Form 3160-3
(July 1989)
(formerly 9-331C)

N.M. OIL CONS. COMMISSION
P.O. BOX 1980
HOBBS, NEW MEXICO 88240

BLM Roswell District
Modified Form No.
NM060-3160-2

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK: DRILL [XX] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [ ] MULTIPLE ZONE [X]

2. NAME OF OPERATOR: Shackelford Oil Co.

3a. Area Code & Phone No.: (915) 682-9784

3. ADDRESS OF OPERATOR: 310 W. Illinois, Ste. 328, Midland, TX 79701

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 330' FWL and 2410' FSL unorthodox location... SUBJECT TO LIKE APPROVAL BY STATE
At proposed prod. zone: 330' FWL and 2410' FSL

5. LEASE DESIGNATION AND SERIAL NO.: NM 0175774

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA

7. UNIT AGREEMENT NAME: NA

8. FARM OR LEASE NAME: Mobil Federal #7

9. WELL NO.:

10. FIELD AND POOL, OR WILDCAT: West Lusk - Delaware

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 21, T-19-S, R-32-E

12. COUNTY OR PARISH: Lea

13. STATE: NM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 13 Miles South of Malijamar, NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 330

16. NO. OF ACRES IN LEASE: 600

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.: 100'

19. PROPOSED DEPTH: 5300'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3584' GR

22. APPROX. DATE WORK WILL START*: As soon as possible

23. PROPOSED CASING AND CEMENTING PROGRAM

HOLE SIZE	CASING SIZE	WEIGHT/FOOT	GRADE	THREAD TYPE	SETTING DEPTH	QUANTITY OF CEMENT
17½"	13 3/8"	54.50#	J-55		550'	Class C CIRCULATE
12 1/4"	4 1/2"	10.50#	J-55	TIE BACK	2850' See	Exhibit #7
12 1/4" &7 7/8"	4 1/2"	10.50#	J-55		5300' See	Exhibit #7

The operator proposes to drill to a depth sufficient to test the Delaware formation for oil. If non-productive, the well will be plugged and abandoned in a manner consistant with federal regulations. Specific programs as per Onshore Oil and Gas Order #1 are outlined in the following attachments:

Drilling Program

Surface Use and Operating Plant
Exhibit #1/#1-A = Blowout Prevention Equipment
Exhibit #2 = Location and Elevation Plat
Exhibit #3 = Planned Access Road
Exhibit #4 = Wells Within One Mile Radius
Exhibit #5 = Production Facilities Plat
Exhibit #6 = Rotary Rig Layout
Exhibit #7 = Drilling Prognosis
Evidence of Bond Coverage

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 _____ DATE _____

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY (ORIG. SGD.) RICHARD L. MANUS TITLE AREA MANAGER DATE 3-4-96

CONDITIONS OF APPROVAL, IF ANY:

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

*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

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

RECEIVED FEB 9 10 23 AM '96

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 10, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code	³ Pool Name
		Lusk Delaware, West

⁴ Property Code	⁵ Property Name	⁶ Well Number
	MOBIL FEDERAL	7

⁷ OGRID No.	⁸ Operator Name	⁹ Elevation
020595	SHACKELFORD OIL COMPANY	3584

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
L	21	19S.	32E.		2410	SOUTH	330	WEST	LEA

¹¹ 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

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
40			

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

16

SECTION 21, T.19S., R.32E., N.M.P.M.

330'

2410'

¹⁷ OPERATOR CERTIFICATION

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

W. L. Shackelford

Signature

W. L. Shackelford

Printed Name

Agent

Title

2/7/96

Date

¹⁸ 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.

