State of New Maxico ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT



Santa Fe, New Mexico 87505

OIL CONSERVATION DIVISION

January 12, 1995



EnRe Corporation c/o Permits West, Inc. 37 Verano Loop Santa Fe, New Mexico 87505

Attn: Brian Wood

OIL CON. DIV.

Administrative Order NSL-3460

Dear Mr. Wood:

Reference is made to your application dated December 12, 1994 on behalf of the operator, EnRe Corporation, for an unorthodox oil well location for the proposed Los Indios Canyon "15-J" Well No. 1 to be drilled 1395 feet from the South line and 2180 feet from the East line (Unit J) of Section 15, Township 27 North, Range 1 West, NMPM, to test both the Entrata formation and the West Puerto Chiquito-Mancos Oil Pool, Rio Arriba County, New Mexico.

All of said Section 15 being a standard 640-acre oil spacing and proration unit for the West Puerto Chiquito-Mances Oil Pool and the NW/4 SE/4 of said Section 15 being a standard 40acre oil spacing and proration unit for the Entrata interval, are to be dedicated to said well.

By the authority granted me under the provisions of Rule 5 of the "Special Rules and Regulations for the West Puerto Chiquito-Mancos Oil Pool", as promulgated by Division Order Nos. R-2565-B, R-2565-C, R-6469, R-6469-A, R-6469-B, R-6469-C, R-6469-D, R-6469-E, R-6469-F, R-6469-F-1, R-6469-G, R-6469-G-1, and R-6469-H, and Division General Rule 104.F(1), the above-described unorthodox oil well location is hereby approved.

Sincerely,

William J. LeMay

Director

WJL/MES/kv

Cil Conservation Division - Aztec cc:

U. S. Bureau of Land Management - Albuquerque

VILLAGRA BUILDING - 408 Galistec

Forestry and Resources Conservation Division P.O. Bcx 1948 87504-1948 827-5830

Park and Recreation Division P.O. Box 1147 87504-1147 827-7465

2040 South Pacheco

Office of the Secretary 827-5950

Administrative Services 827-5925

Energy Conservation & Management 827-5900

Mining and Minerals 827-5970

Oil Conservation 827-7131

Ernie Busch

From:

Ernie Busch

To:

Mike Stogner

Subject:

Date:

EnRe CORPORATION (NSL) Monday, January 09, 1995 1:51PM

Priority:

LOS INDIOS CANYON 15J #1

1395 FSL; 2130 FEL

J-15-27N0-1W

RECOMMEND: APPROVAL



DECEIVED N DEC 1 4 1994

OIL CON. DIV. Dist. 3

REQUEST FOR ADMINISTRATIVE APPROVAL FOR NON-STANDARD LOCATION FOR THE LOS INDIOS CANYON 15 J #1 OIL WELL 1395' FSL & 2180' FEL SEC. 15, T. 27 N., R. 1 W., RIO ARRIBA COUNTY, NM BY EnRe CORPORATION

- I. The well is on Jicarilla Apache Tribal Trust surface and minerals. An onsite was held September 30, 1994. Onsite participants included John Atencio (BIA), Pat Hester (BLM), Mitch Michelson (EnRe), Fred Vigil (Jicarilla Apache Oil & Gas Admin.), Brian Wood (Permits West), et al. Application for Permit to Drill is attached.
- II. A C-102 showing the well location, proration unit (all of Sec. 15 which totals 640 acres), and lease (all of T. 27 N., R. 1 W. is lease and totals 17,710.81 ac.) is in the APD.
- III. According to NM Oil Conservation Records, the closest producing well of any kind is EnRe's O-16 which is 5,161' west in 16-27n-1w. A map is attached showing the proposed well (square), quarter-quarter lines (dash lines), and spacing units (solid lines). There is only one lease/mineral agreement (701-94-0011) within a minimum 2 mile radius. It comprises all of T. 27 N., R. 1 W. Interest owners are: Ampolex, Benson-Montin-Greer, Deven Resources, EnRe, Fortune Petroleum, and the Jicarilla Apache Tribe.
- IV. A copy of the Los Indios Canyon 7.5' USGS map is attached. The proposed wellsite is marked by a square. Proration units (sections) are marked by solid lines. Quarter-quarter lines are dashed lines. Closest existing well is EnRe's O-16 well 5,161' west in SWSE 16-27n-1w. Closest proposed well is EnRe's Los Indios 15 N #1 over 2,000' west in the SESW 15-27n-1w. It was planned to be a horizontal well which would drill beneath the 15 J location. However, extreme difficulty (4 sidetracks) while drilling EnRe's Cedar Canyon 22 G in 22-28n-1w has convinced EnRe to cancel the horizontal 15 N and replace it with the vertical 15 J.
- V. Request for a non-standard location is based on the Tribe's desire to minimize the loss of timber. The most open area in the quarter-quarter (see attached photos) was selected. Moving 255' further north to an orthodox location would require felling more and larger salable timber.

