d				No.	Top Depth in F	Bottom	Cubic Feet of Cement
Date Well Plugg Plugging approv								
		State Engi	neer Represe	ntative	$ \frac{2}{3}$ $\frac{2}{4}$			
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				000.000	NGINEER ONL			

City and S	State							
Vell was drilled	under Permit	No			_ and is located	in the:		
a	· ¼ ¼	4 ¼	¼ of Sec	ction	Township	Range	·	N.M.P.
b. Tract h	No	of Map No.		of the				
		of Block No						
				feet, N	M. Coordinate	System	·	Zone
						_ License No		
						1		
						,	Size of hole _	i
						ft. Total Lepth o		
Completed well	is 🗀 s	hallow 🔲 a	rtesian.		Depth to water	upon completion o	f well	1
			tion 2. PRIN	CIPAL WATE	R-BEARING ST	RATA	· · · · · · · · · · · · · · · · · · ·	
Depth i	n Feet To	Thickness in Feet	I	Description of	Water-Bearing F	ormation	Estimated (gallons per	
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lugging Contra	ctor			n 5. PLUGGIN	G RECORD			
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on to thirty		State Engi	ncer Represe	ntative	$\frac{2}{3}$			
			<u> </u>		I 4 IGINEER ONL	Y		
ate Received	Typed 2	2/2/78	2 OR OOL			' FWL	501	

Owner's Well No.

STATE ENGINEER OFFICE

WELL RECORD

A)			dress					Owner	's Well No	
'ell v	was drilled	under Permit	No			and	is locate	d in the:		
	a	_ ¼ ¼	í ¼	¼ of Sec	ction	To	wnship .	Rang	ge	N,M,P,1
	b. Tract !	No	of Map No.		of t	the				
			of Block No							
		•								
	d. X= the		_ feet, Y=		feet,	N.M. Co	ordinate	e System		Zone Gran
3)	Drilling C	ontractor						License No		
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rilli	ng Began .		Comp	leted		Тур	toois	,	Size of I	nolei
								ft. Total slepth		
onı	pleted well	lis 📙 s	hallow 🔲 ar	tesian.		Depth	to wat	er upon completion	of well	1
			Sect	ion 2. PRIN	CIPAL WAT	rer-bea	RING S	STRATA		
	Depth i	in Feet	Thickness	,	Description (of Water	Dearing	Formation		ated Yield
	From	То	in Feet		Description	or water-	Dear Hig	Formation	(gallons	per minute)
			·					,		
			-J	Section	n 3. RECOR	D OF C	ASING	<u></u>		
D	iameter	Pounds	Threads		in Feet	\neg	ength	T (0)		Perforations
(i	nches)	per foot	per in.	Тор	Bottom		feet)	Type of Shoo	Fre	om To
										
					RD OF MUD			MENTING		- Marian Property Control
-	Depth From	To	Hole Diameter	Sack of Mi		Cubic F of Ceme		Method	i of Placem	ent
		 ······								
			\						·	
				Sectio	n 5. PLUGG	HNG RE	CORD			
lugg	ing Contra	ictor								
							No.	Depth in f	cet	Cubic Feet
								Тор	Bottom	of Cement
	wen ringg ing approv		·				1			
-	0						3			
			State Engir	neer Represe	entative		4			
				FOR USE	OF STATE		ER ON	LY		
ate l	Received	Typed	2/2/78	. IN JUL						Far
					Qu	an		FWL		FSL
Fil	e No		·		Use0:	11		Location No. 17	36.12.2	2000

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	1		(A) Owne	ar of well			(2)	
Γ			1				o que el rela Marigago de Calcalillado por Laborario	
							State	
<u> </u>			_l				and	
		-					Twp. 175	
	 						Licens	
			1 ' '	_			Licen	
			Street and	I MANTINEY -			State	
							State	
			1					19.53
(7	Plat of 640 a	cres)	→ Drilling W	as compa	:tea			
Elevatio	n at top of	casing in f	eet above se	a leveL		Total de	pth of well	110'
State w	hether well	is shallow	or artesian		· ·	Depth to wa	ter upon complet	ion 45' (Rept
Section	2		PRIN	ICIPAL WA	ATER-BEAL	RING STRATA	:	· · · · · · · · · · · · · · · · · · ·
No.	Depth in		Thickness in	ļ	D	escription of Water	r-Bearing Formation	
110.	From	То	Feet	<u> </u>				
1	1				:			
2								
3			<u></u>		2			
-4	-!							
								
5		!		l	<u>-</u> -			
Section	3	:			D OF CA	SING	, ,	
Dia	Pounds	Threads			Feet	Type Shoe	Perfor	
in.	ft.	in	Тор	Bottom	 		From	То
	ļ	ļ. <u></u>		<u> </u>				
	<u> </u>	ļ	-:		 	_		~
	<u> </u>	ļi			 			
	<u> </u>	<u> </u>		<u></u>	<u> </u>			J
Section	4	1 .	RECOR	D OF MUI	: DDING A	ND CEMENTING		
	h in Feet	Diameter	Tons	No. Sa	cks of			
From	То	Hole in i	1	Cem			Methods Used	
	1.		1					
	1:	1	1:					
	1:	1	1	-				
	- 	†:	-	_				
		*			!			<u></u>
Section	5			PLUGG	SING REC	CORD		• • •
Name of	f Plugging	Contractor			:		License No.	
							State	
					, -		pe of roughage	
	-	:				Date Plu	·	19
	g approved					and the second s	gs were placed as	and the second second
* ***60**-c	2 abbraign							10110 44 5.
			Basin Sup	ervisor	N	o. Depth of P	No. of	Sacks Used
		~~ C~ A MI			7	11 42	, in \$1.25 g 10,244 m (65mm) in	
ľ		OF STATE	ENGINEER O		1		* * 1	
Date	Received		•	£0.43) <u> </u>	+		
Dan	Meceraca					 		
i					L			
į								
File No	L-2205			Use		Locatio	n No. 17.36.13	2.2214.

/ell was drilled under Permit No and is located in the:	
a ¼ ¼ ¼ of Section Township Range	N.M.P
b. Tract No of Map No of the	
c. Lot No of Block No of the County.	
d. X= feet, Y= feet, N.M. Coordinate System	Zone
Drilling Contractor License No	
ldress	
rilling Began Completed Type tools Size of	f hole
evation of land surface or at well is ft. Total tlepth of well	
ompleted well is Shallow artesian. Depth to water upon completion of well	
Section 2. PRINCIPAL WATER-BEARING STRATA Depth in Feet Thickness Esti	mated Yield
	ns per minute)
·	
Section 3. RECORD OF CASING	
Diameter (inches) Pounds per foot per in. Top Bottom Type of Shoe F	Perforations From To
Section 4. RECORD OF MUDDING AND CEMENTING Depth in Feet Hole Sacks Cubic Feet Method of Place From To Diameter of Mud of Cement	ment
From To Diameter of Mud of Cement Method of Flace	
Section 5. PLUGGING RECORD	
ddress No. Depth in Feet	Cubic Feet of Cement
ate Well Plugged1	of cement
ugging approved by:	
State Engineer Representative 4	
FOR USE OF STATE ENGINEER ONLY	
ate Received Typed 2/2/78 Quad FWL	FSL
File No Use 011 Location No. 17.36.12.	

A) Owner of	well Read	and Stev	ens, Inc	C.		Owne	er's Well No.	
Street or City and	Post Office Ad State Box 6	dres ¢/o_ GI 692 Tatum	New Mo	exico {	ll Service 38267			
Vell was drilled	under Permit	No. L-9	666		_ and is located i	in the:	(d	
a	_ ¼ : ¼	_NE_ % SW	¼ of Sec	tion <u>13</u>	Township	17-S Ra	nge <u>36- E</u>	ast_N.M
b. Tract	No	of Map No		of the	2		:	······································
					e			
		d in					-	
d. X= the		_ feet, Y=		feet, N	.M. Coordinate S	ystem		Zc
B) Drilling C	Contractor	Glenn'	s Water	Well S	ervice	_ License No	WD 421	
ddress	Box (592 Tatum	, New M	exico {	38267			
Drilling Began .	4/23/8	35 Comp	leted4/	23/85	_ Type tools Ro	tary	Size of	hole <u>9</u> 7
levation of la	nd surface or _			at we	Il is <u>3815</u>	_ ft. Total depth	of well	150
Completed wel	lis 🗷 sl	hallow 🔲 ai	rtesian.		Depth to water	upon completion	n of well	
		Sect	ion 2. PRINC	IPAL WATE	R-BEARING STI	RATA		
Depth		Thickness in Feet	D	escription of	Water-Bearing Fo	ormation	1	ated Yield per minute
From 76	128'	521		sand ar	nd gravel	;	12	-
-				, , , , , , , , , , , , , , , , , , , ,		•		
							<u> </u>	· · · · · · · · · · · · · · · · · · ·
						······································		
	<u></u>			2 050000	05.046010		<u> </u>	
Diameter	Pounds	Threads	Depth is		OF CASING Length	Type of Sh	oe	Perforations
(inches)	per foot	per in.	Top	Bottom	(feet)	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Fr	om T
6 5	5/8		0	151	151		9	0 1
		<u> </u>						
Depth	in Feet	Hole	Sacks	C	UNG AND CEME		od of Placem	ent
From	То	Diameter	of Mu	d o	f Cement			
	·							
						. ,		
			Section	5. PLUGGIN	NG RECORD			
Plugging Contra Address						Depth in	Foot	011 5
	od				No.	Top	Bottom	Cubic Fe of Ceme
lugging appro	•				1 2			
		State Engi	neer Represer	ntative	3 4			
	Am 1 1	26 1005	FOR USE C	OF STATE E	NGINEER ONLY	 		
Date Received	April	26, 1985		Quad	·	FWL .		FSL
hile No.	L-9666			Use OV	m1	ocation No. 1	7.36.13.3	2231

WELL RECORD

Street or	Post Office A	ddress						er's Well No.	
•									
		No							
							Ra		
		_							
		of Block Nod in					······		
		feet, Y=					ystem		
Drilling C	Contractor						License No		
ddress							1		
							,	Size of	hole
							ft. Total d epti		
ompleted wel		shallow 🗆 a					ipon completio		
		Sec	tion 2. PRIN	CIPAL WATE	R-BEARIN	G STF	RATA	·	
	in Feet	Thickness in Feet		Description of	Water-Bear	ing Fo	rmation		nated Yield s per minute)
From	То	in Feet						(ganon	s per minute)
		<u> </u>						 	
							,		
		-						ļ	
								<u></u>	
				n 3. RECORI	OF CASIN	NG			
Diameter (inches)	Pounds per foot	Threads per in.	Top	in Feet Bottom	Lengti (feet)		Type of Sh	oe F	Perforations com To
		1			1				
		 	<u>-</u>						
					<u> </u>				
Depth	in Feet	Secti	on 4. RECOI	RD OF MUDI	OING AND	СЕМЕ	NTING	<u></u>	
From	То	Diameter	of Mi		of Cement		Meth	od of Placen	nent
	L		<u> </u>						
one in a Compton	actor			n 5. PLUGGII	NG RECOR	D			•
agging Contra						10.	Depth in	Feet	Cubic Feet
idress							Top	Bottom	of Cement
					1 .				I
ldress agging Metho	ed								
ldress agging Metho te Well Plugg	ed	State Eng	ineer Represe	entative	<u> </u>	3			
ldress agging Metho te Well Plugg	ed	State Eng		entative OF STATE E		3 4			
ldress agging Metho te Well Plugg	ed			OF STATE E	NGINEER (3 4 ONLY	FWL .		

EIELD ENGR. LOG

(This form to be executed in triplicate)

WELL RECORD

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1	4	
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	treet or P. O., LO	VINGTON,	, City an	d StateNEW	MEXICO	•••••
· 1.	Well location and	description: The 81	IALLOW well is lo	cated inSE		3E
		Section2	, Township	7Southange 3	6 EASTElevat	ion of to
	casing above sea l	level, fe	et; diameter of hole,	8 minches;	total depth,9) r
			feet; drilling wa			
	and completed	10v. 20	, 19. 53 ; name of drilli	ng contractor	C. O. AL	DREDG
			LOVINSTON, N.			
2.	Principal Water-be	earing Strata:		;	·	
	Depth. From	in Feet	nickness	Description of Water-b	earing Formation	
	No. 1 45	60 15 F	AIR WATER SAND			
_	No. 2 60	90 30	GOOD WATER S	AND		
_	No. 8					
-	No. 4					
_	No. 5				<u></u>	· · · · · · ·
9	Casing Record:			<i>†</i>		
J.		ds Threads Dept	ih of Casing or Liner Fee	t of		oration
	Diameter Poun in inches per		Top Bottom Ca	sing Type of Si		Te
				····		
		on replaces old well	to be abandoned, give l	location:	. ¼	
4.	If above constructi				:	
4.		, Township	Range	; name and a	ddress of pluggir	g contrac
4.	of Section		Range		•	
4.	of Section	······································			•	
4.	of Section					
4.	of Section					

DEC 5 1953
OFFICE

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	L			(A) Oum	or of well	Je.	nle :	Cayton			
	Π							252			
1			- 1								W Mendice
											is located in th
1 1		Ì									Rge. 36 R
	+			(B) Drilli	ing Contra	actor_C	ayt	on Drilling	Co.	Licens	e No. WD-183
				Street and	Number.	B	OX.	1021			·
<u> </u>	 }-		-								New Mexico
1											1957_
	Plat of 640	acres)		Drilling w	as comple	eted		Septer	sber 17		19_57
		-	in fee	et shove se	o level			Total der	nth of well	ı <u>75</u>	ft.
	_										on 68 ft.
Section 2		,11 AV	10					NG STRATA		<u>-</u>	
- I	Depth	in Feet	Th	ickness in			Desc	ription of Water	r-Bearing Fo	rmation	
No.	From	То	1	Feet							
1	38	55	1_	17	Wa	ter Sa	nd_				
2	68	75	T	7		od Wat					
3			1								
4			1								
5			+						-		
Section 3	3				RECOF	RD OF C	ASI	NG			
Dia in.	Pounds ft.	Thre		Top	pth Bottom	Feet		Type Shoe	From	Perfora	tions
	 	-	<u> </u>	 		 	\dashv		7.		
NONE	+			 			\dashv				
				1		-	\exists				
		1		·		<u> </u>	\top				
Section 4	4			RECOR	D OF MUI	DDING A	AND	CEMENTING			
Depth	h in Feet	Diam		Tons	No. Sa	1			Methods V	[[sed	
From	То	Hole	n in.	Clay	Cem	ient			Mctilous (
20	75	7		100 1	28			Dry Mix			
	_			 	- `						
	<u> </u>			<u> </u>							
	<u> </u>			1				<u></u>			
Section 5	5 .				PLUGE	SING RE	:CO	RD			
Name of	Pluggin	g Contra	ctor					***************************************	Licen	se No	
Tons of (Clay used	<u> </u>		Tons of Re	oughage u	ısed		Тур	pe of rough	hage	
Plugging	; method	used						Date Plu	gged		19
Plugging	approved	d by:				_		Cement Plug	s were pla	ced as f	ollows:
			-,	Basin Supe		,	No.	Depth of Pl		No. of S	Sacks Used
						-	\dashv	From T	<u>'o</u>		
	FOR US	E OF STA	TE EN	GINEER ON	ALTY.	-				· <u> </u>	
Date 1	Received .		T.	ائن ياق	$\frac{1}{2}$	I -					
	1100011-0	- 4	0.	ST 2 195	7 KU	- -					
i		4		OFFICE	0).			<u> </u>		·	· · · · · · · · · · · · · · · · · · ·
ĺ				WATER SUP		J	هجيد بيثه				
File No.	1-36	126	MO3 N	WELL, NEW MEX	Use. Z	00		Location	n No./Z	362	240

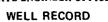
___ Owner's Well No. ___

STATE ENGINEER OFFICE WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well _____

ll was drilled	under Permit	No			and is located	in the:		
a	_ ¼ ½	4 ¼	¼ of Section		. Township	Rang	e	N.M.P.
b. Tract l	No	of Map No		_ of the _				
Lat No	_	of Plack No		.f : h.a				
d. X=		feet, Y=		_ feet, N.M	. Coordinate :	System		Zone
the			<u></u>					Gra
						License No		
dress	· · · · · ·					1		
illing Began .		Compl	eted		Type tools		Size of hole_	
evation of lar	nd surface or _			at well i	s	_ ft. Total depth c	of well	
mpleted well		shallow 🔲 ar				upon completion of		
inpicted wen	115 🗀 3					•	or wen	
Depth	in Feet	Thickness	on 2. PRINCIPA				Estimated	Yield
From	То	in Feet	Descri	ption of Wa	iter-Bearing F	ormation	(gallons per	minute)
						<i>*</i>		
1		<u></u>						
Diameter	Pounds	Threads	Section 3. R Depth in Fed		F CASING Length		Perfo	rations
(inches)	per foot	per in.		ottom	(feet)	Type of Shoe	From	То
								1
		ـــاـــــــــــــــــــــــــــــــــ	- 4 PEOORD OF		(I - ND OFM			1
Depth i	in Feet	Hole	Sacks		ic Feet		of Placement	
From	То	Diameter	of Mud	of C	Cement			
	<u>-</u>							·
	····							
							- Aric - sun	
agging Contro	ector		Section 5. P	LUGGING	RECORD			
igging Contra					No.	Depth in F	cet C	ubic Feet
					_ 100.	Тор	Bottom 0	f Cement
gging Metho					2			
igging Metho te Well Plugg						l .	ł	
Idress ligging Metho te Well Plugg ligging approv		State Engin	cer Representativ	/e	- 3 4	-		
igging Metho te Well Plugg	red by:		· · · · · · · · · · · · · · · · · · ·		4			
gging Metho te Well Plugg	red by:	State Engin	FOR USE OF S	TATE ENG	INEER ONL			





Description of Water Descript Competing	Zoi Gi ole_15½
Vell was drilled under Permit No. L-5486-S and is located in the: a	Zoi Gi ole 15½ 32 83
a	Zoi Gi ole 15½ 32 83
b. Tract No of Map No of the	Zoi Gi ole 15½ 32 83
Subdivision, recorded in	Zon Gr
d. X=	Gibe_15½ 32 83
the	Gibe_15½ 32 83
P.O. Box 637, Hobbs, New Mexico 88240 rilling Began 4/20/92 Completed 5/1/92 Type tools Cable Size of ho levation of land surface or at well is ft. Total depth of well 2 completed well is shallow artesian. Depth to water upon completion of well Section 2. PRINCIPAL WATER-BEARING STRATA Depth in Feet Thickness in Feet Description of Water-Bearing Formation (gallons p) 83 227 144 Sand	32 83
rilling Began 4/20/92 Completed 5/1/92 Type tools Cable Size of ho levation of land surface or	32 83
Section 2. PRINCIPAL WATER-BEARING STRATA Depth in Feet Thickness in Feet Description of Water-Bearing Formation Estimat (gallons p	32 83 ted Yield
Section 2. PRINCIPAL WATER-BEARING STRATA Depth in Feet Thickness in Feet Description of Water-Bearing Formation (gallons p	83
Section 2. PRINCIPAL WATER-BEARING STRATA Depth in Feet Thickness in Feet Description of Water-Bearing Formation (gallons p	ted Yield
Section 2. PRINCIPAL WATER-BEARING STRATA Depth in Feet Thickness in Feet Description of Water-Bearing Formation (gallons p	ted Yield
Depth in Feet Thickness in Feet Description of Water-Bearing Formation (gallons p	
From To in Feet Description of Water-Bearing Formation (gallons p	
83 227 144 Sand	
Section 3. RECORD OF CASING	
Section 3. RECORD OF CASING	
I I I I I I I I I I I I I I I I I I I	erforations
(inches) per foot per in. Top Bottom (feet) Type of Since From	n To
12 3/4 50 Welded 0 235 235 82	232
Section 4. RECORD OF MUDDING AND CEMENTING	
Depth in Feet Hole Sacks Cubic Feet Method of Placemen From To Diameter of Mud of Cement Method of Placemen	nt
Section 5. PLUGGING RECORD	
Idress No. Depth in Feet	Cubic Fee
igging Method No Top Bottom te Well Plugged 1	of Cemen
agging approved by:	
State Engineer Representative 3 4	
FOR USE OF STATE ENGINEER ONLY	
te Received May 6, 1992 . Quad FWL F	

STATE ENGINEER OFFICE WELL RECORD

(A) Owner of Street or City and	Post Office Ad	ddress					Own	er's Well No		
Well was drilled	under Permit	No			and is loc	ated in	the:			
a	_ ¼ ½	/ ₄ ½	¼ of Se	ction	Townsh	ip	Ra	inge		N.M.P.M
b. Tract l	No	of Map No.		of th	he					
c. Lot No Subdiv	o vision, recorde	of Block No		of il	ne County.				· 	
		feet, Y=					stem			
(B) Drilling C	Contractor						License No		· · · · · · · · · · · · · · · · · · ·	
Address										
Drilling Began .		Comp	oleted		Type too	ls		Size of	hole	in
Elevation of lar										
Completed well		shallow 🗀 a	rtesian.	ICIPAL WATI	Depth to w	/ater uţ	oon completio			
Depth	in Feet	Thickness		Description o					mated Yie	
From	То	in Feet		——————————————————————————————————————	1 Water-Bear	mg roi		(gallor	ns per min	ute)
1							<u> </u>	-		
							٠			
		1					<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>			
				 				<u> </u>		
		 		n 3. RECOR	D OF CASIN	G				
Diameter (inches)	Pounds per foot	Threads per in.	Depth Top	in Feet Bottom	Length (feet)		Type of Sh	oe F	Perforati rom	ons To
			-							
							<u> </u>			
						+			_	
	•									
Depth	in Feet	Section Hole	on 4. RECO	RD OF MUD	DING AND (Cubic Feet	CEMEN				
From	То	Diameter	of M	1	of Cement	-	Meth	od of Place	ment ———	
	<u> </u>					 				
Plugging Contra	actor			n 5. PLUGGI	ING RECOR	D				
Address					N		Depth in	Feet	Cubic	
Plugging Metho Date Well Plugg							Тор	Bottom	of Ce	ment
Plugging approv	ved by:				2				1	
		State Engi	incer Represe	entative	$\frac{3}{4}$				<u> </u>	
Date Received	Typed	1/27/78	FOR USE	OF STATE I						
							FWL			
File No				Usc011		Lo	cation No	7.36.1.1	12344	

WELL RECORD

	•	-		T and makes	
Street or P.O. Box 3	38		, City and Stat	e-rovington	New Mex
1. Well location and d	escription: The	shallow or artesian		in	¼,NE
	f Section1	, Towns	hip 17 South	., Range36Ea	5t; Elevation
casing above sea le	vel, %	feet; diameter	of hole,7	inches; total	depth,110
depth to water upor	n completion,	48feet; d	irilling was comm	enced Sept	. 29
and completed	Sept. 29), 19.52; n	ame of drilling co	ntractor Edwar	d Burke
Box-306	; Ad	dress, Hobbs.	New Mexic	O Driller's	License No.WD
2. Principal Water-bea	iring Strata:			,	a.
	in Feet	Thickness	, D	! 	
No. 1	16	Interness		ription of Water-bearin	ig Formation
No. 2	110	57	Water	sand	
No. 3					
No. 4					
No. 5			1	1	
3. Casing Record: Diameter Poun in inches per i		Depth of Casing or L Top Bot	iner Feet of	, Type of Shoe	Perforati From
	L 3.0		10	none	
2	4 10		19 109	Hone	01
	**** **** ************ **				
		,		-	

4. If above construction	n replaces old v	vell to be abandon	ed, give location:.		34,
of Section	, Township	, Ran	.ge;	name and addres	ss of plugging c
				at a second	y 15 (2 - 7
				well was plugged:	
dute or bingging	i i				
water of pragging			······································	**********	

WELL RECORD

Owner of Street or F	well	dress				Own	er's Well No.	
ell was drilled	under Permit	No			_ and is located	in the:		
a	. ¼ ¼	i ¼	¼ of Se	ction	Township _	Ra	inge	N.M.P
b. Tract N	No	of Map No.		of th	e			
		of Block No						
						e		. 7000
		_ feet, Y=				System		
B) Drilling Co	ontractor					License No		
ddress						<u> </u>		
							Size of	hole
						ft. Total dept		
ompleted well		hallow 🗀 a				upon completio		
ompieted wen	is L s			ODAL WATE			., 01	
Depth i	n Feet	Thickness	7		R-BEARING S			nated Yield
From	То	in Feet		Description of	Water-Bearing I	ormation	(gallon	s per minute)
						,		
							<u> </u>	
		<u> </u>				····		
Diameter	Pounds	Threads		n 3. RECORE	OF CASING	T		Perforations
(inches)	per foot	per in.	Тор	Bottom	Length (feet)	Type of Sh	ioe Fr	om To
			4 Droot	DD OF MUSE		L		
Depth i		Hole	Sacl	cs C	OING AND CEM		od of Placen	nent
From	То	Diameter	of M	ud c	of Cement			
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				n 5. PLUGGII	NG RECORD			
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lugging Method ate Well Plugge	ed			OF STATE E	3 4 NGINEER ONL	Y FWL		

NAIDA SUI ELE MBALL AU. SU LOVINGE SAN ARDRES UNI:

FIELD ENGR. LOG

File No. L- 4988-X

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									1 17
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	0		Cit	y		Lovin	eton	State	ew hextoo
			We	ell was	drilled ur	nder Pern	nit NoL.#4985	 and	is located in t
	}			1/4	#£		of Section 2	Twp. 12 💸	Rge. 26 A
			1 '	•	-			Licen	
			Str	reet and	l Number.	P.0	<u>box USZ</u>		
								State Ke	
								.30	
	1 - 4 640		Dr	illing v	vas compl	eted		February .	2 19 <i>63</i>
	Plat of 640	•	- fact al	harra aa	o lorrol		Total de	oth of well	182
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itate wn	netner we	ii is snaiid	ow or a	irtesian.	BIMA	.4.21	Deptii to wa	ter upon complet	1011
ection 2	2			PRIN	ICIPAL W	ATER-BEAR	ING STRATA		
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4	·							······································	
5									
- 1			<u> </u>		1				
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5/੪	32 8		(0	162	162	open	55	178
	1		1						
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Section 4	4			RECOR	D OF MILE	DDING AL	ID CEMENTING		
		Diame	ntor				ND CEMENTING		
	4 h in Feet	Diame Hole in		RECOR Tons Clay	No. Sa	DDING At	ND CEMENTING	Methods Used	
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Owner of	well	ldress				Owner's W	'ell No	
	State							
ell was drilled	under Permit	No			and is located	in the:		
a	_ ¼ ¼	4 ¼	¼ of Sec	ction	Township	Range _	N	.M.F
b. Tract l	No	of Map No.		of the				
c. Lot No	»	of Block No		of the				
		d in						
		_ feet, Y=			M, Coordinate	System		Zone Gra
) Drilling C	ontractor					License No		
ldress								
illing Began .		Comp	oleted		_ Type tools		Size of hole	
evation of lar	d surface or _			at wel	l is	ft. Totalulepth of v	vel1	
mpleted well	()	hallow 🗆 a				upon completion of v		
mpieted wen	is s							
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							·	
			Sectio	n 3. RECORD	OF CASING			
I I		Threads	in Feet	Length	Type of Shoe	Perforation	ns	
(inches)	per foot	per in.	Тор	Bottom	(feet)		From	То
		Secti	on 4. RECOI	RD OF MUDDI	NG AND CEM	ENTING		
Depth From	in Feet To	Hole Diameter	Sack of Ma		bic Feet Cement	Method o	f Placement	
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St., Nr.,				u 011		. 17.3	6 1 132344	

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Form WR-23

STATE ENGINEER OFFICE

9/	Filler	lant to

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) Owner of well... Street and Number and is located in the Street and Number Street Drilling was commenced Drilling was completed..... (Plat of 640 acres) _____Depth to water upon completion State whether well is shallow or artesian... PRINCIPAL WATER-BEARING STRATA Section 2 Thickness in Depth in Feet Description of Water-Bearing Formation No. Feet From To 1 0 2 3 28 20 5 RECORD OF CASING Section 3 Depth Perforations Threads Pounds Dia Type Shoe Feet Bottom From Top To in. ft. in 23/ D 225 225 ۵ RECORD OF MUDDING AND CEMENTING Section 4 Depth in Feet Diameter Tons No. Sacks of Methods Used Hole in in. Clay Cement From To ၖ PLUGGING RECORD Section 5 $\overline{\mathbb{S}}$ Name of Plugging Contractor..... License No. Street and Number Tons of Clay used _____Tons of Roughage used___ Type of roughage... Pl Pi

			V 1				
Plugging method used		Date Plugged1					
Plugging approved by:	Cement Plugs were placed as follows:						
	No.	Depth	of Plug	No. of Sacks Used			
Basin Supervisor	- 📖	From	То				
FOR USE OF STATE ENGINEER ONLY							
Date Received							
File No. L -5486 Use MUN	1	L	ocation No.	17,36.1.13241			

Depth	in Feet	Diameter	Tons	No. Sacks of	Methods Used
From	То	Hole in in.	Clay	Cement	Methods obed
	150	1			Studded top to bottom
	i				

Section 5

PLUGGING RECORD

Name of Plugging Contractor.		License N	· 0
Street and Number	City	State	
Tons of Clay used	Tons of Roughage used	Type of roughage.	
Plugging method used		Date Plugged	19
Plugging approved by:		Cement Plugs were placed	as follows:

	Basin Supervisor	
FOR USE OF	STATE ENGINEER ONLY	
Date Received	MAR 15 1953	
-	OFFICE GROUND WATER SUPERVISOR	

No.	Depth	of Plug	No. of Sacks Used
110.	From	То	No. of Sacks Osed
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) Owner of	Well	ddress				Owner	r's Well No.		
		udicis							
ell was drilled	l under Permit	No			and is located	in the:			
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b. Tract	No	of Map No		of the					
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the					·	·			_ Gr
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evation of la	nd surface or .			at well	is	_ ft. Total depth	of well		
ompleted wel	lis 🗀 s	shallow 🔲 ar	tesian.	!	Depth to water	upon completion	of well		
			on 2. PRINCIP	AL WATER	-BEARING ST	RATA	·		
Depth From	in Feet To	Thickness in Feet	Desc	cription of V	Vater-Bearing F	ormation		nated Yiel s per mini	
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			Section 3	. RECORD	OF CASING				
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igging Contr	actor				G RECORD				
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WELL RECORD

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						Range		
c. Lot No Subdiv	ision, recorde	of Block No d in		of the Cou	nty.			
		_ feet, Y=		. feet, N.M.	Coordinate:	System		Zone Gra
) Drilling C	ontractor					_ License No		
Įdress						1		
illing Began _		Compl	eted	т	ype tools		_ Size of hole_	
evation of lan	d surface or _			_ at well is		_ ft. Total depth of	f well	
mpleted well		hallow 🔲 art				upon completion o		
mpieteu wen	15 🗀 5				_			
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			Section 3. R	ECORD OF				
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igging Metho	d			-	No.			ubic Feet Cement
te Well Plugg gging approv		·····			- - 1			-
	-	State Engin	eer Representativ	e	$-\frac{3}{4}$			
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					ALLEED ONLY	v		
te Received	1/31/78	Typed	FOR USE OF ST	ATEENG	NEEK ONL			

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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.

