

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

b. TYPE OF WELL

OIL WELL ☐

GAS WELL ☒

OTHER

SINGLE ZONE ☐

MULTIPLE ZONE ☐

2. NAME OF OPERATOR

MURCHISON OIL & GAS, INC.

3. ADDRESS AND TELEPHONE NO.

1100 MIRA VISTA BLVD., PLANO, TX. 75093-4698

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

At surface

1310' FSL & 1310' FWL SWSW (M)

At proposed prod. zone

Diamond Meadow; Morrow

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

15 MILES NORTH AND EAST OF ARTESIA, NM.

15. DISTANCE FROM PROPOSED*

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

1310'

16. NO. OF ACRES IN LEASE

480

18. DISTANCE FROM PROPOSED LOCATION*

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

NONE

19. PROPOSED DEPTH

9500'

17. NO. OF ACRES ASSIGNED TO THIS WELL

320

20. ROTARY OR CABLE TOOLS

ROTARY

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

3561' GR

22. APPROX. DATE WORK WILL START*

1/15/2001

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8 H-40	48#	400'	420 SX - CIRCULATE TO SURFACE
12 1/4"	8 5/8 K-55	32#	1800'	715 SX - CIRCULATE
7 7/8"	5 1/2 N-80-S95	17#	9500'	640 SX - EST TOP @ 6500'

IT IS PROPOSED TO DRILL THIS WELL TO A TD OF 9500' AND TEST THE MORROW FORMATION

- 1) ONE SET OF DRILL PIPE RAMS (5M)
- 2) ONE SET OF BLIND RAMS (5M)
- 3) ONE SET OF HYDRIL (3M)



GENERAL REQUIREMENTS AND SPECIAL SPECIFICATIONS

IN ABOVE SPACE DESCRIBE PROPOSED 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

Michael J. Daugherty

TITLE

VICE PRESIDENT OPERATIONS

DATE

12/5/00

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

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

DATE

*See Instructions On Reverse Side

DISTRICT I
P.O. Box 1880, Hobbs, NM 88241-1880

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

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

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

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

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
		WILDCAT
Property Code	Property Name	Well Number
	WINDMILL FEDERAL COM.	1
OGRID No.	Operator Name	Elevation
015363	MURCHISON OIL & GAS, INC.	3561

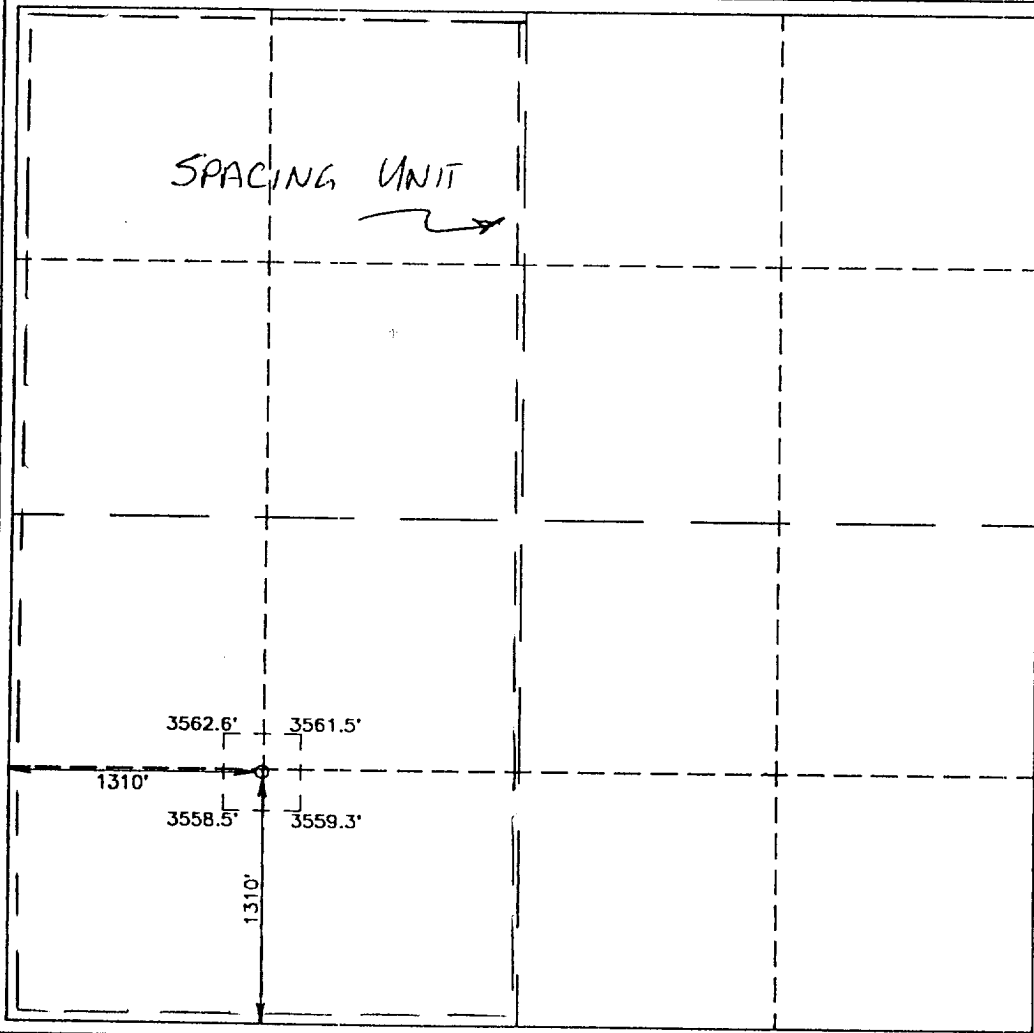
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	28	15 S	28 E		1310	SOUTH	1310	WEST	CHAVES