2-3-96

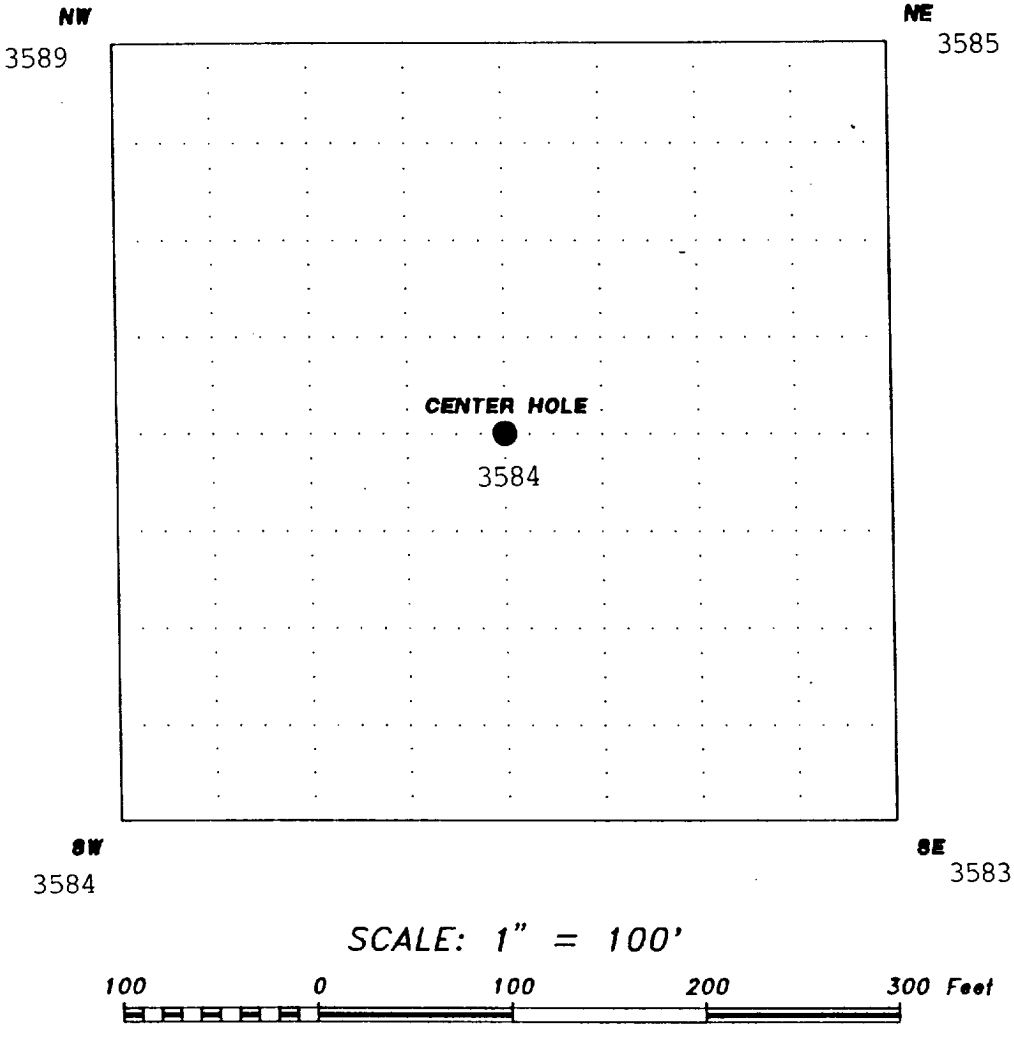
Date of Survey

Signature and Seal of Professional Surveyer:

Certificate Number 6290

John D. Jaquess & Associates

Well Grid Elevations



WELL INFORMATION

SHACKELFORD MOBIL FEDERAL #7
2410 FSL, 330 FWL
SECTION 21, T.19S., R.32E.
LEA COUNTY, NEW MEXICO

APPLICATION TO DRILL

In conjunction with Form 3160-3, Application for Permit to Drill, Shackelford Oil Co. submits the subject well in accordance with Bureau of Land Management requirements.

1. The geologic surface information is cretaceous.

2. The estimated tops of geologic markers are:

1.	Anhydrite	830'
2.	Transill	2375'
3.	Yates	2566'
4.	Seven Rivers	2762'
5.	Delaware	4450'

3. The estimated depths at which water, oil, or gas-bearing formation are expected:

Water:	300 feet
Oil & Gas:	2566 - 2762' Yates and Seven Rivers
	4700 - 5300' Delaware

4. Casing

13 3/8"	54.50#	J-55	0-550'
4 1/2"	10.50#	J-55	Surface to 2850'
4 1/2"	10.50#	J-55	Surface to TD

5. Cement
   - A. Cement from 550' to surface with 470 sacks class C
   - B. Cement from 2870' to surface in 12 1/4" hole 910 sacks of light, 270 sacks of class C
   - C. Cement from 5300' to 2870' up to an inflatable packer at 2870' with 190 sacks of light, 250 sacks of class C

6. Pressure control equipment: Blowout preventer.

7. Mud Program: See Exhibit #7

8. No abnormal pressures are expected

9. Testing, Logging, and Coring Programs

   Wireline logging program: See Exhibit #7

10. Anticipated starting date: February 1996

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

Mobil Federal #7
2410' FSL and 330' FWL
Section 21, T-19-S, R-32-E
Lea County, New Mexico

This plan is submitted with Form 3160-3, application for permit to drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of necessary surface disturbance involved, and the procedures to be followed in rehabilitating the surface after completion of operations so that a complete appraisal can be made of the environmental effects associated with the operations.

1. EXISTING ROADS

A. The wellsite and elevation plat for the proposed Mobil Federal #6 are reflected on Exhibit #2.

B. All roads to the location are indicated on Exhibit #3. County Road 126A will be used to access the location.

C. **DIRECTIONS:**

1. Proceed west from Hobbs on US 62-180 for 36 miles.
2. Turn left (north) on State Highway 176 and continue for 4.2 miles.
3. Turn right (north) on county road 126A and continue 5.5 miles and turn right (east) go approximately 1 mile to the location.

2. PLANNED ACCESS ROAD

A. See Item 1.

3. LOCATION OF EXISTING WELLS

A. The locations of existing active wells located in and immediately adjacent to Section 21 are highlighted on Exhibit #4.

4. LOCATION OF EXISTING AND PROPOSED FACILITIES

A. There are seven producing wells on this lease. These seven wells are listed below:

SHACKELFORD OIL CO.
Section 21, T-19-S, R-32-E

Mobil Federal #1	1650' FNL & 330' FWL	Delaware Producer
Mobil Federal #2	1650' FNL & 1650' FWL	Delaware Producer
Mobil Federal #3	2310' FSL & 330' FWL	Delaware Producer
Mobil Federal #4	2310' FSL & 1650' FWL	Delaware Producer

Section 28, T-19-S, R-32-E
Bowman Federal #2 660' FNL & 1980 FWL Yates Seven River Producer

PARKER & PARSLEY
Section 21, T-19-S, R-32-E
Plains Unit-Fed #4-X 710' FSL & 660' FWL Strawn Producer

Section 28, T-19-S, R-32-E
Plains Unit-Fed #2 1980' FNL & 660' FWL Strawn Producer

Proposed facilities if well is completed shall be furnished prior to completion.

5. **LOCATION AND TYPE OF WATER SUPPLY**

A. It is planned to drill the proposed well with a cut-brine water system or with produced water. The water will be obtained from commercial source and will be hauled to location by truck over existing and proposed lease roads marked on Exhibit #3.

6. **SOURCES OF CONSTRUCTION MATERIALS**

A. Caliche required for construction of the location pad and access road will be obtained from caliche on the location or from the nearest BLM approved pit.

7. **METHODS OF HANDLING WASTE DISPOSAL**

A. Drill cuttings will be disposed of in the reserve pits.

B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry. The reserve pit will be fenced on three sides and will be totally isolated upon removal of the rig.

C. Water produced during operations will be collected in steel tanks or a reserve pit, if volumes prove excessive. After placing the well on production, all water will be collected in tanks.

D. Oil produced during operations will be stored at the existing battery and sold through transport trucks.

E. Current regulations pertaining to disposal of human waste will be complied with.

F. Trash, waste paper, garbage and junk will be kept in a trailer and disposed of at an approved landfill. All waste material will be contained to prevent scattering by the wind.