VI. No archaeology sites were found.

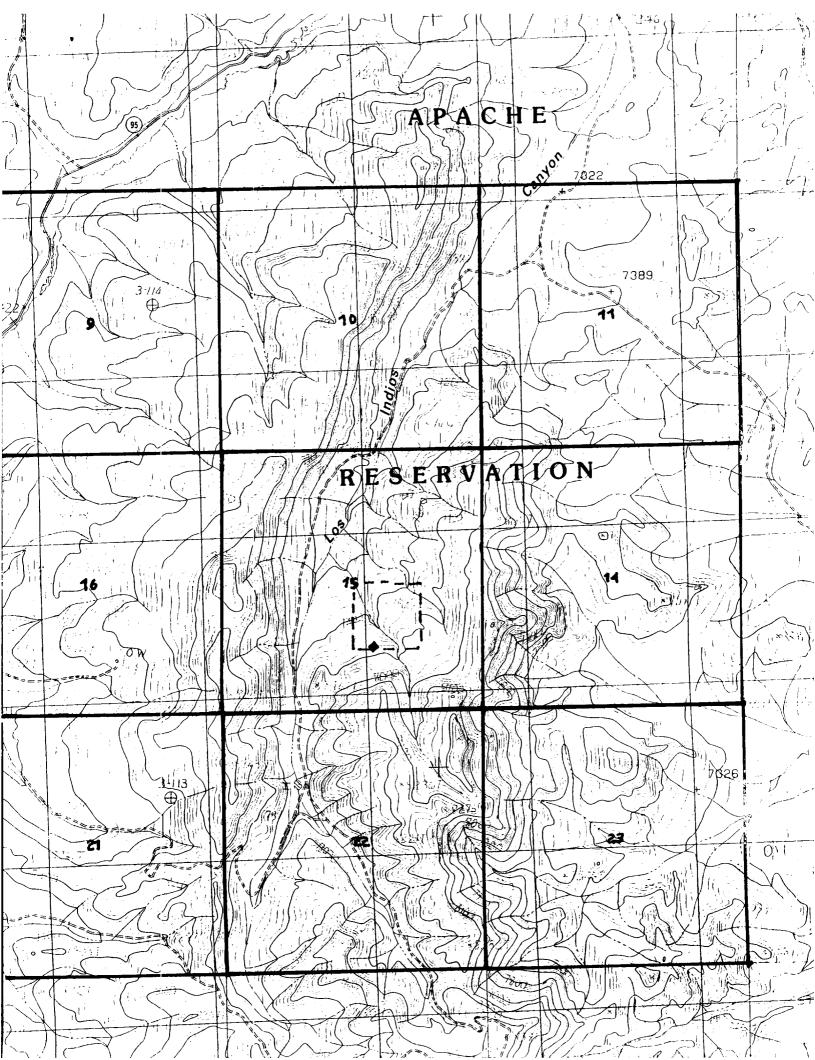
VII. Location was moved out of orthodox drilling window due to presence of large ponderosa pines which Tribe wants to preserve for future timber sales. Wellsite is staked in an area with fewer and smaller trees.

VIII. Directional drilling is not feasible because it is not cost effective. EnRe's recent Cedar Canyon 22-G well (22-28n-1w) required 4 sidetracks.

IX. I hereby certify that notice has been sent to the following lessees, lessors, surface management agencies, operators of spacing units, or owners of undrilled leases which adjoin the applicant's spacing unit on one or more of the two sides or the single closest corner to the proposed well and that the information is current and correct:

Ampolex
Benson-Montin-Greer
BIA
Deven Resources
Fortune Petroleum
Jicarilla Apache Tribe





Form, 3160-3 (November 1983) (No (fo

2-1/4"

<u>-7/8"</u>

3.