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.						
320									

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

<p>SPACING UNIT</p> 	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Michael S. Daugherty</i> Signature</p> <p>MICHAEL S. DAUGHERTY Printed Name</p> <p>VICE PRESIDENT OPERATIONS Title</p> <p>12/5/00 Date</p> <p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>OCTOBER 24, 2000 Date Surveyed</p> <p><i>Ronald J. Edison</i> Signature & Seal of Professional Surveyor</p> <p>NEW MEXICO W.O. Num. 00-111294</p> <p>Certificate No. RONALD J. EDISON, 3239 GARRA G. EDISON, 12841</p>
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December 5, 2000

United States Department of the Interior
Bureau of Land Management
Roswell District Office
2909 West Second Street
Roswell, New Mexico 88201
Attn: Linda Askawik

**Re: Application for Permit to Drill
Murchison Oil & Gas, Inc.
Windmill Federal Com #1
Chaves County, New Mexico
Lease No. NM-103868**

Gentlemen:

Murchison Oil & Gas, Inc. "MOGI" respectfully requests permission to drill our Windmill Federal Com #1 located 1310' FSL and 1310' FWL of Section 28, T15S, R28E, Chaves County, New Mexico, Federal Lease No. NM-103868. The proposed well will be drilled to a TD of approximately 9500' (TVD). The location and work area have been staked. It is approximately 15 miles Northeast of Artesia, New Mexico.

In accordance with requirements stipulated in Federal Onshore Oil and Gas Order No. 1 under 43 CFR 3162.1, our Application for Permission to Drill and supporting evidence is hereby submitted.

I. Application for Permit to Drill:

1. Form 3160-3, Application for Permit to Drill.
2. Form C-102 Location and Acreage Dedication Plat certified by Ronald J. Eidson Registered Land Surveyor No. 3239 in the State of New Mexico, dated 10/24/00.
3. The elevation of the unprepared ground is 3561 feet above sea level.
4. The geologic name of the surface formation is Permian Rustler.
5. Rotary drilling equipment will be utilized to drill the well to TD 9500' (TVD), and run casing. This equipment will then be rigged down and the well will be completed with a pulling unit.
6. Proposed total depth is 9500' TVD.