G. All trash and debris will be removed from the well site within 30 days after drilling and/or completion operations are terminated. At the point the reserve pit is dry it will be backfilled and reclaimed as outlined by BLM specifications. Only the portion of the drilling pad used by production equipment will remain in use. If deemend dry only a dry hole marker will remain.

8. **ANCILLARY FACILITIES**

A. No ancillary facilities will be required for this well.

9. **WELLSITE LAYOUT**

A. Exhibit #6 shows the dimensions of the well pad and reserve pits and the location of major rig components.

B. The ground surface at the drilling location is essentially flat.

C. The reserve pits will be plastic lined.

D. The pad and pit area has been staked and flagged.

10. **PLANS FOR RESTORATION OF THE SURFACE**

A. After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleared of all trash and junk, to leave the wellsite in as aesthetically pleasing a condition as possible.

B. Unguarded pits, if any, containing fluids will be fenced until they have been filled.

C. If the proposed well in non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management and the United States Geological Survey will be compiled with and will be accomplished as expeditiously as possible. All pits will be filled and leveled within 90 days after abandonment.

11. **SURFACE OWNERSHIP**

A. The wellsite is owned by the Bureau of Land Management.

B. The surface location will be restored in compliance with BLM rules.

12. **TOPOGRAPHY**

A. The well site and access route are located in a flat area with little relief.

B. The top soil at the wellsite is caliche.

C. The vegetation cover at the wellsite is moderately sparse, with mesquite, grasses, yucca, scrube oak, and weeds.

D. No wildlife was observed but it is likely that rabbits, lizards, insects and rodents traverse the area. The area is used for cattle grazing.

E. There are no ponds, lakes, streams, or rivers within several miles of the wellsite.

F. The wellsite is located on federal surface.

G. There is no evidence of any archaeological, historical, or cultural sites in the vicinity of the location.

13. **OPERATOR'S REPRESENTATIVES**

A. The field representatives responsible for assuring compliance with the approved surface use plan are:

Don G. Shackelford
Shackelford Oil Co.
310 W. Illinois, Suite 328
Midland, Texas 79701
Phone: (915) 682-9784 (Office)
(915) 694-1133 (Home)

W. L. Shackelford
512 New Mexico Dr.
Roswell, New Mexico 88201
Phone: (505) 622-5902

14. **CERTIFICATION**

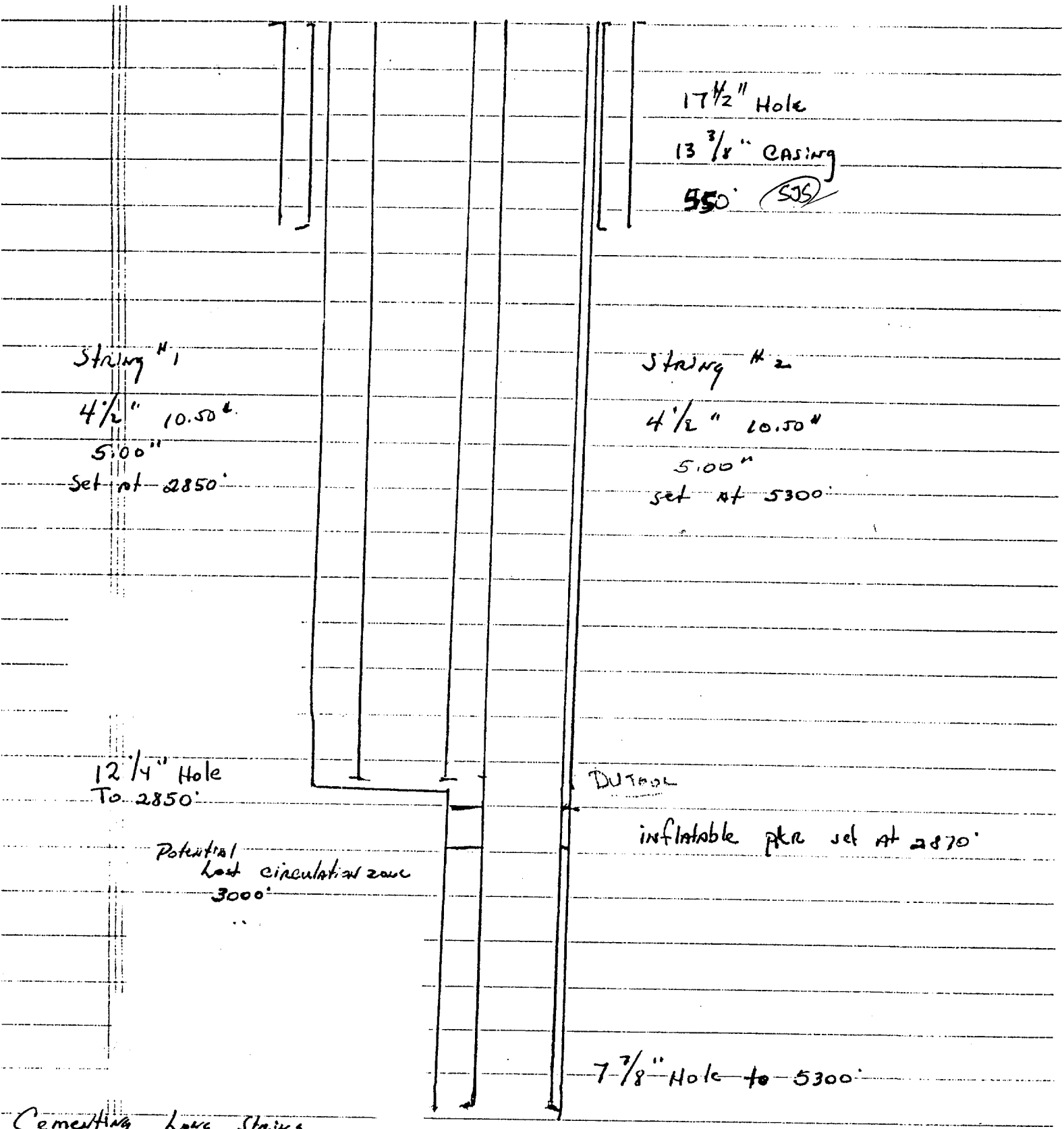
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated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