9-5/8"

5-1/2"

15.5#(N-80)

(Other instructions on

Budget Bureau No. 1004-0136

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EnRe Corpo	ration (210)	826-0681					#	1	
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P.O. Box 60	27, San Anto	1110, 17. 70	- State requires	nents.*)		M Duo	rto C	hi'to	Mancos
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*) 1395' FSL & 2180' FEL							R., M., OR I	RLE.	<u>, , , , , , , , , , , , , , , , , , , </u>
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21. ELEVATIONS (Show when	ther DF, RT, GR, etc.)	',858' ungrad	ded grour	ıd		Nov.	15,	1994	
23.		PROPOSED CASING			м				
	WEIGHT PER FOOT		IG DEPTH		QUANTITY OF CEMENT				
SIZE OF HOLE	SIZE OF CASING	26# (K-55)		>500'	≈325 cu ft and to surface				

≈1860 cu ft and to surface

OIL CON. DIV. DIST. 3

cc: BIA, BLM(4 +2 for OCD), EnRe, T. Velarde

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IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If propose zone. If proposal is to drill or deepen directionally, gi	al is to deepen or plug back, give data on present productive ve pertinent data on subsurface locations and measured and	e sone and proposed new productive true vertical depths. Give blowout
81GNED Truet- COZ	Consultant	DATE 11-9-94
(This space for Federal or State office use)	APPROVAL DATE	
PERMIT NO.	APPROVAL DATE	DATE
APPROVED BY	TITLE	ps. ()

District 1 PO Box 1980, Hobbs, NM 88241-1980 District II PO Drawer DD, Artesia, NM 88211-8719 District III 1000 Rio Brazos Rd., Aztoc. NM 87410 District IV

State of New Mexico Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION PO Box 2088 Santa Fe, NM 87504-2088

Form C-102 Revised February 21, 1994 Instructions on back

Submit to Appropriate District Office State Lease - 4 Copies Fee Lease - 3 Copies

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Property Code Los Indios Canyon						15J-1				
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133	182		¹⁰ Surface Location							
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J			11 Bot	tom Hol	e Location I	f Different Fr	om Surface			
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Drilling Program

1. FORMATION TOPS

Estimated tops of important geologic markers (based on an ungraded ground elevation of 7,858') are:

Formation Name San Jose Ojo Alamo Ss Fruitland Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Ss & Coal Pt. Lockout Ss	GL Depth 000' 2,604' 2,645' 2,764' 3,168' 5,291' 5,268' 5,728'	KB Depth 13' 2,617' 2,658' 2,777' 3,181' 5,304' 5,281' 5,741' 5,748'	Subsea Depth +7,858' +5,254' +5,213' +5,094' +4,690' +2,567' +2,590' +2,130' +2,123'
	5,291'	5,304'	+2,567'
	5,268'	5,281'	+2,590'
	5,728'	5,741'	+2,130'
Mancos Shale	5,735'	5,748'	+2,123'
Niobrara	6,298'	6,311'	+1,560'
Mancos "A" Zone	6,787'	6,800'	+1,071'
Mancos "A" Ss	6,821'	6,834'	+1,037'
Mancos "B" Ss	6,857'	6,870'	+1,001'
Mancos "C" Ss	6,976'	6,989'	+882'
Total Depth	7,112'	7,125'	+746'

2. NOTABLE ZONES

The Pictured Cliffs, Mesa Verde, and Mancos zones are most likely to have oil or gas. Mancos is the primary goal. Lost circulation may occur in the Pictured Cliffs and Mancos. Only likely water zone is the San Jose. If any other water zones are found, then all will be recorded and protected with casing, cement, and weighted mud. Oil and gas shows



will be tested for commercial potential based on the well site geologist's recommendations.

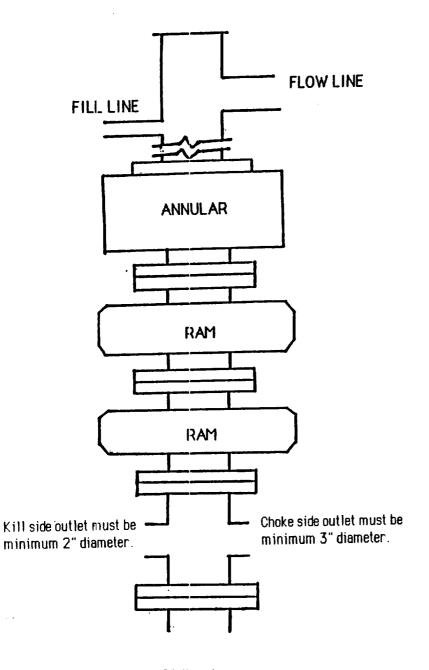
3. PRESSURE CONTROL

BOP systems will follow Onshore Order #2 and API RP 53. The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. A typical model is on PAGE 3. Maximum pressure will be $\approx 1,100$ psi.