7. Estimated tops of important geologic markers.

Bowers	901 TVD
Queen	1121 TVD
Grayburg	1546 TVD
San Andres	1878 TVD
Wolfcamp	6598 TVD
Strawn	8610 TVD
Atoka	8896 TVD
Morrow	9128 TVD
Chester	9368 TVD

8. Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

Primary Objective:	Morrow	9368 TVD
Secondary Objectives:	Wolfcamp	6598 TVD
	Atoka	8896 TVD

9. The proposed casing program is as follows:

Surface: 13-3/8" OD 48# H40 ST&C casing set at 400'

Intermediate: 8-5/8" OD 32# K55 ST&C casing from 0 to 1800'

Production: 5-1/2" OD 17# N80-S95 LT&C casing from 0 to 9300'

10. Casing setting depth and cementing program:

- A. 13-3/8" surface casing set at 400', or the top of the Rustler Anhydrite, in 17-1/2" hole. Circulate cement with 220sx 35:65 POZ/Class C with 6% gel + 2% CaCl₂ + 0.25 #/sx Cello-Seal and 200sx Class C with 2% CaCl₂.

If cement does not circulate, a temperature survey will be run to find the TOC and then finish cementing to surface through 1" using Class C with 2% CaCl₂.

- B. 8-5/8" intermediate casing set at 1800' in 12 1/4" hole. Circulate cement with 515sx 35:65 POZ/Class C with 6% gel + 5% salt + 0.25 #/sx Cello-Seal and 200sx Class C with 2% CaCl₂.

If hole conditions dictate, a DV tool may be run to ensure that the intermediate string is cemented to surface.

If cement does not circulate, a temperature survey will be run to find the TOC and then finish cementing to surface through 1" using Class C with 2% CaCl₂.

- C. 4-1/2" or 5-1/2" production casing set at 9500'. Cement with 640sx Super "C" Modified cement with 0.5#/sx FL-25 + 0.2 #/sx CD-32 + 0.5 #/sx gilsonite.

Estimated top of cement is 6500'.

Note: Cement volumes may need to be adjusted to hole caliper.

11. Pressure Control Equipment

0' – 400'	None
400' – 1800'	13-3/8" 5000# ram type preventers with one set blind rams and one set pipe rams and a 3000# annular preventer.
1800' – 9500'	13-3/8" 5000# ram type preventers with one set blind rams and one set pipe rams and a 3000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 6000'. See attached Sketch of BOP Equipment.

A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

After setting the 8-5/8" casing, the blowout preventers and related control equipment shall be pressure tested to 5000 psi and 3000 psi respectively. Any equipment failing to test satisfactorily shall be repaired or replaced. Results of the BOP test will be recorded in the Driller's Log. The BOP's will be maintained ready for use until drilling operations are completed.

BOP drills will be conducted as necessary to assure that equipment is operational and each crew is properly trained to carry out emergency duties.

Accumulator shall maintain a pressure capacity reserve at all times to provide for the close-open-close sequence of the blind and pipe rams of the hydraulic preventers.

12. Mud Program:


0 – 400'	Fresh water/native mud. Wt. 8.7-9.2 ppg, vis 32-34 sec, Lime for pH control (9-10). Paper for seepage. Lost circulation may be encountered.
400' – 1800'	Fresh water 8.4 ppg, vis 28-29 sec. Add 10# brine as make-up to avoid excessive washouts in salt stringers. Caustic for pH control (10-10.5). Paper for seepage. Lost circulation may be encountered.
1800' – 6000'	Fresh water. Wt. 8.4 ppg, vis 28-29 sec, caustic for pH control (9-9.5). Paper for seepage.
6000' – 9100'	Cut brine. Wt. 9.2 – 9.4 ppg, vis 28-29 sec, caustic for pH control.
9100' – 9500'	Mud up with an XCD Polymer mud system with the following characteristics: Wt. 9.0 – 9.6 ppg, Vis 32-34 sec, WL 8cc.

Mud system monitoring equipment with derrick floor indicators and visual/audio alarms shall be installed and operative prior to drilling into the Wolfcamp formation. This equipment will remain in use until the production casing is run and cemented. Monitoring equipment shall consist of the following:

- 1) A recording pit level indicator.
- 2) A pit volume totalizer.
- 3) A flowline sensor.