February 8, 1996
Date

Don G. Shackelford
Don G. Shackelford

Proposed Wellbore Schematic

Mobil FEDERAL #1



Cementing Long String

String #2

5300 - 2870'

7 7/8" hole

4 1/2" CASING

Good / Cement 4200'

Life Above

String #1

2850' to surface

12 1/4" hole

2 strings of 4 1/2" 10.50 CASING

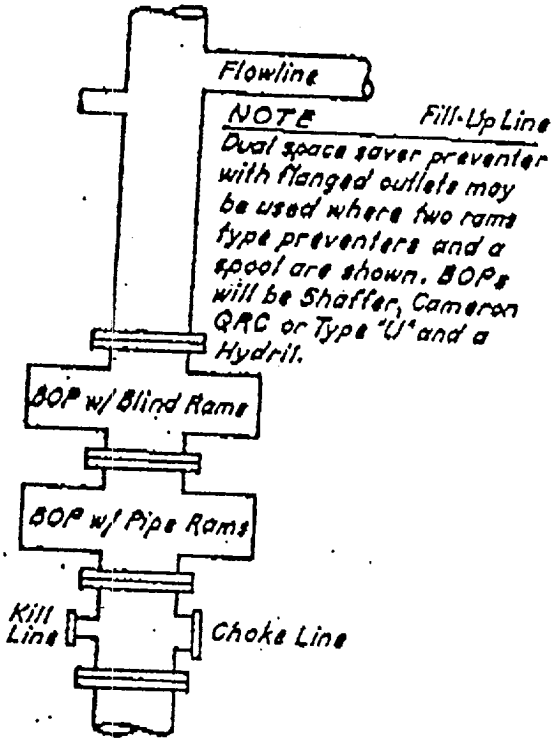
Good / Cement 2400'

Exhibit #1

CAPSTAR DRILLING

301 BOYD, E
ALLEN, TEXAS 75002
(214) 727-8367

P. O. BOX 589
ALLEN, TEXAS 75002
In Texas (800) 442-5224



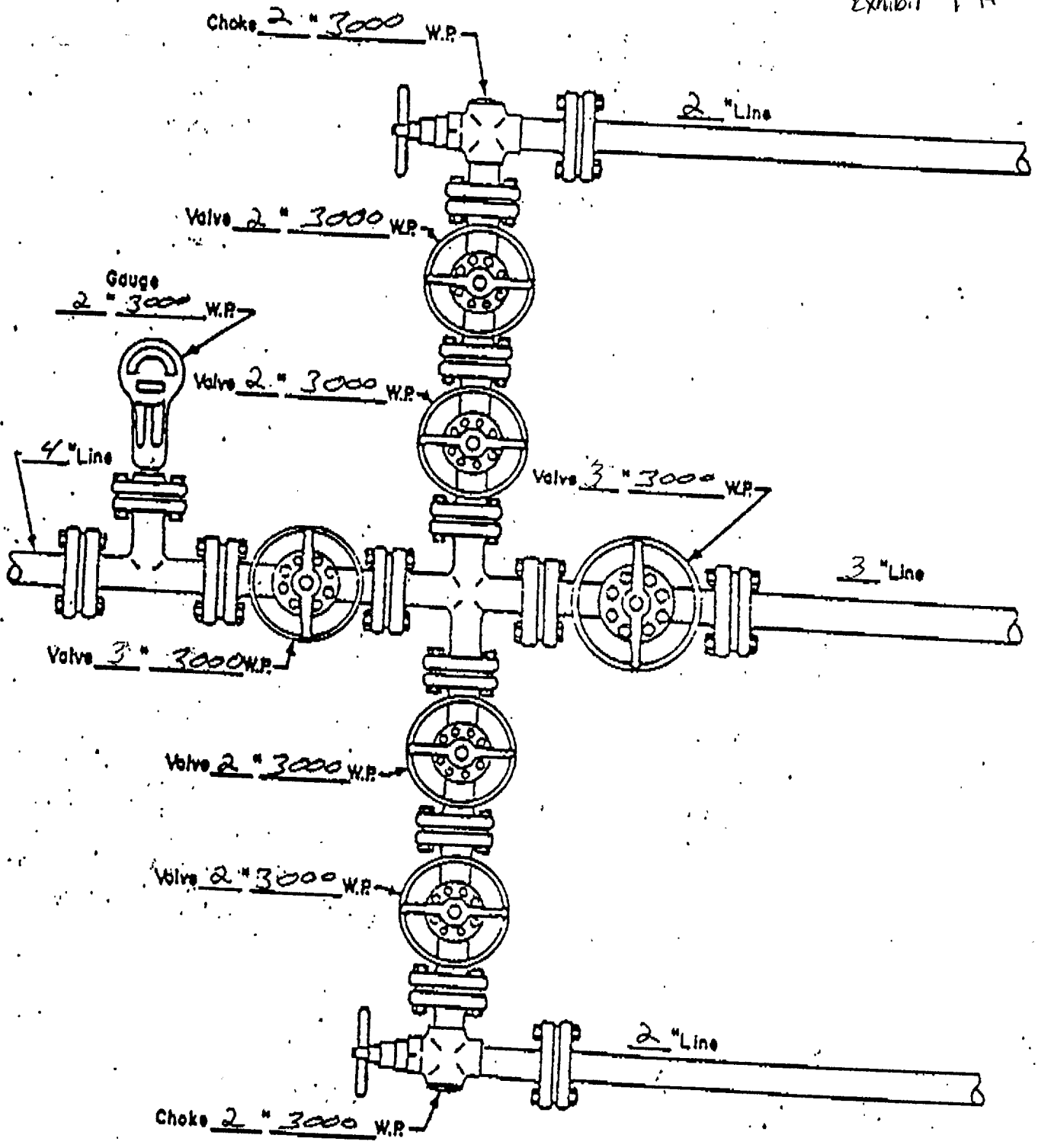
CASE I

BLOWOUT PREVENTER HOOKUP

3000# Working Pressure

Chok- Manifold

Exhibit 1-A



MANIFOLD
3000 #W.P

☒ Manuel
☐ Hydraulic

SHACKELFORD OIL COMPANY

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 (H2S).
2. The proper use and maintenance of personal protective equipment and life support system.
3. The proper use of H2S 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 H2S 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 H2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S 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. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S 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 H2S.

