

GW - 36

**GENERAL
CORRESPONDENCE**

YEAR(S):

1993-1979

PENROC

OIL CONSERVATION DIVISION
RECEIVED
'93 APR 26 AM 9 01

April 22, 1993

Mr. Roger C. Anderson
State of New Mexico
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

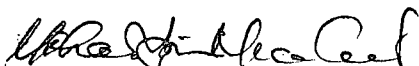
RE: Discharge Plan GW-36 Renewal
Penroc Oil Corporation
State "E" Tract 18 Wells No. 21 & 22
Lea County, New Mexico

Dear Mr. Anderson:

Thank you for your letter dated April 13, 1993 for the captioned which was received here yesterday. For your information, Penroc Oil Corporation has never injected any fluids other than produced water. Therefore, we do not plan to pursue Class I classification.

Your cooperation is appreciated and if you have any further questions, please contact me. Thank you.

Sincerely,



M. Y. (Merch) Merchant
President & Chief Executive Officer

MYM/lm

MAILING ADDRESS:
PO Box 5970
Hobbs, NM
88241-5970

DELIVERY ADDRESS:
5014 Carlsbad Hwy.
Hobbs, NM
88240-1118

(505) 397-3596 Phone
(505) 393-7051 FAX



U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF DRINKING WATER
INVENTORY OF INJECTION WELLS
(This information is collected under
the authority of the Safe Drinking Water Act.)

I. DATE PREPARED
(mo., day, & year)

II. FACILITY I.D. NUMBER

III. TRANSACTION TYPE ('X' one)

- ☐ 1. DELETION
☒ 2. FIRST TIME ENTRY
☐ 3. CHANGE OF ENTRY

IV. FACILITY NAME AND LOCATION

A. NAME

01 APOLLO OIL COMPANY

B. STREET ADDRESS OR ROUTE NUMBER

02 SEC. 17 T. 17S R. 36E N. 1/4M

C. CITY OR TOWN

D. ST.

E. ZIP CODE

F. COUNTY

G. INDIAN LAND (mark 'X')

LEA

NM

40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00

V. LEGAL CONTACT: TYPE, NAME, PHONE, MAILING ADDRESS, AND OWNERSHIP

B. NAME (last, first, & middle initial)

03

RALSTON, ALAN W

D. ORGANIZATION

04 APOLLO OIL COMPANY

E. STREET OR P.O. BOX

05 PO BOX 1737

F. CITY OR TOWN

G. ST. H. ZIP CODE

NM 08240

I. OWNERSHIP ('X' one)

M. PUBLIC

O. OTHER (specify)

S. STATE

F. FEDERAL

VI. WELL INFORMATION

WELL OPERATION STATUS:

UC = UNDER CONSTRUCTION

AC = ACTIVE

TA = TEMPORARILY ABANDONED

PA = PERMANENTLY ABANDONED AND APPROVED BY STATE


AN = PERMANENTLY ABANDONED AND NOT APPROVED BY STATE


C. WELL OPERATION STATUS

D. COMMENTS (optional)

REFINERY EFFLUENT AND PRODUCED WATER
DISPOSAL WELLS. PERMITTED THROUGH
GROUND WATER DISCHARGE PLAN GW-36

C	A. CLASS AND TYPE	B. TOTAL NO. OF WELLS	C. WELL OPERATION STATUS			
			UC	AC	TA	AN
08	12	2		2		
14 15	16 17	18 - 21	22 - 24 25	27 28 - 30 31	33 34 - 36	
09						
14 15	16 17	18 - 21	22 - 24 25	27 28 - 30 31	33 34 - 36	
10						
14 15	16 17	18 - 21	22 - 24 25	27 28 - 30 31	33 34 - 36	
11						
14 15	16 17	18 - 21	22 - 24 25	27 28 - 30 31	33 34 - 36	
12						
14 15	16 17	18 - 21	22 - 24 25	27 28 - 30 31	33 34 - 36	
13						
14 15	16 17	18 - 21	22 - 24 25	27 28 - 30 31	33 34 - 36	
14						
14 15	16 17	18 - 21	22 - 24 25	27 28 - 30 31	33 34 - 36	

 <p>US ENVIRONMENTAL PROTECTION AGENCY OFFICE OF DRINKING WATER WASHINGTON, DC 20460</p> <p>UIC FEDERAL REPORTING SYSTEM</p> <p>PART IV: QUARTERLY NONCOMPLIANCE REPORT</p> <p>MAJOR INJECTION WELLS</p>		I. DATE PREPARED (Mo, day, year)	II. STATE	III. REGION
		3/25/87	N.M.	VI
IV. REPORTING AGENCY New Mexico Oil Conservation Division		V. REPORT FOR QUARTER ENDING (Mo, day, year) 12/31/86		
VI. PERMIT/FACILITY NUMBER Discharge Plan GW-36	VII. PERMITTEE NAME AND LOCATION Apollo Oil Company State "E" Tract 18 Wells #21 & 22 Lea County, N.M.			
VIII. NATURE OF NONCOMPLIANCE(S) AND DATE(S) OF OCCURRENCE(S) None				
IX. DESCRIPTION AND DATE(S) OF ANY ACTION(S) TAKEN BY THE AGENCY (Identify agency)				
X. STATUS OF NONCOMPLIANCE (Provide date(s) of review or resolution)				
XI. MITIGATING CIRCUMSTANCES (if any)				
XII. STATE CONTACT (Name, telephone number) Roger Anderson (505) 827-5885				
XIII. COMMENT Facility permitted to inject non hazardous refinery waste on 12/15/86. Refinery has not started up, consequently no waste has been injected. The wells are used for injection of produced water only at this time.				

 US ENVIRONMENTAL PROTECTION AGENCY OFFICE OF DRINKING WATER WASHINGTON, DC 20460 UIC FEDERAL REPORTING SYSTEM PART IV: QUARTERLY NONCOMPLIANCE REPORT MAJOR INJECTION WELLS		I. DATE PREPARED (Mo, day, year) 3/25/87	II. STATE N.M.	III. REGION VI
IV. REPORTING AGENCY New Mexico Oil Conservation Division		V. REPORT FOR QUARTER ENDING (Mo, day, year) 12/31/86		
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All USGS observation
wells in area of
injection wells are
completed in the
Gallala fm.

TABLE 3. STRATIGRAPHIC UNITS IN SOUTHERN LEA COUNTY, N. MEX.

GEOLOGIC AGE		GEOLOGIC UNIT	THICKNESS (ft)	GENERAL CHARACTER	WATER-BEARING PROPERTIES
Cenozoic Quaternary	Recent	Sand	0-30±	Dune sand, unconsolidated stabilized to drifting, semiconsolidated at depth; fine- to medium-grained.	Above the zone of saturation, hence, does not yield water to wells. Aids recharge to underlying formations by permitting rapid infiltration of rain-water.
	and Pleistocene	Alluvium	0-400±	Channel and lake deposits; alternating thickbedded calcareous silt, fine sand, and clay; thickest in San Simon Swale; less than 100 feet thick in most places.	Saturated and highly permeable in places in east end of Laguna Valley. Forms continuous aquifer with Ogallala formation. Wells usually yield less than 30 gpm. Locally above the water table.
Cenozoic Tertiary	Pliocene	Ogallala	0-300±	Semiconsolidated fine-grained calcareous sand capped with thick layer of caliche; contains some clay, silt, and gravel.	Major water-bearing formation of the area. Unsaturated in many localities, such as north side of Grama Ridge, west side of Eunice Plain, Antelope Ridge area, and Rattlesnake Ridge. Greatest saturated thickness along east side of Eunice Plain, west of Monument Draw, where wells yield up to 30 gpm. Highest yields, up to 700 gpm, obtained from wells along south edge of Eunice Plain, east of Jal.
Mesozoic Cretaceous		Undifferentiated	35±	Small isolated and buried residual blocks of limestone, about 3 miles east of Eunice.	Possibly small isolated bodies of water locally.
Mesozoic Triassic Dockum group		Chinle formation	0-1,270±	Claystone, red and green; minor fine-grained sandstones and siltstones; underlies all of eastern part of southern Lea County area; thins westward; absent in extreme west.	Yields small quantities of water from sandstone beds. Yields are rarely over 10 gpm. Water has high sulfate content.
		Santa Rosa sandstone	140-300±	Sandstone, chiefly red but locally white, gray, or greenish-gray; fine- to coarse-grained; exposed in extreme west; underlies Cenozoic rocks in western part of area, and is present at depth in eastern part.	Yields small quantities of water over most of the area. Some wells are reported to yield as much as 100 gpm. Water has high sulfate content.
Paleozoic Permian or Triassic		Undifferentiated	90-400+	Siltstone, red, shale, and sandstone; present at depth under all of southern Lea County.	No wells are known to be bottomed in the red beds. Probably can yield very small quantities of high-sulfate water.
Paleozoic Ordovician through Permian			6,500-17,000±	Thick basin deposits ranging in character from evaporites to coarse clastics; thinnest on the east side of the area over the Central basin platform, thickest toward the southwest.	No presently usable water supply available from these rocks. Source of highly mineralized oil-field waters.
Precambrian				Granite, granodioritic and other igneous and metamorphic rocks; complex structure.	Not hydrologically significant.

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NEW MEXICO BUREAU OF MINES & MINERAL RESOURCES

GROUND WATER

LEA COUNTY

31

USGS Hydrologic Investigation Atlas HA-62

Map Ground Water Conditions in Northern Lea Cty. by SR Ash, 1963
2 T175 R36 E

DTW ⁴²~~175~~ in 1952

Saturated Thickness 175' ⁽¹⁹⁵²⁾ Ogallala

Cl⁻ ~ 60 ppm

Spec. Cond. ~ 710 μ mhos

Ground water flow SE

~~State Engineer~~

USGS computer printout indicates wells in the section
have DTW 50-60'.

TABLE 1. WATER LEVELS IN THE TATUM-LOVINGTON-HOBBS AREA, LIN AND CHAVES COUNTIES, N. MEX., IN WINTER 1979, CHANGE FROM WINTER 1978 TO WINTER 1979, IN FEET, AND HIGHEST AND LOWEST RECORDED WINTER WATER LEVEL, IN FEET, REFERENCED TO LAND SURFACE DATUM.

LOCATION	OWNER NAME	SOURCE	79 WATER LEVEL	DATE	CHANGE	HIGH	YR	LOW	YR	YEARS OF RECORD
165 36E 23 241	T.M. MONTEITH	OGLL	-59.07	1-04	-0.52	-60.68	55	-62.59	72	54-55,60-61,65-79
165 37E 01 211	WILKS	OGLL	-81.99	1-03	-0.55	-84.99	50	-84.99	79	50-79
165 37E 02 211	HARALA	OGLL	-78.25	1-03	-0.95	-33.33	50	-73.26	79	50-79
165 37E 07 114	BEAL GLEASON	OGLL	-63.36	1-04	-0.72	-32.32	50	-63.36	79	50-79
165 37E 11 111	RUDY TAYLOR	OGLL	-78.64	1-03	-0.22	-34.93	49	-73.44	79	49-79
165 37E 21 111	A.C. DAVIS	OGLL	-64.70	1-05	-	-64.90	79	-64.60	79	79
165 38E 03 111	STATE OF N. MEX.	OGLL	-64.35	1-04	-0.36	-64.60	51	-64.35	79	51-79
165 38E 27 111	WOODY'S ACRES INC.	OGLL	-86.84	1-03	-1.07	-32.85	50	-86.84	79	50-79
165 38E 37 211	MITCHELL	OGLL	-60.93	1-03	+1.09	-51.84	51	-65.02	79	51-54,67-79
165 38E 34 131	WOODY'S ACRES INC.	OGLL	-100.76	1-03	+1.56	-60.39	59	-104.32	79	52-58-79
165 39E 24 231	SOMC AND HOLDER	OGLL	-92.08	1-03	-2.66	-54.85	50	-92.08	79	50-58,60-79
175 33E 13 341	POTASH CO. OF AMERICA	OGLL	-171.04	1-04	-1.22	-146.05	53	-171.04	79	53-79
175 34E 28 213	SOUTHWEST POTASH	OGLL	-153.48	1-04	-1.05	-133.01	69	-153.48	79	69-79
175 34E 35 130	STATE OF N. MEX.	OGLL	-124.32	1-04	-1.32	-59.88	53	-124.32	79	42-79
175 36E 27 131	DOROTHY SCHARBAUER	OGLL	-39.81	1-04	-0.47	-33.05	49	-39.31	79	49-79
175 37E 10 211	S.M. REILAND	OGLL	-60.08	1-03	-1.22	-32.87	49	-63.08	79	49-79
175 37E 12 111	LEE STILES	OGLL	-75.12	1-03	-0.30	-63.69	50	-75.12	79	50-79
175 37E 34 111	C.G. GOODWIN	OGLL	-60.96	1-03	-0.01	-42.13	57	-69.74	79	57-79
175 38E 02 311	M.V. LAWRENCE	OGLL	-77.94	1-03	-2.17	-43.65	51	-79.94	79	49-79
175 38E 07 111	L.R. SEBRINGS	OGLL	-68.36	1-03	-0.37	-35.59	52	-65.36	79	51-79
175 38E 08 211	J.J. HANLEY JR.	OGLL	-70.92	1-03	-0.66	-36.46	50	-70.92	79	50-57,59-79
175 38E 24 131	M.V. LAWRENCE	OGLL	-53.02	1-03	-1.20	-41.30	50	-57.00	79	50-55,60-64,66-79
175 38E 31 311	G.L. BEENE	OGLL	-52.09	1-03	+2.61	-29.71	49	-54.70	79	48-71,74-79
175 38E 34 113	M.E. BUSBY	OGLL	-54.62	1-03	-1.12	-24.78	44	-54.62	79	43-79
185 34E 22 343	CONOCO OIL CO.	OGLL	-110.45	1-04	-	-109.22	67	-110.62	72	65-77,79
185 35E 17 144	INT MIN AND CHEM CORP	OGLL	-75.05	1-04	-0.25	-69.46	56	-75.05	79	53-79
185 36E 27 111	STATE OF N. MEX.	OGLL	-47.30	1-04	-1.40	-38.13	43	-47.30	79	39-79
195 36E 32 321	F.A. TURNER	ALVM	-26.75	1-04	-	-24.05	76	-27.33	71	71,74-77,79
195 37E 34 111	UNKNOWN	OGLL	-18.85	1-04	-	-18.85	79	-22.33	74	74-77,79
195 38E 30 121	UNKNOWN	OGLL	-29.66	1-04	+0.88	-28.53	76	-30.54	76	74-79
195 38E 34 222	J.G. COURSEY	OGLL	-52.14	1-04	-2.27	-42.27	49	-55.05	72	49-59,61-79

A. This section sets forth the information to be considered by the director in authorizing construction and use of an effluent disposal well or in situ extraction well or well field. Certain maps, cross-sections, tabulations of all wells within the area of review, and other data may be included in the discharge plan submittal by reference provided they are current, readily available to the director and sufficiently identified to be retrieved.

B. Prior to the approval of a discharge plan or project discharge plan allowing construction of a new effluent disposal well, operation of an existing effluent disposal well, or operation of a new or existing in situ extraction well or well field, or conversion of any well to injection use, the director shall consider the following:

1. Information required in Subsection 3-106.C. of these regulations; SEE PAGE 2

2. A map showing the effluent disposal well, or in situ extraction wells or well fields, for which approval is sought and the applicable area of review. Within the area of review, the map must show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads;

3. A tabulation of data on all wells within the area of review which may penetrate into the proposed injection zone. Such data shall include, as available, a description of each well's type, the distance and direction to the injection well or well field, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the director may require;

4. For wells within the area of review which penetrate the injection zone, but are not properly completed or plugged, the corrective action proposed to be taken under Section 5-203;

5. Maps and cross-sections indicating the general vertical and lateral limits of all ground water having 10,000 mg/l or less TDS within the area of review, the position of such ground water within the area of review relative to the injection formation, and the direction of water movement, where known, in each zone of ground water which may be affected by the proposed injection operation;

6. Maps and cross-sections detailing the geology and geologic structure of the local area, including faults, if known or suspected;

7. Generalized maps and cross-sections illustrating the regional geologic setting;

8. Proposed operating data, including:

(a) Average and maximum daily flow rate and volume of the fluid to be injected;

(b) Average and maximum injection pressure;

and

(c) Source of injection fluids and an analysis or description, whichever the director requires, of their chemical, physical, radiological and biological characteristics;

✓ OK

✓ OK

✓ OK

just now in line
2-1-1 - m. thick
on 500' rounds
on 200' rounds
?

Disposal
Injection
Wells
Wells
Wells
none submitted

Disposal
Injection
Wells
Wells
Wells
none submitted

Disposal
Injection
Wells
Wells
Wells
none submitted

1. Quantity, quality and flow characteristics of the discharge;

1. Quantity, quality and flow characteristics of the discharge;
2. Location of the discharge and of any bodies of water, watercourses and ground water discharge sites within one mile of the outside perimeter of the discharge site, and existing or proposed wells to be used for monitoring;
3. Depth to and TDS concentration of the ground water most likely to be affected by the discharge;
4. Flooding potential of the site;
5. Location and design of site(s) and method(s) to be available for sampling, and for measurement or calculation of flow;
6. Depth to and lithological description of rock at base of alluvium below the discharge site if such information is available;
7. Any additional information that may be necessary to demonstrate that approval of the discharge plan will not result in concentrations in excess of the standards of Section 3-103 or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use. Detailed information on site geologic and hydrologic conditions may be required for a technical evaluation of the applicant's proposed discharge plan; and
8. Additional detailed information required for a technical evaluation of effluent disposal wells or in situ extraction wells as provided in Part 5 of these regulations.
9. Results of the formation testing program to obtain an analysis or description, whichever the director requires, of the chemical, physical, and radiological characteristics of, and other information on, the receiving formation, provided that the director may issue a conditional approval of a discharge plan if he finds that further formation testing is necessary for final approval;
10. Expected pressure changes, native fluid displacement, and direction of movement of the injected fluid;
11. Proposed stimulation program;
12. Proposed or actual injection procedure;
13. Schematic or other appropriate drawings of the surface and subsurface construction details of the well;
14. Construction procedures, including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;
15. Contingency plans to cope with all shut-ins or well failures so as to prevent movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 5-103;

15. Contingency plans to cope with all shut-ins or well failures so as to prevent movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 5-103;

X
16. Plans, including maps, for meeting the monitoring requirements of Section 5-207; and

17. The ability of the discharger to undertake measures necessary to prevent contamination of ground water having 10,000 mg/l or less TDS after the cessation of operations, including the proper closing, plugging, and abandonment of a well, ground water restoration if applicable, and any post-operational monitoring as may be needed. Methods by which the discharger may demonstrate the ability to undertake these measures shall include submission of a surety bond or other adequate assurance, such as financial statements or other materials acceptable to the director. If an adequate bond is posted by the discharger to a federal or another state agency, and this bond is to insure closing and proper abandonment of the facility, the director shall consider this bond as a submission of a bond to the Division.

5-200. TECHNICAL CRITERIA AND PERFORMANCE STANDARDS FOR
EFFLUENT DISPOSAL WELLS AND IN SITU EXTRACTION WELLS.

5-201. PURPOSE.

Sections 5-200 through 5-210 of these regulations provide the technical criteria and performance standards for effluent disposal wells and in situ extraction wells.

5-202. AREA OF REVIEW.

A. The area of review is the area surrounding an effluent disposal well or in situ extraction well or the area within and surrounding a well field that is to be examined to identify possible fluid conduits, including the location of all known wells and fractures which may penetrate the injection zone.

B. The area of review for each effluent disposal well, or each in situ extraction well or well field shall be an area which extends:

1. Two and one half (2½) miles from the well, or well field; or

2. One-quarter (¼) mile from a well or well field where the area of review is calculated to be zero pursuant to Subsection B.3. below, or where the well field production at all times exceeds injection to produce a net withdrawal; or

3. A suitable distance, not less than one-quarter (¼) mile, proposed by the discharger and approved by the director, based upon a mathematical calculation to determine the area of review. Computations to determine the area of review may be based upon the parameters listed below and should be calculated for an injection time period equal to the expected life of the effluent disposal well, or in situ extraction well or well field. The following modified Theis equation illustrates one form which the mathematical model may take to compute the area of review; the discharger must demonstrate that any equation or simulation used to compute the area of review applies to the hydrogeologic conditions in the area of review.

$$r = \left(\frac{2.25 K H t}{S 10^x} \right)^{\frac{1}{2}}$$

Where:

$$x = \frac{4\pi KH (H_w - H_{bo}) \times S_p G_b}{2.3 Q}$$

r = Radius of the area of review for an effluent disposal well or in situ extraction well (length)

K = Hydraulic conductivity of the injection zone (length/time)

H = Thickness of the injection zone (length)

t = Time of injection (time)

S = Storage coefficient (dimensionless)

Q = Injection rate (volume/time)

H_o = Observed original hydrostatic head of injection zone (length) measured from base of the lowest aquifer containing ground water of 10,000 mg/l or less TDS

H_w = Hydrostatic head of underground source of drinking water (length) measured from the base of the lowest aquifer containing ground water of 10,000 mg/l or less TDS

S_{p_b} = Specific gravity of fluid in the injection zone (dimensionless)

$\gamma = 3.142$ (dimensionless)

The above equation is based on the following assumptions:

- (a) The injection zone is homogenous and isotropic;
- (b) The injection zone has infinite areal extent;
- (c) The effluent disposal well or in situ extraction well penetrates the entire thickness of the injection zone;
- (d) The well diameter is infinitesimal compared to "r" when injection time is longer than a few minutes; and
- (e) The emplacement of fluid into the injection zone creates an instantaneous increase in pressure.

5-205. CONSTRUCTION REQUIREMENTS.

A. General Construction Requirements Applicable to Effluent Disposal Wells and In Situ Extraction Wells.

1. Construction of all effluent disposal wells and all new in situ extraction wells shall include casing and cementing. Prior to well injection, the discharger shall demonstrate that the construction and operation of:

(a) Effluent disposal wells will not cause or allow movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 5-103;

(b) In situ extraction wells will not cause or allow movement of fluids out of the injection zone into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 5-103.

2. The construction of each newly drilled well shall be designed for the proposed life expectancy of the well.

3. In determining if the discharger has met the construction requirements of this section and has demonstrated adequate construction, the director shall consider the following factors:

(a) Depth to the injection zone;

(b) Injection pressure, external pressure, annular pressure, axial loading, and other stresses that may cause well failure;

(c) Hole size;

(d) Size and grade of all casing strings, including wall thickness, diameter, nominal weight, length, joint specification, and construction material;

(e) Type and grade of cement;

(f) Rate, temperature, and volume of injected fluid;

(g) Chemical and physical characteristics of the injected fluid, including corrosiveness, density, and temperature;

(h) Chemical and physical characteristics of the formation fluids including pressure and temperature;

(i) Chemical and physical characteristics of the receiving formation and confining zones including lithology and stratigraphy, and fracture pressure; and

(j) Depth, thicknesses and chemical characteristics of penetrated formations which may contain ground water.

4. To demonstrate adequate construction, appropriate logs and other tests shall be conducted during the drilling and construction of new effluent disposal wells or in situ extraction wells or during work-over of existing wells in preparation for reactivation or for change to injection use. A descriptive report interpreting the results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the director for review prior to well injection. The logs and tests appropriate to each type of injection well shall be based on the intended function, depth, construction and other characteristics of the well, availability of similar data in the area of the drilling site and the need for additional information that may arise from time to time as the construction of the well progresses.

(a) The discharger shall demonstrate through use of sufficiently frequent deviation checks, or another equivalent method, that an effluent disposal well or in situ extraction well drilled using a pilot hole then enlarged by reaming or another method, does not allow a vertical avenue for fluid migration in the form of diverging holes created during drilling.

(b) The director may require use by the discharger of the following logs to assist in characterizing the formations penetrated and to demonstrate the integrity of the confining zones and the lack of vertical avenues for fluid migration:

(i) For casing intended to protect ground water having 10,000 mg/l or less TDS:

(A) Resistivity, spontaneous potential, and caliper logs before the casing is installed; and

(B) A cement bond, or temperature log after the casing is set and cemented.

(ii) For intermediate and long strings of casing intended to facilitate injection:

(A) Resistivity, spontaneous potential, porosity, and gamma ray logs before the casing is installed;

(B) Fracture finder or spectral logs; and

(C) A cement bond or temperature log after the casing is set and cemented.

5. In addition to the requirements of Section 5-102, the discharger shall provide notice prior to commencement of drilling, cementing and casing, well logging, mechanical integrity tests, and any well work-over to allow opportunity for on-site inspection by the director or his representative.

B. Additional Construction Requirements for Effluent Disposal Wells.

1. All effluent disposal wells shall be sited in such a manner that they inject into a formation which is beneath the lowermost formation containing, within one quarter mile of the well bore, ground water having 10,000 mg/l TDS or less except as approved pursuant to Section 5-103.

OK

2. All effluent disposal wells shall be cased and cemented by circulating cement to the surface.

X

3. All effluent disposal wells, except those municipal wells injecting noncorrosive wastes, shall inject fluids through tubing with a packer set in the annulus immediately above the injection zone, or tubing with an approved fluid seal as an alternative. The tubing, packer, and fluid seal shall be designed for the expected length of service.

✓OK

(a) The use of other alternatives to a packer may be allowed with the written approval of the director. To obtain approval, the operator shall submit a written request to the director which shall set forth the proposed alternative and all technical data supporting its use. The director may approve the request if the alternative method will reliably provide a comparable level of protection to ground water. The director may approve an alternative method solely for an individual well or for general use.

N/A

(b) In determining the adequacy of the specifications proposed by the discharger for tubing and packer, or a packer alternative, the director shall consider the following factors:

✓OK

(i) Depth of setting;

(ii) Characteristics of injection fluid (chemical nature or characteristics, corrosiveness, and density);

Partial
Not submitted

(iii) Injection pressure;

not submitted

(iv) Annular pressure;

not submitted
injected fluid; and

(v) Rate, temperature and volume of

✓OK

(vi) Size of casing.

A. The discharger shall submit as part of the discharge plan, a plan for plugging and abandonment of an effluent disposal well or an in situ extraction well that meets the requirements of Subsections 3-109.C. and 5-101.C. for protection of ground water. If requested, a revised or updated abandonment plan shall be submitted for approval prior to closure.

B. Prior to abandonment of a well used in an effluent disposal or in situ extraction operation, the well shall be plugged in a manner which will not allow the movement of fluids through the well bore out of the injection zone or between other zones of ground water. Cement plugs shall be used unless a comparable method has been approved by the director for the plugging of in situ extraction wells at that site.

C. Prior to placement of the plugs, the well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom; either by circulating the mud in the well at least once or by a comparable method approved by the director.

D. Placement of the plugs shall be accomplished by one of the following:

1. The Balance Method; or
2. The Dump Bailer Method; or
3. The Two-Plug Method; or
4. An equivalent method with the approval of the

director.

E. The following shall be considered by the director in determining the adequacy of a plugging and abandonment plan.

1. The type and number of plugs to be used;
2. The placement of each plug, including the elevation of the top and bottom;
3. The type, grade and quantity of cementing slurry to be used;
4. The method of placement of the plugs;
5. The procedure to be used to plug and abandon the well; and
6. Such other factors that may affect the adequacy of the plan.

F. The discharger shall retain all records concerning the nature and composition of injected fluids until five years after completion of any plugging and abandonment procedures.



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONY ANAYA
GOVERNOR

December 15, 1986

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501-2088
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Alan W. Ralston
Apollo Oil Company
P. O. Box 1737
Hobbs, New Mexico 88240

RE: Discharge Plan GW-36
Apollo Oil Company
State "E" Tract 18
Wells #21 and #22

Dear Mr. Ralston:

The ground water discharge plan (GW-36) for the Apollo Oil Company State "E" Tract 18 wells #21 and #22 Class I effluent (non-hazardous) injection wells, and associated surface facilities located in the NE/4 of Section 2, Township 17 South, Range 36 East (NMPM), Lea County, New Mexico, is hereby approved with the following provisions:

1. To prevent corrosion and provide maximum protection for the casing, injection shall be through plastic lined tubing with a packer set no more than 100 feet from the bottom of the long-string casing.
2. The casing-tubing annulus shall be filled with an inert fluid, and a minimum pressure of 100 psi maintained pursuant to WQCC 5-206.B.2.
3. Continuous monitoring devices shall be installed to provide a record of injection pressure (vacuum), flow rate, flow volume and annular pressure, pursuant to N.M. WQCC 5-207.B.2. Such devices shall be installed prior to injection of any industrial effluent.
4. Monthly reports of the disposal of produced water shall be submitted in accordance with Rules 704 and 1120 of the Division Class II Rules and Regulations.
5. For wastes other than produced water, the operator shall keep and make available for inspection, records for each calendar month on the source, location, volume and type of waste, date of disposal and pipeline or hauling company that disposes of fluids or materials in the facility. Such records shall be

maintained for a period of two years from the date of disposal. This requirement is pursuant to WQCC 3-107.A. and is needed to track the types and volumes of waste received by the facility.

6. The operator shall provide a representative analysis of the injected fluids quarterly pursuant to WQCC 5-208.A.2(a). Constituents to be analyzed for will be determined by the type of effluent received and will be determined through coordination with the OCD and the operator when specific types and sources of effluent are identified.
7. Mechanical integrity for each effluent disposal well shall be demonstrated yearly during the life of the well pursuant to WQCC 5-207.A. and Apollo letter of November 25, 1986. The type of test shall be approved by the Division and witnessed by an OCD representative.
8. The injection well or system shall be equipped with a pressure limiting switch or acceptable substitute which will limit the wellhead pressure on the injection well to no more than the requested 1650 psi injection pressure.
9. The operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing, casing, or packer in the wells or the leakage of water from around said wells, or associated surface facility, and take such steps as may be timely and necessary to correct such failure or leakage pursuant to WQCC 5-208.A.1.
10. Pursuant to WQCC 5-208.2, the following quarterly reports will be submitted to the Director:
 - a) The analyses as required in (6) above.
 - b) Monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure.
 - c) Any well workover.

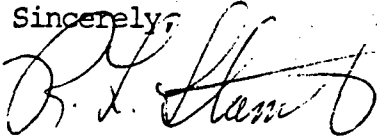
The discharge plan was submitted pursuant to Section 3-106 of the New Mexico Water Quality Control Commission Regulations. It consists of the application dated September 17, 1986, and a supplement dated November 25, 1986. It is approved pursuant to Section 3-109.C. which provides for the possible future amendments of the plan. Please be advised that the approval of this plan does not relieve you of liability should your operation result in actual pollution of surface or ground waters which may be actionable under other laws and/or regulations.

Please note that Section 3-104 of the regulations requires that "when a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3-107.C., you are required to

notify the Director of any facility expansion or process modification that would result in any change in the discharge of water quality or volume. You are further required to notify the Director prior to the receipt of any industrial effluent.

On behalf of the staff of the Oil Conservation Division, I wish to thank you and your staff for your cooperation during this discharge plan review.

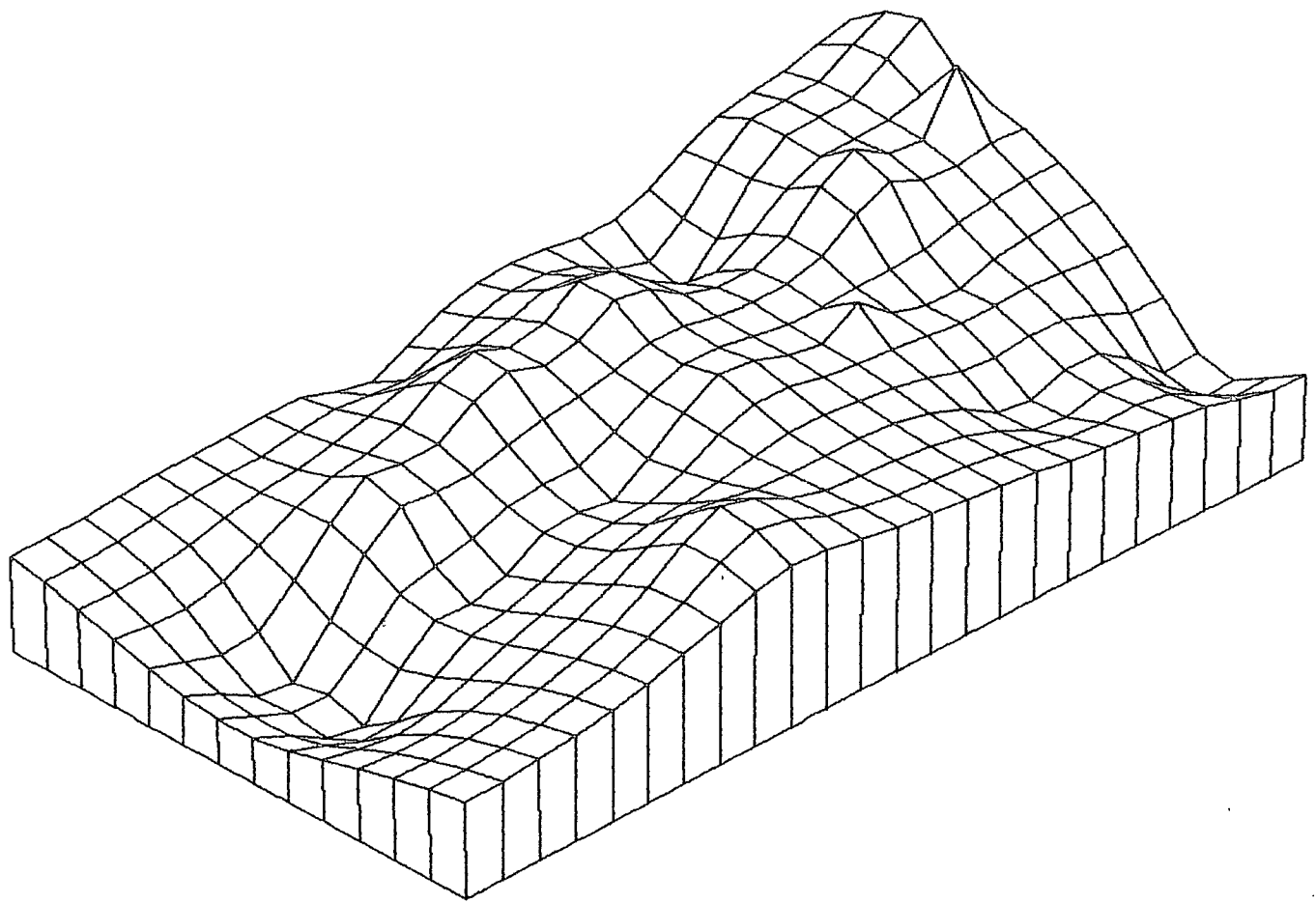
Sincerely,

A handwritten signature in dark ink, appearing to read "R. L. Stamets", written over a horizontal line.

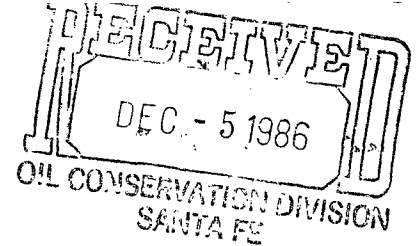
R. L. STAMETS
Director

RLS:RCA:dp

cc: OCD, Hobbs
Joe Ramey, Hobbs
James E. Snipes, Lovington



Top of the Abo



NEW MEXICO OIL CONSERVATION COMMISSION

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR				ADDRESS			
Apollo Oil Company				Box 1737, Hobbs, N.M. 88240			
REPORT OF	FIRE	BREAK	SPILL	LEAK XX	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY XX	PIPE LINE	GASO PLNT	OIL RFY	OTHER*
NAME OF FACILITY C. S. Caylor							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)				E/2 NW/4	SEC. 6	TWP. 17S	RGE. 37E COUNTY Lea
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK				Approximately one mile southwest of the Southern Union Refinery.			
DATE AND HOUR OF OCCURENCE				11-19-86 3:00 P.M.	DATE AND HOUR OF DISCOVERY 11-19-86 4:00 P.M.		
WAS IMMEDIATE NOTICE GIVEN?		YES X	NO	NOT RE-QUIRED	IF YES, TO WHOM Oil Conservation Division		
BY WHOM				DATE AND HOUR			
Apollo Oil Company				11-20-86 1:00 P.M.			
TYPE OF FLUID LOST				Oil		QUANTITY OF LOSS 24 bbls. VOLUME RE- 14 bbls. COVERED	
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO XX	QUANTITY			
IF YES, DESCRIBE FULLY**							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**							
Leak in the sump drain line; repaired it and blocked it off.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**							
Oil leaked into the area inside the fence at the Tank Battery; vacuum truck called to vacuum up oil. Covered the area with sand.							
DESCRIPTION OF AREA		FARMING		GRAZING		URBAN	
SURFACE CONDITIONS		SANDY XX		SANDY LOAM		CLAY	
				ROCKY		WET	
				DRY		SNOW	
OTHER* Inside the fenced T.B.							
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**							
Clear, 70°.							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED		<i>Alvin W. Johnston</i>		TITLE		Owner	
						DATE 12-2-86	

*SPECIFY

**ATTACH ADDITIONAL SHEETS IF NECESSARY

Memo

From

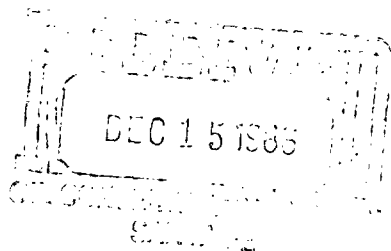
BONNIE PRICHARD
District I - UIC Coordinator

December 12, 1986

To Roger Anderson

As per your conversation with Eddie Seay, we are enclosing copies of the tests conducted on the Apollo Oil Company Wells No. State E Tract 18 SWD 21-N, 2-17-36 and State E Tract 18 SWD 22-G, 2-17-36.

If you need further information, please advise.