13. Testing, Logging and Coring Program:
 - A. Testing program: Possible DST in Wolfcamp.
 - B. Mud logging program: Two man unit from 1800' to TD.
 - C. Electric logging program: CNL/LDT/CAL/GR, DLL/CAL/GR.
 - D. Coring program: Possible sidewall rotary cores.
14. No abnormal temperatures, or H₂S gas are anticipated. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.
15. Anticipated starting date is February 1, 2001. It should take approximately 28 days to drill the well and another 10 days to complete.
16. A statement accepting responsibility for operations is attached.
17. The Multi-Point Surface Use & Operation Plan is attached.
18. If the Bureau of Land Management needs additional information to evaluate this application, please advise.

Very truly yours,


Michael S. Daugherty
Vice President, Operations

MSD/cb/WindmillFdCom#1-BLM-App.PTD

Attachments

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201-1287

Statement Accepting Responsibility for Operations

Operator Name: MURCHISON OIL & GAS, INC.
Street or Box: 1100 MIRA VISTA BLVD.
City, State: PLANO, TX.
Zip Code: 75093-4698

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.: NM-103868

Legal Description of Land: SW/4, SECTION 28, T15S, R28E

Formation (s) (if applicable): ALL

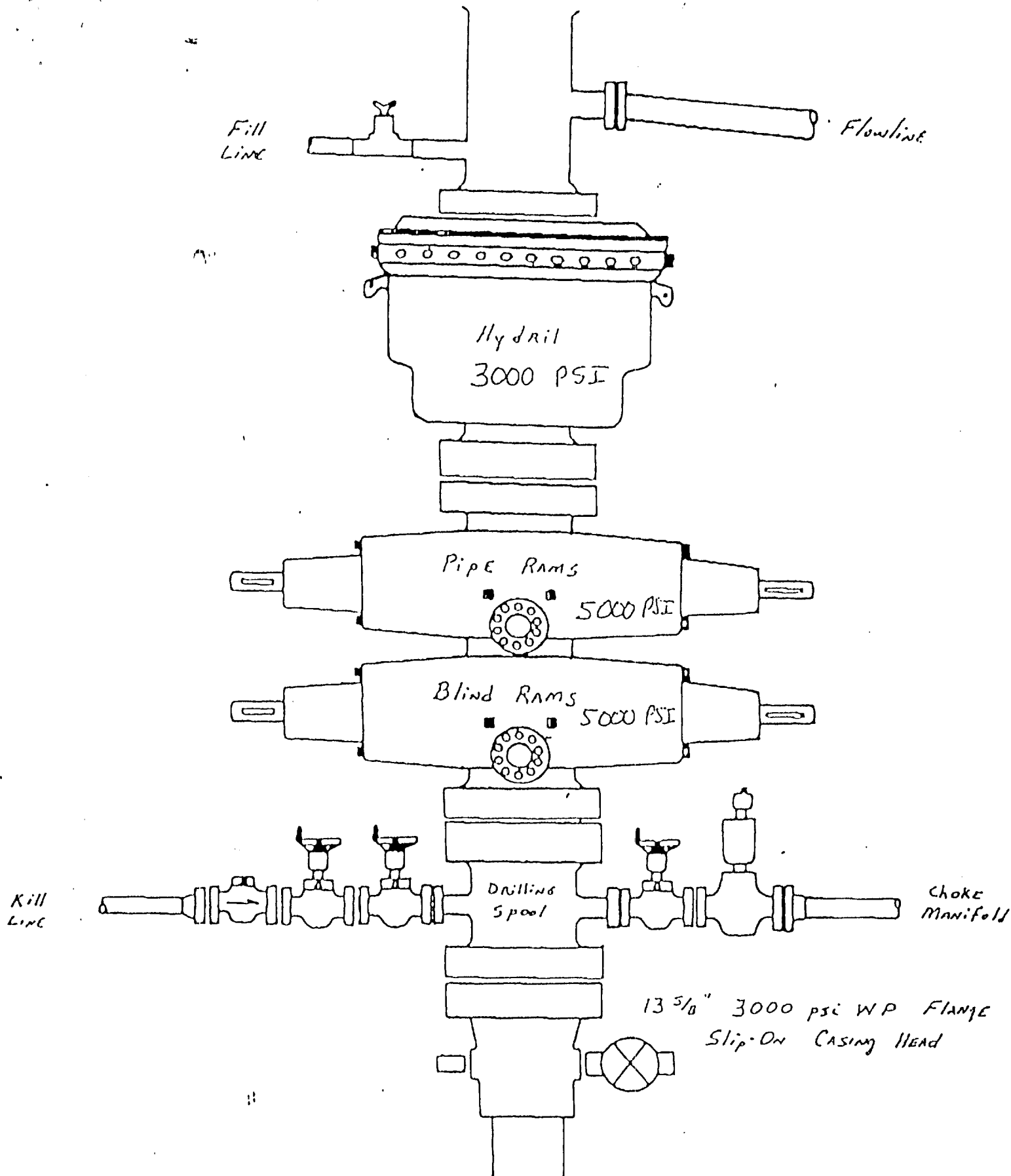
Bond Coverage (State if individually bonded or another's bond):
PERSONAL STATEWIDE BOND

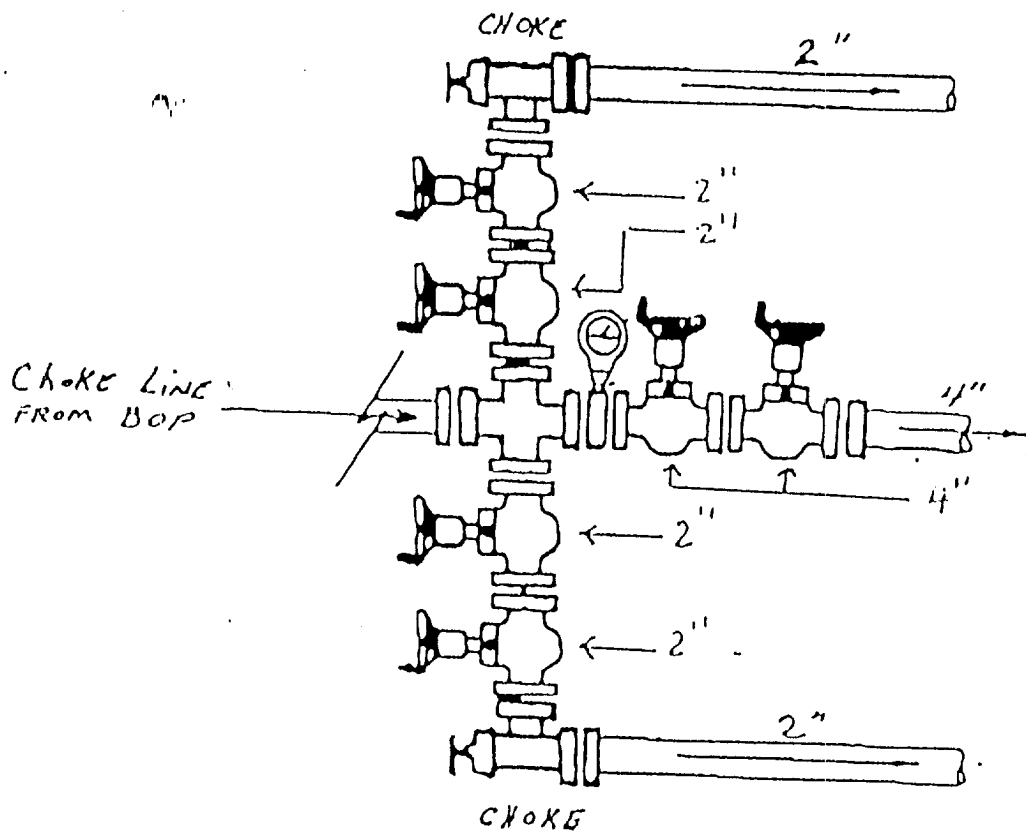
BLM Bond File No.: NM2683

Authorized Signature: 
MURCHISON OIL & GAS, INC.

Title: MICHAEL S. DAUGHERTY
VICE PRESIDENT OPERATIONS

Date: 12/5/00





MULTI-POINT SURFACE USE AND OPERATIONS PLAN

MURCHISON OIL & GAS, INC.
WINDMILL FEDERAL COM #1
CHAVES COUNTY, NEW MEXICO
LEASE NO. NM-103868

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to identify 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 the operation so that a complete appraisal may be made of the environmental effects associated with the operation.

The well, and work area have been staked by a registered New Mexico land surveyor. Jim Scisenti Archaeological Surveys have been engaged to make an archaeological reconnaissance of the work area. Their findings concerning cultural resources will be reported to the Bureau of Land Management.

1. Existing Roads

A copy of a USGS "Diamond Mound, New Mexico" Topographic map is attached showing the proposed location. The well location is spotted on this map, which also shows the existing road system.

Directions to location: From Loco Hills, New Mexico travel North on CR 217 and travel 15 miles to Hagerman Hwy turn (Left) West and travel 13.2 miles between 8 and 9 mile markers. Turn (Left) South at Harriet road (Duke Energy sign to Buffalo Valley Booster at the turn) stay on the traveled main road for 8.6 miles and through three cattle guards and after passing through third cattle guard travel 1 mile and well is on left side of road. Total miles to well from Hagerman road 9.6 miles. (See attached map).

2. Planned Access Road

- A. The well location is adjacent to an existing lease road which will require less than 100' of access road to be constructed.
- B. Surfacing material: Six inches of caliche and water, compacted and graded.
- C. Maximum Grade: Less than 3%
- D. Turnouts: None needed.
- E. Drainage Design: N/A.

- F. Culverts: None needed.
 - G. Cuts and Fills: Leveling the location will require minimal cuts or fills.
 - H. Gates or Cattleguards: None required.
3. Existing wells within a one mile radius of the proposed development well are shown on the attached map.
4. Location of Existing and/or Proposed Facilities
- A. If the well is productive, production facilities will be constructed on the well pad. The facility will consist of a stack pack, one 300 bbl oil tank and one 300 bbl fiberglass water tank. All permanent above ground facilities will be painted in accordance with the BLM's painting guidelines simulating the color of sandstone brown.
 - B. All site security guidelines identified in 43 CFR 3162.7 regulations will be adhered to and a site security plan will be submitted for the Windmill Federal Com #1 tank battery. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed.
5. Location and Type of Water Supply
- Fresh water and brine water will be used to drill this well. It will be purchased from a local supply and transported to the well site.
6. Source of Construction Materials
- Caliche for surfacing the well pad will be obtained from a Federal pit located in Eddy County, New Mexico.
7. Method of Handling Waste Disposal
- A. Drill Cuttings will be disposed of in drilling pits.
 - B. Drilling fluids will be allowed to evaporate in the drilling pits until pits are dry.
 - C. Water produced during tests will be disposed of in the drilling pits. Oil produced during tests will be stored in test tanks until sold.

- D. Current laws and regulations pertaining to the disposal of human waste will be complied with.
 - E. Trash, waste paper, garbage and junk will be collected in steel trash bins and removed after drilling and completion operations are completed. All waste material will be contained to prevent scattering by the wind.
 - F. All trash and debris will be removed from the wellsite within 30 days after finishing drilling and/or completion operations.
8. Ancillary Facilities
- A. None needed.
9. Wellsite Layout
- A. The location and dimensions of the well pad, mud pits, reserve pit and location of major rig components are shown on the attached well site layout sketch. If Patterson Drilling Company Rig #18 is not utilized a comparable rig will be substituted. The V-door will be to the east and the pits to the north.
 - B. Leveling of the wellsite will be required with minimal cuts or fills anticipated.
 - C. The reserve pit will be plastic lined.
 - D. The pad and pit area have been staked and flagged.
10. Plans for Restoration of the Surface
- A. After completion of drilling and/or completion operations, all equipment and other materials not needed for operations will be removed. Pits will be filled and location cleaned of all trash and junk to leave the well site in as aesthetically pleasing condition as possible.
 - B. Any unguarded pits containing fluids will be fenced until they are filled.
 - C. After abandonment of the well, surface restoration will be in accordance with the land owner. This will be accomplished as expeditiously as possible. Barring unforeseen problems, all pits will be filled and leveled within 90 days after abandonment.