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.

2. Protective equipment for essential personnel:

   A. Mark II Survivor 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 monitors 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.

6. Metallurgy:

   A. All drill strings, casing, tubing wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

7. Communication:

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

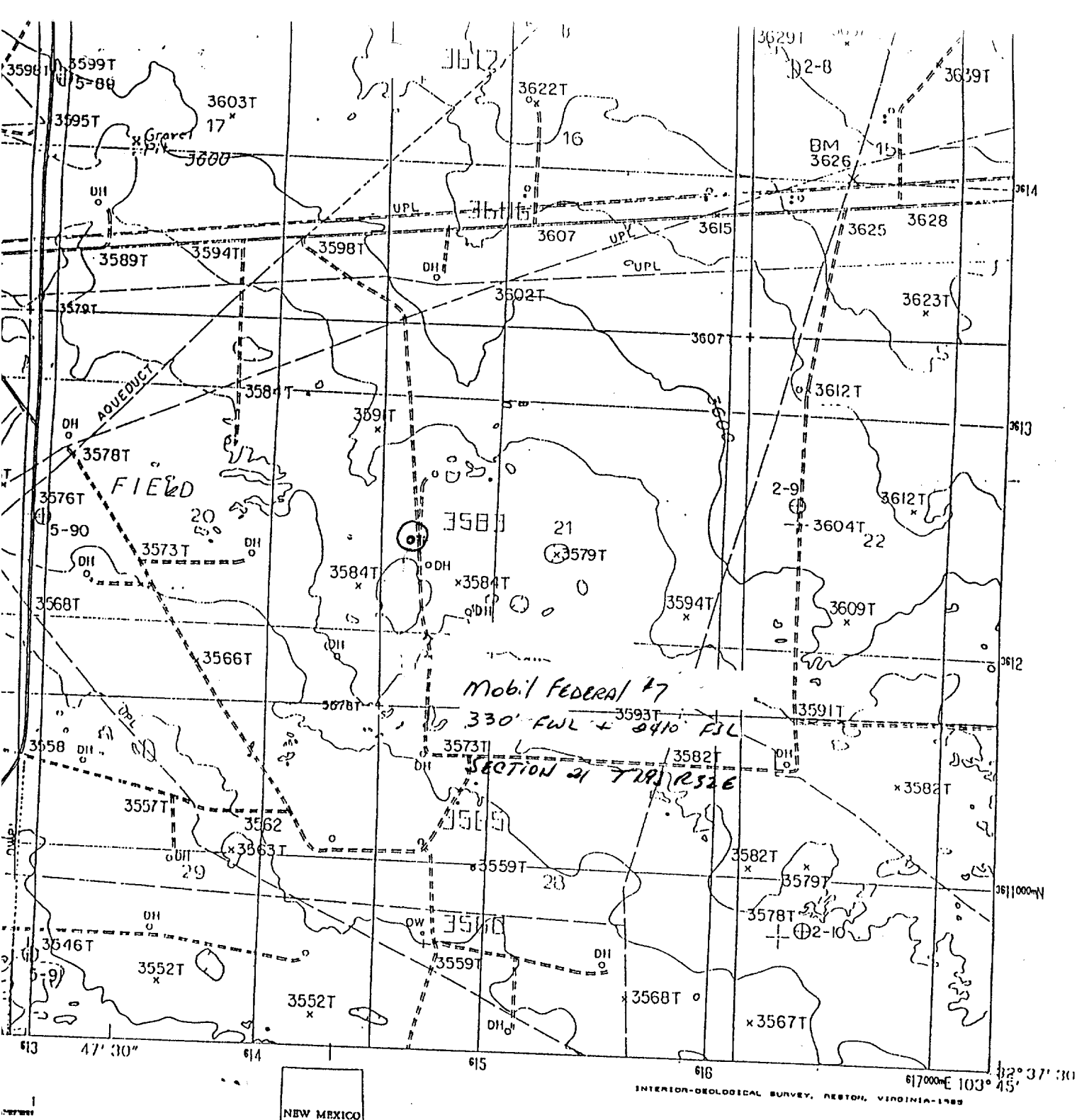
   B. Land line (telephone) communications at field office.

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.

Exhibit #2

LOCATION AND ELEVATION PLAT will be sent UNDER SEPARATE COVER



NEW MEXICO

QUADRANGLE LOCATION

1	2	3	1 Loco Hills 2 Malljamar 3 Dog Lake 4 Hackberry Lake 5 Laguna Gatuna NW 6 Tower Hill North 7 Williams Sink 8 Laguna Gatuna
4		5	
6	7	8	

