

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒

RECEIVED

PLUG BACK ☐

b. TYPE OF WELL

OIL
WELL ☒GAS
WELL ☐

OTHER

SINGLE
ZONE ☐MULTIPLE
ZONE ☐

2. NAME OF OPERATOR

Flag-Redfern Oil Company

3. ADDRESS OF OPERATOR

P.O. Box 23, Midland, TEXAS, OFFICE

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)

At surface

660' FEL & 660' FSL

At proposed prod. zone

Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

8 Miles SE of Loco Hills, NM.

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST

PROPERTY OR LEASE LINE, FT.

(Also to nearest drlg. unit line, if any)

660'

18. DISTANCE FROM PROPOSED LOCATION*

TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

None

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

3602 GL

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
11"	8-5/8"	24# J-55	850'	475 sx.
7-7/8"	4-1/2"	9.5# K-55	4250'	250 sx.

Drill 11" hole to 850' or into the Rustler Anyhdrite formation. Run 8-5/8" casing and circulate cement using 275 sx. of Halliburton light weight with 2% CaCl followed by 200 sxs of Class "C" w/2% CaCl. Wait on cement 8 hrs. and test casing to 600 PSIG. Drilled 7-7/8" hole to approximately 4250. Run Sidewall Neutron Porosity log. Run 4-1/2" casing to TD and cement with 575 sx. Halliburton Light Weight with 15# salt, 5# gilsonite, 1/4# floccel and 300 sx. 50-50 Poz A with 0.75% CFR-2, 5# salt, 2% gel. Wait on cement a minimum of 8 hrs. Test 4-1/2" casing to 1500 PSIG. Run correlation logs and perforate the Premier, Grayburg and Queen. Treat by acidizing and hydraulic fracturing. Potential test well.

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. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24

SIGNED

TITLE Petroleum Engineer

DATE 10-3-79

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

Form C-107
Supersedes C-128
Effective 1-1-65

Order		Location		Well No.	
FLAG-REDFERN OIL COMPANY		BLAND- FEDERAL		1	
at Letter	Section	Township	Range	County	
P	3	19-S	31-E	EDDY	
True Bearing Location of Well:					
S60		feet from the	SOUTH	line and	660
				feet from the	EAST
Land Level Elev.		Lithology Formation		To be located according to	
3602					

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ARTESIA, NEW MEXICO

☐ Yes ☐ No If answer is "yes," type of consolidation

If answer is "no," list the owners and tract descriptions which have actually been surveyed. (Use reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

	<h3 style="text-align: center; margin-top: 0;">CERTIFICATION</h3> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p style="text-align: right;"><i>[Signature]</i></p> <hr/> <p>Name _____</p> <hr/> <p>Position _____</p> <hr/> <p>Company _____</p> <hr/> <p>Date _____</p> <hr/> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.</p> <hr/> <p>Date Surveyed _____</p> <p style="text-align: right;"><i>Jan. 2, 1979</i></p> <p>Respected Plaintiff's Agent and of Land Company</p> <p style="text-align: right;"><i>[Signature]</i></p> <hr/> <p>Certification No. 754</p>
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APPLICATION TO DRILL
LLANO FEDERAL WELL NO. 1

In response to questions asked under Section II B of Bulletin NTL-6, the following answers are provided for your consideration:

1. Location: 660' FEL & 660' FSL of Section 3, T-19-S, R-31-E, Chaves County, New Mexico.
2. Elevation Above Sea Level: 3602' G. L.
3. Geologic Name of Surface Formation: Mississippian
4. Drilling Tools and Associated Equipment: Conventional Rotary Drilling rig using mud for the circulation medium.
5. Proposed Drilling Depth: 4250'
6. Estimated Geological Marker Tops: Rustler Anhydrite - 740', Top of Salt - 865', Base of Salt - 2350', Yates - 2530', Seven Rivers - 2870', Queen - 3370', Grayburg - 3950'.
7. Mineral Bearing Formations: Water Bearing - none, Gas Bearing - none, Oil Bearing - Queen and Grayburg.
8. Casing Program: (a) Surface casing - 8-5/8" - 24#/ft. J-55 new casing, (b) Production casing - 4-1/2" - 9.50#/ft. K-55 new casing.
9. Setting Depth of Casing and Cement for Same: (a) 8-5/8" casing set at 850'. Cement will be circulated to the surface using 275 sx. of Halliburton Light Weight w/2% CaCl followed by 200 sx. Class C w/2% CaCl. (b) 5-1/2" casing set at 4250' and will be cemented with 575 sxs. Halliburton Light Weight with 15# salt, 5# gilsonite, 1/4# floccel and 300 sx. 50-50 Pox A with 0.75% CFR-2, 5# salt, 2% gel.
10. Pressure Control Equipment: Blowout preventers will be installed on the surface casing. They will be 10" API Series 900 dual preventers adapted for the drilling contractor's 4-1/2" and 5-1/2" drill pipe. They will be capable of closing off on all open areas. The blowout preventers will be hydraulically actuated by an 80 gal Payne accumulator. The blowout preventers will be tested to 2000 psig after they are installed on the surface casing, prior to drilling out, and each time they are removed or rearranged on the wellhead.



United States Department of the Interior

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P. O. Drawer U
Artesia, New Mexico 88210

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NOV 13 1979

O. C. C.
ARTESIA, OFFICE

November 9, 1979

Flag-Redfern Oil Company
P. O. Box 23
Midland, Texas 79702

Gentlemen:

FLAG-REDFERN OIL COMPANY
Llano Federal No. 1
660 FSL 660 FEL Sec. 3 T.19S R.31E
Eddy County Lease No. NM 23002

Above Data Required on Well Sign

Your APPLICATION FOR PERMIT TO DRILL the above-described well to a depth of 4,200 feet to test the Grayburg formation is hereby approved subject to compliance with the OIL AND GAS OPERATING REGULATIONS (30 CFR 221) and the following conditions:

1. Drilling operations authorized are subject to compliance with the GENERAL REQUIREMENTS FOR OIL AND GAS OPERATIONS ON FEDERAL LEASES, dated July 1, 1978.
2. Prior to commencing construction of road, pad, or other associated developments, operator will provide the dirt contractor with a copy of the SURFACE USE PLAN and this approval including the GENERAL REQUIREMENTS.
3. Submit a Daily Report of Operations from spud date until the Well Completion Report (form 9-330) is filed. The progress report should be not less than 8" x 5" in size and each page should identify the well.
4. All permanent above-ground structures and equipment shall be painted in accordance with the attached Painting Requirements. The color used should simulate Sandstone Brown (Federal Standard No. 595A, color 20318 or 30318).
5. Cement behind the 8-5/8" and 4-1/2" casing must be circulated.
6. Notify Survey in sufficient time to witness the cementing of 8-5/8" and 4-1/2" casing.



7. Please have anyone contacting the Survey in regard to this well to identify the well with all of the information required above for the well sign.
8. This is an amended approval letter. Please disregard approval letter dated November 2, 1979.

Sincerely yours,

George H. Stewart
Acting District Engineer



N.M.O.C.D. COPY

United States Department of the Interior

GEOLOGICAL SURVEY

P. O. Drawer U
Artesia, New Mexico 88210

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NOV 6 1979

O. C. C.
ARTESIA, OFFICE

November 2, 1979

Flag-Redfern Oil Company
P. O. Box 23
Midland, Texas 79702

Gentlemen:

FLAG-REDFERN OIL COMPANY
Llano Federal No. 1
660 FSL 660 FEL Sec. 3 T.19S R.31E
Eddy County Lease No. NM 23002

Above Data Required on Well Sign

Your APPLICATION FOR PERMIT TO DRILL the above-described well to a depth of 4,250 feet to test the Grayburg is hereby approved subject to compliance with the OIL AND GAS OPERATING REGULATIONS (30 CFR 221) and the following conditions:

1. Drilling operations authorized are subject to compliance with the attached General Requirements for Oil and Gas Operations on Federal Leases, dated July 1, 1978.
2. Prior to commencing construction of road, pad, or other associated developments, operator will provide the dirt contractor with a copy of the Surface Use Plan and these Conditions of Approval including the attached General Requirements.
3. Submit a Daily Report of Operations from spud date until the well is completed and the Well Completion Report (form 9-330) is filed. The report should not be less than 8" x 5" in size and each page should identify the well.
4. All permanent above-ground structures and equipment shall be painted in accordance with the attached Painting Guidelines. The color used should simulate Sandstone Brown (Federal Standard No. 595A, color 20318 or 30318).
5. Before drilling below the 8-5/8" casing, the blowout preventer assembly will consist of a minimum of one annular type and two ram type preventers.
6. A kelly cock will be installed and maintained in operable condition.