BOP controls will be installed before drilling the surface casing plug and remain in use until the well is completed or abandoned. Once out from under the surface casing, a 10" minimum 3,000 psi BOP and choke manifold system will be used. System will include upper and lower kelly cock with handle, test plug, drill pipe float, mud logging unit with gas detector to detect any influx of formation fluids, and a sub on the floor with a full opening valve to be stabbed into the drill pipe when a kelly is not in the string.

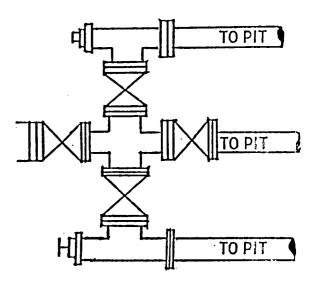
Ram type preventers and associated equipment (e.g., choke manifold and kelly cock) will be pressure tested to 100% of their rated working pressure for a minimum of 10 minutes. A test plug will isolate the BOP stack from the casing. Annular preventers will be tested to $\geq 50\%$ of their rated working pressure for at least 10 minutes. Tests will be run after installation, before drilling out the surface casing shoe, and after any use under pressure, or a minimum of once every 14 days. Pipe rams will be operationally checked each 24 hour period, as will blind rams and annular preventer each time pipe is pulled out of the hole. Annular preventers will be functionally operated at least weekly. BOP checks will be noted on the daily drilling report.





TYPICAL BOP STACK & CHOKE MANIFOLD

There will be at least 2 chokes and 2 choke line valves (3" minimum). The choke line will be 3" in diameter. There will be a pressure gauge on the choke manifold.



Kill line will be minimum 2" diameter and have 2 valves, one of which shall be a minimum 2" check valve.

Upper kelly cock will have handle available.

Safety valve and subs will fit all drill string connections in use.

All BOPE connections subjected to well pressure will be flanged, welded, or clamped.



4. CASING & CEMENT

Hole Size	<u>O.D.</u>	Weight (lb/ft)	<u>Grade</u>	<u>Type</u>	<u>Age</u>	KB Setting Depth
12-1/4"	9-5/8"		K-55	ST&C	New	≥500'
			N-80	ST&C	New	7.125
7-7/8"	5-1/2"	15.5	14-00	3100	11011	.,

Surface casing will be cemented to the surface with ≈ 325 cubic feet (≈ 275 sx) Class B with 3% salt + 1/4#/sk celloflake + 2% CaCl₂. Volume calculated at 100% excess. Use ≈ 20 sx for top job. Run regular pattern guide shoe and insert float in top of shoe joint. Place one stop ring 10' from bottom of shoe joint for first centralizer. Place 2 additional centralizers on the casing at 100' intervals.

Production casing will be cemented to the surface. Calculations based on 150% excess. Actual volumes will be calculated at 20% excess as measured by caliper log. First stage will be cemented from TD to $\approx\!5750^{\circ}$ (DV collar) with $\approx\!360$ cubic feet of $\approx\!60$ sx Howco Lite + 1/4#/sk celloflake in lead mixed at 11.2#/gal and $\approx\!200$ sx Class B + 1/4#/sk celloflake in tail. Second stage lead will be cemented from $\approx\!5750^{\circ}$ to the surface with $\approx\!1500$ cubic feet of $\approx\!150$ sx Class B nitrofied to 4.24#/gal in lead and $\approx\!50$ sx Class B + 1/4#/sk celloflake in tail. Cap with 50 sx Class B with 2% CaCl₂ to hold nitrofied cement (previous experience shows denser cernent will not easily circulate to surface). DV tool may be installed just below Picture Cliffs. Centralizers will be used.