ADJOINING 7.5' QUADRANGLE NAMES

ROAD LEGEND

Improved Road . . . . . ═══

Unimproved Road . . . . . ═ ═ ═

Trail . . . . . - - - -

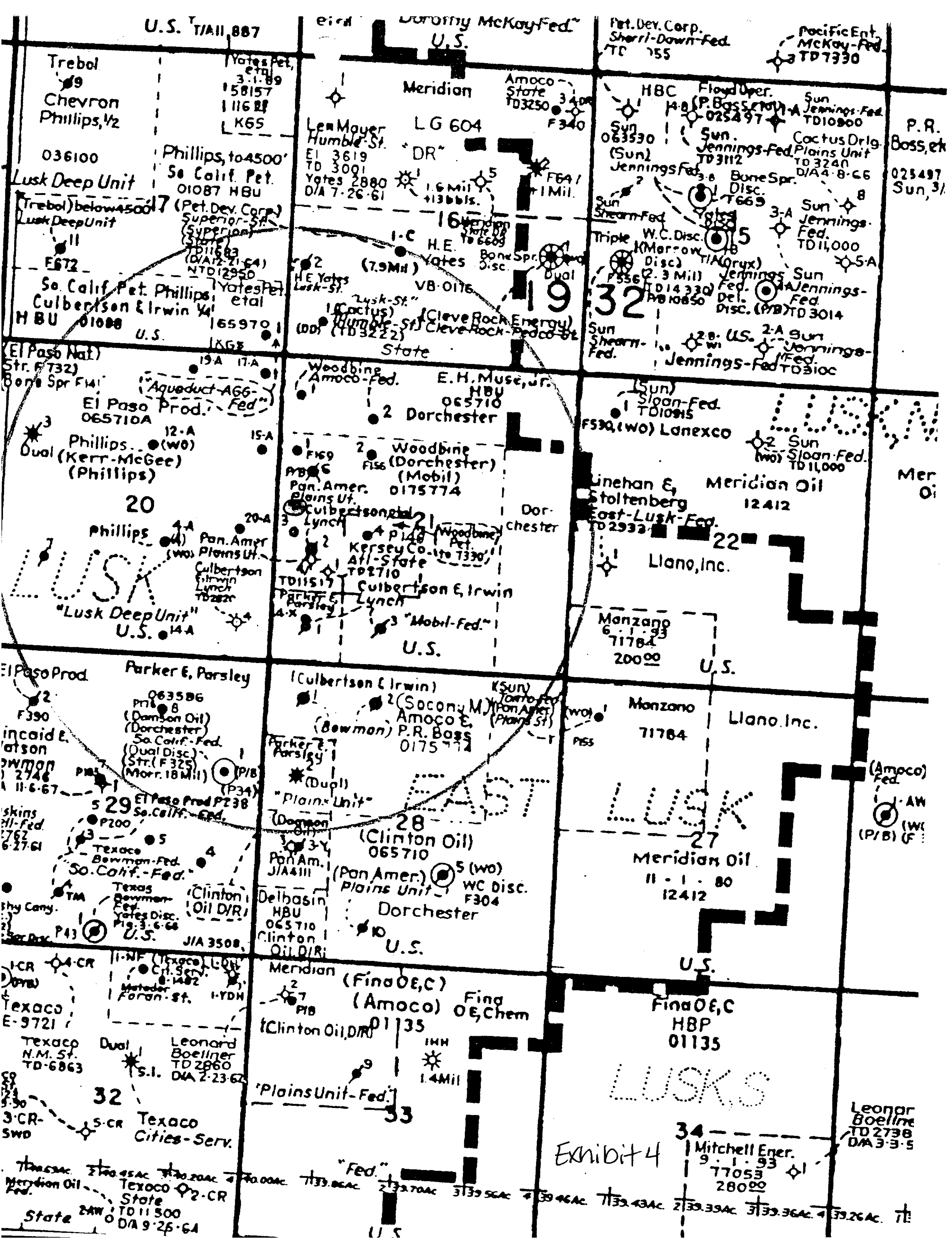
Interstate Route U.S. Route State Route

GREENWOOD LAKE, NEW MEXICO

PROVISIONAL EDITION 1985

32103-F7-TF-024

Exhibit 3



U.S.
Dorothy McKay-Fed.
U.S.
Pet. Dev. Corp.
Sherl-Down-Fed.
Pacific Ent.
McKay-Fed.
TD 7330
Trebol
Chevron
Phillips, 1/2
036100
Lusk Deep Unit
Yates Pet. etal
3-1-89
58157
K65
Phillips, to 4500'
So. Calif. Pet.
01087 HBU
Meridian
Amoco
State
TD 3250
F340
Len Mayer
Humble-St.
L G 604
"DR"
Yates 2880
D/A 7-26-61
1.6 Mil
+13 bbls.
1 Mil.
HBC
Floyd Oper.
(P. Boss etal)
025497
Sun
063530
Sun
Jennings-Fed.
Sun
Jennings-Fed.
TD 10900
Cactus Drlg.
Plains Unit
TD 3240
D/A 4-8-66
P.R. Boss, etal
025497
Sun, 3/4
Bone Spr. Disc.
Sun
Shearn-Fed.
(Trebol) below 4500'
Lusk Deep Unit
17
(Pet. Dev. Corp.)
Superior-St.
(Superior)
(State)
16
Meridian
State DR
Bone Spr. Disc.
H.E. Yates
(7.9 Mil)
VB-0116
"Lusk-St."
(Cactus)
(Humble-St.)
(TD 3222)
(Cleve Rock Energy)
Cleve Rock-Pedco-St.
State
So. Calif. Pet. Phillips
Culbertson & Irwin 1/4
HBU
U.S.
Yates Pet. etal
165970
K65
Triple
W.C. Disc.
(Morrow Disc.)
(2.3 Mil)
T/A (Orux)
Jennings-Fed.
Del. Disc.
Sun
Jennings-Fed.
TD 11,000
Sun
Jennings-Fed.
TD 3014
Dual
19
32
Sun
Shearn-Fed.
U.S.
Sun
Jennings-Fed.
Jennings-Fed
(El Paso Nat.)
Bone Spr.
"Aqueduct-A66-Fed"
El Paso Prod.
065710A
Phillips
Dual (Kerr-McGee)
(Phillips)
20
Phillips
Pan. Amer.
Plains Ut.
Culbertson
Irwin
Lynch
LUSK
"Lusk Deep Unit"
U.S.
Woodbine
Amoco-Fed.
E.H. Muse, Jr.
HBU
065710
Dorchester
Woodbine
(Dorchester)
(Mobil)
0175774
Pan. Amer.
Plains Ut.
Culbertson
Lynch
21
(Woodbine Pet.)
Kersey Co.
Atl-State
Culbertson & Irwin
Lynch
Parker & Parsley
"Mobil-Fed."
U.S.
Dor-chester
(Sun)
Sloan-Fed.
TD 10915
(WO) Lanexco
LUSK N
Sun
Sloan-Fed.
TD 11,000
Linehan &
Stoltenberg
East-Lusk-Fed.
Meridian Oil
12412
Mer
Oi
22
Llano, Inc.
Manzano
6-1-93
71784
200.00
U.S.
El Paso Prod.
Parker & Parsley
063586
(Damson Oil)
(Dorchester)
So. Calif.-Fed.
(Dual Disc.)
(Morr. 18 Mil)
Kincaid &
Watson
Bowman
29
El Paso Prod.
So. Calif.-Fed.
Texaco
Bowman-Fed.
"So. Calif.-Fed."
Texas
Bowman-Fed.
Yates Disc.
(Clinton Oil D/R)
U.S.
J/A 3508
(Culbertson & Irwin)
(Socony M.)
(Bowman)
Amoco &
P.R. Boss
0175
Parker & Parsley
(Dual)
"Plains Unit"
(Damson Oil)
28
(Clinton Oil)
065710
Pan Am.
(Pan Amer.)
Plains Unit
5 (wo)
WC Disc.
Delhasin
HBU
065710
Clinton
Oil D/R
Dorchester
U.S.
EAST
(Sun)
Texaco-Fed.
(Pan Amer.)
(Plains St.)
Manzano
71784
Llano Inc.
LUSK
27
Meridian Oil
11-1-80
12412
U.S.
(Amoco)
Fed.
Texaco
E-9721
Texaco
N.M. St.
TD-6863
Dual
Leonard
Boellner
TD 2860
D/A 2-23-67
32
Texaco
Cities-Serv.
Meridian
(Fina O&C)
(Amoco)
Fina O&Chem
01135
(Clinton Oil, D/R)
1.4 Mil
"Plains Unit-Fed."
33
"Fed."
Fina O&C
HBP
01135
LUSK S
34
Mitchell Ener.
9-1-93
77053
280.00
Leonard
Boellner
TD 2738
D/A 3-3-5
Exhibit 4
Meridian Oil
Texaco
State
TD 11500
D/A 9-26-64
State
U.S.