7. After setting the 8-5/8" casing string and before drilling into the Queen formation, the blowout preventers and related control equipment shall be pressure tested to rated working pressures by an independent service company. Any equipment failing to test satisfactorily shall be repaired or replaced. This office should be notified in sufficient time for a representative to witness the tests and shall be furnished a copy of the pressure test report.
8. Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be installed and operating before drilling into the Queen formation and used until production casing is run and cemented. Monitoring equipment shall consist of the following:
 - (1) A recording pit level indicator to determine pit volume gains and losses.
 - (2) A mud volume measuring device for accurately determining mud volume necessary to fill the hole on trips.
 - (3) A flow sensor on the flow-line to warn of any abnormal mud returns from the well.
9. Notify the Survey in sufficient time to witness the cementing of the 8-5/8" and 4-1/2" casing.
10. Cement behind the 8-5/8" casing must be circulated and the cement behind the 4-1/2" casing must, at a minimum, cover the base of the salt.
11. Please have anyone contacting the Survey in regard to this well to identify the well with all of the information required above for the well sign.

Sincerely yours,

George H. Stewart
Acting District Engineer

11. Proposed Circulating Medium: Mud will be used for the circulating medium for all depths in this well. The following mud properties will be maintained:
0-850' Fresh water based native mud, mud weight 8.6 to 10.0 lb/gal, viscosity 32 to 34 seconds.
850-3200' (TD) Fresh water based native mud with oil, mud weight 10.0 lb/gal. Viscosity 32 to 42 seconds.
12. Testing, Logging and Coring Programs: (a) Testing - All Testing will be commenced after the well is drilled and casing has been set and cemented. (b) Logging - At total depth the following logs will be run:
0-4250' Compensated Neutron Formation Density and Dual Laterolog Micro-SFL.
13. Potential Hazards: No abnormal pressure or temperature zones are anticipated. Hydrogen sulfide gas is not expected to be a problem; however, the drilling rig will be so situated as to allow all gas vapors to be expelled away from all personnel gathering sites and engine exhausts.
14. Anticipated Starting Date and Duration of Operations: November 15, 1979
Road and location to be constructed, December 1, 1979
Drilling rig to spud well, January 1, 1979 Well to be potentialled.
15. Other Facets of Operations: After running 4-1/2" casing, cased hole gamma ray collar correlation logs will be run from 4250 to 3200'. The Grayburg and Queen will be perforated, acidized, and hydraulically fractured. A pumping unit will be installed to potential and produce the well.

Surface Use and Operation Plan

Flag-Redfern Oil Company
Llano Federal No. 1
Section 3, T-19-S, R-31-E
Eddy County, New Mexico

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ARTESIA, NEW MEXICO

1. Existing Roads

- A. Attached is a portion of a U.S.G.S. Topographic map showing existing roads in the vicinity of the proposed location.
- B. There are no plans for improving the existing roads.

2. Access Roads

- A. Planned access roads are shown on the topographic map.
- B. The road will be constructed of caliche and will be 12' wide.

3. Location of Existing Wells

- A. Existing wells are shown on the attached plat.

4. Location of Tank Batteries, etc.

- A. In the event the proposed well is productive, a tank battery and production facility will be built on the southeast portion of the drill site.
- B. The reserve pits will be back filled and leveled.

5. Location and Type of Water Supply

- A. There is no known surface water in the area.
- B. A windmill is located approximately 6000' north of the proposed location.
- C. All water used in drilling operations will be trucked to the drillsite from commercial sources.