Depth in Feet Thickness in Feet Thickness in Feet Description of Water-Bearing Formation	Section 1		,,,				270831	THE OFF COL	r 194 (A. 19 64)	
City Well was drilled under Permit No. L=4939 and is located in the state of	F									
Well was drilled under Permit No. L=40.23 and is located in No. No. No. 24.02.3 and is located in No. No. No. 24.02.3 and is located in No. No. No. 25.02.2 and Number. I Top. 17 Reg. 50.2 and Number. I Top. 12 Received January 2 19. Drilling was commenced January 2 19. Drilling was completed January 3 19.65. [Plat of 640 acres)		}								
C 14					•					
(B) Drilling Contractor. Abbatt Grothers: License No. minds Street and Number f.o. box 637 City hobts State few fexter City hobts State few fexter City hobts State few fexter Drilling was commenced January 2 19 Drilling was completed January 3 19 Drilling was completed January 2 19 Drilling was completed January 3 19 Drilling was comp			0							
Street and Number	 +									
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Drilling was commenced January 2 19 19 65		_			City		ho	bla	State	New Mexico
City of 640 acres Elevation at top of casing in feet above sea level			ĺ		Drilling v	was comm	enced	January 2		19
City of 640 acres Elevation at top of casing in feet above sea level					Drilling v	was comple	eted		January 3	19 83
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PRINCIPAL WATER-BEARING STRATA No. Depth in Feet From To Feet To Security T	Elevation	at top o	of casing in	n fee	t above se	a level		Total de	pth of well	. 82
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Street and Number City State Tons of Clay used Tons of Roughage used Type of roughage Plugging method used Date Plugged 19 Plugging approved by: Basin Supervisor FOR USE OF STATE ENGINEER ONLY Date Received 30140 VINT E961 ZE:8 HV 01 NUT E961	Name of	Phiggins	g Contrac	tor					License N	<u></u>
Tons of Clay used			_							
Plugging method used										
Plugging approved by: Basin Supervisor										
Basin Supervisor FOR USE OF STATE ENGINEER ONLY Date Received 30140 VIII SIVIS ZE:8 HV 01 NVC E961										
Basin Supervisor FOR USE OF STATE FINGINEER ONLY IT ISTUISTED Date Received 30110 VIIISMA TIVIS ZE: 8 HU OI NUT E961	Lingame	approved	1 by:							is follows:
FOR USE OF STATE ENGINEER SALLY OR USE OF STATE ENGINEER SALL					Basin Sur	pervisor	No), _	——— I No. o	of Sacks Used
Date Received STATE ENGINEER OFFICE Parisons 1963 JAN 10 AM 8: 32	i		- 02 Cm4		الما والما الماء	enu.	7	1 1		
Date Received SINDINIER OFFICE Described Sinding Sindi	ĺ	FOR US	E OF STAT	/EjEd	THE HERE	NLX				
SE :8 MA OI NAL EARI	Date F	harrison	וויב	יינ ע מרו			. ∦ ├-			
	Date 1	'Sceiver"	2012	 _ U 			~			
File No. 1 - 4988 Use 5 P.O. Location No. / 7 · 3 6 · / · 2/4+3 *	i		32	:8 k	1A OI NA	L961			l	
File No. 1 - 4988 Use 5 PO Location No. 17. 36.1.21443	i									
	File No.	1 4	988			Use 5	FRO	Locatic	m No./>.3	6.1.21413

Street or	Post Office Ac	idress					's Well No	
Well was drilled	under Permit	No			_ and is located	in the:		
a	_ ¼ ¼	4 ½	¼ of Sect	ion	Township	Ran	ge	N.M.P.M
b. Tract	No	of Map No		of the				
c. Lot N Subdiv	o vision, recorde	of Block No d in		of the	ounty.			<u>,, ,,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,</u>
		feet, Y=		feet, N.		System		
(B) Drilling C	Contractor					_ License No		
Address						1		
							Size of h	ole in.
Elevation of lar	nd surface or _			at wel	il is	_ ft. Total slepth	of well	ft.
Completed wel	lis 🗆 s	shallow 🗀 ar	tesian.		Depth to water	upon completion	of well	ft.
<u></u>		Sect	ion 2. PRINC	IPAL WATEI	R-BEARING ST	RATA		
Depth From	in Feet To	Thickness in Feet	De	scription of '	Water-Bearing F	ormation	Estima (gallons	ated Yield per minute)
71011								
						,		
		_				· · ·		
		1				<u> </u>		
Diameter	Pounds	Threads	Section Depth in		OF CASING Length		[]	Perforations
(inches)	per foot	per in.	Тор	Bottom	(feet)	Type of Sho	e Fro	
						··-		
				OF MUDD	ING AND CEM	ENTING	·	
From	in Feet To	Hole Diameter	Sacks of Mud	ı	ibic Feet Cement	Metho	d of Placeme	ent
Plugging Contro	and an			5. PLUGGIN	G RECORD			
Address						Depth in f	reet	Cubic Feet
					No.	Тор	Bottom	of Cement
Plugging approv					$-\frac{2}{3}$			
		State Engir	neer Represen	tative	4			
D . F	Tunod	1/21/70	FOR USE O	F STATE EN	GINEER ONL	·= /		
Date Received	Typed 1	r\		Quad		FWL _		FSL
File No				Use 011		ocation No. 17.	36 1 220	00

Orig. to St.

(This form is to be executed in triplicate)

WELL RECORD

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Street or P. O. BOX 55 City and State LOVIngtons, New Mariator New Maria Control of Charles of Streets of P. O. Box 55 City and State Lovingtons, New Mariator New Maria Control of Charles of Streets of P. O. Box 55 City and State Lovingtons, New Mariator New Maria Control of Control of Control of New Maria Control of Control of New Maria Co	Date of Re	eceipt //	oven	lies 26,	1954	Permit No. L=2508
Street of P. O. Box 55	Name	of permitee	Oitho	i. Grimos		
Well location and description: The Shallow well is located in We We We We We We We W					City and State LOV.1	ngton. New Mexico
casing above sea level, IM MOWIM feet; diameter of hole, 10 inches; total depth, 120 feet depth to water upon completion, 140 feet; drilling was commenced MOVOMBOY 17, 1951 and completed MOVOMBOY 20, 1951; name of drilling contractor Glaudo Tatum 524 Washington; Address, Lovington Now MoxiqQprillers License No. 1203 2. Principal Water-bearing Strata: Period 1 Peet 120 120 80 Water Sands	1. Well lo	cation and	description: The	shallow well	is located in No.	4, IE
depth to water upon completion, 40 feet; drilling was commenced Novomber 17, 1951 and completed Novomber 20, 1951; name of drilling contractor Claudo Tatuum 524, Washington, Address, Lovington Now Mexicoppillers License No. 1933 2. Principal Water-bearing Strata: Destrict						
and completed Hoverbor 26 19th; name of drilling contractor Claude Tatum Section Post of	casing	above sea le	vel, unlmown	1 feet; diameter	of hole, 10 inch	es; total depth, 120 fee
2. Principal Water-bearing Strata: Despit to Feet Thickness Description at Water-bearing Formation	depth t	o water upo	n completion,	40 feet; dri	lling was commenced	Movember 17, 1951
2. Principal Water-bearing Strata: Despit to Feet Thickness Description at Water-bearing Formation	and co	mpleted	November :	20 , 1954 ; nai	; ne of drilling contractor	Claude Tatum
2. Principal Water-bearing Strata: Despit to Feet To Thickness Description of Water-bearing Formation					•	
No. 1 140 120 80 Uniter sands No. 2 No. 3 No. 4 No. 5 3. Casing Record: Diameter per fine per fine per fine to the standoned per fine to the s					,	
No. 2 No. 3 No. 4 No. 5 3. Casing Record: Diameter Pounds per Inch Proph of Casing or Liner Casing Type of Shee Preferation From To To Diameter per Inch Proph Design Casing Type of Shee Preferation To To Diameter Proph Proph Design Type of Shee Preferation To Diameter Proph Design Type of Shee Preferation To Diameter Proph To Diameter Dia	_	Depth i	n Foot	Thickness	Description of W	ater-bearing Fermation
No. 2 No. 3 No. 4 No. 5 3. Casing Record: Diameter Pounds per ich Per ich per ich Depth of Casing or Liner Casing Type of Shee Prem To 7 OD 23 8 0 120 120 ncns 60 120 4. If above construction replaces old well to be abandoned, give location: How wall does not and address of plugging contract date of plugging 19; describe how well was plugged:	No. 1			80	Untar san	da
No. 4 No. 5 3. Casing Record: Planeter Pounds in Inches per fit. per inch Top Rotton Casing or Liner Casing Type of Shoe Prom To 7 OD 23 8 0 120 120 nong 60 120 4. If above construction replaces old well to be abandoned, give location: How wall does not ract of Section Township Range ; name and address of plugging contract date of plugging, 19. ; describe how well was plugged:	No. 2		-	<u></u>	o se over their	
No. 5 3. Casing Record: Diameter Pounds per fi. Threads Depth of Casing or Liner Rodium Casing Type of Shee Prom To 7 OD 23 8 0 120 120 ncns 66 120 4. If above construction replaces old well to be abandoned, give location: How wall does not act of Section Township Range; name and address of plugging contract date of plugging 19 ; describe how well was plugged:	No. 3					
3. Casing Record: Diameter Pounda Threada Depth of Casing or Liner Rest of in Inches per fit. per inch Top Bottom Casing Type of Shee Prom To	No. 4					
Diameter for thinches per fit. 7 OD 23 8 0 120 120 nong 60 120 4. If above construction replaces old well to be abandoned, give location: Hew wall does not plugging, Township, Range; name and address of plugging contract.	No. 5				,	
Diameter for thinches per fit. 7 OD 23 8 0 120 120 nong 60 120 4. If above construction replaces old well to be abandoned, give location: Hew wall does not plugging, Township, Range; name and address of plugging contract.). 1.	
A. If above construction replaces old well to be abandoned, give location: HOV WALL does apply and of Section, Township, Range; name and address of plugging contract date of plugging, 19; describe how well was plugged:	3. Casing	Record:			,	
4. If above construction replaces old well to be abandoned, give location: How wall does not appear of Section , Township , Range ; name and address of plugging contract date of plugging , 19 ; describe how well was plugged:			Threads Dept per inch	h of Casing or Liner Fop Bottom	Feet of Casing Type of Sh	Perforation oe From To
of Section , Township , Range ; name and address of plugging contract date of plugging , 19 ; describe how well was plugged:	7 OD	23	8 (120	120 ncm	6 0 120
of Section , Township , Range ; name and address of plugging contract date of plugging , 19 ; describe how well was plugged:	•••••	•••••		······································	·	
of Section , Township , Range ; name and address of plugging contract date of plugging , 19 ; describe how well was plugged:		***************************************				
of Section , Township , Range ; name and address of plugging contract date of plugging , 19 ; describe how well was plugged:						
of Section , Township , Range ; name and address of plugging contract date of plugging , 19 ; describe how well was plugged:		•••••				
of Section , Township , Range ; name and address of plugging contract date of plugging , 19 ; describe how well was plugged:	4 Tf about	a construction	on replaces ald s	rroll to be abouted	d due leastles Total	Wall does mot smal
date of plugging , 19 ; describe how well was plugged:	•					
date of plugging , 19; describe how well was plugged:	of Secti	lon	, Township	, Range	; name and	address of plugging contract
date of plugging , 19. ; describe how well was plugged:		••••••••••••••••				
			•			
	date of	plugging		, 19	; describe how well wa	s plugged:
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NOV 26 1954						THUD
						NOV 26 1954

C FFICE GROUND WATCH IN PERVISOR ROUMER, IN MINIMAR

Street or	well Post Office Ad State	dress				Owne		
Well was drilled	under Permit	No			and is loca	ted in the:		
a,	_ ¼ ¼	á ¼	¼ of Sec	tion	Township	Ra	nge	N.M.P.M
b. Tract l	No	of Map No		of t	he			
c. Lot No	0,	of Block No		of :	he			
		d in						•
		_ feet, Y=				ite System		
(B) Drilling C	ontractor		· · · · · · · · · · · · · · · · · · ·			License No		
Address						1		
Drilling Began .		Comple	eted		Type tools	;	Size of	holein.
						ft. Total depth		
Completed well	lis 🗀 s	hallow 🗀 art			•	iter upon completion	of well	ft.
Depth	in Feet	Section Sectio			ER-BEARING		Estim	nated Yield
From	То	in Feet	D	escription o	of Water-Bearin	g Formation	(gallons	per minute)
			-			<u> </u>		
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						· · · · · · · · · · · · · · · · · · ·		
			Section	3. RECOR	D OF CASING)	· · · · · · · · · · · · · · · · · · ·	·
Diameter (inches)	Pounds per foot	Threads per in.	Depth i	n Feet Bottom	Length (feet)	Type of Sho	oe	Perforations om To
		Section	n 4. RECOR	D OF MUD	DING AND C	EMENTING		
Depth From	in Feet To	Hole Diameter	Sacks of Mu		Cubic Feet of Cement	Metho	od of Placem	ent
-								
							·	
Plugging Contra	etor				ING RECORD			
Address					No.	Depth in	Feet	Cubic Feet
Date Well Plugg	ed					Тор	Bottom	of Cement
Plugging approv	red by:	0			$\frac{2}{3}$			
- 1		State Engin	eer Represer		4			
Date Received	Typed		FOR USE O		ENGINEER O	NLY		
	-, pea .	-, 52, 70		Qua	d	FWL _		FSL
File No		· · · · · · · · · · · · · · · · · · ·		_ Use Q1	1	_ Location No. 17	.36.1.23	000

(A) Owner of	weil	ddagaa				Owner	's Well No	
ell was drilled/	under Permit	No			_ and is located	in the:		
a	_ ¼ ;	4 ¼	¼ of Se	ction	Township _	Rang	ge	N.M.P
b. Tract	No	of Map No)	of the	·			
Subdiv	vision, recorde	d in			ounty.			
		feet, Y=				System		
3) Drilling C	Contractor				 	License No		
ddress				_		1		· · · · · · · · · · · · · · · · · · ·
rilling Began .		Com	ipleted		_ Type tools	,	Size of ho	le
levation of lar	nd surface or			at we	ll is	ft. Total depth	of well	
				u				
ompleted wel	lis LJ s	shallow 🗆	artesian.		Depth to water	upon completion	of well	
	. F			CIPAL WATE	R-BEARING ST	RATA		1 1/2 1 1
Depth From	To	Thicknes in Feet	s l	Description of	Water-Bearing F	ormation		ed Yield er minute)
		<u> </u>					-	
-						, i		
			Sectio	n 3. RECORD				
Diameter	Pounds	Threads		in Feet	Length	Type of Shoe	Pe	rforations
(inches)	per foot	per in.	Тор	Bottom	(feet)	Type of Shee	From	To_
		Sect	ion 4. RECOI	RD OF MUDD	ING AND CEM	ENTING		
Depth		Hole	Sack	cs C	ubic Feet		i of Placemen	ıt
From	То	Diameter	of M	ud o	Cement			
		- 						
				n 5. PLUGGIN	IG RECORD			
						Depth in F	icet	Cubic Feet
		 			No.		Bottom	of Cement
ate Well Plugg lugging approv			 -					
		State Eng	gineer Represe	entative	3 4			
			EOB HOE	OE CTATE IN	*			
ate Received	Typed	1/ 3 1/78	FUR USE		NGINEER ONL			er.
				·		FWL		
File No				Use0	11	Location No. 17.	36.1.2400	Ω

Owner's Well No.

STATE ENGINEER OFFICE

WELL RECORD

Section 3. RECORD OF CASING	Zone Gra
b. Tract No of Block No of the	Zone Gra
C. Lot No of Block No	Zone
Subdivision, recorded in	Zone
d. X=	Gra
Drilling Contractor Completed Type tools Size of horderss Completed Type tools Size of horders Completed Type tools Size of horder grade well is Shallow at well is ft. Total depth of well Section 2. PRINCIPAL WATER-BEARING STRATA Depth in Feet	Gra
Size of hotel Size of hote	
Completed	
Section 3. RECORD OF CASING Size of Shoe Per (inches) Per foot Per in. Top Bottom (feet) Type of Shoe Per foot Per in. Top Bottom Completed Type of Shoe Per foot Per in. Top Bottom Completed Type of Shoe Per foot Per in. Top Bottom Completed Type of Shoe Per foot Per in. Top Bottom Completed Type of Shoe Type	
Section 2. PRINCIPAL WATER-BEARING STRATA Depth in Feet	le
Section 2. PRINCIPAL WATER-BEARING STRATA Depth in Feet	
Depth in Feet Thickness in Feet Description of Water-Bearing Formation Estimating From To	· · · · · · · · · · · · · · · · · · ·
Section 3. RECORD OF CASING Diameter (inches) Per foot Per in. Top Bottom (feet) Type of Shoe From	ted Vield
Diameter (inches) Pounds per foot Threads per in. Top Bottom (feet) Type of Shoe Pront	er minute)
Diameter (inches) Pounds per foot Pounds per in. Top Bottom (feet) Type of Shoe From Section 4. RECORD OF MUDDING AND CEMENTING Depth in Feet Hole Diameter of Mud of Cement Method of Placemer	
Diameter (inches) Pounds per foot Threads per in. Top Bottom (feet) Type of Shoe Pront	
Diameter (inches) Pounds per foot Pounds per in. Top Bottom (feet) Type of Shoe From Section 4. RECORD OF MUDDING AND CEMENTING Depth in Feet Hole Diameter of Mud of Cement Method of Placemer	
Diameter (inches) Pounds per foot Pounds per in. Top Bottom (feet) Type of Shoe From Section 4. RECORD OF MUDDING AND CEMENTING Depth in Feet Hole Diameter of Mud of Cement Method of Placemer	
Diameter (inches) Pounds per foot Threads per in. Top Bottom (feet) Type of Shoe Pront	
Section 4. RECORD OF MUDDING AND CEMENTING Depth in Feet Hole Sacks Cubic Feet of Mud of Placemer From To Diameter of Mud of Cement Method of Placemer	erforations
Depth in Feet	n To
Depth in Feet	
Depth in Feet	
Depth in Feet	
From 10 Diameter Of Mitta Of Cement	nt
Section 5. PLUGGING RECORD	
lugging Contractor	
ugging Method No. Top Bottom	Cubic Feet of Cement
1	
State Engineer Representative 3 3	
FOR USE OF STATE ENGINEER ONLY	
ate Received Typed 2/1/78	
Quad FWL I File No. Use Of 1 Location No. 17.36.1.3200	201

WELL RECORD

well	ldress				Own	er's Well No	
under Permit	No	··		_ and is located	in the:		
1/4 1/4	4 ¼	¼ of Sec	ction	Township	Ra	nge	N.M.F
	of Block No		of the				
sion, recorde	d in		C	ounty.			
					1		
							
						Size of i	hole
	_						
is L S						n or wen	
- Foot	T	ion 2. PRIN	CIPAL WATEI	R-BEARING ST	TRATA	Fatier	nated Yield
To	in Feet	1	Description of	Water-Bearing F	ormation		per minute)
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				<u> </u>	· · ·	-	
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						<u></u>	
		Section	n 3. RECORD	OF CASING			
Pounds	Threads	Depth	in Feet	Length	Type of Sh	oe ├─	Perforations
per 100t	per in.	Тор	Bottom	(reet)		Fre	om To
	Sectio	n 4. RECOI	RD OF MUDD	ING AND CEM	ENTING		
n Feet	Hole	Sack	s Cu	bic Feet		od of Placem	ent
10	Diameter	OI MU	10 D1	Cement			
						,	
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			n 5. PLUGGIN	G RECORD			
					Douth in	Foot	Call Fast
				No.	Depth in Top	Bottom	Cubic Feet of Cement
l							01 01
				- 1			
l				$-\frac{2}{3}$			
l		neer Represe		2			
l	State Engi	ncer Represe	entative	$-\frac{2}{3}$	Y		
	o	Pounds Threads per foot Per in. Pounds per foot Per in. Section Feet Hole Section Feet Hole	ander Permit No		and is located	and is located in the:	and is located in the:

WELL RECORD

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

Section	1			(A) Own	er of well		48	S. CHLOS	TILES	·	<u> </u>	
-		İ		Street and	l Number.					************		
	1	}	1	City	<u>0 </u>	<u>'4</u>				State	iew ise	<u> </u>
				Well was	drilled ur	nder Pe	rm	it No. 001-2	084 C	ELL and	is locate	ed in th
}	1		- 1	3W 1/4	Svl 1/4	SW	.1/4	of Section	_LTw	/p17	Rge	30E
	1		_	(B) Drilli	ing Contra	actor	<u>:</u>	· O. ALDRE	.DUE	Licen	se No	79
ł								79				
1	-			City	VINGTO	N				State	No ME	<u>X.•</u>
1			- 1	Drilling v	vas comm	enced		SEPT. 14				19.55
l	Plat of 640			Drilling w	vas comple	eted		SEPT. 15				19_55
•		•	- f	+ +	a lorro1			Total de	nth of m	roll	72	
								Depth to wa	1			
State w.	Herner we	on is shan	low o						ter upor	Complet	.1011	···
Section	2			PRIN	ICIPAL WA	ATER-BEA	٩RI	NG STRATA		 .		
No.		in Feet	Thi	ickness in Feet		3	Des	cription of Water	r-Bearing	Formation	1	
	From	То	ļ	reet	ļ				· ·			
1	72	72	0		BAL	LING	Į u	ICK SAND A	T 72 F	FEET		
2												
3												
4												
5	·											
G .:		•			DECOL	D 05 0		INIC				
Section	3			· · · · · · · · · · · · · · · · · · ·	 	D OF C	AS	ING	,			
Dia in.	Pounds ft.	Thre		Top	pth Bottom	Feet		Type Shoe	Fr	Perfor		'o
					-	 	-		- *			
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	-!	!		'	!	<u></u>					<u>'</u>	
Section	4			RECOR	D OF MUI	DING A	٩NI	D CEMENTING				
	h in Feet	Diam		Tons	No. Sa				Metho	ds Used		
From	То	Hole i	n in.	Clay	Cen	nent						
		_						laU dum en	E D			
	_			ļ								
	_	- 		ļ								
	 			<u> </u>		!			·			
Section :	5				PLUGG	ING RE	cc	ORD		4		
Name of	f Pluggin	g Contrac	tor						Lic	ense No.		
								Ту				
								Date Plu	_	-		
	g approve							Cement Plug				
						Г	ŗ	Depth of P				
*				Basin Sup	ervisor	1	٧o.	\	70	No. of	Sacks Us	ed
	FOR US	E OF STA	re en	GINEER OI	NLY	7 [,			
i			17 7	77. 2	11						, ,, , , , , , , , , , , , , , , , , , 	
Date	Received .		007	13 195	5	_ -	_					
				OFFICE								
		CRO	מאטכ	WATEL CIPP								
173:3	4-2	084		il, / hash	AN!	,			/	7.36	() -	2 2
rue No	الكمسيحي	~ Q.Z			use <u></u>			Locatio	n No. 🊣	ع جمعے ا		> ->-⊃-

Street	r Post Office A	ddress				Own.	er's Well No.			
Vell was drill	ed under Permi	t No			_ and is located	in the:				
a	¼ :	½ ¼	¼ of Sec	tion	Township _	Ra	inge	ngeN.M.P.I		
b. Trac	t No	of Map No.		of the				 		
		of Block No ed in								
		feet, Y=				System				
B) Drilling	Contractor					License No				
.ddress								_		
orilling Bega	n	Comp	leted		_ Type tools	-				
levation of	and surface or .			at we	ll is	_ ft. Total depti	h of well	f		
Completed w	ell is	shallow 🗆 a		PIDAL WATE	Depth to water	upon completion	n of well	f		
Dept	n in Feet	Thickness						nated Yield		
From	То	in Feet	D	escription of	Water-Bearing F	ormation (gallor		ns per minute)		
										
				~		· · · · · · · · · · · · · · · · · · ·				
		<u> </u>								
		···	Section	3. RECORD	OF CASING					
Diameter (inches)	Pounds per foot	Threads per in.	Depth i	n Feet Bottom	Length (feet)			oe Perforations From To		
			•							
		1			 					
	 	-			-					
		Santia	A RECOR	D OE MIDD	INC AND CEM	ENTING				
	in Feet	Hole	Sacks	ibic Feet						
From	То	Diameter	of Mu	of Mud of Cer		ient				
	<u>, </u>				·					
	ļ	<u> </u>								
lugging Con	rnotor			5. PLUGGIN	IG RECORD					
					No.	Depth in	Feet	Cubic Feet		
lugging Method						Тор	Bottom	of Cement		
lugging appr										
		State Engi	ncer Represei	ntative	3 4					
-			FOR USE O	OF STATE EN	GINEER ONL					
ate Receive	Typed 1/	27/78				FWL		FSL		
120 s. Ni s.				011		17	7 36 1 43	000		

Street or I	ost Office Ad	idress					Own	CI 3 WERE INO.		
ell was drilled	under Permit	No			and is l	ocated	in the:			
a	. ¼ ¼	4 ¼	¼ of Se	ction	Town	ship	Ra	nge	N.M.f	
b. Tract N	lo	of Map No.		of	the					
		of Block No d in								
		feet, Y=			N.M. Coord	dinate S	ystem		Zone	
							_ License No			
idress							1			
rilling Began _		Comp	leted		Type to	ools	·	Size of hole		
evation of lan	d surface or _			at v	well is		_ ft. Total'depti	n of well	···	
ompleted well	is 🗆 s	hallow 🗆 a	rtesian.		Depth to	water	upon completion	n of well		
D.mah. i			ion 2. PRIN	CIPAL WAT	ER-BEARI	ING ST	RATA	T Paris	natad Viold	
Depth i From	То	Thickness in Feet]	Description of Water-Bearing			ormation		Estimated Yield (gallons per minute)	
				1						
	***************************************			, ,						
•			Sectio	n 3. RECOF	RD OF CAS	ING				
Diameter (inches)	Pounds per foot	Threads per in.	Depth Top			Length (feet) Type of Sho		Perforations From To		
	<u> </u>			Bortom					<u> </u>	
Depth i	- F			RD OF MUI			ENTING			
From	То	Hole Diameter	Sack of Mi		Cubic Feet of Cement		Method of Placement			
	<u> </u>									
						_				
ugging Contro	010-			on 5. PLUGG	GING RECO	RD				
ddress						No.	Depth in	Feet	Cubic Feet	
							Тор	Bottom	of Cement	
ugging approv	ed by:				-	2 3				
		State Engi	neer Represe	entative		4				
D	Tun-4	1/27/70	FOR USE	OF STATE	ENGINEER	R ONL			····	
ite Received	Typed	1/27/78		Qu	ad		FWL		. FSL	
					011		ocation No. 17			

Post Office A	ddress				Own	er's Well No		
under Permit	No			_ and is located	1 in the:			
No	of Map No	•	of the	e		·	·	
ontractor					License No			
					<u> </u>			
						Size of t	nole	
 1	shallow 🗆 :	artesian.		Depth to wate	r upon completio			
n Feet			CIPAL WATE	R-BEARING S	FRATA	Estim	ated Yield	
То	in Feet Descript			Water-Bearing	Formation	(gallons per minute)		
						<u> </u>		
					,			
						<u> </u>		
Pounds	Threads			T .	Γ		Perforations	
per foot	per in.	Тор	Bottom	(feet)	Type of Sh	oe Fro	om To	
	ļ							
	Secti	on 4. RECOI	RD OF MUDE	ING AND CEN	IENTING			
n Feet To					Meth	Method of Placement		
7.44.1.7								
							<u> </u>	
-								
		<u> </u>						
				\G RECORD				
				No.	Depth in	Feet	Cubic Feet	
lugging Method Date Well Plugged					Тор	Bottom	of Cement	
ed			-					
eded by:					;			
	State Eng	incer Represe	entative	<u>3</u>		·		
ed by:					.Y			
			OF STATE EI	4 NGINEER ONI	Y FWL		FOI	
	Post Office AdState	Post Office Address State	Post Office Address State	Post Office Address State under Permit No.	Post Office Address State under Permit No	Post Office Address State under Permit No	Post Office Address State under Permit No	

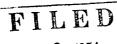
WELL RECORD



Street or P. (O			City and Sta	teLovingt	on,II.	
1. Well locat	ion and o	iescription: Th	te	is located in	<i>y</i>	,	
•••••	¼ of	Section	, Township	, Ra	nge	; Eleva	tion of
casing abo	ove sea le	vel, unlmou	n feet; diameter	of hole,8	inches; tot	al depth,	100
depth to v	water upo	n completion,		lling was con	menced	Jan13	. 1
and comp	leted	Jan-1	إلى	ne of drilling	contractorQ	Laude!	Patum
<u> </u>	-delahir	agicopa Addre	ss, Jovington		; Driller's Lice	nse No	WD33
2. Principal	Water-be	earing Strata:			, ;	,	,
	Depth to From	To To	Thickness	Des	eription of Water-bear	ing Formatic	ax
No. 1	1:0	100	60		tor sends		
No. 2							
No. 3							
No. 4							
No. 5							
3. Casing Re	ecord:				j.		
Diameter	Pounds		oth of Casing or Liner	Feet of	*		: rforati <u>o</u> n
in inches	per ft.	per inch	Top Bottom	Casing	Type of Shoe	From	To
Ilozzo	••••••			***************************************		***************************************	•••••
•••••••••••••••••••••••••••••••••••••••							

	•••••					••••••	
	•••••			1		······································	•••••••
4. If above c	onstructio	on replaces old	well to be abandone	ed, give locati	on:4,		Y 4,
of Section		, Township	, Range	; I	name and address	of pluggi	lng contr
					·····		
date of pl	ugging	········	19	; describe h	ow well was plugs	red:	





MAR 2 1954

OFFICE
GROUND WATER SUPERVISOR
ROSWELL, NEW MEXICO

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) Owne	or of well		Mattie	Price				(15)	
			\neg	Street and								<u> </u>	
				City								М.	
				Well was									
				NW									
				(B) Drilli									
1 1				Street and	-								
	_		- 1	City									
				Drilling w									
				Drilling w									
(P)	at of 640	acres)		Dinning w	as compre					***************************************			10
Elevation	at top o	f casing i	n fee	t above se	a level		TT	otal de	pth of	well	130		
State wh	ether wel	ll is shalle	ow o	r artesian_	shall	Low	Deptl	ı to wa	ter upo	n com	pletion	175	
Section 2				PRIN	CIPAL WA	ATER-BEA	RING STR	ATA					
No.	Depth in	n Feet	Thi	ckness in Feet		. D	escription	of Wate	r-Bearin	g Forma	ation		··
1													
	75	130		55	sand								
2													
3													
4													
5				<u> </u>									
Section 3					RECOR	D OF CA	SING		i				
Dia	Pounds	Threa	ds	Der	oth	Feet	Type	Shoe	1	Pe	rforati	ons	
in.	ft.	in		Top	Bottom	reet	1306	21106	F	rom		To)
						<u></u>	_						
				None									
									Ì				
				!		<u> </u>							
Section 4				RECOR	D OF MUD	DING A	ND CEME	NTING					
	in Feet	Diame	ter	Tons	No. Sa								
From	То	Hole in		Clay	Cem				Metho	ods Use o	i		
	-	 			 								
								 -					
		- 											
	1	1			1						<u> </u>	<u>-</u>	
							· ·			-			
Section 5						ING REC			•				
				Tons of Re									
							D	ate Plu	gged				.19
Plugging	approved	by:		!			Ceme	nt Plug	gs were	placed	as fol	llows:	
						N	a I.———	th of P	lug	No	of Sa	cks Use	d
				Basin Supe	ervisor	-	From	7	°O			CAS OSC	·
	FOR USE	OF STAT	E EN	GINEER ON	ILY								
_													
Date R	eceived	July 2	<u>1, 1</u>	972 8:	30 AM	-							
						<u> </u>							
Dile M-		1.=904			Ifac T	rr /20-	air)	T oca41	BY:-	17 27	6 21	9	
гие ио		<u></u>			use	~~~~YY&E	MAA.L	LOCATIO:	11 140' "		·0.57	4	

STATE ENGINEER OFFICE

FIELD ENGR. Luu 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) Owner of well J. LYNN WALKER Street and Number STAR Pl. A. Bix 123 Well was drilled under Permit No. 2-5426 and is located in the Cirth of Allie 4 5 F 1/4 of Section 6 Twp. 125 Rge 31 F (B) Drilling Contractor M. L. FULLINGIM License No. W. 12124 Street and Number 317 Noct TH Foul Le C City Hoss 5 State 5 5 ... State 5 5 ... Drilling was commenced 4/-/3 19.66 Drilling was completed 4-17 (Plat of 640 acres) Elevation at top of casing in feet above sea level. Total depth of well 12017. State whether well is shallow or artesian 5 HALLOW Depth to water upon completion 484 PRINCIPAL WATER-BEARING STRATA Thickness in Depth in Feet Description of Water-Bearing Formation No. Feet 3 5 Section 3 RECORD OF CASING Depth Dia Threads Pounds Type Shoe Top Bottom From To 120 120 14 Section 4 RECORD OF MUDDING AND CEMENTING Depth in Feet Diameter Tons No. Sacks of Methods Used From Hole in in. Clay Cement PLUGGING RECORD Section 5 Name of Plugging Contractor......License No......License No..... City_____State___ Street and Number Tons of Clay used ______Tons of Roughage used ______Type of roughage_____ Plugging method used..... _Date Plugged.... Plugging approved by: Cement Plugs were placed as follows: Depth of Plug No. of Sacks Used Basin Supervisor From FOR USE OF STATE ENGINEER ONLY - AMESIJ Date Received

In Location No. 17. 37. 6.400

(This form to be executed in triplicate) _

(17)

Permit No. L-1603

ARTESIAN WELL SUPERVISOR HOBWELL, NEW MEXICO

WELL RECORD

Street or P. O., Box 2322 City and State Tulsa, Oklahoma

Name of permittee, Simmons Drilling Co.