5. MUD PROGRAM

<u>Depth</u>	<u>Type</u>	ppg	<u>Viscosity</u>	Fluid Loss cc
0' - 500'	Fresh water gel & lime	9.0-10.0	40-50	NC
500' - 3.000'	Gel & PHPA polymer	8.7-8.8	29-33	15-20
3,000' - 5,700'	Gel polymer	8.7-8.9	30-35	12-15
5,700' - 6,500'	Gel polymer	8.7-8.9	34-38	12-15
6,500' - 7,125'	Gel polymer	8.8-9.0	35-38	8-10



At $\approx 6,000'$ will rig up air compressors and booster sufficient to move 1.5MMcf/D with one 800Mcf/d compressor on standby. Rig up separate 500 bbl mud tank with Quadco separator (gas buster), Drilco style degasser, oil skimmer, and 50 hp transfer pump. From 6,500 to TD will control lost circulation with sufficient air to lower equivalent mud gradient to 0.22 psi/ft or equivalent mud density of 4.25 ppg.

Sufficient mud material to maintain mud properties, control lost circulation, and contain a blowout will be at the wellsite while drilling. Mud will be checked frequently by rig personnel. Mud logging unit, gas detector, and flow sensor will be used.

6. CORING, TESTING, & LOGGING

No cores or DSTs are planned. Triple combination logs may be run from $\approx 6,500$ ' to TD. Sonic and Dual Induction - Gamma Ray logs may be run from TD to base of surface casing. Spectral Density and Compensated Neutron logs may be run across porous and potential pay intervals.

7. DOWNHOLE CONDITIONS

No abnormal temperatures pressures, nor hydrogen sulfide are expected.

8. OTHER INFORMATION

Tentative spud date is November 15, 1994. Drilling will take \approx 20 days. Completion will take \approx 10 days.



Surface Use Plan

1. DIRECTIONS & EXISTING ROADS (See Pages 11 & 12)

From the junction of US 64 and NM 537, go south 9.1 miles on NM 537.

Then turn left onto J-16 and go SE 8.5 mi. to J-8.

Then turn right onto J-8 and go S 1.35 mi. to J-17 at a green LACT.

Then turn right onto J-17 and go SW 0.9 mi. to J-55.

Then bear right and go SW 3.9 mi.

Then turn left and go E ≈1900' on a flagged route to the proposed well.

Roads will be maintained at least equal to their present condition. Only upgrading needed will be to limb or fell a few trees along J-55.

2. ROAD TO BE BUILT (See Page 12)

About 1900' of new road will be built. It will have a ≈ 15 ' wide running surface within a maximum disturbed width of 40'. It will be crowned and ditched. Two minimum 18" x 40' culverts iwll be installed. No gates or cattleguards are needed. Maximum grade is 10%.

3. EXISTING WELLS (See PAGE 12)

According to NM Oil Conservation Division records, there are no injection, water, or gas wells within a mile. EnRe has an existing oil well ≈ 5000 ' west and plans another ≈ 2000 ' west.

4. PROPOSED PRODUCTION FACILITIES

The exact type, location, and layout of the production facilities are



not known now. It is expected they may include a meter run, dehydrator, separator, tank battery, and/or heater-treater. All will be painted a flat juniper green color. A flowline will be buried north to a possible production facility at the LACT on J-17. A Sundry Notice and or right-of-way will be submitted for approval before installation.

5. WATER SUPPLY

Water will be trucked from Tribal land. Primary source will be a new water hole recently dug by EnRe in Cisneros Canyon. A secondary source will be an existing seep pond below Hayden Dam. Exact source will depend on availability.

6. CONSTRUCTION MATERIALS & METHODS

Large ponderosa pines will be felled and limbed, but the trunks will be left intact and pushed along the road. Other smaller trees will be felled, cut into 16" lengths for firewood, and stacked by the road. A diversion ditch to be cut along the south side of the pad will run along the toe of the slope, rather than above it.

Brush and the top 6" of topsoil will be stripped and stockpiled west of the pad. Subsoil from the reserve pit will be kept separate from topsoil. The reserve pit will be terraced down so at least half its capacity is in cut and lined with minimum 12 mil plastic. The south corner of the pad will be rounded off if possible to reduce the cut. (Safety considerations may preclude rounding.)

7. WASTE DISPOSAL



The reserve pit will be fenced sheep tight on 3 sides with woven wire fence topped with barbed wire. The 4th side will be fenced once the rig moves off. The fence will be kept in good repair while the pit dries. No oil will be discharged into the pit. All oil will go into tanks.