6. Source of Construction Materials

- A. Construction material will be caliche, which will be purchased by the dirt contractor.

7. Methods for Handling Waste Disposal

- A. Well cuttings will be disposed in the reserve pit. All waste and trash will be either burned or buried in a separate pit.
- B. After completion any produced water will be collected in tanks and trucked to an approved disposal system.
- C. During testing operations, all produced fluids will be collected in tanks and trucked from the well site.

8. Auxiliary Facilities

- A. None anticipated.

9. Well Site Layout

- A. Attached is a plat of the well site and rig layout.

10. Plans for Restoration of the Surface

- A. As soon as practical upon completion of the well, the pits will be back filled and leveled and the surface returned to its original contours.

11. Other Information

- A. See attached topographic map for the general area which consists of an undulating plain covered by sandy soils of alluvian and aeolian origin.
- B. Characteristic soils belong to the typic haplargids paleargids associations.
- C. Vegetation consists of yucca glauca, rhus tripebata, gutierrezia sarothrae, eurotia, lanata, and lycurus phleoides.
- D. Fauna consists of crotalus and sistrurus, canis latrans, lepus alleni, mephitis mephitis and antelope.
- E. The surface of this land is being utilized to a limited extent as grazing land for cattle.

- F. The surface is federally owned.
- G. No cultural resources or archeological sites are present.
- H. There are no steep hillsides, no deep gullies, no streams and no occupied dwellings on this lease.

12. Operator's Representative

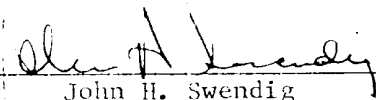
John H. Swendig
P. O. Box 23
Midland, Texas 79702

Office Phone: 915/683-5184
Home Phone: 915/697-1628

13. Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist, that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Flag-Redfern Oil Company and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

Date Oct 4, 1979

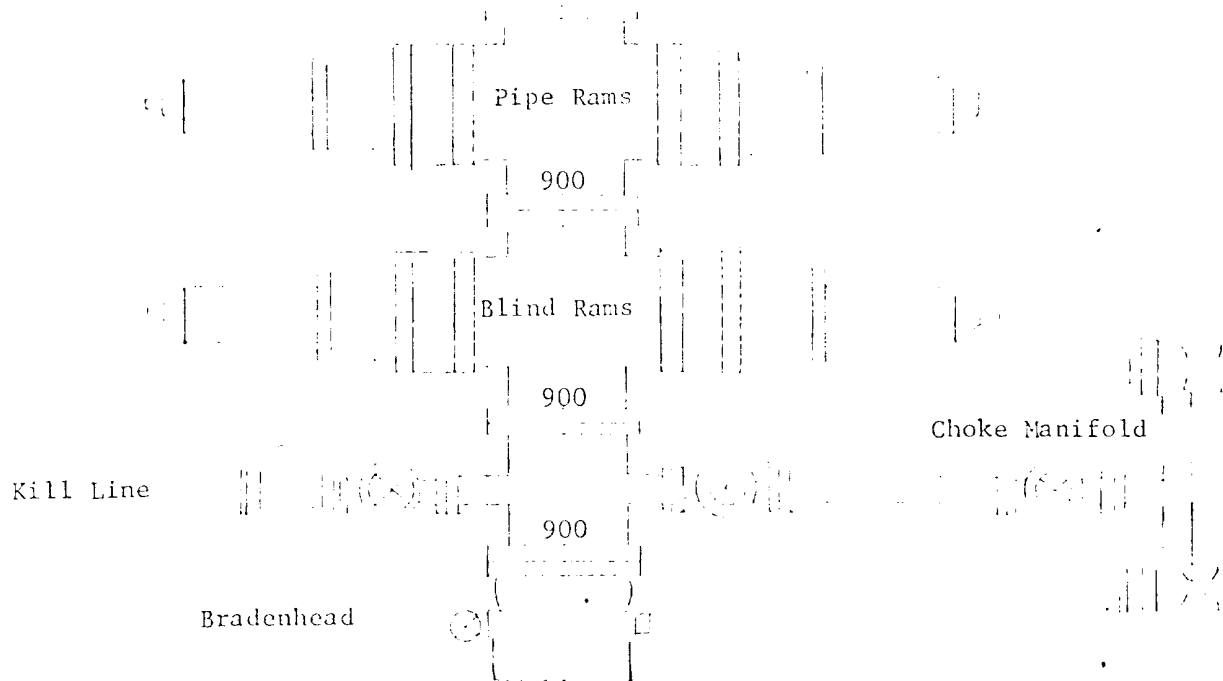


John H. Swendig

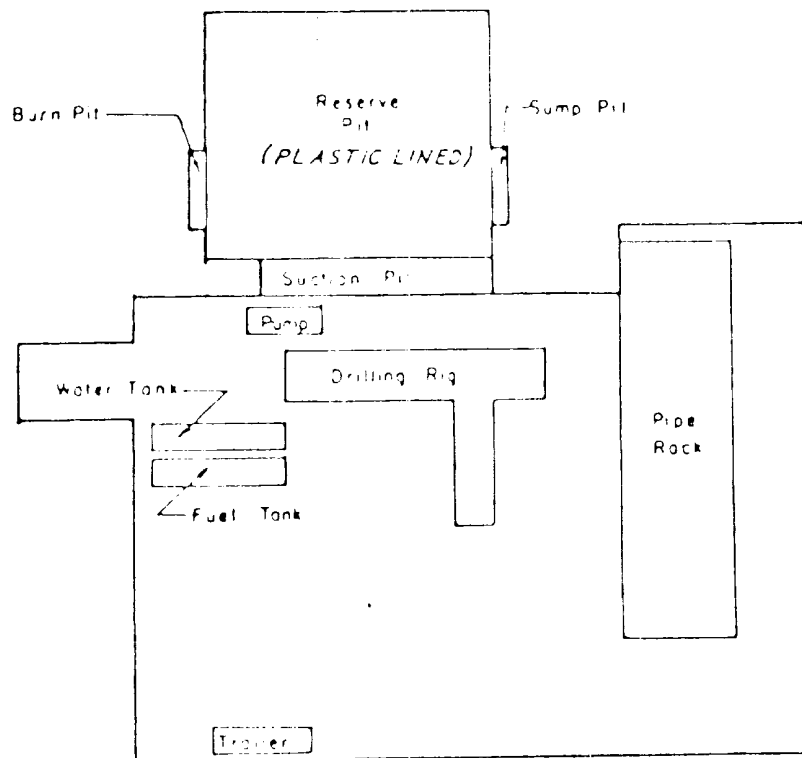
BLOWOUT PREVENTER ASSEMBLY

Shaffer 10" Series 900

Hydraulically Operated BOP



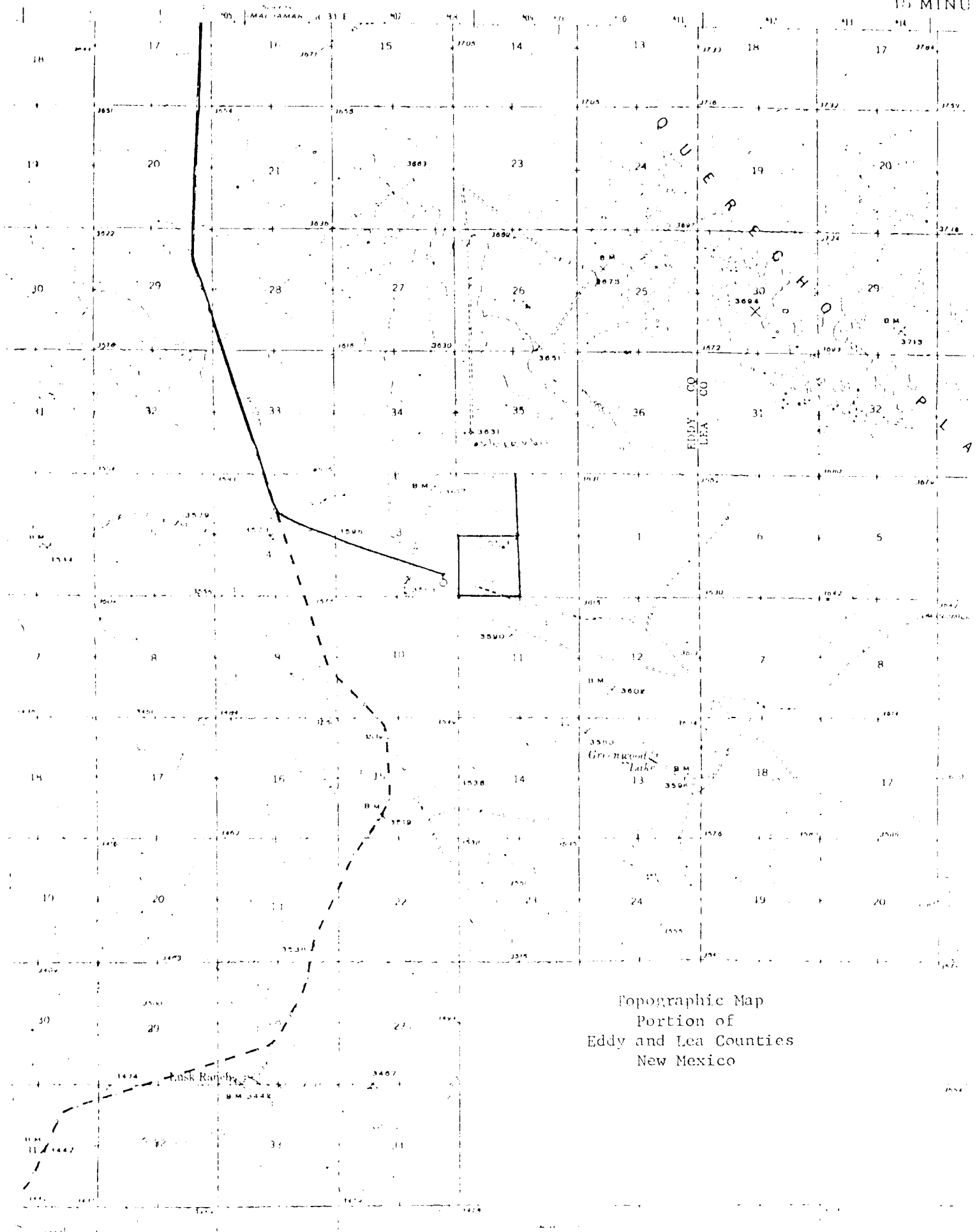
1. All preventers to be hydraulically operated with secondary manual controls installed prior to drilling out from under casing.
2. The preventers will be Type "E" 10" 900 Series Double Shaffer.
3. The preventers will be capable of closing off all open areas.
4. The preventers will be tested to 2000 psig after they are installed on the surface casing prior to drilling out, and each time they are removed or rearranged on the well head.
5. Operating controls will be located a safe distance from the rig floor.