Date of Receipt Oct. 1952

1. '	Well loo	cation and	description:	The Shall	ow well is located	in	4,	NW 14,
		NW4 of	Section 7	Tow	nship 17	Range 37	; Elevation	of top of
,	asing	above sea	level, 386	5 feet; diame	ter of hole, 7 OD	inches; total	depth, 120)
	depth to	water upo	n completion,	39 re	et; drilling was con	menced	Oct 22	19 52
,	and con	npleted	Oct 25	, 19 52 ;	name of drilling co	ntractor Aque	Drilling	Co.
		Box 10	004 ; Ad	dress, L	ovington, N.M.	; Driller's Li	cense No	vd 35
2 , ∑	Princip		earing Strata		•	- }		
	_	Depih	in Feet	•				
1	₹o. 1	From	To	Thickness 2		tion of Water-bearing		
	₹o. 2	50 68	70	2	Water Sand,	& Quick Sand	·	, ,,
<u> </u>	To. 3	105	111	~	Water Sand			
	₹o. 4	105	111		Marer Sand		<u> </u>	
1	₹o. 5		,					
			•		· · · · · · · · · · · · · · · · · · ·	1		
3. (Casing	Record:				•		
	Diameter n inches	Pour per	ids Thread:	Depth of Casing	or Liner Feet of Bottom Casing	Type of Shoe	Perfora From	tion Te
6	-5/8	27	8		114	, ,	60-80	94-11
,					•	;		
		***************************************		•••• ••••••••••••				
						······································		
								•••••
i . :	If abov	e construct	ion replaces o	ld well to be aba	ndoned, give locatio	n:		
	of Sect	lon	, Towns	hip	Range	name and addres	s of plugging	contractor,
		•••••					<u>:</u>	
						* * * * * * * * * * * * * * * * * * *		
,	date of	plugging		, 19	; describe how v	well was plugged:		i
						Fee A	Suer L	SUC.
							700	0
						Nov	28 1952	

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				_					(1.5)			
	Т Т							Shipp						
			c	ity	Loving	ton			St	ateNen	· Liexico			
1								it NoL-4360						
1	1 1	İ		4	.N] 4	NW	1/4	of Section7	Twp.	_17_S	Rge. 37 E			
				B) Drillii	ng Contra	actor.p	··-	P Drilling G	0	_ License	NoWD-28I			
l			s	treet and	Number.	II	2I .	Love						
[ity Lov	ington-				S1	ateNo	w Mexico			
1		1						March_24						
<u> </u>			r	Orilling wa	as comple	eted	<u>V</u>	arch 26			1964			
	Plat of 640			_				• •			_			
								Total dep						
State w	hether w	ell is shal	low or	artesian_	Shall	.OW		Depth to wa	ter upon	completio	n62			
Section	2			PRINC	CIPAL WA	ATER-BE	ARI	NG STRATA	,					
	Depth	in Feet	Thick	kness in			Des	cription of Water	-Bearing F	ormation				
No.	From	То	. 1	Feet			Desi	ription of water	· Dearing r	OI MACION				
1			1											
2	37	40	+											
	82	105	 											
3		ļ						· ·		·				
4		ļ												
5		1	<u> </u>						-					
Section	3				RECOR	D OF	CAS	ING.						
			, 1	Den		1				Perforat	ions			
Dia in.	Pound ft.	s Thre	1-	Top Bottom			٠	Type Shoe	Fron	From To				
	 	_				 	_				· · · · · · · · · · · · · · · · · · ·			
 -		Non	•											
		_												
	 							·	l					
		!	<u>·</u>			•	<u>'</u>		<u>'</u>					
Section	4			RECORD	OF MU	DDING	ANI	CEMENTING						
Dept	h in Feet	Diam		Tons	No. Sa				Methods	IIsed				
From	То	Hole i	n in.	Clay	Cen	nent	<u> </u>							
				6 sack			ļ							
	_				<u> </u>		<u>L</u> .	·•						
									·					
	<u>i</u>	<u> </u>			<u> </u>									
Section	E				PLUGG	SINC D	500	NOD.						
			. 4 -					• • • • • • • • • • • • • • • • • • • •						
								Тур						
								Date Plu						
'luggin _i	g approve	ed by:						Cement Plug	gs were pla	aced as fo	ollows:			
							No.	Depth of Pl		No of S	acks Used			
	==			Basin Supe	rvisor	-		From T	0	110. 01 0.	acas oseu			
	FOR U	E OF STA	TE ENG	INEER ON	LY									
		II 100	11810											
Date	Received	I NCEV Oc l	idiv :	11/18	~~									
	tı l	:8 MA 8	אנע _	ti O C I	-									
	71	OWN Q.	GGR	1001		<u></u>								
	, ,	£2(n				Ω,			. / 7	' 3 7 ^	7 / 1/			
rile No) <i>(</i>	F360			.Use	\mathcal{L}	<u>~</u> .	Location	n No./_/	<u>/</u>	<u>. ′ ′/</u>			

STATE ENGINEER OFFICE

THE DEPORT 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	or of well		מדנוס ת ש	P	(19)			
								New Mexico			
	-							d is located in th			
			1					SRge37 E			
							•	· • • · · · · · · · · · · · · · · · · ·			
						-	Tice	nse No. WD_28I			
			1								
								New Pexico			
			_								
(P	lat of 640	acres)	Drining v	was compr	etea	April 16		1965.			
Elevation	n at top o	of casing i	n feet above s	ea level		Total de	pth of well	III			
								etion 75			
Section 2						ING STRATA	,	17			
No.	Depth i	in Feet	Thickness in	Ī	Des	scription of Water	r-Bearing Formation	on			
140.	From	То	Feet								
1	47	60									
2								-			
3	75	—IIO—									
4				 							
5											
<u> </u>	1	l	<u> </u>				,				
Section 3	3			RECO	RD OF CAS	SING					
Dia	Pounds	Threa	ads De	epth	Feet	Type Shoe	l	orations			
in.	ft.	in	Тор	Bottom		1300 0	From	То			
Tlı			0	III	III		50	III			
			-		<u> </u>		, , ,				
		<u> </u>									
		T									
~			חברים		DOING AN	D OF ACUTING					
Section 4				1		D CEMENTING					
Depth From	in Feet	Diame Hole in	t		acks of nent	Methods Used					
FIUM	10										
	 		6 sacks	<u> </u>							
	<u> </u>	<u> </u>	<u> </u>			· · · · · · · · · · · · · · · · · · ·	*				
Section 5	,			PLUG	SING REC	ORD					
Vame of	Plugging	Contrac	tor				License No	D			
								J4			
								19			
-ingging	approved	1 by:					gs were placed a	s fonows:			
			Basin Su		No.	Prom T	No o	f Sacks Used			
		0.117	At Prince		-, ├─	From	No 200				
		e of stat	TE ENGINEER C	ONLY	 	-					
	<i>J.</i>	EV OFFIC	144.5M 1800ar - 1			ļ					
Date 1			-1010143 -11415	} .	—						
	Ų,	C 'R MA	OI YAN 2991								
			7301								
	1.43	55		.(2 .		/2 2	77/)/			

FIELD ENGR. Lou

WELL RECORD

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

Section :	1				F			1	(20)	
	· 						Shipp			
							281			
] (City Love	ntten-			S	State	New Hextee
			١,	Well was	drilled ur	der Perm	it NoL-4712		and i	s located in
1			.	-No1/4		NE14	of Section7	Twp	<u>17</u> S	Rge37E
				(B) Drilli	ng Contra	actor	P & P Drilli	ng Co.	License	NoWD-28
				Street and	Number.		.Jove			
	<u>\</u> -		-	CityLo	vington.			S	State _Ne	rlend co
1			1	Drilling w	as comm	enced Se	pt. 10			19.6
L			;	Drilling w	as comple	ted Sep	t. II			19_6
	Plat of 640	-					m +-1 -1	.45 . e	.11	
							Total de			
State wl	nether wel	l is shall	ow or	r artesian	DHALLON		Depth to wa	ter upon	completio	n
Section :	2			PRIN	CIPAL WA	TER-BEARI	NG STRATA	,		
N-	Depth is	r Feet	Thic	ckness in		Des	cription of Water	-Bearing I	Formation	
No.	From	То		Feet				1.		
1	1.0	65								
2	75	95								
3			 				····			
4			 							···
5			1							
Section :	3				RECOR	D OF CAS	ING	,		
Dia	Pounds	Threa	ads	Der	oth	Feet	Type Shee	,	Perforat	ions
in.	ft.	in		Тор	Bottom	reel	Type Shoe	Fro	m	To
		Non	e							
	<u> </u>									
	}						<u> </u>			
a				DE0.00						
Section							D CEMENTING			
Depti From	n in Feet	Diame Hole in		Tons Clay	No. Sa Cem			Methods	s Used	
					-					
		7								
							<u> </u>			
										
	<u> </u>	<u> </u>								
Section 5	5				PLUGG	ING RECO	ORD			
Name of	Plugging	Contrac	tor					Lice	nse No.	
							Ту			
							Date Plu			
	approved						Cement Plus			
JU0						Γ				
				Basin Supe	ervisor	No.	From T	o lug	No. of S	acks Used
	non state	oblad.	nta teser	diameter c-	77.37	7				
	FOR USE	OFISTAT	- 11.1 ruž križ i	GINEER ON	4TX					
Date 1	Received	AFILLER CELLECTER	ли <u>11 7</u> 1	1/10		_	 			
		.lH .a.:	٠ <u>ــ</u>	1961 BU	}		 		•	
	וא.וע	W Cla	170	10c1 A (J		<u> </u>			

Use Oom Location No. 17. 37. 7. 24.2

FIELD ENGR. LOG

STATE ENGINEER OFFICE

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	er of well	Dam		(2)		
			S	troot and	Number				4-4-	New Wex100
			"	Na was	Na V	ider Feri	Wof Section 11:	nu dEwn		Sis located R the Rge #D-281
			— a	B) Drill	ing Contr	actor as	C torr		Licen	se No.
			s	treet and	i Number.	1121	D. 1048			New Mexico
			⊢c	ity	'aatuleoi	1 	June 25	S	tate	New Mexico 60
1			D	rilling v	vas comm	enced	-June 30			19
	1		D	rilling v	vas comple	eted			T	50 ft/ ¹⁹
Elevation	lat of 640 at top o	f casing i	n feet	above se	a level	W	Total de	epth of we	:11	132 ft.
		ll is shall	ow or				Depth to w	ater upon	complet	ion
Section 2	Depth i		1	ness in	CIFAL W		escription of Water	er-Bearing I	Formation	
	From	То	F	'eet				<u>.</u>		
1	L6 132	62 150-	İ	·						*
2	4.74				.,					***
3										
4										
5					1					· · · · · · · · · · · · · · · · · · ·
Section 3					RECOR	RD OF CA	SING			
Dia	Pounds	Threa	ads	De	pth	Feet	Type Shoe	ا ا	Perfor	ations
in.	ft.	in		Top Bottom		1000	Type blice	/ From	m	То
		<u> </u>	None	· · · · · · · · · · · · · · · · · · ·						
								<u> </u>		
Section 4			ł	PECOP	D OF MI	DOING A	ND CEMENTING	<u> </u>		
Section 4 Depth	in Feet	Diame	eter	Tons		cks of	ND CEMENTING	···		
From	То	Hole in	- 1	Clay	1	nent		Methods	Used	
		16		ते हर	icka					
	<u> </u>						· · · · · · · · · · · · · · · · · · ·			<u> </u>
	-}								· · · · · · · · · · · · · · · · · · ·	
Section 5					PLUG	SING REC	CORD			
Name of	Plugging	g Contrac	tor					Lice	nse No.	
Street an	d Numb	e r				City		State	<u></u>	
Tons of C	Clay used	l	Т	ons of R	loughage ı	ısed	T	pe of rou	ghage	
Plugging	method	used					Date Pl	ugged		19
Plugging	approved	i by:				-	Cement Plu	gs were pl	laced as	follows:
				Basin Sur	ervisor	N	o. Depth of I	Plug	No. of	Sacks Used
	FOR 110	e or sta	- LI - LU -	HARRY O	NI.Y	7				
D-4- T			IIATZIO		NEI					
, гиэто №	received		HINTE.							
Date 1					V					
Date 1		S :8 MA) .					

STATE ENGINEER OFFICE WELL RECORD

MILD INNER

Section 1. GENERAL INFORMATION

Owner of	well	Bill Ship	p			Owne	r's Well No.	
City and	State	4.	TOATURE	وللفائ وللد	·			
vas drilled	under Permit	No L-1	963-S		_ and is located	in the:		
a	_ ¼ ½	4 <u>NH </u>	14 of Se	ection7	Township	17 S Rai	nge <u> </u>	mast_N.M.P.
b. Tract l	No	of Map No.		of the	e		· · · · · · · · · · · · · · · · · · ·	
							<u></u>	
		•			.M. Coordinate S			
Drilling C	ontractor	Glenr	's water	. Well Ser	vice	_ License No	VD_421	
:ss		Box 692	Tatum, 1	i.ii. 8826′	7		·····	
ng Began .	/1 <i>≥</i> 30-,7	9 Comp	leted2	-3-79	Type tools	```	Size of	hole 10 i
tion of lan	nd surface or _			at we	ll is	ر _ ft. Total depth	of well	128 f
		Sect	tion 2. PRIN	CIPAL WATE	R-BEARING ST	RATA		
Depth i	in Feet	Thickness		D	W-4- D		Estin	nated Yield
rom	To	in Feet		Description of	water-Bearing F	ormation	(gallons	s per minute)
80	128							100 GH1
						-	ļ	
						<i>‡.</i>		
			Section	n 3. RECORD	OF CASING			
- 1	Pounds	Threads	Depth	in Feet	Length	Type of Sho	oe	Perforations
nches)	per foot	per in.	Тор	Bottom	(feet)		Fr	om To
6 5/8	910							70 128
0.7/8	•217							
		Section	on 4. RECO	RD OF MUDD	ING AND CEMI	ENTING		
		Hole				Metho	od of Placem	ent
rom	То	Diameter	of M	ud o	Cement			
			Section	on 5. PLUGGIN	G RECORD			
	ictor				·			
ng Contra			-14		No.	Depth in		Cubic Feet
ss	d							
						Тор	Bottom	of Cement
ng Metho	ed				1 2 3	Тор	Bottom	of Cement
	Street or City and was drilled a b. Tract b. Tract c. Lot N. Subdivided A the b. Tract b. Tract	Street or Post Office Ac City and State	Street or Post Office Address City and State was drilled under Permit No	Street or Post Office Address City and State	Street or Post Office Address	Street or Post Office Address City and State Idvington,	Street or Post Office Address City and State Lovington,	City and State

.... 1-1963-S

Quad FWL SUPP. (was old domestic well # L-4712)
IRR. 10001000 No. 17.37.7.21221

(3)

WELL RECORD

ate of the		.Mar _e ,ju _g .				Permit No	~4561
Name o	of permittee	, Utha	II. Crimes	if skirkfiredinani	1.00		***************************************
reet or P	. o.,	Box 50	1	, City and St	ate Nor	an, Oklaho	ma
Well loc	ation and d	lescription: 1	The Shallow (shallow or artesian)	well is located	in Si	1 1/4,	SW 4.
			1 Townshi			1	
			and the second second	i		ì	=
			feet; diameter			1	
		•	50 feet;	i		i .	
and com	pleted	March	3 , 19 54; nas	ne of drilling co	ontractor	Abbott Bro	95.
Box	: 637	; Add	iress, Hobbs,	N. D.	Drill	er's License No.	WD-46
Principa	ıl Water-bes	aring Strata:].			
	Depth is	n Feet To	Thickness	Paranti	ntion of Water	bearing Formation	
No. 1	45	75	30		er Sand		
No. 2	95	137	42	* * * * * * * * * * * * * * * * * * * *	er Sand		
No. 3	-	-/-					
No. 4		·					······································
				<u> </u>	4		
No. 5	<u> </u>						
Casing 1	Record:						
	ì						:
Diameter in inches	Pound per fi	s Threads L per inch	Depth of Casing or I	iner Feet of Casing	Type of E	hoe From	oration Te
7" CI) 32	2 8	0 1	37 137	none	50	137
	3					<u> </u>	
				!			
		••••••			***************************************	1	
***************************************	i			·····	······································	<u> </u>	
If above	constructio	n replaces ol	d well to be abando	ned, give locati	on:	1/4,	,4
of Section	on	, Townsh	nip, Ra	nge	; name and	address of pluggir	ng contractor,
					4 - +		
						-	•
date of 1	plugging		, 19	; describe how	well was plu	1gged:	
			*				
1, 3 -	1011°						
			,	1 11		MAR ³ 0 195	4
					1		1
					1	OFFICE	
					GRO	OFFICE DUND WATER SUP ROSWELL, NEW MEX	

p

STATE ENGINEER OFFICE WELL RECORD

Section 1. GENERAL INFORMATION

Revised June 1972

(11)

(A) Owner of	f well Post Office Ad	BOC Ga	ses	- W - A W	V-13 G	Owne	r's Well No.	١.	4)
Street or City and	Post Office Ad State P.O.	dress <u>C/</u> Box 692	Tatum,	s water v New Mexic	o 8826	<u>vice </u>			
Well was drilled	d under Permit	No. L-10	652		_ and is locate	ed in the:			
a	_ ¼ <u>S1</u> ¼	SE 4	SW % of Se	ection 31	Township	16-S. Rai	nge37	-E•	_N,M.P,M.
b. Tract	No	of Map N	o,	of the	,		<u></u>		,
c. Lot N	o	of Block No	· 	of the					
	vision, recorded			•	•				
d. X= the		_ feet, Y=		feet, N.	M. Coordinat	e System			Zone in Grant.
(B) Drilling C	Contractor G1	enn's W	ater Wel	l Service	e	License No	WD-421		
Address P.	0. Box 6	92 Tatu	m, New M	exico 88	3267		-		
Drilling Began	4-10-97	Co	npleted	4-10-97	_ Type tools _	rotary	Size of	hole_1	2 <u>‡</u> in.
Elevation of las	nd surface or _			at wel	l is	ft. Total depth	of well	248	ft.
Completed wel	lis 🖆 sh	allow []	artesian.	,	Depth to wate	er upon completion	of well	72	ft.
		S	ection 2. PRIN	CIPAL WATER	R-BEARING S	STRATA			
Depth From_	in Feet To	Thickne in Feet		Description of	Water-Bearing	Formation		ated Y	
72	185		8	and			75		
198	243	.,	g	ravel			75		
		*							
		<u> </u>	Section	n 3. RECORD	OF CASING		*		
Diameter (inches)	Pounds per foot	Threads per in.	Depth Top	in Feet Bottom	Length (feet)	Type of Sho	×e	Perfora om	tions To
6 5/8	•188		1	238	248	none		58	248
0), 0									
<u></u>		Sec	tion 4. RECO	RD OF MUDD	ING AND CE	MENTING	 		
Dep th From	in Feet To	Hole Diameter	Sacl of M		bic Feet Cement	Metho	d of Placem	ent	
			1						
	<u> </u>								
Plugging Contra	actor		Section	n 5. PLUGGIN	G RECORD				
Address Plugging Metho					No.	Depth in Top	Feet Bottom		ic Feet Cement
Date Well Plugg Plugging approv					1 2				
		State En	gineer Represe	ntative	- 3 4				
	04/16/9	,	FOR USE	OF STATE EN	GINEER ON	LY 16.	37.31,3	44/2	(
Date Received	04/10/9	•	•.	Quad.	<u>-</u>	FWL _		FSL_	
File No	L-10,652			Use	E S	Location No. 16	.37.31.3	44121	

APPENDIX D Borehole Logs and Monitor Well Completion Logs

Boring/Well:

BH-1

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

31 feet

Date Installed:

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, unconsolidated caliche
5-6	4	White, caliche, dense layer
10-11	4	White, caliche, dense and friable layer
15-16	4	White, caliche, dense and friable layer
20-21	4	White, caliche, dense, tan fine grain sand encountered at 23', loose
25-26	4	Tan, fine grain sand, loose, trace of caliche layers and cemented sandstone
30-31	3	Tan, fine grain sand, loose, cemented sandstone layers
		TD -31'

Boring/Well:

BH-2

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico 31 feet

Total Denth:

rotai Deptii:	31 leet
Date Installed:	6/29/98

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, unconsolidated caliche
5-6	2	White, caliche, dense layer
10-11	2	White, caliche, dense and friable layer, trace of fine grain sand
15-16	17	Tan, fine grain sand, and trace of white caliche, dense layers
20-21	6	Tan, fine grain sand, and trace of white caliche, dense layers
25-26	7	Tan, fine grain sand, loose, trace of caliche layers and cemented sandstone
30-31	3	Tan, fine grain sand, loose, traces of cemented sandstone
		TD -31'

Boring/Well:

BH-3

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

31 feet

Date Installed:

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, unconsolidated caliche
5-6	0	White, caliche, dense, layer
10-11	0	White, caliche, dense and friable layer, unconsolidated layer, trace of fine grain sand
15-16	3	Tan, fine grain sand, and trace of white caliche, dense layers
20-21	2	Tan, fine grain sand, and trace of white caliche and cemented sandstone, dense layers
25-26	1	Tan, fine grain sand, loose, trace of caliche layers and cemented sandstone
30-31	2	Tan, fine grain sand, loose, traces of cemented sandstone
		TD -31'

Boring/Well:

BH-4

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

31 feet

Date Installed:

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, unconsolidated caliche, broken
5-6	1	White, caliche, dense, layer, unconsolidated
10-11	0	White, caliche, dense and friable layer, unconsolidated layer
15-16	1	Tan, fine grain sand, and trace of white caliche, dense layers
20-21	1	Tan, fine grain sand, and trace of white caliche and cemented sandstone, dense layers
25-26	0	Tan, fine grain sand, loose, trace of caliche layers and cemented sandstone
30-31	0	Tan, fine grain sand, loose, traces of cemented sandstone
		TD -31'
		77.50

Boring/Well:

BH-5

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

31 feet

Date Installed:

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	Grayish, caliche, dense layer, trace of black streaks in caliche
5-6	520	Grayish, caliche, dense, layer, trace of black streaks of staining
10-11	550	White, caliche, dense and friable layer, unconsolidated layer
15-16	388	Grayish, fine grain sand, loose, and trace of gray caliche, dense layers
20-21	500	Tan, fine grain sand, and trace of white caliche and cemented sandstone, dense layers traces of gray staining
25-26	550	Tan, fine grain sand, loose, trace of caliche layers and cemented sandstone, trace of gray staining
30-31	240	Tan, fine grain sand, loose, traces of cemented sandstone
35-36	350	Tan, fine grain sand, streaks of cemented sandstone
40-41	350	Tan, fine grain sand, streaks of cemented sandstone
45-46	490	Tan, fine grain sand, streaks of cemented sandstone
50-51	560	Tan, fine grain sand, streaks of cemented sandstone
60-61	115	Tan, fine grain sand, streaks of cemented sandstone, damp
70-71	1	Tan, fine grain sand, streaks of cemented sandstone, moist

Boring/Well:

MW-1

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

75 feet

Date Installed:

10/1/98

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, unconsolidated caliche, broken
10-20	-	White, caliche, dense and friable layer, unconsolidated layer, becoming sandy with depth
20-30	-	Tan, fine grain sand, and trace of white caliche and cemented sandstone, dense layers
30-40	-	Tan, fine grain sand, loose, traces of caliche and cemented sandstone
40-50	-	Tan, fine grain sand, loose, traces of cemented sandstone
50-60	-	Tan, fine grain sand, loose, traces of cemented sandstone
60-75	-	Tan, fine grain sand, loose, traces of cemented sandstone, damp
		TD -75'
	1	
]	

Boring/Well:

MW-2

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

76 feet

Date Installed:

10/1/98

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, unconsolidated caliche, broken
10-20	-	White, caliche, dense and friable layer, unconsolidated layer, becoming sandy with depth
20-30	-	Tan, fine grain sand, and white caliche and traces of cemented sandstone, dense layers, 50% sand / 50% caliche
30-40	-	Tan, fine grain sand, loose, traces of caliche and cemented sandstone
40-50	-	Tan, fine grain sand, loose, traces of cemented sandstone
50-60	-	Tan, fine grain sand, loose, traces of cemented sandstone
60-61	0	Tan, fine grain sand, loose, traces of cemented sandstone, damp
70-76	-	Tan, fine grain sand, loose, traces of cemented sandstone, damp
		TD -76'

Boring/Well:

MW-3

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

75 feet

Date Installed:

10/1/98

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, unconsolidated caliche, broken
10-20	-	White, caliche, dense and friable layer, unconsolidated layer, becoming sandy with depth
20-30	<u>-</u>	Tan, fine grain sand, and white caliche and traces of cemented sandstone, dense layers, 50% sand / 50% caliche
30-40	-	Tan, fine grain sand, loose, traces of caliche and cemented sandstone
40-50	-	Tan, fine grain sand, loose, traces of cemented sandstone
50-60	-	Tan, fine grain sand, loose, traces of cemented sandstone
60-61	3	Tan, fine grain sand, loose, traces of cemented sandstone, damp
70-75	-	Tan, fine grain sand, loose, traces of cemented sandstone, damp
		TD -75'
	<u></u>	
	<u> </u>	

Boring/Well:

MW-4

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

75 feet

Date Installed:

10/2/98

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, unconsolidated caliche, broken
10-20	-	White, caliche, dense and friable layer, unconsolidated layer, becoming sandy with depth
20-30	-	Tan, fine grain sand, and white caliche and traces of cemented sandstone, dense layers, 30% sand / 70% caliche
30-40	-	Tan, fine grain sand, loose, traces of caliche and cemented sandstone
40-50	-	Tan, fine grain sand, loose, traces of cemented sandstone
50-60	-	Tan, fine grain sand, loose, traces of cemented sandstone
60-61	671	Tan, fine grain sand, loose, traces of cemented sandstone, damp
70-75	-	Tan, fine grain sand, loose, traces of cemented sandstone, damp
		TD -75'
		·

Boring/Well:

MW-5

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

77 feet

Date Installed:

1/27/99

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, unconsolidated, dense
10-20	-	White, caliche, dense and friable layer, unconsolidated layer, becoming sandy with depth
20-30	-	Tan, fine grain sand, and white caliche and traces of cemented sandstone, dense layers, 50% sand / 50% caliche
30-40	-	Tan, fine grain sand, loose, traces of caliche and cemented sandstone
40-50	-	Tan, fine grain sand, loose, traces of cemented sandstone, 50% / 50%
50-60	-	Tan, fine grain sand, loose, traces of cemented sandstone, layered
60-61	4	Tan, fine grain sand, loose, traces of cemented sandstone, damp
70-77	-	Tan, fine grain sand, loose, traces of cemented sandstone, damp
		TD -77'
	ļ	
<u> </u>	 	
 		

Boring/Well:

MW-6

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

77 feet

Date Installed:

1/27/99

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, unconsolidated, dense
10-20	-	White, caliche, dense and friable layer, unconsolidated layer, becoming sandy with depth
20-30	-	Tan, fine grain sand, and white caliche and traces of cemented sandstone, dense layers, 80% sand 20% caliche
30-40	-	Tan, fine grain sand, loose, traces of caliche and cemented sandstone
40-50	-	Tan, fine grain sand, loose, traces of cemented sandstone, 50% / 50%
50-60	-	Tan, fine grain sand, loose, traces of cemented sandstone, layered
60-61	4	Tan, fine grain sand, loose, traces of cemented sandstone, damp
70-77	-	Tan, fine grain sand, loose, traces of cemented sandstone, damp
		TD -77'
	<u></u>	

Boring/Well:

MW-7

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

77 feet

Date Installed:

3/24/99

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, dense
10-20	-	White, caliche, dense and friable layer, becoming sandy with depth
20-30		Tan, fine grain sand, and white caliche and traces of cemented sandstone, dense layers, 80% sand 20% caliche
30-40	•	Tan, fine grain sand, loose, traces of caliche and cemented sandstone
40-50	•	Tan, fine grain sand, loose, traces of cemented sandstone, 50% / 50%
50-60	-	Tan, fine grain sand, loose, traces of cemented sandstone, layered
60-61	3	Tan, fine grain sand, loose, traces of cemented sandstone, damp
70-77	-	Tan, fine grain sand, loose, traces of cemented sandstone, damp
		TD -77'

Boring/Well:

MW-8

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

Total Depth:

77 feet

Date Installed:

3/24/99

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, dense
10-20	-	White, caliche, dense and friable layer, becoming sandy with depth
20-30	-	Tan, fine grain sand, and white caliche and traces of cemented sandstone, dense layers, 60% sand 40% caliche
30-40	-	Tan, fine grain sand, loose, traces of caliche and cemented sandstone
40-50	-	Tan, fine grain sand, loose, traces of cemented sandstone, 50% / 50%
50-60	-	Tan, fine grain sand, loose, traces of cemented sandstone, layered
60-61	0	Tan, fine grain sand, loose, traces of cemented sandstone, damp
70-77	-	Tan, fine grain sand, loose, traces of cemented sandstone, damp
		TD -77'
	•	

Boring/Well:

MW-9

Project Number:`

1085

Client:

Titan Exploration, Inc.