All trash will be placed in a portable trash cage. It will be hauled to an approved landfill. There will be no burial or burning.

Human waste will be disposed of in chemical toilets or minimum 10' deep ratholes under trailers. Ratholes will be immediately filled when the trailers are removed.

8. ANCILLARY FACILITIES

There will be no air strips or camps. Camper trailers will be on site for the company man, tool pusher, and mud loggers.

9. WELL SITE LAYOUT

See Fages 13 and 14 for depictions of the well pad, cross section, cut and fill diagram, reserve pit, trash cage, access onto the location, parking, living facilities, and rig orientation.

10. RECLAMATION

Reclamation starts once the reserve pit is dry. It usually takes a year for the pit to fully evaporate, at which point it will be backfilled. The wellpad and backfilled pit will be recontoured to a natural shape, water barred, stockpiled topsoil spread evenly over disturbed areas, and disturbed areas ripped or harrowed. A seed mix will be drilled at a



depth and time to be determined by the Tribe.

If seed is broadcast, the rate will be increased as determined by the Tribe. A harrow or cable will be dragged over the area to assure seed cover. After seeding is done, the stockpiled brush and limbs will be scattered evenly over disturbed areas.

If the well is a producer, then the reserve pit and any other areas not needed for workovers will be reclaimed as previously described.

11. SURFACE OWNER

The well and road are on Jicarilla Apache Tribal trust land.

12. OTHER INFORMATION

The nearest hospital is a ≈ 2 hour drive away in northwest Espanola. Hospital phone number is (505) 753-7111.

13. REPRESENTATION

Anyone having questions concerning the APD should call:

Brian Wood, Consultant Permits West, Inc. 37 Verano Loop Santa Fe, NM 87505 (505) 466-8120

FAX: (505) 466-9682 Cellular: (505) 699-2276



The field representative while drilling will be:
Harvey Ashford
(505) 325-1873, Unit 2895
or dial (505) 327-1870 and ask for Rig 7
or cellular phone (505) 320-7626 then (210) 415-4235

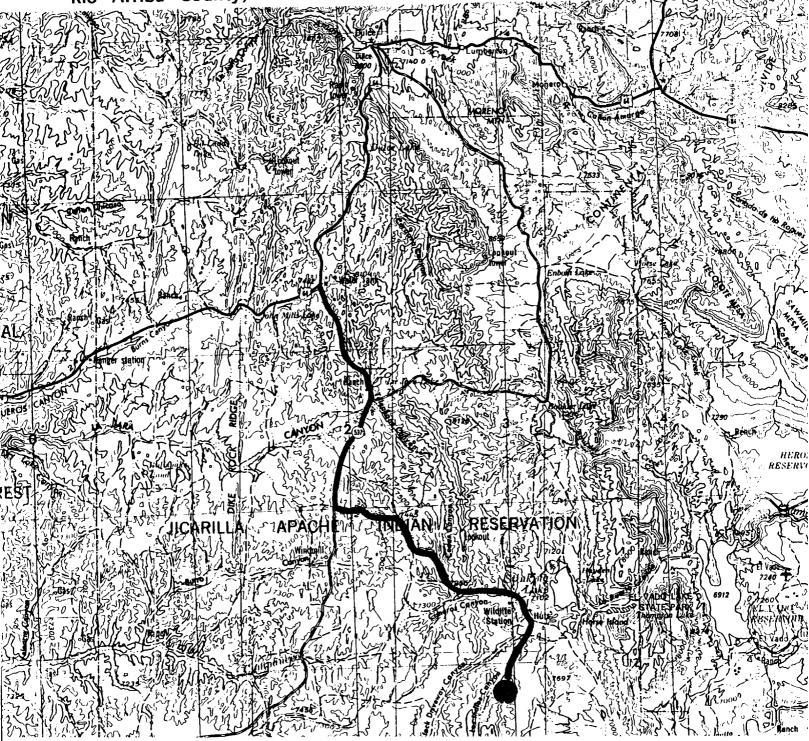
EnRe Corporation has the necessary consents from the proper lease owners to conduct lease operations in conjunction with this well. Bond coverage pursuant to 43 CFR 3104 for lease activities and operations is being provided by EnRe Corporation.

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by EnRe Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Brian Wood, Consultant

November 9, 1994 Date





PROPOSED WELL:

ACCESS ROUTE:

