1625 N. ... Hobbs ...

Form 3160-3
(July 1992)

Bureau of Land Management
Received
MAY 02 2000
Carlsbad Field Office
Carlsbad, N.M.

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

FORM APPROVED
OMB NO. 1004-0136
Expires: February 28, 1995

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO.
LC-~~065863~~ NM-23810

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

1a. TYPE OF WORK
DRILL X DEEPEN

7. UNIT AGREEMENT NAME

b. TYPE OF WELL
OIL WELL ☐ GAS WELL X OTHER SINGLE ZONE ☐ MULTIPLE ZONE ☐

8. FARM OR LEASE NAME, WELL NO.
LUSK DEEP UNIT A Com # 16

2. NAME OF OPERATOR
MARBOB ENERY CORPORATION

9. API WELL NO.
30-025-35053

3. ADDRESS AND TELEPHONE NO.
P.O. BOX 227, ARTESIA, NM 88210 505-748-3303

10. FIELD AND POOL, OR WILDCAT
LUSK MORROW (GAS)

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface 785 FSL 660 FWL M
At proposed prod. zone SAME

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
SEC. 18-T19S-R32E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
SEE SURFACE USE PLAN

12. COUNTY OR PARISH: LEA
13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
660'	121.77	361.63

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	19. PROPOSED DEPTH	20. ROTARY OR CABLE TOOLS
	12,500'	ROTARY

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
3578' GR

22. APPROX. DATE WORK WILL START*
06/01/00

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	H-40, 13 3/8"	48#	800'	450 SX
12 1/4"	J-55, 8 5/8"	32# & 24#	4500'	2200 SX
7 7/8"	S-96 & N-80, 5 1/2"	17#	12,500'	SUFF. TO COVER TO COVER 200' ABOVE ALL KNOWN O&G HORIZONS

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

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

OPER. OGRID NO. 14049
PROPERTY NO. ~~17817~~ 17824
POOL CODE 80759
EFF. DATE 6-12-00
API NO. 30-025-35053

IN ABOVE SPACE DESCRIBE PROGRAM: If proposal is to deepen, 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 Robin Cockrum TITLE PRODUCTION ANALYST DATE 06/04/2000

(This space for Federal or State office use)

PERMIT NO. ORIGINAL SIGNED BY ... DIS... APPROVAL DATE JUN 12 2000

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY ... TITLE Assistant Field Manager, Lands And Minerals DATE JUN 8 2000

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

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

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

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

DISTRICT IV
P.O. BOX 2088, SANTA FE, N.M. 87504-2088

State of New Mexico
Energy, Minerals and Natural Resources Departm

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

OIL CONSERVATION DIVISION

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-35053	80759	LUSK MORROW (GAS)

Property Code	Property Name	Well Number
~~17817~~ 17824	LUSK DEEP UNIT A Comm.	16

OGRID No.	Operator Name	Elevation
14049	MARBOB ENERGY CORPORATION	3578

Surface Location

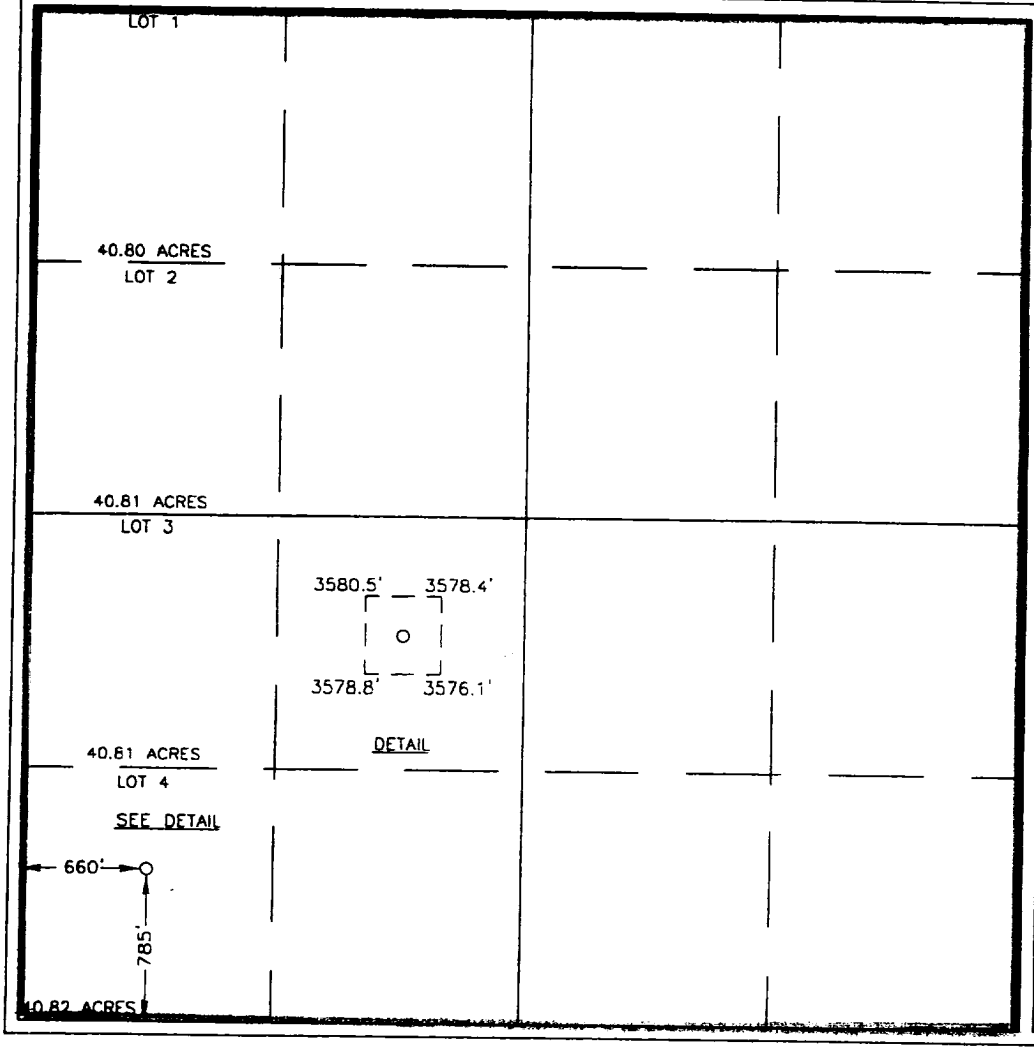
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
LOT 4	18	19 S	32 E		785	SOUTH	660	WEST	LEA

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	Joint or Infill	Consolidation Code	Order No.
640			

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 the the information contained herein is true and complete to the best of my knowledge and belief.

Robin Cockrum
Signature

ROBIN COCKRUM
Printed Name

PRODUCTION ANALYST
Title

5/22/00
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 supervison, and that the same is true and correct to the best of my belief.

APRIL 27, 2000
Date Surveyed DC

Signature & Seal of Professional Surveyor

Ronald J. Eidson 4/28/00

00-11-0542

Certificate No. RONALD J. EIDSON 3239
GARY EIDSON 12641
MACON McDONALD 12185

DRILLING PROGRAM

Attached to Form 3160-3
Marbob Energy Corporation
Lusk Deep Unit Federal No. 16
785' FSL and 660' FWL
Section 18-19S-32E
Lea County, New Mexico

1. Geologic Name of Surface Formation:

   Permian

2. Estimated Tops of Important Geologic Markers:

Permian	Surface	Delaware Sd.	4400'
Anhy.	725'	Bone Springs	7010'
Tansill	2285'	Wolfcamp	10230'
Yates	2410'	Strawn	11,100'
Seven Rivers	2750'	Atoka	11,500'
San Andres	4200'	Morrow	12050'

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

Yates	2435'	Oil
Bone Spring	7180'	Oil
Strawn	11,198'	Oil
Morrow	12,350'	Gas

No other formations are expected to give up oil, gas, or fresh water in measurable quanitites. The surface fresh water sands wil be protected by setting 13 3/8 casing at 800' 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 show joint into the 13 3/8 production casing which will be run at TD.

4. **Casing Program:**

Hole Size	Interval	OD Casing	Wt, Grade, Jt. Cond, Type
17 1/2	0-800	13 3/8	48# H-40 STC
12 1/4	0-2300	8 5/8	24# J-55 STC
12 ¼	2300-4500	8 5/8	32# J-55 STC
7 7/8	0-1200	5 1/2	17# S-95 LTC
7 7/8	1200-10800	5 1/2	17# N-80 LTC
7 7/8	10800-12500	5 1/2	17# S-95 LTC

Cement Program:

13 3/8 Surface Casing: Cemented to surface with 450 sx of Class C w/2% cc.

8 5/8 Intermediate Casing: Cemented to surface with 2200 sx of Class C w/2% cc.

5 1/2 Production Casing: Cemented sufficient to cover 200' above all oil and gas horizons.

5. **Minimum Specifications for Pressure Control:**

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram-type preventer. This unit will by hydraulically operated and the ram-type preventer will be equipped with blind rams on top and 4-1/2" drill pipe rams on bottom. This BOP will be nippled up on the 13 3/8' surface casing and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 3500 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 5000 psi WP rating.

6. **Types and Characterisitcs of the Proposed Mud System:**
The well will be drilled to TD with cut brine. Ths applicable depths and properties of this system are as follows:

Depth	Type	Weight	Viscosity	Waterloss
0-800	Fresh Water (Spud)	8.5	28	N.C.
800-4500	Brine	9.8-10.2	40 – 45	N.C.
4500-TD	Cut Brine	8.6-9.4	28 – 36	N.C. / 10cc

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.

8. **Logging, Testing, and Coring Program:**

A. Drill Stem tests will be used as determined during drilling.

B. The electric logging program will consist of Dual Laterolog Micro SFL, Spectral Desity 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, and Potential Hazards:**
No abnormal pressures or temperatures are anticipated. The estimated bottom hole temperature (BHT) at TD is 150' and estimated bottom hole pressure (BHP) is 4500 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 June 1, 2000. 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
Lusk Deep Unit Federal No. 16
785' FSL and 660' FWL
Section 18-19S-32E
Lea County, New Mexico

1. **Existing Roads:**

   A. All roads to the location are shown in Exhibit #3. 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.

   B. Directions to location: From Loco Hills proceed east on U.S. 82 5.6 miles to state road 529. Proceed southeast on NM 529 7.1 miles. Turn south on Lea county road #126 (Maljamar Road) and proceed south 10 miles. Turn west on County Road C-126-A (Dry Lake Road) and proceed .4 miles. Turn northwest on lease road and proceed .3 miles to Marbob's Lusk 13 well pad. Access road and location are southwest of the Lusk 13.

   C. 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 of 1627 feet will be necessary. The new access 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.

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 #3 has been centerline flagged by John West Engineering.

3. Location of Existing Wells:

Exhibit #2 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 will construct a battery on the well pad if well is productive.

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 central tank battery. Anticipated pressures in the flowline should not exceed 75 psi. Flowline route shown in blue on map labeled Exhibit #3.

T&O 6/7/00

C. If the well is productive, power will be obtained from Lea County Electric. Lea County 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 #3. If a commercial fresh water source

is nearby, fasline may be laid along existing road 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 120' X 120' X 6" deep. The reserve pit will be plastic-lined to minimize loss of drilling fluids and saturation of the ground with brine water.

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.

8. **Ancilliary 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.

B. There is no permanent or live water in the immediate area.

C. Marbob Energy would request an exemption from the LPCH stipulation. We realize that this area is possibly LPCH Habitat. The exemption is being requested to the large compressor activity in this area.

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

12. Lessee's and Operator's Respresentative:

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

Johnny C. Gray
Marbob Energy Corporation
324 West Main, Suite 103
Post Office Box 227
Artesia, New Mexico 88211-0227
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 provision of 18 U.S.C. 1001 for the filing of a false statement.

Date: 4-28-2000 Signed: John R. Gray
John R. Gray, 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. Choke manifold.

   B. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

   C. Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.

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. H_2S detection and monitoring equipment:

   A. 2 - portable H_2S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S levels of 20 ppm are reached.

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 H_2S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

B. A mud-gas separator will be utilized.

6. Communication:

A. Radio communications in company vehicles including cellular telephone and 2-way radio.

B. Land line (telephone) communications at field office.

W A R N I N G

YOU ARE ENTERING AN H_2S 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

PETERSON DRILLING COMPANY

B.O.P. ARRANGEMENT RIG NO. 8

NOTE: All BOP Equipment is 5000# Working Pressure

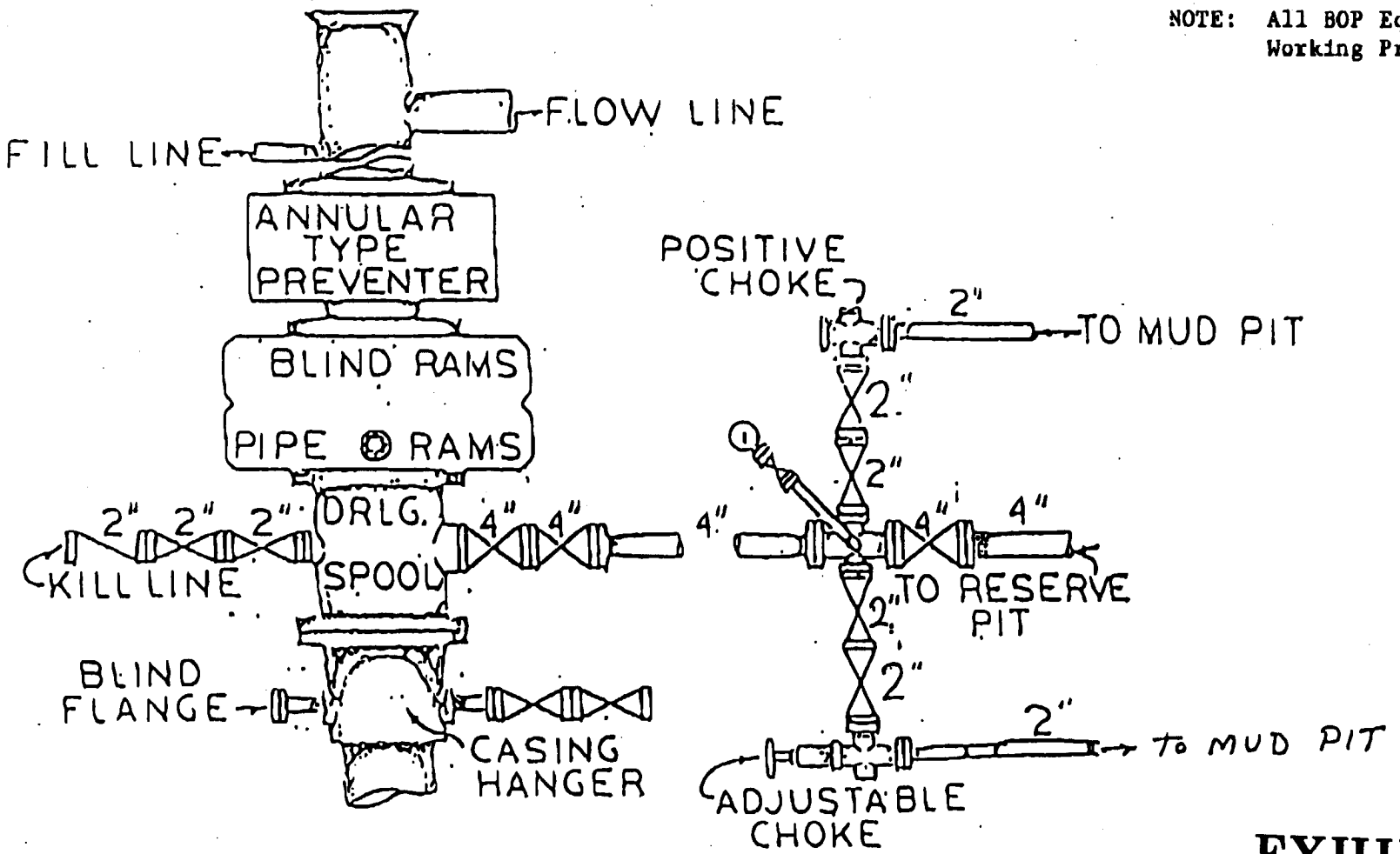


EXHIBIT ONE

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, 5000 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 5000 psi W.P. minimum.

6. All choke and fill lines to be securely anchored, especially ends of choke lines.

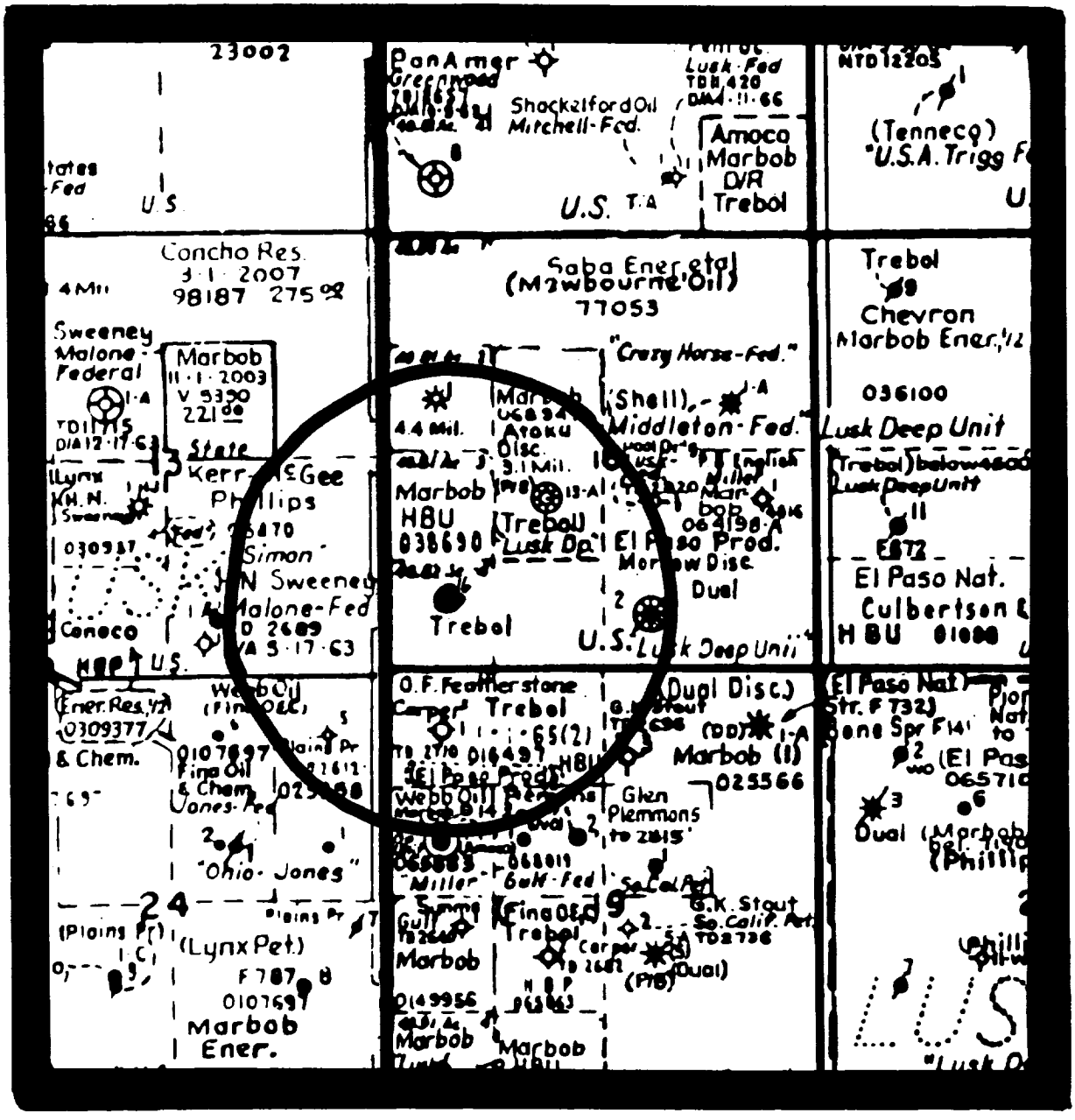
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.

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.

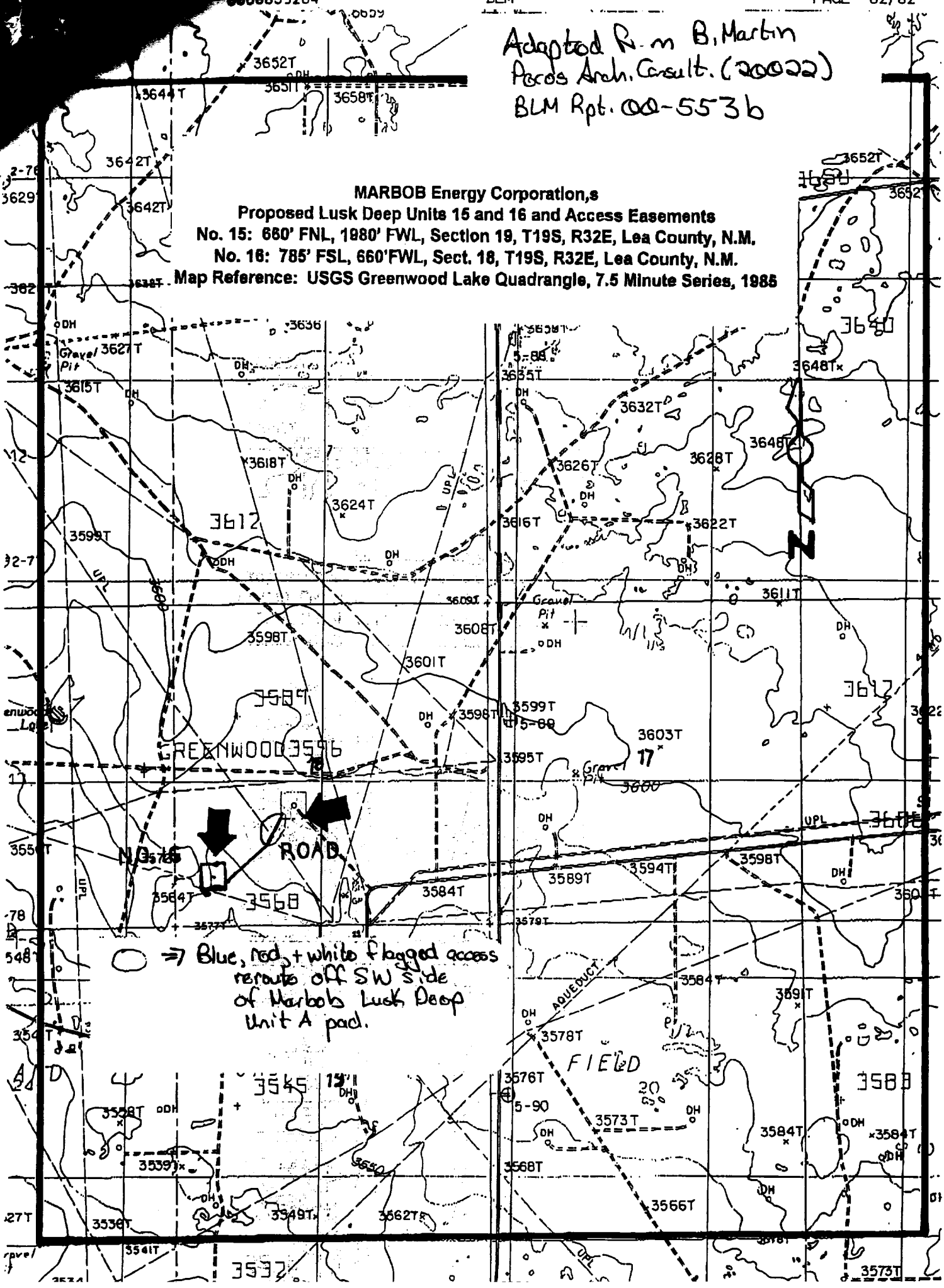


LUSK DEEP UNIT No. 16
785' FSL & 660' FWL
Section 18; T19S - R32E
Lea County, New Mexico

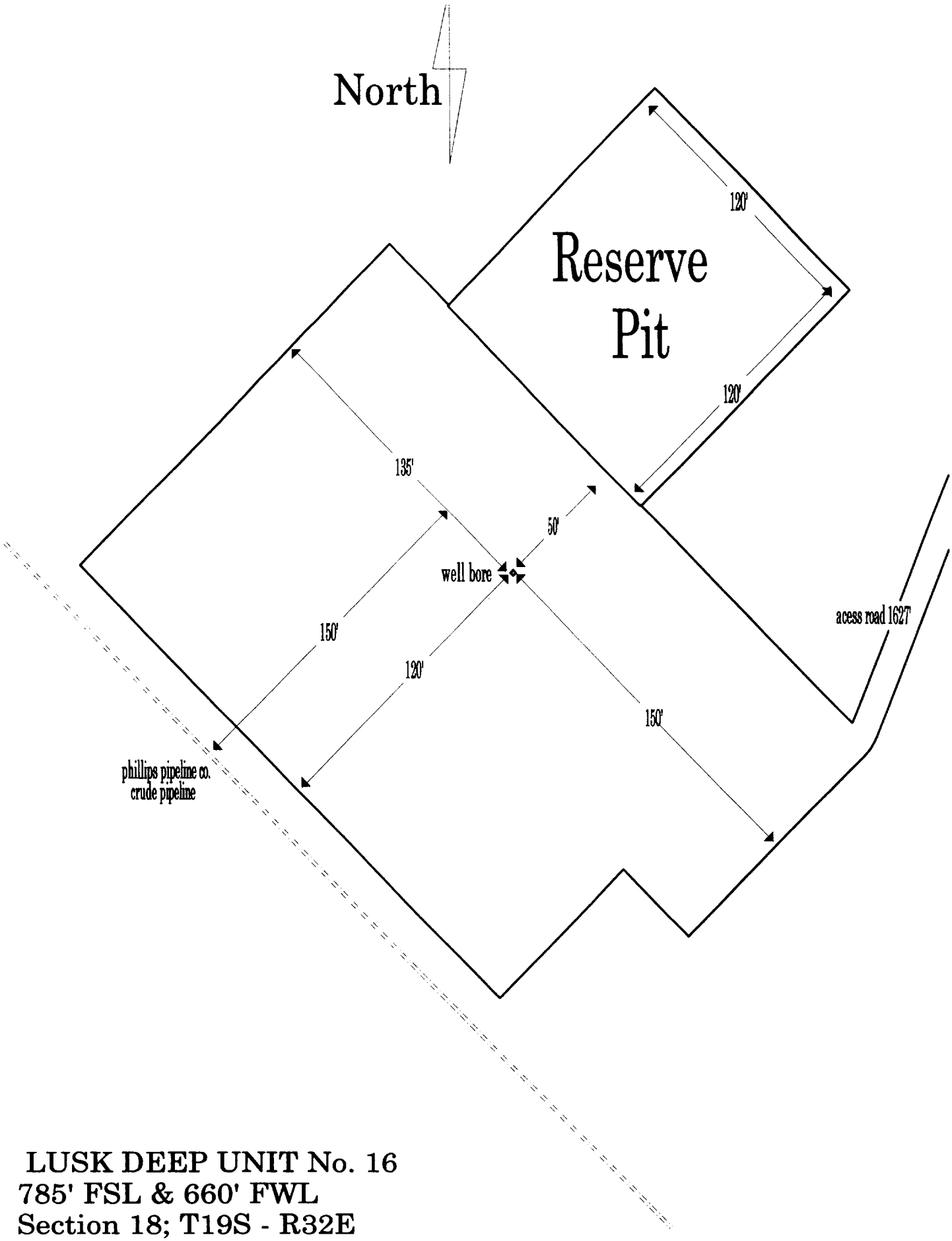
EXHIBIT TWO

Adapted from B. Martin
Pecos Arch. Consult. (2002)
BLM Rpt. 00-553b

MARBOB Energy Corporation,s
Proposed Lusk Deep Units 15 and 16 and Access Easements
No. 15: 660' FNL, 1980' FWL, Section 19, T19S, R32E, Lea County, N.M.
No. 16: 785' FSL, 660'FWL, Sect. 18, T19S, R32E, Lea County, N.M.
Map Reference: USGS Greenwood Lake Quadrangle, 7.5 Minute Series, 1985



⇒ Blue, red, + white flagged access reroute off SW side of Marbob Lusk Deep Unit A pad.



LUSK DEEP UNIT No. 16
785' FSL & 660' FWL
Section 18; T19S - R32E
Lea County, New Mexico

Exhibit Four

ELF

ABOVE DATE DOES NOT
INDICATE WHEN
CONFIDENTIAL LOGS
WILL BE RELEASED