Site Location:

ATB 1-1 Pit, Lovington Paddock/Lovington San Andres

Location:

Lea County, New Mexico

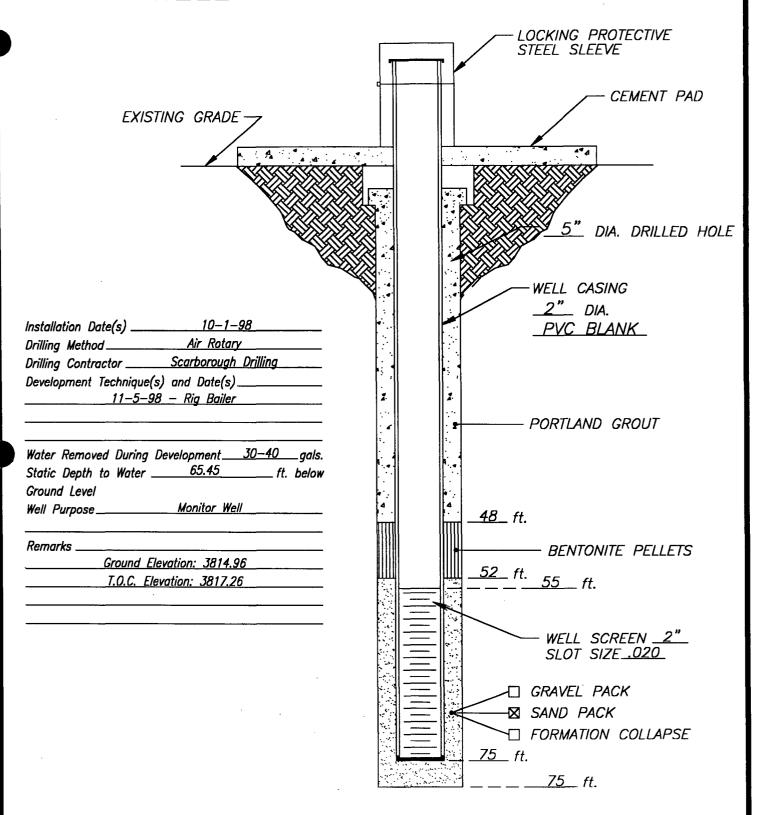
Total Depth:

77 feet

Date Installed:

3/24/99

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	-	White, caliche, dense
10-20	<u>-</u>	White, caliche, dense and friable layer, becoming sandy with depth
20-30	-	Tan, fine grain sand, and white caliche and traces of cemented sandstone, dense layers, 70% sand 30% caliche
30-40	-	Tan, fine grain sand, loose, traces of caliche and cemented sandstone
40-50	-	Tan, fine grain sand, loose, traces of cemented sandstone, 50% / 50%
50-60	-	Tan, fine grain sand, loose, traces of cemented sandstone, layered
60-61	5	Tan, fine grain sand, loose, traces of cemented sandstone, damp
70-77	<u>-</u>	Tan, fine grain sand, loose, traces of cemented sandstone, damp
		TD -77'
	<u> </u>	



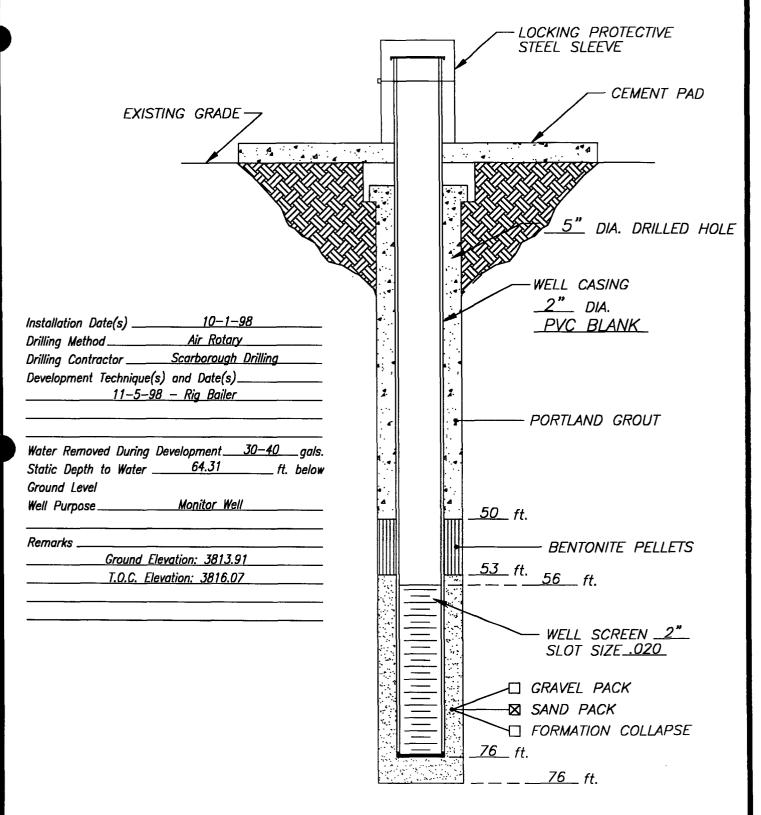
Highlander Environmental

CLIENT: TITAN EXPLORATION & PRODUCTION, INC.

PROJECT: LOVINGTON PADDOCK UNIT-PIT, ATB 1-1

LOCATION: LEA COUNTY, NEW MEXICO

WELL NO.



10-1-98 Highlander ${\it Environmental}$

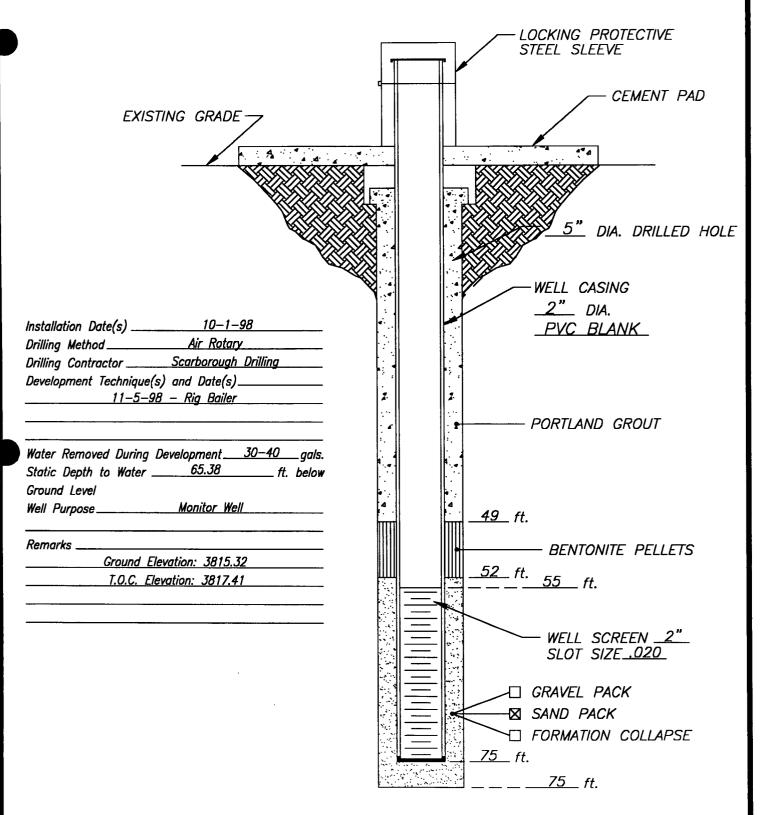
DATE:

CLIENT: TITAN EXPLORATION & PRODUCTION, INC.

PROJECT: LOVINGTON PADDOCK UNIT-PIT, ATB 1-1

LOCATION: LEA COUNTY, NEW MEXICO

WELL NO.



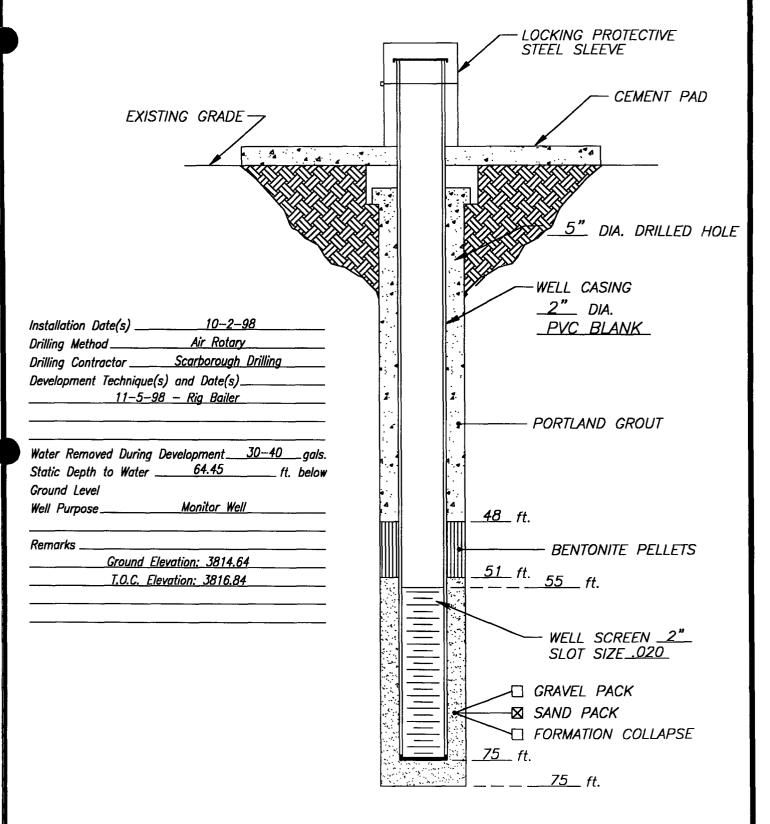
Highlander Environmental

CLIENT: TITAN EXPLORATION & PRODUCTION, INC.

PROJECT: LOVINGTON PADDOCK UNIT-PIT, ATB 1-1

LOCATION: LEA COUNTY, NEW MEXICO

WELL NO.



DATE:

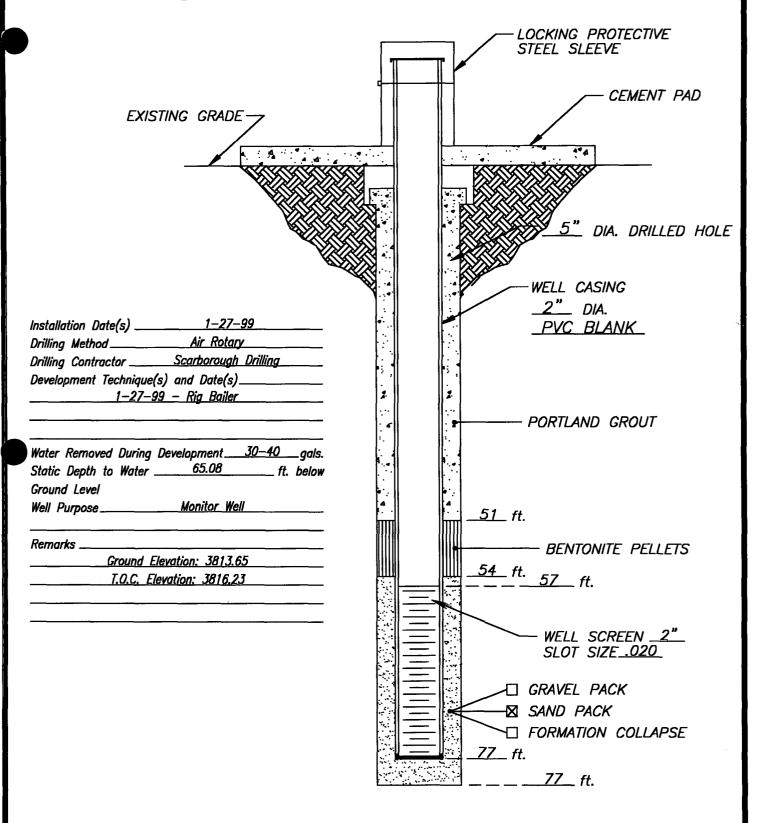
10-2-98

Highlander Environmental CLIENT: TITAN EXPLORATION & PRODUCTION, INC.

PROJECT: LOVINGTON PADDOCK UNIT-PIT, ATB 1-1

LOCATION: LEA COUNTY, NEW MEXICO

WELL NO.



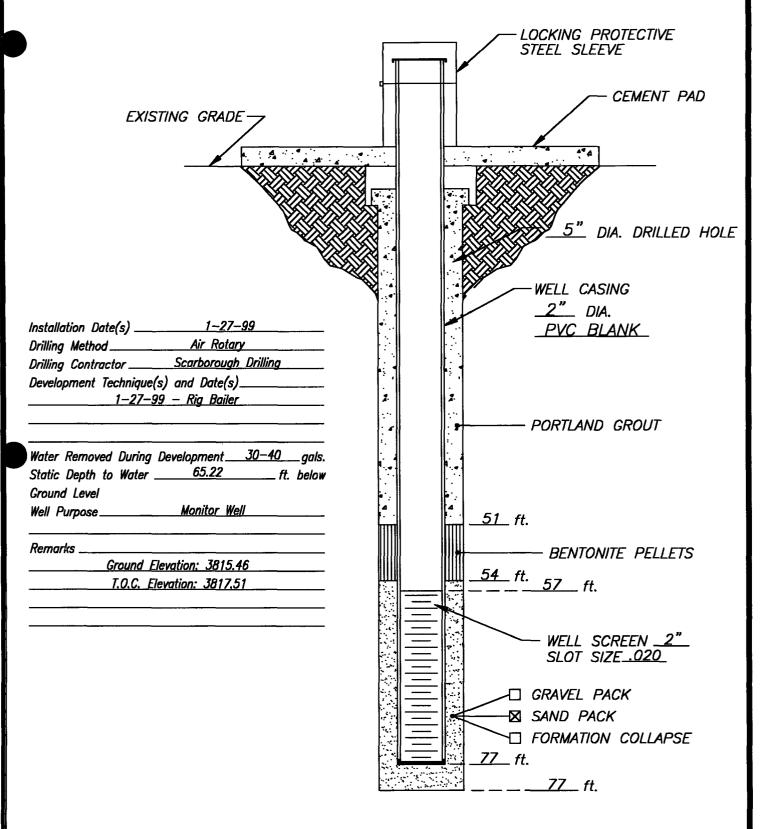
Highlander Environmental

CLIENT: TITAN EXPLORATION & PRODUCTION, INC.

PROJECT: LOVINGTON PADDOCK UNIT-PIT, ATB 1-1

LOCATION: LEA COUNTY, NEW MEXICO

WELL NO.



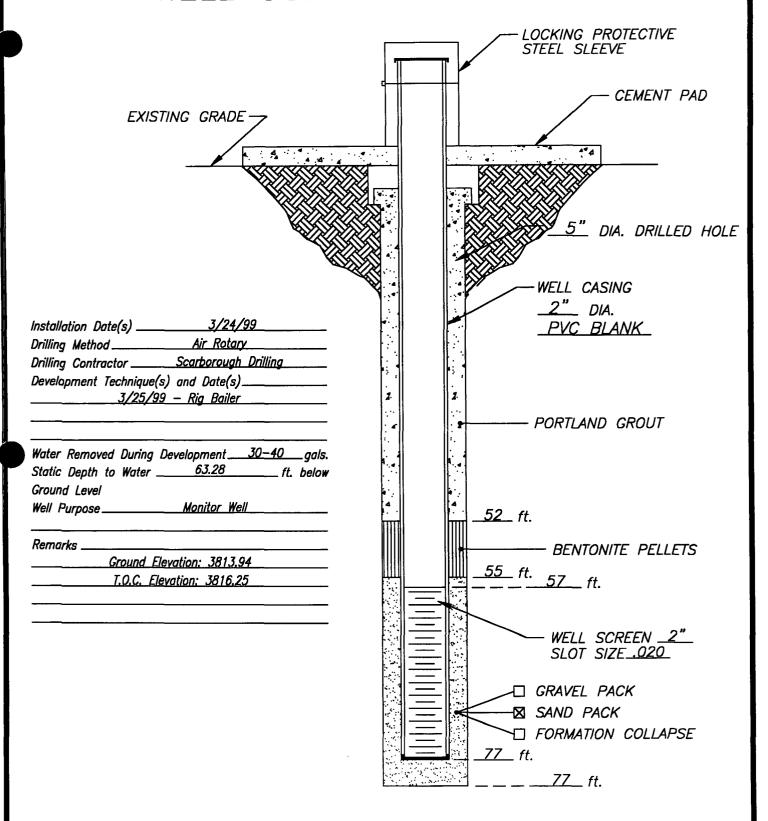
PATE: 1/28/99

Highlander Environmental CLIENT: TITAN EXPLORATION & PRODUCTION, INC.

PROJECT: LOVINGTON PADDOCK UNIT-PIT, ATB 1-1

LOCATION: LEA COUNTY, NEW MEXICO

WELL NO.



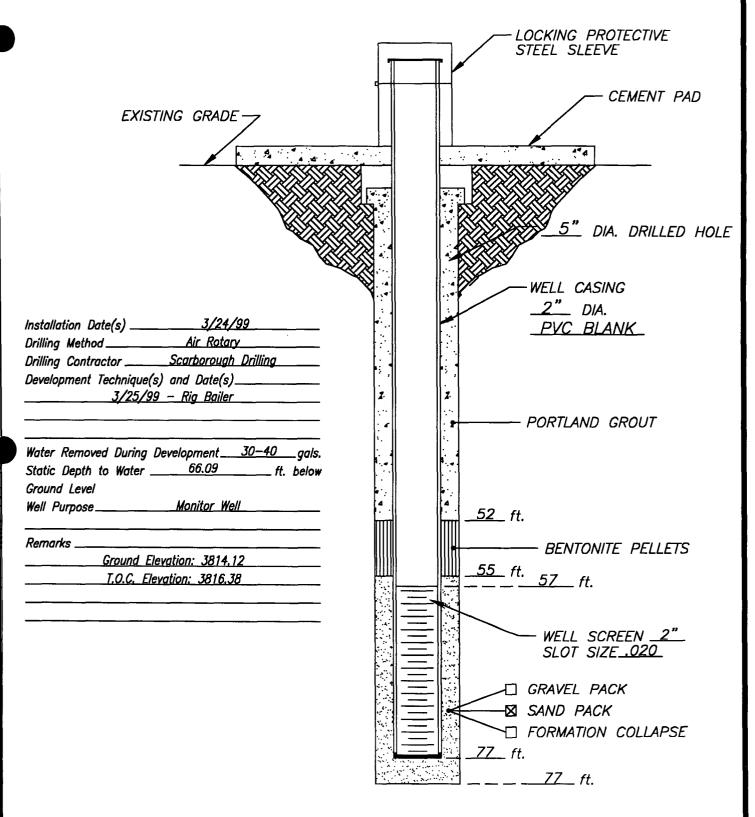
Highlander Environmental

CLIENT: TITAN EXPLORATION & PRODUCTION, INC.

PROJECT: LOVINGTON PADDOCK UNIT-PIT, ATB 1-1

LOCATION: LEA COUNTY, NEW MEXICO

WELL NO.



DATE: 3/24/99

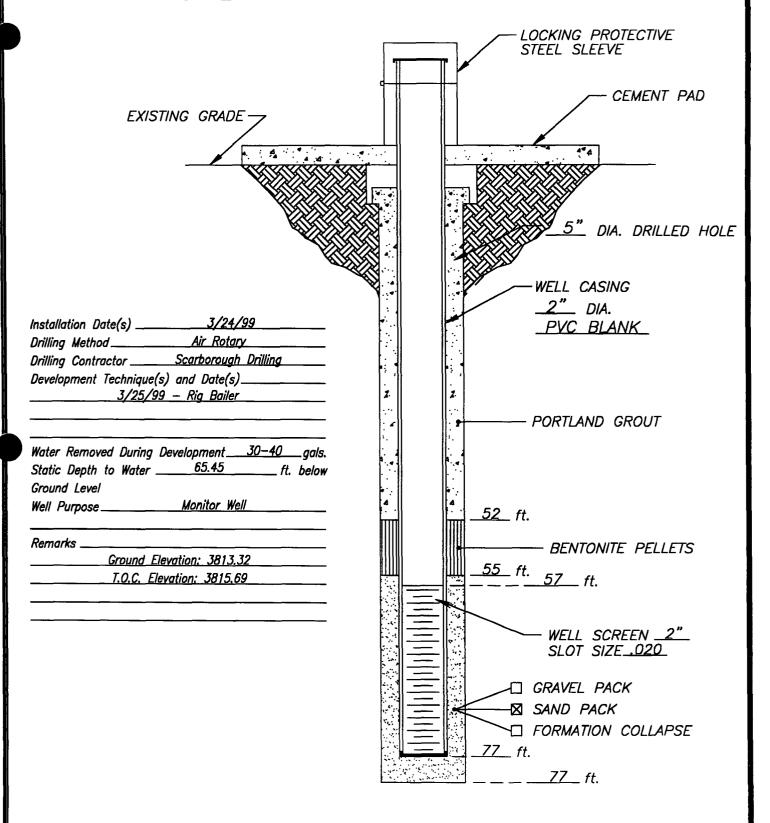
Highlander Environmental CLIENT: TITAN EXPLORATION & PRODUCTION, INC.

PROJECT: LOVINGTON PADDOCK UNIT-PIT, ATB 1-1

LOCATION: LEA COUNTY, NEW MEXICO

WELL NO.

8-WM



DATE: 3/24/99

Highlander Environmental CLIENT: TITAN EXPLORATION & PRODUCTION, INC.

PROJECT: LOVINGTON PADDOCK UNIT-PIT, ATB 1-1

LOCATION: LEA COUNTY, NEW MEXICO

WELL NO.

APPENDIX E

Trace Analysis, Inc. Report

TRACEANALYSIS, INC. MILLIN

	6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Suite A		Lubbock, Texas 79424 800 • 378 • 1296 El Paso, Texas 79922 888 • 588 • 3443 E-Mail: lab@traceanalysis.com	296 806 • 794 • 1296 443 915 • 585 • 3443 com	Į.	FAX 806 • 794 • 1298 FAX 915 • 585 • 4944		
June 29, 1998 Receiving Date: 06 Sample Type: Soil Project No: 1085/1(Project Location: P.	June 29, 1998 Receiving Date: 06/20/98 Sample Type: Soil Project No: 1085/1086 Project Location: Paddock Pit/ W. Lovington Pit	ANA HIG Atte 1910 Midh	ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL CORP. Attention: Tim Reed 1910 N. Big Spring Street Midland, TX 79705	ULTS FOR //RONMENT d Street	AL CORP.	Prep Da Analysis Samplin Sample Sample Project N	Prep Date: 06/22/98 Analysis Date: 06/24/98 Sampling Date: 06/18/98 Sample Condition: Intact & Cool Sample Received by: VW Project Name: Titan	3 88 11 & Cool N
			Ĕ	TOTAL METALS (mg/kg)	_S (mg/kg)			
TA#	Field Code	As	Se Cd	ပ်	Pb	Ag	Ba	ĝ
T100765	W. Lovington Pit @ ATB 33-1						12	<0.25
T100766 ICV	Lovington Paddock Pit @ ATB 1-1	×10 0.99	<10 <2.0 1.0 1.0	,	41. O. L.	<2.0	240 0.97	<0.25 5_0
CCV							1.0	5.0
Reporting Limit	Limit	10	10 2.0	5.0	10	2.0	10	0.25

Hg: HC CHEMIST: As, Se, Cd, Cr, Pb, Ag, Ba, Sb: RR METHODS: EPA SW 846-3015, 6010B, 7470.

TOTAL METALS SPIKE: 200 mg/kg As, Se, Cd, Cr, Pb, Ba, Sb; 5.0 mg/kg Ag; 2.5 mg/kg Hg. TOTAL METALS CV: 1.0 mg/L As, Se, Cd, Cr, Pb, Ba, Sb; 0.20 mg/L Ag; 5.0 mg/L Hg.

92 100

2 8 8 8

2 84 95

7 110 100

ა <u>ნ</u> ნ

2 4 6

4 8 9

2 3 3 3 3

RPD % Extraction Accuracy % Instrument Accuracy

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL CORP.

Attention: Tim Reed 1910 N. Big Spring Street Midland, TX 79705

June 26, 1998

Receiving Date: 06/20/98 Sample Type: Soil Project No: 1085/1086

Project Location: Paddock Pit/W. Lovington Pit

Prep Date: 06/24/98 Analysis Date: 06/24/98 Sampling Date: 06/18/98 Sample Condition: Intact Sample Received by: VW Project Name: Titan

TA#	FIELD CODE	TVHC (mg/kg)	
T100765	W. Lovington Pit @ ATB 33-1	7,136	
T100766	Lovington Paddock Pit @ ATB 1-1	7,390	
QC		0.950	
eporting Limit Method Blank		100 <100	
RPD % Instrument Accuracy		0 95	

METHODS: EPA SW 846-8015 Modified.

CHEMIST: JG

TVHC QC: 1.0 mg/kg TVHC.

6-26-58

Director, Dr. Blair Leftwich

Lubbock, Texas 79424

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL CORP.

Attention: Tim Reed 1910 N. Big Spring Street Midland, TX 79705

PAGE 1 of 2

June 29, 1998

Receiving Date: 06/20/98 Sample Type: Soil Project No: 1085/1086

Project Location: Paddock Pit/W. Lovington Pit

Prep Date: 06/22/98 Analysis Date: 06/22/98 Sampling Date: 06/18/98 Sample Condition: Intact & Cool

Sample Received by: VW Project Name: Titan

TA#: T100766

FIELD CODE: Lovington Paddock Pit @ ATB 1-1

FIELD CODE: Lovington Paddoc	Reporting	Concentration	QC	RPD	EA	IΑ
8260 Compounds	Limit	(ug/kg)				
Dichlorodifluoromethane	10,000	ND				
Chloromethane	10,000	ND				
Vinyl chloride	20,000	ND	98			98
Bromomethane	50,000	ND				
Chloroethane	10,000	ND				
Trichlorofluoromethane	10,000	ND				
1,1-Dichloroethene	10,000	ND	113	1	89	113
Methylene chloride	50,000	110,000				
trans-1,2-Dichloroethene	10,000	ND				
1,1-Dichloroethane	10,000	ND				
cis-1,2-Dichloroethene	10,000	ND				
Chloroform	10,000	ND	114			114
2,2-Dichloropropane	10,000	ND				
Bromochloromethane	10,000	ND				
1,2-Dichloroethane	10,000	ND				
1,1,1-Trichloroethane	10,000	ND				
Carbon Tetrachloride	10,000	ND				
1,1-Dichloropropene	10,000	ND				
Benzene	10,000	56,000		0	99	
1,2-Dichloropropane	10,000	ND	106			106
Trichloroethene	10,000	ND		1	105	
Dibromomethane	10,000	ND				
Bromodichloromethane	10,000	ND				
cis-1,3-Dichloropropene	10,000	ND				
trans-1,3-Dichloropropene	10,000	ND				
Toluene	10,000	130,000	106	0	88	106
1,1,2-Trichloroethane	10,000	ND				
1,3-Dichloropropane	10,000	ND				
MTBE	10,000	ND				

HIGHLANDER SERVICES

Project No: 1085/1086 Client Name: Titan

roject Name: Paddock Pit/W. Lovington Pit

PAGE 2 of 2

TA#: T100766

Field Code: Lovington Paddock Pit @ ATB 1-1

	Reporting	Concentration	QC	RPD	EΑ	ľΑ
8260 Compounds	Limit	(ug/kg)				
Dibromochloromethane	10,000	ND				
1,2-Dibromoethane	10,000	ND				
Tetrachloroethene	10,000	ND				
Chlorobenzene	10,000	ND	109	2	100	109
1,1,1,2-Tertachloroethane	10,000	ND				
Ethylbenzene	10,000	160,000	115			115
m & p-Xylene	10,000	100,000				
Bromoform	10,000	ND				
Styrene	10,000	ND				
o-Xylene	10,000	42,000				
1,1,2,2-Tetrachloroethane	10,000	ND				
1,2,3-Trichloropropane	10,000	ND				
Isopropylbenzene	10,000	26,000				
Bromobenzene	10,000	ND				
2-Chlorotoluene	10,000	ND				
n-Propyibenzene	10,000	43,000				
4-Chlorotoluene	10,000	ND				
1,3,5-Trimethylbenzene	10,000	15,000				
tert-Butylbenzene	10,000	ND				
,2,4-Trimethylbenzene	10,000	55,000				
1,4-Dichlorobenzene	20,000	ND				
sec-Butylbenzene	10,000	12,000				
1,3-Dichlorobenzene	20,000	ND				
4-Isopropyltoluene	10,000	ND				
1,2-Dichlorobenzene	20,000	ND				
n-Butylbenzene	10,000	22,000				
1,2-Dibromo-3-chloropropane	50,000	ND				
1,2,3-Trichlorobenzene	50,000	ND				
Naphthalene	10,000	22,000				
1,2,4-Trichlorobenzene	50,000	ND				
Hexachlorobutadiene	50,000	ND				
	% Recovery					

ND = Not Detected

Toluene-d8

Dibromofluoromethane

4-Bromofluorobenzene

Methods: EPA SW 846-5030, 8260. CHEMIST: AG

96

100

103

6-29-98

Director, Dr. Blair Leftwich

Lubbock, Texas 79424

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL

Attention: Tim Reed 1910 N. Big Spring Street

Midland, TX 79705

Field Code: Lovington Paddock Pit @ ATB 1-1

June 30, 1998

Receiving Date: 06/20/98

Sampling Date: 06/18/98

Sample Type: Soil

TA # T100766

Sample Condition: Intact Sample Received by: BL

Project Location: Levelland Unit

Central Battery

Project Name: Chemical Dock Extraction Date: 06/22/98

	Reporting	Concentration			Analysis Date: 06/	25/98
EPA 8270	Limit*	(mg/kg)	QC	RPD	%EA	%l.A
N-Nitrosodimethylamine	500	ND				
2-Picoline	500	ND				
Methyl methanesulfonate	500	ND				
Ethyl methanesulfonate	500	ND				
Phenol	500	ND	81	3	75	101
Aniline	2500	ND				<u> </u>
bis(2-Chloroethyl)ether	2500	ND .				
2-Chlorophenol	2500	ND		2	72	
1,3-Dichlorobenzene	500	ND				
4-Dichlorobenzene	500	ND	80	1	78	100
Benzyl alcohol	2500	ND				
1,2-Dichlorobenzene	500	ND				
2-Methylphenol	500	ND		<u> </u>		
bis(2-chloroisopropyl)ether	2500	ND				
4-Methylphenol/3-Methylphenol	500	ND				
Acetophenone	2500	ND				
n-Nitrosodi-n-propylamine	500	ND		2	84	
Hexachloroethane	500	ND				
Nitrobenzene	500	ND				
N-Nitrosopiperidine	2500	ND				
Isophorone	2500	ND				
2-Nitrophenol	2500	ND	86			100
2,4-Dimethylphenol	2500	ND				
bis(2-Chloroethoxy)methane	500	ND				
Benzoic acid	5000	ND				
2,4-Dichlorophenol	2500	ND	70			83
,2,4-Trichlorobenzene	500	ND		3	79	
a,a-Dimethylphenethylamine	5000	ND				
 Naphthalene	500	ND				

HIGHLANDER ENVIRONMENTAL SERVICES

Project Location: Paddock Pit/W. Lovington Pit

Project Name: Titan

T100766

LD CODE: Lovington Paddock Pit @ ATB 1-1

	Reporting	Concentration				
EPA 8270	Limit*	(mg/kg)	QC	RPD	%EA	%IA
4-Chloroaniline	2500	ND ND				
2,6-Dichlorophenol	2500	ND				
Hexachlorobutadiene	500	ND	82			103
N-Nitroso-di-n-butylamine	2500	ND				
4-Chloro-3-methylphenol	2500	ND _	88	3	90	110
2-Methylnaphthalene	500	ND	<u> </u>			
1,2,4,5-Tetrachlorobenzene	500	ND ND				
Hexachlorocyclopentadiene	500	ND				
2,4,6-Trichlorophenol	2500	ND	84			105
2,4,5-Trichlorophenol	2500	ND				
2-Chloronaphthalene	500	ND				
1-Chloronaphthalene	500	ND				
2-Nitroaniline	2500	ND				
Dimethylphthalate	500	ND				
Acenaphthylene	500	ND				
2,6-Dinitrotoluene	500	ND		,		
3-Nitroaniline	2500	ND				
aphthene	500	ND	78	_ 2 _	82	98
2,4-Dinitrophenol	2500	ND				
Dibenzofuran	2500	ND				
Pentachlorobenzene	500	ND				
4-Nitrophenol	2500	ND			134	
1-Napthylamine	2500	ND				
2,4-Dinitrotoluene	500	ND		3	89	
2-Napthylamine	2500	ND				
2,3,4,6-Tetrachlorophenol	2500	ND				
Fluorene	500	ND				
 Diethylphthalate	500	ND				
4-Chlorophenyl-phenylether	500	ND				
4-Nitroaniline	2500	ND				
4,6-Dinitro-2-methylphenol	2500	ND				
n-Nitrosodiphenylamine & Diphenylamine	500	ND	76	1		95
Diphenylhydrazine	2500	ND				

HIGHLANDER SERVICES

Project Location: Paddock Pit /W. Lovinton Pit

Project Name: Titan



TA #100766

FIELD CODE: Lovington Paddock Pit @ ATB 1-1

	Reporting	Concentration				
EPA 8270	Limit*	(mg/kg)	QC	RPD	%EA	%IA
4-Bromophenyl-phenylether	500	ND				
Phenacetin	2500	ND				
Hexachlorobenzene	500	ND				
4-Aminobiphenyl	2500	ND				
Pentachlorophenol	2500	ND	95	21**	60	119
Pentachloronitrobenzene	2500	ND				
Pronamide	500	ND				
Phenanthrene	500	ND				
Anthracene	.500	ND				
Di-n-butylphthalate	500	ND				
Fluoranthene	500	ND	76			95
Benzidine	5000	ND				
Perene	500	ND ·		1	83	
p-Dimethylaminoazobenzene	500	ND				
Butylbenzylphthalate	500	ND				
 Benzo[a]anthracene	500	ND				
3,3-Dichlorobenzidine	2500	ND				
Chrysene	500	ND				
bis(2-Ethylhexyl)phthalate	500	ND				
Di-n-octlphthalate	500	ND	73			91
 Benzo[b]fluoranthene	500	ND				
7,12-Dimethylbenz(a)anthracene	500	ND				
 Benzo[k]fluoranthene	500	ND				
 Benzo[a]pyrene	500	ND	79			99
3-Methylcholanthrene	500	ND				
Dibenzo(a,j)acridine	500	ND				
Indeno[1,2,3-cd]pyrene	500	ND			 	
Dibenz[a,h]anthracene	500	ND				
Benzo[g,h,i]perylene	500	ND		 	 	
itrosodimethylamine	500	ND	1	1	1	1

Page 3 of 4

Project Location: Paddock Pit/W. Lovington Pit

Project Name: Titan

A #T100766

Field Code: Lovington Paddock Pit @ ATB 1-1

SURROGATES	% RECOVERY
2-Fluorophenol SURR	69
Phenol-d6 SURR	2***
Nitrobenzene-d5 SURR	78
2-Fluorobiphenyl SURR	99
2,4,6-Tribromophenol SURR	0***
Terphenyl-d14 SURR	118

*NOTE: Elevated reporting limits due to sample matrix interference.

**NOTE: RPD out of control limits <20 Pentachlorophenol
***NOTE: Surrogate out of control limits due to matrix

ND = NOT DETECTED

METHODS: EPA SW 8270, 3550.

CHEMIST: MB

13

Director, Dr. Blair Leftwich

6-30-98

Lubbock, Texas 79424

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ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL CORP.

Attention: Tim Reed 1910 N. Big Spring Street Midland, TX 79705

PAGE 1 of 2

June 29, 1998

Receiving Date: 06/20/98 Sample Type: Soil Project No: 1085/1086

Project Location: Paddock Pit/W. Lovington Pit

Prep Date: 06/22/98 Analysis Date: 06/22/98 Sampling Date: 06/18/98

Sample Condition: Intact & Cool Sample Received by: VW

Project Name: Titan

TA #: T100765

FIELD CODE: W. Lovington Pit @ ATB 33-1

8260 Compounds	Reporting Limit	Concentration (ug/kg)	QC	RPD	EA	IA
Dichlorodifluoromethane	10,000	ND				
Chloromethane	10,000	ND				
Vinyl chloride	20,000	ND	98			98
Bromomethane	50,000	ND				
Chloroethane	10,000	ND				
Trichlorofluoromethane	10,000	ND				
1,1-Dichloroethene	10,000	ND	113	1	89	113
Methylene chloride	50,000	ND				
trans-1,2-Dichloroethene	10,000	ND				
1,1-Dichloroethane	10,000	ND				
cis-1,2-Dichloroethene	10,000	ND				
Chloroform	10,000	ND	114			114
2,2-Dichloropropane	10,000	ND				
Bromochloromethane	10,000	ND				
1,2-Dichloroethane	10,000	ND				
1,1,1-Trichloroethane	10,000	ND				
Carbon Tetrachloride	10,000	ND				
1,1-Dichloropropene	10,000	ND				
Benzene	10,000	48,000		0	99	
1,2-Dichloropropane	10,000	ND	106			106
Trichloroethene	10,000	ND		1	105	
Dibromomethane	10,000	ND				
Bromodichloromethane	10,000	ND				
cis-1,3-Dichloropropene	10,000	ND				
trans-1,3-Dichloropropene	10,000	ND				
Toluene	10,000	220,000	106	0	88	106
1,1,2-Trichloroethane	10,000	ND				
1,3-Dichloropropane	10,000	ND				
MTBE	10,000	ND				

HIGHLANDER SERVICES

Project No: 1085/1086 Client Name: Titan

oject Name: Paddock Pit/W. Lovington Pit

PAGE 2 of 2

TA #: T100765

Field Code: W. Lovington Pit @ ATB 33-1

8260 Compounds	Reporting Limit	Concentration	QC	RPD	EA	IA
0200 Compounds	LITTE	(ug/kg)				
Dibromochloromethane	10,000	ND				
1,2-Dibromoethane	10,000	ND				
Tetrachloroethene	10,000	ND				
Chlorobenzene	10,000	ND	109	2	100	109
1,1,1,2-Tertachloroethane	10,000	ND		-		
Ethylbenzene	10,000	220,000	115			115
m & p-Xylene	10,000	170,000				
Bromoform	10,000	ND				
Styrene	10,000	ND				
o-Xylene	10,000	77,000				
1,1,2,2-Tetrachloroethane	10,000	ND				
1,2,3-Trichloropropane	10,000	ND				
Isopropylbenzene	10,000	34,000				
Bromobenzene	10,000	ND				
2-Chlorotoluene	10,000	ND				
n-Propylbenzene	10,000	55,000				
4-Chlorotoluene	10,000	ND				
1,3,5-Trimethylbenzene	10,000	25,000				
tert-Butylbenzene	10,000	ND				
2,4-Trimethylbenzene	10,000	95,000				
1,4-Dichlorobenzene	20,000	ND				
sec-Butylbenzene	10,000	20,000				
1,3-Dichlorobenzene	20,000	ND				
4-Isopropyltoluene	10,000	ND				
1,2-Dichlorobenzene	20,000	ND				
n-Butylbenzene	10,000	31,000				
1,2-Dibromo-3-chloropropane	50,000	ND				
1,2,3-Trichlorobenzene	50,000	ND				
Naphthalene	10,000	49,000				
1,2,4-Trichlorobenzene Hexachlorobutadiene	50,000 50,000	ND ND				
Texacillorobutadiene	30,000	ND				

% Recovery

Dibromofluoromethane	92
Toluene-d8	100
4-Bromofluorobenzene	102

ND = Not Detected

Methods: EPA SW 846-5030, 8260. CHEMIST: AG

6-29-98

Director, Dr. Blair Leftwich

Lubbock, Texas 79424

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El Paso, Texas 79922 E-Mail: lab@traceanalysis.com FAX 915 • 585 • 4944

June 30, 1998

Receiving Date: 06/20/98

ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL

Sample Condition: Intact Sample Received by: BL

Sample Type: Soil

Attention: Tim Reed

Project Location: Levelland Unit

Sampling Date: 06/18/98

1910 N. Big Spring Street

Central Battery

TA # T100765

Midland, TX 79705

Project Name: Chemical Dock

Field Code: W. Lovington Pit @ ATB 33-1

Extraction Date: 06/22/98

	Reporting	Concentration			Analysis Date: 06/2	25/98
EPA 8270	Limit*	(mg/kg)	QC	RPD	%EA	%IA
N-Nitrosodimethylamine	250	ND	<u>]</u>			
2-Picoline	250	ND				
Methyl methanesulfonate	250	ND				
Ethyl methanesulfonate	250	ND				
Phenol	250	ND	81	3	75	101
Aniline	1250	ND				
ois(2-Chloroethyl)ether	1250	ND				
2-Chlorophenol	1250	ND		2	72	
1,3-Dichlorobenzene	250	ND				
,4-Dichlorobenzene	250	ND	80	1	78	100
, Benzyl alcohol	1250	ND				
1,2-Dichlorobenzene	250	ND				
2-Methylphenol	250	ND		<u> </u>		
bis(2-chloroisopropyl)ether	1250	ND				
4-Methylphenol/3-Methylphenol	250	ND				
Acetophenone	1250	ND				
n-Nitrosodi-n-propylamine	250	ND		2	84	
Hexachloroethane	250	ND				
Nitrobenzene	250	ND				
N-Nitrosopiperidine	1250	ND				
Isophorone	1250	ND				
2-Nitrophenol	1250	ND	86			100
2,4-Dimethylphenol	1250	ND				
bis(2-Chloroethoxy)methane	250	ND				
Benzoic acid	2500	ND				
2,4-Dichlorophenol	1250	ND	70			88
1,2,4-Trichlorobenzene	250	ND		3	79	
a,a-Dimethylphenethylamine	2500	ND				
Naphthalene	250	ND			1	

HIGHLANDER ENVIRONMENTAL SERVICES

Project Location: Paddock Pit/W. Lovington Pit

Project Name: Titan



T100765 FLD CODE: W. Lovington Pit @ ATB 33-1

Reporting	Concentration				
Limit*	(mg/kg)	QC	RPD	%EA	%IA
1250	ND				
1250	ND				
250	ND	82			103
1250	ND				
1250	ND	88	3	90	110
250	260/390				
250	ND				
250	ND				
1250	ND	84			105
1250	ND				
250	ND				
250	ND				
1250	ND				
250	ND				
250	ND				
250	ND				
1250	ND				
250	ND	78	2	82	98
	· · · · · · · · · · · · · · · · · · ·				
12550					
250	ND				
1250	ND			134	
1250	ND				
250	ND		3	89	
1250					
1250	ND				
250		1			
			<u> </u>		
			1		
		76		 	95
				-	
	Limit* 1250 1250 250 1250 250 1250 250	Limit* (mg/kg) 1250 ND 1250 ND 250 ND 1250 ND 1250 ND 250 260/390 250 ND 250 ND 1250 ND 250 ND 1250 ND 1250	Limit* (mg/kg) QC 1250 ND 1250 ND 1250 ND 82 1250 ND 82 1250 ND 88 250 260/390 250 ND 250 ND 250 ND 1250 ND 84 1250 ND 1250	Limit*	Limit*

HIGHLANDER SERVICES

Project Location: Paddock Pit /W. Lovinton Pit

Project Name: Titan



FIELD CODE: W. Lovington Pit @ ATB 33-1

	Reporting	Concentration				
EPA 8270	Limit*	(mg/kg)	QC	RPD	%EA	%IA
4-Bromophenyl-phenylether	250	ND				
Phenacetin	1250	ND				
Hexachlorobenzene	250	ND				
4-Aminobiphenyl	1250	ND				
Pentachlorophenol	1250	ND	95	21**	60	119
Pentachloronitrobenzene	1250	ND				
Pronamide	250	ND				
Phenanthrene	250	ND				
Anthracene	250	ND				
Di-n-butylphthalate	250	ND				
Fluoranthene	250	ND	76			95
Benzidine	2500	ND				
Prene	250	ND		1	83	
p-Dimethylaminoazobenzene	250	ND				_
Butylbenzylphthalate	250	ND				
Benzo[a]anthracene	250	ND				
3,3-Dichlorobenzidine	1250	ND				
Chrysene	250	ND				
bis(2-Ethylhexyl)phthalate	250	ND				
Di-n-octiphthalate	250	ND	73			91
Benzo[b]fluoranthene	250	ND				
7,12-Dimethylbenz(a)anthracene	250	ND				
Benzo[k]fluoranthene	250	ND				
Benzo[a]pyrene	250	ND	79			99
3-Methylcholanthrene	250	ND				•
Dibenzo(a,j)acridine	250	ND				
Indeno[1,2,3-cd]pyrene	250	ND				
Dibenz[a,h]anthracene	250	ND				
Benzo(g,h,i)perylene	250	ND				
itrosodimethylamine	250	ND				

Page 3 of 4

Project Location: Paddock Pit/W. Lovington Pit

Project Name: Titan

#T100765

Field Code: W. Lovington Pit @ ATB 33-1

SURROGATES	% RECOVERY
2-Fluorophenol SURR	51
Phenol-d6 SURR	7***
Nitrobenzene-d5 SURR	87
2-Fluorobiphenyl SURR	103
2,4,6-Tribromophenol SURR	52
Terphenyl-d14 SURR	112

*NOTE: Elevated reporting limits due to sample matrix interference.

**NOTE: RPD out of control limits <20 Pentachlorophenol

***NOTE: Surrogate out of control limits due to matrix

ND = NOT DETECTED

METHODS: EPA SW 8270, 3550.

CHEMIST: MB

RZ

Director, Dr. Blair Leftwich

6-30-98

354

PAGE: OF:	(Circle or Specify Method No.)	9S 8H Pd 33	250 624 260 624 28 C9 C	MTBE 8020/602 PLEX 8020/602 MTBE 8020/608 MTBE 8020/608 MTBE 8020/608 MTBE 8020/608	·\$	· \(\times \)			SAMPLED Pf: (Print, d Sign) Date:	BY: (Circle) BUS AI	HIGHLANDER CONTACT PERSON: Results by:	Time Lead Authorized:	uts by 6-26-98 togs HTUHCS (4-1)	
Analysis Request and Chain of Custody Record	T) II KO GIZITKI	HIGHLANDEK ENVIKONMENTAL COKF. 1910 N. Big Spring St. Midland, Texas 79705 Fax (915) 682-4559	SITE MANAGER.	PROJECT NAME:	K W. Lovinston Pit @ ATS 33-1	X X			6.19.90 RECEPTED BY Sonaye	(Signature) Time: 3:10 pm.	RELINQUISHED BY: (Signature) Date: Date: Time: Time: RECEIVED BY: (Signature) Time: Time: Time: RECEIVED BY: (Signature)	STATE: 2IP: L	IEN RECEIVED: MATRIX: W-Water A-Air SD-Solid S-Soil (SL-Sludge) 0-Other	

100765-

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ANALYTICAL Markes DE 1887 BOR COM

HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

July 13, 1998

Receiving Date: 07/03/98 Sample Type: Soil Project No: 1085/1086

Project Location: Lea County, NM

Prep Date: 07/10/98
Analysis Date: 07/10/98
Sampling Date: 06/30/98
Sample Condition: Intact & Cool
Sample Received by: VW

Client Name: Titan Exploration, Inc.
Project Name: Titan - Lovington
Padlock & West Lovington

Lea County

TA#	Field Code	TVHC (mg/kg)	
T101932	LPU BH-1 (20-21')	12.1	
T101933	LPU BH-1 (30-31')	12.0	
T101935	LPU BH-2 (15-16')	<5.00	
T101937	LPU BH-2 (30-31')	<5.00	
T101939	LPU BH-3 (15-16')	<5.00	
T101941	LPU BH-3 (30-31')	<5.00	
T101943	LPU BH-4 (15-16')	<5.00	
T101944	LPU BH-4 (30-31')	<5.00	
T101945	WLU BH-1 (10-11')	<5.00	
T101947	WLU BH-1 (30-31')	<5.00	
T101948	WLU BH-2 (10-11')	<5.00	
T101950	WLU BH-2 (30-31')	<5.00	
T101951	WLU BH-3 (10-11')	<5.00	
T101953	WLU BH-3 (30-31')	<5.00	
T101955	WLU BH-4 (10-11')	<5.00	
T101957	WLU BH-4 (30-31')	<5.00	
QC	Quality Control	0.880	
METHOD BLANK		<5.00	
REPORTING LIMI	IT	5.00	
RPD		1	
% Extraction Accu	ıracy	92	
% Instrument Accu		88	
METHODO EDA	0144.0.40, 5000, \$4-3:5-4.0045		

METHODS: EPA SW 846-5030, Modified 8015.

CHEMIST: JG

TVHC SPIKE: 1.000 mg/kg TVHC. TVHC QC: 1.000 mg/L TVHC.

112

7-17-98

Director, Dr. Blair Leftwich

Lubbock, Texas 79424

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR HIGHLANDER SERVICES CORP.

Attention: Ike Tavarez 1910 N. Big Spring Street Midland, TX 79705

July 10, 1998

Receiving Date: 07/03/98 Sample Type: Soil

Project No: 1085/1086

Project Location: Lea County, NM

Prep Date: 07/07/98 Analysis Date: 07/07/98 Sampling Date: 06/30/98 Sample Condition: Intact & Cool Sample Received by: VW

Client Name: Titan Exploration, Inc. Project Name: Titan - Lovington Padlock & West Lovington

Lea County

TA#	Field Code	DRO (mg/kg)	
T101932	LPU BH-1 (20-21')	<50	-
T101933	LPU BH-1 (30-31')	<50	
T101935	LPU BH-2 (15-16')	<50	
T101937	LPU BH-2 (30-31')	<50	
T101939	LPU BH-3 (15-16')	<50	
T101941	LPU BH-3 (30-31')	<50	
T101943	LPU BH-4 (15-16')	<50	
T101944	LPU BH-4 (30-31')	<50	
T101945	WLU BH-1 (10-11')	<50	
T101947	WLU BH-1 (30-31')	<50	
T101948	WLU BH-2 (10-11')	<50	
T101955	WLU BH-4 (10-11')	<50	
T101957	WLU BH-4 (30-31')	<50	
QC	Quality Control	224	
REPORTING LIMIT		50	
RPD		24	
% Extraction Accuracy		85	
% Insturment Accuracy		90	

METHODS: EPA SW 846-8015B, 8011.

CHEMIST: MS

DRO SPIKE: 250 mg/kg DRO. DRO QC: 250 mg/L DRO.

7-10-98

Director, Dr. Blair Leftwich

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FAX 915 • 585 • 4944

ANALYTICAL RESULTS FOR HIGHLANDER SERVICES CORP.

Attention: Ike Tavarez 1910 N. Big Spring Street Midland, TX 79705

July 10, 1998

Receiving Date: 07/03/98 Sample Type: Soil Project No: 1085/1086

Project Location: Lea County, NM

Prep Date: 07/07/98 Analysis Date: 07/07/98 Sampling Date: 06/30/98 Sample Condition: Intact & Cool Sample Received by: VW

Client Name: Titan Exploration, Inc Project Name: Titan - Lovington Padlock & West Lovington

Lea County

TA#	Field Code	DRO (mg/kg)	
T101950	WLU BH-2 (30-31)	<50	
T101951	WLU BH-3 (10-11)	<50	
T101953	WLU BH-3 (30-31)	<50	
QC	Quality Control	218	
REPORTING LIMIT		50	
RPD		24 83	
% Extraction Accuracy% Insturment Accuracy		87	

METHODS: EPA SW 846-8015B, 8011.

CHEMIST: MS

DRO SPIKE: 250 mg/kg DRO. DRO QC: 250 mg/L DRO.

PS

Director, Dr. Blair Leftwich

7-10-98

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CEANAL	
TRAC	

	6701 Aberdeen Avenue, ' 4725 Ripley Avenue, Suit	Sui e /	te 9 Lubbock, Texas 79424 800•378•1296 El Paso, Texas 79922 888•588•3443 E-Mail: lab@traceanalysis.com ANALYTICAL RESULTS FOR	800 • 378 • 1296 888 • 588 • 3443 aceanalysis.com	806 • 794 • 1296 915 • 585 • 3443	FAX 806 • 794 • 1298 FAX 915 • 585 • 4944	998 344	
Date: Jul 13, 1998 Date Rec: 7/3/98 Project: 1085-1086 Proj Name: Paddock Pi	13, 1998 7/3/98 1085-1086 Paddock Pit /W. Lovington	- н	ander Enviror on Ike Tavarez Big Spirng St 1		al Services L S 79705 S	ab Rec amplin ample ample	# : 6/; on: d By:	9807000072 29/98 - 6/30/98 Intact and Cool : VW
н Н 1-		MATRIX	~	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	M,P,O XYLENE (mg/Kg)	TOTAL BTEX (mg/Kg)
101933 LPU BH-1 (20-21) 101935 LPU BH-2 (15-16') 101937 LPU BH-2 (30-31') 101941 LPU BH-3 (15-16') 101943 LPU BH-4 (15-16') 101944 LPU BH-4 (15-16') 101945 WLU BH-1 (10-11) 101947 WLU BH-1 (30-31') Method Blank Reporting Limit QC	31') 16') 16') 31') 11) 31') 31)	Soil Soil Soil Soil Soil Soil		 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 60.050 	 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 	 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 <	 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 < 0.050 <	0.0500.0500.0500.0500.0500.0500.0500.050
<pre>% Extraction Accuracy % Instrument Accuracy</pre>				102 98	101 98	101 97	109	
TEST PREP METHOD		PREP DATE	ANALYSIS METHOD	ANAI	ANALYSIS CE COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/Kg)
BTEX EPA 5	5030 7/10	0/98	EPA 8021B	7/1	7/10/98	JG	0.100 ea	5 ea

7-13-58

Director, Dr. Blair Leftwich

10, 1998 7/3/98 1085-1086 Paddock Pit /w. Lovington B N/A Ld Code Ld Code EH-2 (10-11) EH-2 (30-31) EH-3 (10-11') EH-4 (10-11') EH-4 (10-11')	so, Texas 7922 888 • 588 • 3443 E-Mail: lab@traceanalysis.com ICAL RESULTS FOR Inder Environment; on Ike Tavarez Big Spirng St. TX (mg/kg) <0.050 <0.050 <0.050 <0.050 <0.050	TOLUENE (mg/kg) (0.050 (0.050 (0.050 (0.050 (0.050 (0.050 (0.050	FAX 915 • 585 • 4944 Lab Receiving # : 5 Sampling Date: 6/3 Sample Condition: Sample Received By: ETHYL- M, P, O BENZENE XYLENE (mg/Kg) (mg/Kg) <0.050 <0.050 <0.050 <0.050 <0.050 <0.050 <0.050 <0.050 <0.050 <0.050 <0.050 <0.050 <0.050 <0.050		: 9807000072 6/30/98 - 7/1/98 : Intact and Cool By: VW (O TOTAL INE BTEX (G) (mg/Kg) 0 <0.050 0 <0.050 0 <0.050 0 <0.050
Method Blank	<0.050	<0.050	<0.050	<0.050	
Reporting Limit QC	0.05	0.05	0.05	0.05	

RPD				m	4	m	7	
% Extractic	% Extraction Accuracy			102 1	101	101	109	
% Instrume	% Instrument Accuracy			86	86	97	104	
TEST	PREP METHOD	PREP	ANALYSIS METHOD	ANALYSIS		CHEMIST	QC: (mg/L)	SPIKE: (mg/Kg)
BTEX	EPA 5030	7/10/98	EPA 8021B	7/10/98		JG	0.100 ea	5 ea

Director, Dr. Blair Leftwich

Date

86-01-6

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HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

July 13, 1998

Receiving Date: 07/03/98 Sample Type: Soil Project No: 1085/1086

Project Location: Lea County, NM

Prep Date: 07/07/98
Analysis Date: 07/07/98
Sampling Date: 06/30/98
Sample Condition: Intact & Cool
Sample Received by: VW

Client Name: Titan Exploration, Inc.
Project Name: Titan - Lovington
Padlock & West Lovington

Lea County

TA#	Field Code	CHLORIDE (mg/kg)	
T101931 T101932 T101933 T101934 ICV CCV	LPU BH-1 (10-11') LPU BH-1 (20-21') LPU BH-1 (30-31') LPU BH-2 (10-11')	190 140 210 16 13	
REPORTING LIMIT		0.5	
RPD		1	

METHODS: EPA 300.0.

% Extraction Accuracy

% Instrument Accuracy

CHEMIST: JS

CHLORIDE SPIKE: 12.5 mg/kg CHLORIDE. CHLORIDE CV: 12.5 mg/L CHLORIDE.

13

7-13-58

93

95

Director, Dr. Blair Leftwich

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HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

July 13, 1998

Receiving Date: 07/03/98 Sample Type: Soil Project No: 1085/1086

Project Location: Lea County, NM

Prep Date: 07/07/98
Analysis Date: 07/07/98
Sampling Date: 06/30/98
Sample Condition: Intact & Cool
Sample Received by: VW

Client Name: Titan Exploration, Inc.
Project Name: Titan - Lovington
Padlock & West Lovington

Lea County

TA#	Field Code	CHLORIDE (mg/kg)	
T101935	LPU BH-2 (15-16')	14	
T101937	LPU BH-2 (30-31')	17	
T101938	LPU BH-3 (10-11')	8.9	
T101939	LPU BH-3 (15-16')	14	
T101941	LPU BH-3 (30-31')	12	
ICV	,	11	
CCV		11	
REPORTING LIM	ΙΤ	0.5	
RPD % Extraction Accu % Instrument Acc		0 94 95	

METHODS: EPA 300.0.

CHEMIST: JS

CHLORIDE SPIKE: 12.5 mg/kg CHLORIDE. CHLORIDE CV: 12.5 mg/L CHLORIDE.

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Date

7-13-98

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ANALYTICAM HESULTS FOR COM

HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

July 13, 1998

Receiving Date: 07/03/98 Sample Type: Soil Project No: 1085/1086

Project Location: Lea County, NM

Prep Date: 07/07/98
Analysis Date: 07/07/98
Sampling Date: 06/30/98
Sample Condition: Intact & Cool
Sample Received by: VW

Client Name: Titan Exploration, Inc.
Project Name: Titan - Lovington
Padlock & West Lovington

Lea County

TA#	Field Code	CHLORIDE (mg/kg)	
T101942	LPU BH-4 (10-11')	13	
T101943	LPU BH-4 (15-16')	10	
T101944	LPU BH-4 (30-31')	13	
T101945	WLU BH-1 (10-11')	200	
ICV		11	
CCV		11	
REPORTING LIMIT		0.5	
RPD % Extraction Accura	· ·	0 94*	
% Instrument Accur	acy	95	

*NOTE: Chloride matrix spikes % Extraction Accuracy high. LRB spikes % Extraction Accuracy used due to matrix difficulties. LRB spikes in range.

METHODS: EPA 300.0.

CHEMIST: JS

CHLORIDE SPIKE: 12.5 mg/kg CHLORIDE. CHLORIDE CV: 12.5 mg/L CHLORIDE.

3

7-13-98

Director, Dr. Blair Leftwich

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806 • 794 • 1296 915 • 585 • 3443 FAX 806 • 794 • 1298 FAX 915 • 585 • 4944

venue, Suite A El Paso, Texas 79922 888 • 588 • 3443

ANALYTICAMARIES (1993) (1993) (1993) (1994)

HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

July 13, 1998

Receiving Date: 07/03/98 Sample Type: Soil Project No: 1085/1086

Project Location: Lea County, NM

Prep Date: 07/07/98 Analysis Date: 07/07/98 Sampling Date: 06/30/98

Sample Condition: Intact & Cool Sample Received by: VW

Client Name: Titan Exploration, Inc.
Project Name: Titan - Lovington
Padlock & West Lovington

Lea County

TA#	Field Code	CHLORIDE (mg/kg)	
T101948	WLU BH-2 (10-11')	50	
T101950	WLU BH-2 (30-31')	360	
T101951	WLU BH-3 (10-11')	190	
T101953	WLU BH-3 (30-31')	440	
ICV		11	
CCV		12	
REPORTING LIMIT		0.5	
RPD % Extraction Accuracy		1 99*	
% Instrument Accuracy		96	

*NOTE: Chloride matrix spikes % Extraction Accuracy high. LRB spikes % Extraction Accuracy used due to matrix difficulties. LRB spikes in range.

METHODS: EPA 300.0.

CHEMIST: JS

CHLORIDE SPIKE: 12.5 mg/kg CHLORIDE. CHLORIDE CV: 12.5 mg/L CHLORIDE.

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7-13-98

Director, Dr. Blair Leftwich

Lubbock, Texas 79424

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806 • 794 • 1296 915 • 585 • 3443 FAX 806 • 794 • 1298 FAX 915 • 585 • 4944

El Paso, Texas 79922

ANALYTICAL RESULTS FOR COM

HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

July 13, 1998

Receiving Date: 07/03/98 Sample Type: Soil Project No: 1085/1086

Project Location: Lea County, NM

Prep Date: 07/09/98 Analysis Date: 07/09/98 Sampling Date: 06/30/98 Sample Condition: Intact & Cool Sample Received by: VW

Client Name: Titan Exploration, Inc. Project Name: Titan - Lovington Padlock & West Lovington

Lea County

TA#	Field Code	CHLORIDE (mg/kg)	
T101947 T101954 T101955 T101957 ICV CCV	WLU BH-1 (30-31') WLU BH-4 (5-6') WLU BH-4 (10-11') WLU BH-4 (30-31')	71 59 790 520 12 12	
REPORTING LIMIT		0.5	
RPD % Extraction Accura % Instrument Accura		0 85 98	

METHODS: EPA 300.0.

CHEMIST: JS

CHLORIDE SPIKE: 62.5 mg/kg CHLORIDE. CHLORIDE CV: 12.5 mg/L CHLORIDE.

Director, Dr. Blair Leftwich

7-13-98

or: 3		Alpha Beta (Air) PLM (Asbestos)	×	·×	·×	×	·×		·X	×	X			0 3 851-551	Results by:	RUSH Charges Authorized: Yes	1/1348
QUEST	Circle or Specify Method	Gennia Spec. BOD, TSS, PH, TDS, Chlor CLLP Volatiles CC.MS Vol. 8240/8260/62 TCLP Volatiles CC.MS Semi Volatiles CC.MS Vol. 8240/8260/62 FCI Semi Volatiles CC.MS Vol. 8240/8260/62 FCI Semi Volatiles FCI Semi Volatiles FCI Semi Volatiles FCI Semi Volatiles FCI Semi Volatiles FCI Semi Volatiles FCI Semi Volatiles FCI Semi Volatiles FCI Semi Volatiles FCI MS TON SEMI VOLATILE FOR TON SEMI VOLATI			*			6	×		*			SAMPLE SHIPPED BY: (Circle) PEDEX BUS AIRBILL THEP)	7/13
Analysis Request and Chain of Custody Record	ANDER ENVIRONMENTAL CORP. 1910 N. Big Spring St. Midland, Texas 79705 Fax (915) 682-3946	CLEAT NAME: SITE MANAGER. PROJECT NO.: PRO	1. P. R. L. (m-11)	1	(30-31) 1 / X		1. CAU. BH.2 (0	4 1 (Du 84-2 (3031) 11 1 X X	630-18 5 LPU BH-3 (10-11) 11 11	4 (DU BH3 (15-16) 11 / X	4 (Ou BH3 (2021) 11 11 H	2:00 pm	Date: 7 2 148 RECEIVED BY: (Signature) Date:	Date: RECEIVED BY: (Signature) Date: Time:	ZIP: RECEIVED BY: (SIENDY HOLD AND MAN 9:40 PM	MATRIX: W-Water A-Air SD-Solid REMARKS: SL-Sindge 0-0ther

	ANALYSIS REQUEST	95 8H 95 8H	Cr Pd	9820/98 9890/98 98 98 98 98 98 98 98 98	PLM (ASDESTOR) SCRA Metals Ag As SCLAS Semi Volatile SCLAS Semi Volatile SCLAS Semi Volatile SCLAS Volatiles SCLAS Semi Vol. SCLAS Volatiles SCLAS Semi Volatile SCLAS Semi Volatile SCLAS Semi Volatile SCLAS Semi Volatile SCLAS Semi Volatile SCLAS Volatiles SCLAS V		·×	·X.	×	·×	9.	×	×			12	BY: (Circus)	HAND DELLYERED OFFS OTHER: Results by:	IMEN WALL A RUSH Charges	Yes No	
•	and chain of custous	EN N. H	Midland, Texas 79705 Fax (915) 682-3946	SITE MANAGER	PROJECT NAME: 1-401 - LOUISH PART CALL 1-401 - LOUISH PART CONTA 1-401 -	17011 74-2 (30-31) 1 1 1	7-HZ	12.4.X		2	1 (16-0E) 1-HE WINN,	16-16 BH-1 (30-31) 1 X	1 (11-01) 2-HZ W1W	1 W. W. BH-Z (24-21) 11 / 120	X	Date: 12 416 RECRIVED BY: (Squadure) Date: 15 08 PM 1	7 2 19 RECEIVED BY: (Signature) Date:	RECEIVED #: (Signature) 1 Date: 7-3-53	RECEIVED BY: (Signature)	NE ZIP: DATE:	MATRIX: N-W
	Analysis request	HIGHLANDER 1910	(915) 682-4559	CLIENT MAME Explortion Le	PROJECT NO.: PRO. PRO. LAB I.D. DATE TIME FROM PRO.	2	2 -		n'h	c, Sh	4 74	45	48	7	20 ×	RELINQUISHED BY: SIGNATUCE)	RELINGUISHED BY: (Signature)	RELINQUISHED BY: (Signature)	RECEIVING LABORATORY:	CITY: STATE:	SAMPLE CONDITION WHEN RECEIVED:

ANALYSIS REQUEST	Specify Method No.)			SS	:9/07 <u>5</u> 8	16. Vol. 0/608 70. Vol. 10. Vol. 10. Vol. 10. Vol.	PLW (Asher Bet) Pest. 808/ Pest. 808/ CG.WS Sem	74		×	·×	.×		×		4 Hely et Date	7		RUSH Charges	Yes No	
8-8	(Circle or	9S 9S	8H 9d VVV	1 CL	sa 1 Be Cq 2 Be Cq	COS/19 CO	RCRA Metal TCLP Wetal TCLP Wetal TCLP Wetal	×	1/0/0/	×		×	1414.	×		SAMPLED BY Print 49 S	SAMPLE SHIPPED BY: (Circle) FEDEX BUS	HAND DELIVERED UPS	INC ICAMAS	1 /ke-1 a	
Request and Chain of Custody Record		HIGHLANDER ENVIRONMENTAL CORP.	Midland, Texas 79705	Fax (915) 682-3946	SITE MANAGER.	E. COUTA	NONE HOS HILLERED (NOMBER OF	1 124. 54-3 (10-11) i		343 (30-31)	FILT	BH-4 (16-11)	1 WW. 84-4 (20-21)	-		7 / RECEIVED BY: (Spraturet a)	~PN		RECEIVED BY: (Signatury) Cle U.	TE. 7-3-4 TIME 9'40 M.	MATRIX: F-Fater A-Air SD-Solid REMARKS: S-Soli SL-Sludge 0-Other
Analysis Redu	T	HIGHLANI		(915) 682-4559	CENTRAME KORATION TO	780.	LAB I.D. DATE TIME EX				7 72		2	27 12		RELINOS STED BY: (Signature)		RELINQUISHED BY: (Signature)	RECEIVING LABORATORY:	STA	CONDITION WHEN RECEIVE

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR

Highlander Environmental Services

Attention Ike Tavarez 1910 N. Big Spirng St.

Midland

TX 79705

Date: Date Rec:

Aug 27, 1998

8/19/98

Lab Receiving # : 9808000372

Project:

Titan-Paddock Pit & West Lovington Pit Proj Name: Titan-Paddock Pit & West Lovington Pit

Sampling Date: 8/17/98 - 8/19/98 Sample Condition:

Intact and Cool

Proj Loc:

Sample Received By:

Lea County, NM

TA#	Field Co	ode	MATRIX	GRO mg/Kg)
105363	LPU BH-5	(10-11')	Soil	397
105366	LPU BH-5	(25-26')	Soil	182
105369	LPU BH-5	(40-41')	Soil	274
105371	LPU BH-5	(50-51')	Soil	10.1
105374	WLU BH-5	(5-6')	Soil	<5.00
105378	WLU BH-5	(30-31')	Soil	<5.00
105381	WLU BH-5	(60-61')	Soil	7.88
Method	Blank			<5.00
Reporti	ng Limit			5
QC				0.98

RPD

% Extraction Accuracy

4

100

% Instrument Accuracy

98

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/Kg)
GRO	EPA 5030	8/26/98	EPA 8015B	8/27/98	CS	1	1

8-27-98

Director, Dr. Blair Leftwich



September 01, 1998

Receiving Date: 08/19/98 Sample Type: Soil

Project No: 1085/1086

Project Location: NA

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ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

Prep Date: 08/27/98

Analysis Date: 08/27/98 Sampling Date: 08/17/98

Sample Condition: Intact & Cool Sample Received by: VW

Client Name: Titan Exploration, Inc. Project Name: Titan - Paddock Pit &

> West Lovington Pit Lea County, NM

TA#	FIELD CODE	DRO (mg/kg)
T105363 T105378 QC	LPU BH-5 (10-11') WLU BH-5 (30-31') Quality Control	3,940 <50 536
REPORTING LIMIT		50
RPD % Extraction Accuracy % Instrument Accuracy		3 84 107

METHODS: EPA SW 846-8011, 8015B Modified.

CHEMIST: SLR

DRO SPIKE: 500 mg/kg DRO. DRO CV: 500 mg/L DRO.

9-1-98

Director, Dr. Blair Leftwich

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ANALYTICAL RESULTS FOR

HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

August 25, 1998

Receiving Date: 08/19/98 Sample Type: Soil Project No: 1085/1086 Project Location: NA Prep Date: 08/18/98
Analysis Date: 08/18/98
Sampling Date: 08/17/98
Sample Condition: Intact & Cool
Sample Received by: VW

Client Name: Titan Exploration, Inc.
Project Name: Titan - Paddock Pit &
West Lovington Pit
Lea County, NM

DRO TA# FIELD CODE (mg/kg) 1,840 T105366 LPU BH-5 (25-26') T105369 LPU BH-5 (40-41') 2,080 LPU BH-5 (50-51') 1,709 T105371 T105374 WLU BH-5 (5-6') 210 T105381 WLU BH-5 (60-61') <50 QC **Quality Control** 227 REPORTING LIMIT 50 **RPD** 4 101 % Extraction Accuracy

METHODS: EPA SW 846-8011, 8015B Modified.

CHEMIST: SLR

% Instrument Accuracy

DRO SPIKE: 250 mg/kg DRO. DRO CV: 250 mg/L DRO.

Director, Dr. Blair Leftwich

8-25-98

91

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Lubbock, Texas 79424

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FOR
RESULTS
ANALYTICAL

Highlander Environmental Services

Attention Ike Tavarez

Aug 27, 1998 8/19/98

Date Rec:

Project:

1910 N. Big Spirng St.

Lab Receiving # : 9808000372 Sampling Date:

Sample Received By:

TX 79705

Sample Condition: Intact and Cool 8/17/98 - 8/19/98

Proj Name:

Proj Loc:

Titan-Paddock Pit & West Lovington Pit Titan-Paddock Pit & West L Lea County, NM

Σ C

					FIHXT-	3, F, C	TOTAL
TA#	Field Code	MATRIX	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	BENZENE (mg/Kg)	XYLENE (mg/Kg)	BTEX (mq/Kq)
				,	, , , , ,		
105363	105363 LPU BH-5 (10-11')	Soil	<0.050	3.57	0.189	59.8	63.6
105366	LPU BH-5 (25-26')	Soil	0.167	6.24	21.3	28.4	56.1
105369	LPU BH-5 (40-41')	Soil	<0.100	1.63	7.76	17.8	27.2
105371	LPU BH-5 (50-51')	Soil	<0.100	<0.100	<0.100	<0.100	<0.100
105374	WLU BH-5 (5-6')	Soil	<0.050	<0.050	<0.050	<0.050	<0.050
105378	WLU BH-5 (30-31')	Soil	<0.050	<0.050	<0.050	<0.050	<0.050
105381	WLU BH-5 (60-61')	Soil	<0.050	<0.050	<0.050	0.785	0.785
Method Blank	Blank		. <0.050	<0.050	<0.050	<0.050	
Reporti	Reporting Limit		0.05	0.05	0.05	0.05	
ρŏ			0.106	0.107	0.107	0.315	

RPD	E	4	ю	4	
<pre>% Extraction Accuracy</pre>	105	106	107	105	
<pre>\$ Instrument Accuracy</pre>	106	107	107	105	

TEST	PREP	PREP	ANALYSIS	ANALYSIS	CHEMIST	: တွ	SPIKE:	
	METHOD	DATE	METHOD	COMPLETED		(mg/Γ)	(mg/Kg)	
BTEX	EPA 5030	8/26/98	EPA 8021B	8/26/98	CS	0.100 ea	5 ea	-
		વ		1	30	:		r
		100		ダーノン・ファ	o,			

Dr. Blair Leftwich Director,

Lubbock, Texas 79424 El Paso, Texas 79922

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ANALYTICAL RESULTS FOR HIGHLANDER SERVICES CORP.

Attention: Ike Tavarez 1910 N. Big Spring Street Midland, Texas 79705

August 28, 1998

Receiving Date: 08/19/98

Sample Type: Soil

Location Address: Lea County, NM

Project No: 1085/1086

Project Name: Titan-Paddock Pit & West Lovington Pit

Prep Date: 08/25/98 Analysis Date: 08/25/98 Sampling Date: 08/17/98 Sample Condition: Intact & Cool

Sample Received by: VW

TA#	FIELD CODE	CHLORIDE (mg/kg)	
T105363 ICV CCV	LPU BH-5 (10-11)	13 11.79 11.87	
REPORTING LIMIT		0.5	
RPD		3	

METHODS: EPA 300.0

% Extraction Accuracy

% Instrument Accuracy

CHEMIST: JS

TOTAL CI SPIKE: 12.5 mg/kg TOTAL CI. TOTAL CI CV: 12.5 mg/L TOTAL CI.

Director, Dr. Blair Leftwich

8-28-98

93

95

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ANALYTICAL RESULTS FOR HIGHLANDER SERVICES CORP. Attention: Ike Tavarez 1910 N. Big Spring Street Midland, Texas 79705

August 28, 1998

Receiving Date: 08/19/98

Sample Type: Soil

Location Address: Lea County, NM

Project No: 1085/1086

Project Name: Titan-Paddock Pit & West Lovington Pit

Prep Date: 08/25/98 Analysis Date: 08/25/98 Sampling Date: 08/17/98

Sample Condition: Intact & Cool

Sample Received by: VW

TA#	FIELD CODE	CHLORIDE (mg/kg)	
T105366 ICV CCV	LPU BH-5 (25-26)	24 11.85 11.81	
REPORTING LIMIT		0.5	
RPD % Extraction Accuracy		0 95	

METHODS: EPA 300.0

% Instrument Accuracy

CHEMIST: JS

TOTAL CI SPIKE: 12.5 mg/kg TOTAL CI. TOTAL CI CV: 12.5 mg/L TOTAL CI.

8-28-98

95

Director, Dr. Blair Leftwich

Lubbock, Texas 79424

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806 • 794 • 1296 915 • 585 • 3443 FAX 806 • 794 • 1298

OLU ODIDE

September 02, 1998

Sample Type: Soil

Receiving Date: 08/19/98

Project No: 1085/1086

Project Location: NA

El Paso, Texas 79922 E-Mail: lab@traceanalysis.com

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FAX 915 • 585 • 4944

ANALYTICAL RESULTS FOR

HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St.

Midland, TX 79705

Prep Date: 09/01/98

Analysis Date: 09/01/98 Sampling Date: 08/17/98

Sample Condition: Intact & Cool Sample Received by: VW Client Name: Titan Exploration, Inc. Project Name: Titan-Paddock Pit & West Lovington Pit Lea County, NM

TA#	FIELD CODE	CHLORIDE (mg/kg)
T105369	LPU BH-5 (40-41')	12
T105371	LPU BH-5 (50-51')	13
T105374	WLU BH-5 (5-6')	1,600
T105379	WLU BH-5 (40-41')	530
T105380	WLU BH-5 (50-51')	180
T105381	WLU BH-5 (60-61')	510
ICV		502
CCV		495
REPORTING LIMIT		2.0
RPD		0
% Extraction Accuracy		105
% Instrument Accuracy		. 100

METHODS: EPA SM 4500 CI-B.

CHEMIST: JS

CHLORIDE SPIKE: 10,000 mg/kg CHLORIDE.

CHLORIDE CV: 500 mg/L CHLORIDE.

9-2-98

Director, Dr. Blair Leftwich



E-Mail: lab@traceanalysis.com

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ANALYTICAL RESULTS FOR HIGHLANDER SERVICES CORP.

Attention: Ike Tavarez 1910 N. Big Spring Street Midland, Texas 79705

August 28, 1998

Receiving Date: 08/19/98

Sample Type: Soil

Location Address: Lea County, NM

Project No: 1085/1086

Project Name: Titan-Paddock Pit & West Lovington Pit

Prep Date: 08/25/98 Analysis Date: 08/25/98 Sampling Date: 08/17/98 Sample Condition: Intact & Cool

Sample Received by: VW

TA#	FIELD CODE	CHLORIDE (mg/kg)	
T105377 T105378	WLU BH-5 (20-21) WLU BH-5 (30-31)	1,200 870	
ICV CCV		11.84 11.82	
REPORTING LIMIT		0.5	
RPD % Extraction Accuracy		0 85	

METHODS: EPA 300.0

% Instrument Accuracy

CHEMIST: JS

TOTAL CI SPIKE: 12.5 mg/kg TOTAL CI. TOTAL CI CV: 12.5 mg/L TOTAL CI.

BZ

8-28-98

95

Director, Dr. Blair Leftwich

PAGE: OF: 3	ANALYSIS REQUEST	Specify method		9	789/048 79/048	8240/82 1, Vol. 8 3/608 pH, TDS, pec.	PLUP Semi		×			×			× .		×	7	- ra	UPS OTHER:	NCT PERSON: RUSH Charges		Spads	Project Manager retains pink copy Accounting receives Gold copy. $ S_{f_2} _{\sim}$
	AN.	~	8 _H	Cr Pb	Bº Cq Bu Cq	so 84 s sy 84 s sy 84 s) SIG	PAH 8270 TCLP Wetal TCLP Wetal	Mild	*×	Plat	16/4	×.	140/0/	14616	·×	V	×	A SAMPLED BY TEPM	SAMPLE SHIPPED BY: (Circle)	HAND DELIVERED	HIGHLANDER CONTACT PERSON:	, X/		overt Manager retains p
Record	L	CORP.		5) 682-3946	PRESERVATIVE METHOD		NONE ICE HNO3 HCT LITLEKED (A	\	```		\	\ \ \	/	\	\			Time: 4 14 0 PM	Date: Time:	Date:	whether	9:15 Am	REMARKS: .	to Highlander Funitonmental Corn - Pr
Their of Chair	and Chain or	ENVIRONMENTAL CORP.		Midland, Texas 79705 Fax (915)	SITE MANYSER.	Hock Pots Canny that Pet	COLLE IDENTII	011 RH-5 (5-7) (84-5		10	1 (18-31) 1	AL 845 (35-36)	١.	14 BHS (45-46)	Pu BH'S (50-51")	8 40 PM	8/18/48 6:30 PM	e: RECEIVED BY: (Signature)	RECEIVED BY: (Signature)/10.		MATRIX: Hater A-Air SD-Solid SL-Sludge 0-0ther	D. t to Undloader F.
Amelianic Desired	Analysis Request	HIGHLANDER	1910 N.	Midl (915) 682-4559	CLIENT NAME:	186	ATE TIME MATRIX		V	X	\$	7	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\(\sigma\)	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	N × C	RELINGUISHED BY Signature Date:		RELINQUISHED BY: (Signature) Date:	RECEIVING LABORATORY:	CITY: STATE: CONTACT: PHONE	SONDITION WHEN REC	

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PAGE: 2	<u>9</u> 5	8H Pd	S2 14 1 C1	883.0\83 3580\83 63 8 BF CG	\$ 608 Ag Ag Ag Ag Ag Ag Ag Ag Ag Ag Ag Ag Ag	PCB' 8080 CC'NS Semi CC'NS Semi LCIP Volati TCIP Volati	Pak	1919	×	Ton Man	140/04	X	·×	·×	X .	× × ×	SAMPLED BY: (Print & Sign) SAMPLED BY: (Print & Sign) Time:	BY: (Cir		HIGHLANDER CONTACT PERSON: RUSH Charges	Authorized. Yes No		Proiect Manager retains vink copy - Accounting receives Gold copy.
Analysis Request and Chain of Custody Record	NVIRON	1910 N. Big Spring St. Midland, Texas 79705	(915) 682-4559 Fax (915) 682-3946	CLEAT NAME: EXPORTING TIME. SITE MANAGER. OF BE METHOD METHOD	(N/)	LAB 1.D. DATE TIME SAMPLE IDENTIFICATION LIGHT COUNTY AND DATE HOLD HOUSE NUMBER OF HOLD SAMPLE IDENTIFICATION LIGHT COUNTY OF HOLD SAMPLE IDENTIFICATION)	73 S X DW 745 (70-7)	5 (5-6') 11 4	S XWLU BH-5	١.) S-H2	5 KINLW 845 (30-31) 11 4	S KWLW BHS		t 1 (19-09) 5-HB	S. Children	MG08:7	(Signature)	RECEIVING LABORATORY: (F. U. L. L. L. L. L. L. L. L. L. L. L. L. L.	STATE ZIP: BATE: 8-19-63 TIME: 9.	CONDITION WHEN RECEIV	ս & Hiohlander EntrieonmentalkCorv

	of Custody Record	(Circle	es.	St	Fax (915) 682-3946	PRESERVATIVE BA CA RECOVERS RETHOD	(V/N) (602 (602 (603 (608	bear 8080 bcb. 8080 cc. 182 8080 bcc. 183 8080 bcc. 184 8080 bvh 8570 bvh 8	×						D. BY: (Signature) HOA	SAMPLE SHIPPED BY: (Circle) BEDEX	D BY: (Signature) Date: 18 Cay Time: 1. O VW Date: 18 Cay SAMPLE SHIPPED BY: (Circle) Bus FEDEX HAND DELIVERED UPS OTHE	D BY: (Signature) Time: L: O VM SAMPLE PY Triny & Sign C Tri SAMPLE SHIPPED BY: (Grele) Time: FEDEX HAND DELIVERED UPS OTHER HIGHLANDER CONTACT PERSON:	Der: (Signature) Dete: Light Color Time: Light Color Circle) Dete: Time: Light Color Circle) Dete: Time: Hand Delivered Ups other Highlander contact person: Time: 4.15 flux The laughered Color	BY: (Signature) BY: (Signature) BY: (Signature) Time: L: 40 PW Time: L: 40 PW Time: L: 40 PW Time: L: 40 PW SAMPLE SHIPPED BY: (Circle) Time: Bus ARB HIGHLANDER CONTACT PERSON: Iq-43 TIME: 4.15 M. Arr SD-Solid	Def: (Signature) Def: Line: Line Devint Right Properties of Properties Devint Relarks: Dev. (Signature) Def: Time: Line: Line Deve Deve Deve Deve Deve Deve Deve De
Analysis Request and Chain			HIGHLANDER ENVIRONMENTAL CORF.	1910 N. Big Spring St Midland, Texas 79705	(915) 682-4559	THEN SUPPORTED THE MANAGER.	PROJECT NO. 1086 PROJECT NAME: UND 1864 Pite U	LAB I.D. DATE TIME K A SAMPLE IDENTIFICATION	21-12 1111 22-5					1, 4.	FIEE CT COLL COLL COLL COLL COLL COLL COLL C	Date: 2 18 9 PM	(Signature) Date: 71:40 Pm Time: 7:40 Pm Time: 30 Fm	Mate: 81898 Date: 81898 Mime: 130 PM Time: Fing: Rings	HED BY: (Signature) HED BY: (Signature) Time: 7:40 PW Time	STATE: STATE: STATE: STATE: AMATRIX: TIME: TI	HED BY: (Signature) HED BY: (Signature) HED BY: (Signature) HED BY: (Signature) Time: 7 1 40 478 Time: 7 1 4

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR

Highlander Environmental Services Attention Ike Tavarez 1910 N. Big Spirng St.

Midland

TX 79705

Date: Oct 30, 1998 Date Rec:

10/8/98

Lab Receiving # : 9810000165

Project:

1085-1086

Sampling Date: 10/1/98 Sample Condition:

Proj Name: Paddock Pit /W. Lovington Pit

Intact and Cool Sample Received By: VW

Proj Loc: N/A

TA# Field Code MATRIX GRO (mg/Kg) 109442 MW-2 (60-61') Soil <5.00 109443 MW-3 (60-61') Soil <5.00 109444 MW-4 (60-61') 20.5 Soil Method Blank <5.00 Reporting Limit 5 89 QC

RPD

% Extraction Accuracy

% Instrument Accuracy

81 89

0

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/Kg)
GRO	EPA 5030	10/29/98	EPA 8015B	10/29/98	CS	100	100

10-30-98

Dr. Blair Leftwich Director,

Lubbock, Texas 79424 El Paso, Texas 79922 800 • 378 • 1296 888 • 588 • 3443 806 • 794 • 1296 915 • 585 • 3443 FAX 806 • 794 • 1298 FAX 915 • 585 • 4944

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ANALYTICAL RESULTS FOR HIGHLANDER SERVICES CORP.

Attention: Ike Tavarez 1910 N. Big Spring Street Midland, TX 79705

October 16, 1998

Receiving Date: 10/08/98

Sample Type: Soil Project No: 1085 Project Location: NA Prep Date: 10/09/98 Analysis Date: 10/13/98 Sampling Date: 10/01-02/98 Sample Condition: Intact & Cool Sample Received by: VW

Project Name: Titan - Lovington Paddock Unit Lea County

Client Name: Titan Exploration

TA#	Field Code	DRO (mg/kg)	
T109442	MW-2 (60-61')	<50	
T109443	MW-3 (60-61')	<50	
T109444	MW-4 (60-61')	1,180	
QC	Quality Control	280	
REPORTING LIMIT		50	
RPD		10 107	
% Extraction Accuracy		107 112	
% Insturment Accuracy		112	

METHODS: EPA SW 846-8015B, 8011.

CHEMIST: MF

DRO SPIKE: 250 mg/kg DRO. DRO QC: 250 mg/L DRO.

B

10-16-98

Director, Dr. Blair Leftwich

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FAX 806 • 794 • 1298 FAX 915 • 585 • 4944 915 • 585 • 3443 806 • 794 • 1296 Lubbock, Texas 79424 800•378•1296 El Paso, Texas 79922 888•588•3443 6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Surte A

Lab Receiving # : 9810000165 10/1/98 Highlander Environmental Services Attention Ike Tavarez ANALYTICAL RESULTS FOR

Sample Condition: Intact and Sampling Date: TX 79705 1910 N. Big Spirng St. Midland Paddock Pit /W. Lovington Pit 1085-1086 Oct 30, 1998 10/8/98 Proj Name: Date Rec: Project:

Sample Received By:

C00]

(mg/Kg) TOTAL <0.050 <0.050 XYLENE (mg/Kg) M, P, O <0.050 <0.050 25.6 BENZENE (mg/Kg) ETHYL-<0.050 <0.050 4.70 TOLUENE (mg/Kg) 1.52 <0.050 <0.050 BENZENE (mg/Kg) <0.050 <0.050 <0.050 MATRIX Soil Soil Soil MW-3 (60-61') MW-4 (60-61') MW-2 (60-61') Field Code Proj Loc:

0.05 0.244 <0.050 0.084 0.05 <0.050 0.05 <0.050 0.085 0.086 0.05 <0.050 Reporting Limit Method Blank 109443 109444 109442 TA#

RPD				-	_	7	7		
% Extraction Accuracy	Accuracy			06	06	68	87		
% Instrument Accuracy	. Accuracy			86	85	84	81		
TEST	PREP METHOD	PREP	ANALYSIS METHOD	ANAL	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/Kg)	

10-30-58

5 ea

0.100 ea

10/29/98

EPA 8021B

10/29/98

5030

EPA

BTEX

Dr. Blair Leftwich

Dinertor,

6701 Aberdeen Avenue

Lubbock, Texas 79424

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ANALYTICAL RESULTS FOR

Highlander Environmental Services

Attention Ike Tavarez

Lab Receiving # : 9811000155

Sampling Date: 11/5/98 1910 N. Big Spirng St.

TX 79705

Midland

Lovington Paddock Unit

N/A

Proj Loc:

Proj Name:

Nov 10, 1998

Date:

11/7/98 1085

Date Rec:

Project:

Intact and Sample Condition:

C001

Sample Received By:

TOTAL (mg/L) BTEX XYLENE M, P, 0 (mg/L) BENZENE ETHYL- (mg/Γ) TOLUENE (mg/L) BENZENE (mg/L) MATRIX Field Code TA#

0.085 <0.001 <0.001 <0.001 0.808 <0.001 <0.001 <0.001 <0.001 0.147 0.882 <0.001 Water Water Water Water MM-3MW-4 MW-1MM-2112190 112192 112191 112189

0.147 1.989

0.214

<0.001

<0.001 0.001

<0.001

<0.001

<0.001

0.317

0.109 0.001

0.118

0.128

0.001

0.001

<0.001 <0.001

<0.001

<0.001

Method Blank

Reporting Limit

106 114 9 113 109 വ S 123 118 133 128 % Instrument Accuracy % Extraction Accuracy RPD

SPIKE: (mg/T) (mg/L) 0.100 ea: 00 CHEMIST CS ANALYSIS COMPLETED 11/7/98 **EPA** 8021B ANALYSIS METHOD 11/7/98 PREP DATE EPA 5030 METHOD PREP TEST BTEX

11-18-58

Dr. Blair Leftwich Director,



Lubbock, Texas 79424

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ANALYTICAL RESULTS FOR

HIGHLANDER SERVICES

Attention: Ike Tavarez

1910 N. Big Spring St.

Midland, TX 79705

November 13, 1998

Receiving Date: 11/07/98

Sample Type: Water

Project No: 1085

Sampling Date: 11/05/98

Sample Condition: I & C Sample Received by: VW

Client Name: Titan

Proj. Name:Lovington Paddock Unit

Extraction Date: 11/09/98

РАН	Reporting	T112189			Analysis	Date: 11/10/98
8270 Compounds (mg/L)	Limit	MW-1	QC	RPD	%EA	%IA
Naphthalene	0.001	ND	74	0	81	93
Acenaphthylene	0.001	ND	74	2	93	93
Acenaphthene	0.001	ND	77	2	84	96
Fluorene	0.001	ND	72	1	81	90
Phenanthrene	0.001	ND	71	1	77	89
Anthracene	0.001	ND	73	0	80	91
Fluoranthene	0.001	ND	67	0	75	84
Pyrene	0.001	ND	76	3	88	95
Benzo[a]anthracene	0.001	ND	71	1	82	89
Chrysene	0.001	ND	73	0	57	91
Benzo[b]fluoranthene	0.001	ND	91	13	101	114
Benzo(k)fluoranthene	0.001	ND	87	13	100	109
Benzo[a]pyrene	0.001	ND	84	2	99	105
Indeno[1,2,3-cd]pyrene	0.001	ND	86	6	93	108
Dibenz[a,h]anthracene	0.001	ND	91	6	76	114
Benzo[g,h,i]perylene	0.001	ND	82	8	92	103

ND = Not Detected

SURROGATES

% RECOVERY

Nitrobenzene-d5 SURR

19*

2-Fluorobiphenyl SURR

16*

Terphenyl-d14 SURR

10*

*Surrogates out of control limits due to evaporative looses which occurred as prep analyst was attempting to remove H2O from the badly emulsed sample.

METHODS: EPA SW 846-8270, 3510.

CHEMIST: DG

11-13-98

Director, Dr. Blair Leftwich



Lubbock, Texas 79424 El Paso, Texas 79922

ANALYTICAL RESULTS FOR

Attention: Ike Tavarez

1910 N. Big Spring St.

HIGHLANDER SERVICES

Midland, TX 79705

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November 13, 1998

Receiving Date: 11/07/98

Sample Type: Water Project No: 1086

Sampling Date: 11/05/98 Sample Condition: I & C Sample Received by: VW

Client Name: Titan

Proj. Name: W. Lovington Unit

Extraction Date: 11/09/98 Analysis Date: 11/10/98

PAH Reporting T112193

PAN	Reporting	T112193			MIGTASTS	Date: 11/10/98
8270 Compounds (mg/L)	Limit	MW-1	QC	RPD	%EA	%IA
Naphthalene	0.001	0.001	74	0	81	93
Acenaphthylene	0.001	ND	74	2	93	93
Acenaphthene	0.001	ND	77	2	84	96
Fluorene	0.001	ND	72	1	81	90
Phenanthrene	0.001	ND	71	1	77	89
Anthracene	0.001	ND	73	0	80	91
Fluoranthene	0.001	ND	67	0	75	84
Pyrene	0.001	ND	76	3	88	95
Benzo[a]anthracene	0.001	ND	71	1	82	89
Chrysene	0.001	ND	73	0	57	91
Benzo[b]fluoranthene	0.001	ND	91	13	101	114
Benzo[k]fluoranthene	0.001	ND	87	13	100	109
Benzo[a]pyrene	0.001	ND	84	2	99	105
Indeno[1,2,3-cd]pyrene	0.001	ND	86	6	93	108
Dibenz[a,h]anthracene	0.001	ND	91	6	76	114
Benzo[g,h,i]perylene	0.001	ND	82	8	92	103

ND = Not Detected

SURROGATES

Nitrobenzene-d5 SURR 63

2-Fluorobiphenyl SURR 63

Terphenyl-d14 SURR

METHODS: EPA SW 846-8270, 3510.

CHEMIST: DG

11-13-98

Director, Dr. Blair Leftwich

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Lubbock, Texas 79424 El Paso, Texas 79922

ANALYTICAL RESULTS FOR

Attention: Ike Tavarez

1910 N. Big Spring St.

HIGHLANDER SERVICES

Midland, TX 79705

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enue, Suite A El I

E-Mail: lab@traceanalysis.com

November 13, 1998

Receiving Date: 11/07/98

Sample Type: Water Project No: 1085

Sampling Date: 11/05/98 Sample Condition: I & C

Sample Received by: VW

Client Name: Titan

Proj. Name:Lovington Paddock Unit

Extraction Date: 11/09/98
Analysis Date: 11/10/98

PAH Poporting #112190

PAH	Reporting	T112190			Analysis	Date: 11/10/98
8270 Compounds (mg/L)	Limit	MW-2	QC	RPD	%EA	%IA
Naphthalene	0.001	0.001	74	0	81	93
Acenaphthylene	0.001	ND	74	2	93	93
Acenaphthene	0.001	ND	77	2	84	96
Fluorene	0.001	ND	72	1	81	90
Phenanthrene	0.001	ND	71	1	77	89
Anthracene	0.001	ND	73	0	80	91
Fluoranthene	0.001	ND	67	0	75	84
Pyrene	0.001	ND	76	3	88	95
Benzo[a]anthracene	0.001	ND	71	1	82	89
Chrysene	0.001	ND	73	0	57	91
Benzo[b]fluoranthene	0.001	ND	91	13	101	114
Benzo[k]fluoranthene	0.001	ND	87	13	100	109
Benzo[a]pyrene	0.001	ND	84	2	99	105
Indeno[1,2,3-cd]pyrene	0.001	ND	86	6	93	108
Dibenz[a,h]anthracene	0.001	ND	91	6	76	114
Benzo[g,h,i]perylene	0.001	ND	82	8	92	103

ND = Not Detected

Terphenyl-d14 SURR 62

METHODS: EPA SW 846~8270, 3510.

CHEMIST: DG

83

11-13-98

Director, Dr. Blair Leftwich



Lubbock, Texas 79424 El Paso, Texas 79922

ANALYTICAL RESULTS FOR

Attention: Ike Tavarez

1910 N. Big Spring St.

HIGHLANDER SERVICES

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E-Mail: lab@traceanalysis.com

November 13, 1998

Receiving Date: 11/07/98

Sample Type: Water

Project No: 1085

Sampling Date: 11/05/98 Sample Condition: I & C Sample Received by: VW

Client Name: Titan

Proj. Name:Lovington Paddock Unit

Extraction Date: 11/09/98 Analysis Date: 11/10/98

PAH

T112191

PAH	Reporting	T112191			Analysis	Date: 11/10/98
8270 Compounds (mg/L)	Limit	MW-3	QC	RPD	%EA	%IA
Naphthalene	0.001	ND	74	0	81	93
Acenaphthylene	0.001	ND	74	2	93	93
Acenaphthene	0.001	ND	77	2	84	96
Fluorene	0.001	ND	72	1	81	90
Phenanthrene	0.001	ND	71	1	77	89
Anthracene	0.001	ND	73	0	80	91
Fluoranthene	0.001	ND	67	0	75	84
Pyrene	0.001	ND	76	3	88	95
Benzo[a]anthracene	0.001	ND	71	1	82	89
Chrysene	0.001	ND	73	0	57	91
Benzo[b]fluoranthene	0.001	ND	91	13	101	114
Benzo[k]flúoranthene	0.001	ND	87	13	100	109
Benzo[a]pyrene	0.001	ND	84	2	99	105
Indeno[1,2,3-cd]pyrene	0.001	ND	86	6	93	108
Dibenz[a,h]anthracene	0.001	ND	91	6	76	114
Benzo[g,h,i]perylene	0.001	ND	82	8	92	103

ND = Not Detected

SURROGATES

% RECOVERY

Nitrobenzene-d5 SURR

111

2-Fluorobiphenyl SURR

110

Terphenyl-d14 SURR

82

METHODS: EPA SW 846-8270, 3510.

