

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

PLUG BACK ☐

b. TYPE OF WELL

OIL WELL ☒

GAS WELL ☐

OTHER

SINGLE ZONE ☐

MULTIPLE ZONE ☐

2. NAME OF OPERATOR

Marbob Energy Corporation

14049

3a. Area Code & Phone No.

505-748-3303

3. ADDRESS OF OPERATOR

P. O. BOX 227 Artesia, NM 88210

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

At surface 1650 FSL 380 FWL

At proposed prod. zone

SAME

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

EAST OF ARTESIA ON U.S. 82 APPROX. 24.8 MILES

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drilg. unit line, if any)

380'

16. NO. OF ACRES IN LEASE

120

17. NO. OF ACRES ASSIGNED TO THIS WELL

40

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.

19. PROPOSED DEPTH

6000'

20. ROTARY OR CABLE TOOLS

ROTARY

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

3639' GR

22. APPROX. DATE WORK WILL START*

MAY 1, 1998

PROPOSED CASING AND CEMENT

HOLE SIZE	CASING SIZE	WEIGHT/FOOT	GRADE	THREAD TYPE	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	8 5/8"	24#	J-55	LT&C	350'	3000' SX97
7 7/8"	5 1/2"	17#	J-55	LT&C	6000'	6000' SX97

PAY ZONE WILL BE SELECTIVELY PERFORATED AND STIMULATED AS NEEDED FOR OPTIMUM PRODUCTION.

ATTACHED ARE: 1. LOCATION & DEDICATION ACREAGE PLAT
2. SUPPLEMENTAL DRILLING DATA
3. SURFACE USE PLAN

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

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.

SIGNED Thonda Nelson TITLE Production Clerk

DATE 3/27/98

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

/S/LARRY D. BRAY

Assistant Field Manager,
Lands And Minerals

APPROVED BY

TITLE

DATE

SEP 05 2000

CONDITIONS OF APPROVAL, IF ANY:

APPROVED FOR 1 YEAR

66
OCT 04 1999

ROSWELL, NM

100-101-101-101

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Artec, NM 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

DISTRICT IV
P.O. Box 2088, Santa Fe, NM 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 96718	Pool Name LOCO HILLS; Paddock
Property Code	Property Name BIRDIE FEDERAL	Well Number 1
OGRID No. 14049	Operator Name MARBOB ENERGY CORPORATION	Elevation 3639

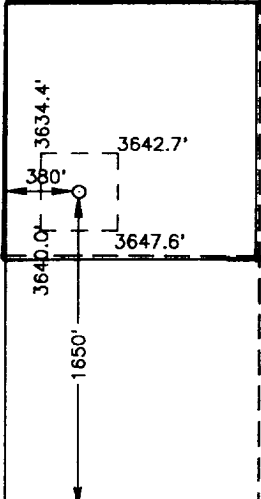
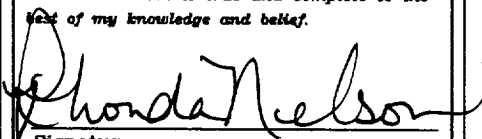
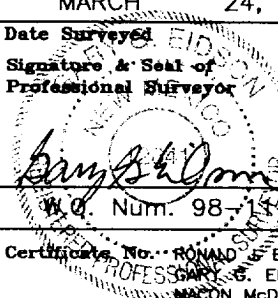
Surface Location

UL or lot No. L	Section 17	Township 17 S	Range 30 E	Lot Idn	Feet from the 1650	North/South line SOUTH	Feet from the 380	East/West line WEST	County EDDY
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Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40		Joint or Infill	Consolidation Code	Order No.					

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

				OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  Signature RHONDA NELSON Printed Name PRODUCTION CLERK Title MARCH 27, 1998 Date		
				SURVEYOR CERTIFICATION 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 belief. MARCH 24, 1998 Date Surveyed Signature & Seal of Professional Surveyor  W.O. Num. 98-140473 Certificate No. RONALD EIDSON, 3239 GARY S. EIDSON, 12841 MACON McDONALD, 12185		

DRILLING PROGRAM

Attached to Form 3160-3
Marbob Energy Corporation
Birdie Federal No. 1
380' FWL and 1650' FSL
Section 17-17S-30E
Eddy County, New Mexico

1. Geologic Name of Surface Formation:

Permian

2. Estimated Tops of Important Geologic Markers:

Permian	Surface		
Salt	360'	Queen	1815'
Base of Salt	780'	Grayburg	2140'
Yates	930'	San Andres	2510'
Seven Rivers	1145'	Glorietta	3900'

3. Estimated Depths of Anticipated Fresh Water, Oil or Gas:

Upper Permian Sands	100'	Fresh Water
Yates	930'	Oil
Seven Rivers	1145'	Oil
Queen	1815'	Oil
Grayburg	2140'	Oil
San Andres	2510'	Oil
Glorietta	3900'	Oil

No other formations are expected to give up oil, gas, or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 8 5/8 casing at 350' and circulating cement back to surface. Any shallower zones above TD which contain commercial quantities of oil and/or gas will have cement circulated across them by inserting a float shoe joint into the 5 1/2" production casing which will be run at TD.

4. Casing Program:

<u>Hole Size</u>	<u>Interval</u>	<u>OD csg</u>	<u>Weight, Grade, Jt. Cond. Type</u>
12 1/4"	0 - 350"	8 5/8"	24# J-55 LTC NEW R-3
7 7/8"	0 - TD	5 1/2"	17# J-55 LTC NEW R-3

DRILLING PROGRAM

PAGE 2

Cement Program:

- 8 5/8" Surface Casing: Cemented to surface with 300sx of Class C w/2% cc.
- 5 1/2" Production Casing: Cemented with 1100sx Class C. Will attempt to circulate to surface.

5. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram-type (3000 psi wp) preventer. This unit will be hydraulically operated and the ram-type preventer will be equipped with blind rams on top and $\pm 1/2$ " drill pipe rams on bottom. This BOP will be nipped up on the 8 5/8" surface csg and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 1000 psi before drilling out of surface casing.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A 2" kill line and a 3" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 3000 psi WP rating.

6. Types and Characteristics of the Proposed Mud System:

The well will be drilled to TD with cut brine. The applicable depths and properties of this system are as follows:

<u>Depth</u>	<u>Type</u>	<u>Weight (ppg)</u>	<u>Viscosity (sec)</u>	<u>Waterloss (cc)</u>
0 - 350'	Fresh Water (Spud)	8.5	28	N.C.
350'-6000'	Brine	9.8 - 10.2	40 - 45	N.C.

7. Auxiliary Well Control and Monitoring Equipment:

- (A) A kelly cock will be kept in the drill string at all times.
- (B) A full opening drill pipe stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

DRILLING PROGRAM
PAGE 3

8. Logging, Testing, and Coring Program:

- (A) No Drillstem tests are anticipated.
- (B) The electric logging program will consist of Dual Laterolog Micro SFL, Spectral Density Dual Spaced Neutron Csng Log, and Depth Control Log.
- (C) No conventional coring is anticipated.
- (D) Further testing procedures will be determined after the 5 1/2" production casing has been cemented at TD based on drill shows, and log evaluation, and drill stem test results.

9. Abnormal Conditions, Pressures, Temperatures, & Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole temperature (BHT) at TD is 104' and estimated bottom hole pressure (BHP) is 2250 psig.

10. Anticipated Starting Date and Duration of Operations:

Location and road work will not begin until approval has been received from the BLM. The anticipated spud date is May 1, 1998. Once commenced, the drilling operation should be finished in approximately 21 days. If the well is productive, an additional 30 to 60 days will be required for completion and testing before a decision is made to install permanent facilities.

SURFACE USE AND OPERATING PLAN

Attached to Form 3160-3
Marbob Energy Corporation
Birdie Federal No. 1
380' FWL and 1650' FSL
Section 17-17S-30E
Eddy County, New Mexico

1. Existing Roads:

- A. The well site and elevation plat for the proposed well is attached. It was staked by John West Engineering.
- B. All roads to the location are shown in Exhibit #2. The existing roads are illustrated in red and are adequate for travel during drilling and production operations. Upgrading of the road prior to drilling will be done where necessary as determined during the onsite inspection.
- C. Directions to location: From Artesia, proceed East on U.S. 82 for 24.8 miles. Turn north on Eddy County Road 217 and proceed .9 miles. Turn west on lease road and proceed 1 mile. The location is on the south side of lease road.
- D. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

2. Proposed Access Road:

A new access road of 252' will be necessary. The new road will be constructed as follows:

- A. The maximum width of the running surface will be 10'. The road will be crowned and ditched and constructed of 6" of rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns. BLM may specify any additions or changes during the onsite inspection.
- B. The average grade will be less than 1%.
- C. No turnouts are planned.
- D. No culverts, cattleguard, gates, low-water crossings, or fence cuts are necessary.

SURFACE USE AND OPERATING PLAN

PAGE 2

- E. Surfacing material will consist of native caliche. Caliche will be obtained from the nearest BLM-approved caliche pit. Any additional materials that are required will be purchased from the dirt contractor.
- F. The proposed access road as shown in Exhibit #4 has been centerline flagged by John West Engineering.

3. Location of Existing Wells:

Exhibit #3 shows all existing wells within a one-half mile radius of this well.

4. Location of Existing and/or Proposed Facilities:

- A. Marbob Energy Corporation has a collection facility set up for this lease located at approximately 1650' FSL and 1500' FWL, Section 17-17S-30E, Eddy County.
- B. If the well is productive, a 3" plastic flowline (grade SDR 7 @ 265 psi) will be laid on the surface following the existing lease road Right-of-Way to the tank battery. Anticipated pressures in the flowline should not exceed 75 psi.
- C. If the well is productive, power will be obtained from Central Valley Electric. Central Valley Electric will apply for ROW for their power lines.
- D. If the well is productive, rehabilitation plans are as follows:
 - (1) The reserve pit will be back-filled after the contents of the pit are dry (within 10 months after the well is completed).
 - (2) Topsoil removed from the drill site will be used to recontour the pit area and any unused portions of the drill pad to the original natural level, as nearly as possible, and reseeded as per BLM specifications.

5. Location and Type of Water Supply:

The well will be drilled with a combination brine and fresh water mud system as outlined in the drilling program. The water will be obtained from commercial water stations in the area and hauled to the location by transport truck over the existing and proposed access roads shown in Exhibit #2. If a commercial fresh water source is nearby, fasline may be laid along existing road

SURFACE USE AND OPERATING PLAN

PAGE 3

ROW's and fresh water pumped to the well. No water well will be drilled on the location.

6. Source of Construction Materials:

All caliche required for construction of the drill pad and the proposed new access road (approximately 1500 cubic yards) will be obtained from a BLM - approved caliche pit. All roads and pads will be constructed of 6" of rolled and compacted caliche.

7. Methods of Handling Water Disposal:

- A. Drill cuttings not retained for evaluation purposes will be disposed into the reserve pit.
- B. Drilling fluids will be contained in lined working pits. The reserve pit will contain any excess drilling fluid or flow from the well during drilling, cementing, and completion operations. The reserve pit will be an earthen pit, approximately 100' X 150' X 6' deep. A dike will be built across the pit, dividing it in half. One-half of the reserve pit will be plastic-lined to minimize loss of drilling fluids and saturation of the ground with brine water. The other half of the reserve pit will be lined with plastic and used only if we encounter a waterflow during drilling operations and find that we need additional space. This portion of the pit is a precautionary measure only. The portion of the pit that will be lined with plastic should be more than adequate for normal drilling operations. If a water flow is encountered, we should have ample time to line the other half of the pit with plastic before the water encroaches.
- C. Water produced from the well during completion may be disposed into the reserve pit.
- D. Garbage and trash produced during drilling or completion operations will be hauled off. All waste material will be contained to prevent scattering by the wind. All water and fluids will be disposed of into the reserve pit. Salts and other chemicals produced during drilling or testing will be disposed into the reserve pit. No toxic waste or hazardous chemicals will be produced by this operation.
- E. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned-up within 30 days. No adverse materials will be left on location. The reserve pit will be completely fenced until it has dried. When the reserve pit is dry enough to breakout and fill, the reserve pit will be leveled and reseeded as per BLM specifications. In the event of a dry hole, the location will be ripped and seeded, as per BLM Specifications, and a dry hole marker will remain.

SURFACE USE AND OPERATING PLAN
PAGE 4

8. Ancillary Facilities:

No airstrip, campsite, or other facilities will be built as a result of the operations on this well.

9. Well Site Layout:

A. The drill pad layout is shown in Exhibit #4. Dimensions of the pad and pits are shown. Top soil, if available, will be stockpiled per BLM specifications as determined at the on-site inspection.

B. The reserve pit will be lined with a high-quality plastic sheeting.

10. Plans for Restoration of the Surface:

A. Upon finishing drilling and/or completion operations, all equipment and other material not needed for operations will be removed.

All trash, garbage, and pit lining will be hauled away in order to leave the location in an aesthetically pleasing condition. All pits will be filled and the location leveled within 10 months after abandonment.

B. Three sides of the reserve pit will be fenced prior to and during drilling operations. At the time that the rig is removed, the reserve pit will be fenced on the rig (fourth) side. The fencing will remain in place until the pit area is cleaned-up and leveled. No oil will be left on the surface of the fluid in the pit.

C. Upon completion of the proposed operations, if the well is completed, the reserve pit area will be treated as outlined above within the same prescribed time. Any additional caliche required for facilities will be obtained from a BLM - approved caliche pit. Topsoil removed from the drill site will be used to recontour the pit area to the original natural level and reseeded as per BLM specifications.

11. Surface Ownership:

The wellsite and lease is located on Federal Surface.

A. The area around the well site is grassland and the top soil is sandy. The vegetation is native scrub grasses with abundant oakbrush, sagebrush, yucca, and prickly pear.

SURFACE USE AND OPERATING PLAN
PAGE 5

- B. A Cultural Resources Examination has been requested and will be forwarded to your office in the near future.

12. Lessee's and Operator's Representative:

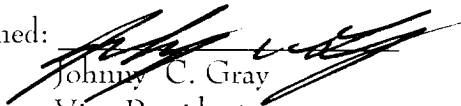
The Marbob Energy Corporation representative responsible for assuring compliance with the surface use plan is as follows:

Johnny C. Gray
Marbob Energy Corporation
324 W. Main, Suite 103
P. O. Drawer 227
Artesia, New Mexico 88211
Phone: 505/748-3303 (office)
505/885-3879 (home)

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 currently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed by Marbob Energy Corporation and its contractors and subcontractors in conformity with this plan and the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Date: 3-30-98

Signed: 
Johnny C. Gray
Vice-President

MARBOB ENERGY CORPORATION

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

II. H_2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S .

1. Well Control Equipment:
 - A. Flare line with electronic igniter or continuous pilot.
 - B. Choke manifold with a minimum of one remote choke.
 - C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
 - D. Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head, and flare gun with flares.
2. Protective equipment for essential personnel:
 - A. Mark II Surviveair 30-minute units located in the dog house and at briefing areas, as indicated on well site diagram.
3. H₂S detection and monitoring equipment:
 - A. 2 - portable H₂S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H₂S levels of 20 ppm are reached.
 - B. 1 - portable SO₂ monitor positioned near flare line.
4. Visual warning systems:
 - A. Wind direction indicators as shown on well site diagram.
 - B. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.
5. Mud Program:
 - A. The mud program has been designed to minimize the volume of H₂S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.
 - B. A mud-gas separator and an H₂S gas buster will be utilized.
6. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.
 - B. All elastomers used for packing and seals shall be H₂S trim.
- 7. Communication:
 - A. Radio communications in company vehicles including cellular telephone and 2-way radio.
 - B. Land line (telephone) communications at field office.
- 8. Well testing:
 - A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill stem testing operations conducted in an H₂S environment will use the closed chamber method of testing.

W A R N I N G

**YOU ARE ENTERING AN H₂S AREA
AUTHORIZED PERSONNEL ONLY**

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED**
- 2. HARD HATS REQUIRED**
- 3. SMOKING IN DESIGNATED AREAS ONLY**
- 4. BE WIND CONSCIOUS AT ALL TIMES**
- 5. CK WITH MARBOB FOREMAN AT MAIN OFFICE**

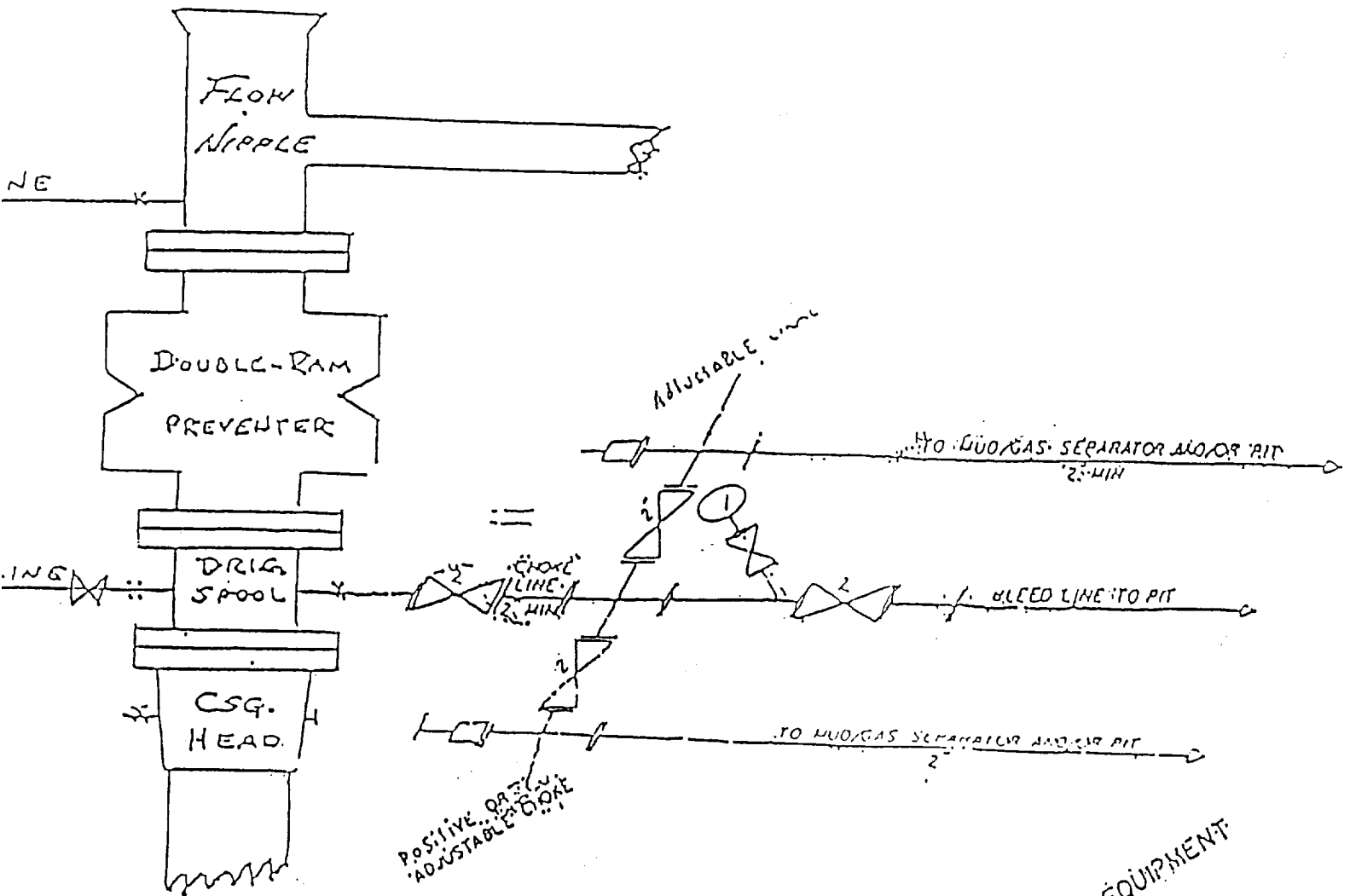
MARBOB ENERGY CORPORATION

1-505-748-3303

EXHIBIT #1

B O P & CHOKE MANIFOLD

10"/900 Cameron SS Space Saver
3000# Working Pressure
3,000# Working Pressure Choke Manifold



2 1/4" CHOKE MANIFOLD EQUIPMENT

Marboh Energy Corporation

Birdie Federal No. 1

380' FWL and 1650' FSL

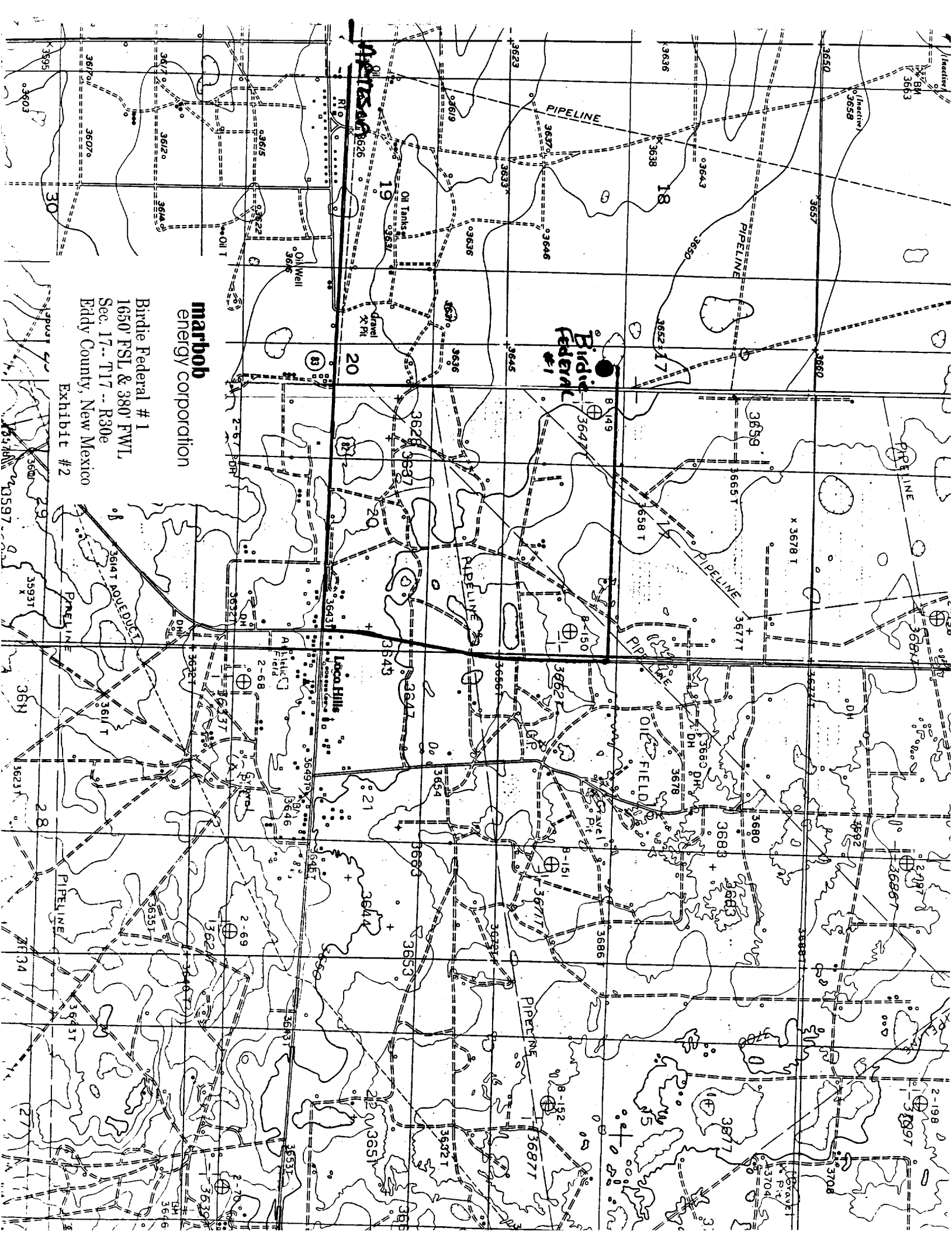
Section 17-17S-30E

Eddy County, New Mexico

Exhibit #1

Attachment to Exhibit #1
NOTES REGARDING THE BLOWOUT PREVENTERS

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
2. Wear ring to be properly installed in head.
3. Blow out preventer and all fittings must be in good condition, 1000 psi W.P. minimum.
4. All fittings to be flanged.
5. Safety valve must be available on rig floor at all times with proper connections, valve to be full bore 1000 psi W.P. minimum.
6. All choke and fill lines to be securely anchored, especially ends of choke lines.
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
8. Kelly cock on kelly.
9. Extension wrenches and hand wheels to be properly installed.
10. Blow out preventer control to be located as close to driller's position as feasible.
11. Blow out preventer closing equipment to include minimum 40 gallon accumulator, two independent sources of pump power on each closing unit installation, and meet all API specifications.



Birdie
Federal
#1

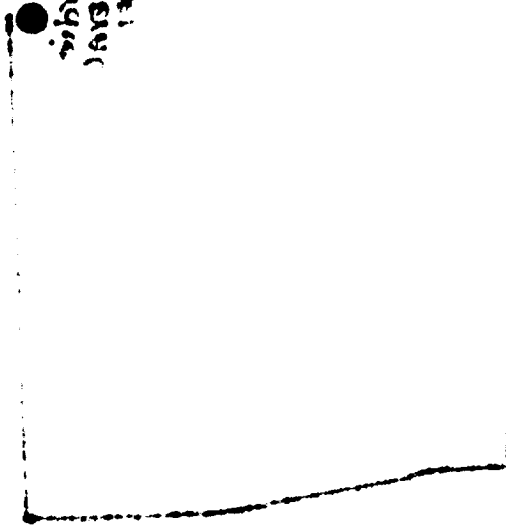
marbob
energy corporation

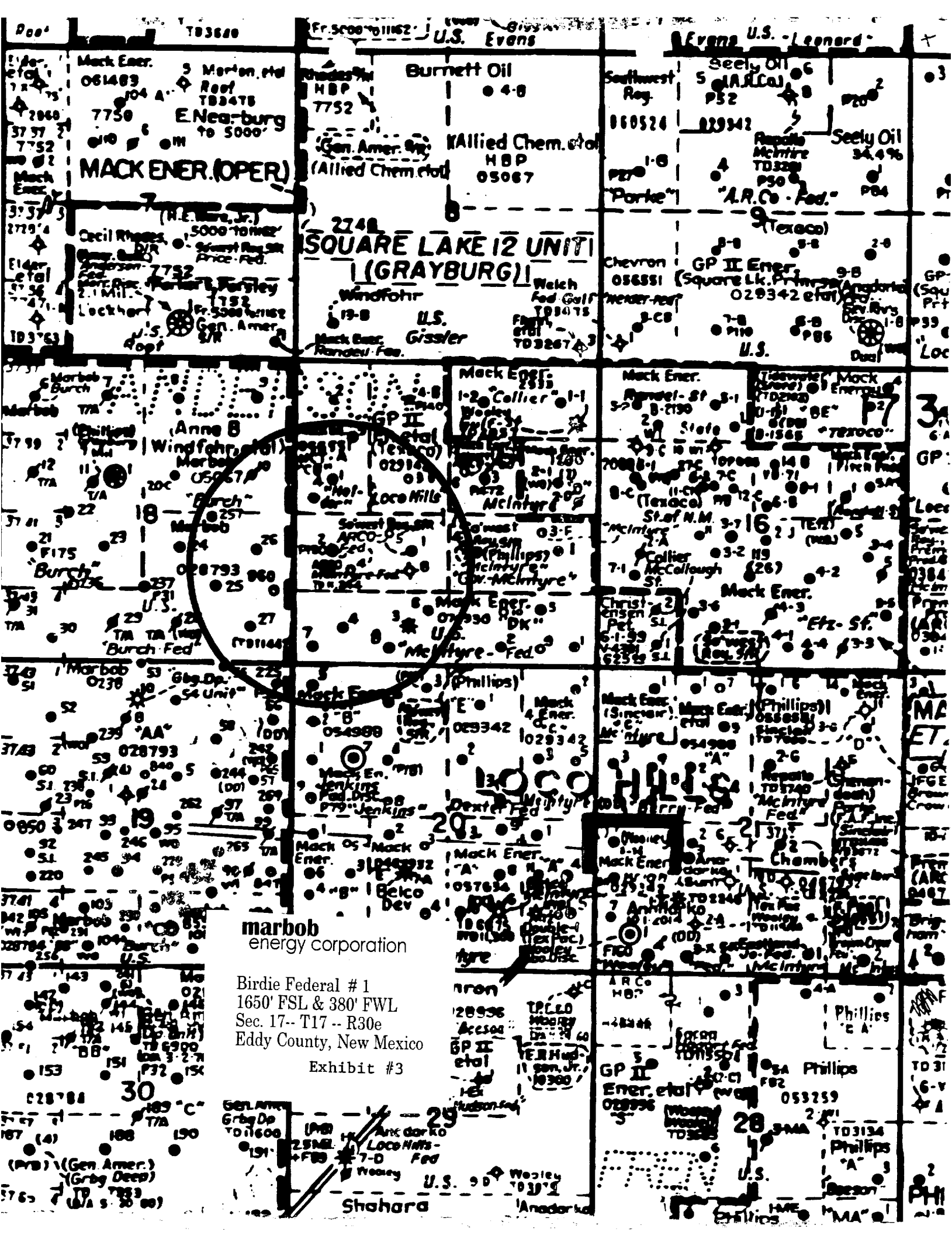
Birdie Federal # 1
1650' FSL & 380' FWL
Sec. 17-- T17 -- R30e
Eddy County, New Mexico

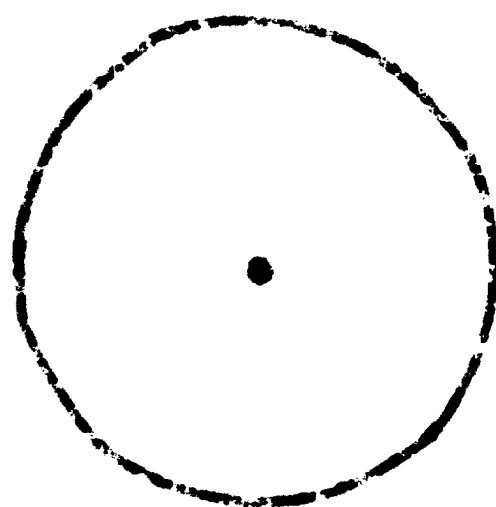
Exhibit #2

1875

1875

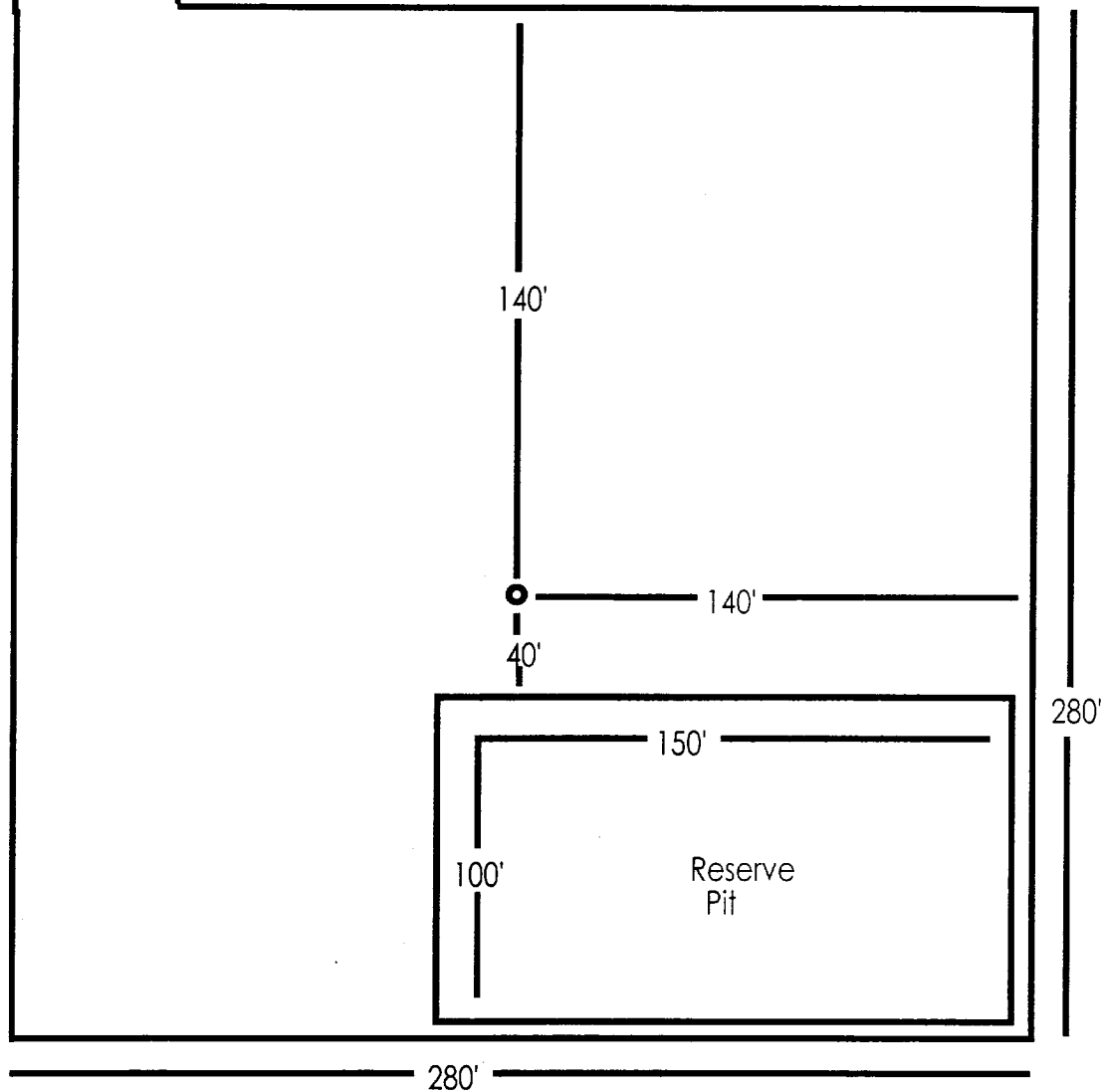






Access
Road
252'

