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REPORTS

DATE:

1993

CURA, INC.
3001 North Big Spring
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Midland, Texas 79705
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PHASE II
ENVIRONMENTAL SITE ASSESSMENT

DENTON STATION
LEA COUNTY, NEW MEXICO

CURA PROJECT NO. 15-92567001.3

RECEIVED

NOV 15 1993

OIL CONSERVATION DIV.
SANTA FE

SHELL PIPE LINE CORPORATION
TWO SHELL PLAZA
P.O. BOX 2099
HOUSTON, TEXAS 77252-2099

March 12, 1993

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CURA

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1.0 REPORT SUMMARY

1.1 EXECUTIVE SUMMARY

The site, Denton Station, is located approximately 13 miles northeast of Lovington in Lea County, New Mexico (Appendix A, Figure 1) and is utilized as a crude oil pipeline pump station.

A review of the analytical results from the Preliminary Site Assessment conducted during December 1992 indicated hydrocarbon-impacted soils (> 100 ppm TPH) at a depth of 3 to 5 feet (580 ppm TPH), 11 to 12 feet (970 ppm TPH), and 15 to 17 feet (110 ppm TPH) in boring B-2. Boring B-3 recorded a TPH level of 240 ppm in the 6 to 6.5 foot interval at the bottom of the boring. Based on these analytical results, the sump and pump equipment located in the southeast corner of the site were identified as potential sources of the crude oil impacted soils observed on site.

Based on the findings of the Preliminary Site Assessment, four additional soil borings (B-8 through B-11) were performed on February 8, 1993 to further delineate the horizontal and vertical extent of the hydrocarbon-impacted soils previously identified in borings B-2 and B-3.

Benzene levels measured below method detection limits of 0.001 ppm in each sampled interval of borings B-8 through B-11. The total BTEX levels ranged from below method detection limits of 0.001 ppm in various intervals to 0.005 ppm in the 20 to 22 foot interval of boring B-8. TPH levels ranged from below method detection limits of 10 ppm in various boring intervals to 50 ppm in the 15 to 17 foot interval of boring B-8. The current New Mexico Oil Conservation Division (OCD) recommended remediation levels for crude oil impacted soils are 10 ppm benzene, 50 ppm total BTEX, and either 100 ppm,

1,000 ppm, or 5,000 ppm TPH depending upon the risk assessment ranking for the site.

Based on the data obtained, the extent of hydrocarbon-impacted soils near the sump and pump equipment in the southeast corner of the site is limited to an area less than 100 feet long (east - west) and 50 feet wide with a maximum depth of 20 feet.

Groundwater was not encountered during this subsurface investigation, however, during subsequent operations by Shell Pipe Line Company to plug and abandon the on site water well, crude oil was identified to be present in the well bore. During investigation and crude oil recovery operations performed by CURA on February 26, 1993, a crude oil thickness of approximately 7.97 feet was measured at a depth to water of approximately 58 feet below ground surface. Subsequent measurement on March 5, 1993 measured approximately 3.45 feet of crude oil overlying water. The extent of the impacted area and potential source are currently unknown. Possible sources are subsurface pipelines, and off-site oil production facilities.

1.2 SCOPE OF SERVICES

The following scope of services was conducted for the Phase II - Environmental Site Assessment:

- Met with Shell Pipe Line Corporation to determine additional boring locations in order to further delineate the extent of hydrocarbon-impacted soils discovered during the Preliminary Site Assessment conducted in December 1992.
- Performed soil borings and obtained soil samples to aid in classifying subsurface conditions with respect to petroleum hydrocarbons.
- Constructed a soil hydrocarbon concentration map to help delineate the horizontal and vertical extent of hydrocarbon-affected soils.
- Assembled soil profile columns from soil boring logs and reviewed the soil classification for the site area.
- Summarized findings in the Phase II - Environmental Site Assessment Report.

2.0 INTRODUCTION

During December 1992, CURA was contracted by Shell Pipe Line Corporation to conduct a Preliminary Site Assessment (report dated January 15, 1993) prior to a planned site divestment. Based on the discovery of hydrocarbon-impacted soils in boring B-2 and B-3, the sump and pump equipment located in the southeast corner of the site were identified as potential sources.

A Phase II - Environmental Site Assessment (this report) was performed on February 8, 1993 to further delineate the extent of hydrocarbon-impacted soils near borings B-2 and B-3, and to provide a more comprehensive assessment of the subsurface soil conditions. The site, Denton Station, is located approximately 13 miles northeast of Lovington in Lea County, New Mexico (Appendix A, Figure 1).

3.0 SITE DESCRIPTION

Denton Station is utilized as a crude oil pipeline pumping station in which subsurface crude oil field lines from various oil field leases are manifolded into the main subsurface discharge pipeline currently operated by Shell Pipe Line Corporation. Two inactive 10,000 gallon aboveground crude oil storage tanks (Tanks 1979 and 1980) are located in the northwestern portion of the site (Appendix A, Figure 2) and are surrounded by an earthen dike. A pumping station and small single-walled steel sump are located in the southeast quarter of the site approximately 80 feet south of an abandoned water well. A pipeline scraper gate is located south of the sump near the property boundary.

Denton Station is bounded on the north, east and south by barbed-wire fencing and to the west by range land. A locked gate is located near the center of the east property boundary. The site is located in a rural area within the Denton Oil Field. No residences, public buildings, or surface bodies of water were observed within a 1,000 foot radius of the facility. An abandoned water well is present on site and 4 additional water wells are located between 2,000 to 2,500 feet from the site to the northwest. The current status of these wells is unknown.

4.0 SITE HYDROGEOLOGY

The site is located in Lea County, New Mexico, within the High Plains physiographic province of New Mexico and Texas.

The late Miocene to Pliocene age Ogallala Formation is the major water-bearing formation in the area and consists of semiconsolidated fine-grained calcareous sand overlain by a thick layer of caliche. The formation contains some clay, silt, and often a basal gravel. It is a heterogeneous complex of terrestrial sediments deposited over an irregular erosional surface cut into the underlying Cretaceous and Triassic rocks. The Ogallala Formation outcrops in the site area and often forms a continuous aquifer with the underlying rocks.

Other than the abandoned on-site well, no water wells were observed within a 1,000 foot radius of the site. Based on a water well search performed by Geosource Inc., (GI; January 11, 1992), the abandoned well is not registered with the State of New Mexico. The well is constructed of 10 inch steel casing near the surface and is currently open to a depth of 97 feet. Four additional water wells are located between 2,000 to 2,500 feet from the site to the northwest. The current status of these wells is unknown.

According to the U.S.G.S. Prairieview, New Mexico, topographic quadrangle, the site is approximately 3,780 feet above mean sea level (Figure 4). The general trend of the local topography and surface drainage of the site area is to the southeast.

The soils on site belong to the Portales Series consisting of well-drained, sandy loam soils that have a sandy clay loam subsoil. These soils formed in strongly calcareous wind-deposited and water-deposited sediments in depressions, swales and along playa lakes. Typically, the surface layer is a dark brown loam about 8 inches thick. The subsoil is pale-brown sandy clay loam to a depth of 26 inches. This is underlain by

very pale brown calcareous sandy silty loam (caliche) to a depth of 60 inches. The soils described in the soil survey are generally consistent with the observed soil on site.

Subsurface conditions were similar for borings B-1 through B-12. The soils consisted of dark to light brown slightly calcareous sand (SM) underlain by buff white to pink calcareous sand (caliche). A vuggy interval was present from 7 feet to 13 feet in the buff-white calcareous sand (caliche) of boring B-2. The soil boring logs included in Appendix B provide a more detailed description of the subsurface conditions.

Currently, the groundwater in the site area is used for industrial and livestock purposes. The water wells located between 2,000 to 2,500 feet northwest of the site produce from depths ranging from 38 feet to 120 feet with well yields ranging from 5 gpm to 20 gpm. The drinking water in Lovington, the nearest municipality, is supplied from a well field located approximately 3 miles south of the city that produces from the Ogallala Formation at a depth of 80 to 210 feet.

A field survey of the site and surrounding area was conducted to identify potential receptors (residences, public buildings, water supply wells, and surface bodies of water) in the site vicinity. No residences or public buildings were identified within a 1000 foot radius of the site. The abandoned on-site water well is the only well identified within a 1000 foot radius of the site.

5.0 HYDROGEOLOGIC INVESTIGATION AND FINDINGS

5.1 SOIL INVESTIGATION

5.1.1 SOIL BORING LOCATIONS

The locations of borings B-8 through B-11 were chosen based on the discovery of hydrocarbon-impacted soils in boring B-2 and B-3 during the Preliminary Site Assessment which indicated the potential source of the crude oil contamination is the sump and pump located in the southeast corner of the site.

Borings B-8 and B-9 were placed southwest and west of the hydrocarbon-impacted soils identified in borings B-2 and B-3. Boring B-10 was located north of the pump equipment and approximately 30 feet west of the abandoned water well. Boring B-11 was placed downgradient (southwest) with respect to the observed local surface drainage to the potential sources.

5.1.2 SOIL SAMPLING OPERATIONS

Soil samples were retrieved from the borings to be analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX) and total petroleum hydrocarbons (TPH). Samples were obtained at five foot intervals in each boring using a split spoon sampling device. The soil sample obtained from each interval was split into two separate containers. One sample was placed into a glass jar with teflon-lined lids and zero head space and preserved at 4°C in accordance with EPA protocol for shipment to the laboratory. The other soil sample from each interval was placed in a sample jar and field-screened (head space analysis)

with a flame ionization detector (FID) Century 128 Organic Vapor Analyzer (OVA). The OVA detects volatile petroleum and non-petroleum organic compounds in parts per million (ppm) methane equivalent.

5.1.3 SOIL SAMPLE ANALYTICAL RESULTS

OVA readings ranged from <1 ppm in several sampled intervals of borings B-8 through B-11 to 2 ppm in the 5 to 7 foot interval of borings B-8 and B-9. Two to three samples from each boring were submitted for laboratory analyses. The sample with the highest relative OVA reading and the sample at the total depth of each boring unless noted otherwise were submitted to the laboratory for BTEX and TPH analyses using EPA-approved analytical methods (EPA Method 8020 and EPA Method 418.1, respectively). Complete OVA readings and a listing of those samples submitted to the laboratory are presented in Table 1. No hydrocarbon staining or odors were observed during sampling operations.

**TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS**

Boring	Date Sampled	Sample Interval (feet)	OVA	Benzene	Toluene	Ethyl-benzene	Xylenes	Total BTEX	TPH
B-1	12-07-92	2 - 4	<1	<0.001	0.003	<0.001	<0.001	0.003	30
		7 - 9	<1	<0.001	0.002	<0.001	0.003	0.005	27
B-2	12-07-92	1 - 3	2						
		3 - 5	9	0.001	0.013	0.007	0.032	0.053	580
		5 - 7	<1						
		10 - 11	20						
		11 - 12	>1000	<0.001	0.025	0.160	0.180	0.365	970
		14 - 15	<1						
		15 - 17	<1	<0.001	0.004	0.002	0.006	0.012	110
B-3	12-07-92	4 - 5	<1						
		6 - 6.5	<1	<0.001	0.003	<0.001	0.005	0.008	240
B-4	12-07-92	1 - 3	2	<0.001	0.004	0.001	0.007	0.012	57
		3 - 5	1						
		5 - 7	1						
		7 - 9	<1	<0.001	0.003	0.001	0.005	0.009	18
B-5	12-07-92	1 - 3	3	0.003	0.019	0.008	0.041	0.071	23
		8 - 9	<1						
		11 - 13	<1	<0.001	0.002	<0.001	0.001	0.003	35
B-6	12-07-92	5 - 7	5	<0.001	0.003	<0.001	<0.001	0.003	14
		10 - 12	<1						
		15 - 17	<1	<0.001	0.004	<0.001	<0.001	0.004	16
B-7	12-07-92	0 - 2	<1						
		2 - 4	4	<0.001	0.004	<0.001	0.008	0.012	28
		5 - 7	3						
		10 - 12	1	<0.001	0.003	<0.001	0.002	0.005	27
		15 - 17	<1						
		20 - 22	<1	<0.001	0.001	<0.001	<0.001	0.001	19

**TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS**

Boring	Date Sampled	Sample Interval (feet)	OVA	Benzene	Toluene	Ethyl-benzene	Xylenes	Total BTEX	TPH
B-8	02-08-93	1 - 3	1						
		5 - 7	2	<0.001	<0.001	<0.001	<0.001	<0.001	10
		10 - 12	<1						
		15 - 17	<1	<0.001	<0.001	<0.001	0.001	0.001	50
		20 - 22	<1	<0.001	<0.001	0.002	0.003	0.005	30
B-9	02-08-93	1 - 3	1	<0.001	<0.001	<0.001	0.001	0.001	30
		5 - 7	2						
		10 - 12	<1						
		15 - 17	<1	<0.001	0.001	<0.001	0.001	0.002	30
B-10	02-08-93	1 - 3	<1						
		5 - 7	1	<0.001	<0.001	<0.001	0.002	0.002	30
		10 - 12	<1						
		15 - 17	<1	<0.001	<0.001	<0.001	0.001	0.001	20
B-11	02-08-93	1 - 3	1						
		5 - 7	1	<0.001	<0.001	<0.001	0.001	0.001	40
		10 - 12	<1						
		15 - 17	<1						
		20 - 22	<1	<0.001	<0.001	<0.001	<0.001	<0.001	10

OVA results listed in parts per million (ppm) equivalent methane.
 BTEX results in mg/kg (parts per million; ppm) with method detection limits listed in Appendix C.
 TPH results in mg/kg (parts per million; ppm) with method detection limits listed in Appendix C.
 Analyses were conducted using EPA Method 8020 (BTEX) and EPA Method 418.1 (TPH) by SPL Environmental Laboratories.

A review of the analytical results from the Preliminary Site Assessment conducted during December 1992 indicated hydrocarbon-impacted soils (> 100 ppm TPH) 3 to 5 feet (580 ppm TPH), 11 to 12 feet (970 ppm TPH), and 15 to 17 feet (110 ppm TPH) in boring B-2. Boring B-3 recorded a TPH level of 240 ppm in the 6 to 6.5 foot interval at the bottom of the boring.

Results from this phase of the investigation recorded benzene levels below method detection limits of 0.001 ppm in every sampled interval of Borings B-8 through B-11. The total BTEX levels ranged from below method detection limits of 0.001 ppm in the 5 to 7 foot interval of B-8 and the 20 to 22 foot interval of B-11, and B-11 to 0.005 ppm in the 20 to 22 foot interval of boring B-8. TPH levels ranged from below method detection limits of 10 ppm in the 5 to 7 foot interval of boring B-8 to 50 ppm in the 15 to 17 foot interval of boring B-8. Hydrocarbon concentrations are illustrated on the site map (Appendix B, Figure 2) to indicate soil sample depths and the corresponding hydrocarbon concentration levels.

A summary of the analytical results is presented in Table 1. Laboratory reports and the chain-of-custody are included in Appendix C.

5.2 GROUNDWATER ASSESSMENT

Groundwater was not encountered during drilling operations. However, during subsequent operations by Shell Pipe Line Company to plug and abandon the water well located near the eastern boundary of the site, crude oil was identified in the well bore.

On February 26, 1993, CURA investigated the contents of the abandoned well and removed any phase separated hydrocarbons present in the well bore. The well was visually checked for phase-separated hydrocarbons with a clear PVC bailer and measured with a Keck (Model KIR-89) oil/water interface probe. Depth to groundwater was measured at 60.23 feet below the top of casing with an overlying crude oil thickness of 7.97 feet before bailing operations. Approximately 35 gallons of crude oil were recovered and discharged into the on-site pipeline sump. Subsequent measurements on March 5, 1993 recorded a crude oil thickness of 3.45 feet and a depth to groundwater of 56.54 feet. The extent of the impacted area and potential source are currently unknown. Possible sources are subsurface pipelines, and offsite oil production facilities.

6.0 CONCLUSIONS

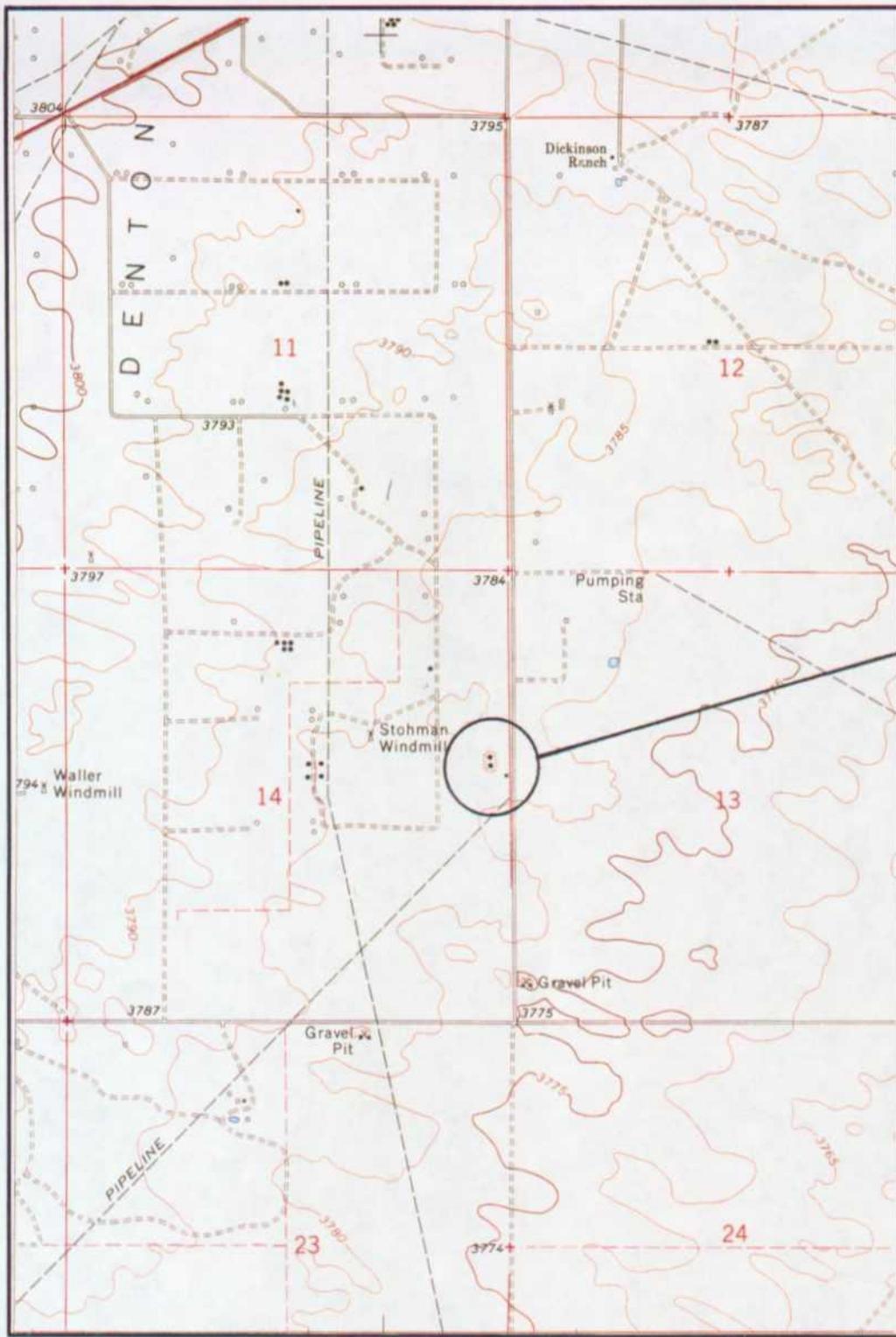
1. An abandoned water well is present on site. No other potential receptors were identified within a 1,000 foot radius of the site, other than the abandoned onsite water well.

2. Based on the data obtained, the extent of hydrocarbon-impacted soils near the sump and pump equipment in the southeast corner of the site is limited to an area approximately less than 100 feet long (east - west) and 50 feet wide with a maximum depth of 20 feet.

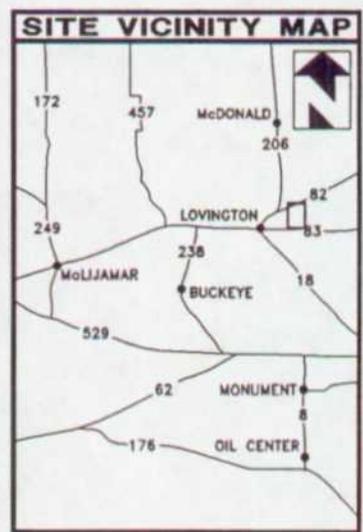
4. Groundwater was not encountered during this subsurface investigation, however, based on the presence of crude oil in the abandoned on site water well, hydrocarbon-impacted groundwater (phase separated hydrocarbons) is possible.

7.0 APPENDICES

APPENDIX A
FIGURES



SITE



SITE LOCATION MAP

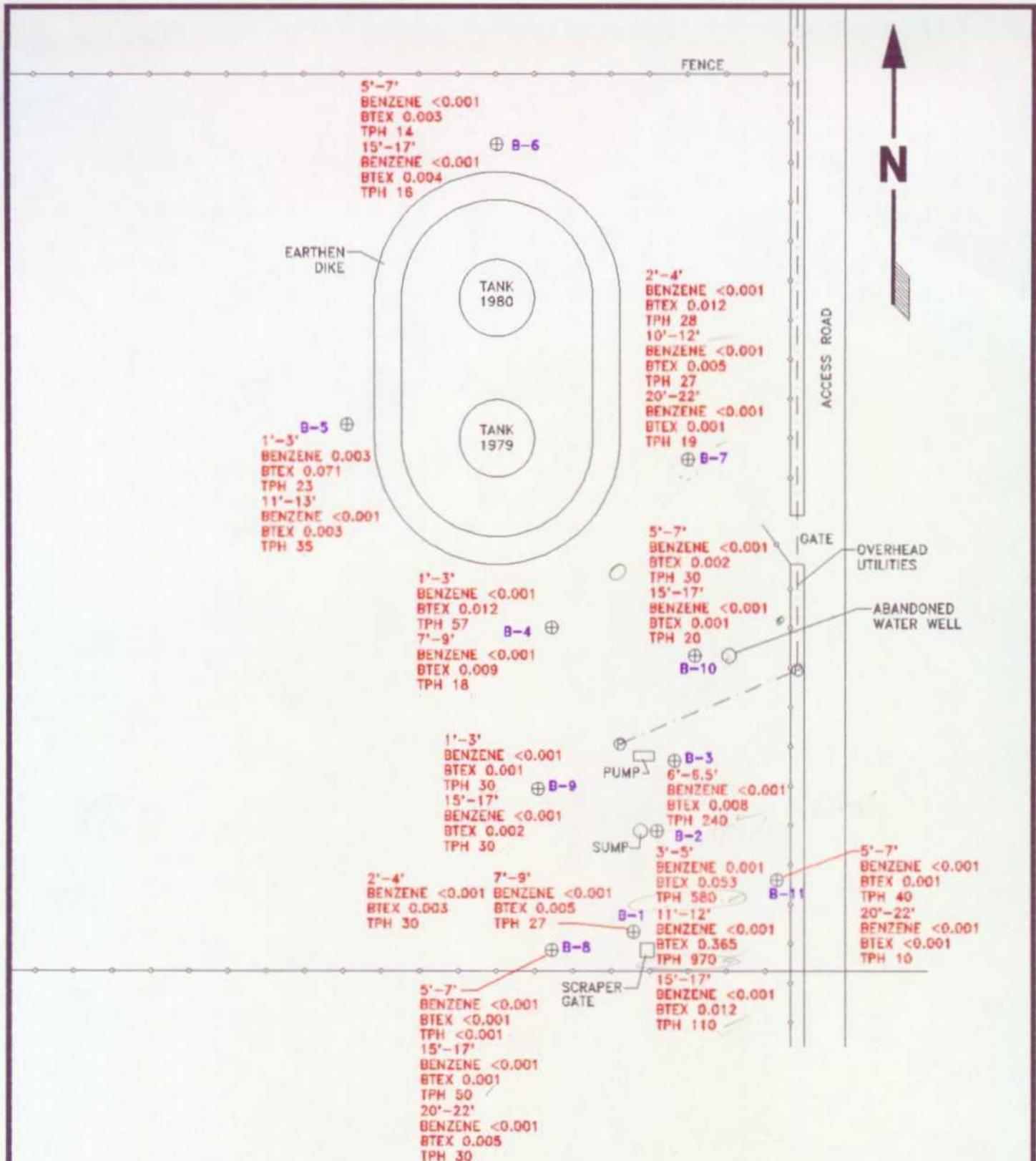
REF: USGS PRAIRIEVIEW, NEW MEXICO TOPOGRAPHIC QUADRANGLE (1970)



2735 VILLA CREEK DRIVE - TWO METRO SQUARE
BLDQ. C - SUITE 250 - DALLAS, TX 75234
620-7117 FAX - 620-8219

DENTON STATION
SHELL PIPE LINE CORPORATION
LEA COUNTY, NEW MEXICO

DATE: MAR 1993	SCALE: 1" ≈ 2000'
PROJECT NO. 15-92567	FIGURE NO. 1



SITE MAP

RED NUMBERS INDICATE BENZENE, TOTAL BTEX AND TPH CONCENTRATIONS IN mg/kg (ppm)



2735 VILLA CREEK DRIVE - TWO METRO SQUARE
 BLDG. C - SUITE 250 - DALLAS, TX 75234
 820-717 FAX - 820-829

DENTON STATION
 SHELL PIPE LINE CORPORATION
 LEA COUNTY, NEW MEXICO

DATE: MAR 1993	SCALE: SEE ABOVE
PROJECT NO. 15-92567	FIGURE NO. 2

APPENDIX B
BORING/WELL LOGS



2735 VILLA CREEK DRIVE - TWO METRO SQUARE
BLDQ. C - SUITE 250 - DALLAS, TX 75234
620-7117 FAX - 620-8219

RECORD OF SUBSURFACE EXPLORATION

Project No: 15-92567
Project: DENTON STATION
LEA COUNTY, NEW MEXICO
Drilling Co: HI PLAINS DRILLING
Driller: B.S.
Drilling Method: AIR ROTARY

Well/Boring #: B-1
Depth of Boring: 9 FEET
Depth of Well: -
Length of Screen: -
Length of Casing: -
Logged By: F.W.R.