EXHIBIT #4

SECTION 21, T-19-S, R-32-E

	WELL NAME	LOCATION	STATUS
1.	Pan Am	Plains Unit #6	TD 11,690 P&A
2.	Shackelford Oil Co.	Mobil Fed #3	TD 7,213' Delaware Producer
3.	Shackelford Oil Co.	Mobil Fed #4	TD 7,230' Delaware Producer
4.	Culbertson & Irwin	Lynch #2	TD 2,820' P&A Yates Producer
5.	Kersey Co. Atlantic	State	TD 2,710' P&A
6.	Culbertson & Irwin	Lynch #4	TD 2,820' P&A
7.	Culbertson & Irwin	Lynch #1	TD 3,817' P&A Seven Rivers Producer
8.	Parker & Parsley	4-X Plains Unit	TD 11,517 Strawn Producer
9.	Shackelford Oil Co.	Lynch #3	TD 2,776' Yates Producer

SECTION 22, T-19-S, R-32-E

NONE

SECTION 29, T-19-S, R-32-E

1.	Parker & Parsley	So. Calif Fed #8	TD 7,200' Delaware Producer
2.	Parker & Parsley	So. Calif Fed #1	TD 12,833' Delaware & Strawn

			Producer
	SECTION 20, T-19-S, R-32-E		
1.	Phillips Petroleum	4-A	TD 7,207' Delaware Producer
2.	Phillips Petroleum	14-A	TD 7,200' Delaware Producer
3.	Culbertson & Irwin	Lynch #4	TD 2,820' P&A
4.	Phillips Petroleum	20-A	TD 7,230' Delaware & Strawn Producer
5.	Phillips Petroleum	12-A	TD 6,426' Delaware Producer
6.	Phillips Petroleum	19-A	TD 6,999' Delaware Producer
7.	Phillips Petroleum	17-A	TD 6,999' Delaware Producer
8.	Phillips Petroleum	15-A	TD 6,999' Delaware Producer
	SECTION 28, T-19-S, R-32-E		
1.	Culbertson & Irwin	Bowman #1	TD 2,811' P&A
2.	Shackelford Oil Co.	Bowman #2	TD 2,771' Seven Rivers Producer
3.	Parker & Parsley	Plains Unit #2	TD 12,996' Strawn and Morrow Producer

SECTION 16

1.	Heyco	#1 Lusk 16 State	TD 6,600' Delaware Producer
2.	Heyco	#2 Lusk 16 State	TD 6,600' Delaware Producer
3.	Heyco	#1 Superior "C" State	TD 12,950' Morrow & Bone Springs Producer