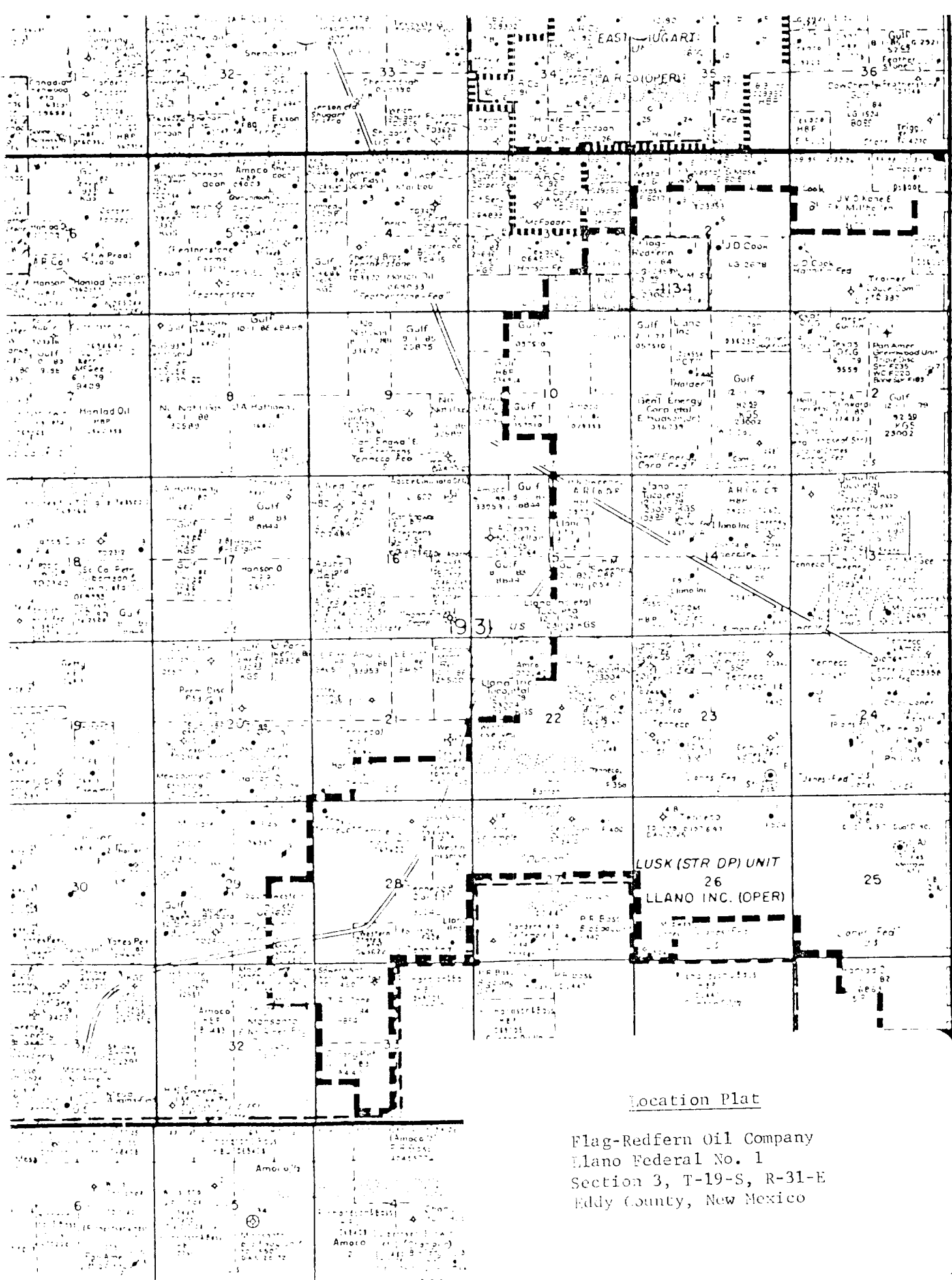


WELL SITE LAYOUT

Flag-Redfern Oil Company
 Llano Federal No. 1
 Eddy County, New Mexico

Scale 1" = 40'





Directions To:

Llano Federal No. 1
Shugart Field
Eddy County, New Mexico

1. Go east from Loco Hills on Highway 82 for 6 miles.
2. Turn south on Highway 31 for 8 miles.
3. Turn southeast on caliche road $1\frac{1}{2}$ miles.
4. Turn south 400' to location.

Ogrod 18862
 Prop 16342
 Pool 56439

2-6-80
 Comp. Hunt. - F.D.
 Surf - 4250
 Dual laterolog
 2500-4250
 Gamma Ray
 3250-4050

IT IS THEREFORE ORDERED: *Case # 6860 4-9-80 D.S.Y.*
order # 6324 4-24-80

(1) That the applicant, Flag-Redfern Oil Company, is hereby granted an exception to Order (3) of Division Order No. R-3221, as amended, to dispose of water produced in conjunction with the production of oil or gas, or both, from its Llano Federal Well No. 1, located in Unit P of Section 3, Township 19 South, Range 31 East, NMPM, Shugart Pool, Eddy County, New Mexico, in an unlined surface pit located in Unit P of said Section 3, until further order of the Division.

(2) That the Director of the Division may by administrative order rescind such authority whenever it reasonably appears to the Director that such rescission would serve to protect fresh water supplies from contamination.

Chas. A. Smith
1891
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