Date Drilled: 12/07/92
Diameter of Boring: 5 1/8 INCHES
Diameter of Screen: -
Diameter of Casing: -
Slot Size: -
Well Material: GROUT

DEPTH FEET	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	OVA (PPM)	WELL DESIGN	REMARKS
0	Buff & pink silty calcareous SAND (caliche)					
2.5		1	SS	<1	■	Benzene <0.001 mg/kg BTEX=0.003 mg/kg TPH=30 mg/kg
5.0						
7.5		2	SS	<1	■	Benzene <0.001 mg/kg BTEX=0.005 mg/kg TPH=27 mg/kg
10.0	Bottom of boring @ 9.0 feet					
12.5						
15.0						
17.5						
20.0						
22.5						
25.0						
27.5						
30.0						

SS-Driven Split Spoon
ST-Pressed Shelby Tube
CA-Continuous Flight Auger
RC-Rock Core
THD-Texas Highway Department Cone
CT-5' Continuous Sampler

ABBREVIATIONS AND SYMBOLS

HSA-Hollow Stem Augers
CFA-Continuous Flight Augers
DC-Driving Casing
MD-Mud Drilling

WATER LEVEL
▽ At Completion
▼ After Hours
● Water on Rods

■ Sample submitted to lab
Bottom Cap
Factory-Slotted Well Screen
Sand Pack
Well Casing
Bentonite Seal
Vibroclay Grout Seal



2735 VILLA CREEK DRIVE - TWO METRO SQUARE
BLDG. C - SUITE 250 - DALLAS, TX 75234
620-7117 FAX - 620-8219

RECORD OF SUBSURFACE EXPLORATION

Project No: 15-92567	Well/Boring #: B-2	Date Drilled: 12/07/92
Project: DENTON STATION LEA COUNTY, NEW MEXICO	Depth of Boring: 17 FEET	Diameter of Boring: 5 1/8 INCHES
Drilling Co: HI PLAINS DRILLING	Depth of Well: -	Diameter of Screen: -
Driller: B.S.	Length of Screen: -	Diameter of Casing: -
Drilling Method: AIR ROTARY	Length of Casing: -	Slot Size: -
	Logged By: F.W.R.	Well Material: GROUT

DEPTH FEET	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	OVA (PPM)	WELL DESIGN	REMARKS
0	Dark gray & buff mottled SAND (SM)					0
2.5	Buff fine grained slightly calcareous SAND (SM)	1	SS	2		2.5
5.0		2	SS	9	■	Benzene=0.001 mg/kg BTEX=0.053 mg/kg TPH=580 mg/kg
7.5	Buff-white calcareous SAND (caliche)	3	SS	<1		7.5
10.0		4	SS	20		10.0
12.5		5	SS	>1000	■	Hydrocarbon odor Benzene <0.001 mg/kg BTEX=0.365 mg/kg TPH=970 mg/kg
15.0	Buff-white calcareous SAND (caliche)	6	SS	<1		15.0
17.5	Buff-brown slightly calcareous SAND	7	SS	<1	■	Benzene <0.001 mg/kg BTEX=0.012 mg/kg TPH=110 mg/kg
17.5	Bottom of boring @ 17.0 feet					17.5
20.0						20.0
22.5						22.5
25.0						25.0
27.5						27.5
30.0						30.0

SS-Driven Split Spoon
ST-Pressed Shelby Tube
CA-Continuous Flight Auger
RC-Rock Core
THD-Texas Highway Department Cone
CT-5' Continuous Sampler

ABBREVIATIONS AND SYMBOLS
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CFA-Continuous Flight Augers
DC-Driving Casing
MD-Mud Drilling
WATER LEVEL
▽ At Completion
▼ After Hours
● Water on Rods

■ Sample submitted to lab
Bottom Cap
Factory-Slotted Well Screen
Sand Pack
Well Casing
Bentonite Seal
Valoclay Grout Seal



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BLDG. C - SUITE 250 - DALLAS, TX 75234
620-7117 FAX - 620-8219

RECORD OF SUBSURFACE EXPLORATION

Project No: 15-92567

Well/Boring #: B-3

Date Drilled: 12/07/92

Project: DENTON STATION
LEA COUNTY, NEW MEXICO

Depth of Boring: 6.5 FEET

Diameter of Boring: 5 1/8 INCHES

Drilling Co: HI PLAINS DRILLING

Depth of Well: -

Diameter of Screen: -

Driller: B.S.

Length of Screen: -

Diameter of Casing: -

Drilling Method: AIR ROTARY

Length of Casing: -

Slot Size: -

Logged By: F.W.R.

Well Material: GROUT

DEPTH FEET	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	OVA (PPM)	WELL DESIGN	REMARKS
0	Buff-white calcareous SAND (caliche)					
2.5						
5.0		1	SS	<1		
5.0		2	SS	<1		Benzene <0.001 mg/kg BTEX=0.008 mg/kg TPH=240 mg/kg
7.5	Bottom of boring @ 6.5 feet					
10.0						
12.5						
15.0						
17.5						
20.0						
22.5						
25.0						
27.5						
30.0						

SS-Driven Split Spoon
ST-Pressed Shelby Tube
CA-Continuous Flight Auger
RC-Rock Core
THD-Texas Highway Department Cone
CT-5' Continuous Sampler

ABBREVIATIONS AND SYMBOLS

HSA-Hollow Stem Augers
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WATER LEVEL
▽ At Completion
▼ After Hours
● Water on Rods

■ Sample submitted to lab
 Bottom Cap
 Factory-Slotted Well Screen
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 Voloclay Grout Seal



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 620-7117 FAX - 620-8219

RECORD OF SUBSURFACE EXPLORATION

Project No: 15-92567
 Project: DENTON STATION
 LEA COUNTY, NEW MEXICO
 Drilling Co: HI PLAINS DRILLING
 Driller: B.S.
 Drilling Method: AIR ROTARY

Well/Boring #: B-4
 Depth of Boring: 9.0 FEET
 Depth of Well: -
 Length of Screen: -
 Length of Casing: -
 Logged By: F.W.R.

Date Drilled: 12/07/92
 Diameter of Boring: 5 1/8 INCHES
 Diameter of Screen: -
 Diameter of Casing: -
 Slot Size: -
 Well Material: GROUT

DEPTH FEET	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	OVA (PPM)	WELL DESIGN	REMARKS
0	Buff-white calcareous SAND (caliche)					0
2.5		1	SS	2	■	Benzene <0.001 mg/kg BTEX=0.012 mg/kg TPH=57 mg/kg
5.0		2	SS	1		2.5
7.5		3	SS	1		5.0
10.0	Bottom of boring @ 9.0 feet	4	SS	1	■	Benzene <0.001 mg/kg BTEX=0.009 mg/kg TPH=18 mg/kg
12.5						7.5
15.0						10.0
17.5						12.5
20.0						15.0
22.5						17.5
25.0						20.0
27.5						22.5
30.0						25.0
						27.5
						30.0

SS-Driven Split Spoon
 ST-Pressed Shelby Tube
 CA-Continuous Flight Auger
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 CT-5' Continuous Sampler

ABBREVIATIONS AND SYMBOLS
 HSA-Hollow Stem Augers
 CFA-Continuous Flight Augers
 DC-Driving Casing
 MD-Mud Drilling
 WATER LEVEL
 ▽ At Completion
 ▼ After Hours
 ● Water on Rods

■ Sample submitted to lab
 Bottom Cap
 Sand Pack
 Bentonite Seal
 Factory-Slotted Well Screen
 Well Casing
 Voloclay Grout Seal



2735 VILLA CREEK DRIVE - TWO METRO SQUARE
 BLDG. C - SUITE 250 - DALLAS, TX 75234
 620-7117 FAX - 620-8219

RECORD OF SUBSURFACE EXPLORATION

Project No: 15-92567
 Project: DENTON STATION
 LEA COUNTY, NEW MEXICO
 Drilling Co: HI PLAINS DRILLING
 Driller: B.S.
 Drilling Method: AIR ROTARY

Well/Boring #: B-5
 Depth of Boring: 13.0 FEET
 Depth of Well: -
 Length of Screen: -
 Length of Casing: -
 Logged By: F.W.R.

Date Drilled: 12/07/92
 Diameter of Boring: 5 1/8 INCHES
 Diameter of Screen: -
 Diameter of Casing: -
 Slot Size: -
 Well Material: GROUT

DEPTH FEET	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	OVA (PPM)	WELL DESIGN	REMARKS
0	Dark-brown sandy LOAM (SM)					
2.5	Pink-buff slightly calcareous SAND (caliche)	1	SS	3	■	Benzene <0.001 mg/kg BTEX=0.071 mg/kg TPH=23 mg/kg
7.5	Pink-buff calcareous SAND (caliche)	2	SS	<1		
12.5	Buff-brown slightly calcareous SAND (SM)	3	SS	<1	■	Benzene <0.001 mg/kg BTEX=0.003 mg/kg TPH=35 mg/kg
13.0	Bottom of boring @ 13.0 feet					

SS-Driven Split Spoon
 ST-Pressed Shelby Tube
 CA-Continuous Flight Auger
 RC-Rock Core
 THD-Texas Highway Department Cone
 CT-5' Continuous Sampler

ABBREVIATIONS AND SYMBOLS

HSA-Hollow Stem Augers
 CFA-Continuous Flight Augers
 DC-Driving Casing
 MD-Mud Drilling

WATER LEVEL
 ∇ At Completion
 ▼ After Hours
 ● Water on Rods

■ Sample submitted to lab
 Bottom Cap
 Factory-Slotted Well Screen
 Sand Pack
 Well Casing
 Bentonite Seal
 Vulco Clay Grout Seal



2735 VILLA CREEK DRIVE - TWO METRO SQUARE
BLDG. C - SUITE 250 - DALLAS, TX 75234
620-7117 FAX - 620-8219

RECORD OF SUBSURFACE EXPLORATION

Project No: 15-92567
Project: DENTON STATION
LEA COUNTY, NEW MEXICO
Drilling Co: HI PLAINS DRILLING
Driller: B.S.
Drilling Method: AIR ROTARY

Well/Boring #: B-6
Depth of Boring: 17.0 FEET
Depth of Well: -
Length of Screen: -
Length of Casing: -
Logged By: F.W.R.

Date Drilled: 12/07/92
Diameter of Boring: 5 1/8 INCHES
Diameter of Screen: -
Diameter of Casing: -
Slot Size: -
Well Material: GROUT

DEPTH FEET	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	OVA (PPM)	WELL DESIGN	REMARKS
0	Buff-white calcareous SAND (caliche)					
2.5						
5.0		1	SS	5		■ BTEX=0.003 mg/kg TPH=14 mg/kg
7.5						
10.0		2	SS	<1		
12.5	Buff-pink calcareous SAND (caliche)					
15.0		3	SS	<1		■ BTEX=0.004 mg/kg TPH=16 mg/kg
17.5	Bottom of boring @ 13.0 feet					
20.0						
22.5						
25.0						
27.5						
30.0						

SS-Driven Split Spoon
ST-Pressed Shelby Tube
CA-Continuous Flight Auger
RC-Rock Core
THD-Texas Highway Department Cone
CT-5' Continuous Sampler

ABBREVIATIONS AND SYMBOLS

HSA-Hollow Stem Augers
CFA-Continuous Flight Augers
DC-Driving Casing
MD-Mud Drilling

WATER LEVEL
▽ At Completion
▼ After Hours
● Water on Rods

■ Sample submitted to lab
Bottom Cap
Factory-Slotted Well Screen
Sand Pack
Well Casing
Bentonite Seal
Vuloclay Grout Seal



2735 VILLA CREEK DRIVE - TWO METRO SQUARE
BLDQ. C - SUITE 250 - DALLAS, TX 75234
620-7117 FAX - 620-8219

RECORD OF SUBSURFACE EXPLORATION

Project No.: 15-92567

Well/Boring #: B-7

Date Drilled: 12/07/92

Project: DENTON STATION
LEA COUNTY, NEW MEXICO

Depth of Boring: 22.0 FEET

Diameter of Boring: 5 1/8 INCHES

Drilling Co: HI PLAINS DRILLING

Depth of Well: -

Diameter of Screen: -

Driller: B.S.

Length of Screen: -

Diameter of Casing: -

Drilling Method: AIR ROTARY

Length of Casing: -

Slot Size: -

Logged By: F.W.R.

Well Material: GROUT

DEPTH FEET	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	OVA (PPM)	WELL DESIGN	REMARKS
0	Pink-brown slightly calcareous SAND (SM)	1	SS	<1		
2.5	Buff-brown slightly calcareous SAND (SM) with scattered caliche fragments	2	SS	4	■	Benzene <0.001 mg/kg BTEX=0.012 mg/kg TPH=28 mg/kg
5.0		3	SS	3		
7.5						
10.0		4	SS	1	■	Benzene <0.001 mg/kg BTEX=0.005 mg/kg TPH=27 mg/kg
12.5						
15.0		5	SS	<1		
17.5						
20.0		6	SS	<1	■	Benzene <0.001 mg/kg BTEX=0.001 mg/kg TPH=19 mg/kg
22.5	Bottom of boring @ 22.0 feet					
25.0						
27.5						
30.0						

SS-Driven Split Spoon
ST-Pressed Shelby Tube
CA-Continuous Flight Auger
RC-Rock Core
THD-Texas Highway Department Cone
CT-5' Continuous Sampler

ABBREVIATIONS AND SYMBOLS

HSA-Hollow Stem Augers
CFA-Continuous Flight Augers
DC-Driving Casing
MD-Mud Drilling

WATER LEVEL
▽ At Completion
▼ After Hours
● Water on Rods

■ Sample submitted to lab
Bottom Cap
Sand Pack
Bentonite Seal
Factory-Slotted Well Screen
Well Casing
Voloclay Grout Seal



2735 VILLA CREEK DRIVE - TWO METRO SQUARE
 BLDG. C - SUITE 250 - DALLAS, TX 75234
 620-7117 FAX - 620-8219

RECORD OF SUBSURFACE EXPLORATION

Project No.: 15-92567

Well/Boring #: B-8

Date Drilled: 02/08/93

Project: DENTON STATION
 LEA COUNTY, NEW MEXICO

Depth of Boring: 22.0 FEET

Diameter of Boring: 5 1/8 INCHES

Drilling Co: HI PLAINS DRILLING

Depth of Well: -

Diameter of Screen: -

Driller: B.S.

Length of Screen: -

Diameter of Casing: -

Drilling Method: AIR ROTARY

Length of Casing: -

Slot Size: -

Logged By: F.W.R.

Well Material: GROUT

DEPTH FEET	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	OVA (PPM)	WELL DESIGN	REMARKS
0	Dark brown clay					
2.5	Buff fine-grained calcareous SAND (caliche)	1	SS	1		
5.0		2	SS	2		Benzene <0.001 mg/kg BTEX <0.001 mg/kg TPH <10 mg/kg
10.0		3	SS	<1		
15.0		4	SS	<1		Benzene <0.001 mg/kg BTEX=0.001 mg/kg TPH=50 mg/kg
17.5	Buff-pink fine-grained SAND (SM) slightly calcareous					
20.0		5	SS	<1		Benzene <0.001 mg/kg BTEX=0.005 mg/kg TPH=30 mg/kg
22.5	Bottom of boring @ 22.0 feet					
25.0						
27.5						
30.0						

SS-Driven Spill Spoon
 ST-Pressed Shelby Tube
 CA-Continuous Flight Auger
 RC-Rock Core
 THD-Texas Highway Department Cone
 CT-5' Continuous Sampler

ABBREVIATIONS AND SYMBOLS

HSA-Hollow Stem Augers
 CFA-Continuous Flight Augers
 DC-Driving Casing
 MD-Mud Drilling

WATER LEVEL
 ▽ At Completion
 ▼ After Hours
 ● Water on Rods

Bottom Cap
 Sand Pack
 Bentonite Seal
 Sample submitted to lab
 Factory-Slotted Well Screen
 Well Casing
 Voloclay Grout Seal



2735 VILLA CREEK DRIVE - TWO METRO SQUARE
 BLDG. C - SUITE 250 - DALLAS, TX 75234
 620-7117 FAX - 620-8219

RECORD OF SUBSURFACE EXPLORATION

Project No: 15-92567

Well/Boring #: B-9

Date Drilled: 02/08/93

Project: DENTON STATION
 LEA COUNTY, NEW MEXICO

Depth of Boring: 17.0 FEET

Diameter of Boring: 5 1/8 INCHES

Drilling Co: HI PLAINS DRILLING

Depth of Well: -

Diameter of Screen: -

Driller: B.S.

Length of Screen: -

Diameter of Casing: -

Drilling Method: AIR ROTARY

Length of Casing: -

Slot Size: -

Logged By: F.W.R.

Well Material: GROUT

DEPTH FEET	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	OVA (PPM)	WELL DESIGN	REMARKS
0	Gray fine-grained SAND & caliche rubble (SM)					
2.5		1	SS	1	■	Benzene <0.001 mg/kg BTEX= 0.001 mg/kg TPH=30 mg/kg
5.0	Buff fine-grained calcareous SAND (caliche)					
7.5		2	SS	2		
10.0						
12.5		3	SS	<1		
15.0						
17.5		4	SS	<1	■	Benzene <0.001 mg/kg BTEX=0.002 mg/kg TPH=30 mg/kg
17.5	Bottom of boring @ 17.0 feet					
20.0						
22.5						
25.0						
27.5						
30.0						

SS-Driven Split Spoon
 ST-Pressed Shelby Tube
 CA-Continuous Flight Auger
 RC-Rock Core
 THD-Texas Highway Department Cone
 CT-5' Continuous Sampler

ABBREVIATIONS AND SYMBOLS

HSA-Hollow Stem Augers
 CFA-Continuous Flight Augers
 DC-Driving Casing
 MD-Mud Drilling

WATER LEVEL
 ▽ At Completion
 ▼ After Hours
 ● Water on Rods

■ Sample submitted to lab
 Bottom Cap
 Factory-Slotted Well Screen
 Sand Pack
 Well Casing
 Bentonite Seal
 Voloclay Grout Seal



2735 VILLA CREEK DRIVE - TWO METRO SQUARE
 BLDG. C - SUITE 250 - DALLAS, TX 75234
 620-7117 FAX - 620-8219

RECORD OF SUBSURFACE EXPLORATION

Project No.: 15-92567

Well/Boring #: B-10

Date Drilled: 02/08/93

Project: DENTON STATION
 LEA COUNTY, NEW MEXICO

Depth of Boring: 17.0 FEET

Diameter of Boring: 5 1/8 INCHES

Drilling Co: HI PLAINS DRILLING

Depth of Well: -

Diameter of Screen: -

Driller: B.S.

Length of Screen: -

Diameter of Casing: -

Drilling Method: AIR ROTARY

Length of Casing: -

Slot Size: -

Logged By: F.W.R.

Well Material: GROUT

DEPTH FEET	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	OVA (PPM)	WELL DESIGN	REMARKS
0	Gray fine-grained SAND & caliche rubble (SM)					
1		1	SS	<1		
5.0	Buff fine-grained calcareous SAND (caliche)					
2		2	SS	1		Benzene <0.001 mg/kg BTEX=0.002 mg/kg TPH=30 mg/kg
10.0		3	SS	<1		
15.0		4	SS	<1		Benzene <0.001 mg/kg BTEX=0.001 mg/kg TPH=20 mg/kg
17.5	Bottom of boring @ 17.0 feet					
20.0						
22.5						
25.0						
27.5						
30.0						

SS-Driven Split Spoon
 ST-Pressed Shelby Tube
 CA-Continuous Flight Auger
 RC-Rock Core
 THD-Texas Highway Department Cone
 CT-5' Continuous Sampler

ABBREVIATIONS AND SYMBOLS

HSA-Hollow Stem Augers
 CFA-Continuous Flight Augers
 DC-Driving Casing
 MD-Mud Drilling

WATER LEVEL
 ∇ At Completion
 ▼ After Hours
 ● Water on Rods

Sample submitted to lab
 Bottom Cap
 Factory-Slotted Well Screen
 Sand Pack
 Well Casing
 Bentonite Seal
 Vibroclay Grout Seal



2735 VILLA CREEK DRIVE - TWO METRO SQUARE
BLDQ. C - SUITE 250 - DALLAS, TX 75234
620-7117 FAX - 620-8219

RECORD OF SUBSURFACE EXPLORATION

Project No.: 15-92567

Well/Boring #: B-11

Date Drilled: 02/08/93

Project: DENTON STATION
LEA COUNTY, NEW MEXICO

Depth of Boring: 22.0 FEET

Diameter of Boring: 5 1/8 INCHES

Drilling Co: HI PLAINS DRILLING

Depth of Well: -

Diameter of Screen: -

Driller: B.S.

Length of Screen: -

Diameter of Casing: -

Drilling Method: AIR ROTARY

Length of Casing: -

Slot Size: -

Logged By: F.W.R.

Well Material: GROUT

DEPTH FEET	SOIL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE	OVA (PPM)	WELL DESIGN	REMARKS
0	Dark brown clayey loam					
2.5	Buff fine-grained calcareous SAND (caliche)	1	SS	1		
5.0		2	SS	1		■ Benzene <0.001 mg/kg BTEX=0.001 mg/kg TPH=40 mg/kg
7.5						
10.0		3	SS	<1		
12.5						
15.0		4	SS	<1		
17.5	Buff-pink fine-grained SAND (SM) slightly calcareous					
20.0		5	SS	<1		■ Benzene <0.001 mg/kg BTEX <0.001 mg/kg TPH=10 mg/kg
22.5	Bottom of boring @ 22.0 feet					
25.0						
27.5						
30.0						

SS-Driven Split Spoon
ST-Pressed Shelby Tube
CA-Continuous Flight Auger
RC-Rock Core
THD-Texas Highway Department Cone
CT-5' Continuous Sampler

ABBREVIATIONS AND SYMBOLS

HSA-Hollow Stem Augers
CFA-Continuous Flight Augers
DC-Driving Casing
MD-Mud Drilling

WATER LEVEL
▽ At Completion
▼ After Hours
● Water on Rods

■ Sample submitted to lab
Bottom Cap
Sand Pack
Bentonite Seal
Factory-Slotted Well Screen
Well Casing
Voloclay Grout Seal

APPENDIX C
ANALYTICAL RESULTS



SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: 93-02-346

Approved for release by:

M. Scott Sample
S. Sample, Laboratory Director

Date: 2/18/93

Ed Fry
Ed Fry, Project Manager

Date: 2/18/93



****SUMMARY REPORT****

02/17/93

Company: Shell Pipe Line Corporation
Site: Lea Co., NM
Project No: 15-92567.013
Project: Denton Station

ANALYTICAL DATA
NOTE: ND - Not Detected

SPL ID	CLIENT ID	MATRIX	BENZENE	TOLUENE	ETHYLBENZ.	XYLENE	TPH-IR	TPH-GC	LEAD	MTBE
9302346-01	B-8 (5'-7')	SOIL	NDµg/Kg	NDµg/Kg	NDµg/Kg	NDµg/Kg	NDmg/Kg			
9302346-02	B-8 (15'-1)	SOIL	NDµg/Kg	NDµg/Kg	NDµg/Kg	1µg/Kg	50mg/Kg			
9302346-03	B-8 (20'-2)	SOIL	NDµg/Kg	NDµg/Kg	2µg/Kg	3µg/Kg	30mg/Kg			
9302346-04	B-8 (20'-2)	SOIL	NDµg/Kg	NDµg/Kg	NDµg/Kg	NDµg/Kg	30mg/Kg			
9302346-05	B-9 (1'-3')	SOIL	NDµg/Kg	NDµg/Kg	NDµg/Kg	1µg/Kg	30mg/Kg			
9302346-06	B-9 (15'-1)	SOIL	NDµg/Kg	1µg/Kg	NDµg/Kg	1µg/Kg	30mg/Kg			
9302346-07	B-10 (5'-7)	SOIL	NDµg/Kg	NDµg/Kg	NDµg/Kg	2µg/Kg	30mg/Kg			
9302346-08	B-10 (15'-)	SOIL	NDµg/Kg	NDµg/Kg	NDµg/Kg	1µg/Kg	20mg/Kg			
9302346-09	B-11 (5'-7)	SOIL	NDµg/Kg	NDµg/Kg	NDµg/Kg	1µg/Kg	40mg/Kg			
9302346-10	B-11 (20'-)	SOIL	NDµg/Kg	NDµg/Kg	NDµg/Kg	NDµg/Kg	10mg/Kg			

BTEX - METHOD 5030/8020 ***
TPH-IR - METHOD Mod. 418.1

Shari L. Grice

SPL, Inc., - Shari L. Grice



Certificate of Analysis No. 9302346-01

Shell Pipe Line Corporation
P.O. Box 2099
Houston, TX 77252-2099
ATTN: John Hite

P.O.#
PX-16959-RMM
DATE: 02/17/93

PROJECT: Denton Station
SITE: Lea Co., NM
SAMPLED BY: CURA
SAMPLE ID: B-8 (5'-7')

PROJECT NO: 15-92567.013
MATRIX: SOIL
DATE SAMPLED: 02/08/93 09:35:00
DATE RECEIVED: 02/15/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	0.0010 P	mg/Kg
ETHYLBENZENE	ND	0.0010 P	mg/Kg
TOLUENE	ND	0.0010 P	mg/Kg
TOTAL XYLENE	ND	0.0010 P	mg/Kg
TOTAL BTEX	ND		mg/Kg
METHOD 5030/8020 ***			
Analyzed by: LT			
Date: 02/17/93			
Petroleum extractables	ND	10	mg/Kg
METHOD Mod. 418.1			
Analyzed by: AO			
Date: 02/16/93			

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Shari L. Grice

SPL, Inc., - Shari L. Grice



Certificate of Analysis No. 9302346-02

Shell Pipe Line Corporation
P.O. Box 2099
Houston, TX 77252-2099
ATTN: John Hite

P.O.#
PX-16959-RMM
DATE: 02/17/93

PROJECT: Denton Station
SITE: Lea Co., NM
SAMPLED BY: CURA
SAMPLE ID: B-8 (15'-17')

PROJECT NO: 15-92567.013
MATRIX: SOIL
DATE SAMPLED: 02/08/93 09:45:00
DATE RECEIVED: 02/15/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	0.0010 P	mg/Kg
ETHYLBENZENE	ND	0.0010 P	mg/Kg
TOLUENE	ND	0.0010 P	mg/Kg
TOTAL XYLENE	0.0010	0.0010 P	mg/Kg
TOTAL BTEX	0.001		mg/Kg
METHOD 5030/8020 ***			
Analyzed by: MOO			
Date: 02/16/93			
Petroleum extractables	50	10	mg/Kg
METHOD Mod. 418.1			
Analyzed by: AO			
Date: 02/16/93			

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Shari L. Grice
SPL, Inc., - Shari L. Grice

No. 9302346-05

Analysis No. 9302346-03

P.O.#
PX-16959-RMM
DATE: 02/17/93

P.O.#
PX-16959-RMM
DATE: 02/17/93

PROJECT NO: 15-92567.013
MATRIX: SOIL
DATE SAMPLED: 02/08/93 09:50:00
DATE RECEIVED: 02/15/93

PROJECT NO: 15-92567.013
MATRIX: SOIL
DATE SAMPLED: 02/08/93 10:05:00
DATE RECEIVED: 02/15/93

ANALYTICAL DATA

RESULTS	DETECTION LIMIT	UNITS
ND	0.0010 P	mg/Kg
0.0020	0.0010 P	mg/Kg
ND	0.0010 P	mg/Kg
0.0030	0.0010 P	mg/Kg
0.005		mg/Kg

ATA	RESULTS	DETECTION LIMIT	UNITS
	ND	0.0010 P	mg/Kg
	ND	0.0010 P	mg/Kg
	ND	0.0010 P	mg/Kg
	0.0010	0.0010 P	mg/Kg
	0.001		mg/Kg

30	10	mg/Kg
----	----	-------

(P) - Practical Quantitation Limit

P) - Practical Quantitation Limit

Analysis of Water and Wastes, 1983, EPA
Examination of Water & Wastewater, 17th ed.
Evaluating Solid Waste, EPA SW846, 3rd Ed.

Analysis of Water and Wastes, 1983, EPA
Examination of Water & Wastewater, 17th ed.
Solid Waste, EPA SW846, 3rd Ed.

Analyses are performed in accordance with
procedure.

Analyses performed in accordance with

L. Grice
Shari L. Grice

L. Grice
L. Grice



Certificate of Analysis No. 9302346-06

Shell Pipe Line Corporation
P.O. Box 2099
Houston, TX 77252-2099
ATTN: John Hite

P.O.#
PX-16959-RMM
DATE: 02/17/93

PROJECT: Denton Station
SITE: Lea Co., NM
SAMPLED BY: CURA
SAMPLE ID: B-9 (15'-17')

PROJECT NO: 15-92567.013
MATRIX: SOIL
DATE SAMPLED: 02/08/93 10:25:00
DATE RECEIVED: 02/15/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	0.0010 P	mg/Kg
ETHYLBENZENE	ND	0.0010 P	mg/Kg
TOLUENE	0.0010	0.0010 P	mg/Kg
TOTAL XYLENE	0.0010	0.0010 P	mg/Kg
TOTAL BTEX	0.002		mg/Kg
METHOD 5030/8020 ***			
Analyzed by: MOO			
Date: 02/16/93			
Petroleum extractables	30	10	mg/Kg
METHOD Mod. 418.1			
Analyzed by: AO			
Date: 02/16/93			

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Shari L. Grice

SPL, Inc., - Shari L. Grice



Certificate of Analysis No. 9302346-07

Shell Pipe Line Corporation
P.O. Box 2099
Houston, TX 77252-2099
ATTN: John Hite

P.O.#
PX-16959-RMM
DATE: 02/17/93

PROJECT: Denton Station
SITE: Lea Co., NM
SAMPLED BY: CURA
SAMPLE ID: B-10 (5'-7')

PROJECT NO: 15-92567.013
MATRIX: SOIL
DATE SAMPLED: 02/08/93 10:45:00
DATE RECEIVED: 02/15/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	0.0010 P	mg/Kg
ETHYLBENZENE	ND	0.0010 P	mg/Kg
TOLUENE	ND	0.0010 P	mg/Kg
TOTAL XYLENE	0.0020	0.0010 P	mg/Kg
TOTAL BTEX	0.002		mg/Kg

METHOD 5030/8020 ***
Analyzed by: MOO
Date: 02/16/93

Petroleum extractables 30 10 mg/Kg
METHOD Mod. 418.1
Analyzed by: AO
Date: 02/16/93

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Shari L. Grice

SPL, Inc., - Shari L. Grice



Certificate of Analysis No. 9302346-08

Shell Pipe Line Corporation
P.O. Box 2099
Houston, TX 77252-2099
ATTN: John Hite

P.O.#
PX-16959-RMM
DATE: 02/17/93

PROJECT: Denton Station
SITE: Lea Co., NM
SAMPLED BY: CURA
SAMPLE ID: B-10 (15'-17')

PROJECT NO: 15-92567.013
MATRIX: SOIL
DATE SAMPLED: 02/08/93 11:00:00
DATE RECEIVED: 02/15/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	0.0010 P	mg/Kg
ETHYLBENZENE	ND	0.0010 P	mg/Kg
TOLUENE	ND	0.0010 P	mg/Kg
TOTAL XYLENE	0.0010	0.0010 P	mg/Kg
TOTAL BTEX	0.001		mg/Kg
METHOD 5030/8020 ***			
Analyzed by: MOO			
Date: 02/16/93			
Petroleum extractables	20	10	mg/Kg
METHOD Mod. 418.1			
Analyzed by: AO			
Date: 02/16/93			

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Shari L. Grice

SPL, Inc., - Shari L. Grice



Certificate of Analysis No. 9302346-09

Shell Pipe Line Corporation
P.O. Box 2099
Houston, TX 77252-2099
ATTN: John Hite

P.O.#
PX-16959-RMM
DATE: 02/17/93

PROJECT: Denton Station
SITE: Lea Co., NM
SAMPLED BY: CURA
SAMPLE ID: B-11 (5'-7')

PROJECT NO: 15-92567.013
MATRIX: SOIL
DATE SAMPLED: 02/08/93 13:50:00
DATE RECEIVED: 02/15/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	0.0010 P	mg/Kg
ETHYLBENZENE	ND	0.0010 P	mg/Kg
TOLUENE	ND	0.0010 P	mg/Kg
TOTAL XYLENE	0.0010	0.0010 P	mg/Kg
TOTAL BTEX	0.001		mg/Kg
METHOD 5030/8020 ***			
Analyzed by: MOO			
Date: 02/16/93			
Petroleum extractables	40	10	mg/Kg
METHOD Mod. 418.1			
Analyzed by: AO			
Date: 02/16/93			

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Shari L. Grice

SPL, Inc., - Shari L. Grice



Certificate of Analysis No. 9302346-10

Shell Pipe Line Corporation
P.O. Box 2099
Houston, TX 77252-2099
ATTN: John Hite

P.O.#
PX-16959-RMM
DATE: 02/17/93

PROJECT: Denton Station
SITE: Lea Co., NM
SAMPLED BY: CURA
SAMPLE ID: B-11 (20'-22')

PROJECT NO: 15-92567.013
MATRIX: SOIL
DATE SAMPLED: 02/08/93 14:10:00
DATE RECEIVED: 02/15/93

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	ND	0.0010 P	mg/Kg
ETHYLBENZENE	ND	0.0010 P	mg/Kg
TOLUENE	ND	0.0010 P	mg/Kg
TOTAL XYLENE	ND	0.0010 P	mg/Kg
TOTAL BTEX	ND		mg/Kg
METHOD 5030/8020 ***			
Analyzed by: MOO			
Date: 02/16/93			
Petroleum extractables	10	10	mg/Kg
METHOD Mod. 418.1			
Analyzed by: AO			
Date: 02/16/93			

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Shari L. Grice

SPL, Inc., - Shari L. Grice

QUALITY CONTROL DOCUMENTATION



**** SPL Quality Control Report ****
BTX MATRIX SPIKE/MATRIX SPIKE DUPLICATE
Method 8020/602

SPL Sample ID: 9302303-01A Reported on: 02/17/93
Matrix: Soil Analyzed on: 02/16/93

This sample was randomly selected for use in the SPL quality control program. One in twenty samples is fortified, in duplicate, with a known concentration of the substance being analyzed. The results are as follows:

----- SPIKE ANALYSIS -----

Compound	Blank Value	Spike Added µg/Kg	Original Sample Concentration µg/Kg	MS Concentration µg/Kg	MS % Rec#	QC Limits Range
BENZENE	ND	20	ND	22	110	39 - 150 %
TOLUENE	ND	20	ND	19	95	46 - 148 %
ETHYL_BENZENE	ND	20	ND	27	135	32 - 160 %
O XYLENE	ND	20	ND	18	90	32 - 160 %
M AND P XYLENE	ND	40	ND	25	62	32 - 160 %

----- SPIKE DUPLICATE ANALYSIS -----

Compound	Spike Added µg/Kg	MSD Concentration µg/Kg	MSD % Rec#	% RPD	RPD Limit	QC Rec Range
BENZENE	20	26	130	17	20	39 - 150 %
TOLUENE	20	20	100	5	20	46 - 148 %
ETHYL_BENZENE	20	27	135	0	20	32 - 160 %
O XYLENE	20	21	105	15	20	32 - 160 %
M AND P XYLENE	40	22	55	12	20	32 - 160 %

VARD930216133600


Cynthia Schreiner, QC Officer



**** SPL Quality Control Report ****
BTEX MATRIX SPIKE/MATRIX SPIKE DUPLICATE
Method: 8020/602

SPL Sample ID: 9302302-13A Reported on: 02/17/93
 Matrix: Soil Analyzed on: 02/17/93

This sample was randomly selected for use in the SPL quality control program. One in twenty samples is fortified, in duplicate, with a known concentration of the substance being analyzed. The results are as follows:

----- SPIKE ANALYSIS -----

Compound	Blank Value	Spike Added µg/Kg	Original Sample Concentration µg/Kg	MS Concentration µg/Kg	MS % Rec#	QC Limits Range
BENZENE	ND	20	ND	17	85	39 - 150 %
TOLUENE	ND	20	ND	15	75	46 - 148 %
ETHYL_BENZENE	ND	20	ND	16	80	32 - 160 %
O XYLENE	ND	20	ND	16	80	32 - 160 %
M AND P XYLENE	ND	40	ND	35	87	32 - 160 %

----- SPIKE DUPLICATE ANALYSIS -----

Compound	Spike Added µg/Kg	MSD Concentration µg/Kg	MSD % Rec#	% RPD	RPD Limit	QC Rec Range
BENZENE	20	15	75	12	20	39 - 150 %
TOLUENE	20	14	70	7	20	46 - 148 %
ETHYL_BENZENE	20	15	75	6	20	32 - 160 %
O XYLENE	20	14	70	13	20	32 - 160 %
M AND P XYLENE	40	31	77	12	20	32 - 160 %

VARE930217234200


 Cynthia Schreiner, QC Officer



**** SPL QUALITY CONTROL REPORT ****
TOTAL PETROLEUM HYDROCARBONS (TPH)

SPL sample Id: 9302331-1B
Matrix: SOIL

Reported on: 02/17/93
Analyzed on: 02/16/93

This sample was randomly selected for use in the SPL quality control program. One in ten samples is fortified with a known concentration of the substance being analyzed and one in ten samples is analyzed in duplicate. The result are as follows:

-- SPIKE ANALYSIS --

Sample Id	Blank Value	Spike Added mg/L	Original Sample Concentration mg/Kg	MS Concentration mg/Kg	MS % Rec
9302331-1B	ND	357	7	312	86

-- SPIKE DUPLICATE ANALYSIS --

Sample Id	Spike Added mg/L	MSD Concentration mg/Kg	MSD % Rec	% RPD
9302331-1B	357	338	93	8

SPL, Incorporated


Cynthia Schreiner, QC Officer

CHAIN OF CUSTODY
AND
SAMPLE RECEIPT CHECKLIST

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 2/15/93 TIME: 09:00 CLIENT NO. _____
LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. _____

SPL SAMPLE NOS.: _____

YES NO

1. Is a Chain-of-Custody form present? ✓ _____
2. Is the COC properly completed? ✓ _____
If no, describe what is incomplete: _____

If no, has the client been contacted about it? _____
(Attach subsequent documentation from client about the situation)

3. Is airbill/packing list/bill of lading with shipment? ✓ _____
If yes, ID#: FED X

4. Is a USEPA Traffic Report present? _____ ✓
5. Is a USEPA SAS Packing List present? _____ ✓
6. Are custody seals present on the package? _____ ✓
If yes, were they intact upon receipt? _____

7. Are all samples tagged or labeled? ✓ _____
Do the sample tags/labels match the COC? ✓ _____
If no, has the client been contacted about it? _____
(Attach subsequent documentation from client about the situation)

8. Do all shipping documents agree? _____
If no, describe what is in nonconformity: _____

9. Condition/temperature of shipping container: INTACT - 4°C

10. Condition/temperature of sample bottles: 6000s - 4°C

11. Sample Disposal?: SPL disposal ✓ Return to client _____

NOTES (reference item number if applicable): _____

ATTEST: [Signature] DATE: 2/15/93
DELIVERED FOR RESOLUTION: REC'D DATE: _____
RESOLVED: _____ DATE: _____

APPENDIX D
WATER WELL SEARCH

WATER WELL SEARCH
SHELL PIPE LINE CORP.
DENTON STATION
LEA COUNTY, NEW MEXICO
PROJECT #: 15-9267.01
PO #: 7896

CURA, INC.

WELL RECORDS
SHELL PIPE LINE CORP.
DENTON STATION
LEA COUNTY



G e o s o u r c e I n c o r p o r a t e d

January 11, 1993

Project #: 15-9267.01
PO #: 7896

Wes Root
CURA, Inc.
3001 N. Big Spring , Ste. 101
Midland, Texas 79705

In re: Water well search for a site at Shell Pipeline Corp. Denton Station in Lea County, New Mexico.

Dear Mr. Root,

Geosource Inc. (GI) has performed a water well search for a site in Lea County. GI utilized data provided by the State Engineers Office of New Mexico (Underground Waters). The office is the central depository for water well logs from the licensed water well drillers in the state. The data is what the office currently has within their files. GI was able to identify twelve total wells. The location map will have ten locations. Well # 3 has three wells for its location.

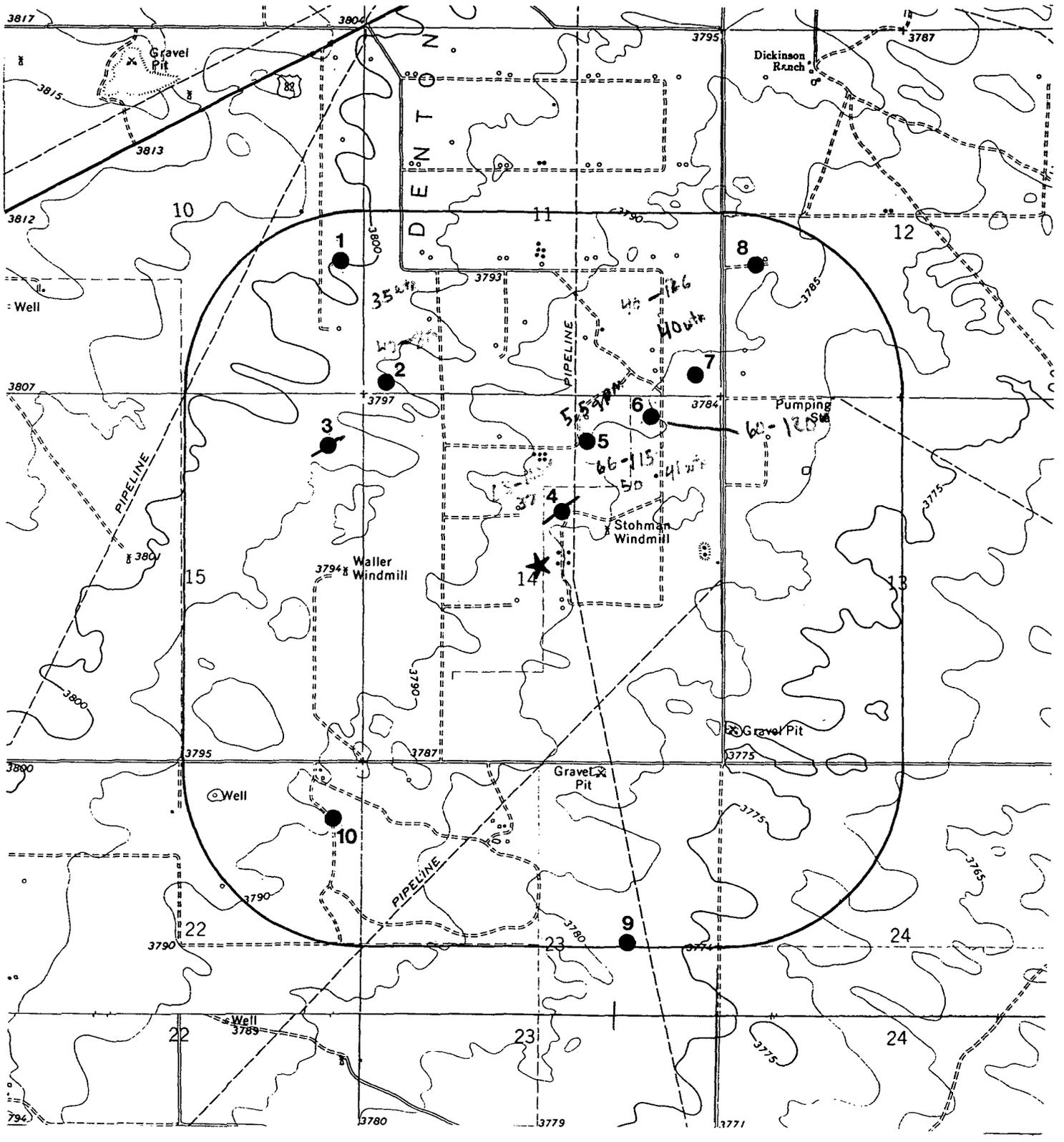
If you have any questions concerning this project or need additional information, please call me at 512 474 6721.

Sincerely,



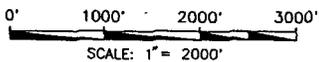
Eloy Del Bosque

Enclosures



Legend

- ★ SITE LOCATION
- WELL LOCATION



APPROXIMATE LOCATIONS

Site

Shell Pipeline Corp.
Lea County, New Mexico

USGS Quads

Prairieview (1970)
Humble City NW (photorevised 1979)



Geosource, Inc.

2201 N. Lamar, Ste. 200
Austin, Texas 78705
phone (512)474-6721
fax (512)474-5428

WELL RECORD PILLING 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 Shell Oil Company
 Street and Number Box 845
 City Roswell State New Mexico
 Well was drilled under Permit No. L-2268 and is located in the
1/4 NE 1/4 SE 1/4 of Section 10 Twp. 15S Rge. 37E

(B) Drilling Contractor _____ License No. _____
 Street and Number _____
 City _____ State _____
 Drilling was commenced _____ 19____
 Drilling was completed _____ 19____

(Plat of 640 acres)

Elevation at top of casing in feet above sea level _____ Total depth of well _____
 State whether well is shallow or artesian _____ Depth to water upon completion _____

Section 2 PRINCIPAL WATER-BEARING STRATA

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

STATE ENGINEER OFFICE
 ROSWELL, N.M.
 MAY 30 AM 8:30

Section 3 RECORD OF CASING

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

Section 4 RECORD OF MUDDING AND CEMENTING

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

Section 5 PLUGGING RECORD

Name of Plugging Contractor _____ Company Labor _____ License No. _____
 Street and Number _____ City _____ State _____
 Tons of Clay used _____ Tons of Roughage used _____ Type of roughage _____
 Plugging method used Backfilled w/rubble - 3 ft. Conc. Plug Date Plugged April 19 56

Plugging approved by: *James J. [Signature]*

FOR USE OF STATE ENGINEER ONLY
 MAY 13 1958
 OFFICE
 GROUND WATER SUPERVISOR
 ROSWELL, NEW MEXICO

Cement Plugs were placed as follows:

No.	Depth of Plug		No. of Sacks Used
	From	To	
1	0'	3'	One

File No. L-2268 Use O.W.D. Location No. 15.37.10.3.20

Important—Read Instructions On Back Before Filling Out This Application

APPLICATION FOR EXTENSION OF TIME

In Which to Complete an Appropriation of Underground Water

Book No. LC-9 Permit No. L-2268

Before the State Engineer Santa Fe, New Mexico. Received May 28, 1958

The undersigned, Shell Oil Company of Roswell, County of Chaves State of New Mexico, hereby applies for an extension of time in which to Complete the works under (complete the works, apply water to beneficial use)

Permit No. L-2268 Approved July 7, 1953

The prevailing dates which have been set by the State Engineer are as follows:

Well shall be plugged and plugging record filed on or before July 30, 1956

Apply Water to Beneficial Use on or before 19.....

The period of time fixed by the above limiting dates has proved to be insufficient and additional time is requested for the following reasons (state reasons in detail and if desirable or necessary, submit affidavits, photographs, etc., as evidence in support of statement): To cover time lapse.

The State Engineer is hereby requested to extend the time previously granted by extending the above limiting dates to read as follows:

Well shall be plugged and plugging record filed on or before July 30, 1957

Apply Water to Beneficial Use on or before 19.....

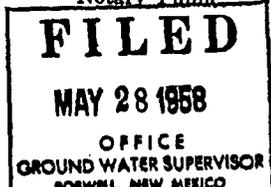
I, R. L. Elkins, being first duly sworn upon my oath, depose and say that I am the agent for owner and holder of said Permit No. L-2268, that I have read the foregoing statements and that the same are true to the best of my knowledge and belief.

Shell Oil Company Permittee

Subscribed and sworn to before me this 27th day of May, A. D., 1958

Notary Public signature

My commission expires 1958



EXTENSION OF TIME

Approval of the State Engineer

File No. of Application L-2268 Recorded in Book LC-9

Date of Receipt May 28, 1958 Extension of Time Granted June 4, 1958

This is to certify that I have examined the above application for additional time in which to complete an appropriation of water and, after considering the merits thereof, do hereby grant to the permittee,

.....
Shell Oil Company

an extension of time to the following dates:

Well shall be plugged and plugging record filed on or before July 30, 19 57

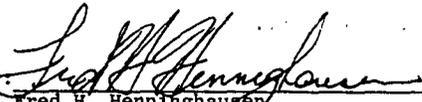
~~Apply Water to Beneficial Use on or before~~

Apply Water to Beneficial Use on or before 19

Witness my hand and official seal this 4th day of June A. D., 19 58.

S. E. Reynolds

State Engineer

By: 
Fred H. Henninghausen
District Supervisor

INSTRUCTIONS

File application in triplicate accompanied by a fee of \$5.00

Due diligence shall be exercised by the applicant at all times in order to complete his appropriation, change, amendment, etc., within the time limits set in the permit. Should conditions unavoidably delay the work, however, the State Engineer may, upon request of the applicant grant reasonable extensions of time as provided by statute, which extensions, in general, are granted for more than one year for any single extension.

In addition to the statements appearing in this form, applicant may submit affidavits or any other pertinent evidence in support of his application. No extension of time shall be granted unless sufficient proof is shown to justify such extension.

NOTE: If additional space is required, use a separate sheet of paper and attach securely hereto.

(This form is to be executed in triplicate)

2

WELL RECORD

Date of Receipt Permit No. L-2391

Name of permittee, J. M. Denton

Street or P. O. Box 843, City and State Lovington, N. M.

1. Well location and description: The Shallow well is located in SW $\frac{1}{4}$, SW $\frac{1}{4}$.
(shallow or artesian)

SW $\frac{1}{4}$ of Section II, Township I58, Range 37E; Elevation of top of

casing above sea level, feet; diameter of hole, 7 inches; total depth, 80 feet;

depth to water upon completion, 37 feet; drilling was commenced October 24, 1953,

and completed October 24, 1953; name of drilling contractor Quarles Drilling Co.

Box 545; Address, Lovington, New Mex.; Driller's License No. WDI44

2. Principal Water-bearing Strata:

No.	Depth in Feet		Thickness	Description of Water-bearing Formation
	From	To		
No. 1	40	80	40	Sand and soft sandstone
No. 2				
No. 3				
No. 4				
No. 5				

3. Casing Record:

Diameter in inches	Pounds per ft.	Threads per inch	Depth of Casing or Liner		Feet of Casing	Type of Shoe	Perforation	
			Top	Bottom			From	To
.....
.....
.....
.....
.....

4. If above construction replaces old well to be abandoned, give location: $\frac{1}{4}$, $\frac{1}{4}$, $\frac{1}{4}$

of Section, Township, Range.....; name and address of plugging contractor,

date of plugging, 19.....; describe how well was plugged:

STATE ENGINEER - Santa Fe, N. M.
RECEIVED
 NOV 24 1953 PM
 AM
 10 11 12 1 2 3 4 5 6

FILED
 NOV 23 1953
 OFFICE
 GROUND WATER SUPERVISOR
 ROSWELL, NEW MEXICO

A

1

IMPORTANT—READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM

APPLICATION FOR PERMIT

To appropriate the Underground Waters of the State of New Mexico

LEA COUNTY UNDERGROUND BASIN

Application No. L-2391 Book LC-9 Date Received October 22, 1953.

1. Name of applicant J.M. Denton
Postoffice address Box 843 Lovington, New Mexico
County of Lea, State of New Mexico

2. Source of water supply Shallow
(state whether artesian or shallow ground water basin)
located in Lea County underground Basin
(name of underground stream, valley, artesian basin, etc.)

3. The well is to be located in the SW $\frac{1}{4}$, SW $\frac{1}{4}$, SW $\frac{1}{4}$,
of section II, Township I5S, Range 37E, N.M.P.M.,
on land owned by J. M. Denton

4. Description of well: driller Quarles Drilling Co.; depth to be drilled 100 feet;
diameter (outside) of casing Not over 7 inches; type of pump and power plant to be used
2 1/2 Inch - Windmill

5. Quantity of water to be appropriated and beneficially used I.0
(feet depth or acre feet per acre)
for Stock Water purposes.

6. Acreage to be irrigated I.0 acres
located and described as follows (describe only lands to be irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
	<u>II</u>	<u>I5S</u>	<u>37E</u>	<u>I.0</u>	<u>J.M. Denton</u>

STATE ENGINEER—State Fe. U. M.
RECEIVED
 OCT 27 1953
 11:09 AM

(Note: location of well and acreage to be irrigated must be shown on plat as shown on page 112, 113, 114, 115, 116)

7. Time required to commence construction Within 10 Days
Time required to complete the works " " 30 Days
Time required to fully apply water to beneficial use " " 30 Days

8. Additional statements or explanations (including data on any other water rights appurtenant to above lands):

FILED
 OCT 22 1953
 OFFICE
 GROUND WATER SUPERVISOR
 ROSWELL, NEW MEXICO

I, J.M. Denton
being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

J.M. Denton, applicant

Subscribed and sworn to before me this 21 day of October, A.D., 1953

My Commission expires Feb. 15, 1954 Beatrice Muller
Notary Public

10-21-53

(This form to be executed in triplicate)

PROOF OF COMPLETION OF WORKS

UNDERGROUND WATERS

Date of Receipt November 24, 1953 Permit No. L-2391

1. Name of permittee J. M. Denton

P. O. address Box 843, City and State Lovington, New Mexico

Permit No. L-2391 to Appropriate
(appropriate, repair well, change location of well)

in the Lea County Underground Basin
(name of underground reservoir, artesian basin, etc.)

2. Description of well: location, SW $\frac{1}{4}$, SW $\frac{1}{4}$, SW $\frac{1}{4}$ of Section 11

Township 15 South, Range 37 East; total depth, 90 feet; outside diameter of top casing

(or hole, if uncased) 7 inches; if artesian, is well equipped with gate valve? no; name

and address of driller, Quarles Drilling Co., Lovington, New Mexico

Date drilled, October, 1953

3. Record of Pumping Test (to be supplied by person or firm making test; Name and address of person making

test, None

date of test, _____, 19____; depth to water before test, _____ feet, and im-

mediately afterward, _____ feet; Lenth of test, _____ hours; average discharge, _____ G.P.M.;

Specific capacity of well, _____ gal. per min. per ft. of drawdown.

4. Description of pump: Make, Aeromotor

type, cylinder; if turbine type, give size of column, _____ inches; diameter of

bowls _____ inches; number of bowls _____; length of suction pipe, _____ feet; total

length of column, bowls and suction pipe, _____ feet; if centrifugal type, give size of pump _____

inches; if other type, describe, 70' - 2 1/2" 2 1/2" cylinder

rated capacity of pump (if known) _____ G.P.M. at _____ rev. per min. from a depth of _____ feet.

5. Description of power plant: make, Aeromotor

type, windmill; rated horsepower (if available) _____; type of drive connection

to pump, sucker rods; date of installation of power plant, October, 1953

6. Actual discharge of pump, _____ G.P.M. at _____ rev. per min., from a depth of _____ feet;

Date of test _____, 19____; Name and address of dealer supplying pump and power

plant, Higginbotham-Bartlett Lumber Co., Lovington, New Mexico

STATE ENGINEER-Santa Fe, N. M.											
RECEIVED											
NOV 24 1953											
7	8	9	10	11	12	1	2	3	4	5	6

OFFICE	
GROUND WATER SUPERVISOR	
ROSELLE, NEW MEXICO	

7. Permit acreage to be served by well, 1.0 acres, to receive a total of 3.0 acre feet of water allowed by permit.

8. The distribution system consists of overnight storage reservoir no and _____ feet of main canal; (yes or no)
give approximate capacity of reservoir or tank (if any) _____ cubic feet.

9. If above construction replaces an old well to be plugged or abandoned, fill out the following: the well abandoned is located in the _____¹/₄ _____²/₄ _____³/₄ of Section _____, Township _____, Range _____;
Name of plugging contractor, _____
Well was plugged in accordance with terms of permit _____, 19_____

10. Give date "Well Record" was filed with State Engineer's Office, _____, 19_____

11. Pump and power plant were installed and works completed October, 1953

The undersigned, owner and holder of Permit No. L-2391, being first duly sworn upon his oath, states that he has read the foregoing statements and that the same are true to the best of his knowledge and belief.

J. M. Denton

Subscribed and sworn to before me this 5th day of November, 1953

My commission expires Sept. 26, 1957

John W. Shearman
Notary Public.

Affidavit of State Engineer's Representative

I hereby certify that I have duly inspected the above Works and find them adequate and properly constructed according to the terms and conditions of the permit. Note any exceptions _____

Groundwater Supervisor or other representative of State Engineer.

Date, _____, 19_____

WELL RECORD

Date of Receipt Permit No. L-1568

Name of permittee, Parker Drilling Co.

Street or P. O. Box 1053 City and State Lovington, New Mexico

1. Well location and description: The shallow well is located in NW
(shallow or artesian)

SW $\frac{1}{4}$ of Section 12, Township 15 South Range 37 East; Elevation of top of casing above sea level, feet; diameter of hole, 7 inches; total depth, 120 feet; depth to water upon completion, 38 feet; drilling was commenced September 8, 1952, and completed September 10, 1953; name of drilling contractor C. O. Aldridge
Box 379; Address, Lovington, New Mexico Dealer's License No. ND-79

2. Principal Water-bearing Strata:

No.	Depth in Feet		Thickness	Description of Water-bearing Formation
	From	To		
No. 1	38	60	22	light water sand
No. 2	60	60	20	fair water sand
No. 3	80	112	32	good water sand
No. 4	112	120	8 plus	quick sand
No. 5				

3. Casing Record:

Diameter in inches	Pounds per ft.	Threads per inch	Depth of Casing or Liner		Feet of Casing	Type of Shoe	Perforation	
			Top	Bottom			From	To
<u>Surface only</u>								

4. If above construction replaces old well to be abandoned, give location: $\frac{1}{4}$, $\frac{1}{4}$, $\frac{1}{4}$

of Section, Township, Range.....; name and address of plugging contractor,

date of plugging, 19.....; describe how well was plugged:

STATE ENGINEER - Sec. 11, N. M.
RECEIVED
 AUG 21 1953
 1953-10-11-12-13-14-15

FILED
 AUG 20 1953
 OFFICE
 ARTESIAN WELL SUPERVISOR
 ROSWELL, NEW MEXICO

(This form to be executed in triplicate)

PROOF OF COMPLETION OF WORKS

UNDERGROUND WATERS

Date of Receipt August 21, 1953 Permit No. L-1568

1. Name of permittee Parker Drilling Co.

P. O. address Box 1053, City and State Lovington, New Mexico

Permit No. L-1568 to Appropriate
(appropriate, repair well, change location of well)

in the Lea County Underground Basin
(name of underground reservoir, artesian basin, etc.)

2. Description of well: location, $\frac{1}{4}$, NW $\frac{1}{4}$, SW $\frac{1}{4}$, of Section 12

Township 15 South, Range 37 East; total depth, 120 feet; outside diameter of top casing

(or hole, if uncased) 7 inches; if artesian, is well equipped with gate valve? no; name

and address of driller, C. O. Aldridge; Lovington, New Mexico

Date drilled, September 8-10, 1953, 1953

3. Record of Pumping Test (to be supplied by person or firm making test; Name and address of person making

test, None made

date of test, , 1953; depth to water before test, feet, and im-

mediately afterward feet; Length of test, hours; average discharge, G.P.M.;

Specific capacity of well, gal. per min. per ft. of drawdown.

4. Description of pump: Make, Peerless

type, turbine; if turbine type, give size of column, 4 inches; diameter of

bowls 4 inches; number of bowls 10; length of suction pipe, 10 feet; total

length of column, bowls and suction pipe, 100 feet; if centrifugal type, give size of pump

inches; if other type, describe,

rated capacity of pump (if known) 150 G.P.M. at 1760 rev. per min., from a depth of 80 feet.

5. Description of power plant: make, International U-2

type, Industrial; rated horsepower (if available) 27; type of drive connection

to pump, belt; date of installation of power plant, Sept. 10, 1953

6. Actual discharge of pump, Estimated 150 G.P.M. at 1760 rev. per min., from a depth of 80 feet;

Date of test, None made, 1953; Name and address of dealer supplying pump and power

plant, Company owned unit

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AUG 20 1953
OFFICE
ARTESIAN WELL SUPERVISOR
ROSWELL, NEW MEXICO

7. Permit acreage to be served by well, 0.0 acres, to receive a total of 20 GPM for 12 months acre feet of water allowed by permit.
8. The distribution system consists of overnight storage reservoir no and _____ feet of main canal; (yes or no)
give approximate capacity of reservoir or tank (if any) _____ cubic feet.
9. If above construction replaces an old well to be plugged or abandoned, fill out the following: the well abandoned is located in the _____ % _____ % _____ % of Section _____ Township _____ Range _____;
Name of plugging contractor, _____;
Well was plugged in accordance with terms of permit _____, 19____.
10. Give date "Well Record" was filed with State Engineer's Office, August 18, 1953.
11. Pump and power plant were installed and works completed September 10, 1952.

The undersigned, owner and holder of Permit No. L-1568, being first duly sworn upon his oath, states that he has read the foregoing statements and that the same are true to the best of his knowledge and belief.

Parker Drilling Co.

by: A. C. Sedet

Subscribed and sworn to before me this 18th day of August, 1953

My commission expires 9/26/53

John W. Sharma
Notary Public

Affidavit of State Engineer's Representative

I hereby certify that I have duly inspected the above Works and find them adequate and properly constructed according to the terms and conditions of the permit. Note any exceptions _____

Delbert W. Nelson
Groundwater Supervisor or other representative of State Engineer

Date, 8-20, 1953

**Application for Permit to Change Place or Method of Use of
Underground Waters**

LEA COUNTY UNDERGROUND BASIN

Book No. LC-6 File No. L-1568
 Application received Jun. 4, 1953
 1. Name of applicant Ollibel C. Card, Estate
 Postoffice address Route 1; Lovington
 County of Lea State of New Mexico
 2. Source of water supply shallow
(state whether artesian or shallow ground water basin)
 located in Lea County Underground Basin
(name of underground stream, valley, artesian basin, etc.)
 3. Water right was acquired by beneficial use for oil well drilling purposes
 and is recorded in the State Engineer's office under File No. L-1568
 the priority date being September 16, 1952
 4. Area from which change is proposed, (a) 250 GPH net duty acres, described as follows:

Subdivision	Sec.	Twp.	Range	Acres	Owner
<u>none</u>					

(b) quantity of water to be transferred, 3.0 acre-feet, (c) supplied from well
 in the $\frac{1}{4}$, NW $\frac{1}{4}$, SW $\frac{1}{4}$
 of section 12 Township, 15 South Range 37 East N.M.P.M.;

(d) if lands receive supplemental water, describe separately each such additional source of supply, giving location, File No., acreage and average quantity or proportion furnished by each

5. Application is hereby made to change place or method of use for the following reasons: to use well drilled by Parker Drilling Co. and to be abandoned for oil well drilling purposes and used for stock watering purposes.

6. Acreage to which change is to be made, (a) 1.0 acres, described as follows:

Subdivision	Sec.	Twp.	Range	Acres	Owner
<u>pt. NW & SW</u>	<u>12</u>	<u>15S</u>	<u>37E</u>	<u>1.0</u>	<u>Ollibel C. Card, Est.</u>

STATE ENGINEER - Santa Fe, N. M.
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 1954
 OFFICE SUPERVISOR
 GROBINS V. A. SUPERVISOR
 ROSWELL, NEW MEXICO

(b) water to be used thereon for domestic and stock watering purposes;
 (c) if there are any other water rights for these lands describe each by source, File No., acreage covered, etc.
none

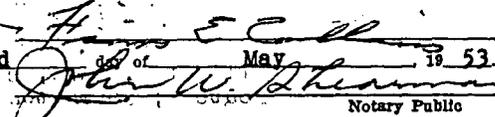
STATE ENGINEER - Santa Fe, N. M.
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FILED
 JUN 4 1953
 OFFICE SUPERVISOR
 ARTESIAN WELL SUPERVISOR
 ROSWELL, NEW MEXICO

L-1568

8. Date change of place or method of use can be completed June 1, 1953
Francis E. Collins for Ollibel C. Card, Est., being first duly sworn, upon
 my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained
 therein, and that the same are true to the best of my knowledge and belief.

Ollibel C. Card Estate applicant

Subscribed and sworn to before me this 22nd day of May, 1953
 My commission expires 9/26/53

 Notary Public

9. APPROVAL OF STATE ENGINEER

Number of this permit L-3586 1568 ma Date received corrected _____
 Recorded in Book LC-6 Publication of notice ordered _____
 Page No. 1586 Name of paper _____
 Application received June 4, 1953 Affidavit of publication filed _____
 Returned for correction _____ Date of approval May 12, 1954

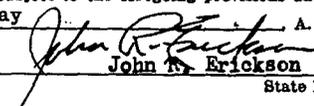
This application is approved provided it is not exercised to the detriment of any others having prior valid and
 existing rights to the use of said underground water source or to the detriment of any rights acquired prior to
 this application

Appropriation of water to be limited at all times to 3 acre feet per annum
 for domestic and stock watering purposes.

Proof of application of water to beneficial use shall be filed on or before not required, 19____

This is to certify that I have examined the above application for permit to change method
 of use and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 12 day of May, A. D., 1954


 John R. Erickson
 State Engineer

~~Frank E. Inby, Chief, Water Rights Div.~~

Change from 12 Sec(s), T. 15 S, R. 37 E Change to 12 Sec(s), T. 15 S, R. 37 E

No change of place - only method of use

INSTRUCTIONS

This form shall be executed, preferably typewritten, in triplicate and must be accompanied by a \$3.00 filing fee.
 Each triplicate copy must be properly signed and attested. If applicant is not recorded owner of water right, Change
 of Ownership affidavit must accompany this application. If additional space is required, use a separate sheet or
 sheets and attach securely hereto.

Note: It is unlawful, after a transfer has been completed, to apply water on the lands or uses from which right
 has been severed, or to use more water than the owner had a valid right to use before change was made. Supple-
 mentary water rights by their very nature, cease to exist for those lands from which rights are transferred; also
 they cannot be transferred to other lands as new or primary water rights.

All blanks in Sections 1-8 shall be filled out fully and accurately. Secs. 2-4 Describe all essential features of
 the water right or rights involved in the proposed change. Sec. 5 Explain fully why change is desired or necessary.
 Sec. 6 Describe lands or uses to which change is to be made and set forth any other rights appurtenant thereto.
 Sec. 7 Explain any features or conditions not made clear in previous sections. Sec. 9 This section, to be filled out
 by the State Engineer, gives his approval or disapproval of the application, the conditions under which approval is
 granted and sets the limiting date for completing such changes.

Important: The location of the lands or uses to be changed from, the lands or uses to be changed to, and the
 well or wells involved in such change must be shown as accurately as possible on the above plat.

CHANGE OF OWNERSHIP OF WATER RIGHT

File No. L-1568
 Date Received 4-22-54

State of New Mexico, _____)
 County of Lea) ss.

This is to certify that Parker Drilling Co.
 of Box 1053; Lovington County of Lea

State of New Mexico, the owner and holder of a water right set forth in
 file number L-1568 of record in the office of the State Engineer
 at Santa Fe, New Mexico, has transferred all (all or part) of said water right

to Ollibel G. Card Estate of Route 1; Lovington
 County of Lea State of New Mexico

The transferred water right is appurtenant to lands described as follows (describe only lands with actual water right):

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACREAGE
<u>Pt. NW 1/4 SW 1/4</u>	<u>12</u>	<u>15 S.</u>	<u>37 E.</u>	<u>1.0</u>

FILED
 MAR 22 1954
 OFFICE
 GROUND WATER SUPERVISOR
 ROSWELL, NEW MEXICO

Total 1.0

The undersigned, being first duly sworn upon oath, deposes and says that he has read the foregoing statements and that the same are true to the best of his knowledge and belief.

PARKER DRILLING CO.
 by: A. C. Ledet
 Superintendent

Subscribed and sworn to before me this 15th day of March, A. D., 19 54

My commission expires:
John W. Shearman
 Notary Public

MY COMMISSION EXPIRES SEPT. 26, 1957

INSTRUCTIONS

Change of ownership shall be filed in
 duplicate—for surface water rights.
 triplicate—for underground water rights.

This form shall be executed either by transferor (seller) or by the transferee (buyer) and shall be accompanied by a filing fee of \$1.00. If executed by the transferee it shall be accompanied by a certified copy of the deed or other instrument of conveyance.

IMPORTANT: Any filing, permit or license to appropriate water may be assigned, but no such assignment shall be binding, except on the parties thereto, unless filed for record in the office of the State Engineer. Such filing shall be made out on Change of Ownership forms or may consist of certified copies of the actual agreement. In either case a filing fee of \$1.00 is required.

No irrigation right which is appurtenant to the land shall be assigned or transferred apart from the land excepting in the manner specifically provided by law. Neither may title to land be transferred apart from any water right which is appurtenant thereto unless such right has been previously alienated from the land in the manner provided by law.

STATE ENGINEER-Santa Fe, N. M.
RECEIVED
 MAY 10 1954
 P.M.

IMPORTANT - READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM

APPLICATION FOR PERMIT

To appropriate the Underground Waters of the State of New Mexico

RECEIVED
SEP 18 1952
STATE ENGINEER

Application No. L-1568 Book LC-6 Date Received September 6 1952

- 1. Name of applicant Parker Drilling Co.
Postoffice address Box 1053, Lovington, New Mexico
County of Lea State of New Mexico
- 2. Source of water supply Shallow ground water basin
(state whether artesian or shallow ground water basin)
located in LEA COUNTY UNDERGROUND BASIN
(name of underground stream, valley, artesian basin, etc.)
- 3. The well is to be located in the $\frac{1}{4}$, NW $\frac{1}{4}$, SW $\frac{1}{4}$,
of section 12 Township 15 S Range 37 E N.M.P.M.,
on land owned by B. G. Dickinson
- 4. Description of well: driller contract not let; depth to be drilled 120 feet;
diameter (outside) of casing 7 inches; type of pump and power plant to be used
4" turbine-Industrial engine
- 5. Quantity of water to be appropriated and beneficially used 250 GPH for a one year period
(feet depth or acre feet per acre)
for oil well drilling operations purposes.
- 6. Acreage to be irrigated acres
located and described as follows (describe only lands to be irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
	NONE				

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side)

- 7. Time required to commence construction Immediately
Time required to complete the works 1 week
Time required to fully apply water to beneficial use 1 year
- 8. Additional statements or explanations (including data on any other water rights appurtenant to above lands):
To be used in oil well drilling operations only.

FILED
SEP 9 1952
OFFICE
ARTESIAN WELL SUPERVISOR
ROSWELL, NEW MEXICO

I, Parker Drilling Co., being a corporation organized under the laws of the State of New Mexico, do hereby certify that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

Parker Drilling Co. applicant
By: [Signature]

Subscribed and sworn to before me this 5th day of September, A.D., 19 52

My Commission expires Sept. 26, 1953
[Signature]
Notary Public

APPROVAL OF THE STATE ENGINEER

Number of this permit L-1568 Date received corrected _____
 Recorded in Book LC-6 Publication of notice ordered _____
 Page 1568 Name of paper _____
 Application received September 16, 1952. Affidavit of publication filed _____
 Date returned for correction _____ Date of approval September 19, 1952.

This application is approved for 3 acre feet of water
 subject to all prior valid and existing rights to the use of the waters of said underground source and provided that
 the applicant complies with all rules and regulations of the State Engineer pertaining to the drilling of wells
Well to be drilled by drilling contractor licensed in the State of New Mexico.
Diameter of well not to exceed 7 inches. Appropriation of water to be limited
at all times to 3 acre feet per annum for domestic and oil well drilling purposes.
Well to be plugged upon completion of oil well drilling operations.

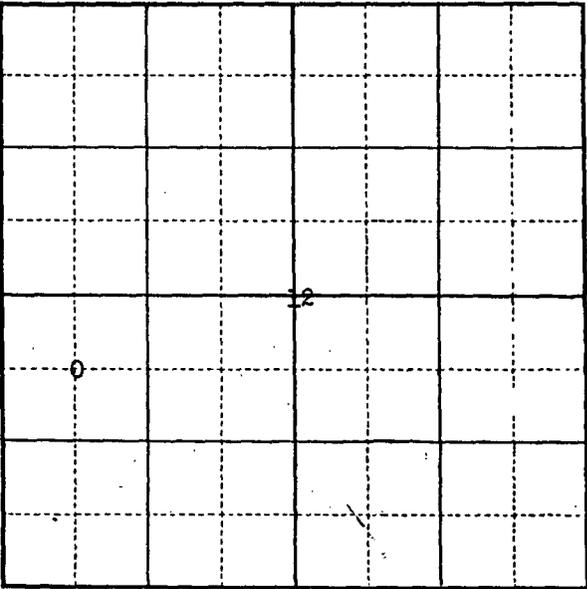
Works shall be completed and proofs filed on or before September 19, 1953.

Water shall be applied to beneficial use and proofs filed on or before _____

This is to certify that I have examined the above application for permit to appropriate the underground waters of
 the State of New Mexico and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 19th day of September A.D. 19 52
AT Bean
 Assistant State Engineer

LOCATE WELL AND ACREAGE TO BE IRRIGATED AS ACCURATELY AS POSSIBLE ON FOLLOWING PLAT:
 Section(s) 12 Township 15 S Range 37 E N.M.P.M.



INSTRUCTIONS

- This form shall be executed, preferably typewritten, in triplicate and shall be accompanied by a filing fee of \$5.00. Each of triplicate copies must be properly signed and attested.
 - A separate application for permit must be filed for each well used.
 - Secs. 1-4—Fill out all blanks fully and accurately.
 - Sec. 5—Irrigation use shall be stated in feet depth or acre feet of water per acre to be applied on the land. If for domestic, municipal, or other purposes, state total quantity in acre feet to be used annually. Domestic use may include the irrigation of not more than one acre of lawn and garden for noncommercial use.
 - Sec. 6—Describe only the lands to be irrigated. If on unsurveyed lands described by legal subdivision "as projected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some permanent, easily located natural object.
 - Sec. 7—Estimate time reasonably required to commence and to complete project.
 - Sec. 8—If lands are irrigated from any other source, explain in this section. Give any other data necessary to fully describe water right sought.
- If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

STATE ENGINEER OFFICE
 STATE ENGINEER OFFICE
 SANTA FE, N.M. 87501
WELL RECORD

Revised June 1972

9

Section 1. GENERAL INFORMATION

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

Well was drilled under Permit No. L-7613 and is located in the:
 a. Center of East 1/2 1/4 of Section 23 Township 15 S Range 37 E N.M.P.M.
 b. Tract No. _____ of Map No. _____ of the _____
 c. Lot No. _____ of Block No. _____ of the _____
 Subdivision, recorded in Len County.
 d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in
 the _____ Grant.

(B) Drilling Contractor E.H. Sumruld License No. WD 230
 Address 606 west avenue I, Lovington, N.M.

Drilling Began 10-15-76 Completed 10-19-76 Type tools rotary Size of hole 8 in.
 Elevation of land surface or _____ at well is _____ ft. Total depth of well 96 ft.
 Completed well is shallow artesian. Depth to water upon completion of well 45 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
62	96	34	layers of sand & sandstone	

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
5 1/2	17	8		96	97	none	69	95

Section 4. RECORD OF MUDDING AND CEMENTING

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

Section 5. PLUGGING RECORD

Plugging Contractor _____
 Address _____
 Plugging Method _____
 Date Well Plugged _____
 Plugging approved by: _____
 State Engineer Representative _____

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

FOR USE OF STATE ENGINEER ONLY

Date Received _____
 Quad _____ FWL _____ FSL _____
 File No. L-7613 Use STR Location No. 15.37.23.244231

63475

APPLICATION TO APPROPRIATE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 75-11-1 NEW MEXICO STATUTES

15 OCT 8 AM 11 30
Per No. L-7613

STATE ENGINEER OFFICE
SANTA FE, N.M. 87501

1. Name and Address of Applicant:

Joe Barnes
Crossroads
New Mexico

2. Describe well location under one of the following subheadings:

a. Center of E $\frac{1}{2}$ 1/4 1/4 of Sec. 23 Twp. 15S Rge. 37E N. M. P. M., in _____ County.

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

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

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

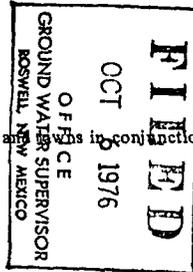
e. Give street address or route and box No. of property upon which well is to be located, or location by direction and distance from known landmarks

3. Approximate depth (if known) 100 feet; outside diameter of casing 7 inches.

Name of driller (if known) not contracted

4. Use of water (check appropriate box or boxes):

- Household, non-commercial trees, lawn and garden not to exceed 1 acre.
- Livestock watering.—range cattle
- Drinking and sanitary purposes and the irrigation of non-commercial trees, shrubs and _____ in conjunction with a commercial operation.
- Prospecting, mining or drilling operations to discover or develop natural resources.
- Construction of public works, highways and roads.



If any of the last three were marked, give name and nature of business under Remarks. (Item 5)

5. Remarks: _____

I, Joe Barnes, affirm that the foregoing statements are true to the best of my knowledge and belief and that development shall not commence until approval of the permit has been obtained.

Joe Barnes, Applicant

By: _____ Date: October 5, 1976

ACTION OF STATE ENGINEER

This application is approved for the use indicated, subject to all general conditions and to the specific conditions numbered 1 and 4 on the reverse side hereof. This permit will automatically expire unless this well is drilled or driven and the well record filed on or before October 31, 1977.

S. E. Reynolds, State Engineer

By: Delbert W. Nelson
Delbert W. Nelson
Assistant District II Supervisor

Date: October 7, 1976 File No. L-7613

SANTA FE

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 Mrs. Nellie Fort
 Street and Number Route 1
 City Lovington State New Mexico
 Well was drilled under Permit No. L-735 & L-736 Comb. S and is located in the
Ne 1/4 NE 1/4 1/4 of Section 22 Twp. 15S Rge. 37E
 (B) Drilling Contractor Glauda Tatum License No. WD33
 Street and Number 524 West Washington
 City Lovington State New Mexico
 Drilling was commenced June 21 1957
 Drilling was completed June 25 1957

(Plat of 640 acres)

Elevation at top of casing in feet above sea level unknown Total depth of well 140
 State whether well is shallow or artesian shallow Depth to water upon completion 45

Section 2

PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation
	From	To		
1	45	140	95	Water sands
2				
3				
4				
5				

Section 3

RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth		Feet	Type Shoe	Perforations	
			Top	Bottom			From	To
None								

Section 4

RECORD OF MUDDING AND CEMENTING

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

Section 5

PLUGGING RECORD

Name of Plugging Contractor _____ License No. _____
 Street and Number _____ City _____ State _____
 Tons of Clay used _____ Tons of Roughage used _____ Type of roughage _____
 Plugging method used _____ Date Plugged _____ 19____
 Plugging approved by: _____

Cement Plugs were placed as follows:

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

Basin Supervisor

FOR USE OF STATE ENGINEER ONLY

Date Received JUL 22 1957

OFFICE
GROUND WATER SUPERVISOR
ROSWELL, NEW MEXICO

File No. L-735 & 736-Comb-S Use Open & Close Location No. 15 37 22 231

Filed



IMPORTANT—READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM

OCT 10 1948

APPLICATION FOR PERMIT

ARTESIAN WELL SUPERVISOR
ROSWELL, NEW MEXICO

To Appropriate the ~~Underground Water~~ of the State of New Mexico

FILED

LEA COUNTY UNDERGROUND BASIN

OCT 13 1948

Application No. L-735 Book LC-2 Date Received October 13, 1948

1. Name of applicant Nellie Fort OFFICE STATE ENGINEER
SANTA FE, N. M.

Postoffice address Route 1, Lovington, New Mexico
County of Lea State of New Mexico

2. Source of water supply Shallow Ground Water Basin
(state whether artesian or shallow ground water basin)
located in LEA COUNTY UNDERGROUND BASIN
(name of underground stream, valley, artesian basin, etc.)

3. The well is to be located in the 1/4 NW 1/4 NE 1/4
of section 22, Township 15, Range 37, N.M.P.M.
on land owned by Nellie Fort

4. Description of well: driller Contract not let; depth to be drilled 130 feet;
diamenter (outside) of casing 16 inches; type of pump and power plant to be used
Turbine Pump Butane Power

5. Quantity of water to be appropriated and beneficially used 480
(feet depth or acre feet per acre)
for Agricultural and Domestic purposes.

6. Acreage to be irrigated 320 1/60 acres
located and described as follows (describe only lands to be irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
<u>NE 1/4</u>	<u>22</u>	<u>15</u>	<u>37</u>	<u>160</u>	<u>Nellie Fort</u>

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side.)

7. Time required to commence construction 6 months;
Time required to complete the works 2 years;
Time required to fully apply water to beneficial use 2 years

8. Additional statements or explanations (including data on any other water rights appurtenant to above lands)

I, Nellie Fort, being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

Nellie Fort, applicant
By Nellie Fort

Subscribed and sworn to before me this 7th day of October, A. D., 19 48

My Commission expires Sept. 12, 1951
Destine M. Fort
Notary Public.

APPROVAL OF THE STATE ENGINEER

Number of this permit L-735 Date received corrected _____
 Recorded in Book LC-2 Publication of notice ordered October 14, 1948
 Page 735 Name of paper Livingston Press
 Application received October 13, 1948 Affidavit of publication filed November 17, 1948
 Date returned for correction _____ Date of approval November 23, 1948

This application is approved for 480 acre feet of water
 subject to all prior valid and existing rights to the use of the waters of said underground source and provided that
 the applicant complies with all rules and regulations of the State Engineer pertaining to the drilling of wells.

1. Prior to the beginning of well drilling operations the well drilling contractor shall first obtain a well driller's permit from the State Engineer or his representative.

Works shall be completed and proofs filed on or before November 23, 1950

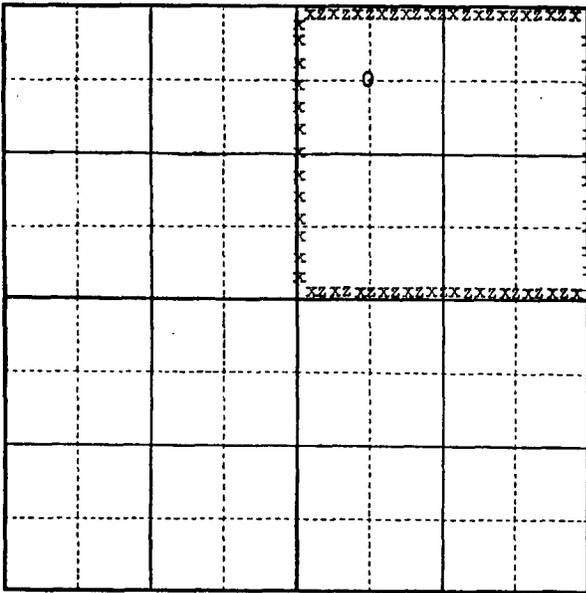
Water shall be applied to beneficial use and proofs filed on or before November 23, 1950

This is to certify that I have examined the above application for permit to appropriate the underground waters of the State of New Mexico, and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 23rd day of November, A. D., 19 48.

[Signature]
 Assistant State Engineer

LOCATE WELL AND ACREAGE TO BE IRRIGATED AS ACCURATELY AS POSSIBLE ON FOLLOWING PLAT:
 Section (s) 22, Township 15, Range 37, N.M.P.M.



INSTRUCTIONS

This form shall be executed, preferably typewritten, in triplicate and shall be accompanied by a filing fee of \$5.00. Each of triplicate copies must be properly signed and attested.

A separate application for permit must be filed for each well used.

Secs. 1-4—Fill out all blanks fully and accurately.

Sec. 5—Irrigation use shall be stated in feet depth or acre feet of water per acre to be applied on the land. If for domestic, municipal, or other purposes, state total quantity in acre feet to be used annually. Domestic use may include the irrigation of not more than one acre of lawn and garden for noncommercial use.

Sec. 6—Describe only the lands to be irrigated. If on unsurveyed lands describe by legal subdivision "as projected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some permanent, easily located natural object.

Sec. 7—Estimate time reasonably required to commence and to complete project.

Sec. 8—If lands are irrigated from any other source, explain in this section. Give any other data necessary to fully describe water right sought.

If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

[Handwritten initials]
 12/21/48

Filed



IMPORTANT—READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM

APPLICATION FOR PERMIT

WELL SUPERVISOR
ROSWELL, NEW MEXICO

To Appropriate the Underground Waters of the State of New Mexico

FILED

LEA COUNTY UNDERGROUND BASIN

Application No. L-736 Book LC-2 Date Received October 13, 1948 OCT 13 1948

1. Name of applicant Nellie Fort OFFICE STATE ENGINEER
Postoffice address Route 1, Lovington SANTA FE, N. M.
County of Lea State of New Mexico

2. Source of water supply Shallow Ground Water Basin
(state whether artesian or shallow ground water basin)
located in LEA COUNTY UNDERGROUND BASIN
(name of underground stream, valley, artesian basin, etc.)

3. The well is to be located in the 1/4, NW, 1/4, NW, 1/4,
of section 23, Township 15, Range 37, N.M.P.M.
on land owned by Nellie Fort

4. Description of well: driller Contract not let; depth to be drilled 130 feet;
diamenter (outside) of casing 16 inches; type of pump and power plant to be used
Turbine Pump Butane Power Plant

5. Quantity of water to be appropriated and beneficially used 480
(feet depth or acre feet per acre)
for Agricultural and Domestic purposes.

6. Acreage to be irrigated 160 acres
located and described as follows (describe only lands to be irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
<u>NW 1/4</u>	<u>23</u>	<u>15</u>	<u>37</u>	<u>160</u>	<u>Nellie Fort</u>

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side.)

7. Time required to commence construction 6 months;
Time required to complete the works 2 years;
Time required to fully apply water to beneficial use 2 years

8. Additional statements or explanations (including data on any other water rights appurtenant to above lands)

I, Nellie Fort, being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

Nellie Fort, applicant
By Ed. Fort

Subscribed and sworn to before me this 7th day of October, A. D., 19 48

My Commission expires Sept. 12, 1951
Dexter M. Ford
Notary Public.

APPROVAL OF THE STATE ENGINEER

Number of this permit L-736 Date received corrected _____
 Recorded in Book LC-2 Publication of notice ordered October 14, 1948
 Page 736 Name of paper Lovington Press
 Application received October 13, 1948 Affidavit of publication filed November 17, 1948
 Date returned for correction _____ Date of approval November 23, 1948

This application is approved for 480 acre feet of water
 subject to all prior valid and existing rights to the use of the waters of said underground source and provided that
 the applicant complies with all rules and regulations of the State Engineer pertaining to the drilling of wells.

1. Prior to the beginning of well drilling operations, the well drilling contractor shall first obtain a well driller's permit from the State Engineer or his representative.

Works shall be completed and proofs filed on or before November 23, 1950

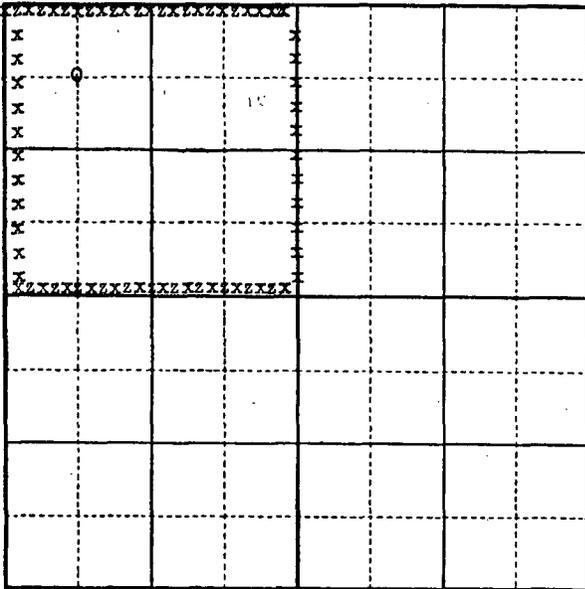
Water shall be applied to beneficial use and proofs filed on or before November 23, 1950

This is to certify that I have examined the above application for permit to appropriate the underground waters
 of the State of New Mexico and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 23rd day of November, A. D. 19 48

A. J. Bean
 Assistant State Engineer

LOCATE WELL AND ACREAGE TO BE IRRIGATED AS ACCURATELY AS POSSIBLE ON FOLLOWING PLAT:
 Section (s) 23 Township 15 Range 37 N.M.P.M.



INSTRUCTIONS

This form shall be executed, preferably typewritten, in triplicate and shall be accompanied by a filing fee of \$5.00. Each of triplicate copies must be properly signed and attested.

A separate application for permit must be filed for each well used.

Secs. 1-4—Fill out all blanks fully and accurately.

Sec. 5—Irrigation use shall be stated in feet depth or acre feet of water per acre to be applied on the land. If for domestic, municipal, or other purposes, state total quantity in acre feet to be used annually. Domestic use may include the irrigation of not more than one acre of lawn and garden for noncommercial use.

Sec. 6—Describe only the lands to be irrigated. If on unsurveyed lands describe by legal subdivision "as projected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some permanent, easily located natural object.

Sec. 7—Estimate time reasonably required to commence and to complete project.

Sec. 8—If lands are irrigated from any other source, explain in this section. Give any other data necessary to fully describe water right sought.

If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

JK
 7/11/

OFFICE OF THE STATE ENGINEER
SANTA FE, N.M.

This form to be executed in triplicate.

PROOF OF COMPLETION OF WORKS UNDERGROUND WATERS

Permit No. L-735

State of New Mexico }
County of Lea } ss.

I, Nellie Fort by Ed. Fort
of Lovington, County of Lea
State of New Mexico, being first duly sworn, do hereby certify that I am the owner

and holder of a permit to Appropriate water in the
(appropriate water, repair well, change of location of well)

Lea County Underground Basin, the waters from such source
(name of underground reservoir, artesian basin, etc.)

to be used for Agricultural and domestic purposes

under said permit; that said application has been filed and approved in the office of the State Engineer under
No. L-735; that the works necessary to accomplish

the appropriation of water in accordance with the terms of said permit have been completed; that all provisions and
conditions under which said permit was approved by the State Engineer have been fully complied with; that the fol-
lowing statement of facts is submitted in proof of the completion of said works; and that the said statement and each
and all of the items contained therein are true to the best of my knowledge and belief.

Nellie Fort
by: Ed. J. Fort

Subscribed and sworn to before me this 21st day of September, 1950

John W. Shearn
Notary Public.

My commission expires:
9/26/53

STATEMENT

- Name of appropriator: Nellie Fort
- Postoffice address: Route 1; Lovington, N. M.
- Underground water supply: Lea County Underground Basin
- The well is located in the X quarter of the NW quarter
of the NE quarter of Section 22, Township 15 South
Range 37 East, N.M.P.M., in Lea County.

FILED
SEP 25 1950
OFFICE
ARTESIAN WELL SUPERVISOR
ROSWELL, NEW MEXICO

30
9/27/50

5. Nominal size (outside diameter) of casing or liner 16 inch hole inches.

6. Depth of well 117 feet. 7. Approximate pumping depth _____ feet.

8. Description of pump: make Byron Jackson; type Turbine;
 suction lift 10 feet; size and length of column 8 inch 80 feet;
 size and number of bowls 12 inch 2 stage; total length 95 feet.

9. Make, type, horsepower, etc., of power plant Ford "V-8" 35 HP butane engine

10. Capacity of well 900 gals. per min. 11. Is well equipped with gate valve? no

12. Name of driller Claude Tatum

13. Has log of this well been filed with State Engineer or his representative? yes

14. The distribution work consists of _____ reservoirs _____ feet of ditch,
 _____ feet of flume, _____ feet of pipe.

15. Size of reservoir _____ feet wide, _____ feet long, _____ feet average
 depth, _____ cubic feet capacity, located in the _____ $\frac{1}{4}$, _____ $\frac{1}{4}$,
 _____ $\frac{1}{4}$ of Section _____, Township _____, Range _____

16. Lands to be irrigated 160 acres, located in NE $\frac{1}{4}$ Sec. 22, T15S, R37E, NMMP.

17. If there are other sources of water supply for these lands, describe giving file Nos., etc.

18. Works were completed May, 1949, 19 _____

19. If above construction replaces an old well to be plugged or abandoned, fill out following:

a. The well abandoned is located in the _____ $\frac{1}{4}$, _____ $\frac{1}{4}$, _____ $\frac{1}{4}$
 of Section _____ Township _____, Range _____

b. Name of plugging contractor _____

c. Well was plugged in accordance with terms of permit _____, 19 _____

I hereby certify that I have duly inspected the above works and find them adequate and properly constructed according to the terms and conditions of this permit.

Dalton Finckel
 Artesian Well Supervisor (or representative of State Engineer)

Date 9-28-50

This form to be executed in triplicate.

PROOF OF COMPLETION OF WORKS UNDERGROUND WATERS

Permit No. L-736

State of New Mexico }
County of Lea } ss.

I, Nellie Fort by Ed. Fort
of Lovington County of Lea
State of New Mexico being first duly sworn, do hereby certify that I am the owner
and holder of a permit to Appropriate water in the
(appropriate water, repair well, change of location of well)
Lea County Underground Basin the waters from such source
(name of underground reservoir, artesian basin, etc.)
to be used for Agricultural and domestic purposes
under said permit; that said application has been filed and approved in the office of the State Engineer under
No. L-736; that the works necessary to accomplish
the appropriation of water in accordance with the terms of said permit have been completed; that all provisions and
conditions under which said permit was approved by the State Engineer have been fully complied with; that the fol-
lowing statement of facts is submitted in proof of the completion of said works; and that the said statement and each
and all of the items contained therein are true to the best of my knowledge and belief.

Nellie Fort
by: Ed. J. Fort

Subscribed and sworn to before me this 21st day of September 1950

John W. Stearns
Notary Public.

My commission expires:
Sept. 26, 1953

FILED
SEP 25 1950
OFFICE
ARTESIAN WELL SUPERVISOR
ROSWELL, NEW MEXICO

STATEMENT

- Name of appropriator Nellie Fort
- Postoffice address Route 1; Lovington, New Mexico
- Underground water supply Lea County Underground Basin
- The well is located in the X quarter of the NW quarter of the NW quarter of Section 23 Township 13 17 South Range 37 East, N.M.P.M., in Lea County.

7, 147

6. Nominal size (outside diameter) of casing or liner 16 inch hole inches.
7. Depth of well 122 feet. 7. Approximate pumping depth _____ feet.
8. Description of pump: make Byron Jackson; type turbine;
suction lift 10 feet; size and length of column 8 inch 80 feet;
size and number of bowls 12 inch 2 stage; total length 95 feet.
9. Make, type, horsepower, etc., of power plant Ford "V-8" 35 HP butane engine

10. Capacity of well 900 gals. per min. 11. Is well equipped with gate valve? no
Name of driller Claude Tatum

13. Has log of this well been filed with State Engineer or his representative? yes
The distribution work consists of _____ reservoirs _____ feet of ditch,
_____ feet of flume, _____ feet of pipe.
14. Size of reservoir _____ feet wide, _____ feet long, _____ feet average
depth, _____ cubic feet capacity, located in the _____
_____ of Section _____ Township _____ Range _____

15. Lands to be irrigated 160 acres, located in NW 1/4 Sec. 23, T15S, R37E, NMPM.

17. If there are other sources of water supply for these lands, describe giving file Nos., etc.

18. Works were completed May, 1949, 1949

19. If above construction replaces an old well to be plugged or abandoned, fill out following:
a. The well abandoned is located in the _____
of Section _____ Township _____ Range _____
b. Name of plugging contractor _____
c. Well was plugged in accordance with terms of permit _____, 19____

I hereby certify that I have duly inspected the above works and find them adequate and properly constructed according to the terms and conditions of this permit.

Dalton Finckel
Artesian Well Supervisor (or representative of State Engineer)

Date 9-28-50

IMPORTANT-READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM

APPLICATION FOR PERMIT 1957 MAY 28 PM 2:09

To appropriate the Underground Waters of the State of New Mexico STATE ENGINEER OFFICE SANTA FE, N. M.

LEA COUNTY UNDERGROUND BASIN

L-735, L-736 Comb. S Application No. Book LC-2b2 Date Received March 20, 1957

- 1. Name of applicant Nellie Fort
Postoffice address Route 1, City or Town Lovington
County of Lea, State of New Mexico
2. Source of water supply Shallow
located in Lea County Underground Basin
3. The well is to be located in the SW 1/4, NE 3/4, of section 22, Township 15 South, Range 37 East, N.M.P.M. on land owned by Nellie Fort
4. Description of well: drilled not contracted, W.D. No. ; depth to be drilled 150 feet; diameter (outside) of casing 16 inches; type of pump and power plant to be used turbine pump with industrial engine
5. Quantity of water to be appropriated and beneficially used three (3) combined duty for Agricultural and domestic purposes.
6. Acreage to be irrigated 320 combined duty acres located and described as follows (describe only lands to be irrigated):

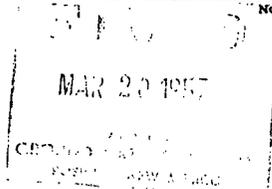
Table with 6 columns: Subdivision, Sec., Twp., Range, Acres Irrigated, Owner. Rows include NW 1/4 and NE 1/4 sections.

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side.)

- 7. Time required to commence construction 1 Month
Time required to complete the works 6 months
Time required to fully apply water to beneficial use 1 year
8. Additional statements or explanations (including data on any other water rights appurtenant to above lands)
It is not the intention of this application to exceed the allowed three acre feet per acre granted under Permits L-735 and L-736.

I, Nellie Fort, being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.
Nellie Fort, applicant

Subscribed and sworn to before me this 12th day of March, A. D., 1957
My Commission expires Sept. 26, 1957
Notary Public.



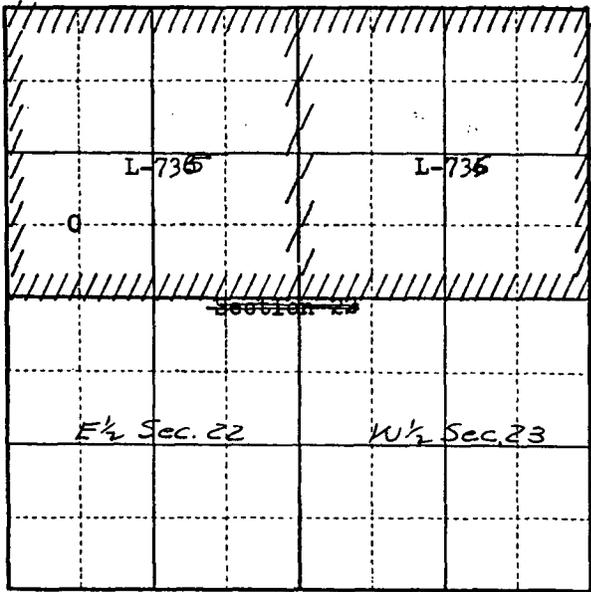
APPROVAL OF THE STATE ENGINEER

Number of this permit L-735 & L-736 Comb-S Date received corrected _____
 Recorded in Book LC-2b2 Publication of notice ordered March 27, 1957
 Page 735 Name of paper The Lovington Press
 Application received March 20, 1957 Affidavit of publication filed April 22, 1957
 Date returned for correction _____ Date of approval May 29, 1957

This application is approved for supplemental _____ acre feet of water
 subject to all prior valid and existing rights to the use of the waters of said underground source and provided that
 the applicant complies with all rules and regulations of the State Engineer pertaining to the drilling of wells _____
Well shall be drilled by a drilling contractor licensed by the State Engineer
of New Mexico. Appropriation of water from all sources combined to be limited
at all times to a maximum of 3 acre feet per acre per annum.

Works shall be completed and proofs filed on or before May 30, 1958
 Water shall be applied to beneficial use and proofs filed on or before _____
 This is to certify that I have examined the above application for permit to appropriate the underground waters
 of the State of New Mexico and hereby approve the same subject to the foregoing provisions and conditions.
 Witness my hand and seal this 29th day of May, A. D. 1957.
S. E. Reynolds
 State Engineer

LOCATE WELL AND ACREAGE TO BE IRRIGATED AS ACCURATELY AS POSSIBLE ON FOLLOWING FLAT:
 Section (s) 22 & 23, Township 15 South, Range 37 East, N.M.P.M.



By: N. E. Gray
 Dr. E. Gray
 Engineer
 Water Rights Division

O - well site
 // - Permit Bdry.

INSTRUCTIONS

- This form shall be executed, preferably typewritten, in triplicate and shall be accompanied by a filing fee of \$5.00. Each of triplicate copies must be properly signed and attested.
 - A separate application for permit must be filed for each well used.
 - Secs. 1-4—Fill out all blanks fully and accurately.
 - Sec. 5—Irrigation use shall be stated in feet depth or acre feet of water per acre to be applied on the land. If for domestic, municipal, or other purposes, state total quantity in acre feet to be used annually. Domestic use may include the irrigation of not more than one acre of lawn and garden for noncommercial use.
 - Sec. 6—Describe only the lands to be irrigated. If on unsurveyed lands describe by legal subdivision "as projected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some permanent, easily located natural object.
 - Sec. 7—Estimate time reasonably required to commence and to complete project.
 - Sec. 8—If lands are irrigated from any other source, explain in this section. Give any other data necessary to fully describe water right sought.
- If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

UNDERGROUND WATERS

SEP 29 10:12 AM '58
STATE ENGINEER OFFICE
SANTA FE, N.M.

Authorization of and Instructions to Registered Engineer and/or Land Surveyor

Office of State Engineer,
~~XXXXXXXXXXXXXXXXXXXX~~
Roswell, New Mexico
September 25, 1958

By Lee Engineering Co.
Registered Engineer and/or Land Surveyor

17 W. Washington, Lovington, New Mexico

Dear Sir:

This is to advise you that in accordance with the rules and regulations of the State Engineer pertaining to underground waters, you are hereby authorized by the State Engineer to make a final inspection and report upon Permit No. L-735 & L-736-Comb., in the name of Mrs. Nellie Fort

whose post office address is Route 1, Lovington, New Mexico

The inspection shall comprise a thorough field examination including an instrument survey of the irrigated lands and the location of the works. The discharge capacity of the well should be verified by field measurements when possible.

In case of a permit to change location of well and/or place or method of use, inspection and survey shall be made of the well and/or lands from which rights were to be severed to prove that permittee has fully complied with that part of his permit. A permit to change can in no way extend or increase the water rights of the permittee. It is therefore essential that the irrigation of any new lands must involve the abandonment of a like acreage from which right is severed. Further, supplementary water rights, by their very nature, automatically cease to exist for those lands from which rights are transferred.

A plat to accompany the report shall be prepared with permanent black India ink on good quality tracing cloth, 17" wide and 23" long on the trim lines with margins of 1" on the top, 1/8" on the right side and bottom and 1 1/2" on the left side for binding purposes. The map shall have a scale of 1" equals 400'. The map shall show the legal subdivisions, accurate locations of the well or wells, reservoirs if any, main canals, streams, highway and other important cultural features. Acreage irrigated shall be clearly indicated on the map. Each source of water used for irrigation shall be designed by the symbols hereinafter given. Primary source shall be designated by the appropriate symbol placed in the corners, and around the perimeter as needed to clearly delineate the area, with 1/8" tick marks parallel to the boundaries of the irrigated area. Acreage irrigated by secondary or supplemental source or sources shall be delineated by the proper symbol or symbols to designate the source or sources with the 1/8" tick marks placed at a 30° angle to the north-south line and so arranged that when the tick marks are connected a wide spaced cross-hatching at 30° to the north-south line results.

Source of Supply	Symbol
Artesian Ground Water	1/8" Circle
Shallow Ground Water	1/8" Square
Surface Water	Letter S
Artificial Water	1/8" Diamond

The location of the well or wells from which water is derived shall be accurately determined and plotted on the map. The course and distance, or coordinate distances, from a known legal subdivision corner shall be shown. A 1/8" circle of solid color shall represent an artesian well and a 1/8" square of solid color shall represent a shallow well. Sections and subdivisions thereof in which the works and the lands lie shall be clearly indicated and the number of acres irrigated within the subdivisions shall be shown. When a part of a ten-acre subdivision is irrigated the acreage within the ten-acre subdivision must be clearly shown. The ownership of lands and file numbers pertinent to the filing shall be shown on the map.

Where lands actually irrigated vary from the lands approved in the permit, these variations shall be designated and noted upon the map. They shall also be noted in the space provided under "Engineer's Certificate" on the "Proof of Application of Water to Beneficial Use" form. Any other variations from the approved location of well, description of lands from which rights are transferred, etc., shall also be noted in that space. If lands have been abandoned or are fallow, lettering within the tract should so indicate.

The location and size of any reservoirs shall be shown on the map and shall be included in the total irrigated acreage surveyed. The main ditches shall be shown and the direction of flow shall be indicated.

The tracing shall include the following statement and certificate:

(Title and Statement)

Plat of Underground Water Project to accompany engineer's report on permit to

Appropriate

(appropriate the underground waters of the State of New Mexico, change place or method of use, etc.)

Permit No. **L-735 & L-736-Comb.** **Mrs. Nellie Fort** Permittee

The areas upon which water has been beneficially applied under the provisions of the permit are described (to the nearest ten-acre subdivision where necessary) as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES	OWNER*
.....
.....
.....
.....
.....

*Omit if permittee is sole owner under permit.

Note: If all or part of the lands receive water from more than one source, detail such sources by File No., legal subdivision and acreages so affected. This may be done by adding other columns to above table in which to designate file numbers of sources supplying water, or by preparing separate tabulations of the acreages irrigated from each source.

The professional engineer or land surveyor making the survey or under whose direction the survey was made, shall place upon the map (or the first sheet if more than one) the engineer's certificate. His license number together with an impression of his seal shall also appear. The engineer's certificate shall read as follows:

ENGINEER'S CERTIFICATE

I,, hereby certify that I am the
 who prepared the above map and statement from field notes of actual surveys made by me or under my direction, and that the same are true and correct to the best of my knowledge and belief

.....
 Registered Professional Engineer and/or Land Surveyor.

License No.

You may be of considerable assistance to the permittee in executing the form, "Proof of Application of Water to Beneficial Use." In any event you must check the statements thereon and sign the "Engineer's Certificate," noting therein any variations from the approved permit which may affect permittee's rights.

Note: Since license cannot be granted for more water than has actually been applied to beneficial use under any permit, permittee is automatically limited to such actual use. If preliminary investigation indicates that permit is not ready for final action you may so advise permittee and, upon his formal application to the State Engineer for extension of time, additional time to more fully apply water to beneficial use may be allowed.

cc: **State Engineer**
Proof of Works have been filed
Proof of Beneficial Use due November 23, 1959
Engineer's Plat & Report due November 23, 1959
Fees required---\$10.00

Very truly yours,

.....
Asst. Basin Supervisor

1959 NOV 13 AM 8:13
 STATE ENGINEER OFFICE
 SAN ANTONIO, TEXAS

PROOF OF APPLICATION OF WATER TO BENEFICIAL USE

Underground Waters

Date of Receipt _____ Permit No. L-735 & 736 Comb.

Name of permittee Nellie Fort

Post office address Route 1, Lovington

County of Lea State of New Mexico

This permit, numbered L-735 & 736 Comb., was formally approved by the State Engineer _____, 19____,

to appropriate the shallow ground waters

(appropriate the artesian or shallow ground waters, change place or method of use, etc.)

in the Lea County Underground Basin
 (name of underground reservoir, artesian basin, etc.)

The point of diversion, or location of the well, is described under File No. L-735
L-736

and is in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ of section 22 Township 15 South, Range 37 East, N.M.P.M.

Capacity of well is _____ gallons per minute. If more than one well irrigates the lands, or if there is supplemental water from another source, describe by location, File No., source of supply, capacity, etc.:

L-735 & L-736 Comb. S., NW $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 22, T15S, R37E, NMPM,
Est. well capacity 1,000 GPM

Storage capacity of reservoir, if any, is none

IRRIGATION AND DOMESTIC USES

A total of 597.3 acre feet of water is required to be delivered on the land during the irrigation season from April 15 to October 15 for the proper irrigation of the lands under this permit.

During the year, 1959, approximately three (3) acre feet per acre was applied to beneficial use on 199.1 acres of land described as follows:

Subdivision	Sec.	Twp.	Range	Acres	Owner
<u>L-735 NE$\frac{1}{4}$NE$\frac{1}{4}$</u>	<u>22</u>	<u>15S</u>	<u>37E</u>	<u>24.1</u>	<u>Nellie Fort</u>
<u>NW$\frac{1}{4}$NE$\frac{1}{4}$</u>	<u>22</u>	<u>15S</u>	<u>37E</u>	<u>20.2</u>	<u>Nellie Fort</u>
<u>SW$\frac{1}{4}$NE$\frac{1}{4}$</u>	<u>22</u>	<u>15S</u>	<u>37E</u>	<u>28.3</u>	<u>Nellie Fort</u>
<u>SE$\frac{1}{4}$NE$\frac{1}{4}$</u>	<u>22</u>	<u>15S</u>	<u>37E</u>	<u>22.3</u>	<u>Nellie Fort</u>
<u>L-736 NE$\frac{1}{4}$NW$\frac{1}{4}$</u>	<u>23</u>	<u>15S</u>	<u>37E</u>	<u>20.8</u>	<u>Nellie Fort</u>
<u>NW$\frac{1}{4}$NW$\frac{1}{4}$</u>	<u>23</u>	<u>15S</u>	<u>37E</u>	<u>28.1</u>	<u>Nellie Fort</u>
<u>SW$\frac{1}{4}$NW$\frac{1}{4}$</u>	<u>23</u>	<u>15S</u>	<u>37E</u>	<u>27.1</u>	<u>Nellie Fort</u>
<u>SE$\frac{1}{4}$NW$\frac{1}{4}$</u>	<u>23</u>	<u>15S</u>	<u>37E</u>	<u>28.2</u>	<u>Nellie Fort</u>

1959 SEP 14 AM 10:11
 STATE ENGINEER OFFICE
 SAN ANTONIO, TEXAS

1959 NOV 13

1960 SEP 15 PM 2:03

PROOF OF COMPLETION OF WORKS

UNDERGROUND WATERS

Date of Receipt September 1, 1957 Permit No. L-735 & L-736 Combined S.

1. Name of permittee Nellie Fort
P. O. address Route 1, Box 510 City and State Lovington, New Mexico
L-735 & L-736
Permit No. Combined S. to Appropriate
(appropriate, repair well, change location of well)

in the Lea County Underground Basin
(name of underground reservoir, artesian basin, etc.)

2. Description of well: location, SW $\frac{1}{4}$, NE $\frac{1}{4}$, of Section 22,
Township 15 South, Range 37 East; total depth, 150 feet; outside diameter of top casing
(or hole, if uncased) 16 inches; if artesian, is well equipped with gate valve? name
and address of driller, Claude Tatum;
Date drilled, June 25, 1957, 1957

3. Record of Pumping Test (to be supplied by person or firm making test; Name and address of person making
test, No Test;
date of test, _____, 19____; depth to water before test, _____ feet, and im-
mediately afterward _____ feet; Length of test, _____ hours; average discharge, _____ G.P.M.;
Specific capacity of well, _____ gal. per min. per ft. of drawdown.

4. Description of pump: Make, Byron Jackson;
type, 2KH 2-Stage; if turbine type, give size of column, 8" inches; diameter of
bowls 12 inches; number of bowls 2; length of suction pipe, 10' feet; total
length of column, bowls and suction pipe, 100' feet; if centrifugal type, give size of pump _____
inches; if other type, describe, _____;
rated capacity of pump (if known) 1000 G.P.M., at 1750 rev. per min., from a depth of 84' feet.

5. Description of power plant: make, 1957 Chevrolet, 6 Cyl. Motor;
type, _____; rated horsepower (if available) _____; type of drive connection
to pump, WL 4L Spicer; date of installation of power plant, 6-25, 1957

6. Actual discharge of pump, _____ G.P.M., at _____ rev. per min., from a depth of _____ feet;
Date of test _____, 19____; Name and address of dealer supplying pump and power
plant, _____

FILED
SEP 25 1957
OFFICE
GROUND WATER SUPERVISOR
ROSWELL, NEW MEXICO

Supplemental on
7. Permit acreage to be served by well, 320 acres, to receive a total of 960 acre feet of water allowed by permit.

8. The distribution system consists of overnight storage reservoir No and 4000 feet of main canal; (yes or no) give approximate capacity of reservoir or tank (if any) _____ cubic feet.

9. If above construction replaces an old well to be plugged or abandoned, fill out the following: the well abandoned is located in the _____ % of Section _____, Township _____, Range _____; Name of plugging contractor, _____;

Well was plugged in accordance with terms of permit _____, 19 _____

10. Give date "Well Record" was filed with State Engineer's Office, _____, 19 _____

11. Pump and power plant were installed and works completed June 25, 19 57

L-735 & L-736
The undersigned, owner and holder of Permit No. Comb-Supps., being first duly sworn upon his oath, states that he has read the foregoing statements and that the same are true to the best of his knowledge and belief.

Nellie Fort

Subscribed and sworn to before me this 24th day of September, 19 57

My commission expires COMMISSION EXPIRES OCTOBER 25, 1958
Margie Robinson
Notary Public

Affidavit of State Engineer's Representative

I hereby certify that I have duly inspected the above Works and find them adequate and properly constructed according to the terms and conditions of the permit. Note any exceptions. Field check made January 6, 1960, indicates L-735 & L-736-Comb-S, to be located in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 22, Township 15 South, Range 37 East and to be equipped with a Byron Jackson Turbine Pump and powered by a 1957 Chevrolet 6 Cyl Industrial Engine.

E.C. Barry
Groundwater Supervisor or other representative of State Engineer

Date, January 11, 19 60

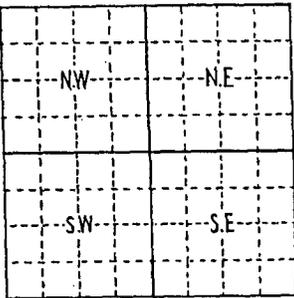
PLUGGING
WELL RECORD

File No. L-1207

3

INSTRUCTIONS: This form should be typewritten, and filed in the office of the State Engineer, (P.O. Box 1079) Santa Fe, New Mexico, unless the well is situated in the Roswell Artesian Basin, in which case it should be filed in the office of the Artesian Well Supervisor, Roswell, New Mexico. Section 5 should be answered only if an old artesian well has been plugged. All other sections should be answered in full in every case, regardless of whether the well drilled is shallow or artesian in character. This report must be subscribed and sworn to before a Notary Public.

Sec. 1



(Plat of 640 acres)
Locate Well Accurately

Owner of well Parker Drilling Co.
 Street and Number P. O. Box 1053
 Post Office
 Well was drilled under Permit No. L-1207 and
 is located in the $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 15
 Township 15S Range 37E
 Drilling Contractor C. O. Aldredge
 Street and Number
 Post Office

Drilling was commenced 19..... Drilling was completed 19.....

Elevation at top of casing in feet above sea level

State whether well is shallow or artesian

Total depth of well feet.

RECEIVED

OCT 27 1952

STATE ENGINEER

Sec. 2

PRINCIPAL WATER-BEARING STRATA

No. 1, from to Thickness in feet Formation

No. 2, from to Thickness in feet Formation

No. 3, from to Thickness in feet Formation

No. 4, from to Thickness in feet Formation

No. 5, from to Thickness in feet Formation

Sec. 3

RECORD OF CASING

DIAMETER IN INCHES	POUNDS PER FOOT	THREADS PER INCH	NAME OF MANUFACTURER	FEET OF CASING	TYPE OF SHOE	PERFORATED		PURPOSE
						FROM	TO	

Sec. 4

RECORD OF MUDDING AND CEMENTING

DIAMETER OF HOLE IN INCHES	NUMBER OF SACKS OF CEMENT	METHODS USED	SPECIFIC GRAVITY OF MUD	TONS OF CLAY USED

Sec. 5

PLUGGING RECORD OF OLD WELL

Well is located in the $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ of Section, Township

Range Name of plugging contractor Parker Drilling Co.

Street and Number Post Office

Tons of clay used Tons of roughage used Type of roughage

..... Was plugging approved by Artesian Well Supervisor
4' depth concrete plug placed 2' below surface
and surface soil leveled over the hole.

Cement plugs were placed as follows:

No. 1 was placed at feet Number of sacks of cement used

No. 2 was placed at feet Number of sacks of cement used

No. 3 was placed at feet Number of sacks of cement used

No. 4 was placed at feet Number of sacks of cement used

No. 5 was placed at feet Number of sacks of cement used

(OVER)

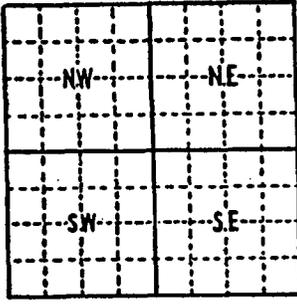
SANTA FE

WELL RECORD

File No. _____

INSTRUCTIONS: This form should be typewritten, and filed in the office of the State Engineer, P. O. Box 1079, Santa Fe, New Mexico, or in the office of the Artesian Well Supervisor, Roswell, New Mexico. Section 5 should be answered only if an old artesian well has been plugged. All other sections should be answered in full in every case, regardless of whether the well drilled is shallow or artesian in character. This report must be subscribed and sworn to before a Notary Public.

L-1207



Owner of well Parker Drilling Co.
 Street and Number _____
 Post Office Southern New Mexico
 Well was drilled under Permit No. 21119 well for oil well and
 is located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 15
 Township 15 South Range 37 East
 Drilling Contractor E. G. Aldridge
 Street and Number 614 North 2nd St.

(Plat of 640 Acres)
Locate Well Accurately

Post Office Southern New Mexico
 Drilling was commenced July 30, 1951. Drilling was completed July 31, 1951
 Elevation at top of casing in feet above sea level _____
 State whether well is shallow or artesian shallow
 Total depth of well 120 feet. Water level upon completion of well 32 feet below land surface.

Sec. 2 PRINCIPAL WATER-BEARING STRATA

No. 1, from 32 to 70, Thickness in feet 38, Formation light water sand
 No. 2, from 70 to 110, Thickness in feet 28, Formation hard water sand
 No. 3, from 110 to 120, Thickness in feet 10, Formation quick sand
 No. 4, from _____ to _____, Thickness in feet _____, Formation _____
 No. 5, from _____ to _____, Thickness in feet _____, Formation _____

Sec. 3 RECORD OF CASING

Diameter in Inches	Pounds per Foot	Threads per Inch	Name of Manufacturer	Feet of Casing	Type of Shoe	Perforated		Purpose
						From	To	
<u>7.00</u>	<u>17</u>	<u>10</u>	<u>used</u>	<u>10</u>	<u>None</u>	<u>None</u>		<u>conductor at top of well</u>

Sec. 4 RECORD OF MUDDING AND CEMENTING

Diameter of Hole in Inches	Number of Sacks of Cement	Methods Used	Specific Gravity of Mud	Tons of Clay Used

Sec. 5 PLUGGING RECORD OF OLD WELL

Well is located in the _____ $\frac{1}{4}$ _____ $\frac{1}{4}$ of Section _____, Township _____
 Range _____ Name of plugging contractor _____
 Street and Number _____ Post Office _____
 Tons of clay used _____ Tons of roughage used _____ Type of roughage _____
 Was plugging approved by Artesian Well Supervisor? _____

Cement plugs were placed as follows:

No. 1 was placed at _____ feet. Number of sacks of cement used _____
 No. 2 was placed at _____ feet. Number of sacks of cement used _____
 No. 3 was placed at _____ feet. Number of sacks of cement used _____
 No. 4 was placed at _____ feet. Number of sacks of cement used _____
 No. 5 was placed at _____ feet. Number of sacks of cement used _____

FILED
 AUG 31 1951
 OFFICE
 ARTESIAN WELL SUPERVISOR
 ROSWELL, NEW MEXICO

PLUGGING RECORD 9-19-52

L-1207

RECEIVED

IMPORTANT-READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM AUG 21 1951

APPLICATION FOR PERMIT STATE ENGINEER

To appropriate the Underground Waters of the State of New Mexico

LEA COUNTY UNDERGROUND BASIN

Application No. I-1207 Book LHC-4 Date Received September 4, 1951

1. Name of applicant Parker Drilling Co.

Postoffice address Lovington

County of Lea State of New Mexico

2. Source of water supply Shallow (state whether artesian or shallow ground water basin)

located in Lea County Underground Basin (name of underground stream, valley, artesian basin, etc.)

3. The well is to be located in the X 1/4, NE 1/4, NE 1/4

of section 35 Township 15 South Range 37 East N.M.P.M.

on land owned by unknown

4. Description of well: driller G. O. Aldridge; depth to be drilled 100' M or L feet;

diameter (outside) of casing 7 inch hole inches; type of pump and power plant to be used

Cylinder type pump with butane engine

5. Quantity of water to be appropriated and beneficially used 250 GPH average (feet depth or acre feet per acre)

for Oil well drilling purposes

6. Acreage to be irrigated none acres

located and described as follows (describe only lands to be irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
none	15	15S	37E	none	

FILED AUG 23 1951 OFFICE ARTESIAN WELL SUPERVISOR ROSWELL, NEW MEXICO

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side.)

7. Time required to commence construction at once

Time required to complete the works 6 months

Time required to fully apply water to beneficial use 1 year

8. Additional statements or explanations (including data on any other water rights appurtenant to above lands)

This well to furnish water for rotary tool oil well drilling

rig operated by the Parker Drilling Co. for General American Oil

Co. in approximately the center of the above described 40 acres.

I, Geo. Aldridge for Parker Drg. Co., being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

Parker Drilling Co., applicant

by: G.O. Aldridge

Subscribed and sworn to before me this 27th day of August, A. D., 1951

My Commission expires Sept. 26, 1953 John W. Pharran Notary Public

110

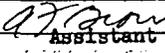
APPROVAL OF THE STATE ENGINEER

Number of this permit L-1207 Date received corrected _____
 Recorded in Book LC-4 Publication of notice ordered _____
 Page 1207 Name of paper _____
 Application received August 31, 1951 Affidavit of publication filed _____
 Date returned for correction _____ Date of approval September 4, 1951

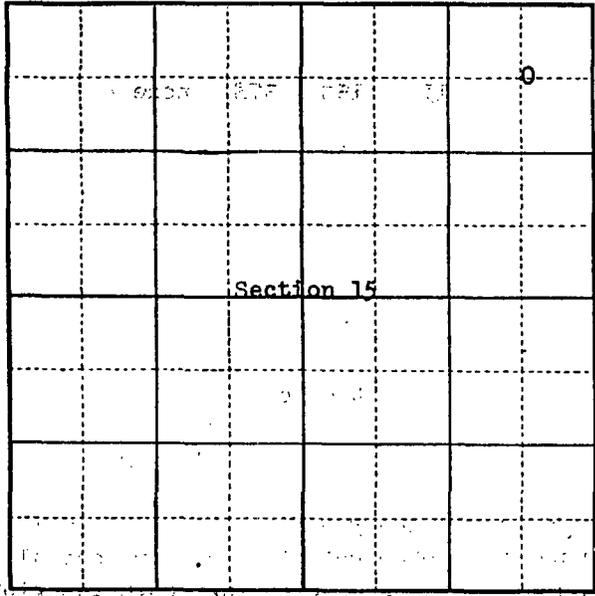
This application is approved for 3 acre feet of water
 subject to all prior valid and existing rights to the use of the waters of said underground source and provided that
 the applicant complies with all rules and regulations of the State Engineer pertaining to the drilling of wells.
Well to be drilled by drilling contractor licensed in the State of New Mexico.
Diameter of well not to exceed 7 inches. Appropriation of water to be limited
at all times to 3 acre feet per annum for domestic and oil well drilling
purposes. Well to be plugged upon completion of oil well drilling operations.

Works shall be completed and proofs filed on or before September 4, 1952.
 Water shall be applied to beneficial use and proofs filed on or before _____

This is to certify that I have examined the above application for permit to appropriate the underground waters
 of the State of New Mexico and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 4th day of September, A. D., 1951

 Assistant State Engineer

LOCATE WELL AND ACREAGE TO BE IRRIGATED AS ACCURATELY AS POSSIBLE ON FOLLOWING PLAT:
 Section (s) 15, Township 15 South, Range 37 East, N.M.P.M.



0 - well site

INSTRUCTIONS

- This form shall be executed, preferably typewritten, in triplicate and shall be accompanied by a filing fee of \$5.00. Each of triplicate copies must be properly signed and attested.
 - A separate application for permit must be filed for each well used.
 - Secs. 1-4—Fill out all blanks fully and accurately.
 - Sec. 5—Irrigation use shall be stated in feet depth or acre feet of water per acre to be applied on the land. If for domestic, municipal, or other purposes, state total quantity in acre feet to be used annually. Domestic use may include the irrigation of not more than one acre of lawn and garden for noncommercial use.
 - Sec. 6—Describe only the lands to be irrigated. If on unsurveyed lands describe by legal subdivision "as projected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some permanent, easily located natural object.
 - Sec. 7—Estimate time reasonably required to commence and to complete project.
 - Sec. 8—If lands are irrigated from any other source, explain in this section. Give any other data necessary to fully describe water right sought.
- If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

(This form to be executed in triplicate)

RECEIVED

PROOF OF COMPLETION OF WORKS SEP 26 1952 STATE ENGINEER UNDERGROUND WATERS

Date of Receipt Permit No. L-1207

1. Name of permittee Parker Drilling Company

P. O. address Box 1053 City and State Lovington, New Mexico

Permit No. L-1207 to Appropriate (appropriate, repair well, change location of well)

in the Lea County Underground Basin (name of underground reservoir, artesian basin, etc.)

2. Description of well: location 1/4, N E 1/4, N E 1/4 of Section 15

Township 15 South Range 37 East; total depth, 120 feet; outside diameter of top casing

(or hole, if uncased) 7 inches; if artesian, is well equipped with gate valve?; name

and address of driller, C. O. Aldredge, Lovington, New Mexico

Date drilled, October 5, 1951

3. Record of Pumping Test (to be supplied by person or firm making test; Name and address of person making

test, None Made

date of test, 19; depth to water before test, feet, and im-

mediately afterward, feet; Lenth of test, hours; average discharge, G.P.M.;

Specific capacity of well, gal. per min. per ft. of drawdown.

4. Description of pump: Make, Peerless

type, Turbine; if turbine type, give size of column, 4 inches; diameter of

bowls, 4 inches; number of bowls, 10; length of suction pipe, 0 feet; total

length of column, bowls and suction pipe, 100 feet; if centrifugal type, give size of pump

inches; if other type, describe,

rated capacity of pump (if known) 250 G.P.M., at 1760 rev. per min., from a depth of 80 feet.

5. Description of power plant: make, U. 2 International

type, Ind.; rated horsepower (if available) 22; type of drive connection

to pump, Shaft; date of installation of power plant, Oct. 6, 1951

6. Actual discharge of pump Est. 200 G.P.M., at 1760 rev. per min., from a depth of 80 feet;

Date of test, None, 19; Name and address of dealer supplying pump and power

plant, Co. Unit

SEP 1 1952 AMERICAN... BOSWELL, NEW MEXICO

7. Permit acreage to be served by well, None acres, to receive a total of _____ acre feet of water allowed by permit.

8. The distribution system consists of overnight storage reservoir _____, and _____ feet of main canal; (yes or no) give approximate capacity of reservoir or tank (if any) _____ cubic feet.

9. If above construction replaces an old well to be plugged or abandoned, fill out the following: the well abandoned is located in the _____ 1/4 _____ 1/4 _____ 1/4 of Section _____, Township _____, Range _____; Name of plugging contractor, _____; Well was plugged in accordance with terms of permit _____, 19 _____.

10. Give date "Well Record" was filed with State Engineer's Office, Oct., 19 51.

11. Pump and power plant were installed and works completed Oct., 19 51.

The undersigned, owner and holder of Permit No. L-1207, being first duly sworn upon his oath, states that he has read the foregoing statements and that the same are true to the best of his knowledge and belief.

A C Leedit

Subscribed and sworn to before me this 8 th day of September, 19 52.

My commission expires 9/26/53

John W. Pharran
Notary Public.

Affidavit of State Engineer's Representative

I hereby certify that I have duly inspected the above Works and find them adequate and properly constructed according to the terms and conditions of the permit. Note any exceptions _____

William H. Nelson
Groundwater Supervisor or other representative of State Engineer.

Date, Sept 25, 19 52

Plugged

WELL RECORD

File No. L-1237

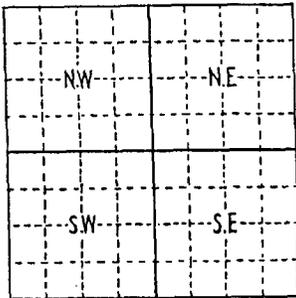
3

INSTRUCTIONS: This form should be typewritten, and filed in the office of the State Engineer, (P.O. Box 1079) Santa Fe, New Mexico, unless the well is situated in the Roswell Artesian Basin, in which case it should be filed in the office of the Artesian Well Supervisor, Roswell, New Mexico. Section 5 should be answered only if an old well has been plugged. All other sections should be answered in full in every case, regardless of whether the well is low or artesian in character. This report must be subscribed and sworn to before a Notary Public.

RECEIVED

OCT 27 1952

Sec. 1



(Plat of 640 acres) Locate Well Accurately

Owner of well Parker Drilling Company STATE ENGINEER
Street and Number ... RY
Post Office Box 1053, Lovington, New Mexico
Well was drilled under Permit No. L-1237 and
is located in the 1/4 N.E. 1/4 N.E. 1/4 of Section 15
Township 15 South, Range 37 East
Drilling Contractor Parker Drilling Company
Street and Number ...
Post Office Box 1053, Lovington, New Mexico

Drilling was commenced 19... Drilling was completed September 2, 1952.
Elevation at top of casing in feet above sea level
State whether well is shallow or artesian
Total depth of well ... feet.

Sec. 2 PRINCIPAL WATER-BEARING STRATA

- No. 1, from ... to ... Thickness in feet ... Formation ...
No. 2, from ... to ... Thickness in feet ... Formation ...
No. 3, from ... to ... Thickness in feet ... Formation ...
No. 4, from ... to ... Thickness in feet ... Formation ...
No. 5, from ... to ... Thickness in feet ... Formation ...

Sec. 3 RECORD OF CASING

Table with columns: DIAMETER IN INCHES, POUNDS PER FOOT, THREADS PER INCH, NAME OF MANUFACTURER, FEET OF CASING, TYPE OF SHOE, PERFORATED (FROM, TO), PURPOSE.

Sec. 4 RECORD OF MUDDING AND CEMENTING

Table with columns: DIAMETER OF HOLE IN INCHES, NUMBER OF SACKS OF CEMENT, METHODS USED, SPECIFIC GRAVITY OF MUD, TONS OF CLAY USED.

Sec. 5 PLUGGING RECORD OF OLD WELL

Well is located in the 1/4 N.E. 1/4 N.E. 1/4 of Section 15, Township 15 South, Range 37 East. Name of plugging contractor Parker Drilling Company. Street and Number Box 1053, Post Office Lovington, New Mexico. Tons of clay used ... Tons of roughage used ... Type of roughage ... Was plugging approved by Artesian Well Supervisor

Cement plugs were placed as follows:

- No. 1 was placed at ... feet Number of sacks of cement used
No. 2 was placed at ... feet Number of sacks of cement used
No. 3 was placed at ... feet Number of sacks of cement used
No. 4 was placed at ... feet Number of sacks of cement used
No. 5 was placed at ... feet Number of sacks of cement used

(OVER)
4 ft. concrete plug placed 2 ft. below surface and dirt filled. Plug set wet.

FILED
SEP 10 1952
ARTESIAN WELL SUPERVISOR
ROSWELL, NEW MEXICO

A

RECEIVED

(This form to be executed in triplicate) OCT 27 1952

WELL RECORD STATE ENGINEER

Date of Receipt _____ RY _____ Permit No. L-1237

Name of permittee, Parker Drilling Co.
Street or P. O., Box 1053 City and State Livingston, N.M.

1. Well location and description: The Shallow well is located in NE $\frac{1}{4}$ of Section 15, Township 15, Range 37E; Elevation of top of casing above sea level, _____ feet; diameter of hole, 7 inches; total depth, 110 feet; depth to water upon completion, 38 feet; drilling was commenced Oct. 2, 1951, and completed Oct 2, 1951; name of drilling contractor C. O. Aldridge; Address, Livingston, N.M., Driller's License No. 79

2. Principal Water-bearing Strata:

No.	Depth in Feet		Thickness	Description of Water-bearing Formation
	From	To		
No. 1	<u>38</u>	<u>78</u>	<u>40</u>	<u>light quality sand</u>
No. 2	<u>78</u>	<u>108</u>	<u>30</u>	<u>hard water sand</u>
No. 3	<u>108</u>	<u>110</u>	<u>2</u>	<u>quicksand</u>
No. 4				
No. 5				

3. Casing Record:

Diameter in inches	Pounds per ft.	Threads per inch	Depth of Casing or Liner		Feet of Casing	Type of Shoe	Perforation	
			Top	Bottom			From	To
<u>20 feet part of 7 in. o.d. cemented in top of well</u>								

4. If above construction replaces old well to be abandoned, give location: _____ $\frac{1}{4}$, _____ $\frac{1}{4}$, _____ $\frac{1}{4}$ of Section _____, Township _____, Range _____; name and address of plugging contractor, _____

date of plugging _____, 19____; describe how well was plugged: _____

FILED
OCT 28 1952
OFFICE
MEXICAN WELL SUPERVISOR
MEXICO

IMPORTANT-READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM

APPLICATION FOR PERMIT

To Appropriate the Underground Waters of the State of New Mexico

LEA COUNTY UNDERGROUND BASIN

Application No. L-1237 Book VIC-1 Date Received October 11, 1951

1. Name of applicant Parker Drilling Co.
Postoffice address P.O. Box 1053; Lovington
County of Lea State of New Mexico

2. Source of water supply Shallow
(state whether artesian or shallow ground water basin)
located in Lea County Underground Basin
(name of underground stream, valley, artesian basin, etc.)

3. The well is to be located in the X NE NE
of section XX 15 Township 15 South Range 37 East N.M.P.M.
on land owned by unknown

4. Description of well: driller C. O. Aldridge; depth to be drilled 100' M or L feet;
diameter (outside) of casing 7 inch hole inches; type of pump and power plant to be used
Cylinder type pump with butane engine

5. Quantity of water to be appropriated and beneficially used 250 G.P.H. Average
(feet depth or acre feet per acre)
for Oil well drilling purposes

6. Acreage to be irrigated none acres
located and described as follows (describe only lands to be irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
<u>None</u>	<u>15</u>	<u>15 S</u>	<u>37 E</u>	<u>0</u>	

RECEIVED

OCT 11 1951

STATE ENGINEER

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side.)

7. Time required to commence construction at once
Time required to complete the works 6 months
Time required to fully apply water to beneficial use 1 year

8. Additional statements or explanations (including data on any other water rights appurtenant to above lands)
Well L-1207 does not furnish sufficient water for operation.

OCT 8 1951
OFFICE OF THE STATE ENGINEER
SUNBELT NEW MEXICO

I, A.C. Ledit for Parker Drilling Co., being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

PARKER DRILLING CO., applicant
by: A.C. Ledit

Subscribed and sworn to before me this 5th day of October, A.D., 1951

My Commission expires Sept. 26, 1953
John W. Stearns
Notary Public.

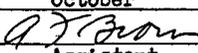
APPROVAL OF THE STATE ENGINEER

Number of this permit I-1237 Date received corrected _____
 Recorded in Book I.C. 4 Publication of notice ordered _____
 Page 1237 Name of paper _____
 Application received October 11, 1951. Affidavit of publication filed _____
 Date returned for correction _____ Date of approval October 16, 1951.

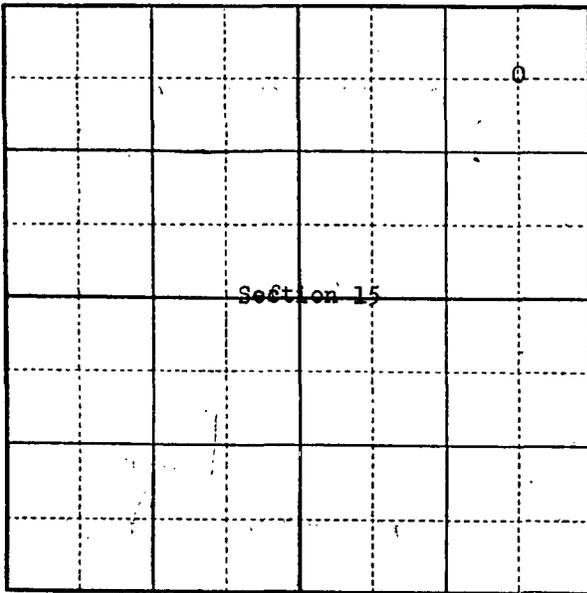
This application is approved for 3 acre feet of water
 subject to all prior valid and existing rights to the use of the waters of said underground source and provided that
 the applicant complies with all rules and regulations of the State Engineer pertaining to the drilling of wells.
Well to be drilled by drilling contractor licensed in the State of New Mexico.
~~Diameter of well not to exceed 7 inches. Appropriation of water to be limited~~
~~at all times to 3 acre feet per annum for domestic and oil well drilling~~
~~purposes. Well to be plugged upon completion of oil well drilling operations.~~

Works shall be completed and proofs filed on or before October 16, 1952.
 Water shall be applied to beneficial use and proofs filed on or before _____

This is to certify that I have examined the above application for permit to appropriate the underground waters
 of the State of New Mexico and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 16th day of October, A. D., 19 51

 Assistant State Engineer

LOCATE WELL AND ACREAGE TO BE IRRIGATED AS ACCURATELY AS POSSIBLE ON FOLLOWING PLAT:
 Section (s) 15, Township 15 South, Range 37 East, N.M.P.M.



0 - well site

INSTRUCTIONS

This form shall be executed, preferably typewritten, in triplicate and shall be accompanied by a filing fee of \$5.00.
 Each of triplicate copies must be properly signed and attested.

A separate application for permit must be filed for each well used.

Secs. 1-4—Fill out all blanks fully and accurately,

Sec. 5—Irrigation use shall be stated in feet depth or acre feet of water per acre to be applied on the land. If for
 domestic, municipal, or other purposes, state total quantity in acre feet to be used annually. Domestic use may include
 the irrigation of not more than one acre of lawn and garden for noncommercial use.

Sec. 6—Describe only the lands to be irrigated. If on unsurveyed lands describe by legal subdivision "as pro-
 jected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some perma-
 nent, easily located natural object.

Sec. 7—Estimate time reasonably required to commence and to complete project.

Sec. 8—If lands are irrigated from any other source, explain in this section. Give any other data necessary to
 fully describe water right sought.

If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

Handwritten initials

RECEIVED

(This form to be executed in triplicate)

OCT 27 1952

PROOF OF COMPLETION OF STATE ENGINEER WORKS

UNDERGROUND WATERS

Rec'd by

Date of Receipt _____ Permit No. L - 1237

1. Name of permittee Parker Drilling Company

P. O. address Box 1053, City and State Lovington, New Mexico

Permit No. L-1237 to Appropriate (appropriate, repair well, change location of well)

in the Lea County Underground Basin (name of underground reservoir, artesian basin, etc.)

2. Description of well: location, 1/4 NE 1/4 NE of Section 15

Township 15 South, Range 37 East; total depth, 110 feet; outside diameter of top casing

(or hole, if uncased) 7 inches; if artesian, is well equipped with gate valve? _____; name

and address of driller, C. O. Aldredge, Lovington, New Mexico

Date drilled, October 11, 1952

3. Record of Pumping Test (to be supplied by person or firm making test; Name and address of person making

test, None Made

date of test, _____, 19____; depth to water before test, _____ feet, and im-

mediately afterward, _____ feet; Lenth of test, _____ hours; average discharge, _____ G.P.M.;

Specific capacity of well, _____ gal. per min. per ft. of drawdown.

4. Description of pump: Make, Peerless

type, Turbine; if turbine type, give size of column, 4 inches; diameter of

bowls, 4 inches; number of bowls, 8; length of suction pipe, 0 feet; total

length of column, bowls and suction pipe, 95 feet; if centrifugal type, give size of pump _____

inches; if other type, describe, _____

rated capacity of pump (if known), 250 G.P.M., at 1760 rev. per min., from a depth of 80 feet.

5. Description of power plant: make, U. 2 International

type, Ind.; rated horsepower (if available), 22; type of drive connection

to pump, Shaft; date of installation of power plant, October 15, 1951

6. Actual discharge of pump, Est. 200 G.P.M., at 1760 rev. per min., from a depth of 80 feet;

Date of test, None made, 19____; Name and address of dealer supplying pump and power

plant, Co. Unit

FILED
OCT 15 1952
STATE ENGINEER

CP
10/15/52

STATE OF CALIFORNIA

7. Permit acreage to be served by well, None acres, to receive a total of _____ acre feet of water allowed by permit.

8. The distribution system consists of overnight storage reservoir _____, and _____ feet of main canal; (yes or no) give approximate capacity of reservoir or tank (if any) _____ cubic feet.

9. If above construction replaces an old well to be plugged or abandoned, fill out the following: the well abandoned is located in the _____ % of Section _____, Township _____, Range _____; Name of plugging contractor, _____

Well was plugged in accordance with terms of permit _____, 19 _____

10. Give date "Well Record" was filed with State Engineer's Office, October, 19 51

11. Pump and power plant were installed and works completed October 15, 19 51

The undersigned, owner and holder of Permit No. L - 1237, being first duly sworn upon his oath, states that he has read the foregoing statements and that the same are true to the best of his knowledge and belief.

A. C. Ledit

Subscribed and sworn to before me this 8 th day of September, 19 52

My commission expires 9/26/53

John W. Shearman
Notary Public.

Affidavit of State Engineer's Representative

I hereby certify that I have duly inspected the above Works and find them adequate and properly constructed according to the terms and conditions of the permit. Note any exceptions. _____

Delbert W. Nelson
Groundwater Supervisor or other representative of State Engineer.

Date, Oct 23, 19 52

Santa Fe

WELL RECORD

2

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 McAlester Fuel Company
 Street and Number P. O. Box 608
 City Lovington State New Mexico
 Well was drilled under Permit No. L-956 and is located in the
1/4 NE 1/4 NE 1/4 of Section 15 Twp. 15S Rge. 37E
 (B) Drilling Contractor Bishop Drilling Co. License No. _____
 Street and Number _____
 City Lovington State New Mexico
 Drilling was commenced October 17, 1949
 Drilling was completed October 18, 1949

(Plat of 640 acres)

Elevation at top of casing in feet above sea level _____ Total depth of well 120'
 State whether well is shallow or artesian Shallow Depth to water upon completion 60'

Section 2 PRINCIPAL WATER-BEARING STRATA

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

Section 3 RECORD OF CASING

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

Section 4 RECORD OF MUDDING AND CEMENTING

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

Section 5 PLUGGING RECORD

Name of Plugging Contractor McAlester Fuel Company License No. WD-9
 Street and Number P. O. Box 608 City Lovington State New Mexico
 Tons of Clay used _____ Tons of Roughage used _____ Type of roughage Dirt
 Plugging method used 10' cement plug at surface Date Plugged February 25, 1950
 Plugging approved by: _____ Cement Plugs were placed as follows:

No.	Depth of Plug		No. of Sacks Used
	From	To	
1	Surf.	10'	3

FOR USE OF STATE ENGINEER ONLY
 Date Received APR 24 1958
 OFFICE
 GROUND WATER SUPERVISOR
 ROSWELL, NEW MEXICO

File No. L-956 Use Comm. Owned Location No. 15.37.15.220

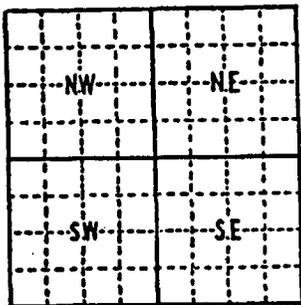
WELL RECORD

File No. L-956

INSTRUCTIONS: This form should be typewritten, and filed in the office of the State Engineer, P. O. Box 1079, Santa Fe, New Mexico, or in the office of the Artesian Well Supervisor, Roswell, New Mexico. Section 5 should be answered only when an old artesian well has been plugged. All other sections should be answered in full in every case, regardless of whether the well drilled is shallow or artesian in character. This report must be subscribed and sworn to before a Notary Public.

RECEIVED

JAN 7 1952



Owner of well McAlester Fuel Co. STATE ENGINEER
 Street and Number Box 210 BY
 Post Office Maginolia, Ark.
 Well was drilled under Permit No. L-956 and
 is located in the NE NE 15 of Section 15
 Township 15 S, Range 37 E
 Drilling Contractor Bishop Drilling Co.
 Street and Number Box 22

(Plat of 640 Acres)
Locate Well Accurately

Post Office Lovington, New Mexico

Drilling was commenced 10-15-49, 19... Drilling was completed 10-16-49, 19...

Elevation at top of casing in feet above sea level.....

State whether well is shallow or artesian shallow

Total depth of well 112 feet. Water level upon completion of well..... feet below land surface.

Sec. 2 PRINCIPAL WATER-BEARING STRATA

No. 1, from 37 to 112, Thickness in feet 75, Formation Water sand
 No. 2, from..... to....., Thickness in feet....., Formation.....
 No. 3, from..... to....., Thickness in feet....., Formation Filed January 16, 1950
 No. 4, from..... to....., Thickness in feet....., Formation Office Artesian Well
 No. 5, from..... to....., Thickness in feet....., Formation Supervisor, Roswell, New Mexico

Sec. 3 RECORD OF CASING

Diameter in Inches	Pounds per Foot	Threads per Inch	Name of Manufacturer	Feet of Casing	Type of Shoe	Perforated		Purpose
						From	To	

Sec. 4 RECORD OF MUDDING AND CEMENTING

Diameter of Hole in Inches	Number of Sacks of Cement	Methods Used	Specific Gravity of Mud	Tons of Clay Used
<u>7"</u>				

Sec. 5 PLUGGING RECORD OF OLD WELL

Well is located in the..... of Section....., Township.....

Range..... Name of plugging contractor.....

Street and Number..... Post Office.....

Tons of clay used..... Tons of roughage used..... Type of roughage.....

..... Was plugging approved by Artesian Well Supervisor?.....

Cement plugs were placed as follows:

No. 1 was placed at..... feet. Number of sacks of cement used.....

No. 2 was placed at..... feet. Number of sacks of cement used.....

No. 3 was placed at..... feet. Number of sacks of cement used.....

No. 4 was placed at..... feet. Number of sacks of cement used.....

No. 5 was placed at..... feet. Number of sacks of cement used.....

(over)

This form to be executed in triplicate.

PROOF OF COMPLETION OF WORKS UNDERGROUND WATERS

Permit No. L-956

RECEIVED

NOV 13 1951

State of New Mexico
County of Lea

ss.

STATE ENGINEER

I, Guy Boyd for McAlester Fuel Co.
of Lovington, County of Lea

State of New Mexico, being first duly sworn, do hereby certify that I am the
owner and holder of a permit to Appropriate water in the

Lea County Underground Basin, the waters from such source
to be used for Agricultural and domestic purposes

under said permit; that said application has been filed and approved in the office of the State Engineer under No.

L-956; that the works necessary to accomplish
the appropriation of water in accordance with the terms of said permit have been completed; that all provisions and
conditions under which said permit was approved by the State Engineer have been fully complied with; that the
following statement of facts is submitted in proof of the completion of said works; and that the said statement and
each and all of the items contained therein are true to the best of my knowledge and belief.

McALESTER FUEL CO.

Guy Boyd

Subscribed and sworn to before me this 27th day of October, 1951

John W. Shearman
Notary Public.

My commission expires:
Sept. 26, 1953

STATEMENT

- Name of appropriator McALESTER FUEL CO.
- Postoffice address Lovington, New Mexico
- Underground water supply Lea County Underground Basin
- The well is located in the NE^E quarter of the NE^E quarter
of the NE^C quarter of Section 15, Township 15 South,
Range 37 East, N.M.P.M., in Lea County.

FILED
OCT 31 1951
OFFICE
ARTESIAN WELL SUPERVISOR
HOSWELL, NEW MEXICO

5. Nominal size (outside diameter) of casing or liner 6 inch hole inches.
6. Depth of well 112X feet. 7. Approximate pumping depth 40 feet.
8. Description of pump: make Smithway; type turbine;
suction lift none feet; size and length of column 4 inch 70 feet;
size and number of bowls 4 inch 6 stage; total length 75 feet.
9. Make, type, horsepower, etc., of power plant D-3400 Caterpillar diesel

10. Capacity of well 175 gals. per min. 11. Is well equipped with gate valve? no
12. Name of driller Bishop Drilling Co.
13. Has log of this well been filed with State Engineer or his representative? unknown
14. The distribution work consist of _____ reservoirs _____ feet of ditch,
_____ feet of flume _____ feet of pipe.
15. Size of reservoir _____ feet wide, _____ feet long, _____ feet average
depth, _____ cubic feet capacity, located in the _____ $\frac{1}{4}$, _____ $\frac{1}{4}$,
_____ $\frac{1}{4}$ of Section _____, Township _____, Range _____
16. Lands to be irrigated None acres, located in _____

NOTE: This well has been plugged and abandoned.

17. If there are other sources of water supply for these lands, describe giving file Nos., etc. No
18. Works were completed October, 1951 later plugged and abandoned, 19____
19. If above construction replaces an old well to be plugged or abandoned, fill out following:
a. The well abandoned is located in the _____ $\frac{1}{4}$, _____ $\frac{1}{4}$, _____ $\frac{1}{4}$
of Section _____ Township _____, Range _____
b. Name of plugging contractor _____
c. Well was plugged in accordance with terms of permit _____, 19____

I hereby certify that I have duly inspected the above works and find them adequate and properly constructed according to the terms and conditions of this permit.

Walter Fincheloe
Ground Water Supervisor (or representative of State Engineer)

Date Nov 8, 51

APPLICATION FOR PERMIT

To appropriate the Underground Waters of the State of New Mexico

LEA COUNTY UNDERGROUND BASIN

Application No. I-956 Book LC-3 Date Received October 27, 1949

1. Name of applicant McAlister Fuel and Oil Co.

Postoffice address % Guy Boyd, Lovington OFFICE OF THE ENGINEER

County of Lea, State of New Mexico

2. Source of water supply Shallow ground water basin

(state whether artesian or shallow ground water basin)

located in Lea County Underground Basin

(name of underground stream, valley, artesian basin, etc.)

3. The well is to be located in the X $\frac{1}{4}$, NE $\frac{1}{4}$, NE $\frac{1}{4}$,

of section 15, Township 15 South, Range 37 East, N.M.P.M.

on land owned by J. S. Waller

4. Description of well: driller Bishop Drilling Co.; depth to be drilled 120 feet;

diameter (outside) of casing 8 inch hole inches; type of pump and power plant to be used

4 inch turbine diesel engine

5. Quantity of water to be appropriated and beneficially used _____

(feet depth or acre feet per acre)

for Commercial use on drilling rig purposes.

6. Acreage to be irrigated none acres

located and described as follows (describe only lands to be irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side.)

7. Time required to commence construction At once;

Time required to complete the works 1 week;

Time required to fully apply water to beneficial use _____.

8. Additional statements or explanations (including data on any other water rights appurtenant to above lands)

This well is to furnish water for drilling operations on oil well rig.

I, McAlister Fuel and Oil Co., being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

McAlister Fuel and Oil Co., applicant
by: J. G. Copeland

Subscribed and sworn to before me this 17th day of October, A. D., 1949

My Commission expires Sept. 26, 1953 John W. Shearman
Notary Public.

APPROVAL OF THE STATE ENGINEER

Number of this permit I-956 Date received corrected _____
Recorded in Book 10-3 Publication of notice ordered _____
Page 956 Name of paper _____
Application received October 27, 1949 Affidavit of publication filed _____
Date returned for correction _____ Date of approval November 3, 1949

This application is approved for oil drilling operations _____ acre feet of water
subject to all prior valid and existing rights to the use of the waters of said underground source and provided that
the applicant complies with all rules and regulations of the State Engineer pertaining to the drilling of wells _____
Well to be drilled by drilling contractor licensed in the State of New Mexico.
Well to be plugged at completion of oil drilling operations.

Works shall be completed and proofs filed on or before November 3, 1951.

Water shall be applied to beneficial use and proofs filed on or before _____

This is to certify that I have examined the above application for permit to appropriate the underground waters
of the State of New Mexico and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 3rd day of November, A. D., 1949.

[Signature]
Assistant State Engineer

LOCATE WELL AND ACREAGE TO BE IRRIGATED AS ACCURATELY AS POSSIBLE ON FOLLOWING PLAT:
Section (s) _____, Township _____, Range _____, N.M.P.M.

INSTRUCTIONS

This form shall be executed, preferably typewritten, in triplicate and shall be accompanied by a filing fee of \$5.00. Each of triplicate copies must be properly signed and attested.

A separate application for permit must be filed for each well used.

Secs. 1-4—Fill out all blanks fully and accurately.

Sec. 5—Irrigation use shall be stated in feet depth or acre feet of water per acre to be applied on the land. If for domestic, municipal, or other purposes, state total quantity in acre feet to be used annually. Domestic use may include the irrigation of not more than one acre of lawn and garden for noncommercial use.

Sec. 6—Describe only the lands to be irrigated. If on unsurveyed lands describe by legal subdivision "as projected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some permanent, easily located natural object.

Sec. 7—Estimate time reasonably required to commence and to complete project.

Sec. 8—If lands are irrigated from any other source, explain in this section. Give any other data necessary to fully describe water right sought.

If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

2149

Santa Fe

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 McAlester Fuel Company
 Street and Number P. O. Box 608
 City Lovington, State New Mexico
 Well was drilled under Permit No. L-1045 and is located in the
NW 1/4 SW 1/4 NE 1/4 of Section 14 Twp. 15S Rge. 37E
 (B) Drilling Contractor Bishop Drilling Co. License No. _____
 Street and Number _____
 City Lovington State New Mexico
 Drilling was commenced October 14, 1950
 Drilling was completed October 15, 1950

(Plat of 640 acres)

Elevation at top of casing in feet above sea level _____ Total depth of well 120'
 State whether well is shallow or artesian Shallow Depth to water upon completion 70'

Section 2 PRINCIPAL WATER-BEARING STRATA

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

Section 3 RECORD OF CASING

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

Section 4 RECORD OF MUDDING AND CEMENTING

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

Section 5 PLUGGING RECORD

Name of Plugging Contractor McAlester Fuel Company License No. WD 9
 Street and Number P. O. Box 608 City Lovington State New Mexico
 Tons of Clay used _____ Tons of Roughage used _____ Type of roughage Dirt
 Plugging method used 10' cement plug at surface Date Plugged March 13, 1951

Plugging approved by:

Cement Plugs were placed as follows:

James D. Bright
 Basin Supervisor

No.	Depth of Plug		No. of Sacks Used
	From	To	
1	Surface	10'	3

FOR USE OF STATE ENGINEER ONLY

Date Received

APR 24 1958

OFFICE
 GROUND WATER SUPERVISOR
 ROSWELL, NEW MEXICO

File No. L-1045

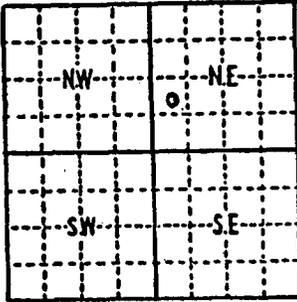
Use R.W.P.

Location No. 15.37.14.231

WELL RECORD

File No. _____

INSTRUCTIONS: This form should be typewritten, and filed in the office of the State Engineer, P. O. Box 1079, Santa Fe, New Mexico, or in the office of the Artesian Well Supervisor, Roswell, New Mexico. Section 5 should be answered only if an old artesian well has been plugged. All other sections should be answered in full in every case, regardless of whether the well drilled is shallow or artesian in character. This report must be subscribed and sworn to before a Notary Public.



Owner of well Guy Boyd for Mc Alester Fuel Co.
 Street and Number P. O. Box 608
 Post Office Lovington, N. M.
 Well was drilled under Permit No. L-1046 and
 is located in the NW 1/4 SW 1/4 NE 1/4 of Section 14
 Township 15 S Range 37 E
 Drilling Contractor Bishop Drilling Co.
 Street and Number Box 22
 Post Office Lovington, N. M.

(Plat of 640 Acres)
 Locate Well Accurately

Drilling was commenced Oct. 6, 1950 Drilling was completed Oct. 6, 1950

Elevation at top of casing in feet above sea level _____
 State whether well is shallow or artesian Shallow
 Total depth of well 100 feet. Water level upon completion of well 35 feet below land surface.

Sec. 2 **PRINCIPAL WATER-BEARING STRATA**
 No. 1, from 63 to 100, Thickness in feet 37, Formation Sand
 No. 2, from _____ to _____, Thickness in feet _____, Formation _____
 No. 3, from _____ to _____, Thickness in feet _____, Formation _____
 No. 4, from _____ to _____, Thickness in feet _____, Formation _____
 No. 5, from _____ to _____, Thickness in feet _____, Formation _____

Sec. 3 **RECORD OF CASING**

Diameter in Inches	Pounds per Foot	Threads per Inch	Name of Manufacturer	Feet of Casing	Type of Shoe	Perforated		Purpose
						From	To	

Sec. 4 **RECORD OF MUDDING AND CEMENTING**

Diameter of Hole in Inches	Number of Sacks of Cement	Methods Used	Specific Gravity of Mud	Tons of Clay Used

RECEIVED
 APR 19 1951
 STATE ENGINEER

FILED
 APR 19 1951
 ARTESIAN WELL SUPERVISOR
 (Township NEW MEXICO)

Sec. 5 **PLUGGING RECORD OF OLD WELL**

Well is located in the _____ % _____ % _____ % of Section _____
 Range _____ Name of plugging contractor _____
 Street and Number _____ Post Office _____
 Tons of clay used _____ Tons of roughage used _____ Type of roughage _____
 _____ Was plugging approved by Artesian Well Supervisor? _____
 Cement plugs were placed as follows:
 No. 1 was placed at _____ feet. Number of sacks of cement used _____
 No. 2 was placed at _____ feet. Number of sacks of cement used _____
 No. 3 was placed at _____ feet. Number of sacks of cement used _____
 No. 4 was placed at _____ feet. Number of sacks of cement used _____
 No. 5 was placed at _____ feet. Number of sacks of cement used _____

(over)

APPLICATION FOR PERMIT

To appropriate the Underground Waters of the State of New Mexico

LEA COUNTY UNDERGROUND BASIN

Application No. V-1045 Book 104 Date Received October 24, 1950

- Name of applicant Guy Boyd for McAlester Fuel Co.
Postoffice address Lovington, New Mexico
County of Lea, State of New Mexico
- Source of water supply Lea County Underground Basin
(state whether artesian or shallow ground water basin)
located in Lea County Underground Basin
(name of underground stream, valley, artesian basin, etc.)
- The well is to be located in the NW $\frac{1}{4}$, SW $\frac{1}{4}$, NE $\frac{1}{4}$
of section 14, Township 15 South, Range 37 East, N.M.P.M.
on land owned by Surface: Pat H. McClure
- Description of well: drilled by Bishop Drilling Co.; depth to be drilled 100' M or L feet;
diameter (outside) of casing 6-7 uncased hole inches; type of pump and power plant to be used
Pump suitable for use in oil well drilling operations
- Quantity of water to be appropriated and beneficially used commercial use
(feet depth or acre feet per acre)
for oil well drilling operations purposes.
- Acreage to be irrigated none acres
located and described as follows (describe only lands to be irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
FILED					
OCT 24 1950					
OFFICE STATE ENGINEER SANTA FE, N. M.					
FILED					
OCT 20 1950					
OFFICE ARTESIAN WELL SUPERVISOR SANTA FE, N. M.					

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side.)

- Time required to commence construction at once
Time required to complete the works 3 months
Time required to fully apply water to beneficial use _____
- Additional statements or explanations (including data on any other water rights appurtenant to above lands)
This well will furnish water to be used for Oil well drilling operations on Pat H. McClure A-1. Time required for use unknown.

I, Guy Boyd for McAlester Fuel Co., being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

Guy Boyd applicant

Subscribed and sworn to before me this 14th day of October, A. D., 19 50

My Commission expires Sept. 26, 1953

John W. Shearman
Notary Public.

APPROVAL OF THE STATE ENGINEER

Number of this permit L-1045 Date received corrected _____
 Recorded in Book LC-4 Publication of notice ordered _____
 Page 1045 Name of paper _____
 Application received October 24, 1950 Affidavit of publication filed _____
 Date returned for correction _____ Date of approval October 30, 1950.

This application is approved for _____ acre feet of water
 subject to all prior valid and existing rights to the use of the waters of said underground source and provided that
 the applicant complies with all rules and regulations of the State Engineer pertaining to the drilling of wells _____
Approved for temporary use for oil drilling operations only. Well to be
plugged upon completion of oil drilling operations.

Works shall be completed and proofs filed on or before April 30, 1951.

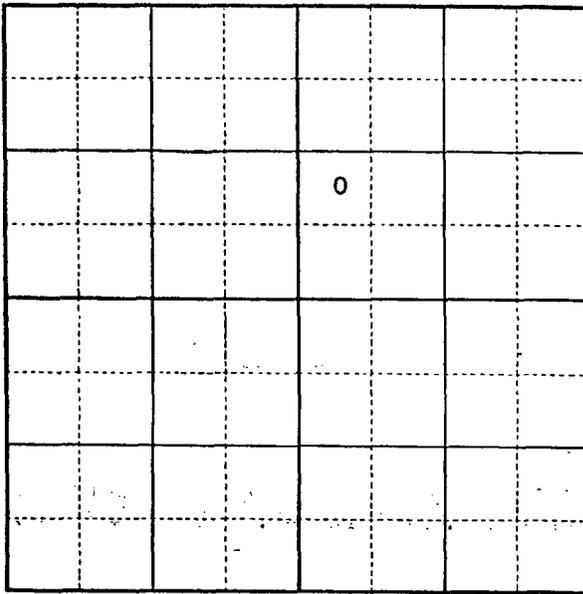
Water shall be applied to beneficial use and proofs filed on or before October 30, 1952.

This is to certify that I have examined the above application for permit to appropriate the underground waters
 of the State of New Mexico and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 30th day of October, A. D., 1950.

[Signature]
 Assistant State Engineer

LOCATE WELL AND ACREAGE TO BE IRRIGATED AS ACCURATELY AS POSSIBLE ON FOLLOWING PLAT:
 Section (s) 14, Township 15 South, Range 37 East, N.M.P.M.



O - well site

INSTRUCTIONS

This form shall be executed, preferably typewritten, in triplicate and shall be accompanied by a filing fee of \$5.00. Each of triplicate copies must be properly signed and attested.

A separate application for permit must be filed for each well used.

Secs. 1-4—Fill out all blanks fully and accurately.

Sec. 5—Irrigation use shall be stated in feet depth or acre feet of water per acre to be applied on the land. If for domestic, municipal, or other purposes, state total quantity in acre feet to be used annually. Domestic use may include the irrigation of not more than one acre of lawn and garden for noncommercial use.

Sec. 6—Describe only the lands to be irrigated. If on unsurveyed lands describe by legal subdivision "as projected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some permanent, easily located natural object.

Sec. 7—Estimate time reasonably required to commence and to complete project.

Sec. 8—If lands are irrigated from any other source, explain in this section. Give any other data necessary to fully describe water right sought.

If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

This form to be executed in triplicate.

PROOF OF COMPLETION OF WORKS UNDERGROUND WATERS

Permit No. L-1045

State of New Mexico }
County of Lea } ss.

I, Guy Boyd for Mc Alester Fuel Co.
of Lovington, County of Lea
State of New Mexico, being first duly sworn, do hereby certify that I am the owner

and holder of a permit to appropriate Water in the
(appropriate water, repair well, change of location of well)

Lea County Shallow Ground Water Basin, the waters from such source
(name of underground reservoir, artesian basin, etc.)

to be used for Oil Well Drilling Operations purposes

under said permit; that said application has been filed and approved in the office of the State Engineer under
No. L-1045 (Book LC-4); that the works necessary to accomplish
the appropriation of water in accordance with the terms of said permit have been completed; that all provisions and
conditions under which said permit was approved by the State Engineer have been fully complied with; that the fol-
lowing statement of facts is submitted in proof of the completion of said works; and that the said statement and each
and all of the items contained therein are true to the best of my knowledge and belief.

Guy Boyd

Subscribed and sworn to before me this 13 day of April, 1957
Francis B. McCreter

Notary Public.

My commission expires: _____
RECEIVED
APR 19 1957

FILED
APR 16 1957
ARTESIAN WELL SUPERVISION
ROSWELL, NEW MEXICO

STATE ENGINEER STATEMENT

- Name of appropriator Guy Boyd for Mc Alester Fuel Co.
- Postoffice address P. O. Box 608; Lovington, New Mexico
- Underground water supply Lea County Shallow Ground Water Basin
- The well is located in the NW $\frac{1}{4}$ quarter of the SW $\frac{1}{4}$ quarter
of the NE $\frac{1}{4}$ quarter of Section 14, Township 15 S
Range 37 E, N.M.P.M., in Lea County.

well

6. Nominal size (outside diameter) of casing or liner Uncased 7" diameter inches.

8. Depth of well 100 feet. 7. Approximate pumping depth 87 feet.

8. Description of pump: make Peerless; type Turbine;

suction lift 5 feet; size and length of column 4" 80';

size and number of bowls #6 4 Stage; total length 87 feet.

9. Make, type, horsepower, etc., of power plant Diesel 24 H.P.

10. Capacity of Pump 180 gals. per min. 11. Is well equipped with gate valve? No

2. Name of driller Bishop Drilling Co.

13. Has log of this well been filed with State Engineer or his representative? Yes

4. The distribution work consists of _____ reservoirs _____ feet of ditch,

_____ feet of flume, _____ feet of pipe.

5. Size of reservoir 500 bbl. Tank _____ feet wide, _____ feet long, _____ feet average

depth, _____ cubic feet capacity, located in the _____, _____,

_____ of Section _____, Township _____, Range _____.

6. Lands to be irrigated _____ acres, located in _____

7. If there are other sources of water supply for these lands, describe giving file Nos., etc. _____

18. Works were completed 12-6 1950

19. If above construction replaces an old well to be plugged or abandoned, fill out following:

a. The well abandoned is located in the _____, _____,

_____ of Section _____, Township _____, Range _____.

b. Name of plugging contractor _____

c. Well was plugged in accordance with terms of permit _____, 19_____

I hereby certify that I have duly inspected the above works and find them adequate and properly constructed accord-

ing to the terms and conditions of this permit.

Dalton Kincheloe
Artesian Well Supervisor (or representative of State Engineer)

Date 4-17-51

(This form to be executed in triplicate)

5

WELL RECORD

Date of Receipt..... Permit No. L-1110

Name of permittee, Gulf Oil Corporation

Street or P.O., Box 2167, City and State, Hobbs, N. M.

1. Well location and description: The Shallow well is located in N W $\frac{1}{4}$, N W $\frac{1}{4}$,
(shallow or artesian)
NE $\frac{1}{4}$ of Section 14, Township 15 S, Range 37 E; Elevation of top of
casing above sea level, feet; diameter of hole, 7" inches; total depth, 115 feet;
depth to water upon completion, feet; drilling was commenced....., 19.....,
and completed....., 19.....; name of drilling contractor.....
.....; Address,; Driller's License No.....

2. Principal Water-bearing Strata:

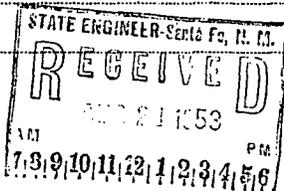
	Depth in Feet		Thickness	Description of Water-bearing Formation
	From	To		
No. 1	66	115	50	Water Sand
No. 2				
No. 3				
No. 4				
No. 5				

3. Casing Record:

Diameter in inches	Founds per ft.	Threads per inch	Depth of Casing or Liner		Feet of Casing	Type of Shoe	Perforations	
			Top	Bottom			From	To
7"	26#	8	0	115	115			

4. If above construction replaces old well to be abandoned, give location:..... $\frac{1}{4}$, $\frac{1}{4}$, $\frac{1}{4}$
of Section....., Township....., Range.....; name and address of plugging contractor,
Gulf Oil Corporation, Box 2167 Hobbs, New Mexico

date of plugging July 23, 1953; describe how well was plugged: Pulled 7"
casing, fill well with heavy mud with a 5' cement plug on top.