SECTION 17

1.	Yates Petroleum	#1 Aqueduct	TD 7,100' Delaware Producer

PSTAR DRILLING
LOCATION SPECIFICATIONS

Rotary Rig Layout - Exhibit #6

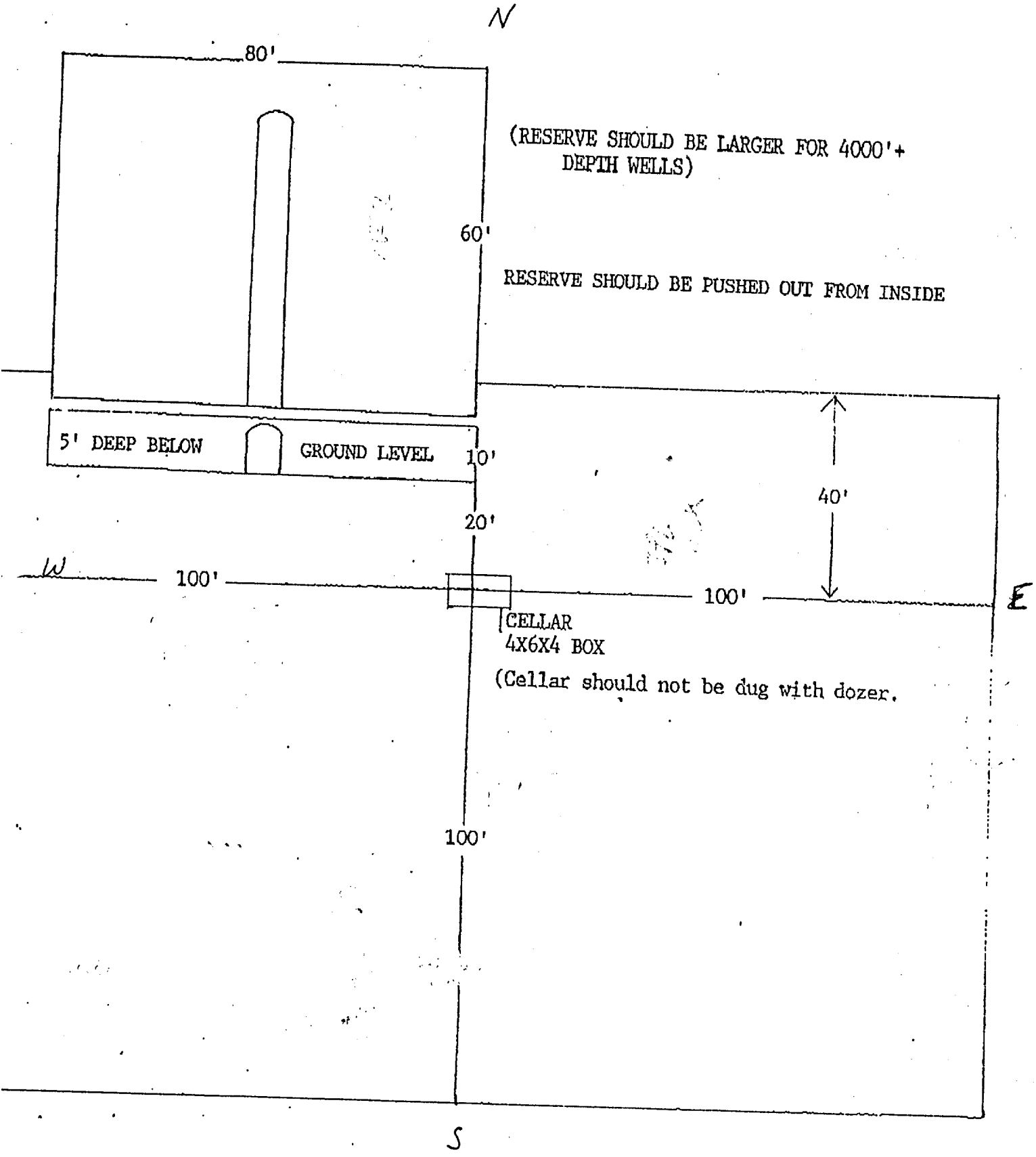


EXHIBIT #7
DRILLING PROGNOSIS
MOBIL FEDERAL #7

LOCATION: Section 21, T-19-S, R-32-E

PROPOSED DEPTH AND OBJECTIVE: Delaware 5300'

CASING PROGRAM:

Surface: 13 3/8" J-55 Set at 550' in an 17½" hole

SJS

Production:

1. 4 1/2" 10.50# J-55 to 2850', cement will be brought to surface.
2. 4 1/2 10.50# J-55 to 5300', inflatable packer - set at 2870'. Cement from 5300' to 2870'.

LOGGING PROGRAM:

A compensated neutron/formation density, with gamma ray, and caliper. A dual laterolog will be run for water saturation analysis. All other logs will be run from TD to 2000'. The gamma ray compensated neutron/formation density will be run from TD to the base of the surface casing.

MUD LOGGING:

Samples will be taken every 10 feet from 2400 feet to TD

MUD PROGRAM:

0 - 550'

Spud 17½" hole with fresh water containing gel and lime, if necessary for hole cleaning. Mud weight should be 8.5 - 8.7 lb/gal with a viscosity of 33 - 35 sec/1000 cc.

SJS

550' - 2850'

Drill out below surface pipe using ~~13 3/8"~~ 12¼" bit with 10 lb/gal brine for drilling the native salt section. Lime will be added to maintain a pH of 9.5 - 10.0.

2850' - 5300'	Drill w/7 7/8" bit to TD of 5300'. If loss circulation occurs in Capitan Reef will drill with fresh water and remainder of the hole will be drilled with sweeps to TD.

CEMENTING

Surface pipe - Cement from 550' to surface w/470 sacks of class C cement.

Production String

1) 5300' - Surface -	Cement from 5300' to 2870' where inflatable packer will be set w/190 sacks of light and 250 sacks of class C
2) 2870' - Surface -	Cement from 2870' - Surface w/910 sacks of light and 270 sacks of class C

This well will be drilled to set 2 strings of production casing, one string to produce the Yates and the other string to produce the Delaware. Should it be determined by log that either zone is not productive a single string of casing will be run.

SHACKELFORD OIL COMPANY

STATEMENT ACCEPTING RESPONSIBILITY OF OPERATIONS

Shackelford Oil Company
310 W. Illinois, Suite 328
Midland, Texas 79701

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

Lease No. NM0175774

Legal Description of Land: NW/4 of SW/4 Section 21 T-19-S R-32-E

Formation(s) (if applicable): 0 - 5300'

Bond Coverage: (State if individual bonded or another's bond)
25,000 Statewide Bond

BLM Bond file No. Statewide Bond
3104 (943C-3TF)

Authorized Signature:

Title: Owner

Date: 1/26/96

P.O. Box 10665
Midland, TX 79701
(915) 682-9784
Fax: (915) 684-5026

SHACKELFORD OIL COMPANY

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 (H2S).
2. The proper use and maintenance of personal protective equipment and life support system.
3. The proper use of H2S 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 H2S 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 H2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S 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. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S 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 H2S.

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.

2. Protective equipment for essential personnel:

   A. Mark II Survivor 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 monitors 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.

6. Metallurgy:

   A. All drill strings, casing, tubing wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

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.

ELF 5/14/99

ABOVE DATE DOES NOT
INDICATE WHEN
CONFIDENTIAL LOGS
WILL BE RELEASED