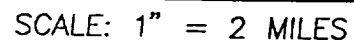
North



marbob
energy corporation

Birdie Federal # 1
1650' FSL & 380' FWL
Sec. 17-- T17 -- R30e
Eddy County, New Mexico

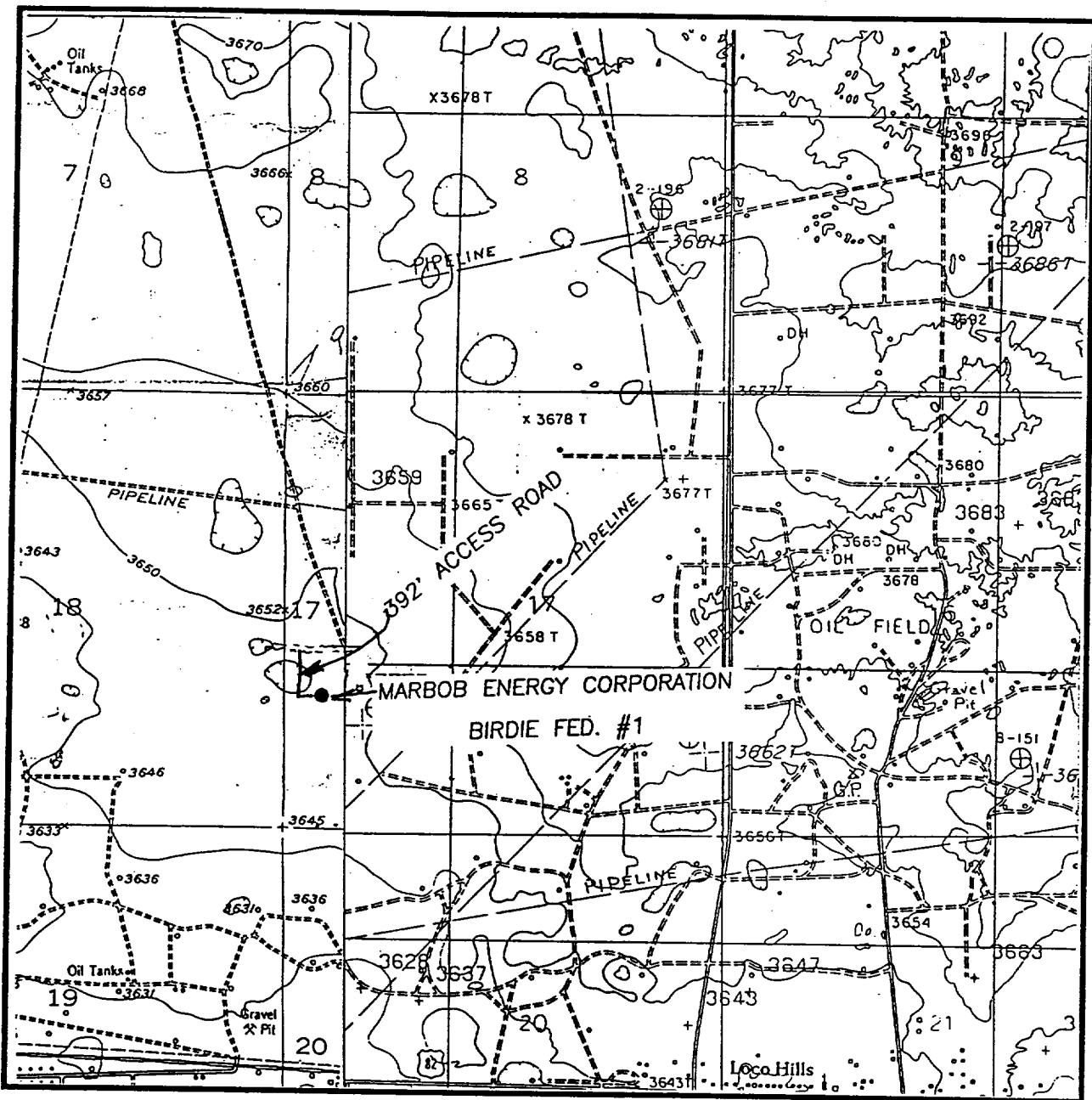
Exhibit 4



LEASE _____ BIRDIE FEDERAL

(505) 393-3117

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL - 10'

SEC. 17 TWP. 17-S RGE. 30-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1650' FSL & 380' FWL

ELEVATION 3639'

OPERATOR MARBOB ENERGY CORPORATION

LEASE BIRDIE FEDERAL

U.S.G.S. TOPOGRAPHIC MAP

RED LAKE SE & LOCO HILLS

JOHN WEST ENGINEERING
HOBBS, NEW MEXICO

(505) 393-3117