Oil Conservation Division
PO Box 1980, Hobbs, New Mexico 88240

OIL CONSERVATION DIVISION
CASING--BRADENHEAD TEST

Upella Oil Co Pool/FM Also 8330-9000'
Unit
Case Name State E 1/8 S W 4 Well # 22 Letter A Sec 2 Twp 17 Rge 36
Footage _____ Inj. Press Limit 1650 Order # R-6461

Test Date 9/9/86 Oper. Rep. Alan Ralston OCD Rep. EWS

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	<u>13 3/8</u>	<u>266'</u>	<u>275sf</u>	<u>0</u>	
	INTERMEDIATE	<u>9 5/8</u>	<u>3287'</u>	<u>300sf</u>	<u>0</u>	
	PRODUCTION	<u>5 1/2</u>	<u>8330'</u>	<u>835sf</u>	<u>0</u>	
	TUBING	<u>2 3/8</u>	<u>8272'</u>	<u>Plv</u>	<u>14" Vac.</u>	

1985
OK to 835 ad
OK to 835 ad
2482 ad

If well is on Vacuum: SI 9 Min. Tbg Press 14" Csg: Vacuum ☒ Static
Test
Approximately how many hours a day is the well used _____ Reviewed by: BT
Remarks 1982- ran casing log to 8150' perf'd at 3700' & 293 x 150
well not in use at this time ok

Test Date _____ Oper Rep. _____ OCD Rep. _____

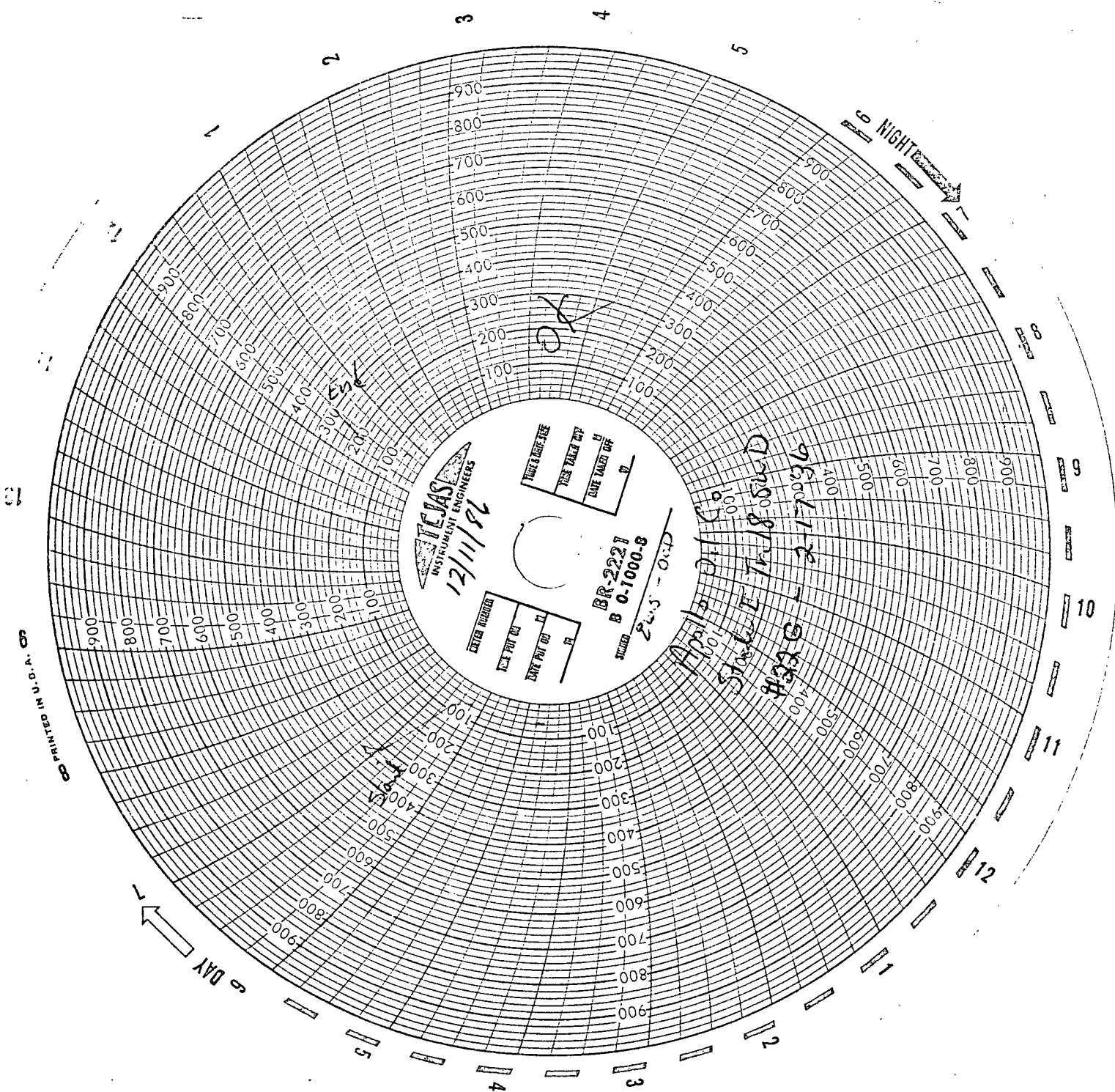
TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE					
	INTERMEDIATE					
	PRODUCTION					
	TUBING					

If well is on Vacuum: SI _____ Min. Tbg Press _____ Csg: Vacuum _____ Static _____
Approximately how many hours a day is the well used _____ Test Reviewed by: _____
Remarks: _____

Test Date _____ Oper Rep. _____ OCD Rep. _____

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE					
	INTERMEDIATE					
	PRODUCTION					
	TUBING					

If well is on Vacuum: SI _____ Min Tbg. Press _____ Csg: Vacuum _____ Static _____
Approximately how many hours a day is the well used _____ Test Reviewed by: _____
Remarks _____



OIL CONSERVATION DIVISION
CASING--BRADENHEAD TEST

OPERATOR: Apello & Co. Pool/FM Uho
Lease Name State & Tract 18 S 1/4 Well # 7 Unit Letter B Sec 2 Twp 17 Rge 36
Footage 1672 Inj. Press Limit 1672 Order # 1-5855

Test Date 11-27-85 Oper. Rep. Jesse OCD Rep. Jyle

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	13 3/8	275'	275' OK	0	
	INTERMEDIATE	9 5/8	3300'	300' OK	350	Blod 15 sec to 280 OK 1/4"
	PRODUCTION	*7	8391'	550' OK	100	Air to Casing 1 1/4 Min 1/4"
	TUBING	2 1/2	8367'	OK	9" Vac	

19 87
PT
0.41
30 sec to air
220
slow
9 30 sec to 0
25"
vac

If well is on Vacuum: SI 20 Min. Tbg Press 9" vac Csg: Vacuum ☒ Static ☐
Approximately how many hours a day is the well used _____ Test Reviewed by: _____

Remarks 117 Bbl/day after 20 min SI everything the same
* 1979 Re-cement 70

Test Date 9/9/88 Oper. Rep. Alan Rabston OCD Rep. Eurs

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	13 3/8	275'	275' OK	0	
	INTERMEDIATE	9 5/8	3300'	300' OK	0	
	PRODUCTION	7	8391'	550' OK	0	
	TUBING	2 1/2	8367'	OK	8" Vac	

If well is on Vacuum: SI ? Min. Tbg Press 8" Csg: Vacuum ☒ Static ☐
Approximately how many hours a day is the well used _____ Test Reviewed by: BP

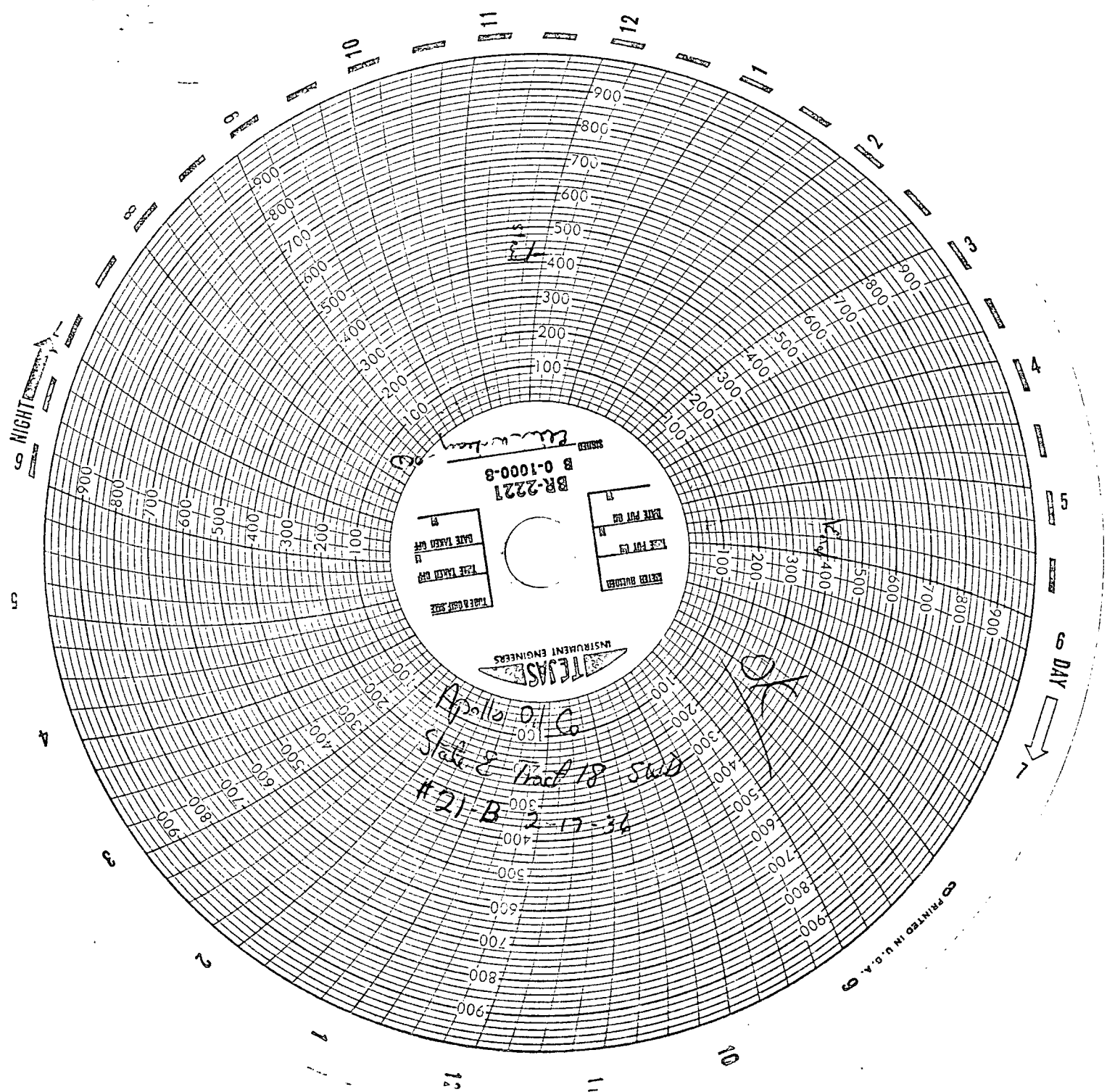
Remarks: Well not being used at this time
discharge plan attached

Test Date _____ Oper. Rep. _____ OCD Rep. _____

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE					
	INTERMEDIATE					
	PRODUCTION					
	TUBING					

If well is on Vacuum: SI _____ Min Tbg. Press _____ Csg: Vacuum _____ Static _____
Approximately how many hours a day is the well used _____ Test Reviewed by: _____

Remarks _____



PRINTED IN U.S.A. - 9

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following proposed discharge plan has been submitted for approval to the Director of the Oil Conservation Division, State Land Office Building, P. O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-36) Apollo Oil Company, Alan Ralston, owner, P. O. Box 1737, Hobbs, New Mexico 88240, proposes to reclassify their State "E" Tract 18 Well No. 21 and Well No. 22 from Class II salt water disposal wells to Class I effluent disposal (non-hazardous) wells. The disposal facility is located in the NE/4 of Section 2, Township 17 South, Range 36 East (NMPM), Lea County, New Mexico. Up to 10,000 barrels (420,000 gallons) per day of produced water and/or non-hazardous refinery effluent will be disposed of through the two disposal wells into the Abo formation at a depth from 8300 to 9100 feet. Discharge concentrations are expected to range between 1200 and 45,000 mg/l total dissolved solids. The approximate total dissolved solids concentration of formation fluids is 45,000 mg/l. The discharge plan addresses current and proposed construction, operation and monitoring of the wells and associated surface facility, and provides a contingency plan in the event of spills, leaks and other unauthorized discharges to ground water. Protectable ground water most likely to be affected in the event of unauthorized discharge is at a depth of approximately 60 feet with a total dissolved solids concentration of approximately 892 mg/l.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him

S E A L

Exhibit A denotes the location of the only watercourse that would be affected in the event of a major spill, in excess of the capacity of the berm around the battery, or a rupture of the injection line. The feature is a depression locally referred to as a "buffalo wallow" with a size of approximately 5-8 acres and a capacity of around 80,000 barrels.

In the event of a spill due to equipment malfunction or line rupture, the system will be shut down until repairs are made and vacuum trucks will be employed to pick up any injection fluid spilled.

The entire system will be physically checked by company personnel twice daily. Injection pressures and annular pressure of the wells will be noted and any abnormalities reported immediately. Mechanical Integrity Tests will be conducted every five years, or at intervals required by the Division, by pressuring the tubing-casing annulus. Volumes injected in the wells will be continually metered and the meter read twice daily. Injection rates will be calculated from these daily readings. Apollo does not anticipate installing continuous metering equipment to record injection pressures and annular pressures at the wells since the twice a day visual inspections should be adequate. However, if the Division requires this in the final Discharge Plan, then eight-day recording meters will be installed at each well.

In the event of a well failure, that well will be shut-in immediately and will not be subject to injection until repairs are made.

The surface facility, Exhibit B, will comprise three tanks: a 750-barrel receiving tank, a 500-barrel injection tank, and a 300-barrel tank for collecting oils, sludges, and tank bottoms which may enter the system. Industrial effluent will enter the system via pipeline to the 750-barrel tank. This tank will have a high level activating float which will be connected to a valve on the pipeline and on the line from the truck terminal. If the fluid level reaches this critical height, then all lines coming into the tank will close; thereby preventing overflow of the receiving tank.

From the receiving tank, the effluent will siphon through a water leg to the 500-barrel injection tank. A high level switch will activate the pump and a low level switch will shut down the pump. Any oils, sludges, etc., will be skimmed off as needed and will be disposed of through Pollution Control.

Line valves are in place at each disposal well which gives Apollo the flexibility of injecting into either or both wells. Lines can be tested for leaks by closing both valves and pressuring the disposal line to approximately ten pounds. Apollo will test the

line prior to injecting any industrial effluent and yearly thereafter. The injection lines are four inch PVC and not subject to corrosion.

Injected fluids will enter the Abo reef well below the water-oil contact. It is anticipated that the fluids will migrate within the reef in a circular pattern, mixing with the natural fluids in the reef. Overall, injection in the reef at the Lovington Abo and Vacuum Abo has been greater than withdrawals. Water from trucking operations, from other formations in the area, and for several years from the Southern Union Refinery have more than surpassed the withdrawal of oil from the reservoirs. The Abo reef continues to be an excellent disposal zone despite this. Apollo would anticipate that the fluid levels would rise appreciably in the wells, perhaps to a level of 4000 feet, during maximum injection but not to the extent of requiring pressure to inject the fluids.

The trucking terminal will consist of up to six inlet points. Each point will be secured with a lock and only authorized truckers will be issued a key. A high level shut-down valve will be installed on the inlet line from the truck terminal which will close if the fluid level in the receiving tank reaches the critical height.

Mechanical integrity tests will be conducted on the wells by December 5, 1986. Pressure will be applied on the annular space between the long string of casing and the injection tubing and will establish the integrity of the casing, tubing and packers in the wells.

The Hobbs District Office will be notified prior to conducting the mechanical integrity tests so that they may witness the tests and results will be immediately submitted to the Division's Santa Fe office. After the December initial test, yearly mechanical tests will be conducted on the wells.

Exhibit C is a revised wellbore arrangement of Well #21. The original Exhibit for this well indicated a cement top of 8250 feet on the long string. An Acoustic Freepipe Locator Log run on January 30, 1979, indicated cement to 4814 feet. The well is essentially cemented from 8391 feet to the base of the intermediate casing at 3300 feet. The intermediate casing does not have cement over the interval from 1500 feet to the surface casing shoe at 269 feet. There is no safe and reasonable way to cement this interval at this time. The risk involved in perforating two strings of casing and cementing through the perforations does not justify the risk of collapsing casing or ending up with perforations which cannot be effectively squeezed. The interval open is in the red bed section and it would be reasonable to assume that these red beds have sloughed off and have filled the area making it virtually impermeable to fluid

movement. Also, static fluid levels were shot on the wells on November 12, 1986, and levels were found at 8029 feet in Well #21 and at 7998 feet in Well #22. At maximum injection rates, Apollo would not anticipate fluid levels close to the 1500 foot level.

Samples of the injected fluid will be collected and analyzed as soon as possible and the results forwarded to the Division's Santa Fe Office. A quarterly analysis will be submitted thereafter.

EXHIBIT A

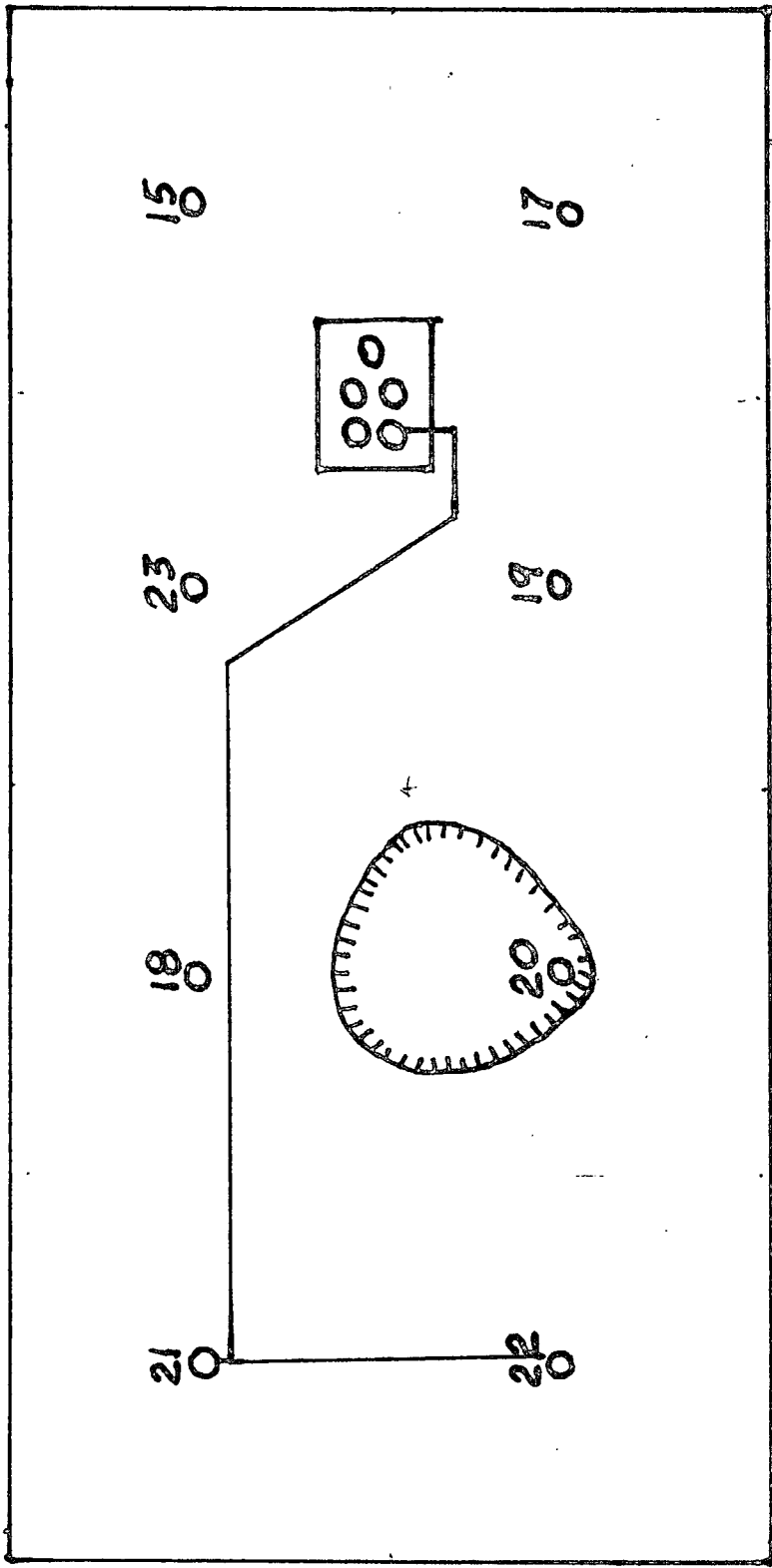
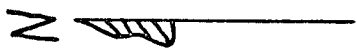


EXHIBIT B

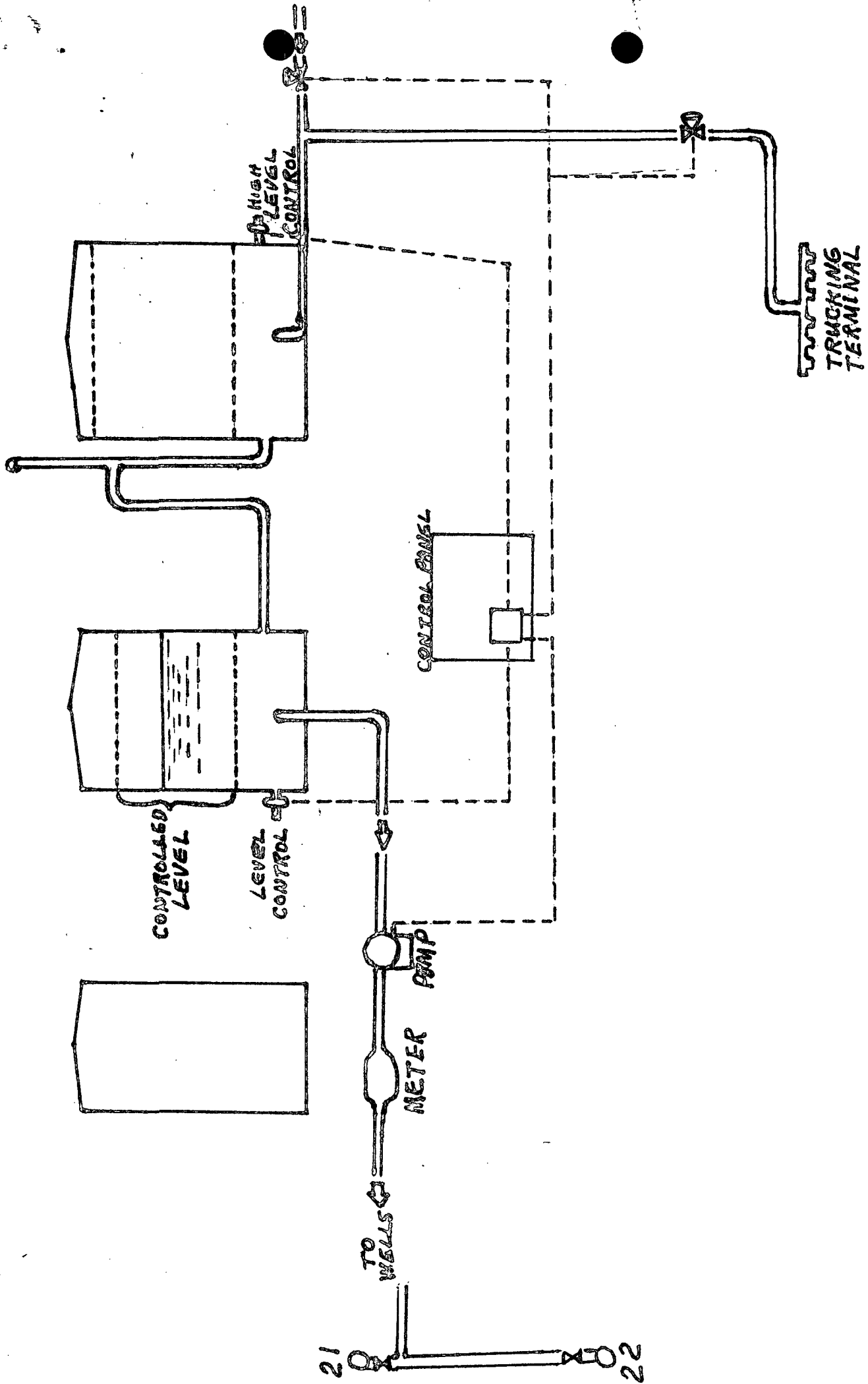


EXHIBIT C

LOVINGTON ABO FIELD
LEA COUNTY, NEW MEXICO
STATE "E" TRACT 18 NO. 21

PROPOSED WELLBORE ARRANGEMENT
FOR DISPOSAL

CALC. TOP CMT. 1500'

DV TOOL @ 2037'

13 3/8" 48# CSA 269'
W/ 275 SX. CMT.
TO SURFACE

CALC. TOP CMT. 2800'

9 5/8" 32# & 36# CSA 3300'
W/ 150 SX. CMT. AROUND
SHOE & 150 SX. CMT. ABOVE
DV TOOL

PERF. 4723-24 CMT. W/ 550 SX.
TOP CEMENT - TEMP. SURVEY
3375'

TOP CMT. ~~8450'~~ 4814' BY
FREEPIPE LOCATOR

SQ. PERFS 8287'-89' & 8301'-11'
SQ. PERFS 8330'-40'

3 1/2" TBG & GUIBERSON UNI-PKR.
'6' @ 8350'

7" 23# & 26# CSA 8391'
W/ 550 SX. CMT. W/ 4% GEL &
550 CU FT PERLITE
OPEN HOLE 8391'-9100'

2 JTS 3 1/2" TAILPIPE

T.D. 9100'

BEFORE EXAMINER NUTTER	
OIL CONSERVATION DIVISION	
Amoco	EXHIBIT NO. 4
CASE NO.	6356



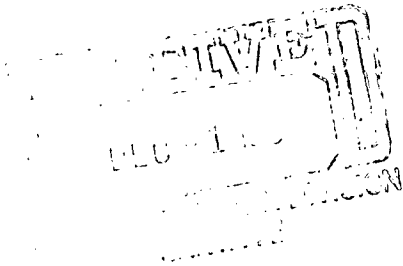
APOLLO OIL COMPANY

November 25, 1986

P. O. BOX 1737

HOBBS, NEW MEXICO 88240

505-393-2273



Re: State 'E' Tract 18
Wells #21 and #22
Discharge Plan Appli-
cation GW-36

New Mexico Oil Conservation Division
Box 2088
Santa Fe, New Mexico 87501-2088

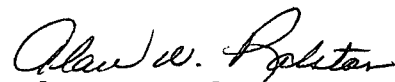
Attn: Roger C. Anderson

Dear Sir:

Attached are discussion sheets and exhibits, which you requested in your letter of November 4, 1986, to complete Discharge Plan Application GW-36.

Should you require further information, please advise.

Yours truly,


Alan W. Ralston
Owner

AWR:md
Attachments

cc: Hobbs-OCD
James E. Snipes, Lovington
File



P. O. BOX 1737
HOBBS, NEW MEXICO 88240
505-397-4611

November 17, 1986

State 'E' Tract 18, Well #21 fluid level as of 11-12-86.
Unit Letter B, Section 2-17S-36E
Fluid level was 259 joints from surface. 259 joints
x 31' per joint = a fluid level of 8029' from surface.



APOLLO OIL COMPANY

November 17, 1986

P. O. BOX 1737

HOBBS, NEW MEXICO 88240

505-397-4611

State 'E' Tract 18, Well #22 fluid level as of 11-12-86.
Unit Letter G, Section 2-17S-36E

Fluid level was 258 joints from surface. 258 joints
x 31' per joint = a fluid level of 7998' from surface.

NW
A

SKELLY
(PROPOSED)

APPLDZ
RIDGE
(PROPOSED)

APPLDZ
APPLDZ
(PROPOSED)

APPLD 19

AKAHO 1

SE
A

2000

3000

4000

5000

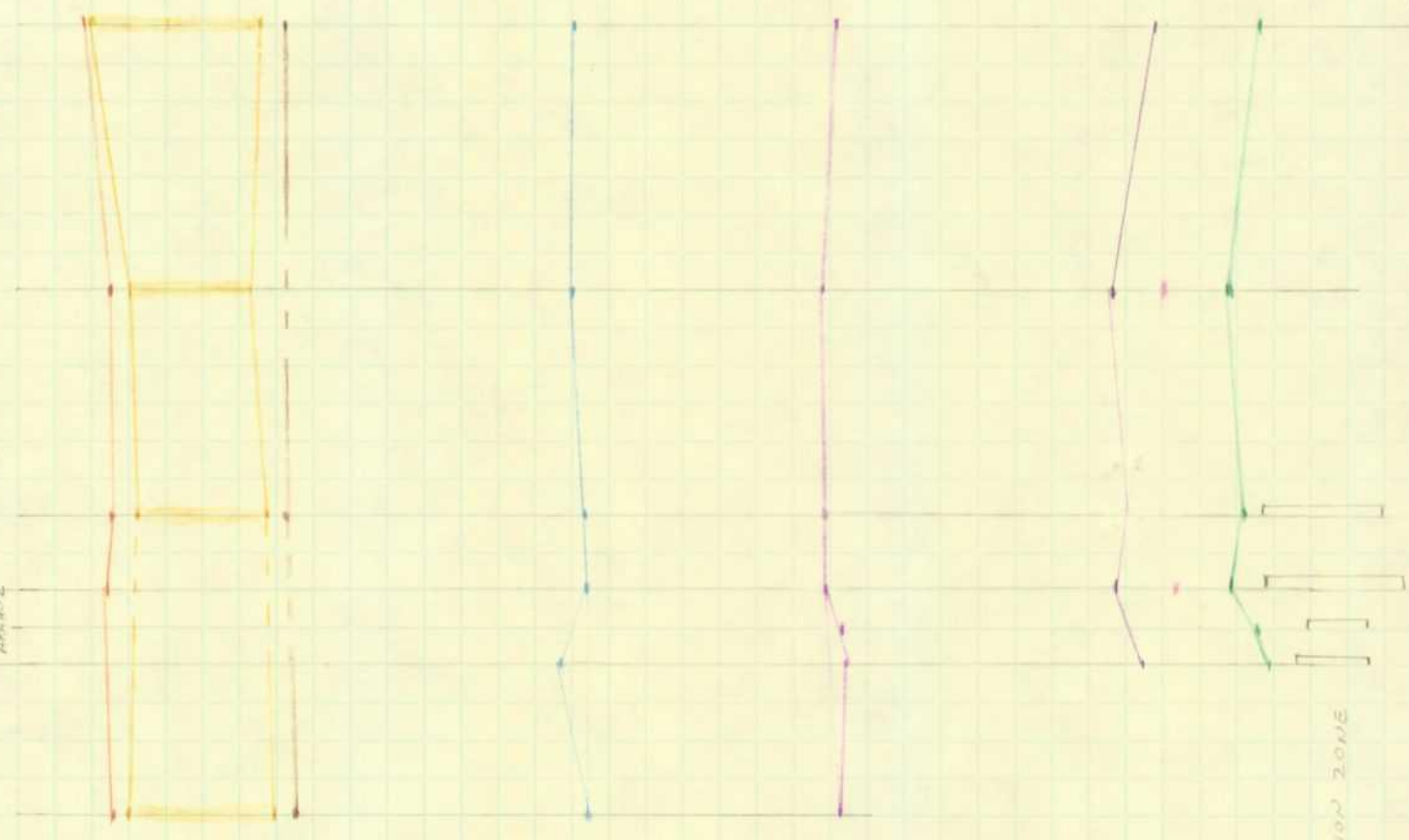
6000

7000

8000

GEOLOGIC CROSS SECTION
35T 165 R34E - 1 T175 R36E

INJECTION ZONE

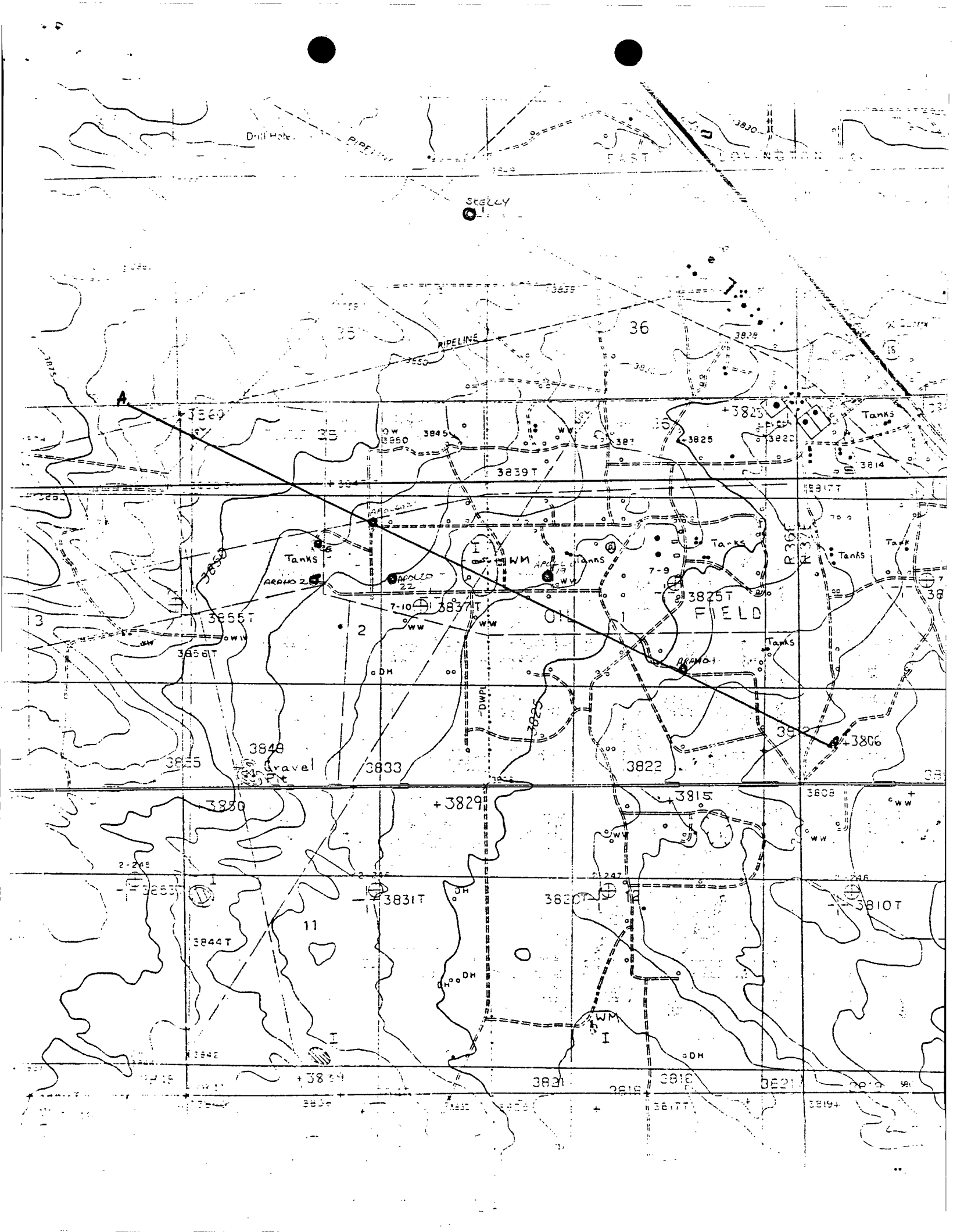


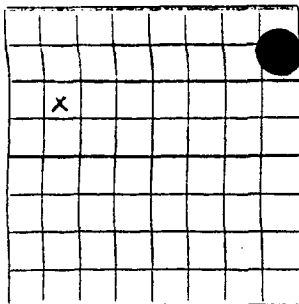
- ANHYDRITE
- SALT
- YATES
- SAN ANDRES
- GURUETA
- TUBBS
- DRINKARD
- ABO

1" = 2000'

1" = 1000'

7 12, 10 - 12, 782





ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

AUG 21 1953

WELL RECORD

WOB-30-111E

Mail to District Office, Oil Conservation Commission, to which Form C-101 was sent not later than twenty days after completion of well. Follow instructions in Rules and Regulations of the Commission. Submit in QUINTUPLICATE.

AREA 640 ACRES
LOCATE WELL CORRECTLY

Stanolind Oil and Gas Company

(Company or Operator)

State "E" Tract 18

(Lease)

Well No. 19, in SW/ 1/4 of NW/ 1/4, of Sec. 1, T-17-S, R-36-E, NMPM.

Lovington - Abo Pool, Lea County.

Well is 1650 feet from North line and 990 feet from West line

of Section 1. If State Land the Oil and Gas Lease No. is B-1553

Drilling Commenced June 23, 1953. Drilling was Completed July 29, 1953

Name of Drilling Contractor Lee Drilling Company

Address Tulsa, Oklahoma

Elevation above sea level at Top of Tubing Head 3832 The information given is to be confidential until

Not Confidential, 19

OIL SANDS OR ZONES

No. 1, from 8140 to 8480 No. 4, from to

No. 2, from to No. 5, from to

No. 3, from to No. 6, from to

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from to feet.

No. 2, from to feet.

No. 3, from to feet.

No. 4, from to feet.

CASING RECORD

SIZE	WEIGHT PER FOOT	NEW OR USED	AMOUNT	KIND OF SHOE	CUT AND PULLED FROM	PERFORATIONS	PURPOSE
13-3/8"	48#	New	251	Float	-	-	Surface String
9-5/8"	32.3-36	New	3286	Float	-	-	Intermediate Strg.
7"	23-26	New	8518	Float	-	8400-8450	Oil String

MUDDING AND CEMENTING RECORD

SIZE OF HOLE	SIZE OF CASING	WHERE SET	NO. SACKS OF CEMENT	METHOD USED	MUD GRAVITY	AMOUNT OF MUD USED
17-1/2"	13-3/8	266	332	Howco Plug	-	-
12-1/4"	9-5/8	3298	300	Howco Plug	-	-
8-3/4"	7"	8530	225 sx	Howco Plug	-	-

Perlite

RECORD OF PRODUCTION AND STIMULATION

(Record the Process used, No. of Qts. or Gals. used, interval treated or shot.)

Washed perforations with 500 gallons regular 15% acid.

Result of Production Stimulation See reverse side.

Depth Cleaned Out.

RECORD OF DRILL-STEM AND SPECIAL TESTS

If drill-stem or other special tests or deviation surveys were made, submit report on separate sheet and attach hereto.

TOOLS USED

Rotary tools were used from 0 feet to 8530 feet, and from feet to feet.
Cable tools were used from feet to feet, and from feet to feet.

PRODUCTION

Put to Producing July 28, 1953

OIL WELL: The production during the first 24 hours was 220 barrels of liquid of which 99 % was oil; % was emulsion; % water; and 1 % was sediment. A.P.I. Gravity 39.5°

GAS WELL: The production during the first 24 hours was M.C.F. plus barrels of liquid Hydrocarbon. Shut in Pressure lbs.

Length of Time Shut in

PLEASE INDICATE BELOW FORMATION TOPS (IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE):

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy. 2095	T. Devonian	T. Ojo Alamo	
T. Salt 2200	T. Silurian	T. Kirtland-Fruitland	
B. Salt 2850	T. Montoya	T. Farmington	
T. Yates	T. Simpson	T. Pictured Cliffs	
T. 7 Rivers	T. McKee	T. Menefee	
T. Queen	T. Ellenburger	T. Point Lookout	
T. Grayburg	T. Gr. Wash	T. Mancos	
T. San Andres 4594	T. Granite	T. Dakota	
T. Glorieta 5950	T.	T. Morrison	
T. Drinkard 7796	T.	T. Penn.	
T. Tubbs 7535	T.	T.	
T. Abo 8140	T.	T.	
T. Penn.	T.	T.	
T. Miss.	T.	T.	

FORMATION RECORD

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	1152	1152	Red Bed				show of water. FBHP - 1195 to 2840. 30 minute SIBHP 3075 psi.
1152	2017	865	Red Bed and Sand				
2017	2168	151	Anhy. Gyp and Sand				
2168	2600	432	Shells and Salt				D.S.T. #2
2600	2825	225	Salt, Anhy. & Shells				
2825	3100	275	Anhy. & Salt Breaks				8451 to 8530 - Tool open 4 hours. No fluid. Reversed out 15 barrels oil and gas cut mud, 21 barrels of oil, 84 barrels of salt water. FBHP 320 to 2980. 30 minute SIBHP 2980 psi.
3100	3156	56	Anhydrite				
3156	3278	122	Anhy. & Gyp				
3278	3803	525	Anhy. and Lime				
3803	4502	699	Lime				
4502	4764	262	Sand and Lime				
4764	8530	3766	Lime				
			D.S.T. #1				
8250 to 8450 - Tool open 2-1/2 hours, 1" bottom choke, 5/8" surface choke. Gas to surface in 15 minutes, mud to surface in 18 minutes. Oil to surface in 25 minutes. Cleaned to pit for 5 minutes. Flowed 75 barrels oil first hour, 75 barrels 2nd hour. Flowing surface pressure 300 psi. Reversed out 81 barrels of oil. No							

ATTACH SEPARATE SHEET IF ADDITIONAL SPACE IS NEEDED

I hereby swear or affirm that the information given herewith is a complete and correct record of the well and all work done on it so far as can be determined from available records.

August 19, 1953

Company or Operator Stanolind Oil and Gas Co. Address Box 68 - Hobbs, New Mexico
Name J. C. K. [Signature] Position or Title Field Superintendent

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

SEC. 35

WELL RECORD

Mail to District Office, Oil Conservation Commission, to which Form C-101 was sent not later than twenty days after completion of well. Follow instructions in Rules and Regulations of the Commission. Submit in QUINTUPLICATE.

AREA 640 ACRES
LOCATE WELL CORRECTLY

Skelly Oil Company

(Company or Operator)

Mexico #Yⁿ

(Lease)

Well No. 1, in NE $\frac{1}{4}$ of NE $\frac{1}{4}$, of Sec. 35, T. 16S, R. 36E, NMPM.

Lovington-Paddock

Pool,

Lea

County.

Well is 660' feet from North line and 330' feet from East lineof Section 35. If State Land the Oil and Gas Lease No. is _____Drilling Commenced May 15, 1955 Drilling was Completed June 13, 1955Name of Drilling Contractor D-K Drilling CompanyAddress Midland, TexasElevation above sea level at Top of Tubing Head 3856' D.F. The information given is to be kept confidential untilNot Confidential, 19____

OIL SANDS OR ZONES

No. 1, from 6129' to 6280' No. 4, from _____ to _____

No. 2, from _____ to _____ No. 5, from _____ to _____

No. 3, from _____ to _____ No. 6, from _____ to _____

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from _____ to _____ feet.

No. 2, from _____ to _____ feet.

No. 3, from _____ to _____ feet.

No. 4, from _____ to _____ feet.

CASING RECORD

SIZE	WEIGHT PER FOOT	NEW OR USED	AMOUNT	KIND OF SHOE	CUT AND PULLED FROM	PERFORATIONS	PURPOSE
8-5/8"	24# & 32#	New	2124'	Float			Surface
5-1/2"	14#-15.5#-17#	New	6130'	Float			Production

MUDDING AND CEMENTING RECORD

SIZE OF HOLE	SIZE OF CASING	WHERE SET	NO. SACKS OF CEMENT	METHOD USED	MUD GRAVITY	AMOUNT OF MUD USED
11"	8-5/8"	2105'	975	Halliburton		
7-7/8"	5 1/2"	6129'	465	Halliburton		

RECORD OF DRILL-STEM AND SPECIAL TESTS

If drill-stem or other special tests or navigation surveys were made, submit report in separate sheet and attach hereto

TOOLS USED

Rotary tools were used from 0 feet to 6280 feet, and from feet to feet.
Cable tools were used from feet to feet, and from feet to feet.

PRODUCTION

Put to Producing June 12, 1955

OIL WELL: The production during the first 24 hours was 156 barrels of liquid of which 100% was oil; % was emulsion; % water; and % was sediment. A.P.I. Gravity 33.1

GAS WELL: The production during the first 24 hours was M.C.F. plus barrels of liquid Hydrocarbon. Shut in Pressure lbs.

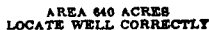
Length of Time Shut in

PLEASE INDICATE BELOW FORMATION TOPS (IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE):

Southeastern New Mexico			Northwestern New Mexico		
T. Anhy. 2096'	T. Devonian	T. Ojo Alamo	T. Kirtland-Fruitland		
T. Salt. 2194'	T. Silurian	T. Farmington	T. Pictured Cliffs		
B. Salt. 2991'	T. Montoya	T. Menefee	T. Point Lookout		
T. Yates. 3117'	T. Simpson	T. Mancos	T. Dakota		
T. 7 Rivers	T. McKee	T. Morrison	T. Penn		
T. Queen	T. Ellenburger				
T. Grayburg	T. Gr. Wash.				
T. San Andres. 4676'	T. Granite				
T. Glorieta. 6042'					
T. Drinkard					
T. Tubbs					
T. Abo					
T. Penn.					
T. Miss					

FORMATION RECORD

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0'	2096'	2096'	Caliche, Red Bed & Shells				
2096'	2194'	98'	Anhydrite				
2194'	2991'	797'	Salt & Anhydrite				
2991'	3117'	126'	Lime, Sand & Anhydrite				
3117'	4676'	1559'	Lime & Sand				
4676'	6280'	1604'	Lime				



Santa Fe, New Mexico

ORIGINAL

WELL RECORD

MAR 10 1954

OIL CONSERVATION COMMISSION

HORRE-OFFICE

Mail to District Office, Oil Conservation Commission, to which Form C-101 was sent not later than twenty days after completion of well. Follow instructions in Rules and Regulations of the Commission. Submit in QUINTUPLICATE.

The Ohio Oil Company
(Company or Operator)

State B 4286 "A"

Well No. 1, in NE $\frac{1}{4}$ of NW $\frac{1}{4}$, of Sec. 2, T. 17 S, R. 36 E, NMPM.

Lovington-Abo

Pool.

Lea

...County.

Well is 2310 feet from West line and 990 feet from North line

of Section 2 If State Land the Oil and Gas Lease No. is B-4286

Drilling Commenced December 12, 1953 Drilling was Completed February 8, 1954

Name of Drilling Contractor..... Company tools, Rig #2

Address..... Hobbs, New Mexico

Elevation above sea level at Top of Tubing Head..... The information given is to be kept confidential until

OIL SANDS OR ZONES

No. 1, from _____ to _____ No. 4, from _____ to _____

No. 2, from _____ to _____ No. 3, from _____ to _____

No. 3, from _____ to _____ No. 6, from _____ to _____

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from _____ to _____ feet.

No. 2, from to feet.

No. 3, from _____ to _____ feet.

No. 4, from to feet

CASING RECORD

SIZE	WEIGHT PER FOOT	NEW OR USED	AMOUNT	KIND OF SHOE	CUT AND PULLED FROM	PERFORATIONS	PURPOSE
13-3/8"	48	New	375'	Baker guide shoe			
9-5/8"	36	New	3330' 3"	Baker differential collar			
5-1/2"	17	New	8572' 11"	"Baker "	float "	& guide shoe	
2-3/8"	4.7	New	8505' 3"				

MUDDING AND CEMENTING RECORD

SIZE OF HOLE	SIZE OF CASING	WHERE SET	NO. SACKS OF CEMENT	METHOD USED	MUD GRAVITY	AMOUNT OF MUD USED
17½"	13-3/8"	396	350	B J Cementing Co.		
12"	9-5/8"	3348	1750	B J Cementing Co.		
8-3/4"	5-1/2"	8530	1350	B J Cementing Co.		
	2-3/8"	8165		torp. end.		

RECORD OF PRODUCTION AND STIMULATION

(Record the Process used, No. of Qts. or Gals. used, interval treated or shot.)

Washed w/750 gallon acid before testing, after acid 528 BOPD, on 22/64" choke.

Perforated tbx. from 8444' to 8468' w/6 shots per ft. 168 - 1/2" holes.

Acidized thru perforation in 5½" casing from 8440' to 8468' w/750 gal. mud acid.

Result of Production Stimulation.

..Depth Cleaned Out

RECORD OF DRILL-STEM AND SPECIAL TESTS

If drill-stem or other special tests or deviation surveys were made, submit report separate sheet attach hereto

TOOLS USED

Rotary tools were used from surface feet to TD 8534' feet, and from feet to feet.
Cable tools were used from feet to feet, and from feet to feet.

PRODUCTION

Put to Producing February 13, 1954

OIL WELL: The production during the first 24 hours was 528 barrels of liquid of which 100 % was oil; % was emulsion; % water; and % was sediment. A.P.I.

Gravity 40.2

GAS WELL: The production during the first 24 hours was M.C.F. plus barrels of liquid Hydrocarbon. Shut in Pressure lbs.

Length of Time Shut in

PLEASE INDICATE BELOW FORMATION TOPS (IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE):

Southeastern New Mexico			Northwestern New Mexico		
T. Anhy.			T. Devonian		T. Ojo Alamo
T. Salt			T. Silurian		T. Kirtland-Fruitland
B. Salt			T. Montoya		T. Farmington
T. Yates			T. Simpson		T. Pictured Cliffs
T. 7 Rivers			T. McKee		T. Menefee
T. Queen			T. Ellenburger		T. Point Lookout
T. Grayburg			T. Gr. Wash		T. Mancos
T. San Andres	4525		T. Granite		T. Dakota
T. Glorieta	6095		T. Padlock	6160	T. Morrison
T. Drinkard			T.		T. Penn
T. Tubbs	7670		T.		
T. Abo	8350		T.		
T. Penn			T.		
T. Miss			T.		

FORMATION RECORD

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	401	401	Surface sands, Red Rocks.				
401	3028	2627	Red Beds, Shale, Anhy., Salt.				
3028	4275	1247	Anhydrite, Lime.				
4275	4565	290	Anhy., Lime, Shale, Salt, Sand.				
4565	4900	335	Lime.				
4900	5135	235	Dolomite, Lime.				
5135	5560	425	Lime.				
5560	5865	305	Lime, Dolo., Sand.				
5865	7783	1918	Lime, Dolomite.				
7783	8534	751	Lime, Dolomite, Shale.				

No. Copies Received

DISTRIBUTION

	NO. FURNISHED
Operator	✓
State Ge.	✓
State Land Office	✓
Transporter	✓
U. S. G. S.	✓
File	✓

ATTACH SEPARATE SHEET IF ADDITIONAL SPACE IS NEEDED

I hereby swear or affirm that the information given herewith is a complete and correct record of the well and all work done on it so far as can be determined from available records.

Hobbs, New Mexico March 10, 1954

Company or Operator The Ohio Oil Company

Address P. O. Box 2107, Hobbs, New Mexico

Name J. H. Brown

Position or Title Superintendent



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

November 4, 1986

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501-2088
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Alan W. Ralston
Apollo Oil Company
P. O. Box 1737
Hobbs, N. M. 88240

RE: DISCHARGE PLAN APPLICATION GW-36
APOLLO OIL COMPANY
STATE "E" TRACT 18
WELLS #21 AND #22

Dear Mr. Ralston:

The Oil Conservation Division has received, and is in the process of reviewing the above-referenced discharge plan application. The plan submittal, dated September 17, 1986, was received by the OCD on September 22, 1986. Public notice has been issued and the comment period ends November 9, 1986. The following comments and requests for additional information are based on our review of the data provided in the plan and observations from a site inspection field trip conducted August 29, 1986. The discharge plan review and evaluation is pursuant to the requirement to bring the subject wells and their associated surface equipment into compliance with Part 3 (Discharges to Ground Water) and Part 5 (Underground Injection Control) of the New Mexico Water Quality Control Commission (WQCC) Regulations.

General Comments

Our review of the discharge plan, the review of the OCD well files for the subject wells, and the August site visit, indicate that submission of additional information as detailed below is required for further review. Specific monitoring, operating and reporting requirements need to be addressed and clarified.

Although the subject wells fulfill the requirements to be permitted as Class II SWD wells, their construction does not meet the requirements for Class I effluent disposal wells. Certain remedial work and corrective actions will be required prior to injection of any industrial effluent. A commitment to correct remaining deficiencies under a schedule of compliance after industrial effluent injection commences would be considered under limited circumstances.

Specific Comments

- 1) A general description of the geologic and hydrologic conditions was contained in the application. Specific maps and cross sections were omitted. However, in lieu of the submission of these items, the following references as researched by the OCD staff will be incorporated in your discharge plan where available and appropriate:
 - a. Sidney R. Ash, Ground-Water Conditions in Northern Lea County, Hydrologic Investigations Atlas HA-62, USGS, 1963, satisfies the requirement for maps and cross sections indicating the general vertical and lateral limits of all ground waters having 10,000 mg/l or less TDS within the area of review.
 - b. A cross section prepared by J. Bailey, OCD, using OCD well files, drillers logs and log files satisfies the requirement for maps and cross sections detailing the geology and geologic structure of the local area. A copy of this review will be placed in your discharge plan file.
- 2) Please supply the following additional information:
 - a. Locations of any watercourse or body of water within one mile of the discharge site that would be impacted by any accidental and/or unauthorized release of effluent on the surface.
 - b. Information on expected pressure changes, formation fluid displacement, and direction of movement of injected fluids in the injection zone.
 - c. Contingency plans for well failures or shut-ins to prevent movement of fluids to zones other than the approved injection zone.
- 3) A description of the surface facility and a monitoring system was submitted in the plan. Please submit the following information and clarifications:
 - a. A schematic or appropriate drawings of the surface facility from effluent receiving point to wellhead.
 - b. Location, schematics and plans for operation of continuous monitoring devices to be installed and used to provide a record of injection pressure (vacuum), flow rate, flow volume and annular pressures.
 - c. Contingency plans for any unauthorized release resulting from leaks or rupture of a flow line not contained by the proposed berms. What automatic flow shutdown devices will be employed? How will any small leaks be detected? How often will the system be physically checked?

- d. Plans and diagrams outlining the security system to prevent unauthorized disposal and/or operation.
 - e. What will be the disposition of fluids including oils, sludges and tank bottoms that may be received but cannot be injected?
- 4) As mentioned previously, the subject Class II SWD wells do not meet the more stringent Class I effluent disposal well construction requirements. The following are the minimum requirements for conversion of your Class II SWD wells to Class I effluent disposal (non-hazardous) wells and for associated surface facilities. Additional requirements may be identified and added based on an additional site inspection, test results, and/or public response following public notification. Please submit plans for compliance including expected dates of completion.

Not all items listed below need be completed before injection of industrial effluent. However, prior to such injection, those items listed in Section (a) below must be completed and the results evaluated by OCD prior to injection approval. The items listed in Section (b) below must be completed within six months of the date of any agreement by Apollo to receive such effluent. The items listed in Section (c) below will be performed from onset of injection throughout the period the well is used for injection of industrial effluent.

a. Prior to injection of any industrial effluent:

- 1. Static fluid level determination.
- 2. Mechanical Integrity Test.
- 3. Installation of continuous monitoring equipment to provide a record of injection pressure (vacuum), flow rate, flow volume, and pressure on the annulus.
- 4. An analysis of the fluid injected.
- 5. Well No. 21 will not be allowed to be used for injection of industrial effluent until 4.b.1, 4.b.2, and 4.b.3 below are completed. The well file indicates the production casing is cemented from 8391 to 8250 feet, and from 4723 to 3375 feet leaving the annulus from 4723 to 8250 uncemented. The driller's log places the top of the Abo at 8172 and in the uncemented portion of the annulus potentially allowing the injected fluids to communicate to other zones through the annulus.

b. Completed within six months:

- 1. Placement of cement in the annulus between the drilled hole and each string of casing extending from the bottom of the pipe to within the previous string of casing where such cement may not now be present.

2. A bond log or temperature survey verifying all casing is cemented so as to fulfill the requirement in b.1 above.
 3. Performance of a Mechanical Integrity Test after remedial work in b.1 above. Until successful completion of this MIT, all injection shall be on a vacuum.
 4. Automatic equipment shall be installed to interrupt the flow to the facility in the event of tank overflow.
 5. Any pits on the facility shall conform to the OCD "Guidelines".
- c. During the period the well is used for injection of industrial effluent:
1. Inject through plastic lined tubing with a packer set no more than 100 feet from the bottom of the long string casing.
 2. Surface equipment will be secured to prevent unauthorized operation.
 3. Surface equipment shall be maintained and have proper berms to contain any leaks or spills.
 4. Continuous monitoring of injection pressure (vacuum), flow rate, flow volume, and pressure on the annulus with a monthly summary report to the Division.
 5. A quarterly chemical analysis of the injected fluids for those constituents representative of fluid characteristics and required by OCD.

Enforcement Agreement

The wells proposed for reclassification can retain their Class II SWD permit and can continue to be used for produced water disposal pursuant to OCD Rules and Regulations. In the event you plan to receive industrial effluent for disposal prior to discharge plan approval, an enforcement agreement will need to be negotiated as OCD is prohibited from issuing temporary permits for Class I wells.

Prior to injecting any industrial effluent pursuant to such an agreement, the following will be required:

1. Static fluid level determination.
2. Mechanical Integrity Test.
3. Installation of surface monitoring equipment.
4. An analysis of the fluid injected.

5. Well No. 21 will not be allowed to be used for injection of industrial effluent until 4.b.1, 4.b.2., and 4.b.3 above are completed. The well file indicates the production casing is cemented from 8391 to 8250 feet, and from 4723 to 3375 feet, leaving the annulus from 4723 to 8259 uncemented. The driller's log places the top of the Abo at 8172 and in the uncemented portion of the annulus potentially allowing the injected fluids to communicate to other zones through the annulus.

During the period of an agreement, the following will be required:

1. Injection of fluids on a vacuum.
2. Continuous monitoring of injection pressure (vacuum), flow rate, flow volume, and pressure on the annulus with a monthly summary report to the Division.
3. A quarterly chemical analysis of the injected fluids for those constituents representative of fluid characteristics and required by OCD.

If you have any questions, please do not hesitate to call me at (505) 827-5885.

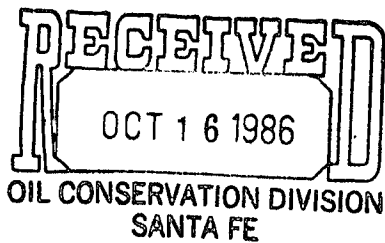
Sincerely,



ROGER C. ANDERSON
Environmental Engineer

RCA:dp

cc: Hobbs-OCD
James E. Snipes, Lovington



LAW OFFICES OF
JAMES E. SNIPES
A PROFESSIONAL CORPORATION
205 NORTH FIRST STREET
P. O. BOX 1565
LOVINGTON, NEW MEXICO 88260
(505) 396-3692

October 1, 1986

Apollo Oil Company
P. O. Box 1737
Hobbs, New Mexico 88240

Dear Sir:

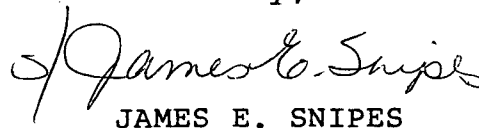
This office represents the City of Lovington. In response to your letter, without date and without signature, received September 26, 1986 by the City of Lovington, we need a bit more information.

In checking with the New Mexico Oil Conservation Division for more information, I discovered your notification involves a different township 6 miles to the west of the one you described and is for a type of authority by the division which does not presently exist.

As you know, the City of Lovington has a significant portion of its water wells in the area you are concerned with. Although the City does not wish to complicate your plans, I'm afraid the City does not have adequate information upon which to approve or object to your application. Therefore, please treat this letter as an objection to your plan. To that end, I am sending a copy of this letter to the New Mexico Oil Conservation Commission.

The City of Lovington will try to cooperate with you but we need information upon which to do it. Please forward this office complete copies of your application and plans as well as a reasonable description of the industrial effluents you plan to produce and dispose of in the subject well.

Sincerely,


JAMES E. SNIPES

JES/me

✓ cc: New Mexico Oil Conservation
Commission

Apollo well deficiencies

- # 21 1) Cement not circulated to Surface ^{WACC} 5-205.B.2
2) Movement of fluid may not be prevented
to other zones OGD - 702

a) No cement around 5 1/2 from

4723 to 8250 (3527 ft)

T. San Andres 4666

T. Gloria 5958

T. Darnhard 7861

T. Tubbs 7583

T. Abo 8172

Cement does not COVER ENTIRE

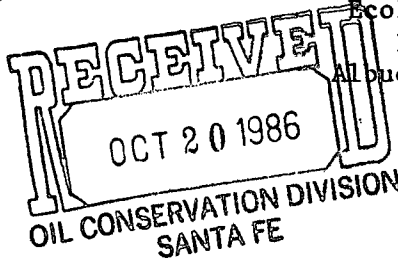
Abo ZONE

- # 22 1) Cement not circulated to Surf ^{WACC} 5-205.B.2
2) San Andres not covered



**UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE**

Field Supervisor
Ecological Services, USFWS
Post Office Box 4487
Albuquerque, New Mexico 87196



October 15, 1986

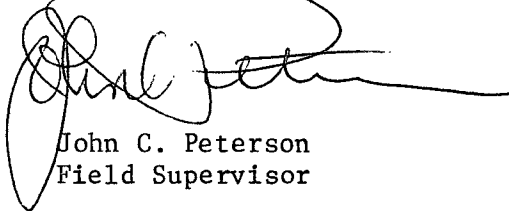
R. L. Stamets, Director
Oil Conservation Division
State of New Mexico
State Land Office Building
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. Stamets:

We have reviewed the proposed discharge plan for GW-36, Apollo Oil Company, Hobbs New Mexico. The facility is located in the NE 1/4 of Section 2, T17S, R36E, NMPM, Lea County. The discharge plan is for the disposal into two wells of up to 10,000 barrels per day of oil well produce water. We have not identified any resource issues of concern to our agency and have no objection to the discharge plan.

These comments represent the views of the Fish and Wildlife Service. Thank you for the opportunity to comment on the proposed plan. If you have any questions concerning our comments please contact Tom O'Brien at (505) 766-3966 or FTS 474-3966.

Sincerely yours,



John C. Peterson
Field Supervisor

cc:

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Health and Environment Department, Environmental Improvement Division, Santa Fe, New Mexico
Regional Administrator, Environmental Protection Agency, Dallas, Texas
Regional Director, FWS, Wildlife Enhancement, Albuquerque, New Mexico

Affidavit of Publication

STATE OF NEW MEXICO)
) ss.
COUNTY OF LEA)

Joyce Clemens being first duly sworn on oath deposes and says that he is Adv. Director of THE LOVINGTON DAILY LEADER, a daily newspaper of general paid circulation published in the English language at Lovington, Lea County, New Mexico; that said newspaper has been so published in such county continuously and uninterruptedly for a period in excess of Twenty-six (26) consecutive weeks next prior to the first publication of the notice hereto attached as hereinafter shown; and that said newspaper is in all things duly qualified to publish legal notices within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico.

That the notice which is hereto attached, entitled

Notice Of Publication

and numbered in the Court of Lea County, New Mexico, was published in a regular and entire issue of THE LOVINGTON DAILY LEADER and not in any supplement thereof, once each week on the same day of the week, for one (1)

consecutive weeks, beginning with the issue of

October 7, 1986

and ending with the issue of

19.....

And that the cost of publishing said notice is the sum of \$ 22.48

which sum has been (Paid) (Assessed) as Court Costs

Subscribed and sworn to before me this 22nd day of October, 1986

Notary Public, Lea County, New Mexico

My Commission Expires Sept. 28, 1990

LEGAL NOTICE NOTICE OF PUBLICATION STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following proposed discharge plan has been submitted for approval to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505)827-5800:

(GW-36) Apollo Oil Company, Alan Ralston, owner, P.O. Box 1737, Hobbs, New Mexico 88240, proposes to reclassify their State "E" Tract 18 Well No. 21 and Well No. 22 from Class II salt water disposal wells to Class I effluent disposal (non-hazardous) wells. The disposal facility is located in the NE/4 of Section 2, Township 17 South, Range 36 East (NMPM), Lea County, New Mexico. Up to 10,000 barrels (420,000 gallons) per day of produced water and/or non-hazardous refinery effluent will be disposed of through the two disposal wells into the Abo formation at a depth from 8300 to 9100 feet. Discharge concentrations are expected to range between 1200 and 45,000 mg/l total dissolved solids. The approximate total dissolved solids concentration of formation fluids is 45,000 mg/l. The discharge plan addresses current and proposed construction, operation and monitoring of the wells and associated surface facility, and provides a contingency plan in the event of spills, leaks and other unauthorized discharges to ground water. Protectable ground water most likely to be affected in the event of unauthorized discharge is at a depth of approximately 60 feet with a total dissolved solids concentration of approximately 892 mg/l.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN Under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico on this 30th day of September, 1986. To be published on or before October 10, 1986.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
R.L. STAMETS
Director

(SEAL)

Published in the Lovington Daily Leader October 7, 1986.

County of Bernalillo

THOMAS J. SMITHSON

being duly sworn declares and

says that he is NATL. ADV. MGR. of the Albuquerque Journal, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made or assessed as court costs; that the notice, a copy of which is hereto attached, was published in said paper in the regular daily edition,

for 1 times, the first publication being on the 9 day
of October, 1986, and the subsequent consecutive
publications on 11 12 13 14, 1986.

Sworn and subscribed before me, a Notary Public in and
for the County of Bernalillo and State of New Mexico,
this 7 day of October, 198...

OFFICIAL SEAL
CONNIE MONTOYA
NOTARY PUBLIC - STATE OF NEW MEXICO
Notary Public Filed with Secretary of State
My Commission Expires 4-28-23

PRICE 20.77

Statement to come at end of month.

ACCOUNT NUMBER C 80930



EDJ-15 (R-2/86)

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

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GIVEN under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico on this 30th day of September, 1986. To be published on or before October 10, 1986.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
s/R. L. STAMETS
Director

Journal, October 9, 1986

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, _____

Robert L. Summers

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not in a supplement thereof for a period

of _____

One _____ weeks.

Beginning with the issue dated

October 8, 19 86

and ending with the issue dated

October 8, 19 86

Robert L. Summers
Publisher.

Sworn and subscribed to before

me this 8 day of

October, 19 86

Vera Murphy
Notary Public.

My Commission expires _____

Nov. 14, 19 88

(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

—Wed., Oct. 8, 1986—Page 25

LEGAL NOTICE

OCTOBER 8, 1986

NOTICE OF

PUBLICATION

STATE OF NEW MEXICO

ENERGY AND MINERALS

DEPARTMENT

OIL CONSERVATION

DIVISION

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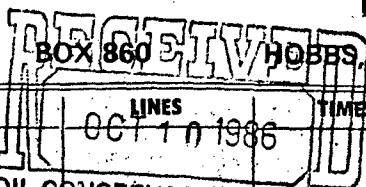
STATE OF NEW MEXICO
OIL CONSERVATION
DIVISION
R.L. STAMETS
Director

SEAL

5986

LEGAL PUBLICATION INVOICE

HOBBS DAILY NEWS-SUN



BOX 860 HOBBS, NEW MEXICO 88241-0860

505-393-2123

DATES PUBLISHED	LINES	TIMES	AMOUNT	TAX	TOTAL
October 8, 1986	OCT 10 1986		30.78	1.46	32.24

NAME:

State of New Mexico, Energy and Minerals Department

ACCOUNT NO: 1006800

ADDRESS:

P.O. Box 2088

CITY:

Santa Fe, N.M. 87501

STATE:

ZIP:

DESCRIPTION:

Apollo Oil Company reclassification for the State "E" Tract 18 Well No. 21 and Well No. 22.

(P)

Legal notices are charged as an accommodation and are payable upon receipt of this invoice.

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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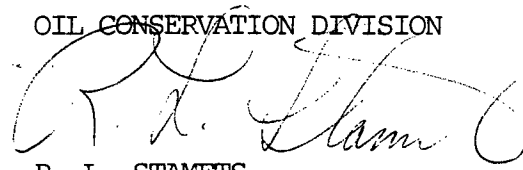
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STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

A handwritten signature in dark ink, appearing to read "R. L. Stamets", is written over the typed name.

R. L. STAMETS
Director

S E A L

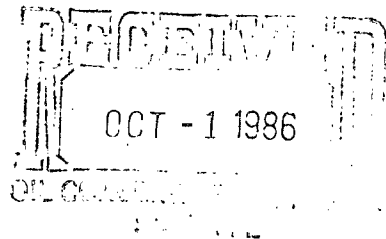


September 30, 1986

P. O. BOX 1737

HOBBS, NEW MEXICO 88240

505 393-2273



Re: State 'E' Tract 18
Wells #21 and #22
Section 2-17S-36E
Reclassification

Attached please find a corrected page to be inserted in the application for reclassification, dated September 17, 1986, for the subject wells.



APOLLO OIL COMPANY

P. O. BOX 1737
HOBBS, NEW MEXICO 88240
505 393-2273

This is to serve as notification of Apollo Oil Company's intent to convert their State "E" Tract 18 Well Nos. 21 and 22 located 660' N & 1650' E and 1650' N&E, respectively, Section 2, Township 17 South, Range 36 East, Lea County, New Mexico, from Salt Water Injection wells (Class II) to Effluent Disposal Wells (Class I). The discharge plan to cover this operation has been filed with the New Mexico Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501.

Copies of the plan may be obtained by calling the above number. Any objection to the plan should be forwarded to the Oil Conservation Division at the above address.

Mobil Prod. Texas & NM Inc.
Box 633
Midland, TX 79702

Cities Service Oil Company
Box 1919
Midland, TX 79701

Texaco USA
Box 728
Hobbs, NM 88240

Amerada
Box 2040
Tulsa, OK 74102

Marathon Oil Company
Box 552
Midland, TX 79702

Phillips Petroleum Company
4001 Penbrook
Odessa, TX 79762

Exxon
Box 1600
Midland, TX 79702

City of Lovington
City Manager

Apollo will dispose of up to 10,000 barrels per day of industrial effluent (non-hazardous) wastes in the Abo formation in the subject wells. The disposal zone will be from around 8300-9100 feet.



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505 393-2273

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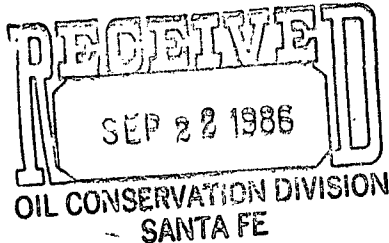
APOLLO OIL COMPANY

September 17, 1986

P. O. BOX 1737

HOBBS, NEW MEXICO 88240

505 393-2273



Re: State 'E' Tract 18
Wells #21 and #22
Section 2-17S-36E
Reclassification

Oil Conservation Division
Box 2088
Santa Fe, New Mexico 87504-2088

Attn: David G. Boyer

Dear Sir:

With this application, Apollo Oil Company is seeking to reclassify their State 'E' Tract 18 Well #21, located 660 feet from the North and 1650 feet from the East, and Well #22, located 1650 feet from the North and 1650 feet from the East, both in Section 2, Township 17 South, Range 36 East, Lea County, New Mexico, from a Class II salt water disposal well to a Class I effluent disposal well. Apollo further seeks a discharge plan approval for these effluent disposal wells.

The above wells were approved by Oil Conservation Division Orders No. R-5855 and R-6461 for Amoco Production Company. Apollo has purchased the State 'E' Tract 18 lease, including the disposal wells.

The proposed area of review is one-half mile, since this is the area of review required by the Oil Conservation Division for all salt water disposal wells. There is a total of nine wells, in addition to the two subject wells, within the area of review which penetrated the injection interval. The construction information on all but one of these was submitted as Exhibit No. 7 in Case No. 7009. A copy of this exhibit, plus the information on the other well, is attached. Two of the wells have been plugged and abandoned and schematic diagrams of these are included. Of the nine wells, five are producing oil wells from the Lovington Abo Pool, two are salt water disposal wells, and two are plugged and abandoned. All nine wells are cased, cemented or plugged in such a manner as to prevent the migration of fluid from the Abo formation to any other formation, and particularly into the Ogallala fresh water aquifer.

Apollo will continue to dispose of water produced from wells on the State 'E' Tract 18 lease. The system will also be open to anyone desiring to truck water to the system. A truck terminal with key and sensor system will be installed at the lease tank battery. If refinery effluent is disposed of, a pipeline from the refinery to

the tank battery will be installed. Although tanks will be regularly inspected and maintained, a fire wall of sufficient height to contain one-half of a day's disposal volume will be constructed and maintained at the battery. In the event of a tank or pump failure, the effluent will be retained within the fire walls around the battery.

The receiving tank at the battery is a 750 barrel tank with a water leg. Separation of any oil or sediments will occur in this tank. Water (effluent) will then transfer to a 500 barrel disposal tank. This 500 barrel disposal tank will be equipped with high-low shut-off switches which will activate a pump. This pump forces the water into the pipelines to the two disposal wells. Meters are installed downstream of the pumps and effluent will be continuously measured.

Apollo is presently disposing of around 600 barrels of produced water per day in the two disposal wells. A sample analysis of this water, obtained by Amoco, is attached. Total solids are indicated to be 45,740 mg/l. Possible sources of other effluent would be from the Southern Union Refinery located approximately one mile to the north. When this refinery was in operation, it generated around 6000 barrels per day. A sample of this effluent is not available at this time. However, a representative analysis should be available in their discharge plan approved by the OCD. Other minor sources would be spent acids and caustics used by operators and gasoline plants in the Lea County area.

Since it is known what the chemical composition of the produced waters are, Apollo does not propose to sample the effluent until such time as outside sources materialize. At that time, quarterly grab samples will be taken and analyzed for those constituents deemed appropriate by the OCD.

Apollo anticipates disposing of a maximum of 10,000 barrels of effluent per day through the two wells and into the Abo formation. The present volume of 600 barrels per day is being disposed of on vacuum with Well #21 indicating eight inches and Well #22 fourteen inches of vacuum. The wells should be capable of taking 10,000 barrels per day without pressure. However, a maximum authorized pressure of 1650 psi is requested. This is slightly less than the normal .2 psi per foot and should not result in any formation fracturing. No well stimulation is anticipated. However, should formation plugging be indicated, Apollo would most probably inject acid into the disposal stream to clean the open hole interval and the formation.

The only known source of fresh water in the area is from the Ogallala. The Ogallala is a large aquifer extending about 40 miles north and south and 20 miles west of this area. The depth to the base of the Ogallala is around 240 feet and the formation can be characterized as unconsolidate course sands and gravels. There is an Ogallala water well, which utilizes a windmill for pumping, located NW SW NE of Section 2, around 660 feet southeast of Well #21 and 660 feet northeast of Well #22. A sample analysis of water from this well is attached. Apollo proposes that this well be the monitor

well for this disposal system. A sample will be caught and analyzed every six months for those constituents deemed necessary by the OCD. Water movement in the Ogallala is generally to the southeast.

The Abo disposal zone has a thickness of 700± feet and is described as a gray-white to light brown, fine to medium sucrose dolomite. Porosity ranges from pin point to small vugs. Permeability is excellent, based on producing characteristics of wells and volumes of water disposed of in nearby Abo disposal wells. The areal extent of the Abo reef in this immediate area is unknown. However, some 46 wells were drilled in this pool indicating an extent of at least 1600 acres. Production from a similar Abo reef occurs in the Vacuum Field some 12 miles west of the Lovington Field. It is quite possible that the water bearing portion of the Abo reef extends throughout the area between the Lovington and Vacuum Fields. Disposal into the Abo reef at Lovington was initiated by Rice Engineering in the early 1970's and water is still being disposed of without pumping. So the Abo reef, in this area, has to be classified as an excellent disposal zone. Available engineering and geological data has been examined and there is no evidence of open faults or any other hydrologic connection between the disposal zone at around 8300-9100 feet and any underground source of drinking water. The character of the disposal zone and the mechanical integrity of the wells penetrating the zone can only lead to the conclusion that effluent injected into the Abo reef will be contained in the Abo reef. The reef is overlain by the Abo shale which effectively seals the Abo reef.

The disposal wells will be tested for mechanical integrity at least every five years. Yearly bradenhead tests have been conducted by the OCD on the subject wells since 1982 and 1983 and are attached. Mechanical integrity tests were conducted on the subject wells in 1984 as part of the Underground Injection Control program. These tests are also attached.

At the conclusion of operations, the wells will be plugged and abandoned in a manner satisfactory to the Hobbs District Office. A suggested plan at this time is as follows:

1. Pull tubing and packer and load hole with mud.
2. Install bridge plug above open hole and cap with 25 sacks cement.
3. Twenty five sack plugs inside the casing at top Paddock, San Andres, base and top salt, across shoe of surface pipe and at the surface.

Flooding potential at the tank and well sites is remote. The terrain is relatively flat and slopes gently to the southeast. There are several gentle draws which run through the area which effectively carry runoff during heavy thunderstorms. Tank battery and well locations have been elevated, with caliche pads, from six to twelve inches above the natural ground level.

Oil Conservation Division

Page Four

A letter of notification of the filing of this discharge plan has been forwarded by Certified Mail to all leasehold operators and the surface owner, copy attached.

Yours truly,

A handwritten signature in cursive script, appearing to read "Alan W. Ralston".

Alan W. Ralston

AWR:md

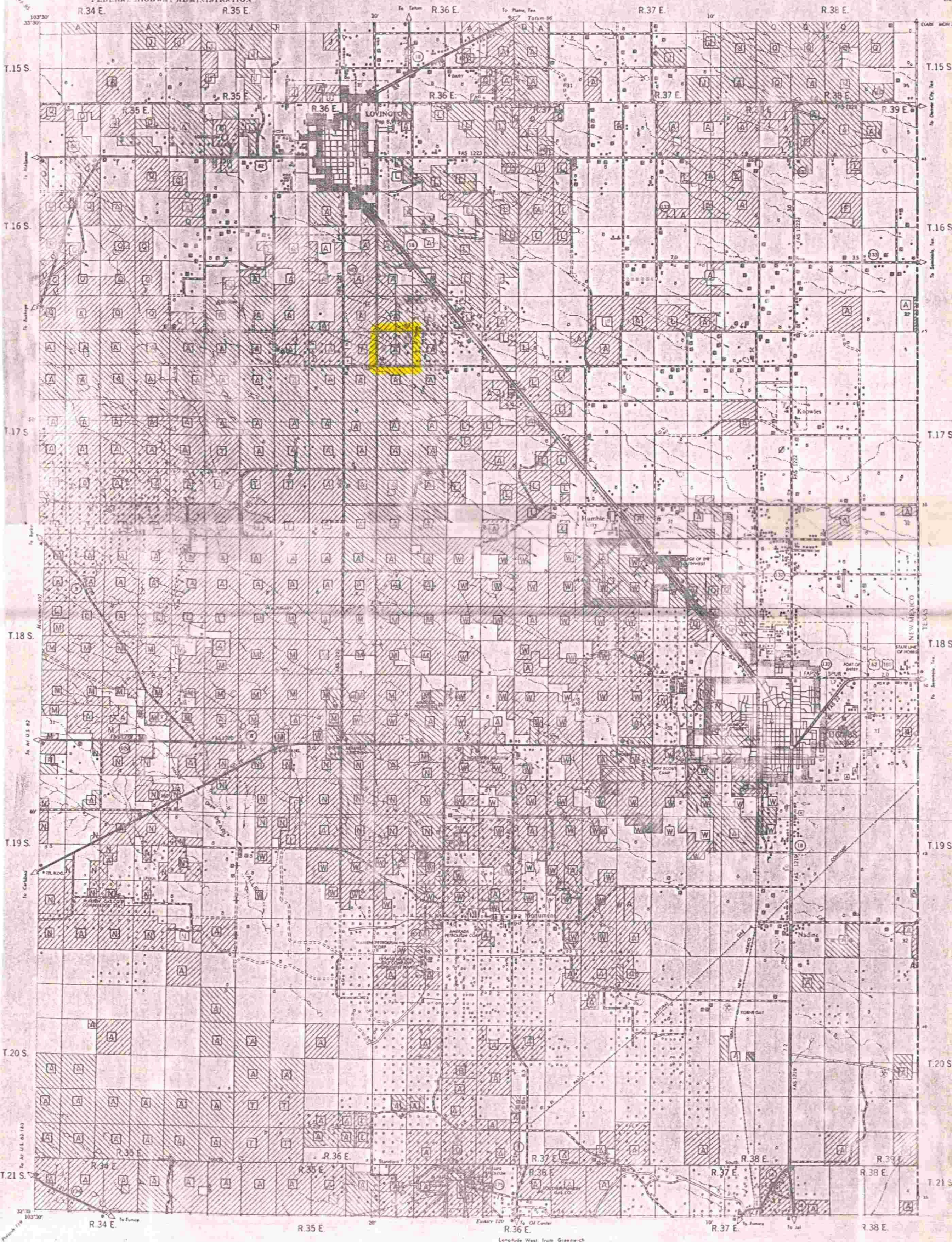
COMMISSIONER OF PUBLIC LANDS

STATE SURFACE AND MINERALS
STATE MINERALS
STATE SURFACE

IN COOPERATION WITH THE
NEW MEXICO STATE HIGHWAY DEPARTMENT
PLANNING AND PROGRAMMING DIVISION
FEDERAL HIGHWAY ADMINISTRATION

STATE LAND STAT

HOBBS OU



Control by National Geodetic Survey; U.S. Geological Survey;
U.S. Forest Service, Bureau of Land Management; and Planning Division.
Modified Conic Projection Standard Parallel 34° North American Datum

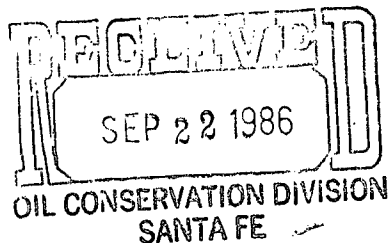
Scale $\frac{1}{124720}$ or 1 inch = 2 Miles





APOLLO OIL COMPANY

P. O. BOX 1737
HOBBS, NEW MEXICO 88240
505 - 393-2273



September 17, 1986

Mr. David G. Boyer
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. Boyer:

Enclosed please find two copies of our proposed discharge plan to cover the operation of Effluent Discharge Wells on the State "E" Tract 18 lease. If you have any questions about the plan or require further information, please contact Mr. Joe D. Ramey at 392-6525.

Yours very truly,



Alan Ralston

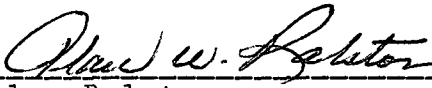


APOLLO OIL COMPANY

P. O. BOX 1737
HOBBS, NEW MEXICO 88240
505 393-2273

CERTIFICATION

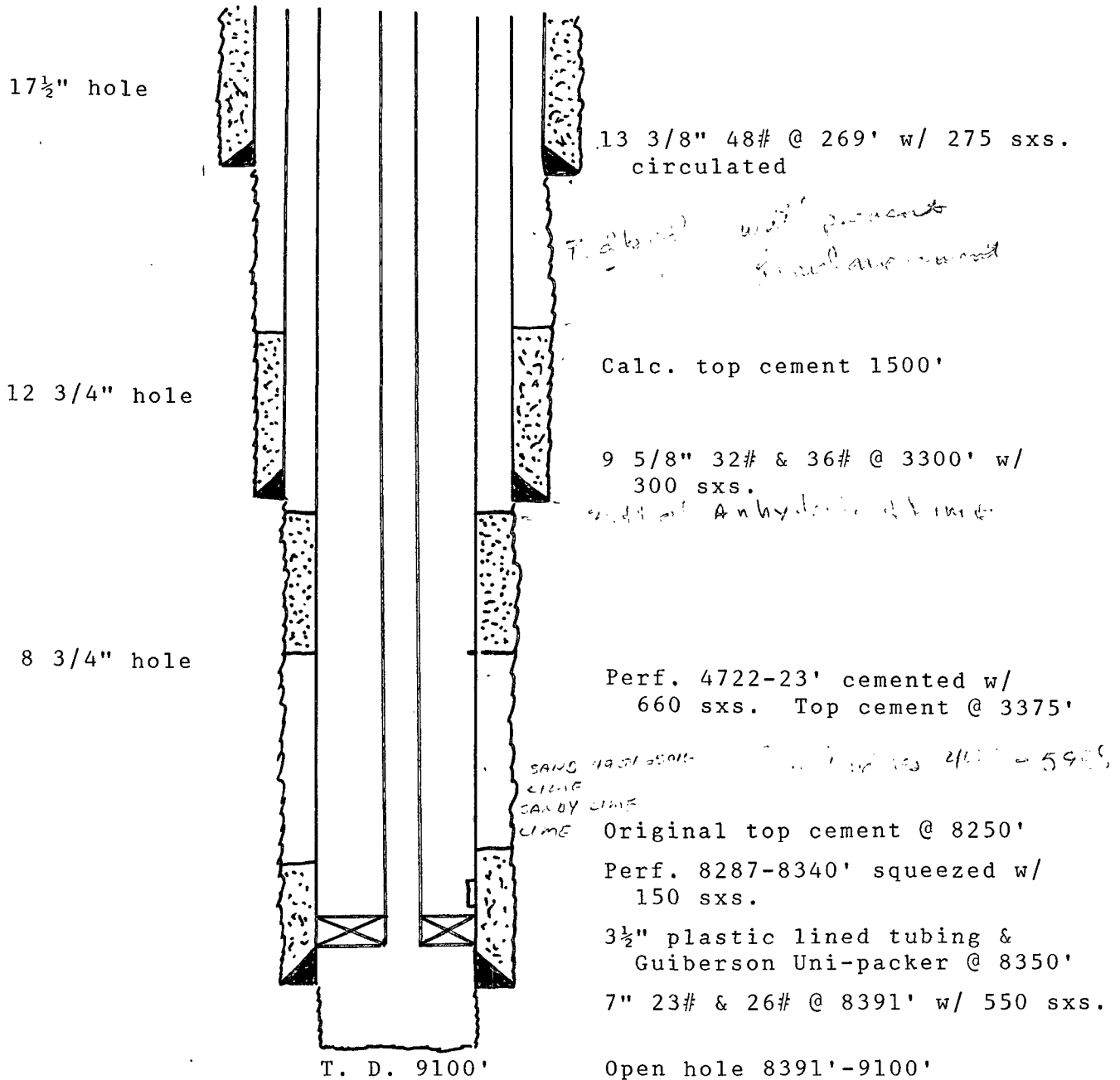
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.



Alan Ralston
Owner
Apollo Oil Company

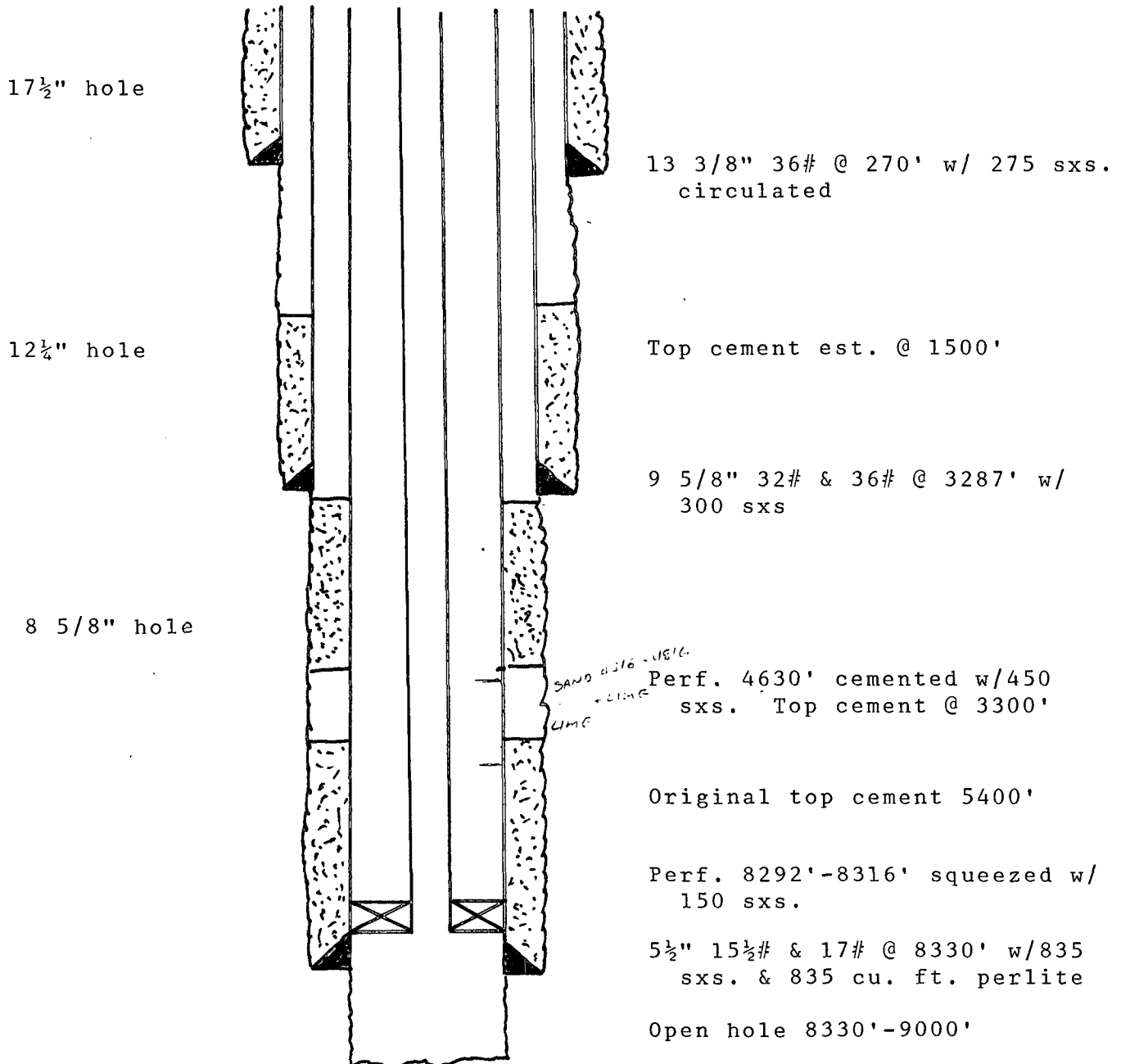
APOLLO OIL COMPANY
STATE "E" TRACT 18 NO. 21

WELLBORE ARRANGEMENT FOR DISPOSAL



APOLLO OIL COMPANY
STATE "E" TRACT 18 NO. 22

WELLBORE ARRANGEMENT FOR DISPOSAL



CASE NO. *2009*
Submitted by *Amoco Prod. Co.*
Hearing Date *8/24/60*
AMOCO PRODUCTION CO.

State "E" Tr. 18 #18

State "E" Tr. 18 #19

State "E" Tr. 18 #20

State "E" Tr. 18 #21

State "E" Tr. 18 #23

ARAO, INC.
State WD-2

GETTY
Lovington Paddock
Unit WI-62

RICE ENGINEERING
State WD #1

PHILLIPS
Lovington #2

COMPLETION & CASING DATA
STATE "E" TRACT 18 WELL NO. 22
SWD APPLICATION

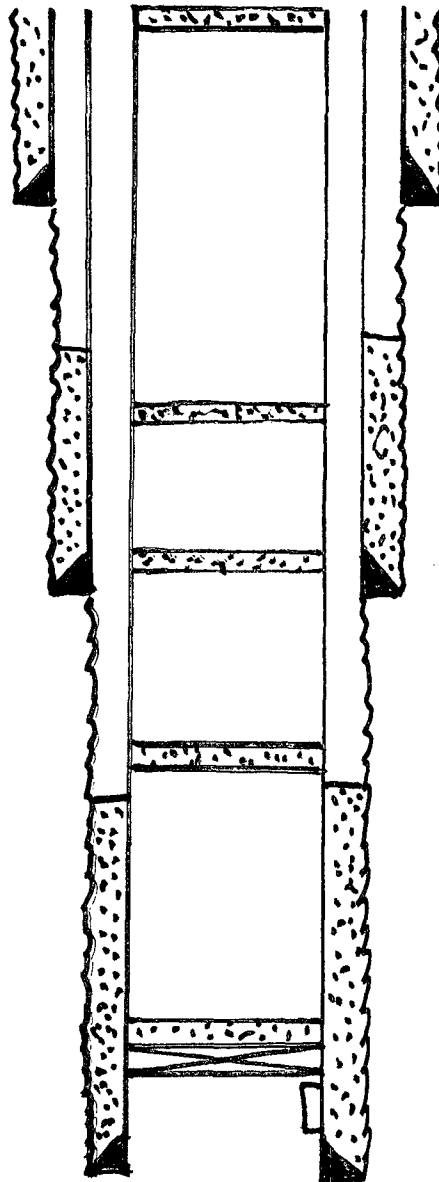
LOCATION	TOTAL DEPTH	CURRENT PBD	PRODUCING INTERVAL (SUBSEA DEPTH)	CASING	SACKS CEMENT	CEMENT TOP
330' FNL & 330' FEL Sec. 2, T-17-S, R-36-E Lea County, New Mexico	8530'	8415'	Abo: PF 8336' - 8392' (-4488' to -4544')	13 3/8" @ 259' 9 5/8" @ 3226' 7" @ 8530'	275 300 550	Circ. 1600' 4979'
1650' FNL & 990' FWL Sec. 1, T-17-S, R-36-E Lea County, New Mexico	8530'	8481'	Abo: PF 8254'-64', 8340'-50' (-4410' to -4420', -4496' to -4506')	13 3/8" @ 266' 9 5/8" @ 3298' 7" @ 8530'	332 300 225	Circ. 1537' 6775'
1650' FNL & 330' FWL Sec. 2, T-17-S, R-36-E Lea County, New Mexico	8525'	8365'	Abo: PF 8239'-99', 8338'-48' (-4392' to -4461', -4500' to -4510')	13 3/8" @ 280' 9 5/8" @ 3299' 7" @ 8520'	300 300 550	Circ. 1660' (Calc.) 4128' (Calc.)
660' FNL & 1650' FEL Sec. 2, T-17-S, R-36-E Lea County, New Mexico	8987'	8381'	Abo SWD: OH 8391' - 8987' (-4538 to -5134')	13 3/8" @ 269' 9 5/8" @ 3300' 7" @ 8391'	275 300 1105	Circ. 1500' (Calc.) 3375'
860' FNL & 790' FWL Sec. 1, T-17-S, R-36-E Lea County, New Mexico	8442'	8350'	Abo: PF 8234' - 8268' (-4392' to -4426')	11 3/4" @ 336' 8 5/8" @ 5116' 5 1/2" @ 8356'	635 2800 1000	Circ. Circ. (Calc.) 2436'
1650' FNL & 2310' FWL Sec. 2, T-17-S, R-36-E Lea County, New Mexico	8889'	8889'	Abo SWD: OH 8528' - 8889' (-4670' to -5301')	13 3/8" @ 349' 9 5/8" @ 3318' 5 1/2" @ 8528'	450 1750 1400	Circ. (Calc.) Circ. (Calc.) 2653' (Calc.)
1980' FSL & 560' FEL Sec. 2, T-17-S, R-36-E Lea County, New Mexico	9746'	6303'	Paddock WI: PF 6128' - 6294' (-2228 to -2454')	10 3/4" @ 461' 7 5/8" @ 3455' 5 1/2" @ 8916'	600 1136 800	Circ. (Calc.) Circ. (Calc.) 1358' (Calc.)
990' FNL & 2310' FWL Sec. 2, T-17-S, R-36-E Lea County, New Mexico	8858'	8858'	Abo: OH 8534' - 8858' (-4675' to -4999')	13 3/8" @ 396' 9 5/8" @ 3348' 5 1/2" @ 8530'	450 1750 1380	Circ. (Calc.) Circ. (Calc.) 2739' (Calc.)
660' FSL & 1880' FEL Sec. 35, T-16-S, R-36-E Lea County, New Mexico	9069'	6343'	Paddock WI: PF 6194' - 6224', 6292' - 6328' (-2333' to -2363', -2431' to -2467')	13 3/8" @ 286' 8 5/8" @ 4694' 5 1/2" @ 8875'	325 2150 720	Circ. (Calc.) Circ. (Calc.) Circ. (Calc.)

COMPLETION & CASING DATA
WELLS WITHIN AREA OF REVIEW

<u>OPERATOR</u>	<u>TOTAL DEPTH</u>	<u>PRODUCING INTERVAL (SUBSEA DEPTH)</u>	<u>CASING</u>	<u>SACKS CEMENT</u>	<u>CEMENT TOP</u>
Texaco					
Skelly S State #2	8471'	Abo: 8440-8464'	13 3/8 @240'	240	Circ.
990 S & 330 E		(-4581--4605)	8 5/8 @ 3291	1300	Circ.
Sec. 35-T16S-R36E			5½ @ 8471'	900	2600 Calc.

NOTE: Remainder of wells which penetrated the injection interval submitted as exhibit No. 7 in OCD Case 7009.

AMOCO PRODUCTION COMPANY
STATE E TRACT 18 NO. 20
1650 N & 330 W Section 2-T17S-R36E
PLUGGED & ABANDONED



15 sxs. @ surface

13 3/8 @ 280 w/ 300 sxs.

25 sxs. @ 2198

25 sxs. @ 3084

9 5/8 @ 3299 w/300 sxs.

41 sxs. @ 4920

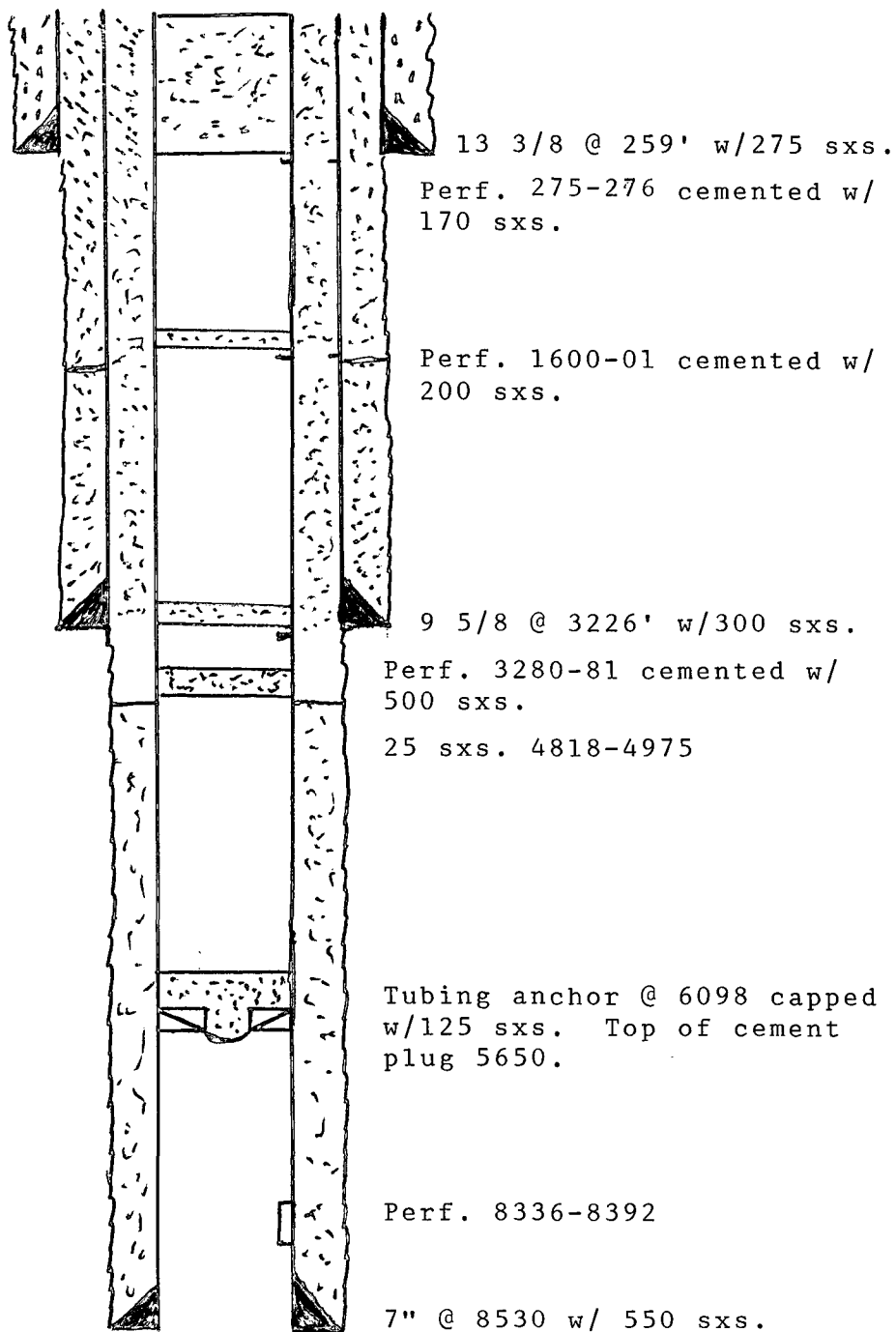
Bridge plug @ 8200 capped
w/15 sxs.

Perf. 8230-8350

7" @ 8520 w/550 sxs.

AMOCO PRODUCTION COMPANY
STATE E TRACT 18 NO. 18
330 N & E Section 2-T17S-R36E

PLUGGED & ABANDONED





Amoco Production Company

RESEARCH CENTER
WATER ANALYSIST.S. or File No. 525 11Lab. No. T-24790

Field No. _____

API Well No. _____

LOCATION SAMPLED: Division Houston District _____ Area Levelland
Operator (Plant) Amoco Well No. 15 Lease Lovington Abo
State (Province) New Mexico County (Parish) _____
Twp. 17 S Rng. 36 E Sec. 1 Quarter (Lsd.) _____ Other (Meridian) _____
Wildcat () Field Well (X) Field name _____
Sample collected from wellhead Date 9-1-78 Sample collected by _____
Interval sampled _____ to _____ Interval name Abo
Recovery _____

Form 97 transmitted by V. E. Staley Date 9-8-78 Authorized by _____

ORGANIC CONSTITUENTS in mg/l

	BOTTOM	MIDDLE	TOP	MUD
Benzene				
Toluene				
HC Gases				

DESCRIPTION OF SAMPLE

Sample used for detailed analyses _____
Date received _____
Condition as received _____
Color _____
Odor _____
Suspended solids _____
Bottom sediment _____
Oil or fluorescence _____

QUALITY OF SAMPLE

	BOTTOM	MIDDLE	TOP
Chloride ion mg/l:			

COMMENTS:

CONVENTIONAL MAJOR ION ANALYSIS

		Major Ions mg/l	% of Total Major Ions	Reaction Value meq/l	% of Total Reaction Value
CATIONS	Sodium Na ⁺	14,395	31.70	626.17	40.71
	Calcium Ca ⁺⁺	2,040	4.49	101.80	6.62
	Magnesium Mg ⁺⁺	500	1.10	41.10	2.67
	Potassium K ⁺				
ANIONS	Chloride Cl ⁻	24,600	54.18	693.72	45.10
	Bicarbonate HCO ₃ ⁻	1,170	2.58	19.19	1.25
	Sulfate SO ₄ ^{- -}	2,700	5.95	56.16	3.65
	Carbonate CO ₃ ^{- -}	0	0	0	0
TOTAL		45,405			

Total solids by evaporation 45,740 mg/l
NaCl resistivity equivalent (Dunlap) 53,599 mg/l
Resistivity .147 ohm-meters at 77 °F
pH 7.1 Specific gravity 1.034 at 75 °F
Ryznar stability index (2pHs-pH) _____ at _____ °F

OTHER IONS AND DISSOLVED SOLIDS

CATIONS	mg/l	ANIONS	mg/l	OTHERS	mg/l

REMARKS AND CONCLUSIONS:

RECEIVED	
HOBBS	
DISTRICT	
OCT 5 1978	
DS	
DAS	
DE	
AF	
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SE	
AS	
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3:11 PM	
RUL	
R92	
File	

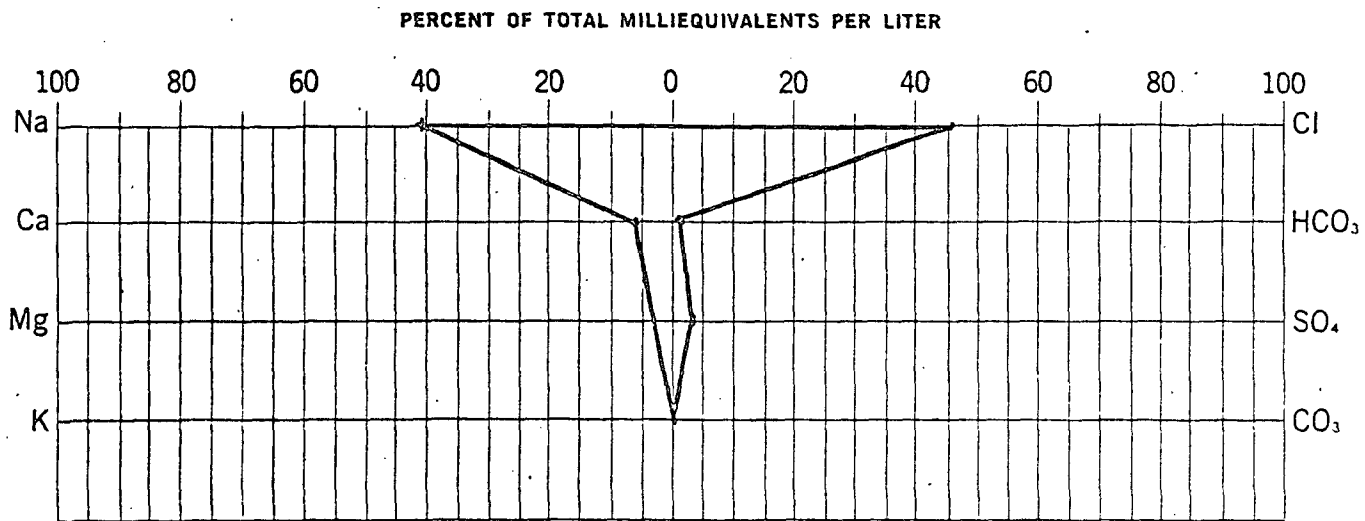
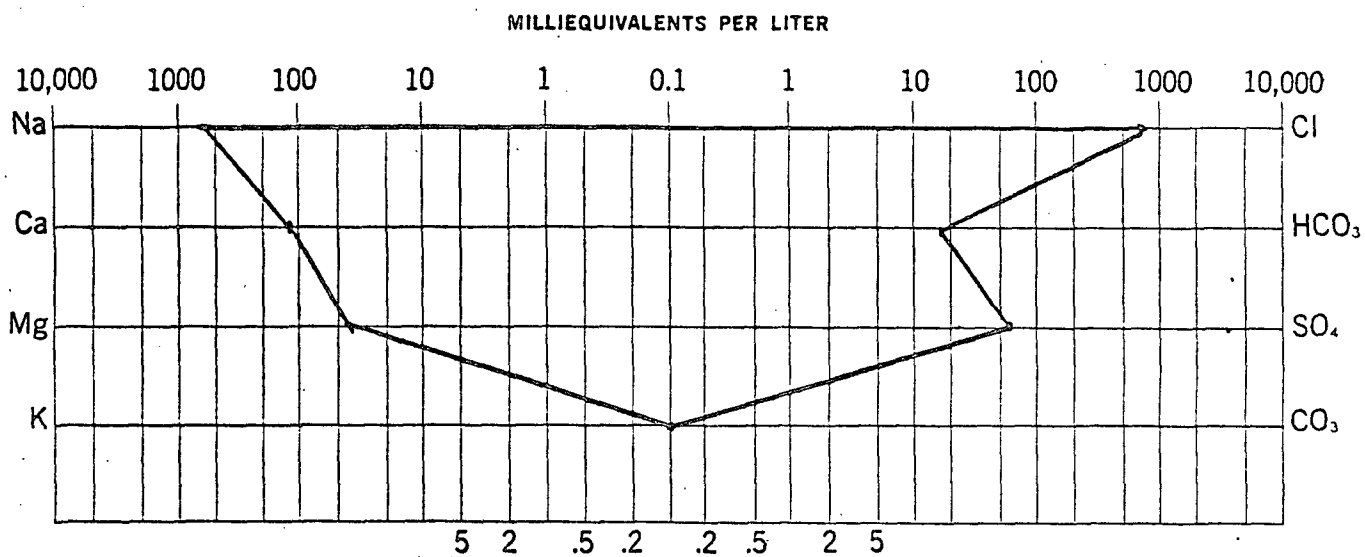
CC: W. V. Grisham
A. R. Reed
A. H. Green
G. W. Schmidt
David Boatwright

Analyst

Bruce BarnesDate 10-2-78

Water charts on back ()

WATER ANALYSIS PATTERNS



HOBBS, NEW MEXICO 88240

COMPANY : APOLLO OIL CO.
DATE : 9-10-86
FIELD, LEASE & WELL : UNIT G SECTION 2 TRACT 18
SAMPLING POINT:
DATE SAMPLED : 9-9-86

SPECIFIC GRAVITY = 1
TOTAL DISSOLVED SOLIDS = 892
PH = 6.99

		ME/L	MG/L
CATIONS			
CALCIUM	(CA)+2	5	100.
MAGNESIUM	(MG)+2	1.6	19.5
SODIUM	(NA), CALC.	7.0	161.
ANIONS			
BICARBONATE	(HCO3)-1	4.6	280.
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	1.0	50
CHLORIDES	(CL)-1	8	280
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	NOT RUN	
OXYGEN	(O2)	NOT RUN	
IRON(TOTAL)	(FE)		.3
BARIUM	(BA)+2	0	.27
MANGANESE	(MN)	NOT RUN	

IONIC STRENGTH (MOLAL) = .017

SCALING INDEX	TEMP
	30C
	86F
CARBONATE INDEX	1.29
CALCIUM CARBONATE SCALING	LIKELY
CALCIUM SULFATE INDEX	-17.
CALCIUM SULFATE SCALING	UNLIKELY

OIL CONSERVATION DIVISION
CASING--BRADENHEAD TEST

OPERATOR: Upelle Oil Co. Pool/FM also 8330-9000
Lease Name State E. In. 18 Snd Well# 22 Letter 8 Sec 2 Twp 17 Rge 36
Footage _____ Inj. Press Limit 1650 Order # R-6461
Test Date 11-10-83 Oper. Rep. Ken OCD Rep. Dr.

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks	1982
	SURFACE	13 3/8	266'	275' C	0		0
	INTERMEDIATE	9 7/8	3287'	300' 4	62	1 min to gas	20" gas
	PRODUCTION	5 1/2	8330'	835' 4	140	2 min to gas	53"
	TUBING	2 3/8	8272'	PKW	18" Vac.		Vac

If well is on Vacuum: SI 60 Min. Tbg Press 12" vac Csg: Vacuum _____ Static ✓
Approximately how many hours a day is the well used _____ Test Reviewed by: _____

Remarks inj began 2/81

* 3/82 ran casing insp. log to 8150' - perf at 3700' + agg w/ 1500' 4

Test Date 8-10-84 Oper. Rep. R. Paul W. OCD Rep. Eug

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	13 3/8	266'	275' C	0	Spec. mech. Integ test
	INTERMEDIATE	9 7/8	3287'	300' 4	0	
	PRODUCTION	5 1/2	8330'	835' 4	57	Blk to 5 min and Gas M. Pl.
	TUBING	2 3/8	8272'	PKW	23 m Vac.	

If well is on Vacuum: SI 20 Min. Tbg Press 20" vac Csg: Vacuum _____ Static _____
Approximately how many hours a day is the well used _____ Test Reviewed by: ED OK

Remarks: bad hole w/ 3465 Pressure up to 500' OK

Test Date 11-27-85 Oper. Rep. JESSE OCD Rep. LYLE

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	13 3/8	266'	275' C	0	Flow to 0 in 5 sec
	INTERMEDIATE	9 7/8	3287'	300' 4	0	Flow to 0 in 5 sec.
	PRODUCTION	5 1/2	8330'	835' 4	248	Gas 5 sec to 0 in 10 min.
	TUBING	2 3/8	8272'	PKW	17"	

If well is on Vacuum: SI 20 Min Tbg. Press 17" Csg: Vacuum _____ Static 0
Approximately how many hours a day is the well used _____ Test Reviewed by: BA. L.

Remarks 103 FELS. day

OIL CONSERVATION DIVISION
CASING--BRADENHEAD T

OPERATOR: Apello Oil Co Pool/FM Also 8330-9000'
Lease Name State E 1/8 SW 1/4 Well # 22 Letter A Sec 2 Twp 17 Rge 36
Footage _____ Inj. Press Limit 1650 Order # R-6461
Test Date 9/9/86 Oper. Rep. Alan Ralston OCD Rep. EWS

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	<u>13 3/8</u>	<u>266'</u>	<u>275</u>	<u>0</u>	
	INTERMEDIATE	<u>9 5/8</u>	<u>3287'</u>	<u>300</u>	<u>0</u>	
	PRODUCTION	<u>5 1/2</u>	<u>8330'</u>	<u>835</u>	<u>0</u>	
	TUBING	<u>2 3/8</u>	<u>8222'</u>	<u>Plk</u>	<u>14" ID</u>	

1985
O'Brien & Sons
O'Brien & Sons
248 S. 4th St.

If well is on Vacuum: SI 1 Min. Tbg Press 14" Csg: Vacuum ☒ Static Test
Approximately how many hours a day is the well used _____ Reviewed by: _____
Remarks 1982- ran casing log to 8150' perf'd at 3700' & 292 w/150 well not in use at this time

Test Date _____ Oper Rep. _____ OCD Rep. _____

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE					
	INTERMEDIATE					
	PRODUCTION					
	TUBING					

If well is on Vacuum: SI _____ Min. Tbg Press _____ Csg: Vacuum _____ Static _____
Approximately how many hours a day is the well used _____ Test Reviewed by: _____
Remarks: _____

Test Date _____ Oper Rep. _____ OCD Rep. _____

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE					
	INTERMEDIATE					
	PRODUCTION					
	TUBING					

If well is on Vacuum: SI _____ Min Tbg. Press _____ Csg: Vacuum _____ Static _____
Approximately how many hours a day is the well used _____ Test Reviewed by: _____
Remarks _____

OIL CONSERVATION DIVISION
CASING--BRADENHEAD TO

Operator: Apella Drilling Co. Pool/FM Alto
Lease Name State & Tract 18 SWD Well #21 Letter B Sec 2 Twp 17 Rge 36
Footage _____ Inj. Press Limit 1675 Order # 15855

Test Date 11-27-85 Oper. Rep. Jesse OCD Rep. Lyle

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	<u>13 3/8</u>	<u>275'</u>	<u>275' 5"</u>	<u>0</u>	
	INTERMEDIATE	<u>9 5/8</u>	<u>3300'</u>	<u>300' 4"</u>	<u>350</u>	<u>Bled 15 sec to 3300' 4"</u>
	PRODUCTION	<u>*7</u>	<u>8391'</u>	<u>550' 4"</u>	<u>100</u>	<u>Air to Oil 1 3/4 Min "4"</u>
	TUBING	<u>2 1/2</u>	<u>8367'</u>	<u>Plkr</u>	<u>9" Vac</u>	

19 74
PT
0.4 w/b
30 sec to 3300'
230
9 30 sec to 0
25"
2 1/2"

If well is on Vacuum: SI 2.0 Min. Tbg Press 9" vac Csg: Vacuum ☒ Static ☐
Approximately how many hours a day is the well used _____ Test Reviewed by: _____

Remarks 117 Bbls/day after 20 min SI everything the same
* 1979 Re-cement 7' 0"

Test Date 9/9/86 Oper. Rep. Alan Robson OCD Rep. Euro

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	<u>13 3/8</u>	<u>275'</u>	<u>275' 5"</u>	<u>0</u>	
	INTERMEDIATE	<u>9 5/8</u>	<u>3300'</u>	<u>300' 4"</u>	<u>0</u>	
	PRODUCTION	<u>7</u>	<u>8391'</u>	<u>550' 4"</u>	<u>0</u>	
	TUBING	<u>2 1/2</u>	<u>8367'</u>	<u>Plkr</u>	<u>8" Vac</u>	

If well is on Vacuum: SI ? Min. Tbg Press 8" Csg: Vacuum ☒ Static ☐
Approximately how many hours a day is the well used _____ Test Reviewed by: _____

Remarks: Well not being used at this time

Test Date _____ Oper. Rep. _____ OCD Rep. _____

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE					
	INTERMEDIATE					
	PRODUCTION					
	TUBING					

If well is on Vacuum: SI _____ Min Tbg. Press _____ Csg: Vacuum _____ Static _____
Approximately how many hours a day is the well used _____ Test Reviewed by: _____

Remarks _____

OIL CONSERVATION DIVISION
CASING--BRADENHEAD TEST

OPERATOR: Amoco Prod Co. Pool/FM Lovington also
Lease Name State E Tr. 18 Snd Well# 21 Letter B Sec 2 Twp 17 Rge 36
Footage _____ Inj. Press Limit 1675 Order # R-5855
Test Date 11-8-82 Oper. Rep. Ken Romine OCD Rep. Dave.

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	13 3/8	275'	275' C	0	
	INTERMEDIATE	9 7/8	3300'	300' x	423	2mm to 0. Gas.
3375'	PRODUCTION	* 7	8391'	550' x	15#	
	TUBING	2 1/2	8367'	PKR	Vac.	

1981
5
0
15" air to 8
5" vac 15" air
oper. 5 E

If well is on Vacuum: SI 15 Min. Tbg Press 7' Csg: Vacuum _____ Static 15#
Approximately how many hours a day is the well used _____
Remarks _____
#1979 - recent 7"
Test Date 11-18-83 Oper. Rep. Ken. OCD Rep. D.C.
Test Reviewed by: OK
85 E D

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	13 3/8	275'	275' C	0	Puff
	INTERMEDIATE	9 7/8	3300'	300' x	370	2mm to 0
3375'	PRODUCTION	* 7	8391'	550' x	8#	air to 0
	TUBING	2 1/2	8367'	PKR	13" Vac.	

If well is on Vacuum: SI 15 Min. Tbg Press 8 in. Csg: Vacuum _____ Static _____
Approximately how many hours a day is the well used _____ Test Reviewed by: EE OK
Remarks: _____

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	13 3/8	275'	275' C	0	Spec mech Integ test.
	INTERMEDIATE	9 7/8	3300'	300' x	220	12" sec in then to (oil) 122#
3375'	PRODUCTION	* 7	8391'	550' x	9#	Blow to 0 30 sec air
	TUBING	2 1/2	8367'	PKR	Vac 25 in	

If well is on Vacuum: SI 20 Min Tbg. Press 18 in Csg: Vacuum _____ Static _____
Approximately how many hours a day is the well used _____ Test Reviewed by: OK E D
Remarks had hole up 11 hrs Pressure to 300# Test OK
#50

OIL CONSERVATION DIVISION
CASING--BRADENHEAD TEST

OPERATOR: Ameca Ford Co. Pool/FM Lorington alb
Lease Name State E Tr. 18 Snd Well# 21 Letter B Sec 2 Twp 17 Rge 36
Footage _____ Inj. Press Limit 1675 Order # R-5853

Test Date 11-8-82 Oper. Rep. Ken Romine OCD Rep. Dave

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	13 3/8	275'	275' C	0	
	INTERMEDIATE	9 7/8	3300'	300' x	423	2mm to 0. Gas.
3375'	PRODUCTION	* 7	8391'	530' x	15#	
	TUBING	2 1/2	8361'	PKR	Vac.	

1981
2
0
15 min to 0
5 min 15 min
OPER. S.I.

If well is on Vacuum: SI 15 Min. Tbg Press 7" Csg: Vacuum _____ Static 15"

Approximately how many hours a day is the well used _____ Test Reviewed by: OK

Remarks _____

*1979 - recent 7"

Test Date 11-18-83 Oper. Rep. Ken OCD Rep. D.C.

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	13 3/8	275'	275' C	0	Puff
	INTERMEDIATE	9 7/8	3300'	300' x	370	2mm to 0
3375'	PRODUCTION	* 7	8391'	530' x	8#	air to 0
	TUBING	2 1/2	8361'	PKR	13" Vac.	

If well is on Vacuum: SI 15 Min. Tbg Press 8" Csg: Vacuum _____ Static _____

Approximately how many hours a day is the well used _____ Test Reviewed by: ED OK

Remarks: _____

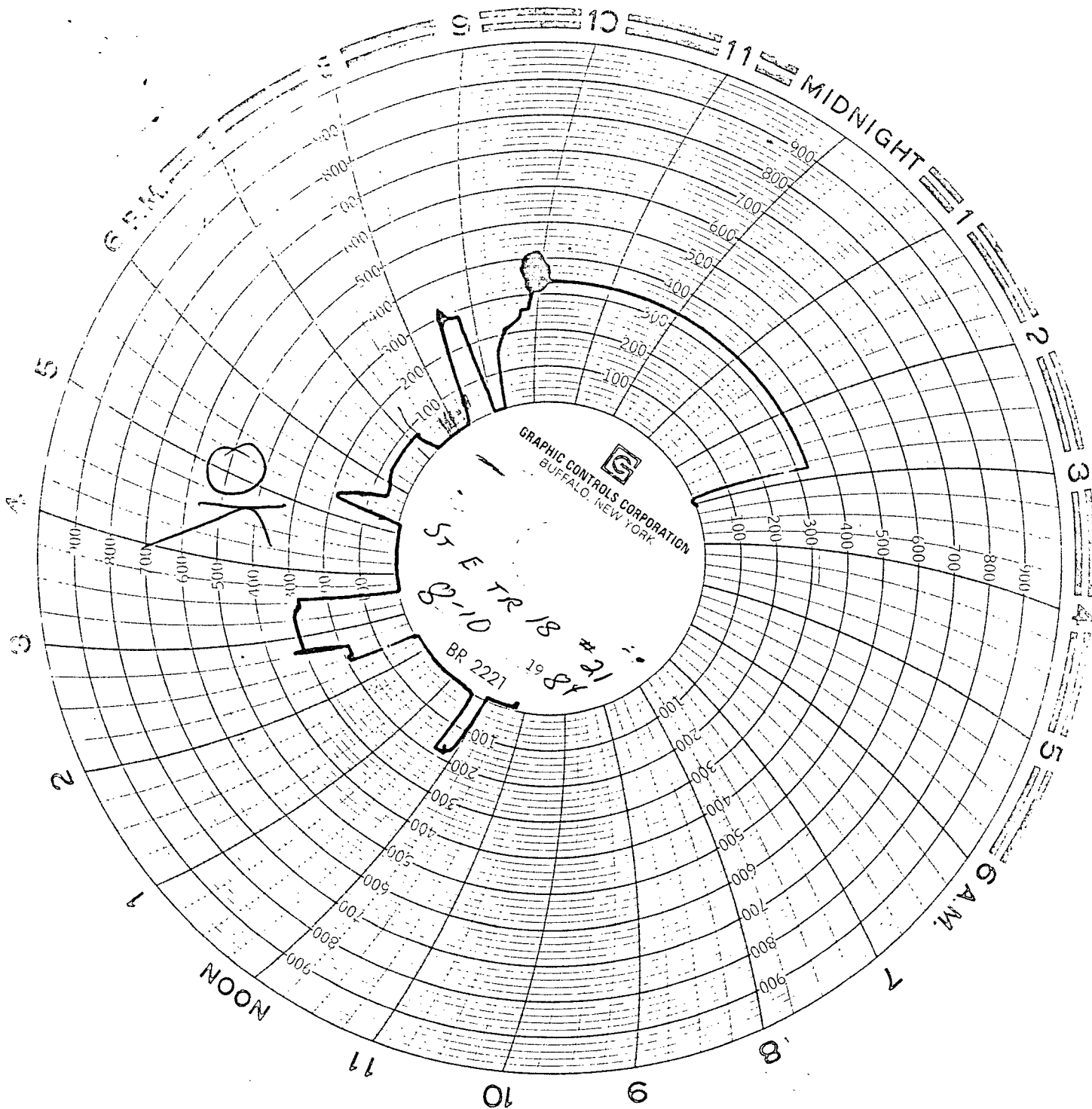
Test Date 8-10-84 Oper. Rep. Richard OCD Rep. EWS

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	13 3/8	275'	275' C	0	Spec. mech. Integ test.
	INTERMEDIATE	9 7/8	3300'	300' x	220	Puff
3375'	PRODUCTION	* 7	8391'	530' x	9#	30 sec air to 0 (oil) 120 #
	TUBING	2 1/2	8361'	PKR	Vac 25 in	Shot 2 30 sec air

If well is on Vacuum: SI 20 Min Tbg. Press 18" Csg: Vacuum _____ Static _____

Approximately how many hours a day is the well used _____ Test Reviewed by: OK ED

Remarks low hole up 1116 Pressure to 300 # Test OK



**OIL CONSERVATION DIVISION
CASING--BRADENHEAD TEST**

OPERATOR: Amoco Oil Co. Pool/FM ab 8330-9000'
 Lease Name State E. Tr. 18 Snd Well# 22 Letter 9 Sec 2 Twp 17 Rge 36
 Footage _____ Inf. Press Limit 1650 Order # R-6461
 Test Date 11-18-83 Oper. Rep. Ken OCD Rep. De

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks	1982
	SURFACE	<u>13 3/8</u>	<u>266'</u>	<u>275</u>	<u>0</u>		<u>0</u>
	INTERMEDIATE	<u>9 5/8</u>	<u>3287'</u>	<u>300</u>	<u>62</u>	<u>1 min to 9m</u>	<u>20" gas</u>
	PRODUCTION	<u>5 1/2</u>	<u>8330'</u>	<u>835</u>	<u>140</u>	<u>2 min to 6m</u>	<u>53" gas</u>
	TUBING	<u>2 3/8</u>	<u>8272'</u>	<u>PKW</u>	<u>18" Vac</u>		<u>Vac</u>

If well is on Vacuum: SI 60 Min. Tbg Press 18" vac Csg: Vacuum _____ Static _____
 Approximately how many hours a day is the well used _____ Test Reviewed by: _____

Remarks inj began 2/81
* 3/82 Ran casing insp. log to 8150' - perf at 3700' & spg w/ 1500'
 Test Date 8-10-84 Oper. Rep. Richard W. OCD Rep. Eug

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	<u>13 3/8</u>	<u>266'</u>	<u>275</u>	<u>0</u>	<u>Spec. mech. Integ test</u>
	INTERMEDIATE	<u>9 5/8</u>	<u>3287'</u>	<u>300</u>	<u>62</u>	
	PRODUCTION	<u>5 1/2</u>	<u>8330'</u>	<u>835</u>	<u>57</u>	<u>1 1/2 min and Gas at 1400'</u>
	TUBING	<u>2 3/8</u>	<u>8272'</u>	<u>PKW</u>	<u>23 in Vac</u>	

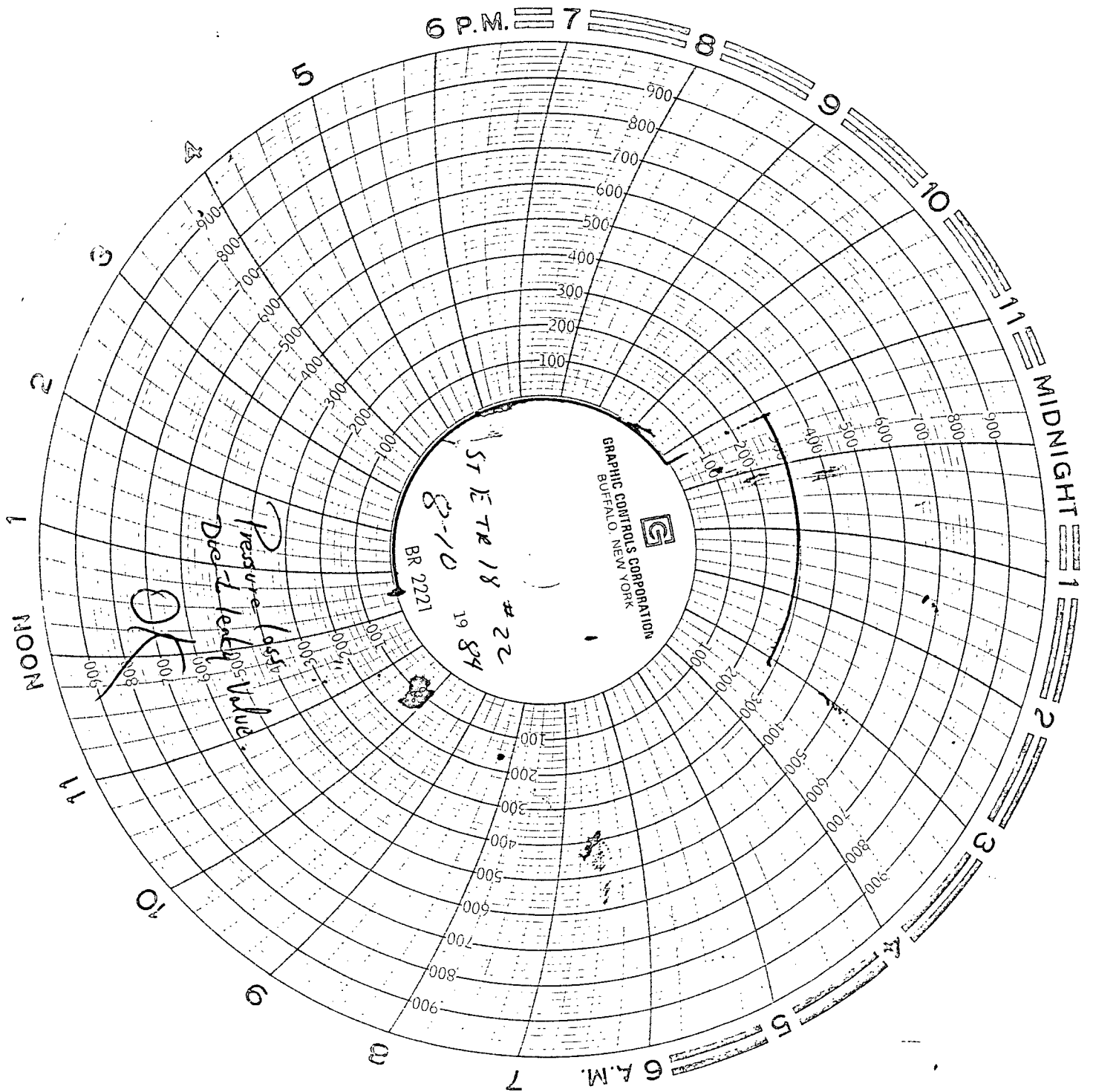
If well is on Vacuum: SI 20 Min. Tbg Press 22 in vac Csg: Vacuum _____ Static _____
 Approximately how many hours a day is the well used _____ Test Reviewed by: ED OK

Remarks: bad hole w/ 3466 Pressure up to 300' OK
 Test Date 11-27-85 Oper. Rep. JESSE OCD Rep. LYLE

TOC	CASING STRING	Size	Set At	Cemented	Pressure	Remarks
	SURFACE	<u>13 3/8</u>	<u>266'</u>	<u>275</u>	<u>0</u>	<u>Flow to 0 in 5 sec.</u>
	INTERMEDIATE	<u>9 5/8</u>	<u>3287'</u>	<u>300</u>	<u>0</u>	<u>Flow to 0 in 5 sec.</u>
	PRODUCTION	<u>5 1/2</u>	<u>8330'</u>	<u>835</u>	<u>148</u>	<u>Gas 5 sec to 0 in 10 min.</u>
	TUBING	<u>2 3/8</u>	<u>8272'</u>	<u>PKW</u>	<u>17"</u>	

If well is on Vacuum: SI 20 Min Tbg. Press 17" Csg: Vacuum _____ Static 0
 Approximately how many hours a day is the well used _____ Test Reviewed by: BAH

Remarks 103 RTG 1st OK



Data prepared by: R.C. Gallaway
 Affiliation: Shell Oil Company
 Date: 7-1-56

Field Name: Lovington (Abo)
 Location: Tps. 16, 17 S., Rs. 36, 37 E.
 County & State: Lea County, New Mexico

DISCOVERY WELL: Skelly, State "O" #9M

COMPLETION DATE: 12-8-51

PAY ZONE: Abo pay zone, lower Leonard series of the Permian system. Lithology consists of gray-white to light brown, fine to medium sucrose dolomite. Porosity ranges from pin point to small vugs, usually encountered about 100 feet below the top of Abo shale. Average producing depth from 8,340 to 8,430 feet. Net pay varies from about 20 to 150 feet within a gross section of about 200 feet.

TYPICAL CORE ANALYSIS OF A PAY INTERVAL IN THIS FIELD:

Not available

Perm. in millidarcys		% Porosity	Liquid Saturation (% of pore space)	
Horizontal	Vertical		Water	Oil

OTHER SHOWS ENCOUNTERED IN THIS FIELD: Queen, San Andres, Paddock, Tubb, Wolfcamp and Pennsylvanian
 See other Lovington field data sheets.

TRAP TYPE: Closed anticline.

NATURE OF OIL: Gravity 39° A.P.I.

NATURE OF GAS:

NATURE OF PRODUCING ZONE WATER:

Resistivity:

ohm-meters @

°F.

	Total Solids	Na/K	Ca	Mg	Fe	SO ₄	Cl	CO ₂	HCO ₃	OH	H ₂ S
ppm											

INITIAL FIELD PRESSURE: 3,248 psi.

TYPE OF DRIVE: Water drive

NORMAL COMPLETION PRACTICES: Conventional drilling through pay zone. Electric logs usually run from San Andres to total depth with microlog in pay zone and selected intervals. Production string set through pay zone. Completion made from perforations after acid treatment.

PRODUCTION DATA:

No. of wells @ yr. end				Production		No. of wells @ yr. end				Production	
Year	Type	Prod.	Shut in or Abnd.	Oil in barrels Gas in MMCF		Year	Type	Prod.	Shut in or Abnd.	Oil in barrels Gas in MMCF	
				Annual	Cumulative					Annual	Cumulative
1941	oil					1949	oil				
	gas						gas				
1942	oil					1950	oil				
	gas						gas				
1943	oil					1951	oil	1	0	3,518	3,518
	gas						gas				
1944	oil					1952	oil	14	1	585,996	589,514
	gas						gas				
1945	oil					1953	oil	37	1	1,463,283	2,052,797
	gas						gas				
1946	oil					1954	oil	41	3	1,602,756	3,655,553
	gas						gas				
1947	oil					1955	oil	40	6	1,636,351	5,291,904
	gas						gas				
1948	oil					1956*	oil	40	6	528,550	5,820,454
	gas						gas				

* 1956 Figure is production to 5-1-56.

NOTE: Refer to map of Lovington area with contours on top Pennsylvanian.

ROSWELL GEOLOGICAL SOCIETY SYMPOSIUM

Author: E. C. Caffey & R. H. Dubitzky
Affiliation: Standard Oil Company of Texas
Date: May 1966

Field Name: Vacuum Abo Reef
Location: T-17, 18-S, R-34-35-E
County & State: Lea County, New Mexico

Discovery Well: Standard Oil Co. of Texas No. 2 Vac Edge Unit, SW/4 NW/4, Section 4,
T-18-S, R-35-E

IP: 240 BO/24 hrs, GOR 1340:1, Disc. Date: 10/17/60.

Exploration Method Leading to Discovery: 90% subsurface, 10% Dipmeter

Pay Zone:

Formation Name: Abo

Depth & Datum Discovery Well: T/Pay 8650 (-4690)

Lithology Description: Gray to brown, coarsely crystalline to vuggy dolomite, fractured, with streaks of gray shale and anhydritic dolomite.

Approximate average pay: 560 gross net Productive Area 11,760 acres

Type Trap: Stratigraphic (Reef), updip pinchout of porosity, downdip limit of field controlled by water - partially structurally controlled.

Reservoir Data: avg.

avg.

4.7 % Porosity, 13.9 Md Permeability, 26 % Sw, 74 % So

Oil: 40° API, green, sweet

Gas: GOR 900, Gr. 1.064 @ 0# psi and 76° F, Sweet,

Water: 17,830 Na+K, 1360 Ca, 350 Mg, 26,850 Cl, 4000 SO₄, 1560 HCO₃, Fe

Specific Gravity NA Resistivity 0.104 ohms @ 80 °F produced water

Initial Field Pressure: 3230 psi @ -4800 datum Reservoir Temp. 136 °F -4725

Type of Drive: solution gas and partial water drive

Normal Completion Practices: 13 3/8" csg @ approximately 300', 8 5/8" @ approx. 3300, 5 1/2" @ approx. 9100'. Drl. to approx. 9100', set csg through pay & selectively perf. Perf 2 shots/ft, selectively. Acid w/1000 gal mud acid.

Type completion: Flowing

Normal Well Spacing 40 Acres

Deepest Horizon Penetrated & Depth: Siluro-Devonian 11,956' - Texas Pacific Oil Co. No. 3 State "AF"
NW/4 SW/4 Section 8, T-18-S, R-35-E, Lea County, New Mexico

Other Producing Formations in Field: Yates 2850', Grayburg-San Andres 4500', Glorieta 6200',
Devonian North 11,850'.

Production Data:

YEAR	TYPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN M M C F		YEAR	TYPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN M M C F	
		Prod.	S.I. or Abd.	ANNUAL	CUMULATIVE			Prod.	S.I. or Abd.	ANNUAL	CUMULATIVE
1961	OIL	36		621,383	621,383	1965	OIL	146	1	4,913,155	17,552,911
	GAS			470,094			GAS			4,878,933	
1962	OIL	93		2,542,850	3,287,601		OIL				
	GAS			2,112,406			GAS				
1963	OIL	129		4,235,946	7,523,547		OIL				
	GAS			3,753,683			GAS				
1964	OIL	147		5,116,209	12,639,756		OIL				
	GAS			4,600,950			GAS				



APOLLO OIL COMPANY

P. O. BOX 1737
HOBBS, NEW MEXICO 88240
505 393-2273

This is to serve as notification of Apollo Oil Company's intent to convert their State "E" Tract 18 Well Nos. 21 and 22 located 660' N & 1650' E and 1650' N&E, respectively, Section 2, Township 17 South, Range 3~~6~~ East, Lea County, New Mexico, from Salt Water Injection wells (Class II) to Effluent Disposal Wells (Class I). The discharge plan to cover this operation has been filed with the New Mexico Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501.

Copies of the plan may be obtained by calling the above number. Any objection to the plan should be forwarded to the Oil Conservation Division at the above address.

Mobil Prod. Texas & NM Inc.
Box 633
Midland, TX 79702

Cities Service Oil Company
Box 1919
Midland, TX 79701

Texaco USA
Box 728
Hobbs, NM 88240

Amerada
Box 2040
Tulsa, OK 74102

Marathon Oil Company
Box 552
Midland, TX 79702

Phillips Petroleum Company
4001 Penbrook
Odessa, TX 79762

Exxon
Box 1600
Midland, TX 79702

City of Lovington
City Manager

Apollo will dispose of up to 10,000 barrels per day of industrial effluent (non-hazardous) wastes in the Abo formation in the subject wells. The disposal zone will be from around 8300-9100 feet.

P 241 449 755

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

PS Form 3800, June 1985

U.S.G.P.O. 1985-480-794

Sent to	Phillips Petr. Co.
Street and No	4001 Penbrook
P.O. State and ZIP Code	Odessa, TX 79762
Postage	22
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom Date, and Address of Delivery	
TOTAL Postage and Fees	97
Postmark	

SEP 1 1985
U.S.P.O.

P 241 449 748

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

PS Form 3800, June 1985

U.S.G.P.O. 1985-480-794

Sent to	Mobil Prod. TNM
Street and No	Box 633
P.O. State and ZIP Code	Midland, TX 79702
Postage	22
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom Date, and Address of Delivery	
TOTAL Postage and Fees	97
Postmark	

SEP 1 1985
U.S.P.O.

P 241 449 752

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

PS Form 3800, June 1985

U.S.G.P.O. 1985-480-794

Sent to	Cities Service Oil Co.
Street and No	Box 1919
P.O. State and ZIP Code	Midland, TX 79701
Postage	22
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom Date, and Address of Delivery	
TOTAL Postage and Fees	97
Postmark	

SEP 1 1985
U.S.P.O.

P 241 449 750

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

PS Form 3800, June 1985

U.S.G.P.O. 1985-480-794

Sent to	Marathon Oil Co.
Street and No	Box 552
P.O. State and ZIP Code	Midland, TX 79702
Postage	22
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom Date, and Address of Delivery	
TOTAL Postage and Fees	97
Postmark	

SEP 1 1985
U.S.P.O.

3800, June 1985

PS Form 3800, June 1985

U.S.G.P.O. 1985-480-794

Sent to	City of Lovington
Street and No	Box 1268
P.O. State and ZIP Code	Lovington, NM
Postage	22
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom Date, and Address of Delivery	
TOTAL Postage and Fees	97
Postmark	

SEP 1 1985
U.S.P.O.

3800, June 1985

PS Form 3800, June 1985

U.S.G.P.O. 1985-480-794

Sent to	Amerada Hess
Street and No	Box 2040
P.O. State and ZIP Code	Tulsa, OK 74102
Postage	22
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom Date, and Address of Delivery	
TOTAL Postage and Fees	97
Postmark	

SEP 1 1985
U.S.P.O.

100, June 1985

PS Form 3800, June 1985

U.S.G.P.O. 1985-480-794

Sent to	Exxon
Street and No	Box 1600
P.O. State and ZIP Code	Midland, TX 79702
Postage	22
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom Date, and Address of Delivery	
TOTAL Postage and Fees	97
Postmark	

SEP 1 1985
U.S.P.O.

800, June 1985

PS Form 3800, June 1985

U.S.G.P.O. 1985-480-794

Sent to	Texaco USA
Street and No	Box 728
P.O. State and ZIP Code	Hobbs, NM 88240
Postage	22
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom Date, and Address of Delivery	
TOTAL Postage and Fees	97
Postmark	

SEP 1 1985
U.S.P.O.

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

P 241 449 754

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

P 241 449 753

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

P 241 449 751

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

P 241 449 742

Memo

From
DAVID G. BOYER
Hydrogeologist

To Alan Ralston 9/2

Here is the listing of
current hazardous wastes
from petroleum refining.
Your well should not receive
any of these, plus any
acidic wastes must be
above pH = 2 when received.

Our meeting Friday was
very useful. Permitting
time should be minimal
since you have much of
the necessary information
already.

DB

Oil Conservation Division
P.O. Box 2088 Santa Fe, N.M. 87501

APOLLO OIL CO.

ALAN RALSTON

(505) 393-2273

215 W. Broadway - Suite B
P.O. Box 1737
Hobbs, New Mexico 88241

K034 Filter solids from the filtration of hexachloro-cyclopentadiene in the production of chlordane. (T)

K035 Wastewater treatment sludges generated in the production of creosote. (T)

K036 Still bottoms from toluene reclamation distillation in the production of disulfoton. (T)

K037 Wastewater treatment sludges from the production of disulfoton. (T)

K038 Wastewater from the washing and stripping of phorate production. (T)

K039 Filter cake from the filtration of diethylphosphorodithoric acid in the production of phorate . . . (T)

K040 Wastewater treatment sludge from the production of phorate. (T)

K041 Wastewater treatment sludge from the production of toxaphene. (T)

K042 Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T. (T)

K043 2,6-Dichlorophenol waste from the production of 2,4-D. (T)

K097 Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane. . . (T)

K098 Untreated process wastewater from the production of toxaphene. (T)

K099 Untreated wastewater from the production of 2,4-D. (T)

Explosives:

K044 Wastewater treatment sludges from the manufacturing and processing of explosives. (R)

K045 Spent carbon from the treatment of wastewater containing explosives. (R)

K046 Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds. (T)

K047 Pink/red water from TNT operations. (R)

Petroleum Refining:

K048 Dissolved air flotation (DAF) float from the petroleum refining industry (T)

K049 Slop oil emulsion solids from the petroleum refining industry (T)

K050 Heat exchanger bundle cleaning sludge from the petroleum refining industry (T)

K051 API separator sludge from the petroleum refining industry (T)

K052 Tank bottoms (leaded) from the petroleum refining industry (T)

Iron and Steel:

K061 Emission control dust/sludge from the primary production of steel in electric furnaces. . . (T)

K062 Spent pickle liquor from steel finishing operations. (C,T)

Secondary Lead:

K069 Emission control dust/sludge from secondary lead smelting (T)

K100 Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting (T)

Veterinary Pharmaceuticals:

K084 Wastewater treatment sludge generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds. (T)

Gas Plant Sheet

Area of review $\frac{1}{2}$ mile

check area of review - Class II permit
was prior to 32

mechanical. Integrity -

check Log Run log, check for fluid movement
behind casing, adequate casing

19,600 ~~12,500~~ bbl/day to zone

Packer Fluid ~~is~~ between casing & tubing
~~San~~ Sand H.W. stuff

Apollo Oil Meeting - Hobbs 8/29/86

Alan Ralson

Joe Ramey

Dave Boyer

Roger Anderson

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6356
Order No. R-5855

APPLICATION OF AMOCO PRODUCTION COMPANY
FOR SALT WATER DISPOSAL, LEA COUNTY,
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 25, 1978, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 14th day of November, 1978, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Amoco Production Company, is the owner and operator of the State "E" Tract 18 Well No. 21, located in Unit B of Section 2, Township 17 South, Range 36 East, NMPM, Lovington-Abo Pool, Lea County, New Mexico.
- (3) That the applicant proposes to utilize said well to dispose of produced salt water into the Abo formation, with injection into the open-hole interval from approximately 8391 feet to 9100 feet.
- (4) That the injection should be accomplished through 3 1/2-inch plastic lined tubing installed in a packer set at approximately 8350 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(5) That the injection well or system should be equipped with a pop-off valve or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1675 psi.

(6) That the subject well is presently equipped with 13 3/8-inch surface casing set at 269 feet with cement circulated to the surface; 9 5/8-inch intermediate casing set at 3300 feet and cemented with 300 sacks, calculated top of cement being at 2800 feet; and 7-inch long string set at 8391 feet and cemented with 550 sacks, with top of cement being at 8250 feet.

(7) That the above-described casing and cementing program leaves the San Andres and Paddock formations open without any protective cement opposite these formations around the long string of casing in the subject well.

(8) That secondary recovery water injection operations are currently being conducted in both the San Andres and Paddock formations within one-half mile of the subject well.

(9) That in order to prevent the subject well from becoming an avenue of escape for waters injected into the San Andres and Paddock formations in nearby wells, or into the Abo formation in the subject well, it (the subject well) should be recemented from the present top of cement on the long string to a point well above the top of the San Andres formation.

(10) That prior to its use as a salt water disposal well, the subject well should be recemented in such a manner as to cause cement around the 7-inch casing to come from the present top of cement at 8250 feet to a point at least 300 feet above the top of the San Andres formation.

(11) That the operator should notify the supervisor of the Hobbs district office of the Division of the date and time of recementing operations on the subject well and also of the installation of disposal equipment so that the same may be witnessed and/or inspected.

(12) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(13) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Amoco Production Company, is hereby authorized to utilize its State "E" Tract 18 Well No. 21, located in Unit B of Section 2, Township 17 South, Range 36 East, NMPM, Lovington-Abo Pool, Lea County, New Mexico, to dispose of produced salt water into the Abo formation, injection to be accomplished through 3 1/2-inch tubing installed in a packer set at approximately 8350 feet, with injection into the open-hole interval from approximately 8391 feet to 9100 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped with a pop-off valve or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1675 psi.

(3) That upon conversion to salt water disposal, applicant shall recement the 7-inch casing in the subject well in such a manner as to cause cement to come from the present top of cement at 8250 feet back up to a point at least 300 feet above the top of the San Andres formation.

(4) That the operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the recementing operations on the subject well and also of installation of disposal equipment.

(5) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(6) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

(7) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

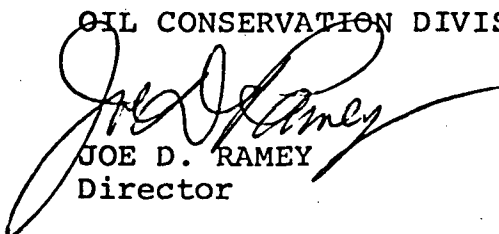
-4-

Case No. 6356

Order No. R-5855

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



JOE D. RAMEY
Director

S E A L

fd/

Entered September 10, 1980
JLR

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

36A

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7009
Order No. R-6461

APPLICATION OF AMOCO PRODUCTION
COMPANY FOR SALT WATER DISPOSAL,
LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on August 20, 1980, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 10th day of September, 1980, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Amoco Production Company, is the owner and operator of the State "E" Tract 18 Well No. 22, located in Unit G of Section 2, Township 17 South, Range 36 East, NMPM, Lovington-Abo Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Abo formation, with injection into the open hole interval from approximately 8330 feet to 9000 feet.

(4) That the injection should be accomplished through 3 1/2-inch plastic lined tubing installed in a packer set at approximately 8300 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

-2-

Case No. 7009
Order No. R-6461

(5) That prior to injection the applicant should recement the 5 1/2-inch casing in said well from a depth of approximately 5400 feet to 5000 feet, obtain a formation water analysis at the injection interval, and file such analysis with the Director of the Division.

(6) That the injection well or system should be equipped with a pressure limiting switch or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1650 psi.

(7) That the Director of the Division should be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such higher pressure will not result in migration of the injected waters from the Abo formation.

(8) That the operator should notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(9) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(10) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Amoco Production Company, is hereby authorized to utilize its State "E" Tract 18 Well No. 22, located in Unit G of Section 2, Township 17 South, Range 36 East, NMPM, Lovington-Abo Pool, Lea County, New Mexico, to dispose of produced salt water into the Abo formation, injection to be accomplished through 3 1/2-inch tubing installed in a packer set at approximately 8300 feet, with injection into the open hole interval from approximately 8330 feet to 9000 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

-3-

Case No. 7009

Order No. R-6461

PROVIDED FURTHER, that prior to injection the applicant shall recement the 5 1/2-inch casing in said well from a depth of approximately 5400 feet to 5000 feet, obtain a formation water analysis at the injection interval, and file such analysis with the Director of the Division.

(2) That the injection well or system shall be equipped with a pressure limiting switch or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1650 psi.

(3) That the Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Abo formation.

(4) That the operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(5) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(6) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

(7) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Director

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6356
Order No. R-5855

APPLICATION OF AMOCO PRODUCTION COMPANY
FOR SALT WATER DISPOSAL, LEA COUNTY,
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 25, 1978, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 14th day of November, 1978, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Amoco Production Company, is the owner and operator of the State "E" Tract 18 Well No. 21, located in Unit B of Section 2, Township 17 South, Range 36 East, NMPM, Lovington-Abo Pool, Lea County, New Mexico.
- (3) That the applicant proposes to utilize said well to dispose of produced salt water into the Abo formation, with injection into the open-hole interval from approximately 8391 feet to 9100 feet.
- (4) That the injection should be accomplished through 3 1/2-inch plastic lined tubing installed in a packer set at approximately 8350 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(5) That the injection well or system should be equipped with a pop-off valve or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1675 psi.

(6) That the subject well is presently equipped with 13 3/8-inch surface casing set at 269 feet with cement circulated to the surface; 9 5/8-inch intermediate casing set at 3300 feet and cemented with 300 sacks, calculated top of cement being at 2800 feet; and 7-inch long string set at 8391 feet and cemented with 550 sacks, with top of cement being at 8250 feet.

(7) That the above-described casing and cementing program leaves the San Andres and Paddock formations open without any protective cement opposite these formations around the long string of casing in the subject well.

(8) That secondary recovery water injection operations are currently being conducted in both the San Andres and Paddock formations within one-half mile of the subject well.

(9) That in order to prevent the subject well from becoming an avenue of escape for waters injected into the San Andres and Paddock formations in nearby wells, or into the Abo formation in the subject well, it (the subject well) should be recemented from the present top of cement on the long string to a point well above the top of the San Andres formation.

(10) That prior to its use as a salt water disposal well, the subject well should be recemented in such a manner as to cause cement around the 7-inch casing to come from the present top of cement at 8250 feet to a point at least 300 feet above the top of the San Andres formation.

(11) That the operator should notify the supervisor of the Hobbs district office of the Division of the date and time of recementing operations on the subject well and also of the installation of disposal equipment so that the same may be witnessed and/or inspected.

(12) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(13) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Amoco Production Company, is hereby authorized to utilize its State "E" Tract 18 Well No. 21, located in Unit B of Section 2, Township 17 South, Range 36 East, NMPM, Lovington-Abo Pool, Lea County, New Mexico, to dispose of produced salt water into the Abo formation, injection to be accomplished through 3 1/2-inch tubing installed in a packer set at approximately 8350 feet, with injection into the open-hole interval from approximately 8391 feet to 9100 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped with a pop-off valve or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1675 psi.

(3) That upon conversion to salt water disposal, applicant shall recement the 7-inch casing in the subject well in such a manner as to cause cement to come from the present top of cement at 8250 feet back up to a point at least 300 feet above the top of the San Andres formation.

(4) That the operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the recementing operations on the subject well and also of installation of disposal equipment.

(5) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(6) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

(7) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

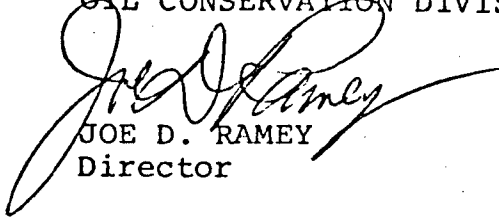
-4-

Case No. 6356

Order No. R-5855

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Director

S E A L

fd/

OIL CONSERVATION DIVISION

P. O. BOX 7088

SANTA FE, NEW MEXICO 87501

Form C-104
Revised 10-1-70

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REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Apollo Oil Company	
Address	
Box 1737, Hobbs, N.M. 88240	
Reason(s) for filing (Check proper box):	
New Well <input type="checkbox"/>	Change in Transporter of: Oil <input type="checkbox"/> Dry Gas <input type="checkbox"/>
Recompletion <input type="checkbox"/>	Casinghead Gas <input type="checkbox"/> Condensate <input type="checkbox"/>
Change in Ownership <input checked="" type="checkbox"/>	
Effective 4-1-86	

If change of ownership give name and address of previous owner: Amoco Production Company, Box 68, Hobbs, N.M. 88240

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, including Formation	Kind of Lease	Lease No.
State E Tract 18	21	Lovington ABO	State, Federal or Fee State	B-1553
Location				
Unit Letter	B	660 Feet From The North	Line and 1650	Feet From The East
Line of Section	2	Township	17S	Range 36E
		N.M.P.M.		Lea
				County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

DISPOSAL WELL

Name of Authorized Transporter of Oil <input type="checkbox"/> or Condensate <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)	
Name of Authorized Transporter of Casinghead Gas <input type="checkbox"/> or Dry Gas <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)	
If well produces oil or liquids, give location of tanks.	Unit	Sec. Twp. Rge.
Is gas actually connected?	When	

If this production is commingled with that from any other lease or pool, give commingling order number:

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Reservoir	Full Reservoir
Date Spudded	Date Compl. Ready to Prod.		Total Depth		F.S.T.D.			
Elevations (DF, RKB, RT, GR, etc.)	Name of Producing Formation		Top Oil/Gas Pay		Tubing Depth			
Perforations					Depth Casing Shoe			

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT

V. TEST DATA AND REQUEST FOR ALLOWABLE OIL WELL

(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

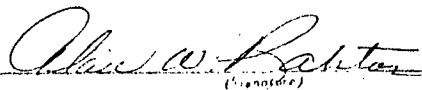
Date First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	Tubing Pressure	Casing Pressure	Choke Size
Actual Prod. During Test	Oil-Bbls.	Water-Bbls.	Gas-MCF

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MCF	Gravity of Condensate
Testing Method (prior, back pr.)	Tubing Pressure (shut-in)	Casing Pressure (shut-in)	Choke Size

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.



Owner

4-11-86

(Date)

OIL CONSERVATION DIVISION

APPROVED APR 15 1986

BY 
TITLE DISTRICT 1 SUPERVISOR

This form is to be filed in compliance with RULE 10.1.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the device tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for all wells on new and recompleted wells.

Fill out only Sections I, II, III, and VI for change of ownership, well name or number, or transporter, or other such change of condition.

Separate Form C-104 must be filed for each pool in multi-completed wells.

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NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease
State ☒ Fee ☐

5. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR.
USE "APPLICATION FOR PERMIT - 1" (FORM C-101) FOR SUCH PROPOSALS.

OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER- Injection	7. Unit Agreement Name
Amoco Production Company	8. Farm or Lease Name State E Tract 18
P.O. Drawer "A", Levelland, Texas 79336	9. Well No. 21
10. Field and Pool, or Wildcat Lovington	
11. Location of Well UNIT LETTER B 660 FEET FROM THE North LINE AND 1650 FEET FROM East LINE, SECTION 2 TOWNSHIP 17-S RANGE 36-E NMPM.	
15. Elevation (Show whether DF, RT, GR, etc.) 3853 RDB	12. County Lea

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO

SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK <input type="checkbox"/> TEMPORARILY ABANDON <input type="checkbox"/> PULL OR ALTER CASING <input type="checkbox"/> OTHER <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/> CHANGE PLANS <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/> COMMENCE DRILLING OPNS. <input type="checkbox"/> CASING TEST AND CEMENT JOB <input type="checkbox"/> OTHER <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/> PLUG AND ABANDONMENT <input type="checkbox"/> Convert to SWD <input checked="" type="checkbox"/>
---	--	---	---

7. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work, SEE RULE 1103.

Moved in service unit 1/29/79. Pulled rods, tubing, and packer. Ran tubing and cement retainer to 8275'. Squeezed perfs 8330'-40' with 100 sx Class H cement plus 6% Halad 9 followed by 100 sx Class H plus .2% HR4. Reversed out 60 sx. Pulled tubing and perforated interval 4722'-23' with 4 JSPF. Ran tubing and packer set at 4363'. Pumped 283 BW thru perfs and circulated out bradenhead. Ran tubing and set cement retainer at 4638'. Cement 7" casing with 560 sx Class C cement plus 3% NA Silicate plus 6# salt plus 1/4# Flocele/sx followed by 100 sx Class C cement plus 9# salt/sx. Reversed out 5 sx. Ran Temperature Survey and found top of cement at 3375'. Drilled out cement and retainer 4638'-4727'. Ran bit to 8257' and drilled cement and cast iron bridge plug to 8381'. Drilled fill from 8381'-8470'. Drilled formation 8470'-8987'. Pulled drill pipe and bit. Ran 2 1/2" tubing and set packer at 8367'. Acidized with 5000 gal 15% HCL acid. Ran injection packer and set at 8378'. Moved out service unit 2/28/79. Well is currently shut-in. Waiting on pipeline to place well on injection.

I, hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED <i>Ray Cox</i>	TITLE Administrative Supervisor	DATE March 9, 1979
APPROVED BY <i>[Signature]</i>	TITLE SUPERVISOR DISTRICT 1	DATE MAR 20 1979
CONDITIONS OF APPROVAL, IF ANY: 0+4-NMOC, H 1-Houston 1-RWA 1-Susp		

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NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

SUNDRY NOTICES AND REPORTS ON WELLS <small>(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE APPLICATION FOR PERMIT - 1" (FORM C-101) FOR SUCH PROPOSALS.)</small>		5a. Indicate Type of Lease State <input checked="" type="checkbox"/> Fee <input type="checkbox"/> 5. State Oil & Gas Lease No.
1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> 2. Name of Operator Amoco Production Company 3. Address of Operator P.O. Drawer "A", Levelland, Texas 79336 4. Location of Well UNIT LETTER <u>B</u> <u>660</u> FEET FROM THE <u>North</u> LINE AND <u>1650</u> FEET FROM <u>East</u> LINE, SECTION <u>2</u> TOWNSHIP <u>17-S</u> RANGE <u>36-E</u> N.M.P.M. 15. Elevation (Show whether DF, RT, GR, etc.) 3853 RDB	7. Unit Agreement Name 8. Farm or Lease Name State "E" Tract 18 9. Well No. 21 10. Field and Pool, or Wildcat Lovington 12. County Lea	

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data
NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐
TEMPORARILY ABANDON ☐
PULL OR ALTER CASING ☐

PLUG AND ABANDON ☐
CHANGE PLANS ☐

REMEDIAL WORK ☐
COMMENCE DRILLING OPNS. ☐
CASING TEST AND CEMENT JOB ☐

ALTERING CASING ☐
PLUG AND ABANDONMENT ☐

OTHER Convert to SWD ☒

OTHER ☐

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Per NMOCD order No, R-5885 dated 10/25/78, propose to convert well to SWD by the following procedure. Pull rods, tubing and packer. Run tubing and cement retainer to 8275'. Squeeze Abo perfs 8330'-8340' with 100 sx Class H cement plug additives and 100 sx Class H cement plug 2% HR4. Pull out of retainer. Perf 7" casing w/4 shots/foot over 1 foot interval at approx. 4720'. Run tubing with cement retainer and set above perfs at 4670'. Cement 7" casing with 560 sx Class C Incor plus additives and 100 sx Class C Incor plus 9.5# fine grained salt/sx. to circulate to surface. Pull out of retainer. Run bit and drill pipe. Drill out cement retainers and CIBP set at 8380'. Deepen hole to 9100'. Pull drill pipe and bit. Run workstring, treating packer and tailpipe. Acidize open hole with 5000 gal 15% HCL. Pull workstring, treating packer, and tailpipe. Run internally coated tubing and injection packer. Set packer at approx. 8370'. Place well on injection.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Ray Cox TITLE Administrative Supervisor DATE February 1, 1979

APPROVED BY Jerry Lytle TITLE SUPERVISOR DISTRICT 1 DATE FEB 2 1979

CONDITIONS OF APPROVAL, IF ANY:

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NEW MEXICO OIL CONSERVATION COMMISSION

Form C-101
Revised 1-1-65

5A. Indicate Type of Lease	
STATE <input checked="" type="checkbox"/>	FEE <input type="checkbox"/>
5. State Oil & Gas Lease No. B-1553	

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work		7. Unit Agreement Name	
b. Type of Well DRILL <input type="checkbox"/> DEEPEN <input checked="" type="checkbox"/> PLUG BACK <input type="checkbox"/> OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		8. Farm or Lease Name State E Tract 18	
2. Name of Operator Amoco Production Company		9. Well No. 21	
3. Address of Operator P.O. Drawer A, Levelland, Texas 79336		10. Field and Pool, or Wildcat Lovington	
4. Location of Well UNIT LETTER B LOCATED 660 FEET FROM THE north LINE AND 1650 FEET FROM THE east LINE OF SEC. 2 TWP. 17-S RGE. 36-E NMPM		12. County Lea	
19. Proposed Depth 9100		19A. Formation Abo	20. Rotary or C.T. Rotary
21. Elevations (Show whether DF, RT, etc.) 3853' RDB	21A. Kind & Status Plug. Bond Blanket on File	21B. Drilling Contractor NA	22. Approx. Date Work will start Aug. 25, 1978

23. PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
Existing casing program well not be altered.					

Propose to deepen well to new TD of 9100', spot 1100 gal 15% NE acid over open hole, test injectivity by pumping 500 bbl of produced water and convert well to a salt water disposal.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed David L. Porter Title Asst. Administrative Analyst Date 7-27-78

(This space for State Use)

APPROVED BY [Signature] TITLE SUPERVISOR DISTRICT 1 DATE JUL 31 1978

CONDITIONS OF APPROVAL, IF ANY:

+4-NMOCC, H. 1-Div 1-Susp 1-DLP

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-103
(Rev 3-55)

MISCELLANEOUS REPORTS ON WELLS

(Submit to appropriate District Office as per Commission Rule 1106)

HOBBS OFFICE 000

Name of Company Pan American Petroleum Corporation		Address Box 68 - Hobbs, N.M.			
Lease State "E" Tract 18	Well No. 21	Unit Letter B	Section 2	Township T-17-S	Range R-36-E
Date Work Performed 10-31-59 thru 11-14-59	Pool Lovington Abo			County Lea	

THIS IS A REPORT OF: (Check appropriate block)

- ☐ Beginning Drilling Operations ☐ Casing Test and Cement Job ☒ Other (Explain):
☐ Plugging ☐ Remedial Work Subsequent notice of plug back & acidize

Detailed account of work done, nature and quantity of materials used, and results obtained.

The following work was performed in an unsuccessful effort to shut off formation water and increase productivity:

Ran logs, set CI bridge plug at 8380' with 7' cement cap. Perforated 8301'-8311' and 8287'-8389' with 2 SPF. Unable to acidize. Set packer at 8246' and acidized with 500 gallons. Would not produce. Re acidized with 1000 gallons 15% reg. acid. Would not produce. Reset packer at 8320', found communications. Set retainer at 8250', squeezed perforations 8301-61', 8287-87', 8330-40', w/2 JSPP with 100 sx cement. Drilled out to 8370'. Reperforated 8330-40' with 2 JSPP. Acidized with 1500 gallons 15%.

Witnessed by M. R. Frazier	Position Field Foreman	Company Pan American Petroleum Corporation
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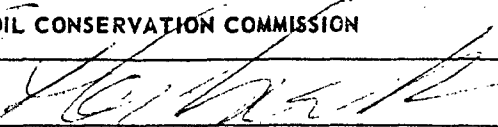
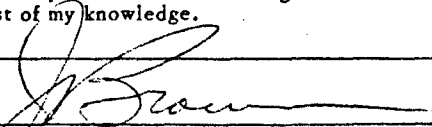
FILL IN BELOW FOR REMEDIAL WORK REPORTS ONLY

ORIGINAL WELL DATA

D F Elev. 3853' RDB	T D 8470'	P B T D 8370'	Producing Interval 8330-8340'	Completion Date 11-14-59
Tubing Diameter 2-3/8" OD	Tubing Depth 8341'	Oil String Diameter 7"	Oil String Depth 8391'	
Perforated Interval(s) 8330-9340'				
Open Hole Interval -		Producing Formation(s) Abo		

RESULTS OF WORKOVER

Test	Date of Test	Oil Production BPD	Gas Production MCFPD	Water Production BPD	GOR Cubic feet/Bbl	Gas Well Potential MCFPD
Before Workover	8-22-59	81		140		
After Workover	11-14-59	65		140		

OIL CONSERVATION COMMISSION		I hereby certify that the information given above is true and complete to the best of my knowledge.	
Approved by 	Name 		
Title Area Superintendent	Position Area Superintendent		
Date	Company Pan American Petroleum Corporation		

ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

HOBBS OFFICE OCC

MISCELLANEOUS NOTICES

1959 OCT 7 AM

Submit this notice in TRIPLICATE to the District Office, Oil Conservation Commission, before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Notice by Checking Below

NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO TEMPORARILY ABANDON WELL		NOTICE OF INTENTION TO DRILL DEEPER	
NOTICE OF INTENTION TO PLUG WELL		NOTICE OF INTENTION TO PLUG BACK	X	NOTICE OF INTENTION TO SET LINER	
NOTICE OF INTENTION TO SQUEEZE		NOTICE OF INTENTION TO ACIDIZE	X	NOTICE OF INTENTION TO SHOOT (Nitro)	
NOTICE OF INTENTION TO GUN PERFORATE	X	NOTICE OF INTENTION (OTHER)		NOTICE OF INTENTION (OTHER)	

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Hobbs, New Mexico
(Place)

October 2, 1959
(Date)

Gentlemen:

Following is a Notice of Intention to do certain work as described below at the Pan American Petroleum Corporation

State "E" Tract 18

(Company or Operator)

Well No. 21

Lease

1959 OCT 7 AM 9:30

MINING OFFICE OCC

NW/ 1/4 NE/ 1/4 of Sec. 2, T-17-S, R-36-E, NMPM, Lovington-Abo Pool
(40-acre Subdivision)
Lea County.

FULL DETAILS OF PROPOSED PLAN OF WORK
(FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS)

In order to shut off formation water and increase productivity the following remedial work is planned:

Set a cast iron bridge plug in 7" casing at 8380' and cap with 10' cement.
Perforate with two shots per ft., intervals, 8287-8289, 8301-8311.
Acidize perforations with 500 gallons 15% regular acid. Overflush with 10-15 barrels of oil.
Put well on production.

Approved....., 1959
Except as follows:

Approved
OIL CONSERVATION COMMISSION

By.....
Title.....

Pan American Petroleum Corporation
Company or Operator

By.....

Position..... Area Superintendent

Send Communications regarding well to:

Name..... J. W. Brown

Address..... P. O. Box 68-Hobbs, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

1950 JUN 17 AM 8:59
MISCELLANEOUS NOTICES

Submit this notice in TRIPPLICATE to the District Office, Oil Conservation Commission, before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Notice by Checking Below

NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO TEMPORARILY ABANDON WELL		NOTICE OF INTENTION TO DRILL DEEPER	
NOTICE OF INTENTION TO PLUG WELL		NOTICE OF INTENTION TO PLUG BACK		NOTICE OF INTENTION TO SET LINER	
NOTICE OF INTENTION TO SQUEEZE	X	NOTICE OF INTENTION TO ACIDIZE	X	NOTICE OF INTENTION TO SHOOT (Nitro)	
NOTICE OF INTENTION TO GUN PERFORATE	X	NOTICE OF INTENTION (OTHER)		NOTICE OF INTENTION (OTHER)	

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Hobbs, New Mexico
(Place)

6-17-59
(Date)

Gentlemen:

Following is a Notice of Intention to do certain work as described below at the Pan American Petroleum Corporation

(Company or Operator) State E Tract 18 Well No. 21 in B (Unit)
NW 1/4 NE 1/4 of Sec. 2, T. 17-S., R. 36-E. NMPM, Lovington Abo Pool
(40-acre Subdivision)
Lea County.

FULL DETAILS OF PROPOSED PLAN OF WORK
(FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS)

In order to shut off water and increase production, we propose the following:

Set drillable retainer at 8385' and squeeze open hole 8391' - 8470' with 200 sacks slo-set cement, leaving 10' cap on top of retainer. Perforate 8330-40 with 2 shots per foot, acidize with 500 gallons 15% acid and flush with 50 barrels oil. Test well and return to production.

Approved _____, 19____
Except as follows:

Approved
OIL CONSERVATION COMMISSION

By _____

Title _____

Pan American Petroleum Corporation
Company or Operator

By _____

Position Area Superintendent
Send Communications regarding well to:

Name J. W. Brown

Address Box 68 - Hobbs, New Mexico

ORIGINAL

Form C-103
(Revised 3-55)

NEW MEXICO OIL CONSERVATION COMMISSION
MISCELLANEOUS REPORTS ON WELLS

(Submit to appropriate District Office as per Commission Rule 1106)

COMPANY Pan American Petroleum Corporation Post Office Box 68, Hobbs, New Mexico
(Address)

LEASE State E Tract 18 WELL NO. 21 UNIT B S 2 T 17 R 36

DATE WORK PERFORMED May 19, 1958 POOL Lovington Abo

This is a Report of: (Check appropriate block) ☐ Results of Test of Casing Shut-off
☐ Beginning Drilling Operations ☒ Remedial Work
☐ Plugging ☐ Other

Detailed account of work done, nature and quantity of materials used and results obtained.
In accordance with Form C-102 approved 5-12-58 the following work was performed and results
obtained: Set packer at approximately 8430' and acidized down casing with 500 gallons 15%
regular and flushed with 50 barrels of oil. On retest well pumped 126 barrels oil and 52
barrels water, 29.09 MCF Gas in 24 hours. GOR 231.

FILL IN-BELOW FOR REMEDIAL WORK REPORTS ONLY

Original Well Data:
DF Elev. 3853 RDB TD 8470 PBD - Prod. Int. 8418 Compl Date 11-15-53
Tbng. Dia 2" Tbng Depth 8448 Oil String Dia 7 Oil String Depth 8398
Perf Interval (s) _____
Open Hole Interval 8393-8470 Producing Formation (s) Abo

RESULTS OF WORKOVER:	BEFORE	AFTER
Date of Test	<u>2-14-58</u>	<u>5-22-58</u>
Oil Production, bbls. per day	<u>115</u>	<u>129</u>
Gas Production, Mcf per day		<u>29.09</u>
Water Production, bbls. per day	<u>44</u>	<u>52</u>
Gas-Oil Ratio, cu. ft. per bbl.		<u>231</u>
Gas Well Potential, Mcf per day		
Witnessed by <u>M. R. Frazier</u>	<u>Pan American Petroleum Corporation</u> (Company)	

OIL CONSERVATION COMMISSION
Name E. Frazier
Title Engineer District 4
Date MAY 29 1958
I hereby certify that the information given above is true and complete to the best of my knowledge.
Name Robert H. Hunsicker
Position Field Superintendent
Company Pan American Petroleum Corporation

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

MISCELLANEOUS NOTICES

PM 3:28

Submit this notice in TRIPLICATE to the District Office, Oil Conservation Commission, before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Notice by Checking Below

NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO TEMPORARILY ABANDON WELL		NOTICE OF INTENTION TO DRILL DEEPER	
NOTICE OF INTENTION TO PLUG WELL		NOTICE OF INTENTION TO PLUG BACK		NOTICE OF INTENTION TO SET LINER	
NOTICE OF INTENTION TO SQUEEZE		NOTICE OF INTENTION TO ACIDIZE	X	NOTICE OF INTENTION TO SHOOT (Nitro)	
NOTICE OF INTENTION TO GUN PERFORATE		NOTICE OF INTENTION (OTHER)		NOTICE OF INTENTION (OTHER)	

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Hobbs, New Mexico
(Place)

May 7

1958
(Date)

Gentlemen:

Following is a Notice of Intention to do certain work as described below at the Pan American Petroleum Corporation

State "NM" Tract 18 Well No. 21 in B
(Company or Operator) (Unit)
NW 1/4 NE 1/4 of Sec. 2, T. 17-S, R. 36-E, NMPM, Lovington Abo Pool
(40-acre Subdivision)
Lea County.

FULL DETAILS OF PROPOSED PLAN OF WORK (FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS)

In order to stimulate production we propose the following: Set packer at approximately 8430' and acidize down casing with 500 gallons 15% regular and flush with 50 barrels of oil. Test well and return to production.

MAY 12 1958

Approved _____, 19____
Except as follows:

Approved
OIL CONSERVATION COMMISSION

By _____
Title _____

Pan American Petroleum Corporation
Company or Operator

By R. L. Hendrickson
Position Field Superintendent
Send Communications regarding well to:

Name R. L. Hendrickson
Address Box 68, Hobbs, New Mexico

ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Form C-110
Revised 7/1/55

(File the original and 4 copies with the appropriate district office)

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION
TO TRANSPORT OIL AND NATURAL GAS

Company or Operator Pan American Petroleum Corporation Lease State "E" Tr. 18

Well No. 21 Unit Letter B S 2 T 17 R 36 Pool Lovington Abo

County Lea Kind of Lease (State, Fed. or Patented) State

If well produces oil or condensate, give location of tanks: Unit C S 1 T 17 R 36

Authorized Transporter of Oil or ~~Condensate~~ Texas-New Mexico Pipe Line Co.

Address Box 1510 - Midland, Texas

(Give address to which approved copy of this form is to be sent)

Authorized Transporter of Gas Skelly Oil Co.

Address Box 1135, Eunice, New Mexico

(Give address to which approved copy of this form is to be sent)

If Gas is not being sold, give reasons and also explain its present disposition:

NAME CHANGED:

FROM: PAN AMERICAN PETR. CORP.

TO: AMOCO PRODUCTION CO.

EFFECTIVE: 2-1-71

Reasons for Filing: (Please check proper box) New Well ()

Change in Transporter of (Check One): Oil () Dry Gas () C'head () Condensate ()

Change in Ownership () Other (x)

Remarks: (Give explanation below)

Change of operating name from "Stanolind Oil and Gas Company" to
"Pan American Petroleum Corporation" effective February 1, 1957.

The undersigned certifies that the Rules and Regulations of the Oil Conservation Commission have been complied with.

Executed this the 28th day of January 19 57

Approved JAN 29 1957 19

OIL CONSERVATION COMMISSION

By E. J. Fischer

Title Engineer District II

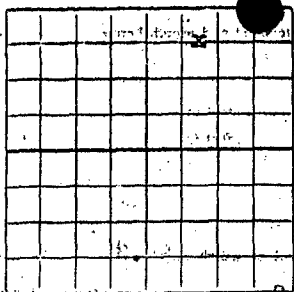
By R. E. Henderson

Title Field Superintendent

Company Pan American Petroleum Corporation

Address Box 68

Hobbs, New Mexico



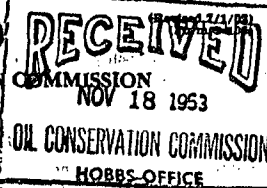
AREA 840 ACRES
LOCATE WELL CORRECTLY

ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

WELL RECORD



Mail to District Office, Oil Conservation Commission, to which Form C-101 was sent not later than twenty days after completion of well. Follow instructions in Rules and Regulations of the Commission. Submit in QUINTUPLICATE.

Stanolind Oil and Gas Company

State E Tract 18

(Company or Operator)

(Lease)

Well No. 21, in NW 1/4 of NE 1/4, of Sec. 2, T. 17-S, R. 36-E, NMPM.

Lovington - Abo

Pool,

Lea

County.

Well is 660' feet from North line and 1650' feet from East line

of Section 2. If State Land the Oil and Gas Lease No. is B-1553

Drilling Commenced 9-26-53, 19... Drilling was Completed 11-9, 1953

Name of Drilling Contractor Lee Drilling Company

Address Philtower Building - Tulsa, Oklahoma

Elevation above sea level at Top of Tubing Head. The information given is to be kept confidential until

Not Confidential, 19...

OIL SANDS OR ZONES

No. 1, from 6100 to 6250 Oil No. 4, from to

No. 2, from 8300 to 8470 Oil No. 5, from to

No. 3, from to No. 6, from to

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from to feet

No. 2, from to feet

No. 3, from to feet

No. 4, from to feet

CASING RECORD

SIZE	WEIGHT PER FOOT	NEW OR USED	AMOUNT	KIND OF SHOE	CUT AND PULLED FROM	PERFORATIONS	PURPOSE
13-3/8"	36#	New	255'	Guide			Surface
9-5/8"	32.3, 36#	New	3286'	Guide			Intermediate
7"	23, 26#	New	8380'	Float			Oil

MUDDING AND CEMENTING RECORD

SIZE OF HOLE	SIZE OF CASING	WHERE SET	NO. BAGS OF CEMENT	METHOD USED	MUD GRAVITY	AMOUNT OF MUD USED
17-1/2"	13-3/8"	269'	275	Howco Plug		
12-1/4"	9-5/8"	3300'	300	Howco Plug		
8-3/4"	7"	8391'	550 / 550	Howco Plug		

RECORD OF PRODUCTION AND STIMULATION

(Record the Process used, No. of Qts. or Gals. used, interval treated or shot.)

Washed formation with 500 gallons 15% regular acid.

NOV 30 1953

Result of Production Stimulation See Production - reverse side.

Depth Cleaned Out

RECORD OF DRILL-STEM AND SPECIAL TEST

If drill-stem or other special tests or deviation surveys were made, submit report on separate sheet and attach hereto

TOOLS USED

Rotary tools were used from 0 feet to TD = 8470 feet, and from feet to feet.
Cable tools were used from feet to feet, and from feet to feet.

PRODUCTION

Put to Producing 11-15 19.53
OIL WELL: The production during the first 24 hours was 147.60 barrels of liquid of which 99.8 % was
was oil; % was emulsion; % water; and .2 % was sediment. A.P.I.

Gravity API 41.2

GAS WELL: The production during the first 24 hours was M.C.F. plus barrels of
liquid Hydrocarbon. Shut in Pressure lbs.

Length of Time Shut in

PLEASE INDICATE BELOW FORMATION TOPS (IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE):

Southeastern New Mexico

Northwestern New Mexico

T. Anhy.	T. Devonian	T. Ojo Alamo
T. Salt	T. Silurian	T. Kirtland-Fruitland
B. Salt	T. Montoya	T. Farmington
T. Yates	T. Simpson	T. Pictured Cliffs
T. 7 Rivers	T. McKee	T. Menefee
T. Queen	T. Ellenburger	T. Point Lookout
T. Grayburg	T. Gr. Wash	T. Mancos
T. San Andres 4666	T. Granite	T. Dakota
T. Glorieta 5958	T.	T. Morrison
T. Drinkard 7861	T.	T. Penn
T. Tubbs 7583	T.	T.
T. Abo 8172	T.	T.
T. Penn	T.	T.
T. Miss	T.	T.

FORMATION RECORD

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	1394	1394	Red Bed				
1394	2073	679	Red Bed and Sand				
2073	2116	43	Anhydrite and Salt				
2116	2295	179	Anhydrite and Gyp				
2295	3200	5495	Anhy., salt, & lime				
3200	3509	309	Anhydrite and lime				
3509	4134	625	Lime				
4134	4236	102	Lime and Gyp				
4236	4504	268	Lime				
4504	4507	3	Lime and Sand				
4507	4698	191	Sand				
4698	4744	46	Lime				
4744	4766	22	Hard Sand				
4766	4841	75	Sand				
4841	4873	32	Sand and lime				
4873	4923	50	Sand				
4923	4936	13	Sand and Lime				
4936	4954	18	Hard Sand				
4954	5016	62	Sand				
5-16	5845	1839	Lime				
5845	5995	150	Sandy Lime				
5995	8470	2475	Lime				

OIL CONSERVATION COMMISSION
HOBBBS DISTRICT OFFICE
No. Copies Received
DISTRIBUTION
Operator
State Land
Transportation
U. S. G. S.

ATTACH SEPARATE SHEET IF ADDITIONAL SPACE IS NEEDED

I hereby swear or affirm that the information given herewith is a complete and correct record of the well and all work done on it so far as can be determined from available records.

November 16, 1953

Company or Operator Stanolind Oil and Gas Co.

Address Box 68, Hobbs, N. M.

ORIGINAL SIGNED BY NATHAN L. HENDERSON

Position or Title Production Foreman

FIELD SUPERINTENDENT

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

ORIGINAL

REQUEST FOR (OIL) - (GAS) ALLOWABLE

RECEIVED

NOV 18 1953

This form shall be submitted by the operator before an initial allowable will be assigned. Form C-104 is to be submitted in QUADRUPLICATE to the same District Office to which the allowable will be assigned effective 7:00 A.M. on date of completion or recompletion, provided this form is submitted within the calendar month of completion or recompletion. The completion date shall be that date in the case of an oil well when oil is delivered into the stock tanks. Gas must be reported on 15.025 psia at 60° Fahrenheit.

Hobbs, New Mexico
(Place)

NOV 3 1953
(Date)

WE ARE HEREBY REQUESTING AN ALLOWABLE FOR A WELL KNOWN AS:

Stanolind Oil and Gas Company St. E Tr., Well No. 21, in NW 1/4 NE 1/4,
(Company or Operator) (Lease)

B, Sec. 2, T. 17-S, R. 36-E, NMPM, Lovington - Abo Pool
(Unit)

Lea County, Date Spudded 7-26-53, Date Completed 11-15-53

Please indicate location:

		X	

Elevation RDB-3853' Total Depth 8470' P.B.

Top oil/gas pay 8250' Prod. Form Abo

Casing Perforations Open hole completion or

Depth to Casing shoe of Prod. String 8391

Natural Prod. Test BOPD

based on bbls. Oil in Hrs. Mins.

Test after acid or shot 294.60 BOPD

Based on 147.30 bbls. Oil in 12 Hrs. Mins.

Gas Well Potential

Size choke in inches 13/64

Date first oil run to tanks or gas to Transmission system: 11-14-53

Transporter taking Oil or Gas: Texas-New Mexico Pipe Line Company

Casing and Cementing Record

Size Feet Sax

13-3/8"	255	275
9-5/8"	3286'	300
7"	8380	550 / 550
		cu. ft. perlite

Remarks: GOR 338; corrected gravity 41.1 API

ACR 39.58

Request top allowable 120 BOPD effective 11-14-53

I hereby certify that the information given above is true and complete to the best of my knowledge.

Approved November, 1953

Stanolind Oil and Gas Company
(Company or Operator)

OIL CONSERVATION COMMISSION

By: [Signature] NOV 18 1953
Title: Engineer District

By: [Signature]
(Signature)

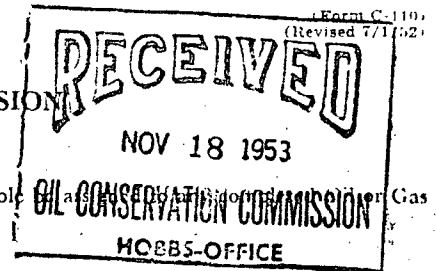
Title: Production Foreman
Send Communications regarding well to:

Name: Stanolind Oil and Gas Company

Address: Box 68, Hobbs, New Mexico

ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico



It is necessary that Form C-104 be approved before this form can be approved on an initial allowable well. Submit this form in QUADRUPLICATE.

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION
TO TRANSPORT OIL AND NATURAL GAS

Company or Operator Stanolind Oil and Gas Company Lease State E Tr. 18
Address Box 68, Hobbs, N. M. Box 1410, Ft. Worth, Texas
(Local or Field Office) (Principal Place of Business)
Unit B, Well(s) No. 21, Sec. 2, T. 17-S, R. 36-E, Pool Lovington - Abo
County Lea Kind of Lease Patented
If Oil well Location of Tanks NW/4 of NE/4 of Section 2 T-17-S; R-36-E
Authorized Transporter Texas-New Mexico Pipe Line Company Address of Transporter
Eunice, New Mexico Box 1510, Midland, Texas
(Local or Field Office) (Principal Place of Business)
Per cent of Oil or Natural Gas to be Transported 100% Other Transporters authorized to transport Oil or Natural Gas
from this unit are None

REASON FOR FILING: (Please check proper box)

NEW WELL ☒ CHANGE IN OWNERSHIP ☐
CHANGE IN TRANSPORTER ☐ OTHER (Explain under Remarks) ☐

REMARKS:

The undersigned certifies that the Rules and Regulations of the Oil Conservation Commission have been complied with.

Executed this the 16th day of November 1953

Approved NOV 18 1953, 1953

Stanolind Oil and Gas Company

OIL CONSERVATION COMMISSION
By J. G. Stanley
Title Engineer District 1

By Paul H. Hurst
Title Production Foreman

ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

RECEIVED

NOV 18 1953

OIL CONSERVATION COMMISSION
HOBBS-OFFICE

MISCELLANEOUS REPORTS ON WELLS

Submit this report in TRIPLICATE to the District Office, Oil Conservation Commission, within 10 days after the work specified is completed. It should be signed and filed as a report on Beginning Drilling Operations, Results of test of casing shut-off, result of plugging of well, result of well repair, and other important operations, even though the work was witnessed by an agent of the Commission. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Report by Checking Below

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON RESULT OF TEST OF CASING SHUT-OFF	X	REPORT ON REPAIRING WELL	
REPORT ON RESULT OF PLUGGING WELL		REPORT ON RECOMPLETION OPERATION		REPORT ON (Other)	

RECEIVED
NOV 30 1953

November 16, 1953
(Date)Hobbs, New Mexico
(Place)

Following is a report on the work done and the results obtained under the heading noted above at the

Stanolind Oil and Gas Company
(Company or Operator)State E Tract 18
(Lease)Lee Drilling Company
(Contractor)

Well No. 21 in the NW 1/4 NE 1/4 of Sec. 2

T17-S, R. 36-E, NMPM, Lovington-Abo

Pool, Lea County

The Dates of this work were as follows: November 10, 1953 to November 13, 1953 Inclusive.

Notice of intention to do the work (✓) (was not) submitted on Form C-102 on _____, 19____.

(Cross out incorrect words)

and approval of the proposed plan (✓) (was not) obtained.

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

On November 11, 1953 ran 8380' of 7" casing and set at 8391' with 550 sacks neat cement w/4% gel and 550 cu. ft. perlite. After 30 hours W.O.C. tested casing before and after drilling plug with 1050 psi for 30 minutes and as there was no loss in pressure, completion operations were resumed.

Witnessed by A.C. Blackburn
(Name)Stanolind Oil and Gas Company Head Roustabout
(Company) (Title)

Approved:

OIL CONSERVATION COMMISSION

A. G. Stanley
(Name)

District 7

(Title)

NOV 18 1953

(Date)

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name

Position Production Foreman

Representing Stanolind Oil and Gas Company

Address Box 68, Hobbs, New Mexico

ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico(Form C-103)
(Revised 7/1/52)RECEIVED
OCT 9 1953

MISCELLANEOUS REPORTS ON WELLS

OIL CONSERVATION COMMISSION

Submit this report in TRIPLICATE to the District Office, Oil Conservation Commission, within 10 days after the work specified is completed. It should be signed and filed as a report on Beginning Drilling Operations, Results of test of casing shut-off, result of plugging of well, result of well repair, and other important operations, even though the work was witnessed by an agent of the Commission. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Report by Checking Below

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON RESULT OF TEST OF CASING SHUT-OFF	X	REPORT ON REPAIRING WELL	
REPORT ON RESULT OF PLUGGING WELL		REPORT ON RECOMPLETION OPERATION		REPORT ON (Other)	

October 7, 1953
(Date)Hobbs, New Mexico
(Place)

Following is a report on the work done and the results obtained under the heading noted above at the

Stanolind Oil and Gas Company
(Company or Operator)State E Tract 18
(Lease)Lee Drilling Company
(Contractor)

Well No. 21 in the NW 1/4 NE 1/4 of Sec. 2

T. 17-S., R. 36-E, NMPM., Lovington - Abo Pool, Lea County.

The Dates of this work were as follows: October 3, 1953 to October 5, 1953 Inclusive

Notice of intention to do the work ~~/was/~~ (was not) submitted on Form C-102 on _____, 19____,
(Cross out incorrect words)and approval of the proposed plan ~~/was/~~ (was not) obtained.

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

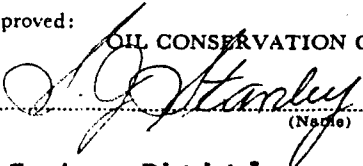
On October 3, 1953 ran 3286' of 9-5/8" landed at 3300 with DV tool set at 2037. Cemented 1st stage with 150 sx neat cement. Circulated 6 hours and cemented second stage with 150 sacks neat cement. After 36 hours W. O. C. tested casing with 1100 psi for 30 minutes with no drop in pressure. Drilled DV tool and tested casing with 1000 psi for 30 minutes with no drop in pressure. Drilled firm cement and shoe and tested casing with 1125 psi for 30 minutes, and as there was no drop in pressure drilling operations were resumed.

OCT 26 1953

Witnessed by A. C. Blackburn
(Name)Stanolind Oil and Gas Company
(Company)Head Roustabout
(Title)

Approved:

OIL CONSERVATION COMMISSION


(Name)

Engineer District 1

(Title)

OCT 13 1953
(Date)

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name: 

Position: Field Superintendent

Representing: Stanolind Oil and Gas Company

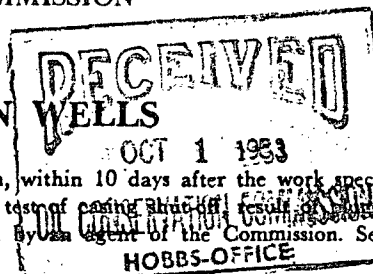
Address: Box 68, Hobbs, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

ORIGINAL

MISCELLANEOUS REPORTS ON WELLS



Submit this report in TRIPLICATE to the District Office, Oil Conservation Commission, within 10 days after the work specified is completed. It should be signed and filed as a report on Beginning Drilling Operations, Results of test of casing shut-off, result of plugging of well, result of well repair, and other important operations, even though the work was witnessed by an agent of the Commission. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Report by Checking Below

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON RESULT OF TEST OF CASING SHUT-OFF	X	REPORT ON REPAIRING WELL	
REPORT ON RESULT OF PLUGGING WELL		REPORT ON RECOMPLETION OPERATION		REPORT ON (Other)	

September 29, 1953

(Date)

Hobbs, New Mexico

(Place)

Following is a report on the work done and the results obtained under the heading noted above at the

Stanolind Oil and Gas Company

(Company or Operator)

State E Tract 18

(Lease)

Lee Drilling Company

(Contractor)

Well No. 21 in the NW 1/4 NE 1/4 of Sec. 2

T. 17-S, R. 36-E, NMPM, Lovington-Abo Pool, Lea County.

The Dates of this work were as follows: September 27, 1953 to September 28, 1953 Inclusive

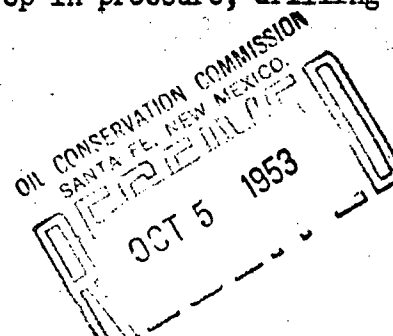
Notice of intention to do the work (was) (was not) submitted on Form C-102 on _____, 19____, (Cross out incorrect words)

and approval of the proposed plan (was) (was not) obtained.

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

On September 27, 1953 ran 255' of 13-3/8" casing landed at 269' and cemented with 275 sacks of cement circulated to surface. After 24 hours W. O. C., tested casing before drilling plug with 400 psi for 30 minutes with no drop in pressure. Drilled 40' of firm cement to shoe and tested casing with 400 psi for 30 minutes and as there was no drop in pressure, drilling operations were resumed.

Spudded 7-26-53.



Witnessed by A. C. Blackburn

(Name)

Stanolind Oil and Gas Company

(Company)

Head Roustabout

(Title)

Approved:

OIL CONSERVATION COMMISSION

(Name)

Engineer District 1

(Title)

OCT 2 - 1953

(Date)

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name

Position Production Foreman

Representing Stanolind Oil and Gas Company

Address Box 63, Hobbs, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

ORIGINAL

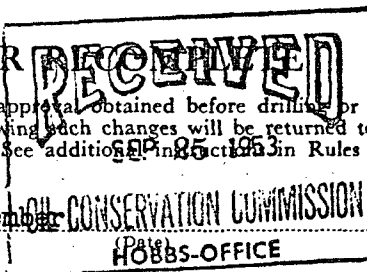
NOTICE OF INTENTION TO DRILL OR RECOMPLETION

Notice must be given to the District Office of the Oil Conservation Commission and approval obtained before drilling or recompletion begins. If changes in the proposed plan are considered advisable, a copy of this notice showing such changes will be returned to the sender. Submit this notice in QUINTUPPLICATE. One copy will be returned following approval. See additional instructions in Rules and Regulations of the Commission.

Hobbs, New Mexico

(Place)

September 25, 1953



OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Gentlemen:

You are hereby notified that it is our intention to commence the (Drilling) (Recompletion) of a well to be known as
Stanolind Oil and Gas Company

(Company or Operator)

State E Tract 18

(Lease)

Well No. 21

B

The well is

(Unit)

located 660 feet from the North line and 1650 feet from the East

East

line of Section 2, T. 17-S, R. 36-E, NMPM.

(GIVE LOCATION FROM SECTION LINE) Lovington Abo Pool, Lea County

If State Land the Oil and Gas Lease is No. B-1553

If patented land the owner is

Address

We propose to drill well with drilling equipment as follows: Rotary tools to total depth

The status of plugging bond is Blanket bond on file with Commission

D	C	B	A
E	F	G	H
L	K	J	I
M	N	O	P

Drilling Contractor Lee Drilling Company

Philtower Bldg.

Tulsa, Oklahoma

We intend to complete this well in the Abo

formation at an approximate depth of 8550 feet.

CASING PROGRAM

We propose to use the following strings of Casing and to cement them as indicated:

Size of Hole	Size of Casing	Weight per Foot	New or Second Hand	Depth	Sacks Cement
17-1/2"	13-3/8"	36#	New	250'	275 sx. circulated
12-1/4"	9-5/8"	32.3# - 36#	New	3300'	*
8-3/4"	7"	23# - 26#	New	8550'	450sx 4% gel / 450 cu. ft. perlite

If changes in the above plans become advisable we will notify you immediately.

ADDITIONAL INFORMATION (If recompletion give full details of proposed plan of work.)

*To be two stage cemented to isolate the salt section.

1st Stage - 150 sacks

2nd Stage - 150 sacks

Approved SEP 25 1953, 19

Except as follows:

OIL CONSERVATION COMMISSION

By Stanley

Title Engineer District 1

Sincerely yours,

Stanolind Oil and Gas Company

(Company or Operator)

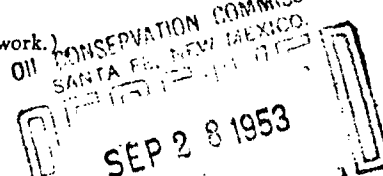
By Ruth Hendrickson

Position Production Foreman

Send Communications regarding well to

Name R. L. Hendrickson

Address Box 68, Hobbs, New Mexico



NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

HOBBS OFFICE OCC

(File the original and 4 copies with the appropriate district office)

1955 SEP 1 AM 10:38

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION
TO TRANSPORT OIL AND NATURAL GAS

Company or Operator Stanolind Oil and Gas Company Lease State E Tract 18

Well No. 21 Unit Letter B S 2 T17-SR 36-F Pool Lovington Abo

County Lea Kind of Lease (State, Fed. or Patented) State Land

If well produces oil or condensate, give location of tanks: Unit S T R

Authorized Transporter of Oil or Condensate _____

Address _____

(Give address to which approved copy of this form is to be sent)

Authorized Transporter of Gas Skelly Oil Company

Address Box 1135, Eunice, New Mexico

(Give address to which approved copy of this form is to be sent)

If Gas is not being sold, give reasons and also explain its present disposition:

Reasons for Filing: (Please check proper box) New Well _____ ()

Change in Transporter of (Check One): Oil () Dry Gas () C'head () Condensate ()

Change in Ownership _____ () Other _____ (X)

Remarks: _____ (Give explanation below)

C-110 being filed to authorize transporter of casinghead gas only,
effective September 1, 1955.

The undersigned certifies that the Rules and Regulations of the Oil Conservation Commission have been complied with.

Executed this the 31st day of August 1955

Approved _____ 19____

OIL CONSERVATION COMMISSION

By [Signature]

Title _____

By [Signature]

Title Field Superintendent

Company Stanolind Oil and Gas Company

Address Box 68

Hobbs, New Mexico

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7009
Order No. R-6461

APPLICATION OF AMOCO PRODUCTION
COMPANY FOR SALT WATER DISPOSAL,
LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on August 20, 1980, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 10th day of September, 1980, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Amoco Production Company, is the owner and operator of the State "E" Tract 18 Well No. 22, located in Unit G of Section 2, Township 17 South, Range 36 East, NMPM, Lovington-Abo Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Abo formation, with injection into the open hole interval from approximately 8330 feet to 9000 feet.

(4) That the injection should be accomplished through 3 1/2-inch plastic lined tubing installed in a packer set at approximately 8300 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(5) That prior to injection the applicant should recement the 5 1/2-inch casing in said well from a depth of approximately 5400 feet to 5000 feet, obtain a formation water analysis at the injection interval, and file such analysis with the Director of the Division.

(6) That the injection well or system should be equipped with a pressure limiting switch or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1650 psi.

(7) That the Director of the Division should be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such higher pressure will not result in migration of the injected waters from the Abo formation.

(8) That the operator should notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(9) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(10) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Amoco Production Company, is hereby authorized to utilize its State "E" Tract 18 Well No. 22, located in Unit G of Section 2, Township 17 South, Range 36 East, NMPM, Lovington-Abo Pool, Lea County, New Mexico, to dispose of produced salt water into the Abo formation, injection to be accomplished through 3 1/2-inch tubing installed in a packer set at approximately 8300 feet, with injection into the open hole interval from approximately 8330 feet to 9000 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

PROVIDED FURTHER, that prior to injection the applicant shall recement the 5 1/2-inch casing in said well from a depth of approximately 5400 feet to 5000 feet, obtain a formation water analysis at the injection interval, and file such analysis with the Director of the Division.

(2) That the injection well or system shall be equipped with a pressure limiting switch or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1650 psi.

(3) That the Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Abo formation.

(4) That the operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

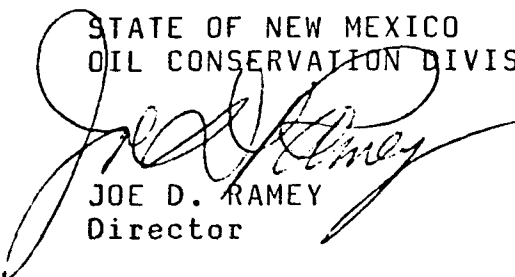
(5) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(6) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

(7) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Director

S E A L
fd/

OIL CONSERVATION DIVISION

Form C-104
Revised 10-1-70P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

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REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

1. APOLLO OIL COMPANY	
Address	
Box 1737, Hobbs, N.M. 88240	
Reason(s) for filing (Check proper box)	Other (Please explain)
New Well <input type="checkbox"/>	Change in Transporter's oil <input type="checkbox"/>
Recompletion <input type="checkbox"/>	Dry Gas <input type="checkbox"/>
Change in Ownership <input checked="" type="checkbox"/>	Condensate <input type="checkbox"/>
Effective 4-1-86	

If change of ownership give name
and address of previous owner

Amoco Production Company, Box 68, Hobbs, N.M. 88240

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, including Formation	Kind of Lease	Lease No.				
State E Tract 18	22	Lovington ABO	State, Federal or Free State	B-1553				
Location								
Unit Letter	G	1650 Feet From The North	Line and	1650 Feet From The East				
Line of Section	2	To ship	17S	Range	36E	NMPM	Lea	County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

DISPOSAL WELL

Name of Authorized Transporter of Oil <input type="checkbox"/> or Condensate <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)					
Name of Authorized Transporter of Casinghead Gas <input type="checkbox"/> or Dry Gas <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)					
If well produces oil or liquids, give location of tanks	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When

If this production is commingled with that from any other lease or pool, give commingling order number:

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas well	New Well	Workover	Deepen	Plug Back	Same hole, (H), Rea
Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.				
Elevations (DF, RFB, RT, GR, etc.)	Name of Producing Formation	Top Oil/Gas Pay	Tubing Depth				
Perforations	Depth Casing Shoe						

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT

V. TEST DATA AND REQUEST FOR ALLOWABLE
OIL WELL

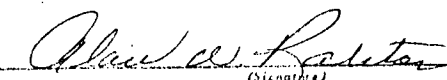
(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

Date First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	Tubing Pressure	Casing Pressure	Choke Size
Actual Prod. During Test	Oil-Bbls.	Water-Bbls.	Gas-MCF

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MCF	Gravity of Condensate
Testing Method (piston, back pr.)	Tubing Pressure (shot-in)	Casing Pressure (shot-in)	Choke Size

VI. CERTIFICATE OF COMPLIANCE

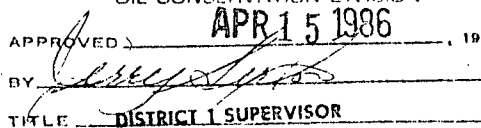
I hereby certify that the rules and regulations of the Oil Conservation
Division have been complied with and that the information given
above is true and complete to the best of my knowledge and belief.

Owner

4-11-86

(Date)

OIL CONSERVATION DIVISION

APPROVED  APR 15 1986
BY
TITLE DISTRICT 1 SUPERVISOR

This form is to be filed in compliance with RULE 1-111.

If this is a request for allowable for a newly drilled or deepened
well, this form must be accompanied by a tabulation of the deviate
tests taken on the well in accordance with RULE 1-111.All sections of this form must be filled out completely, for allow-
able on new and recompleted wells.Fill out only Sections I, II, III, and VI for changes of name,
well name or number, or transporter or other such change of condition.Separate Form C-104 must be filed for each pool to multi-
completed wells.

OIL CONSERVATION DIVISION

P. O. BOX 2038

SANTA FE, NEW MEXICO 87501

Form O-133
Revised 10-1-7

NO. OF COPIES RECEIVED	
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OPERATOR	

5a. Indicate Type of Lease
State ☒ Fee ☐
5. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-100) FOR SUCH PROPOSALS.)

1. OIL ☐ GAS ☐ OTHER- Injection
2. Name of Operator Amoco Production Company
3. Address of Operator P. O. Box 68, Hobbs, New Mexico 88240
4. Location of Well
UNIT LETTER G - 1650 FEET FROM THE North LINE AND 1650 FEET FROM
THE East LINE, SECTION 2 TOWNSHIP 17-S RANGE 36-E NMPM.
15. Elevation (Show whether DF, RT, GR, etc.) 3852' RDB
12. County Lea

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐ REMEDIAL WORK ☒ ALTERING CASING ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐ COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐ OTHER ☐ CASING TEST AND CEMENT JOBS ☐
OTHER ☐

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Moved in service unit 3-10-82. Pulled tubing and packer. Ran a retrievable bridge plug, packer and tubing. Set bridge plug at 8235' and packer at 8225'. Tested bridge plug to 1000 psi and tested okay. Tested casing and packer to 2500 psi and tested okay. Pulled tubing and packer. Ran a casing inspection log 8150' to surface. Ran a casing bond log 8150-3600'. Perforated 3700' with 2 SPF. Ran packer and tubing and spotted 14' of sand on bridge plug. Pulled tubing and packer. Circulated 9-5/8" casing with 280 bbl. water and dye. Cement squeezed casing with 1500 sacks class C cement. Drilled out cement 3624'-3745'. Pressure tested casing to 1000 psi and tested okay. Pulled tubing and tools. Ran a retrieving tool and tubing. Washed sand off retrievable bridge plug. Pulled tubing and retrievable bridge plug. Ran packer and 2-7/8" tubing. Set packer at 8239'. Moved out service unit 3-21-82. Returned well to injection.

O+4-NMOCD, H 1-Hou 1-Susp 1-CLF

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Cathy L. Ferman TITLE Assist. Admin. Analyst DATE 3-29-82

APPROVED BY [Signature] TITLE SUPERVISOR DISTRICT 1 DATE MAR 31 1982

CONDITIONS OF APPROVAL, IF ANY:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Revised 10-1-70

5a. Indicate Type of Lease
State ☒ Fee ☐
5. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR.
USE "APPLICATION FOR PERMIT - 1" (FORM C-101) FOR SUCH PROPOSALS.

1. OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	7. Unit Agreement Name
2. Name of Operator Amoco Production Company	8. Farm or Lease Name State "E" Tract 18
3. Address of Operator P. O. Box 68, Hobbs, New Mexico 88240	9. Well No. 22
4. Location of Well UNIT LETTER <u>G</u> <u>1650</u> FEET FROM THE <u>North</u> LINE AND <u>1650</u> FEET FROM THE <u>East</u> LINE, SECTION <u>2</u> TOWNSHIP <u>17-S</u> RANGE <u>36-E</u> N.M.P.M.	10. Field and Pool, or Wildcat Lovington Abo
11. Elevation (Show whether DF, RT, GR, etc.) 3852' RDB	12. County Lea

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data
NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☒ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐
PULL OR ALTER CASING ☐ CHANGE PLANS ☐
OTHER ☐

SUBSEQUENT REPORT OF:
REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐
CASING TEST AND CEMENT JOBS ☐
OTHER ☐

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Propose to evaluate well prior to repairing casing as follows:
Bleed pressure from tubing- casing annulus and 5-1/2"- 9-5/8" annulus. Pull tubing and packer. Run a retrievable bridge plug, tubing, and packer. Set bridge plug at 8235'. Locate casing damage by moving packer up hole and pressure testing casing. Pull tubing and packer, and cap bridge plug with 25' of sand. Run cement bond log and casing inspection log from 8150' to surface. Supplemental brief will follow to outline repair procedure pending evaluation of logs and test data. (Verbal approval by Les Clements on 2-15-82).

FEB 22 1982
OIL CONSERVATION DIVISION
SANTA FE

0+4-NMOCD, H 1-Hou 1-Susp 1-CLF

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Cathy L. Sorman TITLE Assist. Admin. Analyst DATE 2-15-82
APPROVED BY [Signature] TITLE SUPERVISOR DISTRICT 1 DATE FEB 18 1982
CONDITIONS OF APPROVAL (IF ANY):

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Revised 10-1-73

5a. Indicate Type of Lease	
State <input checked="" type="checkbox"/>	Fee <input type="checkbox"/>
5. State Oil & Gas Lease No.	

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	7. Unit Agreement Name
2. Name of Operator Amoco Production Company	8. Farm or Lease Name State E. Tr. 18
3. Address of Operator P. O. Box 68 Hobbs, NM 88240	9. Well No. 22
4. Location of Well UNIT LETTER <u>G</u> <u>1650</u> FEET FROM THE <u>North</u> LINE AND <u>1650</u> FEET FROM THE <u>East</u> LINE, SECTION <u>2</u> TOWNSHIP <u>17-S</u> RANGE <u>36-E</u> NMPM.	10. Field and Pool, or Wildcat Lovington Abo
15. Elevation (Show whether DF, RT, GR, etc.)	12. County Lea

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

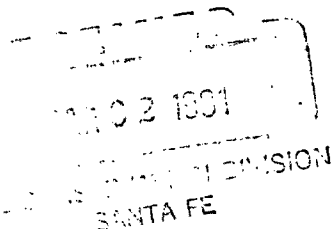
SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>	OTHER <input checked="" type="checkbox"/> Deepen and convert to Injection

17. Describe Proceed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Converted to injection from C-103 filed on 12-17-80.

Side tracked fish and kickoffed to 8443'. Drilled to 9000'. Run packer and tubing to 8150'. Packer set at 8302'. Acidized with 5000 gallons NEFE acid in four stages. Pumped 500 lbs. of rock salt in gelled brine after first 3 stages. Ran tailpipe and packer and set packer at 8272'. Turned well to injection.



0+4-NMOCD, H 1-Hou 1-Susp 1-GPM

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED <u>Amy Mitchell</u>	TITLE <u>Assist. Admin. Analyst</u>	DATE <u>2-20-81</u>
APPROVED BY <u>[Signature]</u>	TITLE <u>SUPERVISOR</u>	DATE <u>FEB 24 1981</u>
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LAND OFFICE	
OPERATOR	

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO RE-OPEN OR PLUG BACK TO A DIFFERENT RESERVOIR.
USE "APPLICATION FOR PERMIT TO DRILL" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	5a. Indicate Type of Lease State <input checked="" type="checkbox"/> Free <input type="checkbox"/>
2. Name of Operator Amoco Production Company	5. State Oil & Gas Lease No.
3. Address of Operator P. O. Box 68 Hobbs, NM 88240	7. Unit Agreement Name
4. Location of Well UNIT LETTER <u>G</u> <u>1650</u> FEET FROM THE <u>North</u> LINE AND <u>1650</u> FEET FROM THE <u>East</u> LINE, SECTION <u>2</u> TOWNSHIP <u>17-S</u> RANGE <u>36-E</u> N.M.P.M.	8. Farm or Lease Name State E Tr. 18
15. Elevation (Show whether DF, RT, GR, etc.)	9. Well No. 22
	10. Field and Pool, or Wildcat Lovington Abo
	12. County Lea

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data
NOTICE OF INTENTION TO: DEC 22 1980 SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input checked="" type="checkbox"/> Deepen and convert to injection	CASING TEST AND CEMENT JOBS <input type="checkbox"/>	

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Moved in service unit 10-28-80. Pulled rods and tubing. Set retainer at 8240'. Squeezed perfs 8292'-8316' with 150 sacks Class "C" cement with water loss control additive. Perfed 4360' w/4 DPJSPF. Set cement retainer at 4558'. Cemented perfs 4630' with 450 sacks Class H cement. Drilled Fill from 8400'-8484'. Pulled 120 joints 2-3/8" tubing.

Propose to convert well to an injection well by the following method:

Fish in hole 8688'. Side track fish and kickoff to 8450'. Drill to TD of 9000'. Test injectivity and turn well to injection.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED <u>Greg Mitchell</u>	TITLE <u>Assist. Admin. Analyst</u>	DATE <u>12-17-80</u>
APPROVED BY <u>[Signature]</u>	TITLE <u>SUPERVISOR DISTRICT 1</u>	DATE <u>DEC 19 1980</u>
CONDITIONS OF APPROVAL, IF ANY: <u>0+4-NMOCD, H</u> <u>1-Hou</u> <u>1-Susp</u> <u>1-GPM</u>		

OIL CONSERVATION DIVISION

P. O. BOX 2038

SANTA FE, NEW MEXICO 87501

Form C-103
Revised 12-1-78

DATE RECEIVED	
BY	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

5a. Indicate Type of Lease State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
5. State Oil & Gas Lease No. B-1553

SUNDARY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	7. Unit Agreement Name
2. Name of Operator Amoco Production Company	8. Farm or Lease Name State E Tr. 18
3. Address of Operator P. O. Box 68 Hobbs, NM 88240	9. Well No. 22
4. Location of well UNIT LETTER G 1650 FEET FROM THE North LINE AND 1650 FEET FROM THE East LINE, SECTION 2 TOWNSHIP 17-S RANGE 36-E N.M.P.M.	10. Field and Pool, or Whdcat Lovington Abo
15. Elevation (Show whether DF, RT, GR, etc.) 3852' RDB	12. County Lea

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK ☐
TEMPORARILY ABANDON ☐
PULL OR ALTER CASING ☐

PLUG AND ABANDON ☐
CHANGE PLANS ☐

REMEDIAL WORK ☐
COMMENCE DRILLING OPER. ☐
CASING TEST AND CEMENT JOBS ☐
OTHER ☐

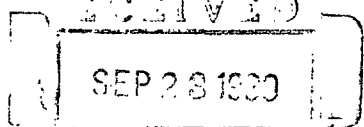
ALTERING CASING ☐
PLUG AND ABANDONMENT ☐

OTHER Deepen and convert to injection ☒

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Propose to convert well to an injection well by the following method:

Run tubing and cement retainer. Set retainer at 8250'. Top of Abo perfs are 8292'. Cement squeeze perforations 8292'-8316' with 150 sacks Class H cement with a water loss control additive followed by 150 sacks Class H neat. Pull retainer and perforate a one foot interval at 5000' with 4 JSPF. Run tubing and cement retainer and set 100' above top of perfs, approximately 4900'. Cement 5-1/2" casing with 450 sacks Class C. Pull retainer and run bit. Drill out cement and retainers to 9000'. Run packer and set at 8310'. Acidize with 5000 gallons NEFE acid in four stages. Pump 500 lbs. of rock salt in gelled brine after first 3 stages. Test injectivity and turn well to injection.



OIL CONSERVATION DIVISION
SANTA FE

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Gilbert R. Rios TITLE Assist. Admin. Analyst DATE 6-10-80

APPROVED BY [Signature] TITLE SUPERVISOR DISTRICT DATE SEP 19 1980

CONDITIONS OF APPROVAL, IF ANY:

0+4-NMOC, H 1-Hou 1-Susp 1-MKE

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	GAS
OPERATOR	
PRORATION OFFICE	

NEW MEXICO OIL CONSERVATION COMMISSION
REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Form C-104
Supersedes Old C-104 and C-11
Effective 1-1-65

RECEIVED

OCT 19 1971

I. OPERATOR **Amoco Production Company**

Address **BOX 68, HOBBS, N. M. 88240**

Reason(s) for filing (Check proper box)

New Well <input type="checkbox"/>	Change in Transporter of:	Other (Please explain) EFFECTIVE 10-1-71
Recompletion <input type="checkbox"/>	Oil <input type="checkbox"/>	Dry Gas <input type="checkbox"/>
Change in Ownership <input type="checkbox"/>	Casinghead Gas <input checked="" type="checkbox"/>	Condensate <input type="checkbox"/>

FORMERLY: SKELLY OIL CO

If change of ownership give name and address of previous owner

II. DESCRIPTION OF WELL AND LEASE

Lease Name STATE E TRACT 18 22	Well No. 22	Pool Name, including Formation LOVINGTON ABO	Kind of Lease STATE	Lease No. B-1553
Location G 1650	Feet From The NORTH	Line and 1650	Feet From The EAST	
Line of Section 2	Township 17-S	Range 36-E	NMPM, LEA	County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil <input checked="" type="checkbox"/> or Condensate <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)
TEXAS-NEW MEXICO PLLC	BOX 1510, MIDLAND TEXAS
Name of Authorized Transporter of Casinghead Gas <input type="checkbox"/> or Dry Gas <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)
PHILLIPS PETRO CO	BIRTESVILLE OKLA
If well produces oil or liquids, give location of tanks.	Unit Sec. Twp. Rge. Is gas actually connected? When
	C 1 17 36 YES

If this production is commingled with that from any other lease or pool, give commingling order number:

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Restv.	Diff. Restv.
Date Spudded	Date Compl. Ready to Prod.		Total Depth		P.B.T.D.			
Elevations (DF, RKB, RT, GR, etc.)	Name of Producing Formation		Top Oil/Gas Pay		Tubing Depth			
Perforations					Depth Casing Shoe			
TUBING, CASING, AND CEMENTING RECORD								
HOLE SIZE	CASING & TUBING SIZE		DEPTH SET		SACKS CEMENT			

V. TEST DATA AND REQUEST FOR ALLOWABLE OIL WELL

(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

Date First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	Tubing Pressure	Casing Pressure	Choke Size
Actual Prod. During Test	Oil-Bbls.	Water-Bbls.	Gas-MCF

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
Testing Method (pilot, back pr.)	Tubing Pressure (Shut-in)	Casing Pressure (Shut-in)	Choke Size

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Commission have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

CH-1100CC-11
1-ACJY
1-NEI
1-DJP
1-SUSP
1-GB

(Signature) **AREA SUPERINTENDENT**

(Title)

OCT 14 1971

(Date)

OIL CONSERVATION COMMISSION

APPROVED **OCT 19 1971**
BY **[Signature]**
TITLE **SUPERVISOR DISTRICT I**

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.

COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

<p align="center">SUNDRY NOTICES AND REPORTS ON WELLS</p> <p align="center"><small>(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)</small></p>		<p>5a. Indicate Type of Lease State <input checked="" type="checkbox"/> Fee <input type="checkbox"/></p> <p>5. State Oil & Gas Lease No. B-1553</p>
<p>1. <input checked="" type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER-</p> <p>2. Name of Operator Amoco Production Company</p> <p>3. Address of Operator BOX 48, HOBBS, N. M. 88240</p> <p>4. Location of Well UNIT LETTER G 1650 FEET FROM THE NORTH LINE AND 1650 FEET FROM THE EAST LINE, SECTION 2 TOWNSHIP 17-S RANGE 36-E NMPM.</p>	<p>7. Unit Agreement Name</p> <p>8. Farm or Lease Name STATE E TR 18</p> <p>9. Well No. 22</p> <p>10. Field and Pool, or Willcat LOUINGTON Abo</p>	
<p>15. Elevation (Show whether DF, RT, GR, etc.) 3852' R.D. B.</p>	<p>12. County LEA</p>	

<p align="center">Check Appropriate Box To Indicate Nature of Notice, Report or Other Data</p>			
NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
<p>PERFORM REMEDIAL WORK <input type="checkbox"/></p> <p>TEMPORARILY ABANDON <input type="checkbox"/></p> <p>PULL OR ALTER CASING <input type="checkbox"/></p> <p>OTHER <input type="checkbox"/></p>	<p>PLUG AND ABANDON <input type="checkbox"/></p> <p>CHANGE PLANS <input type="checkbox"/></p> <p>OTHER <input type="checkbox"/></p>	<p>REMEDIAL WORK <input checked="" type="checkbox"/></p> <p>COMMENCE DRILLING OPNS. <input type="checkbox"/></p> <p>CASING TEST AND CEMENT JOB <input type="checkbox"/></p> <p>OTHER <input type="checkbox"/></p>	<p>ALTERING CASING <input type="checkbox"/></p> <p>PLUG AND ABANDONMENT <input type="checkbox"/></p> <p>OTHER <input type="checkbox"/></p>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

In an effort to increase productivity acidized perfs 8292-8316' w/ 1000 gal 15% CRA spearheaded w/ 500gal water sensitive diverter. Evaluated and restored to production.

Prior- pmp. 16 BD + 46 BW 24 hrs.

After- " 24 " 98 " " "

TD- 8477'

PBD- 8326'

4 1/2" CSA 8330'

PERFS: 8292-8316'

OC- 9-29-71.

COMP- 10-11-71.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

<p>SIGNED <u><i>J. E. Stalley</i></u></p> <p>012-NMOC-14</p> <p>APPROVED BY <u><i>[Signature]</i></u></p> <p>1- ACJR</p> <p>1- SUSP</p>	<p align="center">AREA SUPERINTENDENT</p> <p>TITLE <u> </u></p> <p align="center">SUPERVISOR DISTRICT I</p> <p>TITLE <u> </u></p>	<p>DATE OCT 12 1971</p> <p>DATE OCT 14 1971</p>
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NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-103
(Rev 3-55)

MISCELLANEOUS REPORTS ON WELLS OFFICE 000

(Submit to appropriate District Office as per Commission Rule 1106)

Name of Company Pan American Petroleum Corporation		Address Box 68, Hobbs, New Mexico				
Lease State E Tract 18	Well No. 22	Unit Letter G	Section 2	Township 17-S	Range 36-E	
Date Work Performed	Pool Lovington Abo			County Eddy		

THIS IS A REPORT OF: (Check appropriate block)

- ☐ Beginning Drilling Operations ☐ Casing Test and Cement Job ☐ Other (Explain):
☐ Plugging ☒ Remedial Work

Detailed account of work done, nature and quantity of materials used, and results obtained.

Work approved on Form C-102 dated April 5, 1960. Work done as follows:

1. Cast Iron retainer set at 8326' and squeezed open hole 8330'-8350' w/ 75 Sx. Cement.
2. Perforated 8292'-8316' w/ 2 JSPP.
3. Acidized perforations w/ 1000 gallons regular acid.
4. Would not flow, ran rods & pump and put on production.

Unable to obtain top allowable. Test 4-21-60 pumped 77 BO, 42 BW, 11.17 MCFGPD, GOR 146.

Witnessed by M. R. Frazier	Position Field Foreman	Company Pan American Petroleum Corporation
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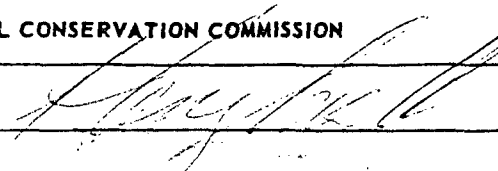
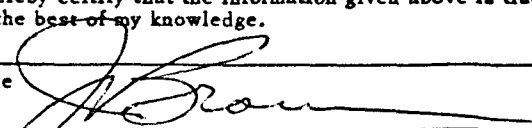
FILL IN BELOW FOR REMEDIAL WORK REPORTS ONLY

ORIGINAL WELL DATA

D F Elev. RDB 3252	TD 8477	PBTD 8326	Producing Interval 8292-8316	Completion Date 4-21-60
Tubing Diameter 2 3/8" OD	Tubing Depth 8277'	Oil String Diameter 4 1/2" OD	Oil String Depth 8330'	
Perforated Interval(s) 8292'-8316'				
Open Hole Interval		Producing Formation(s) Abo		

RESULTS OF WORKOVER

Test	Date of Test	Oil Production BPD	Gas Production MCFPD	Water Production BPD	GOR Cubic feet/Bbl	Gas Well Potential MCFPD
Before Workover	4-11-60	71		12		
After Workover	4-21-60	77		42		

OIL CONSERVATION COMMISSION		I hereby certify that the information given above is true and complete to the best of my knowledge.	
Approved by 		Name 	
Title Area Superintendent		Position Area Superintendent	
Date 4-27-60		Company Pan American Petroleum Corporation	

4-27-60

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

MISCELLANEOUS NOTICES

HOBBS OFFICE CCC

Submit this notice in TRIPLICATE to the District Office, Oil Conservation Commission, before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Notice by Checking Below

NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO TEMPORARILY ABANDON WELL		NOTICE OF INTENTION TO DRILL DEEPER	
NOTICE OF INTENTION TO PLUG WELL		NOTICE OF INTENTION TO PLUG BACK		NOTICE OF INTENTION TO SET LINER	
NOTICE OF INTENTION TO SQUEEZE	X	NOTICE OF INTENTION TO ACIDIZE	X	NOTICE OF INTENTION TO SHOOT (Nitro)	
NOTICE OF INTENTION TO GUN PERFORATE	X	NOTICE OF INTENTION (OTHER)		NOTICE OF INTENTION (OTHER)	

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Hobbs, New Mexico
(Place)

April 5, 1960
(Date)

Gentlemen:

Following is a Notice of Intention to do certain work as described below at the Pan American Petroleum Corporation

State E Tract 18 Well No. 22 in G
(Company or Operator)
SE 1/4 NE 1/4 of Sec. 2, T. 17-S, R. 36-E, NMPM, Lovington Abo Pool
(40-acre Subdivision)
Lea County.

FULL DETAILS OF PROPOSED PLAN OF WORK
(FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS)

In an effort to increase oil productivity it is proposed:

1. Set cast iron retainer at 8326' and squeeze open hole with 100 Sx. Slo Set cement leaving 1' of cement on top of retainer.
2. Perforate 8292-8316 with 2 jet shots per foot.
3. Acidize perforations with 1000 gal. 15% regular acid.
4. Restore well to production.

On production test 1-20-60 well pumped 84 B0, 29 BW in 24 hours.

Approved APR 8 1960, 19
Except as follows:

Approved
OIL CONSERVATION COMMISSION

By
Title

Pan American Petroleum Corporation
Company or Operator

By J. W. Brown
Position Area Superintendent
Send Communications regarding well to:

Name J. W. Brown
Address Box 68, Hobbs, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION

MISCELLANEOUS REPORTS ON WELLS

(Submit to appropriate District Office as per Commission Rule 1957 55C1196)

COMPANY Pan American Petroleum Corporation
(Address)

Box 68, Hobbs, New Mexico

LEASE State "G" Tract 18 WELL NO. 22 UNIT G S 2 T 17 R 36
DATE WORK PERFORMED 11-20-57 POOL Lovington AboThis is a Report of: (Check appropriate block) ☐ Results of Test of Casing Shut-off☐ Beginning Drilling Operations☒ Remedial Work☐ Plugging☐ Other _____

Detailed account of work done, nature and quantity of materials used and results obtained.

In accordance with Form C-103 approved October 17, 1957 the following work was performed and results obtained: Set retainer at 8312, squeezed from 8312 to 8404 with 170 sacks of slt set cement, drilled plug to 8350, perforated open hole formation 8338 - 8340 with 6 shots per foot and acidized perforations with 500 gallons regular acid. On retest well flowed 116 BO, no water, 58 MCF Gas in 24 hours on 20/64" choke. GOR 503.

FILL IN BELOW FOR REMEDIAL WORK REPORTS ONLY

Original Well Data:

DF Elev. 385 TD 8477 PBD 8350 Prod. Int. 8330 Compl Date 5-9-54
Tbng. Dia 2 Tbng Depth 8359 Oil String Dia 5-1/2 Oil String Depth 8330
Perf Interval (s) _____
Open Hole Interval 8330 - 8350 Producing Formation (s) Abo

RESULTS OF WORKOVER:

	BEFORE	AFTER
Date of Test	<u>9-27-57</u>	<u>12-5-57</u>
Oil Production, bbls. per day	<u>0</u>	<u>116</u>
Gas Production, Mcf per day	<u> </u>	<u>58</u>
Water Production, bbls. per day	<u>197</u>	<u>0</u>
Gas-Oil Ratio, cu. ft. per bbl.	<u> </u>	<u>503</u>
Gas Well Potential, Mcf per day	<u> </u>	<u> </u>

Witnessed by D. C. Feurifoy, Jr.Pan American Petroleum Corporation
(Company)

OIL CONSERVATION COMMISSION

Name E. P. FischerTitle Engineer District 1Date DEC 18 1957

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name Ralph H. HenningsPosition Field SuperintendentCompany Pan American Petroleum Corporation

NEW MEXICO OIL CONSERVATION COMMISSION
MISCELLANEOUS REPORTS ON WELLS
(Submitted to appropriate District Office as per Commission Rule 1106)

COMPANY Pan American Petroleum Corporation Box 68, Hobbs, New Mexico
(Address)

LEASE State "E" Tract 18 WELL NO. 22 UNIT G S 2 T 17 R 36
DATE WORK PERFORMED 8-19-57 POOL Lovington Abo

This is a Report of: (Check appropriate block) ☐ Results of Test of Casing Shut-off
☐ Beginning Drilling Operations ☒ Remedial Work
☐ Plugging ☐ Other _____

Detailed account of work done, nature and quantity of materials used and results obtained.
In accordance with Form C-102 filed 7-31-56 the following work was performed and results obtained:
Plugged well back from 8432 - 8404 with hydromite. The work was unsuccessful in shutting off the water, and we propose additional work as follows: Set retrievable retainer at approximately 8230 and squeeze open hole interval 8330 - 8404 with 150 sacks slo set cement. Displace cement below retainer with water, WOC 48 hours, retrieve retainer and drill out to approximately 8350 with bit and reamer, run correlation log from 8100 to Total Depth of 8350 perforate 8328 to 8330 with 12 shots, set packer at approximately 8300 and acidize with 5000 gallons acid. Test well and return to production.

FILL IN BELOW FOR REMEDIAL WORK REPORTS ONLY

Original Well Data:

DF Elev. 3852 TD 8477 PBD 8404 Prod. Int. 8330 Compl Date 5-9-54
Tbng. Dia 2 1/2 Tbng Depth 8359 Oil String Dia 5-1/2 Oil String Depth 8330
Perf Interval(s) _____
Open Hole Interval 8330 - 8404 Producing Formation (s) Abo

RESULTS OF WORKOVER:	BEFORE	AFTER
Date of Test	<u>5-11-57</u>	<u>9-27-57</u>
Oil Production, bbls. per day	<u>62</u>	<u>0</u>
Gas Production, Mcf per day	<u>-</u>	<u>-</u>
Water Production, bbls. per day	<u>166</u>	<u>222</u>
Gas-Oil Ratio, cu. ft. per bbl.	<u>-</u>	<u>-</u>
Gas Well Potential, Mcf per day	<u>-</u>	<u>-</u>

Witnessed by M. R. Frazier Pan American Petroleum Corporation
(Company)

OIL CONSERVATION COMMISSION

Name [Signature]
Title _____
Date OCT 17 1957

I hereby certify that the information given above is true and complete to the best of my knowledge.
Name [Signature]
Position Production Foreman
Company Pan American Petroleum Corporation

NEW MEXICO OIL CONSERVATION COMMISSION
MAIN OFFICE CCC
Santa Fe, New Mexico

1957 AUG 5 MISCELLANEOUS NOTICES

Submit this notice in TRIPLICATE to the District Office, Oil Conservation Commission, before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Notice by Checking Below

NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO TEMPORARILY ABANDON WELL		NOTICE OF INTENTION TO DRILL DEEPER	
NOTICE OF INTENTION TO PLUG WELL		NOTICE OF INTENTION TO PLUG BACK		NOTICE OF INTENTION TO SET LINER	
NOTICE OF INTENTION TO SQUEEZE		NOTICE OF INTENTION TO ACIDIZE		NOTICE OF INTENTION TO SHOOT (Nitro)	
NOTICE OF INTENTION TO GUN PERFORATE		NOTICE OF INTENTION (OTHER)		NOTICE OF INTENTION (OTHER) Shut off water	X

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Hobbs, New Mexico
(Place)

7-31-57
(Date)

Gentlemen:

Following is a Notice of Intention to do certain work as described below at the Pan American Petroleum Corporation

State "E" Tract 18 Well No. 22 in G
(Company or Operator) Lessee (Unit)
SW 1/4 NE 1/4 of Sec. 2, T. 17-S, R. 36-E, NMPM, Lovington Abo Pool
(40-acre Subdivision)
Lea County.

FULL DETAILS OF PROPOSED PLAN OF WORK
(FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS)

In order to shut off water production we propose the following:
Run Caliper survey over open hole from 8425 to bottom of casing
set at 8332. Plug back with Hydromite from 8425 to approximately
8400. Test well and return to production.

AUG 5 1957

Approved....., 19.....
Except as follows:

Approved
OIL CONSERVATION COMMISSION

By.....
Title.....

Pan American Petroleum Corporation

By.....
Position.....

Field Superintendent
Send Communications regarding well to:

Name..... R. L. Hendrickson
Address..... Box 68 Hobbs, New Mexico

ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION

MISCELLANEOUS REPORTS ON WELLS OFFICE OCC

(Submit to appropriate District Office as per Commission Rule 1106)

COMPANY Pan American Petroleum Corporation 1957 MAR 4 AM 8:15
(Address) Box 68 Hobbs, New Mexico

LEASE State E Tract 18 WELL NO. 22 UNIT G S 2 T 17-S R 36-E

DATE WORK PERFORMED 2-6-57 to 2-18-57 POOL Lovington Abo

This is a Report of: (Check appropriate block) ☐ Results of Test of Casing Shut-off

☐ Beginning Drilling Operations

☒ Remedial Work

☐ Plugging

☐ Other

Detailed account of work done, nature and quantity of materials used and results obtained.

In accordance with Form C-102 filed 1-28-57 the following work was performed and results obtained:

Lowered tubing to 8330' and squeezed with 2000 gallons Visqueen and 100 sacks Incor cement, flushed with 100 barrels oil. On retest, well pumped 37 BO, 147 BW in 24 hours. Unsuccessful workover.

FILL IN BELOW FOR REMEDIAL WORK REPORTS ONLY

Original Well Data:

DF Elev. 3852 TD 8477 PBD 8423 Prod. Int. 8330 Compl Date 5-2-54

Tbng. Dia 2" Tbng Depth 8423 Oil String Dia 5-1/2 Oil String Depth 8330

Perf Interval (s)

Open Hole Interval 8330-8477 Producing Formation (s) Abo

RESULTS OF WORKOVER:

	BEFORE	AFTER
Date of Test	<u>1-15-57</u>	<u>2-18-57</u>
Oil Production, bbls. per day	<u>44</u>	<u>37</u>
Gas Production, Mcf per day		
Water Production, bbls. per day	<u>119</u>	<u>147</u>
Gas-Oil Ratio, cu. ft. per bbl.		
Gas Well Potential, Mcf per day		

Witnessed by M. R. Frazier

Pan American Petroleum Corporation
(Company)

OIL CONSERVATION COMMISSION

Name E. Frazier
Title Production Foreman
Date MAR 4 1957

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name E. Frazier
Position Production Foreman
Company Pan American Petroleum Corporation

ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Form C-110
Revised 7/1/55

(File the original and 4 copies with the appropriate district office)

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION
TO TRANSPORT OIL AND NATURAL GAS

Company or Operator Pan American Petroleum Corporation Lease State "E" Tr. 18

Well No. 22 Unit Letter G S 2 T 17 R 36 Pool Lovington Abo

County Lea Kind of Lease (State, Fed. or Patented) State

If well produces oil or condensate, give location of tanks: Unit C S 1 T 17 R 36

Authorized Transporter of Oil or ~~Condensate~~ Texas-New Mexico Pipe Line Co.

Address Box 1510, Midland, Texas
(Give address to which approved copy of this form is to be sent)

Authorized Transporter of Gas Skelly Oil Co.

Address Box 1135, Eunice, New Mexico
(Give address to which approved copy of this form is to be sent)

If Gas is not being sold, give reasons and also explain its present disposition:

NAME CHANGED:
FROM: PAN AMERICAN PETR. CORP.
TO: AMOCO PRODUCTION CO.
EFFECTIVE: 2-1-71

Reasons for Filing: (Please check proper box) New Well ()

Change in Transporter of (Check One): Oil () Dry Gas () C'head () Condensate ()

Change in Ownership () Other (x)

Remarks: (Give explanation below)

Change of operating name from "Stanolind Oil and Gas Company" to
"Pan American Petroleum Corporation" effective February 1, 1957.

The undersigned certifies that the Rules and Regulations of the Oil Conservation Commission have been complied with.

Executed this the 28th day of January 19 57

JAN 28 1957

By Ralph H. Hendrickson

Approved 19 Title Field Superintendent

OIL CONSERVATION COMMISSION

Company Pan American Petroleum Corporation

By E. J. Fischer Address Box 68

Title Engineer District II Hobbs, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION

MISCELLANEOUS REPORTS ON WELLS

(Submit to appropriate District Office as per Commission Rule 1106)

COMPANY Stanolind Oil and Gas Company, Box 68, Hobbs, New Mexico
(Address)

LEASE State "E" Tr. 18 WELL NO. 22 UNIT G S 2 T 17-S R 36-E
DATE WORK PERFORMED 9-5-55 to 10-10-55 POOL Lovington Abo

This is a Report of: (Check appropriate block) ☐ Results of Test of Casing Shut-off
☐ Beginning Drilling Operations ☒ Remedial Work
☐ Plugging ☐ Other _____

Detailed account of work done, nature and quantity of materials used and results obtained.

On 9-5-55 we attempted to shut of water on above well. Pulled tubing poured pea gravel to PB to 8453. Ran Calseal plug from 8443 to 8436. Ran Hydromite plug from 8436 to 8425. On retest pumped 184 BO and 131 BW in 16 hours.

FILL IN BELOW FOR REMEDIAL WORK REPORTS ONLY

Original Well Data:

DF Elev. 3852 TD 8477 PBD 8423 Prod. Int. _____ Compl Date 5-9-54
Tbng. Dia 2" Tbng Depth _____ Oil String Dia 5-1/2 Oil String Depth 8330
Perf Interval (s) _____
Open Hole Interval 8330 - 8477 Producing Formation (s) Abo

RESULTS OF WORKOVER:

	BEFORE	AFTER
Date of Test	<u>9-5-55</u>	<u>10-10-55</u>
Oil Production, bbls. per day	<u>125</u>	<u>184</u>
Gas Production, Mcf per day	_____	_____
Water Production, bbls. per day	<u>62</u>	<u>131</u>
Gas-Oil Ratio, cu. ft. per bbl.	<u>755</u>	<u>328</u>
Gas Well Potential, Mcf per day	_____	_____

Witnessed by Ray Frazier

Stanolind Oil and Gas Company
(Company)

OIL CONSERVATION COMMISSION

Name A. M. Lundy
Title Engineer District 1
Date OCT 13 1955

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name Paul E. Blundick
Position Field Superintendent
Company Stanolind Oil and Gas Company

ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

OFFICE OCC

HOBB'S OFFICE OCC

1957 FEB

MISCELLANEOUS NOTICES

PM 2:23

Submit this notice in TRIPLICATE to the District Office, Oil Conservation Commission, before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Notice by Checking Below

NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO TEMPORARILY ABANDON WELL		NOTICE OF INTENTION TO DRILL DEEPER	
NOTICE OF INTENTION TO PLUG WELL		NOTICE OF INTENTION TO PLUG BACK		NOTICE OF INTENTION TO SET LINER	
NOTICE OF INTENTION TO SQUEEZE		NOTICE OF INTENTION TO ACIDIZE		NOTICE OF INTENTION TO SHOOT (Nitro)	
NOTICE OF INTENTION TO GUN PERFORATE		NOTICE OF INTENTION (OTHER)		NOTICE OF INTENTION (OTHER) Shut off water	X

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Hobbs, New Mexico
(Place)

January 28, 1957
(Date)

Gentlemen:

Following is a Notice of Intention to do certain work as described below at the Stanolind Oil and Gas Company

State "E" Tract 18

(Company or Operator)

Well No. 22 in G (Unit)

SW 1/4 NE 1/4 of Sec. 2, T. 17-S, R. 36-E NMPM, Lovington Abo Pool

Lea County.

FULL DETAILS OF PROPOSED PLAN OF WORK
(FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS)

In order to shut off water in the above well we propose the following work:

Lower tubing to approximately 8330' and spot 24 barrels oil containing 10 gallons CPN in tubing, follow with 2000 gallons Visqueen material (Jelled Kerosene and chemicals) containing 100 sacks of Incor cement and flush with two barrels of oil. Shut well in over night, test and return to production.

JAN 31 1957

Approved....., 19.....
Except as follows:

Approved
OIL CONSERVATION COMMISSION

By E. J. Fischer
Title Engineer District I

Stanolind Oil and Gas Company
Company or Operator

By R. L. Hendrickson
Position Field Superintendent
Send Communications regarding well to:

Name R. L. Hendrickson
Address Box 68 Hobbs, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

HOBBS OFFICE OCC

(File the original and 4 copies with the appropriate district office)

1955 SEP 1 AM 10:38

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION
TO TRANSPORT OIL AND NATURAL GAS

Company or Operator Stanolind Oil and Gas Company Lease State E Tract 18

Well No. 22 Unit Letter G S 2 T17-S R 36-E Pool Lovington Abo

County Lea Kind of Lease (State, Fed. or Patented) State Land

If well produces oil or condensate, give location of tanks: Unit S T R

Authorized Transporter of Oil or Condensate _____

Address _____

(Give address to which approved copy of this form is to be sent)

Authorized Transporter of Gas Skelly Oil Company

Address Box 1135, Eunice, New Mexico

(Give address to which approved copy of this form is to be sent)

If Gas is not being sold, give reasons and also explain its present disposition:

Reasons for Filing: (Please check proper box) New Well ()

Change in Transporter of (Check One): Oil () Dry Gas () C'head () Condensate ()

Change in Ownership () Other (X)

Remarks: _____ (Give explanation below)

C-110 being filed to authorize transporter of casinghead gas only,
effective September 1, 1955.

The undersigned certifies that the Rules and Regulations of the Oil Conservation Commission have been complied with.

Executed this the 31st day of August 19 55

SEP 2 1955

Approved _____ 19 _____

OIL CONSERVATION COMMISSION

By M. Kieder

Title Engineer District 1

By Laurel Hendricks

Title Field Superintendent

Company Stanolind Oil and Gas Company

Address Box 68

Hobbs, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

HOBBS OFFICE OCC

It is necessary that Form C-104 be approved before this form can be approved and an initial allowable be assigned to any completed Oil or Gas well. Submit this form in QUADRUPLICATE.

1954 MAY 13 AM 9:51

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION
TO TRANSPORT OIL AND NATURAL GAS

Company or Operator..... Stanolind Oil and Gas Company..... Lease State "E" Tract #18

Address..... Box 68, Hobbs, New Mexico..... Box 1410, Fort Worth, Texas
(Local or Field Office) (Principal Place of Business)

Unit..... G....., Well(s) No. 22....., Sec. 2....., T. 17-S....., R. 36-E....., Pool Lovington-Abo

County..... Lea..... Kind of Lease:..... State

If Oil well Location of Tanks..... W/2 of the SW/4 NW/4 Sec. 1

Authorized Transporter Texas-New Mexico Pipe Line Company..... Address of Transporter
Sunice, New Mexico..... Box 1510, Midland, Texas
(Local or Field Office) (Principal Place of Business)

Per cent of Oil or Natural Gas to be Transported..... 100%..... Other Transporters authorized to transport Oil or Natural Gas
from this unit are..... None.....

REASON FOR FILING: (Please check proper box)

NEW WELL..... ☒..... CHANGE IN OWNERSHIP..... ☐

CHANGE IN TRANSPORTER..... ☐..... OTHER (Explain under Remarks)..... ☐

REMARKS: Completed as Oil Well 5-9-54.

The undersigned certifies that the Rules and Regulations of the Oil Conservation Commission have been complied with.

Executed this the 11th day of May 1954

Approved..... MAY 13 1954..... Stanolind Oil and Gas Company

OIL CONSERVATION COMMISSION

By S. J. Stanley
District 1

By Ralph R. Hendricks
Title Field Superintendent

Title

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

REQUEST FOR (OIL) - (GAS) ALLOWABLE

HOBBBS OFFICE OF New Well
Recompletion

This form shall be submitted by the operator before an initial allowable will be assigned to any completed Oil or Gas well. Form C-104 is to be submitted in QUADRUPLICATE to the same District Office to which Form C-101 was sent. The allowable will be assigned effective 7:00 A.M. on date of completion or recompletion, provided this form is filed during calendar month of completion or recompletion. The completion date shall be that date in the case of an oil well when oil is delivered into the stock tanks. Gas must be reported on 15.025 psia at 60° Fahrenheit.

HOBBBS, New Mexico

5-11-54

(Place)

(Date)

WE ARE HEREBY REQUESTING AN ALLOWABLE FOR A WELL KNOWN AS:

Stanolind Oil and Gas Co. State E Tract 18, Well No. 22, in SW 1/4 NE 1/4,
(Company or Operator) (Lease)

G, Sec. 2, T. 17-S, R. 36-E, NMPM, Lovington-Abo Pool
(Unit)

Lea County. Date Spudded. 3-24-54, Date Completed. 5-9-54

Please indicate location:

		X	

Elevation. 3852 Total Depth. 8477, P.B.

Top oil/gas pay. 8330 Top of Prod. Form. 8330

Casing Perforations: or

Depth to Casing shoe of Prod. String. 8330

Natural Prod. Test. BOPD

based on. bbls. Oil in. Hrs. Mins.

Test after acid or shot. 127 BOPD

Based on. 127 bbls. Oil in. 12 Hrs. 30 Mins.

Gas Well Potential.

Size choke in inches. 14/64 inch

Date first oil run to tanks or gas to processing system. 5-8-54

Transporter taking Oil or Gas: Texas-New Mexico Pipe Line Co.

Casing and Cementing Record

Size Feet Sax

Remarks: Completed as Oil Well 5-9-54

I hereby certify that the information given above is true and complete to the best of my knowledge.

Approved. MAY 13 1954, 19

Stanolind Oil and Gas Company

(Company or Operator)

By: Ralph K. Hendrickson
(Signature)

Title: Field Superintendent

Send Communications regarding well to:

Name: Stanolind Oil and Gas Company

Address: Box 68, Hobbs, New Mexico

OIL CONSERVATION COMMISSION

By: J. G. Stanley

Title: Engineer District 1

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

HOODS OFFICE OCC

ORIGINAL

WELL RECORD 21 JAN 9:38

Mail to District Office, Oil Conservation Commission, to which Form C-101 was sent not later than twenty days after completion of well. Follow instructions in Rules and Regulations of the Commission. Submit in QUINTUPLICATE.

AREA 640 ACRES
LOCATE WELL CORRECTLY

Stanolind Oil and Gas Company

State "E" Tract 18

(Company or Operator)

(Lease)

Well No. 22, in SW 1/4 of NE 1/4, of Sec. 2, T-17-S, R-36-E, NMPM.

Lorington-Abo

Pool,

Lea

County.

Well is 1650 feet from North line and 1650 feet from East line

of Section 2. If State Land the Oil and Gas Lease No. is Unknown

Drilling Commenced 3-24-1954. Drilling was Completed 5-9-1954.

Name of Drilling Contractor Lee Drilling Company

Address 510 Philtower Building, Tulsa, Oklahoma

Elevation above sea level at Top of Tubing Head 3840'. The information given is to be kept confidential until not confidential 19.

OIL SANDS OR ZONES

No. 1, from to No. 4, from to

No. 2, from to No. 5, from to

No. 3, from to No. 6, from to

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from to feet.

No. 2, from to feet.

No. 3, from to feet.

No. 4, from to feet.

CASING RECORD

SIZE	WEIGHT PER FOOT	NEW OR USED	AMOUNT	KIND OF SHOE	CUT AND PULLED FROM	PERFORATIONS	PURPOSE
13-3/8	36#	New	252	Guide	5180 ft.	5180 ft.	5180 ft.
9-5/8	36-32.3#	New	3275	Guide	5180 ft.	5180 ft.	5180 ft.
5 1/2	15.5#-17#	New	8318	Float	5180 ft.	5180 ft.	5180 ft.

MUDDING AND CEMENTING RECORD

SIZE OF HOLE	SIZE OF CASING	WHERE SET	NO. BAGS OF CEMENT	METHOD USED	MUD GRAVITY	AMOUNT OF MUD USED
17 1/2	13-3/8	266	275	Howco Plug		
12 1/2	9-5/8	3287	300	Howco Plug		
8-5/8	5 1/2	8330	835-4%	Howco Plug		
			835 cu.ft.			

Perlite

RECORD OF PRODUCTION AND STIMULATION

(Record the Process used, No. of Qts. or Gals. used, interval treated or shot.)

5500 gallons 15% regular acid

Result of Production Stimulation See reverse side.

Depth Cleaned Out

RECORD OF DRILL-STEM AND SPECIAL TESTS

If drill-stem or other special tests or deviation surveys were made, submit report on separate sheet and attach hereto

003 Tools USED

Rotary tools were used from 0 feet to 8477 feet, and from feet to feet.
Cable tools were used from feet to feet, and from feet to feet.

PRODUCTION

Put to Producing 5-8-1954
OIL WELL: The production during the first 24 hours was 244 barrels of liquid of which 100% was oil; % was emulsion; % water; and % was sediment. A.P.I.

Gravity

GAS WELL: The production during the first 24 hours was M.C.F. plus barrels of liquid Hydrocarbon. Shut in Pressure lbs.

Length of Time Shut in

PLEASE INDICATE BELOW FORMATION TOPS, (IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE):

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy. 2105	T. Devonian.	T. Ojo Alamo.	
T. Salt 2250	T. Silurian.	T. Kirtland-Fruitland.	
B. Salt 2925	T. Montoya.	T. Farmington.	
T. Yates 3030	T. Simpson.	T. Pictured Cliffs.	
T. 7 Rivers.	T. McKee.	T. Menace.	
T. Queen.	T. Ellenburger.	T. Point Lookout.	
T. Grayburg.	T. Gr. Wash.	T. Mancos.	
T. San Andres. 4655	T. Granite.	T. Dakota.	
T. Glorieta 5980	T.	T. Morrison.	
T. Drinkard. 7595	T.	T. Penn.	
T. Tubbs.	T.	T.	
T. Abo. 8280	T.	T.	
T. Penn.	T.	T.	
T. Miss.	T.	T.	

FORMATION RECORD

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	307	307	Red Bed and Sand				
307	1410	1103	Red Bed				
1410	1910	500	Red Bed and Anhy. Salt				
1910	2056	146	Sand				
2056	2300	244	Anhy. and Sand				
2300	2635	335	Salt				
2635	3160	525	Anhy. and Salt				
3160	3315	155	Anhy. and Lime				
3315	4518	1203	Lime				
4518	4816	298	Sand				
4816	4995	179	Sand and Lime				
4995	5785	790	Lime				
5785	6020	235	Lime and Sand				
6020	8477	2457	Lime				

ATTACH SEPARATE SHEET IF ADDITIONAL SPACE IS NEEDED

I hereby swear or affirm that the information given herewith is a complete and correct record of the well and all work done on it so far as can be determined from available records.

May 17, 1954

Company or Operator Stanolind Oil and Gas Co.
Name R. A. Hernandez

Address Box 68 - Hobbs, New Mexico
Position or Title Field Superintendent

ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION

MAIN OFFICE Santa Fe, New Mexico

HOBBS OFFICE OCC

MISCELLANEOUS REPORTS ON WELLS MAY 11 AM 10:37
MAY 17 PM 2:08

Submit this report in TRIPLICATE to the District Office, Oil Conservation Commission, within 10 days after the work specified is completed. It should be signed and filed as a report on Beginning Drilling Operations, Results of test of casing shut-off, result of plugging of well, result of well repair, and other important operations, even though the work was witnessed by an agent of the Commission. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Report by Checking Below

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON RESULT OF TEST OF CASING SHUT-OFF	X	REPORT ON REPAIRING WELL	
REPORT ON RESULT OF PLUGGING WELL		REPORT ON RECOMPLETION OPERATION		REPORT ON (Other)	

May 8, 1954
(Date)Hobbs, New Mexico
(Place)

Following is a report on the work done and the results obtained under the heading noted above at the

Stanolind Oil and Gas Company
(Company or Operator)State "E" Tract 18
(Lease)Lee Drilling Company
(Contractor)

Well No. 22 in the SW 1/4 NE 1/4 of Sec. 2

T-17-S R-36-E, NMPM, Lovington-Abo Pool, Lea County

The Dates of this work were as follows: May 5, 1954 to May 7, 1954

Notice of intention to do the work ~~was~~ (was not) submitted on Form C-102 on _____, 19____,
(Cross out incorrect words)

and approval of the proposed plan ~~was~~ (was not) obtained.

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

On May 5, 1954, 831 8' of 5 1/2" casing was run in an 8-5/8" hole and cemented at 8330' with 835 sacks cement mixed 4% gel and 835 cu. ft. perlite. After 30 hours WOC tested casing before and after drilling plug with 1050 psi for 30 minutes. Test OK. Completion operations resumed.

Witnessed by A. C. Blackburn Stanolind Oil and Gas Company Head Roustabout
(Name) (Company) (Title)

Approved: OIL CONSERVATION COMMISSION

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name: Leopold J. JensenPosition: Field SuperintendentRepresenting: Stanolind Oil and Gas CompanyAddress: Box 68 - Hobbs, New Mexico

MAY 12 1954

(Title)

(Date)

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

MISCELLANEOUS REPORTS ON WELLS

Submit this report in TRIPLICATE to the District Office, Oil Conservation Commission, within 10 days after the work specified is completed. It should be signed and filed as a report on Beginning Drilling Operations, result of casing shut-off, result of plugging of well, result of well repair, and other important operations, even though the work was witnessed by an agent of the Commission. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Report by Checking Below

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON RESULT OF TEST OF CASING SHUT-OFF	X	REPORT ON REPAIRING WELL	
REPORT ON RESULT OF PLUGGING WELL		REPORT ON RECOMPLETION OPERATION		REPORT ON (Other)	

April 2, 1954

(Date)

Hobbs, New Mexico

(Place)

Following is a report on the work done and the results obtained under the heading noted above at the

Stanolind Oil and Gas Company

(Company or Operator)

State "E" Tract 18

(Lease)

Lee Drilling Company

(Contractor)

Well No. 22 in the SW 1/4 NE 1/4 of Sec. 2

T-17-S, R-36-E, NMPM, Lovington-Abo

Pool, Lea

County.

The Dates of this work were as follows: March 30, 1954 to April 1, 1954, inclusive

Notice of intention to do the work ~~(was)~~ (was not) submitted on Form C-102 on _____, 19____, (Cross out incorrect words)and approval of the proposed plan ~~(was)~~ (was not) obtained.

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

On March 30, 1954, 3275' of new and used 9-5/8" casing was run in a 12 1/4" hole and two stage cemented. (DV tool set at 2106') at 3287' with 150 sx neat cement the first stage and 150 sx neat cement the second stage. After W.O.C. for 30 hours tested casing above DV tool and before and after drilling plug with a minimum of 950 PSI for 30 minutes, and as there was no loss in pressure, drilling operations were resumed.

Witnessed by: A. C. Blackburn Stanolind Oil and Gas Co. Head Roustabout
(Name) (Company) (Title)

Approved: _____
OIL CONSERVATION COMMISSION

(Name)

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name: Ralph E. HendersonPosition: Field SuperintendentRepresenting: Stanolind Oil and Gas CompanyAddress: Box 68 - Hobbs, New Mexico

(Title)

(Date)

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

HOBBS OFFICE OCC

MISCELLANEOUS REPORTS ON WELLS

1954 APR 2 AM 10:50

Submit this report in TRIPLICATE to the District Office, Oil Conservation Commission, within 10 days after the work specified is completed. It should be signed and filed as a report on Beginning Drilling Operations, Results of test of casing shut-off, result of plugging of well, result of well repair, and other important operations, even though the work was witnessed by an agent of the Commission. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Report by Checking Below

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON RESULT OF TEST OF CASING SHUT-OFF	X	REPORT ON REPAIRING WELL	
REPORT ON RESULT OF PLUGGING WELL		REPORT ON RECOMPLETION OPERATION		REPORT ON (Other)	

3-29-54
(Date)

Hobbs, N. M.
(Place)

Following is a report on the work done and the results obtained under the heading noted above at the

Stanolind Oil and Gas Company
(Company or Operator)

State E Tract 18
(Lease)

Lee Drilling Company
(Contractor)

Well No. 22 in the SW 1/4 NE 1/4 of Sec. 2

T. 17-S., R. 36-E, NMPM., Lovington, -Abo Pool, Lea County.

The Dates of this work were as follows: March 25, 1954 to March 27, 1954 Inclusive

Notice of intention to do the work (was) (was not) submitted on Form C-102 on _____, 19____,
(Cross out incorrect words)

and approval of the proposed plan (was) (was not) obtained.

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Spudied 17 1/2" hole 9:00 PM 3-24-54

On March 25, 1954 252' of new 13-3/8" casing was run in a 17 1/2" hole and cemented at 266', with 275 sx. reg. cement. Cement circulated to surface. After 30 hours WOC tested casing with 500 psi for 30 minutes before and after drilling plug and as there was no loss in pressure drilling operations were resumed.

Witnessed by A. C. Blackburn Stanolind Oil and Gas Company Head Roustabout
(Name) (Company) (Title)

Approved: OIL CONSERVATION COMMISSION

A. G. Stanley
(Name)

(Title)

APR 2 1954

(Date)

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name: Ralph H. Pennington

Position: Field Superintendent

Representing: Stanolind Oil and Gas Company

Address: Box 68, Hobbs, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

RECEIVED
MAR 10 1954

NOTICE OF INTENTION TO DRILL OR RECOMPLETE

Notice must be given to the District Office of the Oil Conservation Commission and approval obtained before drilling or recompleting begins. If changes in the proposed plan are considered advisable, a copy of this notice showing such changes will be returned to the sender. Submit this notice in QUINTUPLICATE. One copy will be returned following approval. See additional instructions in Rules and Regulations of the Commission.

Hobbs, New Mexico

(Place)

March 8, 1954

(Date)

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Gentlemen:

You are hereby notified that it is our intention to commence the (Drilling)/(~~Recompletion~~) of a well to be known as

Stanolind Oil and Gas Company

(Company or Operator)

State E Tract 18

(Lease)

Well No. 22

G

(Unit)

The well is

located 1650' feet from the North line and 1650 feet from the East line of Section 2, T. 17-S, R. 36-E, NMPM.

(GIVE LOCATION FROM SECTION LINE) Lovington-Abo Pool, Lea County

If State Land the Oil and Gas Lease is No. B-1553

If patented land the owner is

Address

We propose to drill well with drilling equipment as follows: Rotary Tools to Total Depth

The status of plugging bond is Blanket bond on file with Commission

Drilling Contractor Lee Drilling Company, 510 Philtower Bldg.
Tulsa, Oklahoma

We intend to complete this well in the Abo formation at an approximate depth of 8550' feet.

CASING PROGRAM

We propose to use the following strings of Casing and to cement them as indicated:

Size of Hole	Size of Casing	Weight per Foot	New or Second Hand	Depth	Sacks Cement
17-1/2"	13-3/8"	36#	New	250	275 Circulated
12-1/4"	9-5/8"	32.3, 36#	New	3300	*
7-7/8"	5-1/2"	15.5, 17#	New	8330	675 4% gel /
					675 cu. ft. perlite

If changes in the above plans become advisable we will notify you immediately.

ADDITIONAL INFORMATION (If recompleting give full details of proposed plan of work.)

*To be two stage cemented to isolate salt section. Staging tool to be set at approximately 2050'.

1st Stage - 150 sx. neat.

2nd Stage - 150 sx. neat.

Approved....., 19.....
Except as follows: MAR 10 1954

OIL CONSERVATION COMMISSION

By *J. Stanley*
Title District

Sincerely yours,

Stanolind Oil and Gas Company
(Company or Operator)

By *Lee P. Henderson*

Position Field Superintendent

Send Communications regarding well to

Name Stanolind Oil and Gas Company

Address Box 68, Hobbs, New Mexico

LEA
AMOCO PRODUCTION CO.

Lovington
WI-22 State "E" Tr. 18
Sec 2, T17S, R36E

NM
Page #2

1-18-82 : Continued
DO Ret @ 8326 (2-5-81)
Deepened 8477 to 9000
Acid (8292-9000) 5000 gals
1-23-82 COMPLETION ISSUED

1-4-78 NM
IC 30-025-70020-82

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

20 August 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Amoco Production Company)
for salt water disposal, Lea County,)
New Mexico.)

CASE
7009

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

Clyde A. Mote, Esq.
Amoco Production Company
500 Jefferson Bldg.
Houston, Texas 77001

I N D E X

H. MIKE BROWN

Direct Examination by Mr. Mote	3
Cross Examination by Mr. Stamets	9

E X H I B I T S

Applicant Exhibit One, Plat	4
Applicant Exhibit Two, List	5
Applicant Exhibit Three, C-108	6
Applicant Exhibit Four, Schematic	6
Applicant Exhibit Five, Schematic	6
Applicant Exhibit Six, Log	7
Applicant Exhibit Seven, Tabulation	8

1 MR. STAPETS: At this time we will call,
2 then, Case 7009.

3 MR. PADILLA: Application of Amoco Pro-
4 duction Company for salt water disposal, Lea County, New
5 Mexico.

6 MR. MOTE: Mr. Examiner, I'm Clyde Mote,
7 attorney, representing Amoco Production Company, in associa-
8 tion with Atwood and Malone.

9 I have one witness.

10
11 (Witness sworn.)

12
13 W. MIKE BROWN

14 being called as a witness and having been duly sworn upon
15 his oath, testified as follows, to-wit:

16
17 DIRECT EXAMINATION

18 BY MR. MOTE:

19 Q Would you please state your name, by whom
20 employed, in what capacity, and what location?

21 A Yes. My name is H. Michael Brown. I'm
22 employed by Amoco Production Company in the Houston Regional
23 Office as a Staff Petroleum Engineer, Senior Grade.

24 Q Have you previously testified before the
25 Oil Conservation Division and your qualifications as an ex-

1 part petroleum engineer been accepted?

2 A Yes.

3 Q You'll be asked to testify concerning
4 several exhibits. Were all of these exhibits either prepared
5 by you or under your supervision and direction?

6 A Yes, they were.

7 Q Please turn to your first exhibit and,
8 if you would, please explain to the Examiner the reason for
9 the two circles drawn on this map.

10 A The -- first of all, I'd like to note that
11 the well in question, our State "E" Tract 18 Well No. 22 is
12 designated by the red arrow and is the center of both the
13 circles. The inner circle has a half mile radius; the outer
14 circle is a 2-mile radius.

15 We've tried to show by this map all pro-
16 ducing horizons within the 2-mile radius.

17 Q How many producing horizons are within
18 this 2-mile radius?

19 A There are a total of six. The three main
20 horizons are the San Andres, the Paddock, and the Abo. There
21 is one Queen well, one Yates well, and three Devonian pro-
22 ducers.

23 Q How many existing salt water disposal
24 wells in the Abo?

25 A At present there are four. There are

1 Seven, if you would. I believe this is the completion and
2 casing data of all wells within half a mile of the injection
3 well, is that correct, the proposed injection well?

4 A Yes, it gives the completion data on all
5 wells within a half mile radius of the subject well, and
6 shows that nine wells have penetrated the Abo formation within
7 this area. Of that nine, two are currently Paddock water in-
8 jection wells; three are Abo salt water disposal wells; and
9 four are Abo producers.

10 Q Does it list the completion and casing
11 data for all the wells?

12 A Yes, it does.

13 Q And what is the current status of all
14 these wells?

15 A Well, our State "E" Tract 18 Wells Nos.
16 18, 19, 20, and 23 are currently Abo producers.

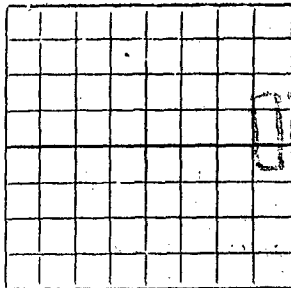
17 State "E" Tract 18 Well No. 21 is a Abo
18 salt water disposal well.

19 The Araho, Incorporated, State "WD" No. 2
20 is an Abo salt water disposal well.

21 Getty Lovington-Paddock Unit Water In-
22 jection Well No. 2 is a Paddock water injection well, as is
23 the Phillips Lovington No. 2.

24 The Rice Engineering State "WD" No. 1

Case 5183



ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

WELL RECORD

RECEIVED
MAR 10 1954
OIL CONSERVATION COMMISSION
HOBBS OFFICE

Mail to District Office, Oil Conservation Commission, to which Form C-101 was sent not later than twenty days after completion of well. Follow instructions in Rules and Regulations of the Commission. Submit in QUINTUPLICATE.

AREA 640 ACRES
LOCATE WELL CORRECTLY

The Ohio Oil Company
(Company or Operator)

State B 4286 "A"
(Lease)

Well No. 1, in NE 1/4 of NW 1/4, of Sec. 2, T. 17 S., R. 36 E., NMPM.

Lovington-Abo

Pool,

Lea

County.

Well is 2310 feet from West line and 990 feet from North line

of Section 2. If State Land the Oil and Gas Lease No. is B-4286

Drilling Commenced December 12, 1953, Drilling was Completed February 8, 1954

Name of Drilling Contractor Company tools, Rig #2

Address Hobbs, New Mexico

Elevation above sea level at Top of Tubing Head The information given is to be kept confidential until 19

OIL SANDS OR ZONES

No. 1, from to No. 4, from to

No. 2, from to No. 5, from to

No. 3, from to No. 6, from to

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from to feet.

No. 2, from to feet.

No. 3, from to feet.

No. 4, from to feet.

CASING RECORD

SIZE	WEIGHT PER FOOT	NEW OR USED	AMOUNT	KIND OF SHOE	CUT AND PULLED FROM	PERFORATIONS	PURPOSE
13-3/8"	48	New	375'	Baker guide shoe			
9-5/8"	36	New	3330'	Baker differential collar			
5-1/2"	17	New	8572'	"Baker" float			
2-3/8"	4.7	New	8505'	"Baker" float			

MUDDING AND CEMENTING RECORD

SIZE OF HOLE	SIZE OF CASING	WHERE SET	NO. BAGS OF CEMENT	METHOD USED	MUD GRAVITY	AMOUNT OF MUD USED
17 1/2"	13-3/8"	396	350	B J Cementing Co.		
12"	9-5/8"	3348	1750	B J Cementing Co.		
8-3/4"	5-1/2"	8530	1350	B J Cementing Co.		
	2-3/8"	8465		torp. end.		

RECORD OF PRODUCTION AND STIMULATION

(Record the Process used, No. of Qts. or Gals. used, interval treated or shot.)

Washed w/750 gallon acid before testing, after acid 528 BOPD, on 22/64" choke.

Perforated tbg. from 8444' to 8468' w/6 shots per ft. 168 - 1/2" holes.

Acidized thru perforation in 5 1/2" casing from 8440' to 8468' w/750 gal. mud acid.

Result of Production Stimulation

Depth Cleaned Out

RECORD OF DRILL-STEM AND SPECIAL TESTS

If drill-stem or other special tests or deviation surveys were made, submit report separate sheet and attach hereto

TOOLS USED

Rotary tools were used from surface feet to TD 8534 feet, and from feet to feet.
Cable tools were used from feet to feet, and from feet to feet.

PRODUCTION

Put to Producing February 13, 1954
OIL WELL: The production during the first 24 hours was 528 barrels of liquid of which 100 % was oil; % was emulsion; % water; and % was sediment. A.P.I. Gravity 40.2

GAS WELL: The production during the first 24 hours was M.C.F. plus barrels of liquid Hydrocarbon. Shut in Pressure lbs.
Length of Time Shut in

PLEASE INDICATE BELOW FORMATION TOPS (IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE):

Southeastern New Mexico			Northwestern New Mexico		
T. Anhy.			T. Devonian		T. Ojo Alamo
T. Salt.			T. Silurian		T. Kirtland-Fruitland
B. Salt.			T. Montoya		T. Farmington
T. Yates			T. Simpson		T. Pictured Cliffs
T. 7 Rivers			T. McKee		T. Menefee
T. Queen			T. Ellenburger		T. Point Lookout
T. Grayburg			T. Gr. Wash.		T. Mancos
T. San Andres			T. Granite		T. Dakota
T. Glorieta	6095		T. Padbrook	6160	T. Morrison
T. Drinkard			T.		T. Penn.
T. Tubbs	7670		T.		T.
T. Abo	8350		T.		T.
T. Penn.			T.		T.
T. Miss.			T.		T.

FORMATION RECORD

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	401	401	Surface sands, Red Rocks.				
401	3028	2627	Red Beds, Shale, Anhy., Salt.				
3028	4275	1247	Anhydrite, Lime.				
4275	4565	290	Anhy., Lime, Shale, Salt, Sand.				
4565	4900	335	Lime.				
4900	5135	235	Dolomite, Lime.				
5135	5560	425	Lime.				
5560	5865	305	Lime, Dolo., Sand.				
5865	7783	1918	Lime, Dolomite.				
7783	8534	751	Lime, Dolomite, Shale.				

ATTACH SEPARATE SHEET IF ADDITIONAL SPACE IS NEEDED

I hereby swear or affirm that the information given herewith is a complete and correct record of the well and all work done on it so far as can be determined from available records.

Hobbs, New Mexico March 10, 1954

Company or Operator The Ohio Oil Company

Address P. O. Box 2107, Hobbs, New Mexico

Name H. C. Brown

Position or Title Superintendent

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico
25 October 1978

EXAMINER HEARING

IN THE MATTER OF:

Application of Amoco Production Company) CASE
for salt water disposal,) 6356
Lea County, New Mexico.)
----->

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Lynn Teschendorf, Esq.
Legal Counsel for the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: Guy Buell, Esq.
Amoco Production Company
P. O. Box 3092
Houston, Texas 77001

I N D E X

J. E. PEASE

Direct Examination by Mr. Buell	3
Cross Examination by Mr. Nutter	11
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E X H I B I T S

Applicant Exhibit One, Map	11
Applicant Exhibit Two, C-102	11
Applicant Exhibit Three, Sketch	11
Applicant Exhibit Four, Sketch	11
Applicant Exhibit Five, Gamma Ray Log	11

MR. NUTTER: Call Case Number 6356.

MS. TESCHENDORF: Case 6356. Application of Amoco Production Company for salt water disposal, Lea County, New Mexico.

MR. BUELL: May it please the Examiner, for Amoco Production Company, my name is Guy Buell.

We have one witness, Mr. Examiner, Mr. Pease, who was previously sworn in Case Number 6355.

MR. NUTTER: Mr. Pease is still under oath.

MR. BUELL: And he was also qualified as a petroleum engineer in that same case, Mr. Nutter. Would you waive the necessity of going through the qualifications?

MR. NUTTER: Mr. Pease is qualified under oath.

J. E. PEASE

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Pease, in connection with your testimony in this particular case, Number 6356, I want you to look first at what has been identified as Amoco's Exhibit Number One. What is that exhibit?

Examination of Exhibits
by Mr. Nutter & Mr. Pease
in Case No. 6356
Lea County, New Mexico

1 significance of that circle?

2 A This represents the two mile radius around
3 the proposed injection well.

4 Q All right, sir, and again in conformance with
5 rule 701, you've identified the operators and the wells
6 that are producing within this two mile circle?

7 A And also the zone in which the wells are
8 producing.

9 Q And speaking of zones, let me ask you this.
10 In the Lovington-Abo Area, is it a multi-pay area?

11 A Yes, it is.

12 Q We have production from more than the Abo?

13 A That's correct.

14 Q Do you have a legend at the bottom of your
15 Exhibit Number One that through a color method identifies
16 the producing interval of all of the wells on Exhibit One,
17 which are within your two mile circle?

18 A Yes, sir.

19 Q All right, sir, since we propose to use the
20 Abo as the disposal interval in Well No. 21, rather than
21 ask you to go through all of those color legends, since
22 they're self-explanatory, I'll just ask you how have you
23 identified the Abo producers on Exhibit Number One?

24 A These are shown with a small purple dot.

25 Q All right, sir. Looking immediately to the

12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039-1040-1041-1042-1043-1044-1045-1046-1047-1048-1049-1050-1051-1052-1053-1054-1055-1056-1057-1058-1059-1060-1061-1062-1063-1064-1065-1066-1067-1068-1069-1070-1071-1072-1073-1074-1075-1076-1077-1078-1079-1080-1081-1082-1083-1084-1085-1086-1087-1088-1089-1090-1091-1092-1093-1094-1095-1096-1097-1098-1099-1100-1101-1102-1103-1104-1105-1106-1107-1108-1109-1110-1111-1112-1113-1114-1115-1116-1117-1118-1119-1120-1121-1122-1123-1124-1125-1126-1127-1128-1129-1130-1131-1132-1133-1134-1135-1136-1137-1138-1139-1140-1141-1142-1143-1144-1145-1146-1147-1148-1149-1150-1151-1152-1153-1154-1155-1156-1157-1158-1159-1160-1161-1162-1163-1164-1165-1166-1167-1168-1169-1170-1171-1172-1173-1174-1175-1176-1177-1178-1179-1180-1181-1182-1183-1184-1185-1186-1187-1188-1189-1190-1191-1192-1193-1194-1195-1196-1197-1198-1199-1200-1201-1202-1203-1204-1205-1206-1207-1208-1209-1210-1211-1212-1213-1214-1215-1216-1217-1218-1219-1220-1221-1222-1223-1224-1225-1226-1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1 west of the location of our Well No. 21, I see two wells
2 that are highlighted by thick, short, blue arrows. What's
3 the significance of those wells and why did you highlight
4 them?

5 A These are existing salt water disposal wells
6 where the disposal zone is the Abo. One of them is oper-
7 ated by Rice Engineering; the other one is by Arahoe.

8 Q All right, sir, and both those wells are
9 located in the northwest quarter of Section 2 and our pro-
10 posed well is in the northeast quarter of Section 2.

11 A That's correct.

12 Q They're immediate offsets to our well to the
13 west, is that correct?

14 A Yes, sir.

15 Q All right, sir, with respect to those two
16 existing disposal wells, do you have any idea of the volumes
17 that the -- those two operators said they might be injecting?

18 A The records for the hearings on the Rice
19 Engineering disposal, they listed 5000 to 3500 barrels of
20 water per day.

21 The application for Arahoe listed 8000 bar-
22 rels of water per day initially.

23 Q All right, sir, let me ask you this. With
24 respect to the Rice well, are they disposing through per-
25 forations or open hole?

1 be arranged after approval and the well equipped for salt
2 water disposal.

3 The cast iron bridge plug -- well, first
4 we'll squeeze off the current perforations that are 8330-
5 to-40, and then the well will be cleaned out by drilling
6 up the cast iron bridge plug, and a new hole will be made
7 from 8470-to-9100 feet.

8 3-1/2 inch internally coated tubing will be
9 run and set on a packer at 8350 feet.

10 Q And then the disposal will be through that
11 plastic coated tubing set in this packer through an open
12 hole interval 8350 feet to total depth of 9100 feet?

13 A Well, the open hole interval would be 8391 to
14 9100 feet.

15 Q I see, the packer is going to be set at 8350.

16 A That's correct.

17 Q All right, sir. Do you have any other comments
18 on Exhibit Number Four?

19 A No, sir.

20 Q Turn then, if you would, to what has been
21 identified as our Exhibit Number Five. What is that exhibit?

22 A Exhibit Five is a gamma ray log which was
23 run on the well which we are asking approval for the salt
24 water disposal, this being State "E" Tract 18 Well No. 21.

25 Q For the benefit of the record, have you identi-

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OIL CONSERVATION DIVISION P. O. BOX 2038 SANTA FE, NEW MEXICO 87501

State <input checked="" type="checkbox"/>
State Oil No. B-1553

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Application for Drilling (Form C-101) for such proposals.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	7. Unit Agreement No.
2. Name of Operator Amoco Production Company	8. Farm or Lease Name State E Tr. 18
3. Address of Operator P. O. Box 68 Hobbs, NM 88240	9. Well No. 22
4. Location of Well UNIT LAYER G 1650 FEET FROM THE North LINE AND 1650 FEET FROM THE East LINE, SECTION 2 TOWNSHIP 17-S RANGE 36-E NMPM.	10. Field and Pool, or Wholeness Lovington Abo
15. Elevation (Show whether DF, RT, GR, etc.) 3852' RDB	12. County Lea

Check Appropriate Box to Indicate Nature of Notice, Report or Other Data
NOTICE OF INTENTION TO:

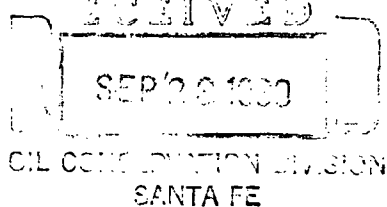
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER Deepen and convert to injection <input checked="" type="checkbox"/>

SUBSEQUENT REPORT OF:
REMEDIAL WORK <input type="checkbox"/>
COMMENCE DRILLING OPNS. <input type="checkbox"/>
CASING TEST AND CEMENT JOBS <input type="checkbox"/>
OTHER <input type="checkbox"/>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. SEE RULE 1103.

Propose to convert well to an injection well by the following method:

Run tubing and cement retainer. Set retainer at 8250'. Top of Abo perms are 8292'. Cement squeeze perforations 8292'-8316' with 150 sacks Class H cement with a water loss control additive followed by 150 sacks Class H neat. Pull retainer and perforate a one foot interval at 5000' with 4 JSPF. Run tubing and cement retainer and set 100' above top of perms, approximately 4900'. Cement 5-1/2" casing with 450 sacks Class C. Pull retainer and run bit. Drill out cement and retainers to 9000'. Run packer and set at 8310'. Acidize with 5000 gallons acid in four stages. Pump 500 lbs. of rock salt in gelled brine after first 3 stages. Test injectivity and turn well to injection.



18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED G. H. Rosta	TITLE Assist. Admin. Analyst	DATE 6-10-80
APPROVED BY [Signature]	TITLE SUPERVISOR DISTRICT	DATE SEP 19 1980

CONDITIONS OF APPROVAL, IF ANY:

0+4-NMOCD, H 1-Hou 1-Susp 1-MKE

Form
Superior
C-103
Effective

NEW MEXICO OIL CONSERVATION COMMISSION

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OPERATOR		

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO REOPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT TO DRILL" (FORM C-101) FOR SUCH PROPOSALS.)

1. ☒ OIL WELL ☐ GAS WELL ☐ OTHER-

2. Name of Operator
Amoco Production Company

3. Address of Operator
P. O. Box 68 Hobbs, NM 88240

4. Location of Well
UNIT LETTER G 1650 FEET FROM THE North LINE AND 1650 FEET FROM
East THE 2 LINE, SECTION 17-S TOWNSHIP 36-E RANGE NMPM.

15. Elevation (Show whether DF, RT, GR, etc.)

5a. Indicate State ☒ State TX

5. State Oil Commission

7. Unit Agreement No.

8. Farm or Lease Name
State E Tr. 18

9. Well No.
22

10. Field and Pool, or Wildcat
Lovington Abo

12. County
Lea

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data
NOTICE OF INTENTION TO: DEC 22 1980 SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input checked="" type="checkbox"/> Deepen and convert to injection	CASING TEST AND CEMENT JOB <input type="checkbox"/>	

R-6461 SMD

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Moved in service unit 10-28-80. Pulled rods and tubing. Set retainer at 8240'. Squeezed perfs 8292'-8316' with 150 sacks Class "C" cement with water loss control additive. Perfed 4360' w/4 DPJSPF. Set cement retainer at 4558'. Cemented perfs 4630' with 450 sacks Class H cement. Drilled Fill from 8400'-8484'. Pulled 120 joints 2-3/8" tubing.

Propose to convert well to an injection well by the following method:

Fish in hole 8688'. Side track fish and kickoff to 8450'. Drill to TD of 9000'. Test injectivity and turn well to injection.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Greg Mitchell TITLE Assist. Admin. Analyst DATE 12-17-80

APPROVED BY [Signature] TITLE SUPERVISOR DISTRICT DATE DEC 19 1980

CONDITIONS OF APPROVAL, IF ANY: 0+4-NMOCD, H 1-Hou 1-Susp 1-GPM

OIL CONSERVATION DIVISION

P. O. BOX 2000

SANTA FE, NEW MEXICO 87501

REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

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LAND OFFICE	
TRANSPORTER	OIL
OPERATION	GAS
PRODUCTION OFFICE	
Operator	

Apollo Oil Company

Address

Box 1737, Hobbs, N.M. 88240

Reason(s) for filing (Check proper box)

New Well

Recompletion

Change in Ownership

OIL CONSERVATION DIVISION
SANTA FE

Change in Transporter of:

Casinghead Gas

Dry Gas

Condensate

Other (Please explain)

Effective 4-1-86

If change of ownership give name
and address of previous owner

Amoco Production Company, Box 68, Hobbs, N.M. 88240

DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
State E Tract 18	22	Lovington ABO	State, Federal or Fee State	B-1553
Location				
Unit Letter	G	1650 Feet From The North Line and	1650 Feet From The East	
Line of Section	2	To Township	17S Range	36E, NMPL, Lea County

DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

DISPOSAL WELL

Name of Authorized Transporter of Oil	or Condensate	Address (Give address to which approved copy of this form is to be sent)
Name of Authorized Transporter of Casinghead Gas	or Dry Gas	Address (Give address to which approved copy of this form is to be sent)
If well produces oil or liquids, give location of tanks.	Unit	Sec.
	Twp.	Rge.
		Is gas actually connected?
		When

If this production is commingled with that from any other lease or pool, give commingling order number:

COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas well	New Well	Workover	Deepen	Plug Back	Same Res't.	Eff. Res't.
Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.					
Elevations (DF, RKB, RT, GR, etc.)	Name of Producing Formation	Top Oil/Gas Pay	Tubing Depth					
Perforations			Depth Casing Shoe					

TUBING, CASING AND CEMENTING RECORD

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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LAND OFFICE		
TRANSPORTER	OIL	
	NATURAL GAS	
OPERATOR		
PRODUCTION OFFICE		

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-104
Revised 10-01-78
Format 06-01-83
Page 1

REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I. Operator PENROC OIL CORPORATION

Address P.O. BOX 5970, HOBBS, NEW MEXICO 88241

Reason(s) for filing (Check proper box)

<input type="checkbox"/> New Well	Change in Transporter of:	Other (Please explain) <u>OCTOBER 1, 1988</u>
<input type="checkbox"/> Recompletion	<input type="checkbox"/> Oil	
<input checked="" type="checkbox"/> Change in Ownership	<input type="checkbox"/> Casinghead Gas	
	<input type="checkbox"/> Dry Gas	
	<input type="checkbox"/> Condensate	

If change of ownership give name and address of previous owner APOLLO OIL COMPANY, P.O. BOX 1737, HOBBS, NEW MEXICO 88241

II. DESCRIPTION OF WELL AND LEASE

Lease Name <u>STATE E TRACT 18</u>	Well No. <u>22</u>	Pool Name, including Formation <u>LOVINGTON ABO</u>	Kind of Lease State, Federal or Fee <u>STATE</u>	Lease No. <u>B-1553</u>
Location				
Unit Letter <u>G</u> : <u>1650</u> Feet From The <u>NORTH</u> Line and <u>1650</u> Feet From The <u>EAST</u>				
Line of Section <u>2</u> Township <u>17S</u> Range <u>36E</u> , NMPM, <u>LEA</u> Coun				

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS SALT WATER DISPOSAL WELL

Name of Authorized Transporter of Oil <input type="checkbox"/> or Condensate <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)
Name of Authorized Transporter of Casinghead Gas <input type="checkbox"/> or Dry Gas <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)
If well produces oil or liquids, give location of tanks.	Unit Sec. Twp. Rge. Is gas actually connected? When

If this production is commingled with that from any other lease or pool, give commingling order number: _____

NOTE: Complete Parts IV and V on reverse side if necessary.

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given is true and complete to the best of my knowledge and belief.

M. Y. Merchant

(Signature)

PRESIDENT

(Title)

OCTOBER 1, 1988

(Date)

OIL CONSERVATION DIVISION

NOV 01 1988

APPROVED _____, 19

BY Paul J. Brady

TITLE Geologist

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deeper well, this form must be accompanied by a tabulation of the device tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for all able on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multi-completed wells.

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

'91 FEB 19 AM 9 35

WELL API NO.

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.
B-1553

7. Lease Name or Unit Agreement Name

STATE "E" TRACT 18

8. Well No. 22

9. Pool name or Wildcat
LOVINGTON ABO

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"
(FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:
OIL WELL ☐ GAS WELL ☐ OTHER DISPOSAL

2. Name of Operator
PENROC OIL CORPORATION

3. Address of Operator
P.O. Box 5970, Hobbs, NM 88241

4. Well Location
Unit Letter G : 1650 Feet From The NORTH Line and 1650 Feet From The EAST Line
Section 2 Township 17S Range 36E NMPLM LEA County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)
3852' KRB

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☒ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐
OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐
CASING TEST AND CEMENT JOB ☐
OTHER: ☐

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

13 3/8" @ 95/8" @ 3287' w/ 300 SX 3. 5 1/2" - TD (8324') OH: 8324' - 8465'
266'
TOC by temperature log March 19, 1982: 490'.
Plan to rig up. Pull pkr & thg. Look for bad tubing & pkr.
Run gauge ring or swage to 8300' ±. If O.K. run RPB & test csg.
Replace bad tubing & pkr, if necessary. Circulate hole w/ treated
water (packer fluid). Pressure test backside for 15 min. to 500'.
Return well to injection.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Mohammed Yamin Merchant TITLE President

DATE 2/13/91

TYPE OR PRINT NAME Mohammed Yamin Merchant

(505) 397-3596
TELEPHONE NO.

(This space for State Use)

APPROVED BY [Signature] TITLE DISTRICT I SUPERVISOR

DATE FEB 13 1991

CONDITIONS OF APPROVAL, IF ANY:

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

OIL CONSERVATION DIVISION

P.O. Box 2088

DISTRICT II
P.O. Drawer DD, Aztec, NM 88210

Santa Fe, New Mexico 87504-2088

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

91 JUL 25 AM 9 36

WELL API NO.

5. Indicate Type of Lease

STATE ☒

FEE ☐

6. State Oil & Gas Lease No.

B-1553

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"
(FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name

STATE E. TR. 18

1. Type of Well:

OIL
WELL ☐

GAS
WELL ☐

(OTHER)

SWD

2. Name of Operator

PENROC OIL CORPORATION

8. Well No.

22

3. Address of Operator

P.O. Box 5970, Hobbs, NM 88241

9. Pool name or Wildcat

LOVINGTON ABO

4. Well Location

Unit Letter B : 1650 Feet From The NORTH Line and 1650 Feet From The EAST Line

Section

2

Township

17S

Range

36E

NMPM

LEA

County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)

3852' KB

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐

PLUG AND ABANDON ☐

TEMPORARILY ABANDON ☐

CHANGE PLANS ☐

PULL OR ALTER CASING ☐

OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☒

ALTERING CASING ☐

COMMENCE DRILLING OPNS. ☐

PLUG AND ABANDONMENT ☐

CASING TEST AND CEMENT JOB ☐

OTHER: ☐

Replaced bad jt. of tag & rep. pkr.

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Rigged up Meenar Well Service 7.18.91. Safety meeting -
unflanged well head. Pulled 261 jts of 2 7/8" PC tubing &
pkr out of hole. Found two ⁽²⁾ holes in 253rd jt. SDN.
Picked up repaired pkr. & replacement joint. Ran tag & pkr
to 4005'. Set pkr & loaded backside. Tested O.K. to 500'. Release
pkr. & ran remaining tag in the hole. Set pkr @ 8241'.
Pressured up backside with pkr fluid using I & W pump truck.
Held pressure (500+) for 15 min - O.K. Chart attached. RD.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE

M. Y. Merchant

TITLE

President

DATE

7/22/91

TYPE OR PRINT NAME

M. Y. (Merch) Merchant

(505) 397-3596

TELEPHONE NO.

(This space for State Use)

APPROVED BY

[Signature]

TITLE

DISTRICT 1 SUPERVISOR

DATE

JUL 22 1991

CONDITIONS OF APPROVAL, IF ANY:

I 1980, Hobbs, NM 88241-1980
II
with First, Artesia, NM 88210
III
to Brazos Rd., Aztec, NM 87410
IV
outh Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-104
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
5 Copies

☐ AMENDED REPORT

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

Operator name and Address SAGA PETROLEUM Limited Liability Co of Colorado 415 W. WALL, SUITE 835 MIDLAND, TX 79701		OGRID Number 148967
Reason for Filing Code CH, EFFECTIVE 1-1-97		
API Number 30-025-03858	Pool Name SWD: Abo	Pool Code 96091
Property Code 30323	Property Name State E	Well Number 22

10 Surface Location									
or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
G	2	17s	36e		1650	north	1650	East	LEA

11 Bottom Hole Location									
or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Lee Code S	Producing Method Code SWD		Gas Connection Date		C-129 Permit Number		C-129 Effective Date		C-129 Expiration Date

Oil and Gas Transporters

Transporter OGRID	Transporter Name and Address	POD	O/G	POD ULSTR Location and Description

Produced Water

POD	POD ULSTR Location and Description

Well Completion Data

Spud Date	Ready Date	TD	PBTD	Perforations	DHC, DC, MC

Hole Size	Casing & Tubing Size	Depth Set	Sacks Cement

Well Test Data

Date New Oil	Gas Delivery Date	Test Date	Test Length	Tbg. Pressure	Csg. Pressure
Choke Size	Oil	Water	Gas	AOF	Test Method

I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature:
Name: J. Charles Farmer
Manager
Date: 2/14/97
Phone: (915) 684-4293

OIL CONSERVATION DIVISION	
Approved by:	
Title: GARY W. WINK	
Approval Date: FIELD REPRESENTATIVE II	
	MAR 07 1997

is a change of operator fill in the OGRID number and name of the previous operator

H. Y. MERCHANT, PRESIDENT
2/7/97

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OPERATOR	

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-102
Supersedes Old
C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
5. State Oil & Gas Lease No.
7. Unit Agreement Name
8. Farm or Lease Name State "E" Tract 18
9. Well No. 21
10. Field and Pool, or Wildcat Lovington
12. County Lea

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>
2. Name of Operator Amoco Production Company
3. Address of Operator P.O. Drawer "A", Levelland, Texas 79336
4. Location of Well UNIT LETTER <u>B</u> <u>660</u> FEET FROM THE <u>North</u> LINE AND <u>1650</u> FEET FROM THE <u>East</u> LINE, SECTION <u>2</u> TOWNSHIP <u>17-S</u> RANGE <u>36-E</u> NMPM.
15. Elevation (Show whether DF, RT, GR, etc.) 3853 RDB

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <u>Convert to SWD</u> <input checked="" type="checkbox"/>

SUBSEQUENT REPORT OF:

REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
CASING TEST AND CEMENT JOBS <input type="checkbox"/>	OTHER <input type="checkbox"/>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Per NMOCDC order No. R-5885 dated 10/25/78, propose to convert well to SWD by the following procedure. Pull rods, tubing and packer. Run tubing and cement retainer to 8275'. Squeeze Abo perfs 8330'-8340' with 100 sx Class H cement plug additives and 100 sx Class H cement plug 2% HR4. Pull out of retainer. Perf 7" casing w/4 shots/foot over 1 foot interval at approx. 4720'. Run tubing with cement retainer and set above perfs at 4670'. Cement 7" casing with 560 sx Class C Incor plus additives and 100 sx Class C Incor plus 9.5# fine grained salt/sx. to circulate to surface. Pull out of retainer. Run bit and drill pipe. Drill out cement retainers and CIBP set at 8380'. Deepen hole to 9100'. Pull drill pipe and bit. Run workstring, treating packer and tailpipe. Acidize open hole with 5000 gal 15% HCL. Pull workstring, treating packer, and tailpipe. Run internally coated tubing and injection packer. Set packer at approx. 8370'. Place well on injection.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED <u>Ray Cox</u>	TITLE <u>Administrative Supervisor</u>	DATE <u>February 1, 1979</u>
APPROVED BY <u>Jerry S. Latham</u>	TITLE <u>SUPERVISOR DISTRICT 1</u>	DATE <u>FEB 2 1979</u>
CONDITIONS OF APPROVAL, IF ANY:		

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LAND OFFICE	
OPERATOR	

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

54. Indicate Type of Lease
State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
5. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

OIL WELL <input type="checkbox"/>	GAS WELL <input type="checkbox"/>	OTHER- Injection
Name of Operator Amoco Production Company		
Address of Operator P.O. Drawer "A", Levelland, Texas 79336		
Location of Well UNIT LETTER B 660 FEET FROM THE North LINE AND 1650 FEET FROM East LINE, SECTION 2 TOWNSHIP 17-S RANGE 36-E N.M.P.M.		

7. Unit Agreement Name
8. Farm or Lease Name State E Tract 18
9. Well No. 21
10. Field and Pool, or Wildcat Lovington
11. Elevation (Show whether DF, RT, GR, etc.) 3853 RDB
12. County Lea

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data
NOTICE OF INTENTION TO
SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>	Convert to SWD <input checked="" type="checkbox"/>

7. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work, SEE RULE 1103.

Moved in service unit 1/29/79. Pulled rods, tubing, and packer. Ran tubing and cement retainer to 8275'. Squeezed perfs 8330'-40' with 100 sx Class H cement plus 6% Halad 9 followed by 100 sx Class H plus .2% HR4. Reversed out 60 sx. Pulled tubing and perforated interval 4722'-23' with 4 JSPF. Ran tubing and packer set at 4363'. Pumped 283 BW thru perfs and circulated out bradenhead. Ran tubing and set cement retainer at 4638'. Cement 7" casing with 560 sx Class C cement plus 3% NA Silicate plus 6# salt plus 1/4# Flocele/sx followed by 100 sx Class C cement plus 9# salt/sx. Reversed out 5 sx. Ran Temperature Survey and found top of cement at 3375'. Drilled out cement and retainer 4638'-4727'. Ran bit to 8257' and drilled cement and cast iron bridge plug to 8381'. Drilled fill from 8381'-8470'. Drilled formation 8470'-8987'. Pulled drill pipe and bit. Ran 2 1/2" tubing and set packer at 8367'. Acidized with 5000 gal 15% HCL acid. Ran injection packer and set at 8378'. Moved out service unit 2/28/79. Well is currently shut-in. Waiting on pipeline to place well on injection.

10. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED <i>Ray Cox</i>	TITLE Administrative Supervisor	DATE March 9, 1979
APPROVED BY <i>Larry Senter</i>	TITLE SUPERVISOR DISTRICT 1	DATE MAR 20 1979
CONDITIONS OF APPROVAL, IF ANY: 0+4-NMOC, H 1-Houston 1-RWA 1-Susp		

OIL CONSERVATION DIVISION

P. O. BOX 7088

SANTA FE, NEW MEXICO 87501

REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

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OIL	
GAS	
OPERATION	
PRODUCTION OFFICE	

Apollo Oil Company

Box 1737, Hobbs, N.M. 88240

Reason(s) for filing (Check proper box)

New Well ☐Recompletion ☐Change in Ownership ☒

Change in Transporter of:

Oil ☐Casinghead Gas ☐Dry Gas ☐Condensate ☐

Other (Please explain)

Effective 4-1-86

If change of ownership give name
and address of previous owner

Amoco Production Company, Box 68, Hobbs, N.M. 88240

I. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
State E Tract 18	21	Lovington ABO	State, Federal or Fee State	B-1553
Location				
Unit Letter		Feet From The	Line and	Feet From The
B	660	North	1650	East
Line of Section	Township	Range	NMPM	Lea
2	17S	36E		County

II. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

DISPOSAL WELL

Name of Authorized Transporter of Oil <input type="checkbox"/> or Condensate <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)	
Name of Authorized Transporter of Casinghead Gas <input type="checkbox"/> or Dry Gas <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)	
If well produces oil or liquids, give location of tanks.	Unit	Sec.
	Twp.	Rge.
Is gas actually connected?	When	

If this production is commingled with that from any other lease or pool, give commingling order number:

COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Reservoir	Diff. Res.
Date Spudded	Date Compl. Ready to Prod.		Total Depth		F.B.T.D.			
Elevations (DF, RKB, RT, GR, etc.)	Name of Producing Formation		Top Oil/Gas Pay		Tubing Depth			
Perforations					Depth Casing Shoe			

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT

TEST DATA AND REQUEST FOR ALLOWABLE
OIL WELL

(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

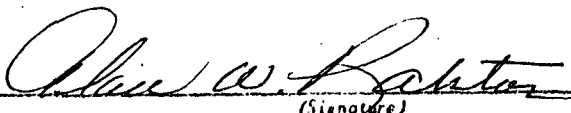
Date First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	Tubing Pressure	Casing Pressure	Choke Size
Actual Prod. During Test	Oil - Bbls.	Water - Bbls.	Gas - MCF

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
Testing Method (pilot, back pr.)	Tubing Pressure (Shut-in)	Casing Pressure (Shut-in)	Choke Size

CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.



Owner

4-11-86

(Date)

OIL CONSERVATION DIVISION

APPROVED APR 15 1986, 19BY [Signature]
TITLE DISTRICT 1 SUPERVISOR

This form is to be filed in compliance with RULE 1101.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter or other such change of condition. Separate Form C-104 must be filed for each pool in multiple

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

NO. OF COPIES RECEIVED		
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SANTA FE		
FILE		
U.S.G.S.		
LAND OFFICE		
TRANSPORTER	OIL	
	NATURAL GAS	
OPERATOR		
PERMITS OFFICE		

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-104
Revised 10-01-78
Format 08-01-83
Page 1

REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I. Operator
PENROC OIL CORPORATION

Address
P.O. BOX 5970, HOBBS, NEW MEXICO 88241

Reason(s) for filing (Check proper box)

<input type="checkbox"/> New Well	Change in Transporter of:	Other (Please explain) OCTOBER 1, 1988
<input type="checkbox"/> Recompletion	<input type="checkbox"/> Oil	
<input checked="" type="checkbox"/> Change in Ownership	<input type="checkbox"/> Casinghead Gas	
	<input type="checkbox"/> Dry Gas	
	<input type="checkbox"/> Condensate	

If change of ownership give name and address of previous owner
APOLLO OIL COMPANY, P.O. BOX 1737, HOBBS, NEW MEXICO 88241

II. DESCRIPTION OF WELL AND LEASE

Lease Name STATE E TRACT 18	Well No. 21	Pool Name, including Formation LOVINGTON ABO	Kind of Lease State, Federal or Fee STATE	Lease No. B-1553
Location Unit Letter <u>B</u> : <u>660</u> Feet From The <u>NORTH</u> Line and <u>1650</u> Feet From The <u>EAST</u> Line of Section <u>2</u> Township <u>17S</u> Range <u>36E</u> , NMPM, LEA				

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS SALT WATER DISPOSAL WELL

Name of Authorized Transporter of Oil <input type="checkbox"/> or Condensate <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)
Name of Authorized Transporter of Casinghead Gas <input type="checkbox"/> or Dry Gas <input type="checkbox"/>	Address (Give address to which approved copy of this form is to be sent)
If well produces oil or liquids, give location of tanks.	Unit Sec. Twp. Rge. Is gas actually connected? When

If this production is commingled with that from any other lease or pool, give commingling order number:

NOTE: Complete Parts IV and V on reverse side if necessary.

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given is true and complete to the best of my knowledge and belief.

M. Y. Merchant

(Signature)

PRESIDENT

(Title)

OCTOBER 1, 1988

(Date)

OIL CONSERVATION DIVISION

APPROVED NOV 01 1988

BY

TITLE Geologist

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deeper well, this form must be accompanied by a tabulation of the device tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for all wells on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multi-completed wells.

Submit 3 Copies
to Appropriate
District Office

State of New Mexico
Energy, Minerals and Natural Resources Department
RECEIVED

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

Santa Fe, New Mexico 87504-2088

WELL API NO.

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"
(FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:
OIL WELL ☐ GAS WELL ☐ OTHER Injection

2. Name of Operator
PENROC OIL CORPORATION

3. Address of Operator
P.O. Box 5970, Hobbs, NM 88241-5970

4. Well Location
Unit Letter B : 660 Feet From The NORTH Line and 1650 Feet From The EAST Line
Section 2 Township 17.5 Range 36-E NMPM LEA County

7. Lease Name or Unit Agreement Name

STATE "E" TR. 18

8. Well No. 21

9. Pool name or Wildcat
Lovington Abo

10. Elevation (Show whether DF, RKB, RT, GR, etc.)

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☒ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐
OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☒ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐
CASING TEST AND CEMENT JOB ☐
OTHER: ☐

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Rigged up 10/8/92 to clean-out fill-up. Cleaned out from 8950' to 9100' (A.H. T.D.). Replace 7" packer w/ a new Baker Loc-set plastic coated. Circulated hole w/ 235 bbls. of packer fluid. Load & tested backside for 30 min. (Sonny's oilfield chart attached). Clean location and return well to injection.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE

M. Y. (Merch) Merchant

TITLE

President

DATE

10/14/92

TYPE OR PRINT NAME

M. Y. (Merch) Merchant

TELEPHONE NO.

(505) 397-3596

(This space for State Use)

APPROVED BY

Jerry Sept

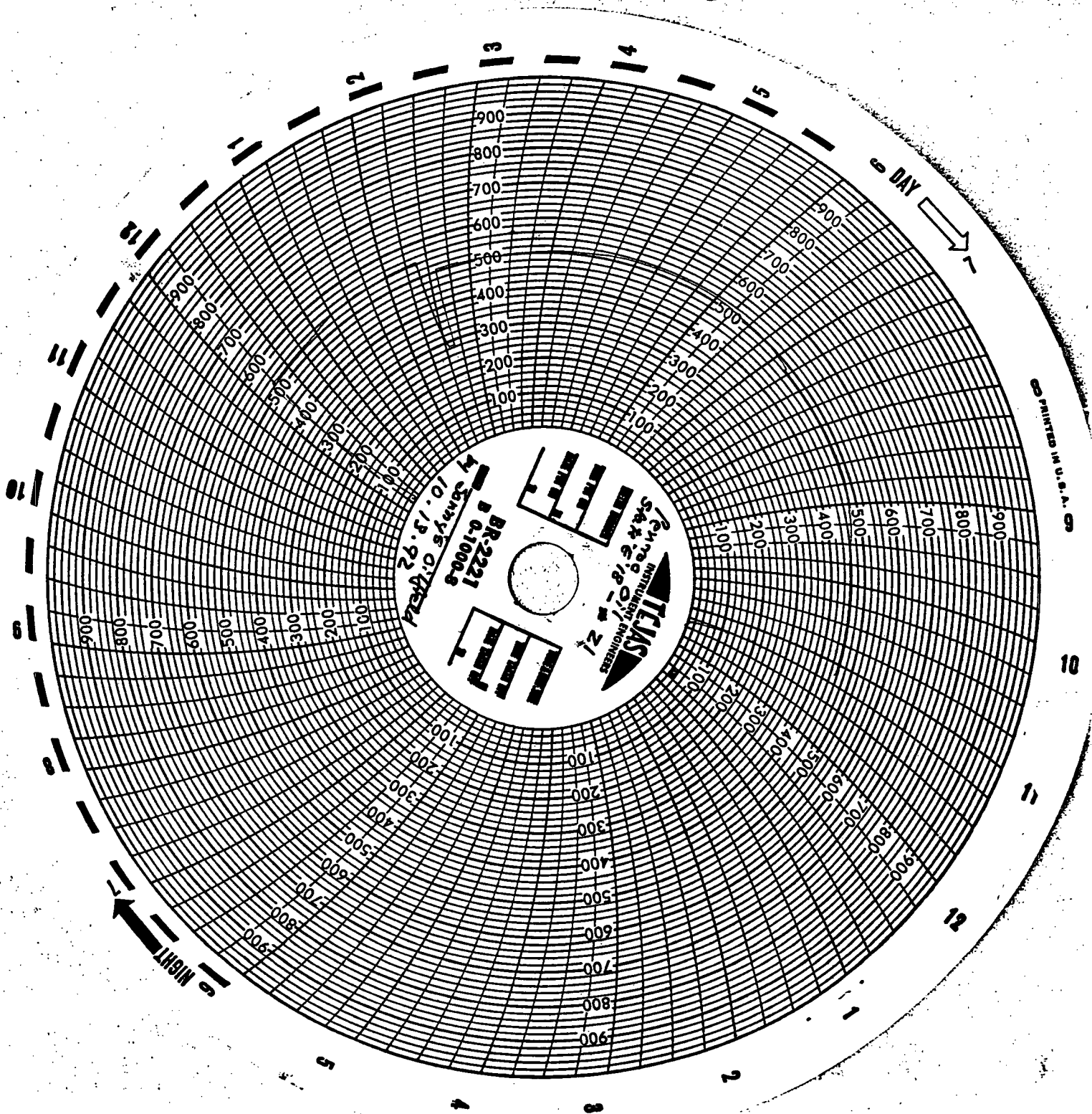
TITLE

DISTRICT 1 SUPERVISOR

DATE

OCT 26 '92

CONDITIONS OF APPROVAL, IF ANY:



Box 1980, Hobbs, NM 88241-1980
South First, Artesia, NM 88210
Rio Brazos Rd., Aztec, NM 87410
South Pacheco, Santa Fe, NM 87505

State of New Mexico
Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-104
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
5 Copies

☐ AMENDED REPORT

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

Operator name and Address SAGA PETROLEUM Limited Liability Co of Colorado 415 W. WALL, SUITE 835 MIDLAND, TX 79701		OGRID Number 148967
Reason for Filing Code CH, EFFECTIVE 1-1-97		
API Number 30-025-03857	Pool Name SWD: Abo	Pool Code 96091
Property Code 30323	Property Name State E	Well Number 21

10 Surface Location									
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
B	2	17s	36e		660	north	1650	East	LEA

11 Bottom Hole Location									
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Use Code S	Producing Method Code SWD	Gas Connection Date	C-129 Permit Number	C-129 Effective Date	C-129 Expiration Date				

II. Oil and Gas Transporters

Transporter OGRID	Transporter Name and Address	POD	O/G	POD ULSTR Location and Description

V. Produced Water

POD	POD ULSTR Location and Description

Well Completion Data

Spud Date	Ready Date	TD	PBTD	Perforations	DHC, DC, MC

Hole Size	Casing & Tubing Size	Depth Set	Sacks Cement

Well Test Data

Date New Oil	Gas Delivery Date	Test Date	Test Length	Tbg. Pressure	Csg. Pressure
Choke Size	Oil	Water	Gas	AOF	Test Method

I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature:
Printed name: J. Charles Farmer
Title: Manager
Date: 2/14/97
Phone: (915) 684-4293

OIL CONSERVATION DIVISION	
Approved by:	
Title: GARY W. WINK	
Approval Date: FIELD REPRESENTATIVE II	MAR 07 1997

This is a change of operator (III) in the OGRID number and name of the previous operator

Previous Operator Signature
017213
Printed Name: H. Y. MERCHANT, PRESIDENT
PENROC OIL CORPORATION
Title:
Date: 2/17/97