CHEMIST:

DG

11-13-98

Director, Dr. Blair Leftwich



Lubbock, Texas 79424 El Paso, Texas 79922

ANALYTICAL RESULTS FOR

Attention: Ike Tavarez

1910 N. Big Spring St.

HIGHLANDER SERVICES

Midland, TX 79705

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E-Mail: lab@traceanalysis.com

November 13, 1998

Receiving Date: 11/07/98

Sample Type: Water

Project No: 1085

Sampling Date: 11/05/98 Sample Condition: I & C Sample Received by: VW

Client Name: Titan

Proj. Name: Lovington Paddock Unit

Extraction Date: 11/09/98 Analysis Date: 11/10/98

PAH Reporting T112192

РАП	Reporting	T112192			Analysis	Date: 11/10/98
8270 Compounds (mg/L)	Limit	MW-4	QC	RPD	%EA	%IA
Naphthalene	0.001	0.002	74	0	81	93
Acenaphthylene	0.001	ND	74	2	93	93
Acenaphthene	0.001	ND	77	2	84	96
Fluorene	0.001	ND	72	1	81	90
Phenanthrene	0.001	ND	71	1	77	89
Anthracene	0.001	ND	73	0	80	91
Fluoranthene	0.001	ND	67	0	75	84
Pyrene	0.001	ND	76	3	88	95
Benzo[a]anthracene	0.001	ND	71	1	82	89
Chrysene	0.001	ND	73	0	57	91
Benzo[b]fluoranthene	0.001	ND	91	13	101	114
Benzo[k]fluoranthene	0.001	ND	87	13	100	109
Benzo[a]pyrene	0.001	ND	84	2	99	105
Indeno[1,2,3-cd]pyrene	0.001	ND	86	6	93	108
Dibenz[a,h]anthracene	0.001	ND	91	6	76	114
Benzo[g,h,i]perylene	0.001	ND	82	8	92	103

ND = Not Detected

SURROGATES

Nitrobenzene-d5 SURR

47

2-Fluorobiphenyl SURR

47

Terphenyl-d14 SURR

48

METHODS: EPA SW 846-8270, 3510.

CHEMIST: DG

11-13-98

Director, Dr. Blair Leftwich

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HIGHLANDER ENVIRONMENTAL SERVICES ANALYTICAL RESULTS FOR Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705 Receiving Date: 11/07/98 Sample Type: Water November 13, 1998 Project No: 1085 Project Location:

Sample Condition: Intact & Cool Sample Received by: VW Client Name: Titan

Sampling Date: 11/05/98

Project Name: Lovington Paddock Unit

TOTAL METALS (mg/L)

Hg	<0.0010 <0.0010 <0.0010 <0.0010	0.0052 0.0055	0.0010	2 93 104	11/08/98 11/09/98
Ba	0.11 <0.10 <0.10 0.12	0.96	0.10	15 90 94	11/09/98 11/10/98
Ag	<0.05 <0.05 <0.05 <0.05	0.20	0.05	19 78 100	11/09/98 11/10/98
g					

Hg: MS CHEMIST: As, Se, Cd, Cr, Pb, Ag, Ba, : RR

METHODS: EPA SW 846-3015, 6010B, 7470.

TOTAL METALS SPIKE: 2.0 mg/L As, Se, Cd, Cr, Pb, Ba; 0.50 mg/L Ag; 0.0050 mg/L Hg. TOTAL METALS CV: 1.0 mg/L As, Se, Cd, Cr, Pb, Ba; 0.20 mg/L Ag; 0.0050 mg/L Hg.

Director Or Riair Leftwich

11-13-98

		CRACEANALYSIS, INCAMMUMILLI	SIS, INC	
	6701 Aberdeen Avenue	Lubbock, Texas 79424	806 • 794 • 1296	FAX 806 • 794 • 1298
November 24, 1998	ANALY	ANALYTICAL RESULTS FOR		Sampling Date: 11/05/98
Receiving Date: 11/07/98	HIGHL	HIGHLANDER ENVIRONMENTAL SERVICES	SERVICES	Sample Condition: Intact & Cool
Sample Type: Water	Attention:	on: Ike Tavarez		Sample Received by: VW
Project No: 1085	1910 N	1910 N. Big Spring St.		Client Name: Titan
Project Location:	Midlan	Midland, TX 79705		Project Name: Lovington Paddock Unit

TA#	FIELD CODE	pH (s.u.)	FLUORIDE (mg/L)	FLUORIDE (mg/L)	CHLORIDE (mg/L)	SULFATE (mg/L)	N03-N (mg/L)	ALKALINITY (mg/L as CaCo3) HC03 C03	aCo3) C03	TDS (mg/L)
T112189	MW-1	7.3	2.0		77	59	1. 6	1	8 8	450
T112191	MW-3	, ₇ , 2, 3, 4, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5,	2.2		33 8	38 38	0.53	210 <1.00	3 8	380
T112192	MW-4	7.3	ļ	2.2	71	25	1.2		00	490
ICV		7.0	2.58	2.59	12.42	11.60	0.121	1,140 1,140	40	1
CCV		7.0	2.59	2.60	12.73	11.55	0.115	1,160 1,100	00	1
PREP DATE ANALYSIS DATE		11/07/98 11/07/98	11/09/98 11/09/98	11/09/98 11/09/98	11/23/98 11/23/98	11/23/98 11/23/98	11/11/98	11/23/98 11/23/99	` `	11/10/98 11/10/98
RPD		0	~	0	0	2	2	9 9		←
% Extraction Accuracy	acy	ŧ	100	92	86	94	101			1
% Instrument Accuracy	racy	100	103	104	101	93	91	94 94	_	95
REPORTING LIMIT	L.	ļ	0.1	0.01	0.5	0.5	0.10	1.00 1.00	0	10

METHODS: EPA 150.1, 300.0, 353.3, 310.1, 160.1.

ALKALINITY/TDS: RS FLUORIDE/CHLORIDE/SULFATE/N03-N: JS CHEMIST: pH: SA

CHLORIDE SPIKE: 62.5 mg/L CHLORIDE. FLUORIDE SPIKE: 12.5 mg/L FLUORIDE.

SULFATE SPIKE: 62.5 mg/L SULFATE.

N03-N SPIKE: 0.665 mg/L N03-N.

FLUORIDE CV: 2.5 mg/L FLUORIDE. CHLORIDE CV: 12.5 mg/L CHLORIDE. SULFATE CV: 12.5 mg/L SULFATE.

N03-N CV: 0.133 mg/L N03-N.

11-24-50

Director, Dr. Blair Leftwich

CAUTILIAN WELLE AND THE TRACE ANALYSIS, INC. MULLIAN MALVINA ROBOTO FAX 806-794-1798

		6701 Aberdeen Avenue	Lubbock, Texas 79424	806•794•1296	FAX 806 • 794 • 1298	86	
November 19, 1998 Receiving Date: 11/07/98 Sample Type: Water	1998 8: 11/07/98 Water	ANALYTICAL RESULT HIGHLANDER ENVIRON Attention: Ike Tavarez 1910 N. Big Spring St.	ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL SERVICES Attention: Ike Tavarez 1910 N. Big Spring St.	/ICES	Prep Date: 11/09/98 Prep Date: 11/18/99 Sampling Date: 11/05/98 Sample Condition: Intact & Cool	3 9 95/98 ntact & Cool	
Project No: 1085 Project Location: Client Name: Titan	85 n: Titan	Midland, TX 79705	9705		Sample Received by: VW Project Name: Lovington Paddock Unit	/: VW gton Paddock Unit	
			POTASSIUM	MAGNESIUM	CALCIUM	SODIUM	HARDNESS
TA#	Field Code		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L CaC03)
T112189	MW-1		2.6	10	93	39	273
T112190	MW-2		2.1	6.1	22	48	167
T112191	MW-3		2.0	9.2	78	30	233
T112192	MW-4		2.0	41	108	15	327
ICV			25	25	25	25	
CCV			25	24	24	25	1
Reporting Limit			0.20	0.20	0.20	0.20	I
RPD			က	-	-	2	1
% Extraction Accuracy	ccuracy		95	104	100	26	!
% Instrument Accuracy	ccuracy		100	100	86	80	1

METHODS: EPA SW 846-6010B, 3015, SM 2340B.

CHEMIST: RR

SPIKE: 100 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

CV: 25 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

Of J

86-61-11

Cation-Anion Balance Sheet

											Percentage	Error	6.872572128	4.775177743	0.106551971	6.089485531	1.298245299	3.038562349	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Ĺ	μMHOs/cm									Total	Anions	in meq/L	24.68	25.19	7.18	5.94	6.08	7.12	#VALUE!	#VALUE!	#VALUE!	#VALUE!
ć F	S Edd			450	360	380	490			Total	Cations	in meq/L	23.04	24.02	7.18	5.59	6.16	7.34	#VALUE!	#VALUE!	#VALUE!	#VALUE!
į	-Inonide	1.6	2.1	2	2.1	2.2	2.2				Fluoride	in meq/L	0.084224	0.110544	0.10528	0.110544	0.115808	0.115808	#VALUE!	#VALUE!	#VALUE!	#VALUE!
	Nitrate	9.3	7.3	1.1	0.99	0.53	1.2				Nitrate	in meq/L	0.663927	0.521147	0.078529	0.0706761	0.0378367	0.085668	#VALUE!	#VALUE!	#VALUE!	#VALUE!
3	Chloride	390	420	7.7	22	33	7.1				Chloride	in meq/L	11.00	11.85	2.17	0.62	0.93	2.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!
91-91-0	Suirate	400	380	59	45	38	25				Sulfate	in meq/L	8.33	7.91	1.23	0.94	0.79	0.52	#VALUE!	#VALUE!	#VALUE!	#VALUE!
	Alkalinity	230	240	180	210	210	220				Alkalinity	in meq/L	4.60	4.80	3.60	4:20	4.20	4.40	#VALUE!	#VALUE!	#VALUE!	#VALUE!
	Potassium ppm	9.1	6.3	2.6	2.1	2	2				Potassium	in meq/L	0.23	0.16	0.07	0.05	0.05	0.05	#VALUE!	#VALUE!	#VALUE!	#VALUE!
:	E DIDOS	214	239	39	48	30	15				Sodium	in meq/L	9.31	10.40	1.70	2.09	1.31	0.65	#VALUE!	#VALUE!	#VALUE!	#VALUE!
	Magnesiu m ppm	30	35	10	6.1	9.2	14				Magnesium	in meq/L	2.47	2.88	0.82	0:20	92.0	1.15	#VALUE!	#VALUE!	#VALUE!	#VALUE!
	Calcium	221	212	92	59	81	110				Calcinm	in meq/L	11.03	10.58	4.59	2.94	4.04	5.49	#VALUE!	#VALUE!	#VALUE!	#VALUE!
I I	sample #	T113253	T113254	T112189	T112190	T112191	T112192				Sample #		T113253	T113254	T112189	T112190	T112191	T112192				

	needs to be 0.55-0.77	needs to be 0.55-0.77	needs to be 0.55-0.77	needs to be 0.55-0.77	needs to be 0.55-0.77	needs to be 0.55-0.77	needs to be 0.55-0.77	needs to be 0.55-0.77	needs to be 0.55-0.77	#VALUE! needs to be 0.55-0.77
TDS/Anion	00.0	0.00	0.63	0.61	0.63	69:0	#VALUE!	#VALUE!	#VALUE!	#VALUE!
TDS/Cat	0.00	0.00	0.63	0.64	0.62	0.67	#VALUE!	#VALUE!	#VALUE!	#VALUE!
TDS/EC	#DIV/0i	#DIV/0i	#DIV/0i	0/AIQ#	#DIV/0I	#DIV/0i	#DIV/0i	#DIV/0i	#DIV/0I	#DIV/0i
	0	0	0	0	0	0	0	0	0	0
	đ	ę	\$	đ	ę	\$	Q.	ę	\$	Q.
	0	0	0	0	0	0	0	0	0	0
	range									
EC/Anion	2467.8051	2519.1491	718.4359	593.87401	607.57347	712.4886	#VALUE!	#VALUE!	#VALUE!	#VALUE!
EC/Cation	2303.8378	2401.6604	717.6708	558.7787	615.5128	734.472	#VALUE!	#VALUE!	#VALUE!	#VALUE!
	T113253	T113254	T112189	T112190	T112191	T112192				

155 to 1 or 5

<u>ئ</u> Š WILLIAM DE Authorized: πId OF: AIRBILL # SAMPLED BY: (Print & Sign) Date: (Circle or Specify Method No.) Chloride BOD' ANALYSIS REQUEST Pest. take laway 809/0808 S.B.a SAMPLE SHIPPED BY: (Cipple) HIGHLANDER CONTACT PERSON: 929/0228 JoV. ST.33 CC'NG AOI 8240/8260/624 BCI Volatiles **Lms**2 TOL HAND DELIVERED Volatiles Metals Ag As Ba Cd Cr Pd Hg Se Va Bu Cd Cr Pb Hg Se Hdl BELR 8020/802 BLEX 80SO/80S PRESERVATIVE METHOD NONE Fax (915) 682-3946 Analysis Request and Chain of Custody Record 7 ENVIRONMENTAL CORP. ICE REMARKS > Date: _ Date: _ CONH Time: lime: TOH FILTERED (Y/N) L) 5 CONTAINERS S MONBER JO SD-Solid 0-0ther SITE MANAGER: counties ladecte Unit RECEIVED BY: (Signature) RECEIVED BY: (Signature) RECEIVED BY: (Signature) 3516/1 SL-Sludge SAMPLE IDENTIFICATION 1910 N. Big Spring St. Midland, Texas 79705 PHONE (SXX) 3 (8: 12:16. DATE: (F)Water S-Soil Date: 11 16 98 J. DOWGOO MATRIX アースエ N - 7.E. ページに ージに PROJECT NAMES Time: Date: HIGHLANDER CRAB ۶ COMP SAMPLE CONDITION WHEN RECEIVED. MATRIX 4.40 REMINIOUSHED BY: (Signature) 1 tan 1355 13 10 112189 1/2/ 11/10 KLINQUISKED BY: (Signature) TIME (915) 682 - 4559(035) RELINQUISHED BY: (Signature) ADDRESS: CTC) C DATE CLIENT NAME: PROJECT NO. LAB I.D. NUMBER 061211 CONTACT 1219 11/19

Diago Ell mit all amice. I abandom votame nollows come ARchirm ariothal come to Highlander Environmental Corv. - Project Manager retains vink copy - Accounting receives Gold copy.

112189-63

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR HIGHLANDER SERVICES CORP.

Attention: Ike Tavarez 1910 N. Big Spring Street Midland, TX 79705

February 02, 1999

Receiving Date: 01/29/99 Sample Type: Water Project No: 1085 Project Location: NA

Prep Date: 01/29/99 Analysis Date: 01/29/99 Sampling Date: 01/28/99

Sample Condition: Intact & Cool

Sample Received by: NG Project Name: Titan - Lovington

> Paddock Unit Lea County, NM

Client Name: Titan Exploration

TA#	Field Code	DRO (mg/L)	
T117864	MW-1	<5	
T117865	MW-2	<5	
T117866	MW-3	<5	
T117867	MW-4	<5	
T117868	MW-5	<5	
T117869	MW-6	<5	
QC	Quality Control	238	
REPORTING LIMIT		5	
RPD		0 79	
% Extraction Accuracy % Instrument Accuracy		95	

METHODS: EPA SW 846-8015B, 8011.

CHEMIST: MF

DRO SPIKE: 25 mg/L DRO. DRO QC: 250 mg/L DRO.

Director, Dr. Blair Leftwich

2-2-55



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888 • 588 • 3443 E-Mail: lab@traceanalysis.com ANALYTICAL RESULTS FOR

Highlander Environmental Services Attention Ike Tavarez

1910 N. Big Spirng St.

Midland

TX 79705

Date: Date Rec:

Feb 03, 1999 1/29/99

Project:

1085

Proj Name: Lovington Paddock Unit

Sampling Date: 1/28/99

Proj Loc:

N/A

Sample Condition: Intact and Cool

Sample Received By: ng

Lab Receiving # : 9901000414

TA# Field Code	MATRIX	GRO (mg/L)	
117864 MW-1	Water	<0.100	
117865 MW-2	Water	<0.100	
117866 MW-3	Water	<0.100	
117867 MW-4	Water	8.07	
117868 MW-5	Water	5.18	
117869 MW-6	Water	5.38	
Method Blank		<0.10	
Reporting Limit		0.1	
QC		107	

RPD

% Extraction Accuracy

4

107

% Instrument Accuracy

107

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/L)
GRO	EPA 5030	1/28/99	EPA 8015B	1/29/99	RC	100	100

2-3-95

Dr. Blair Leftwich Director,

HUNDER TRACE ANALYSIS, INCAMBLE

	6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Suite A AN	Lubbock, Texas 79424 El Paso, Texas 79922 E-Mail: lab@ti IALYTICAL RESU	,	806 • 794 • 1296 915 • 585 • 3443	FAX 806 • 794 • 1298 FAX 915 • 585 • 4944	8	
Date: Feb 03, 1999 Date Rec: 1/29/99	Hj At	Highlander Environmental Attention Ike Tavarez 1910 N. Big Spirng St.	ironmenta arez g St.	1 Services	is Lab Receiving # Sampling Date:	0 2	000414
••	1085 Lovington Paddock Unit	Mıdland	X	00/6/	Sample Condition: Sample Received By:		intact and coor ng
FIOJ FOC: N/A					ETHYL-	M, P, O	TOTAL
TA# Field Code	M	MATRIX	BENZENE (mg/L)	TOLUENE (mg/L)	BENZENE (mg/L)	XYLENE (mg/L)	BTEX (mg/L)
117864 MW-1	1	Water	<0.001	<0.001	<0.001	0.001	0.001
	Δ	Water	<0.001	<0.001	<0.001	<0.001	<0.001
117866 MW-3	Λ	Water	0.102	<0.001	<0.001	<0.001	0.102
117867 MW-4	Δ	Water	1.85	1.89	0.123	0.682	4.55
117868 MW-5		Water	2.73	0.001	0.002	0.120	2.85
117869 MW-6	1	Water	2.58	0.003	0.390	0.108	3.081
Method Blank			<0.001	<0.001	<0.001	<0.001	

0.001

0.001

0.001

0.001

Reporting Limit QC

RPD				2		T	7		
% Extraction Accuracy	on Accuracy			106	106	106	101		
% Instrument Accuracy	ıt Accuracy			103	109	104	102		
TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS	SIS ETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/L)	
BTEX	EPA 5030	1/28/99	EPA 8021B	1/29/99	66/	RC	0.100 ea	0.1 ea	Т

2-3-89

Dr. Blair Leftwich

Director,

Lubbock, Texas 79424 El Paso, Texas 79922

ANALYTICAL RESULTS FOR

Attention: Ike Tavarez

1910 N. Big Spring St.

HIGHLANDER SERVICES

Midland, TX 79705

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E-Mail: lab@traceanalysis.com

806 • 794 • 1296 FAX 806 • 794 • 1298 915•585•3443 FAX 915•585•4944 **February 02, 1999**

Receiving Date: 01/29/99

Sample Type: Water Project No: 1085

Sampling Date: 01/28/99 Sample Condition: I & C Sample Received by: NG

Project No: 1085

Client Name: Titan Exploration Proj. Name: Titan - Lovington

> Paddock Unit Lea County, NM

Extraction Date: 01/29/99

PAH Analysis Date: 01/30/99 Reporting T117868 8270 Compounds (mg/L) Limit MW-5 QC RPD %EA %IA 0.001 Naphthalene 0.034 78 4 49 98 Acenaphthylene 0.001 79 0 51 99 ND 0.001 3 Acenaphthene ND 82 61 103 0.001 Fluorene 80 1 60 100 ND 0.001 55 95 Phenanthrene ND 76 2 Anthracene 0.001 79 57 99 ND Fluoranthene 0.001 78 0 98 ND 62 Pyrene 0.001 ND 82 4 54 103 Benzo[a]anthracene 0.001 ND 80 2 60 100 0.001 100 Chrysene ND 80 4 54 50 Benzo[b]fluoranthene 0.001 78 2 98 ND Benzo[k]fluoranthene 0.001 ND 95 1 73 119 Benzo[a]pyrene 0.001 ND 2 64 103 82 Indeno[1,2,3-cd]pyrene 0.001 ND 81 1 71 101 Dibenz[a,h]anthracene 0.001 ND 82 3 80 103 0.001 Benzo[g,h,i]perylene ND 83 3 69 104

ND = Not Detected

SURROGATES

% RECOVERY

Nitrobenzene-d5 SURR

97

2-Fluorobiphenyl SURR

56

Terphenyl-d14 SURR

98

METHODS: EPA SW 846-8270C, 3510C.

CHEMIST: DG

2-2-55

Lubbock, Texas 79424 El Paso, Texas 79922

ANALYTICAL RESULTS FOR

Attention: Ike Tavarez 1910 N. Big Spring St.

HIGHLANDER SERVICES

Midland, TX 79705

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E-Mail: lab@traceanalysis.com

806 • 794 • 1296 FAX 806 • 794 • 1298 915 • 585 • 3443 FAX 915 • 585 • 4944 February 02, 1999

Receiving Date: 01/29/99

Sample Type: Water Project No: 1085

Sampling Date: 01/28/99 Sample Condition: I & C Sample Received by: NG

Project No: 1085

Client Name: Titan Exploration Proj. Name: Titan - Lovington

Paddock Unit
Lea County, NM

Extraction Date: 01/29/99

PAH Reporting T117869 Analysis Date: 01/30/99 8270 Compounds (mg/L) Limit MW-6 RPD &EA QC &IA 49 98 0.001 0.038 78 4 Naphthalene Acenaphthylene 0.001 ND 79 0 51 99 Acenaphthene 0.001 ND 82 3 61 103 Fluorene 0.001 ND 80 1 60 100 Phenanthrene 0.001 76 2 55 95 ND Anthracene 0.001 79 57 99 ND 0 Fluoranthene 0.001 ND 78 0 62 98 Pyrene 0.001 ND 82 4 54 103 Benzo[a]anthracene 100 0.001 ND 80 2 60 0.001 54 100 Chrysene ND 80 4 Benzo[b]fluoranthene 0.001 ND 78 2 50 98 Benzo[k]fluoranthene 73 119 0.001 ND 95 1 Benzo[a]pyrene 0.001 64 103 ND 82 2 0.001 101 Indeno[1,2,3-cd]pyrene 81 71 ND 1 Dibenz[a,h]anthracene 0.001 80 103 ND 82 3 104 Benzo[g,h,i]perylene 0.001 ND 83 3 69

ND = Not Detected

 ${\tt SURROGATES}$

% RECOVERY

Nitrobenzene-d5 SURR

80

2-Fluorobiphenyl SURR

80

Terphenyl-d14 SURR

78

METHODS: EPA SW 846-8270C, 3510C.

CHEMIST: DG

RZ

2-2-55

Director, Dr. Blair Leftwich

			TRACEANALYSIS, INC.	NALY	SIS, IN				
	6701 Aberd 4725 Ripley	6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Suite A	Lubbock, Texas 79424 El Paso, Texas 79922 ANAL F-Mail and HIGHLANDER	Ubbock, Texas 79424 800•378•1296 806•794•1296 FI Paso, Texas 79922 888•588•3443 915•585•3443 FANAL F-Mail-lab@Eggalalwsis-GOR HIGHLANDER ENVIRONMENTAL SERVICES	1-1296 806-79 1-3443 915-58 1-59R	806 • 794 • 1296 FAX 8915 • 585 • 3443 FAX AL SERVICES	FAX 806 • 794 • 1298 FAX 915 • 585 • 4944		
February 5, 1999	66		Attention: I	Attention: Ike Tavarez					
Receiving Date: 01/29/99	: 01/29/99		1910 N. Big Spring St.	Spring St.			Sampling Date: 01/28/99	te: 01/28/99	-00
Sample Type: water Project No: 1085	water 35		Midiand, I.X. 79705	cn/6/ \			Sample Condition: Intact of Sample Received by: VW	Sample Received by: VW	
Project Name:	Project Name: Titan-Lovington Paddock Unit	addock Unit	_	DISSOLVED			Client Name:	Client Name: Titan Exploration	ation
		Ag	As	Ba	B	ర	P.	Se	Нg
TA#	Field Code	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
T117868	MW-5	<0.05	<0.10	<1.0	<0.01	<0.05	<0.05	<0.05	<0.0010
T117869	MW-6	<0.05	<0.10	۸ <u>۲.</u> 0.	<0.01	<0.05	<0.05	<0.05	<0.0010
ICV		0.20	0.99	96.0	96.0	0.97	0.97	0.97	0.0050
CCV		0.19	0.93	0.92	0.93	0.94	0.90	0.91	0.0050
Reporting Limit		0.05	0.10	1.0	0.01	0.05	0.05	0.05	0.0010
RPD		0	0	5	0	0	0	IJ	2
% Extraction Accuracy % Instrument Accuracy	ccura cy ccura cy	98	100 96	100 94	95 96	95 96	95 94	95 94	100
Prép Date: Analysis Date:		01/29/99	01/29/99 02/03/99	01/29/99 02/03/99	01/29/99 02/03/99	01/29/99 02/03/99	01/29/99 02/03/99	01/29/99 02/03/99	02/02/99

METHODS: EPA SW-846 6010B, 3015, 7470A

CHEMIST: DISSOVLED METALS: RR Hg: BP

Ag: 0.40 mg/L As, Ba, Cd, Cr, Pb, Se: 2.0 mg/L Hg SPIKE: 0.0050 mg/L DISSOLVED METAL SPIKE:

Ag: 0.20 mg/L As, Ba, Cd, Cr, Pb, Se: 1.0 mg/L Hg CV: 0.0050 m DISSOLVED METAL CV:

V)

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL SERVICES Sampling Date: 01/28/99 Sample Condition: Intact & Cool

Receiving Date: 01/29/99 Sample Type: Water Project No: 1085

Attention: Ike Tavarez

Sample Received by: VW

February 6, 1999

Project Location:

1910 N. Big Spring St. Midland, TX 79705

Project Name: Lovington Paddock Unit

TA#	FIELD CODE	ALKALINITY (mg/L as CaCo3) HC03 C03
T117869	MW-6	500 <1.00
ICV CCV		1240 1080 1280 1020
PREP DATE ANALYSIS DATE		02/08/99 02/08/99
RPD % Extraction Accuracy % Instrument Accuracy		1 1 97 97 96 96
REPORTING LIMIT		0.10 0.10

METHODS: EPA 310.1 CHEMIST: ALKALINITY: JS

Director, Dr. Blair Leftwich

Unit

			-				
	6701 Aberd 4725 Ripley	6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Suite A	Lubbock, Texas 79424 El Paso, Texas 79922 E-Mail: lab@	Texas 79424 800 • 378 • 1296 Texas 79922 888 • 588 • 3443 E-Mail: lab@traceanalysis.com	806 • 794 • 1296 915 • 585 • 3443	FAX 806•794•1298 FAX 915•585•4944	298 1944
February 3, 1999 Receiving Date: 01/2/	February 3, 1999 Receiving Date: 01/29/99 Sample Type: Water		ANALYTICAL RESULTHIGHLANDER ENVIR	ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL SERVICES	TAL SERVICES		Sampling Date: 01/28/99 Sample Condition: Intact & Cool
Project No: 1085 Project Location:	7. water 1085 tion:		1910 N. Big Spring St. Midland, TX 79705	pring St. 79705			Project Name: Lovington Paddock L
		Ħ	FLUORIDE	CHLORIDE	SULFATE	TDS	ALKALINITY
TA#	FIELD CODE	(s. u.)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L as CaCo3) HC03 C03
T117868	MW-5	7.6	1.7	150	78	950	600 <1.00
T117869	MW-6	7.4	1.5	42	30	290	1
20		7.0	2.43	12.16	11.33	970	1260 920
CCV		7.0	2.45	11.85	11.28	866	2250 1000
PREP DATE		01/29/99	02/01/99	02/01/99	02/01/99	02/01/99	02/01/99
ANALYSIS DATE	АТЕ	01/29/99	02/01/99	02/01/99	02/01/99	02/01/99	02/01/99
RPD		0	~	0	0	_	-
% Extraction Accuracy	Accuracy		88	91	06	26	91 91
% Instrument Accuracy	t Accuracy	100	86	96	06	100	94 94
REPORTING LIMIT	S LIMIT		0.1	9.0	0.5	10	1.00 1.00
METHODS: CHEMIST: FLUORIDE S	METHODS: EPA 150.1, 300.0, 310.1, 160.1. CHEMIST: pH/TDS/: SA FLUORIDE SPIKE: 12.5 mg/L FLUORIDE.	.1, 160.1. FLUORIDE/C JRIDE.	CHLORIDE/SUI	160.1. FLUORIDE/CHLORIDE/SULFATE/ALKALINITY: JS DE. FLUORIDE CV: 2.5 mg	IITY: JS 2.5 mg/L FLUORIDE.	NDE.	

2-8-55

CHLORIDE CV: 12.5 mg/L CHLORIDE.

CHLORIDE SPIKE: 62.5 mg/L CHLORIDE. SULFATE SPIKE: 62.5 mg/L SULFATE.

SULFATE CV: 12.5 mg/L SULFATE.

Date

Director, Dr. Blair Leftwich

AUMUNUMINATION TRACEANALYSIS, INC. MINUMINATION

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El Paso, Texas 79922 888 • 588 • 3443 E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR

HIGHLANDER ENVIRONMENTAL SERVICES Attention: Ike Tavarez

1910 N. Big Spring St. Midland, TX 79705

Project Name: Titan-Lovington Paddock Unit

Receiving Date: 01/29/99 Sample Type: Water Project No: 1085

February 5, 1999

Client Name: Titan Exploration

Sampling Date: 01/28/99

Analysis Date: 02/03/99 Prep Date: 01/29/99

Sample Condition: Intact & Cool

Sample Received by: VW

DISSOLVED

TA#	Field Code	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CALCIUM (mg/L)	SODIUM (mg/L)	HARDNESS (mg/L CaC03)
T117868 T117869	MW-5 MW-6	4.9	13	98	269	300
ICV CCV		25 25	25 23	24	26 25	
Reporting Limit		0.50	0.50	0.50	0.50	1
RPD % Extraction Accuracy % Instrument Accuracy	,	12 114 100	2 · 97 96	7 103 94	10 117 102	

METHODS: EPA SW 846-6010B, 3015, SM 2340B.

CHEMIST: RR

DISSOLVED SPIKE: 100 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

DISSOLVED CV: 25 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich

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ANALYTICAL RESULTS FOR

HIGHLANDER ENVIRONMENTAL SERVICES Attention: Ike Tavarez 1910 N. Big Spring St.