JUN 4 1952
PROOF OF COMPLETION OF STATE ENGINEER WORKS
 STATE ENGINEER

RY
UNDERGROUND WATERS

Date of Receipt April 20, 1951 Permit No. L-1110

1. Name of permittee Gulf Oil Corporation

P. O. address Box 1290, City and State Fort Worth, Texas

Permit No. L-1110 to appropriate water
(appropriate, repair well, change location of well)

in the Lea County Basin
(name of underground reservoir, artesian basin, etc.)

2. Description of well: location, NW ¼, NW ¼, NE ¼ of Section 14

Township 15S, Range 37E; total depth, 115 feet; outside diameter of top casing

(or hole, if uncased) 7" inches; if artesian, is well equipped with gate valve? _____; name

and address of driller, J. H. Flippe - address unknown

Date drilled, October, 1949, 19__

3. Record of Pumping Test (to be supplied by person or firm making test; Name and address of person making

test, 250 bbls per hour

date of test, Oct. 14, 1949, 19__; depth to water before test, 17 feet, and im-

mediately afterward, Unknown feet; Lenth of test, 1 hours; average discharge, 172 G.P.M.;

Specific capacity of well, Unknown gal. per min. per ft. of drawdown.

4. Description of pump: Make, 1" Peerless Turbine

type, Turbine; if turbine type, give size of column, 1 inches; diameter of

bowls, 6" inches; number of bowls, 4; length of suction pipe, 10 feet; total

length of column, bowls and suction pipe, 100 feet; if centrifugal type, give size of pump, 1

inches; if other type, describe, _____

rated capacity of pump (if known) _____ G.P.M., at _____ rev. per min., from a depth of _____ feet

5. Description of power plant: make, International

type, U-2; rated horsepower (if available), 24; type of drive connection

to pump, belt; date of installation of power plant, March, 19 51

6. Actual discharge of pump, 5.46 G.P.M., at 1000 rev. per min., from a depth of 90 feet;

Date of test, 5-22-52, 19__; Name and address of dealer supplying pump and power

plant, Smith Machinery Co., Inc., Lovington, New Mexico

FILED
 JUN 3 1952
 ARTESIAN WELL SUPERVISOR
 ROSWELL, NEW MEXICO

FILED
 MAY 2 1952
 OFFICE
 ARTESIAN WELL SUPERVISOR
 ROSWELL, NEW MEXICO

FILED
 MAR 10 1952
 OFFICE
 ARTESIAN WELL SUPERVISOR
 ROSWELL, NEW MEXICO

12,500' oil well
7. Permit acreage to be served by well, /to drill acres, to receive a total of 15,000 hbls are feet of water allowed by permit.

8. The distribution system consists of overnight storage reservoir. Yes and None feet of main canal; (yes or no) give approximate capacity of reservoir or tank (if any) 500 hbl cubic feet.

9. If above construction replaces an old well to be plugged or abandoned, fill out the following: the well abandoned is located in the % of Section Township Range; Name of plugging contractor;

Well was plugged in accordance with terms of permit Formation Data: 0 - 30' Caliche & Red Bed 19
10. Give date "Well Record" was filed with State Engineer's Office, 30- 60' Water Sand 19
60 - 65' Lime Stringers
65 - 115' Water Sand
11. Pump and power plant were installed and works completed Dec. 15, 1951 19
Application submitted Dec. 12, 1951 to use water at another location.

The undersigned, owner and holder of Permit No. L-1110, being first duly sworn upon his oath, states that he has read the foregoing statements and that the same are true to the best of his knowledge and belief.

GULF OIL CORPORATION

BY: *Chas Taylor*
Area Superintendent

Subscribed and sworn to before me this 29th day of February, 1952

My commission expires 7-20-54 *Avis Gillbreath*
Notary Public

Affidavit of State Engineer's Representative

I hereby certify that I have duly inspected the above Works and find them adequate and properly constructed according to the terms and conditions of the permit. Note any exceptions This well was not plugged because Gulf has made application to use the well on another oil well location in the same area.

Dalton Kimbels
Groundwater Supervisor or other representative of State Engineer.

Date, March 25, 1952

RECEIVED

IMPORTANT-READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM 1952

To Change Place of Use - APPLICATION FOR PERMIT STATE ENGINEER

To appropriate the Underground Waters of the State of New Mexico

LEA COUNTY UNDERGROUND BASIN

Application No. L-1110 Book LC-104 Date Received January 7, 1952.

1. Name of applicant Gulf Oil Corporation

Postoffice address Box 1290, Fort Worth 4, Texas

County of Tarrant, State of Texas

2. Source of water supply Shallow ground water basin
(state whether artesian or shallow ground water basin)

located in Lea County
(name of underground stream, valley, artesian basin, etc.)

3. The well is to be located in the NW $\frac{1}{4}$, NW $\frac{1}{4}$, NE $\frac{1}{4}$ of section 14, Township 15S, Range 37E, N.M.P.M. on land owned by L. R. Chamberlain

4. Description of well: driller existing well; depth to bottom 115 feet; diameter (outside) of casing 7" inches; type of pump and power plant to be used 4" Peerless Turbine Pump

5. Quantity of water to be appropriated and beneficially used 15,000 barrels
(feet depth or acre feet per acre) for drilling oil well with rotary equipment purposes

6. Acreage to be irrigated NONE acres located and described as follows (describe only lands to be irrigated):

Subdivision Chamberlain #4 well Acres Irrigated to be located in the Owner
NWNE 1/4 SW 1/4 Sec 14 T15S R37E

FILED
DEC 21 1951
OFFICE
ARTESIAN WELL SUPERVISOR
MOSWELL, NEW MEXICO

FILED
DEC 17 1951
OFFICE
ARTESIAN WELL SUPERVISOR
MOSWELL, NEW MEXICO

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side)

7. Time required to commence construction 12-15-51
Time required to complete the works 6-15-52
Time required to fully apply water to beneficial use 6 months

8. Additional statements or explanations (including data on any other water rights appurtenant to above lands)
To drill for oil Gulf L. R. Chamberlain No. 4 located 2310' from the South and West Lines of Section 14-15S-37E, Lea County, New Mexico to an estimated depth of 12,800'. Application No. L-1110 granted authority to utilize water from subject well to drill Chamberlain No. 2. Operations have been completed on this well and authority is requested to utilize water for drilling Chamberlain No. 4.

I, Chas. Taylor, being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

GULF OIL CORPORATION, applicant
Chas Taylor
Area. Prod. Supt.

Subscribed and sworn to before me this 13th day of December, A. D. 19 51

My Commission expires 7-20-54
Avis Billbreath
Notary Public.

IMPORTANT-READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM

APPLICATION FOR PERMIT

To appropriate the Underground Waters of the State of New Mexico

LEA COUNTY UNDERGROUND WATER BASIN

Application No. L-1110 Book LC-4 Date Received April 20, 1951

- 1. Name of applicant Gulf Oil Corporation
Postoffice address Box 1290, Fort Worth 1, Texas
County of Tarrant State of Texas
2. Source of water supply shallow ground water basin
located in Lea County, Basin
3. The well is to be located in the NW 1/4, NW 1/4, NE 1/4 of section 14 Township 15S Range 37E N.M.P.M. on land owned by L. R. Chamberlain
4. Description of well: driller existing well; depth 115 feet; diameter (outside) of casing 7 inches; type of pump and power plant to be used Peerless Turbine Pump
5. Quantity of water to be appropriated and beneficially used 15,000 barrels (feet depth or acre feet per acre) for drilling oil well with rotary equipment purposes.
6. Acreage to be irrigated acres located and described as follows (describe only lands to be irrigated):

Table with columns: Subdivision, Sec, Twp, Range, Acres Irrigated, Owner. Includes stamps: RECEIVED APR 20 1951, FILED APR 6 1951, STATE ENGINEER, OFFICE ARTHUR J. WELLS SUPERVISOR ROSWELL, NEW MEXICO.

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side.)

- 7. Time required to commence construction 3-30-51
Time required to complete the works 10-1-51
Time required to fully apply water to beneficial use 6 months
8. Additional statements or explanations (including data on any other water rights appurtenant to above lands)
To drill for oil Gulf L. R. Chamberlain No. 2 located 660' from North Line and 1980' from West Line of Section 14-15S-37E, Lea County, New Mexico to a depth of 12,500'.

I, F. E. Hatfield, being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

GULF OIL CORPORATION applicant
BY B. R. Jordan Attorney-in-Fact
Subscribed and sworn to before me this 14th day of April, A. D., 1951
My Commission expires May 31, 1951
B. R. JORDAN Notary Public.

APPROVAL OF THE STATE ENGINEER

Number of this permit L-1110 Date received corrected _____
 Recorded in Book LC-4 Publication of notice ordered _____
 Page 1110 Name of paper _____
 Application received April 20, 1951 Affidavit of publication filed _____
 Date returned for correction _____ Date of approval April 24, 1951

This application is approved for 3 acre feet of water
 subject to all prior valid and existing rights to the use of the waters of said underground source and provided that
 the applicant complies with all rules and regulations of the State Engineer pertaining to the drilling of wells.
Appropriation of water to be limited at all times to 3 acre feet per
annum for domestic purposes (and oil well drilling). Well to be plugged
upon completion of oil well drilling operations.

Works shall be completed and proofs filed on or before April 24, 1952.
 Water shall be applied to beneficial use and proofs filed on or before _____

This is to certify that I have examined the above application for permit to appropriate the underground waters
 of the State of New Mexico and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 24th day of April, A. D. 1951
[Signature]
 Assistant State Engineer

LOCATE WELL AND ACREAGE TO BE IRRIGATED AS ACCURATELY AS POSSIBLE ON FOLLOWING PLAT:
 Section (s) 14 Township 15S Range 37E, N.M.P.M.

L.R. Chamberlain No. 20	o Water Well		

Water well located 650'
 from North line and 2178'
 from East line in Section
 14, -15S-37E.

INSTRUCTIONS

This form shall be executed, preferably typewritten, in triplicate and shall be accompanied by a filing fee of \$5.00.
 Each of triplicate copies must be properly signed and attested.

A separate application for permit must be filed for each well used.

Secs. 1-4—Fill out all blanks fully and accurately.

Sec. 5—Irrigation use shall be stated in feet depth or acre feet of water per acre to be applied on the land. If for
 domestic, municipal, or other purposes, state total quantity in acre feet to be used annually. Domestic use may include
 the irrigation of not more than one acre of lawn and garden for noncommercial use.

Sec. 6—Describe only the lands to be irrigated. If on unsurveyed lands describe by legal subdivision "as pro-
 jected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some perma-
 nent, easily located natural object.

Sec. 7—Estimate time reasonably required to commence and to complete project.

Sec. 8—If lands are irrigated from any other source, explain in this section. Give any other data necessary to
 fully describe water right sought.

If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

[Handwritten initials]
 4/25/51

Santa Fe

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

			o
		14	

(Plat of 640 acres)

(A) Owner of well McAlester Fuel Company
 Street and Number P.O. Box 608
 City Lovington State New Mexico
 Well was drilled under Permit No. L-1080 and is located in the
NW 1/4 NE 1/4 NE 1/4 of Section 14 Twp. 15S Rge. 37E
 (B) Drilling Contractor Bishop Drilling Co. License No. _____
 Street and Number _____
 City Lovington State New Mexico
 Drilling was commenced March 2, 1952
 Drilling was completed March 3, 1952

Elevation at top of casing in feet above sea level _____ Total depth of well 120'
 State whether well is shallow or artesian Shallow Depth to water upon completion 60'

Section 2 PRINCIPAL WATER-BEARING STRATA

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

Section 3 RECORD OF CASING

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

Section 4 RECORD OF MUDDING AND CEMENTING

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

Section 5 PLUGGING RECORD

Name of Plugging Contractor McAlester Fuel Company License No. WD-9
 Street and Number P.O. Box 608 City Lovington State New Mexico
 Tons of Clay used _____ Tons of Roughage used _____ Type of roughage Dirt

RECEIVED

(This form to be executed in triplicate)

APR 14 1952

WELL RECORD STATE ENGINEER

Date of Receipt _____ BY _____ Permit No. L-1080

Name of permittee, McAlester Fuel Co.

Street or P.O., Box 608, City and State Lovington, New Mexico

1. Well location and description: The shallow well is located in NW 1/4, NE 1/4, (shallow or artesian)

NE 1/4 of Section 14, Township 15 South, Range 37 East; Elevation of top of

causing above sea level, X feet; diameter of hole, 7 inches; total depth, 120 feet;

depth to water upon completion, 32 feet; drilling was commenced March 2, 1951,

and completed March 3, 1952; name of drilling contractor Bishop Drilling Co.

Address, Lovington, New Mexico; Driller's License No.

2. Principal Water-bearing Strata:

No.	Depth in Feet		Thickness	Description of Water-bearing Formation
	From	To		
No. 1	32	33	1	Shale and sand
No. 2	65	67	2	Water Sand
No. 3	88	91	3	Water sand
No. 4	105	120	15	Water and quick sand
No. 5				

3. Casing Record:

Diameter in inches	Founds per ft.	Threads per inch	Depth of Casing or Liner		Feet of Casing	Type of Shoe	Perforations	
			Top	Bottom			From	To

None (surface only)

4. If above construction replaces old well to be abandoned, give location: 1/4, 1/4, 1/4

of Section, Township, Range; name and address of plugging contractor,

date of plugging, 19; describe how well was plugged:

(This form to be executed in triplicate)

RECEIVED

APR 14 1952

STATE ENGINEER

PROOF OF COMPLETION OF WORKS UNDERGROUND WATERS

Date of Receipt _____ Permit No. L-1080

1. Name of permittee McAlester Fuel Co.

P. O. address P.O. Box 608, City and State Lovington, New Mexico

Permit No. L-1080 to Appropriate
(appropriate, repair well, change location of well)

in the Lea County Underground Basin
(name of underground reservoir, artesian basin, etc.)

2. Description of well: location, NW $\frac{1}{4}$, NE $\frac{1}{4}$, NE $\frac{1}{4}$ of Section 14

Township 15 South, Range 37 East; total depth, 120 feet; outside diameter of top casing

(or hole, if uncased) 7 inches; if artesian, is well equipped with gate valve? no; name

and address of driller Bishop Drilling Co.; Lovington, New Mexico

Date drilled, March 2 & 3, 1951, 19____

3. Record of Pumping Test (to be supplied by person or firm making test; Name and address of person making

test, None made

date of test, _____, 19____; depth to water before test, 32 feet, and im-

mediately afterward, _____ feet; Lenth of test, _____ hours; average discharge, _____ G.P.M.;

Specific capacity of well, _____ gal. per min. per ft. of drawdown.

4. Description of pump: Make, Peerless

type, turbine; if turbine type, give size of column, 4 inches; diameter of

bowls 4 inches; number of bowls 8; length of suction pipe, 10 feet; total

length of column, bowls and suction pipe, 70 feet; if centrifugal type, give size of pump

inches; if other type, describe, _____

rated capacity of pump (if known) 100 G.P.M. at 1760 rev. per min. from a depth of 60 feet.

5. Description of power plant: make, International U-2

Industrial on
type, Natural Gas; rated horsepower (if available) 22; type of drive connection

to pump, "V" Belt; date of installation of power plant, February 20, 1952

6. Actual discharge of pump, SAME G.P.M. at _____ rev. per min., from a depth of _____ feet;

Date of test _____, 19____; Name and address of dealer supplying pump and power

plant, Howard P. Holmes, Drilling Contractor; Eunice, New Mexico

FILED
APR 7 1952
OFFICE
STATE ENGINEER
ROSWELL, NEW MEXICO

7. Permit acreage to be served by well, _____ acres, to receive a total of _____ acre feet of water allowed by permit.

8. The distribution system consists of overnight storage reservoir _____, and _____ feet of main canal; (yes or no)

give approximate capacity of reservoir or tank (if any) 500 bbl. tank cubic feet.

9. If above construction replaces an old well to be plugged or abandoned, fill out the following: the well abandoned

is located in the _____ % _____ % of Section _____, Township _____, Range _____;

Name of plugging contractor, _____

Well was plugged in accordance with terms of permit _____, 19 _____

10. Give date "Well Record" was filed with State Engineer's Office, enclosed herewith

11. Pump and power plant were installed and works completed February 20, 1952

The undersigned, owner and holder of Permit No. _____, being first duly sworn upon his oath, states that he has read the foregoing statements and that the same are true to the best of his knowledge and belief.

McAlester Fuel Co.

by: [Signature]
March

Subscribed and sworn to before me this 22nd day of February, 1952

My commission expires Sept. 26, 1953

[Signature]
Notary Public.

Affidavit of State Engineer's Representative

I hereby certify that I have duly inspected the above Works and find them adequate and properly constructed according to the terms and conditions of the permit. Note any exceptions.

[Signature]
Groundwater Supervisor or other representative of State Engineer.

Date, April 9, 1952

IMPORTANT-READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM

APPLICATION FOR PERMIT

To appropriate the Underground Waters of the State of New Mexico

Commercial-Oil Well Drilling
Application No. L-1080 Book VIC-1 Date Received March 5, 1951.

1. Name of applicant McAlester Fuel Co.
 Postoffice address Box 608, Lovington, New Mexico
 County of Lea State of New Mexico
2. Source of water supply Shallow ground water basin
(state whether artesian or shallow ground water basin)
 located in LEA COUNTY UNDERGROUND BASIN
(name of underground stream, valley, artesian basin, etc.)
3. The well is to be located in the NW $\frac{1}{4}$, NE $\frac{1}{4}$, NE $\frac{1}{4}$
 of section 14 Township 15 S Range 37 E N.M.P.M.
 on land owned by Pat McClure
4. Description of well: driller Contract not let; depth to be drilled 100 feet;
 diameter (outside) of casing 6 inches; type of pump and power plant to be used
Ball seat pump - Industrial engine

5. Quantity of water to be appropriated and beneficially used only water necessary in drilling operations
(feet depth or acre feet per acre)
 for Commercial- only water necessary in drilling operations purposes.
6. Acreage to be irrigated none acres
 located and described as follows (describe only lands to be irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
<u>NW$\frac{1}{4}$NE$\frac{1}{4}$NE$\frac{1}{4}$</u>	<u>14</u>	<u>15 S</u>	<u>37 E</u>	<u>0.0</u>	<u>Pat McClure</u>

RECEIVED

MAR 5 1951

STATE ENGINEER

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side.)

7. Time required to commence construction 1 week
 Time required to complete the works 2 weeks
 Time required to fully apply water to beneficial use one year maximum

8. Additional statements or explanations (including data on any other water rights appurtenant to above lands)
This well is to be used in connection with drilling operations on an oil well.
Well will be plugged when drilling operations are complete.

I, McAlester Fuel Co., being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

McAlester Fuel Co., applicant
 by: Dennis Raul

Subscribed and sworn to before me this 28 th. day of February, A. D., 19 51

My Commission expires Sept. 26, 1953
John W. Shearman
 Notary Public.

100

APPROVAL OF THE STATE ENGINEER

Number of this permit L-1080 Date received corrected

Recorded in Book 10-4 Publication of notice ordered

Page 1080 Name of paper

Application received March 5, 1951. Affidavit of publication filed

Date returned for correction

Date of approval March 7, 1951.

This application is approved for 3 acre feet of water subject to all prior valid and existing rights to the use of the waters of said underground source and provided that the applicant complies with all rules and regulations of the State Engineer pertaining to the drillings of wells Diameter of well not to exceed 7 inches. Appropriation of water to be limited at all times to 3 acre feet per annum for domestic purposes and drilling operations. Well to be plugged upon completion of drilling operations.

Works shall be completed and proofs filed on or before March 7, 1952.

Water shall be applied to beneficial use and proofs filed on or before

This is to certify that I have examined the above application for permit to appropriate the underground waters of the State of New Mexico and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 7th day of March, A. D., 1951

[Signature]
Assistant State Engineer

LOCATE WELL AND ACREAGE TO BE IRRIGATED AS ACCURATELY AS POSSIBLE ON FOLLOWING PLAT:

Section (s) 14 Township 15 S Range 37 E N.M.P.M.

			0

INSTRUCTIONS

- This form shall be executed, preferably typewritten, in triplicate and shall be accompanied by a filing fee of \$5.00. Each of triplicate copies must be properly signed and attested.
 - A separate application for permit must be filed for each well used.
 - Secs. 1-4—Fill out all blanks fully and accurately.
 - Sec. 5—Irrigation use shall be stated in feet depth or acre feet of water per acre to be applied on the land. If for domestic, municipal, or other purposes, state total quantity in acre feet to be used annually. Domestic use may include the irrigation of not more than one acre of lawn and garden for noncommercial use.
 - Sec. 6—Describe only the lands to be irrigated. If on unsurveyed lands describe by legal subdivision "as projected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some permanent, easily located natural object.
 - Sec. 7—Estimate time reasonably required to commence and to complete project.
 - Sec. 8—If lands are irrigated from any other source, explain in this section. Give any other data necessary to fully describe water right sought.
- If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

STATE ENGINEER OFFICE
WELL RECORD

SANTA FE

Section 1. GENERAL INFORMATION

A) Owner of well M. G. F. Drilling Co., Inc. Owner's Well No. Denton # 1
 Street or Post Office Address 7th Floor Vaughn Bldg.
 City and State Midland, Texas 79701

Well was drilled under Permit No. L-7665 and is located in the:

a. $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ Se of Section 11 Township 15S Range 37E N.M.P.M.
 b. Tract No. _____ of Map No. _____ of the _____
 c. Lot No. _____ of Block No. _____ of the _____
 Subdivision, recorded in Lea County.
 d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

B) Drilling Contractor Abbott Bros. License No. WD-46
 Address P.O. Box 637, Hobbs, New Mexico 88240

Drilling Began 3/28/77 Completed 3/29/77 Type tools Cable Size of hole 8 in.
 Elevation of land surface or _____ at well is _____ ft. Total depth of well 126 ft.
 Completed well is shallow artesian. Depth to water upon completion of well 40 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
40	126	86	Sand	

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
9 5/8"	x 5'	surface nipple						

Section 4. RECORD OF MUDDING AND CEMENTING

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

Section 5. PLUGGING RECORD

Plugging Contractor _____
 Address _____
 Plugging Method _____
 Date Well Plugged _____
 Plugging approved by: _____
 State Engineer Representative _____

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

STATE ENGINEER OFFICE
 SANTA FE, N.M. 87501
 JUN 13 PM 1 14

FOR USE OF STATE ENGINEER ONLY

Date Received April 1, 1977 Quad _____ FWL _____ FSL _____
 File No. L-7665 Use OWD Location No. 15.37.11.44441

64585
1

APPLICATION TO APPROPRIATE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 75-11-1 NEW MEXICO STATUTES

11 Mar 20 PM 1 09
STATE ENGINEER OFFICE
SANTA FE, N.M. 87501

1. Name and Address of Applicant: File No. L-7665

M.G.F. Drilling Co., Inc.
7th Floor Vaughn Bldg.
Midland, Texas 79701

RECEIVED: March 25, 1977

2. Describe well location under one of the following subheadings:

a. SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Sec. 11 Twp. 15S Rge. 37E N. M. P. M., in
Lea County.

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

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

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

e. Give street address or route and box No. of property upon which well is to be located, or location by direction and
distance from known landmarks _____

3. Approximate depth (if known) 150 feet; outside diameter of casing 7 inches.

Name of driller (if known) Abbott Bros.

4. Use of water (check appropriate box or boxes):

- Household, non-commercial trees, lawn and garden not to exceed 1 acre.
- Livestock watering.
- Drinking and sanitary purposes and the irrigation of non-commercial trees, shrubs and lawns in conjunction with a commercial operation.
- Prospecting, mining or drilling operations to discover or develop natural resources.
- Construction of public works, highways and roads.

If any of the last three were marked, give name and nature of business under Remarks (Item 5)

5. Remarks: Drilling-Denton # 1

I, Murrell Abbott, affirm that the foregoing statements are true to the best of my knowledge and belief and that development shall not commence until approval of the permit has been obtained.

M.G.F. Drilling Co., Applicant

By: Helen Baker Date: March 23, 1977

ACTION OF STATE ENGINEER

This application is approved for the use indicated, subject to all general conditions and to the specific conditions numbered 1, 3, 5a & 6 on the reverse side hereof. This permit will automatically expire unless this well is drilled or driven and the well record filed on or before March 31, 1978.

S. E. Reynolds, State Engineer

By: Delbert W. Nelson
Delbert W. Nelson
Ass't. Dist. II Supervisor
March 25, 1977

File No. L-7665

STATE ENGINEER OFFICE
SANTA FE, N.M.
77 MAR 25 AM 8 28

APPENDIX E
PHOTO-DOCUMENTATION



Photograph 1: View of drilling operations on boring B-3 with Denton Station tank battery in background.



Photograph 2: View of drilling operations on boring B-6 with the inactive tank No. 1980 on the right.

8.0 QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

8.1 SAMPLING PROCEDURES

A strict Quality Assurance Plan was incorporated throughout all phases of the drilling and sampling operations. The sampling and drilling equipment was decontaminated by a high-pressure steam cleaner before the start of sampling operations and between the borings. The soil samples were collected with decontaminated stainless steel sampling trowels. The sampling equipment was cleaned between sample collections to eliminate the potential of cross-contamination between sampling stations. Groundwater samples were obtained with new disposable bailers after each monitor well was purged.

The soil and water samples were placed in glass jars and sample vials with teflon-lined lids and preserved at 4°C with zero head space in accordance with EPA requirements (EPA 600/4-82-029). A chain-of-custody (COC) that documents sample collection times and delivery times to the laboratory was completed for each set of samples. The COCs are included with the analytical results in the Appendices. Analyses were performed using EPA-recommended analytical methods on all samples.

CURA maintains the highest quality assurance standards with direct supervision of operations (sample handling and storage). Drilling operations were conducted using a licensed water well driller. CURA provides management oversight for laboratory procedures and analytical results and uses laboratories that maintain strict quality control, i.e., equipment calibration and standardization, EPA-recommended analytical methods, preparing spiked samples, and complete chains-of-custody.

9.0 SITE SAFETY PLAN

The sampling operations were performed at level D personal protection. All CURA personnel involved in on-site activities have completed the Hazardous Waste Field Operation training course (OSHA 29 CFR 1910.120). Applicable safety equipment was available on site to CURA personnel.

SITE SAFETY PLAN

Site Name: SPLC - Denton Station

Site Address: 13 miles northeast of Lovington in Lea County, New Mexico

Site Owner: Shell Pipe Line Corporation

Contacts: John B. Hite (713) 241-1001

Work Description: Environmental site assessment activities: soil borings, soil sampling, and site mapping.

Proposed Date of Work: February 8, 1993

Work Team: Team Leader - F. Wesley Root (CURA, Inc.)

Site Safety Officer - F. Wesley Root (CURA, Inc.)

Team Member - Leon Moore (Shell Pipe Line Corporation)

Team Member - Barry Simmons (Hi-Plains Drilling Company)

Team Member - Freddy Tovar (Hi-Plains Drilling Company)

Plan prepared by: Greg C. Walterscheid, R.E.M.

Reviewed by: Richard Wilson, Ph.D.



EMERGENCY INFORMATION

Site Name: SPLC - Denton Station
Site Address: 13 miles northeast of Lovington in Lea County, New Mexico
Site Owner: Shell Pipe Line Corporation

Telephone Numbers:

Ambulance Service: 911
Hospital: NorLea Hospital 505-396-6611

Poison Control Center: 911
Police: 505-396-2811
Fire Department: 505-396-2359

Emergency Contacts

Company Health and Safety Officer: Dr. Richard Wilson
Work: (214) 620-7117
Home: (214) 241-5803

Project Manager: Greg C. Walterscheid

Work: 1-800-486-7117
Mobile Phone: 1-214-202-9320
Pager: 1-214-807-8154
Home: 1-214-317-0518



10.0 REFERENCES

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