Midland, TX 79705

February 5, 1999

Receiving Date: 01/29/99

Sample Type: Water

Project No: 1085

Project Name: Titan-Lovington Paddock Unit

Sampling Date: 01/28/99

Sample Condition: Intact & Cool

Sample Received by: VW

Client Name: Titan Exploration

TA#	FIELD CODE	NO3 (mg/L)
T117868	MW-5	3.4
T117869	MW-6	3.2
ICV		
CCV		4.54
REPORTING LIMIT		0.2
RPD		1
% Extraction Accuracy		86
% Instrument Accuracy		91
PREP DATE		02/01/99
ANALYSIS DATE		02/01/99

METHODS: EPA 300.0

CHEMIST: JS

NO3 SPIKE: 25 mg/L NO3 NO3 CV: 5.0 mg/L NO3

Director, Dr. Blair Leftwich

Cation-Anion Balance Sheet

DATE	2/8/99											
Sample #	Calcium	. Magnesium	Sodium	Potassium	Alkalinity	Sulfate	Chloride	Nitrate	Fluoride	TDS	EC	
	bpm	mdd	mdd	mdd	шда	mdd	шdd	mdd	mdd	mdd	μMHOs/cm	
117868	86	13	569	4.9	600.00	82	150	3.4	1.7	026		
117869	166	24	24	3	500.00	30	42	3.2	1.5	290		
										Total	Total	
Sample #	Calcium	Magnesium	Sodium	Potassium	Alkalinity	Sulfate	Chloride	Nitrate	Fluoride	Cations	Anions	Percentage
	in meq/L	in meq/L	in meq/L	in meq/L	in meq/L	in meq/L	in meq/L	in meq/L	in meq/L	in meq/L	in meq/L	Error
117868	4.89	1.07	11.70	0.13	12.00	1.62	4.23	0.242726	0.089488	17.79	18.19	2.228590563
117869	8.28	1.97	1.04	80.0	10.00	0.62	1.18	0.228448	0.07896	11.38	12.12	6.279624282

	needs to be 0.55-0.77	needs to be 0.55-0.77
TDS/Anion	0.52	0.49
TDS/Cat	0.53	0.52
	117868	117869

PAGE: 1 OF: /	ANALYSIS REQUEST	Icie of Specify method		55 4 C- 1	28/0\85 280\85 8840\85	/602 S	TCLP Metal RCT CC.MS Semi RCT CC.MS) } } }	**************************************	*		× × × × × × × × × × × × × × × × × × ×	× × × × ×		SAMPLED BY SETING SPANCE Date:	BY: (Circle) K	7	HIGHLANDER COMMON FERSON: RUSH Charges Authorized: Yes	ex, teh by taes stated and bessible	Project Manager retains pink copy - Aggunting receives Gold copy.
)	and Chain of Custody Record	ENVIRONMENTAL CORP.	910 N. Big Spring St. Midland, Texas 79705	Fax (915) 682-3946	SITE MANAGER: PRESERVATIVE METHOD	winter Paddak Unit BE	NONE HAOS HAOS NUMBER OF NUMBER OF	1 1 9	, , , , , , , , , , , , , , , , , , ,	11.3	, ,	111110	1111 101		129 59 RECEIVEDABY: (Signafure) Date:	1- 3C-79 RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	ZIP: 1-29-99 TIME 8	MATRIX: (T-Nate) A-Air SD-Solid REMARKS: BT	ine wellow comy - Return orioinal copy to Highlander Environmental Corp
	Analysis Request	HIGHLANDER ENVIRONA	N 1910 N. Midlan	(915) 682–4559	CLEENT TAME: SUBSISTION	PROJECT NOOS PROJECT NAMES	LAB I.D. DATE TIME TIME NUMBER COMP)		MM (of	JAM Les		>		RELINQUISHES HAY, (Sighbure)	RELINQUISHED BY (Signature) Date:		LABORATORY: STATE:	SAMPLE CONDITION WHEN RECEIVED:	



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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR

Highlander Environmental Services

Attention Ike Tavarez 1910 N. Big Spirng St. Midland TX 79705

Date: Date Rec:

Apr 02, 1999 3/27/99

Project:

1085

Proj Loc: N/A

Proj Name: Lovington Paddock Unit

Lab Receiving # : 99032702 Sampling Date: 3/25/99

Sample Condition: Intact and Cool

Sample Received By: BW

TA# Field Code MATRIX DRO (mg/L)121777 MW-7 Water <5 121778 8-WM Water <5 <5 121779 MW-9 Water Method Blank <5 5 Reporting Limit 22 LCS LCSD 23 217 cv 280 CCV 1

RPD

% Instrument Accuracy

% Extraction Accuracy

4

99 88

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/L)	
DRO	E 8011	3/29/99	Mod. 8015B	3/29/99	MF	250	250	

Dr. Blair Leftwich Director,

Lubbock, Texas 79424 El Paso, Texas 79922

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ANALYTICAL RESULTS FOR

HIGHLANDER ENVIRONMENTAL CORP.

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

CORRECTED

April 08, 1999

Receiving Date: 03/27/99 Sample Type: Water Project No: 1085 **Project Location: NA**

Prep Date: 04/01/99

Analysis Date: 04/01/99 Sampling Date: 03/25/99

Sample Condition: Intact & Cool

Sample Received by: BW

Client Name: Titan Exploration & Production Project Name: Titan/Lovington Paddock Unit

0.100

Lea County, NM

GRO (mg/L) TA# FIELD CODE T121777 MW - 7 < 0.100 < 0.100 T121778 MW - 8 T121779 MW - 9 0.155 QC **Quality Control** 1.0 0.100 METHOD BLANK

RPD	1
% Extraction Accuracy	99
% Instrument Accuracy	100

METHODS: EPA SW 846-5035, 8015B Modified.

CHEMIST: RC

REPORTING LIMIT

GRO SPIKE: 1.000 mg/L GRO. GRO CV: 1.000 mg/L GRO.

Director, Dr. Blair Leftwich

4-8-59

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ANALYTICAL RESULTS FOR

HIGHLANDER ENVIRONMENTAL CORP.

Attention: Ike Tavarez 1910 N. Big Spring St.

Midland, TX 79705

Receiving Date: 03/27/99

April 08, 1999

Sample Type: Water Project No: 1085 Project Location: NA

Analysis Date: 04/01/99 Prep Date: 04/01/99

Sample Condition: Intact & Cool Sampling Date: 03/25/99

Sample Received by: BW

Client Name: Titan Exploration & Production

Project Name: Titan/Lovington Paddock Unit, Lea County, NM

CORRECTED

TA#	FIELD CODE	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL- BENZENE (mg/L)	M,P,O XYLENE (mg/L)	TOTAL BTEX (mg/L)
	MW - 7	<0.001	<0.001	<0.001	<0.001	<0.001
T121778	MW - 8	< 0.001	< 0.001	<0.001	< 0.01	< 0.001
T121779	9 - WM	0.104	< 0.001	<0.001	0.002	0.106
QC	Quality Control	0.099	0.098	0.097	0.289	
REPORTING LIMIT		< 0.001	< 0.001	< 0.001	< 0.001	
RPD		~	_	2	2	
% Extraction Accuracy	uracy	100	66	96	96	
% Instrument Accuracy	curacy	66	86	6	96	

METHODS: EPA SW 846-8021B, 5035.

CHEMIST: RC

BTEX SPIKE: 0.100 mg/L BTEX.

BTEX QC: 0.100 mg/L BTEX.

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ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705 April 8, 1999

Receiving Date: 03/27/99 Sample Type: Water Project No: 1085

Client Name: Titan Exploration & Production

Project Name: Titan/Lovington
Paddock Unit, Lea County, NM
Sampling Date: 03/25/99
Sample Condition: I & C
Sample Received by: VW
Extraction Date: 03/29/99

PAH Reporting T121777

Analysis Date: 03/30/99

PAH	Reporting	1121777		,	Analysis L	Pate: 03/30/99
8270 Compounds (mg/L)	Limit	MW-7	cv	RPD	%EA	%IA
Naphthalene	0.001	ND	81	9	80	101
Acenaphthylene	0.001	ND	81	6	89	101
Acenaphthene	0.001	ND	78	6	90	98
Fluorene	0.001	ND	81	5	94	101
henanthrene	0.001	ND	76	0	90	95
Anthracene	0.001	ND	78	0	88	98
Fluoranthene	0.001	ND	81	2	99	101
Pyrene	0.001	ND	76	3	89	95
Benzo[a]anthracene	0.001	ND	78	0	95	98
Chrysene	0.001	ND	81	1	108	101
Benzo[b]fluoranthene	0.001	ND	82	5	96	103
Benzo[k]fluoranthene	0.001	ND	76	3	94	95
Benzo[a]pyrene	0.001	ND	83	11	100	104
Indeno[1,2,3-cd]pyrene	0.001	ND	75	4	90	94
Dibenz[a,h]anthracene	0.001	ND	78	1	115	98
Benzo[g,h,i]perylene	0.001	ND	76	1	90	95

ND = Not Detected

SURROGATES

% RECOVERY 84

84

50

Nitrobenzene-d5 SURR
2-Fluorobiphenyl SURR
Terphenyl-d14 SURR

METHODS: EPA SW 846-8270, 3510C

HEMIST: MA

63

4-8-55

Director, Dr. Blair Leftwich

Lubbock, Texas 79424

ANALYTICAL RESULTS FOR

Attention: Ike Tavarez

1910 N. Big Spring St. Midland, TX 79705

HIGHLANDER ENVIRONMENTAL

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E-Mail: lab@traceanalysis.com

April 8, 1999

Receiving Date: 03/27/99 Sample Type: Water Project No: 1085

Client Name: Titan Exploration & Production

Project Name: Titan/Lovington Paddock Unit, Lea County, NM Sampling Date: 03/25/99 Sample Condition: I & C Sample Received by: VW

Extraction Date: 03/29/99 Analysis Date: 03/30/99

PAH Reporting T121778

	Reporting	1121770			Allalysis L	Jale. 03/30/99
8270 Compounds (mg/L)	Limit	MW-8	cv	RPD	%EA	%IA
Naphthalene	0.001	ND	81	9	80	101
Acenaphthylene	0.001	ND	81	6	89	101
Acenaphthene	0.001	ND	78	6	90	98
Fluorene	0.001	ND	81	5	94	101
nenanthrene	0.001	ND	76	0	90	95
Anthracene	0.001	ND	78	0	88	98
Fluoranthene	0.001	ND	81	2	99	101
Pyrene	0.001	ND	76	3	89	95
Benzo[a]anthracene	0.001	ND	78	0	95	98
Chrysene	0.001	ND	81	1	108	101
Benzo[b]fluoranthene	0.001	ND	82	5	96	103
Benzo[k]fluoranthene	0.001	ND	76	3	94	95
Benzo[a]pyrene	0.001	ND	83	1	100	104
Indeno[1,2,3-cd]pyrene	0.001	ND	75	4	90	94
Dibenz[a,h]anthracene	0.001	ND	78	1	115	98
Benzo[g,h,i]perylene	0.001	ND	76	1	90	95

ND = Not Detected

SURROGATES

% RECOVERY

Nitrobenzene-d5 SURR

87

2-Fluorobiphenyl SURR

81

Terphenyl-d14 SURR

54

METHODS: EPA SW 846-8270, 3510C

HEMIST: MA

4-8-55

Director, Dr. Blair Leftwich

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ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

April 7, 1999

Receiving Date: 03/27/99 Sample Type: Water Project No: 1085

Client Name: Titan Exploration & Production

Project Name: Titan/Lovington Paddock Unit, Lea County, NM Sampling Date: 03/25/99 Sample Condition: I & C

PAH	Reporting	T121779	 _	Date: 03/31/99		
				Extraction	Date: 03/29/99	
				Sample R	eceived by: vvv	

LALL	reporting	1121113			7 (Talyolo L	7ate. 03/3 1/33
8270 Compounds (mg/L)	Limit	MW-9	CV	RPD	%EA	%IA
Naphthalene	0.001	ND	80	9	80	100
Acenaphthylene	0.001	ND	80	6	89	100
Acenaphthene	0.001	ND	78	6	90	98
Fluorene	0.001	ND	80	5	94	100
henanthrene	0.001	ND	78	0	90	98
Anthracene	0.001	ND	79	0	88	99
Fluoranthene	0.001	ND	81	2	99	101
Pyrene	0.001	ND	78	3	89	98
Benzo[a]anthracene	0.001	ND	80	0	95	100
Chrysene	0.001	ND	81	1	108	101
Benzo[b]fluoranthene	0.001	ND	84	5	96	105
Benzo[k]fluoranthene	0.001	ND	76	3	94	95
Benzo[a]pyrene	0.001	ND	83	1	100	104
Indeno[1,2,3-cd]pyrene	0.001	ND	69	4	90	86
Dibenz[a,h]anthracene	0.001	ND	74	1	115	93
Benzo[g,h,i]perylene	0.001	ND	68	1	90	85

ND = Not Detected

SURROGATES

% RECOVERY

Nitrobenzene-d5 SURR

78

2-Fluorobiphenyl SURR

74

Terphenyl-d14 SURR

61

METHODS: EPA SW 846-8270, 3510C

HEMIST: MA

4-7-99

Director, Dr. Blair Leftwich

ULIMENTALISMENT AND MENTAL PRACE ANALYSIS, INCAMBLE MULTINATION OF THE MAINTENAMENT OF

FAX 806 • 794 • 1298 FAX 915 • 585 • 4944	Sampling Date: 03/25/99 Sample Condition: I & C Sample Received by: VW Project Name: Titan/Lovington Paddock Unit, Lea County, NM	TOTAL TOTAL TOTAL Ag Ba Hg (mg/L) (mg/L)	 <0.05 <0.11 <0.002 <0.05 <0.10 <0.0002 <0.0002 	0. 0. -	0.05 0.10 0.0002	2 0 2 96 100 89 100 100 95	03/29/99 03/29/99 03/30/99 03/30/99 03/30/99
806•794•1296 FA 915•585•3443 FA	E-Wall: lab@traceanalysts.com ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL SERVICES Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705	TOTAL Pb (mg/L)	40.1040.1040.10	1.0	0.10	0 001 001	03/29/99 03/30/99
	E-Wall: lab@tracenlaysts.com ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMEN Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705	TOTAL Cr (mg/L)	<0.05 <0.05 <0.05	1.0	0.05	0 100 100	03/29/99
Lubbock, Texas 79424 El Paso, Texas 79922	ANALYTICAL RESULT ANALYTICAL RESULT HIGHLANDER ENVIR Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705	TOTAL Cd (mg/L)	<0.02 <0.02 <0.02	1.0	0.02	0 100 100	03/29/99 03/30/99
		TOTAL Se (mg/L)	<0.10 <0.10 <0.10	1.0	0.10	0 100 100	03/29/99 03/30/99
6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Suite A	Production	TOTAL As (mg/L)	<0.10 <0.10 <0.10	1.0	0.10	5 105 100	03/29/99 03/30/99
6	April 2, 1999 Receiving Date: 03/27/99 Sample Type: Water Project #: 1085 Client Name: Titan Exploration & Production	FIELD CODE	MW-7 MW-8 MW-9		G LIMIT	n Accuracy nt Accuracy	E DATE
	April 2, 1999 Receiving Date: 03/2 Sample Type: Water Project #: 1085 Client Name: Titan E	TA#	T121777 T121778 T121779	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	REPORTING LIMIT	RPD % Extraction Accuracy % Instrument Accuracy	PREP DATE ANALYSIS DATE

METHODS: EPA SW-846 6010B, 3015

CHEMIST: As, Se, Cd, Cr, Pb, Ag, Ba: RR Hg: BP

Ag: 0.10 mg/L Hg: 0.0010 mg/L TOTAL METAL SPIKE: As, Se, Cd, Cr, Pb, Ba: 2.0 mg/L

TOTAL METAL CV: As, Se, Cd, Cr, Pb, Ba: 1.0 mg/L Ag: 0.20 mg/L Hg: 0.0010 mg/L

4-2-99

Director, Dr. Blair Leftwich

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ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

Sampling Date: 03/25/99

Sample Condition: I & C Sample Received by: VW

Project Name: Titan/Lovington Paddock Unit, Lea County, NM

Receiving Date: 03/27/99

April 7, 1999

Sample Type: Water Project #: 1085

Client Name: Titan Exploration & Production

Corrected

TA#	Field Code	FLUORIDE (mg/L)	CHLORIDE (mg/L)	NO3-N* (mg/L)	SULFATE (mg/L)
T121777	MW-7	1.8	28	2.7	35
T121778	MW-8	1.8	23	3.3	80
ICV		2.47	12.01	4.81	12.00
CV		2.48	12.07	4.84	12.07
Reporting Lim	nit	0.1	0.5	0.2	0.5
RPD		13	0	0	1
% Extraction	Accuracy	92	91	92	94
% Instrument	Accuracy	99	96	97	96
PREP DATE		04/05/99	04/05/99	04/05/99	04/05/99
ANALYSIS D	ATE	04/05/99	04/05/99	04/05/99	04/05/99

*Re-ran sample out of holding time

METHODS: EPA 300.0

CHEMIST: JS

FLUORIDE SPIKE: 2.5 mg/L FLUORIDE

NO3-N SPIKE: 5.0 mg/L NO3-N

CHLORIDE SPIKE: 12.5 mg/L CHLORIDE SULFATE SPIKE: 12.5 mg/L SULFATE

FLUORIDE CV: 2.5 mg/L FLUORIDE

NO3-N CV: 5.0 mg/L NO3-N

CHLORIDE SPIKE: 12.5 mg/L CHLORIDE SULFATE SPIKE: 12.5 mg/L SULFATE

83

Director, Dr. Blair Leftwich

4.7-99

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ANALYTICAL RESULTS FOR

HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

April 7, 1999

Receiving Date: 03/27/99 Sample Type: Water Project #: 1085

Client Name: Titan Exploration & Production

Sampling Date: 03/25/99
Sample Condition: I & C
Sample Received by: VW
Project Name: Titan/Lovington

Paddock Unit, Lea County, NM

CORRECTED

					ALK	ALINITY	
		pH*	TDS	ОН	CO3	HC03	TOTAL
TA#	FIELD CODE	(s.u.)	(mg/L)		(mg/L	as CaCo	3)
T121777	MW-7	7.8	340	0	0	174	174
T121778	MW-8	7.7	390	0	0	170	170
ICV		7.0	962		:	2,400	
CCV		7.0	991		2	2,400	
REPORTING L	LIMIT		10			0.1	
PREP DATE		03/29/99	03/29/99		04	1/05/99	
ANALYSIS DA	TE	03/29/99	03/29/99		04	1/05/99	
RPD		3	4			1	
% Extraction A	ccuracy		96			94	
% Instrument A		100	99			95	

*Out of holding time.

METHODS: EPA 150.1, 310.1, 160.1

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Director, Dr. Blair Leftwich

4-7-59

CHELLE CONTROLL OF TRACE ANALYSIS, INCAMBLE CONTROLL OF THE CONTROLL OF THE CONTROL OF THE CONTR

FAX 806 • 794 • 1298	FAX 915 • 585 • 4944			Prep Date: 03/29/99	Analysis Date: 03/30/99	Sampling Date: 03/25/99	Sample Condition: I & C	Sample Received by: VW	Project Name: Titan/Lovington
806 • 794 • 1296	915 • 585 • 3443			AL SERVICES					
800 • 378 • 1296	888 • 588 • 3443	E-Mail: lab@traceanalysis.com	SULTS FOR	IVIRONMENTA	arez	g St.	5		
Lubbock, Texas 79424	El Paso, Texas 79922 888 • 588 • 3443	E-Mail: lab@t	ANALYTICAL RESULTS FOR	HIGHLANDER ENVIRONMENTAL SERVICES	Attention: Ike Tavarez	1910 N. Big Spring St.	Midland, TX 79705		
6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298	4725 Ripley Avenue, Suite A							ion & Production	
				April 2, 1999	Receiving Date: 03/27/99	Sample Type: Water	Project #: 1085	Client Name: Titan Exploration & Production	

TA#	Field Code	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CALCIUM (mg/L)	SODIUM (mg/L)	HARDNESS (mg/L CaC03)
T121777	MW-7	4.9	10	76	23	272
T121778	MW-8	2.3	10	74	43	226
T121779	WW-9	2.8	15	109	46	334
lCV		24	25	25	24	+
CCV		24	25	26	24	1 1 1
Reporting Limit		0.50	0.50	0.50	0.50	I
RPD		*0	2	0	7	I
% Extraction Accuracy		106*	101	26	110	1
% Instrument Accuracy		96	100	102	96	1

*Used LCS/LCSD for EA/RPD due to high concentration in matrix spikes.

METHODS: EPA SW 846-6010B, 3005A, SM 2340B.

CHEMIST: RR

TOTAL SPIKE: 100 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

TOTAL CV: 25 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

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4-2-39

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FAX 915 • 585 • 4944

ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

Sample Type: Water

Receiving Date: 03/27/99

Project #: 1085

April 2, 1999

Client Name: Titan Exploration & Production

Sampling Date: 03/25/99 Sample Condition: I & C Sample Received by: VW

Project Name: Titan/Lovington Paddock Unit, Lea County, NM

TA#	Field Code	FLUORIDE (mg/L)	CHLORIDE (mg/L)	NO3-N (mg/L)	SULFATE (mg/L)	
T121779	MW-9	2.1	95	4.8	70	
ICV		2.37	11.95	4.91	12.37	
CCV		2.39	11.90	4.89	12.04	
Reporting Lim	nit	0.1	0.5	0.2	0.5	
RPD		1	0	0	2	
% Extraction	Accuracy	89	96	96	102	
% Instrument	Accuracy	95	95	98	98	
PREP DATE		03/29/99	03/29/99	03/29/99	03/29/99	
ANALYSIS D	ATE	03/29/99	03/29/99	03/29/99	03/29/99	

METHODS: EPA 300.0

CHEMIST: JS

FLUORIDE SPIKE: 12.5 mg/L FLUORIDE

NO3-N SPIKE: 25 mg/L NO3-N

CHLORIDE SPIKE: 62.5 mg/L CHLORIDE SULFATE SPIKE: 62.5 mg/L SULFATE

FLUORIDE CV: 2.5 mg/L FLUORIDE

NO3-N CV: 5.0 mg/L NO3-N

CHLORIDE SPIKE: 12.5 mg/L CHLORIDE SULFATE SPIKE: 12.5 mg/L SULFATE

Director, Dr. Blair Leftwich

4-7-59

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ANALYTICAL RESULTS FOR HIGHLANDER ENVIRONMENTAL SERVICES

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

April 9, 1999

Receiving Date: 03/27/99 Sample Type: Water Project #: 1085

Client Name: Titan Exploration & Production

Sampling Date: 03/25/99 Sample Condition: I & C Sample Received by: VW Project Name: Titan/Lovington Paddock Unit, Lea County, NM

ALKALINITY TDS pH* ОН CO3 HC03 TOTAL TA# FIELD CODE (s.u.) (mg/L) (mg/L as CaCo3) T121779 MW-9 7.8 540 0 188 188 **ICV** 7.0 962 2,400 CCV 7.0 991 2,400 REPORTING LIMIT 10 0.1 PREP DATE 03/29/99 03/29/99 03/30/99 **ANALYSIS DATE** 03/29/99 03/29/99 03/30/99 **RPD** 3 4 3 96 95 % Extraction Accuracy % Instrument Accuracy 100 99 91

*Out of holding time.

METHODS: EPA 150.1, 310.1, 160.1

4-2.99

Director, Dr. Blair Leftwich

Cation-Anion Balance Sheet

							Percentage	Error	8.253335131	6.406368561	4.626733674
	ပ္ထ	μMHOs/cm				Total	Anions	in meq/L	5.29	6.04	8.35
	TDS	шда	340	390	540	Total	Cations	in meq/L	5.74	6.44	8.75
	Fluoride	bbm	1.8	1.8	2.1		Fluoride	in meq/L	0.094752	0.094752	0.110544
	Nitrate	mdd	2.7	3.3	4.8		Nitrate	in meq/L	0.192753	0.235587	0.342672
	Chloride	mdd	28	23	98		Chloride	in meq/L	0.79	0.65	2.68
	Sulfate	mdd	35	80	02		Sulfate	in meq/L	0.73	1.67	1.46
	Alkalinity	mdd	174.00	170.00	188.00		Alkalinity	in meq/L	3.48	3.40	3.76
	Potassium	mdd	4.9	2.3	2.8		Potassium	in meq/L	0.13	90.0	0.07
	Sodium	mdd	23	43	46		Sodium	in meq/L	1.00	1.87	2.00
	Magnesium	mdd	10	10	15		Magnesium	in meq/L	0.82	0.82	1.23
4/5/99	Calcium	mdd	92	74	109		Calcium	in meq/L	3.79	3.69	5.44
DATE	Sample #		121777	121778	121779		Sample #		121777	121778	121779

								ŀ			
	EC/Cation	EC/Anion					TDS	TDS/EC	TDS/Cat	TDS/Anion	
121777	574.1142	528.6085	range	0	đ	0	#DIN/oi	10//	0.59	0.64	peeds
121778	644,4834	604.4	range	0	đ	0	#DIV/0i	10//	0.61	0.65	needs
121779	874.6074	835.0566	range	0	t	0	AIQ#	10//	0.62	0.65	lneed

needs to be 0.55-0.77	0.65	0.62	#DIV/0i
needs to be 0.55-0.77	0.65	0.61	#DIV/0i
needs to be 0.55-0.77	0.64	0.59	#DIN/0i
	TDS/Anion	TDS/Cat	TDS/EC

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AIRBILL CATIS 938 是"地名大小州 RUSH Charges ADA 159-384-47/4 Please Fill out all conies - Taheratory retains vellow copy - Return original copy to Highlander Environmental Corp. - Project Manager retains pink copy - Accounting receives Cold copy. Beta (Circle or Specify Method No.) TDS, Chloride Bus GLI ANALYSIS REQUEST SAMPLE SHIPPED BY: (Circle)
FRDEX
OFF HIGHLANDER CONTACT PERSON: 8270/825 9240/9260/624 CC'ME NOT IK WOOLY SAMPLED BY APTING JA HAND DELIVERED As Ba Cd Cr Pd Hg Se HVd 5/081 НДД 8020/602 BTEX Ward. REMARKS: 50 PRESERVATIVE METHOD SHO NONE Fax (915) 682-3946 91,55 and Chain of Custody Record HIGHLANDER ENVIRONMENTAL CORP. ICE Date: _ EONH Time: HCT_LDY RECEIVED BY: (Signature) Chandle 5 5 3/21/99 miles OF CONTAINERS 5 Action Systems SD-Solid lavare 0-other RECEIVED BY: (Signature) REČEIVED BY: (Signature) SI-Sludge SAMPLE IDENTIFICATION 1910 N. Big Spring St. Midland, Texas 79705 SITE MANAGER. r-Fater ∞ MATRIX ZIP: Date: J ON SKOloration : 1 PROJECT NAME Date: E E Analysis Request H; ano 727. XUS (699) GRAB COMP SAMPLE CONDITION WHEN RECEIVED: RELINQUESMED, BY: (PROMETYPE) THE DISTRIBUTES TIME RELINQUISHED BY: (Signature) (915) 682 - 4559RECEIVING LABORATORY:
ADDRESS: PROJECT NO.: /// RE 179 2/65/97 DATE CLIENT NAME: LAB I.D. NUMBER CONTACT

MUMINIMAN MANALYSIS, INCAMINATION MAINTIMAN

6701 Aberdeen Avenue, Suite 9 4725 Ripley Avenue, Suite A

Lubbock, Texas 79424 800 • 378 • 1296 806 • 794 • 1296 FAX 806 • 794 • 1298 El Paso, Texas 79922 888 • 588 • 3443 915 • 585 • 3443 FAX 915 • 585 • 4944 E-Mail: lab@traceanalysis.com

HIGHLANDER ENVIRONMENTAL SERVICES ANALYTICAL RESULTS FOR

Attention: Ike Tavarez

1910 N. Big Spring St. Midland TX 79705

Lovington Paddock Pit

Proj Name: Project:

Proj Loc:

Date: April 16, 1999

Lab Receiving # : 99041506 Date Rec: 4/15/99

Sampling Date: 4/14/99 Sample Condition: I & C

Sample Received By:

					ETHYL-	M, P, O	TOTAL	
TA#	Field Code	MATRIX	BENZEN	TOLUENE	BENZEN	IE XYLENE		
			mg/L	mg/L	mg/L	mg/L	mg/L	
10001	5 MM - 0	No + 0 x	100 07	70 07	100 07	70 001	70 001	

		mg/L	mg/L	mg/L	mg/L	mg/L
122815 MW-9	Water	<0.001	<0.001	<0.001	<0.001	<0.001

		•		•		
122815 MW-9	Water	<0.001	<0.001	<0.001	<0.001	<0.001

122815 MW-9	Water	<0.001	<0.001	<0.001	<0.001	V
Method Blank		<0.001	<0.001	<0.001	<0.001	
Reporting Limit		0.001	0.001	0.001	0.001	
DC .		0.091	0.091	0.092	0.266	

RPD	5	9	9	9
<pre>% Extraction Accuracy</pre>	95	94	92	92
%Instrument Accuracy	92	91	92	92

%Instrumen	%Instrument Accuracy			92 9	91 92	92		
TEST	PREP	PREP	ANALYSIS	ANALYSIS	CHEMIST	:oo	SPIKE:	
	METHOD	DATE	METHOD	COMPLETED		(mg/L)	mg/L	
BTEX	EPA SW 846-5035	4/15/99	S 8021B	4/15/99	RC	0.100 ea	0.100 ea	

Director, Dr. Blair Leftwich

Lubbock, Texas 79424 El Paso, Texas 79922

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ANALYTICAL RESULTS FOR

HIGHLANDER ENVIRONMENTAL CORP.

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

April 16, 1999

Receiving Date: 04/15/99 Sample Type: Water Project No: 1085 **Project Location: NA** Client Nanme: Titan

Prep Date: 04/15/99 Analysis Date: 04/15/99 Sampling Date: 04/14/99

Sample Condition: Intact & Cool

Sample Received by: VW

Project Name: Lovington Paddock Pit

TA#	FIELD CODE	GRO (mg/L)
T122815	MW-9	<0.100
€ c	Quality Control	<0.100
METHOD BLANK		<0.100
REPORTING LIMIT		0.100
RPD		9
% Extraction Accuracy		88
% Instrument Accuracy		95

METHODS: EPA SW 846-5035, 8015B Modified.

CHEMIST: RC

GRO SPIKE: 1.00 mg/L GRO. GRO CV: 1.00 mg/L GRO.

4-16-99

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806 • 794 • 1296 915 • 585 • 3443 FAX 806 • 794 • 1298 FAX 915 • 585 • 4944

E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR

HIGHLANDER ENVIRONMENTAL CORP.

Attention: Ike Tavarez 1910 N. Big Spring St. Midland, TX 79705

April 16, 1999

Receiving Date: 04/15/99 Sample Type: Water Project No: NA **Project Location: NA**

Prep Date: 04/15/99 Analysis Date: 04/15/99 Sampling Date: 04/14/99

Sample Condition: Intact & Cool

Sample Received by: VW

Client Name: Titan

Project Name: Lovington Paddock Pit

TA#	FIELD CODE	DRO (mg/L)
T122815	MW-9	<5
METHOD BLANK LCS LCSD ICV CCV-1 CCV-2 CV Average Reporting Limit		<5 19 18 202 215 286 234 5
RPD % Extraction Accuracy % Instrument Accuracy		5 72 81

METHODS: EPA SW 846-8011, 8015B Modified.

CHEMIST: MF

DRO SPIKE: 25 mg/L DRO. DRO CV: 250 mg/L DRO.

4-16-99

J0514abb

PAGE: / OF: /	ANALYSIS REQUEST (Girele or Specify Method No.)	•	4 G-	88 Ces 8880/688	CCMS AOT 8840\CCMS AOT 8840\CCMS Meters V6 V LCIN Meters V6 V LCIN Meters V6 V LCIN Meters V6 V	·×					Date: 12 20		OTHER:	HER CONTACT PERSON: 4 [116 9 9	Tree MUSCAM	4/10	Project Managar retains pink copy - Accounting receives Gold copy.
Anolusia Damost and Chain of Custody Record	hequest and chain of custody	4NDER ENVIRONMENTAL CO. 1910 N. Big Spring St. Midland, Texas 79705	(915) 682-4559 Fex (915) 682-3946	SITE MANAGER:	HONE HONE HONE HONE HOLE HOLE HOLE HOLE HOLE HOLE HOLE HOL	X X 7 9					RELINGUISHED BY (Suchatury) Time: 4/50 20 10 10 10 10 10 10 10 10 10 10 10 10 10	Date: 4/14/14 RECEIVED BY: (Signature)	'Signature)	Y: TAGE ANTHONY ANTENNED BY: (Signature) (CLI)	4-15.99 mar 9.3	SAMPLE CONDITION WHEN RECEIVED: MATRIE: (1-Tates A-Air SD-Solid REMARKS: 8-Sail SI-Stades 0-Other	Please Fill out all copies - Laboratory retains yellow copy - Return original copy to Highlander Environmental Corp Pro-