11. Other Information

- A. Topography: The location is a flat plain. GL elevation is 3561'.
- B. Soil: Sandy clay loams.
- C. Flora and Fauna: The vegetative cover is generally sparse consisting of mesquite, yucca, shinnery oak, sandsage and perennial native range grasses. Wildlife in the area is also sparse consisting of coyotes, rabbits, rodents, reptiles, dove and quail.
- D. Ponds and Streams: There are no rivers, streams, lakes or ponds in the area.
- E. Residences and Other Structures: There are no occupied dwellings within a 1 mile radius of the location.
- F. Archaeological, Historical and Cultural Sites: Cultural resources have been recorded in the area. Desert West Archaeological Services have been engaged to make an archaeological reconnaissance of the work area.
- G. Land Use: Cattle ranching.
- H. Surface Ownership: The surface is public land leased by the BLM to Bogle Farms, P.O. Drawer 460, Dexter, New Mexico 88230. They will be notified of our intention to drill prior to any activity.

Upon completion of the well, any plastic material used to line the pits or sumps will be cut off below ground level as far as possible and disposed of before the pits are covered. All unattended pits containing liquid will be fenced and the liquid portion allowed to evaporate before the pits are broken and backfilled.

All waste associated with the drilling operation will be contained in steel bins and removed. All garbage and debris left on site will be removed within 30 days of the final completion. The well site, if a producer, will be maintained and kept clean of all trash and litter which detracts from the surrounding environment. Equipment will be maintained in accordance with good operating practice.

After the wellsite is cleaned and pits and sumps backfilled, any obstruction to the natural drainage will be corrected by ditching or terracing. All disturbed areas, including any access road no longer needed, will be ripped. Those areas will be reseeded with grass if, in the opinion of the land owner, it is required.

12. Operator's Representatives

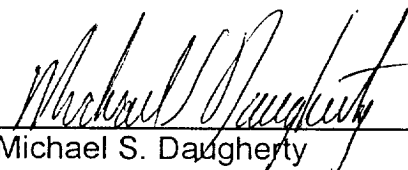
The Field representatives responsible for assuring compliance with the approved surface use and operations plan are as follows:

Michael S. Daugherty
1100 Mira Vista Blvd.
Plano, TX. 75093-4698
Office Phone: (972) 931-0700
Home Phone: (972) 618-0792

Randy Ford
201 W. Wall, Ste. 600
Wall Tower East
Midland, TX. 79701
Office Phone: (915) 682-0440
Pager Phone: (800) 518-9809

13. Certification

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 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 MOGI and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.



Michael S. Daugherty

12/5/00
Date

Vice President, Operations
Murchison Oil & Gas, Inc.

1/8/99

Patterson Drilling Company

Rig #18

14,500'

DRAWWORKS

Drewster N-46
Drako: V80 Double Parmac
Twin Disc Torque Converter

ENGINES

Two Caterpillar 3408 Diesels, 475 HP ea

DERRICK

Pyramid 136', 800,000# Rated Capacity

SUBSTRUCTURE

Pyramid 18', 800,000# Setback Capacity
KB - 19', Rotary Clearance - 15'

MUD PUMPS

Pump #1: Idoco 700 w/Cat 379
Pump #2: Drowster D-750 w/Cat 379

DRILL STRING

4-1/2" Grade E, New, 20# Drill Pipe
6-1/2" New Drill Collars
Other sizes of drill pipe and drill collars are available

BLOWOUT PREVENTERS

13 5/8" 5,000# Ram/Ram/Annular Shaffer SL

MUD SYSTEM

Shale pit, 560 bbls, suction pit, 560 bbls, 5 sub guns, 2 electric mud stirrers, 2 mud mixing pumps (6x8 centrifugal), two 70 HP electric motors, double screen high-speed vibrating shale shaker

MUD HOUSE

None

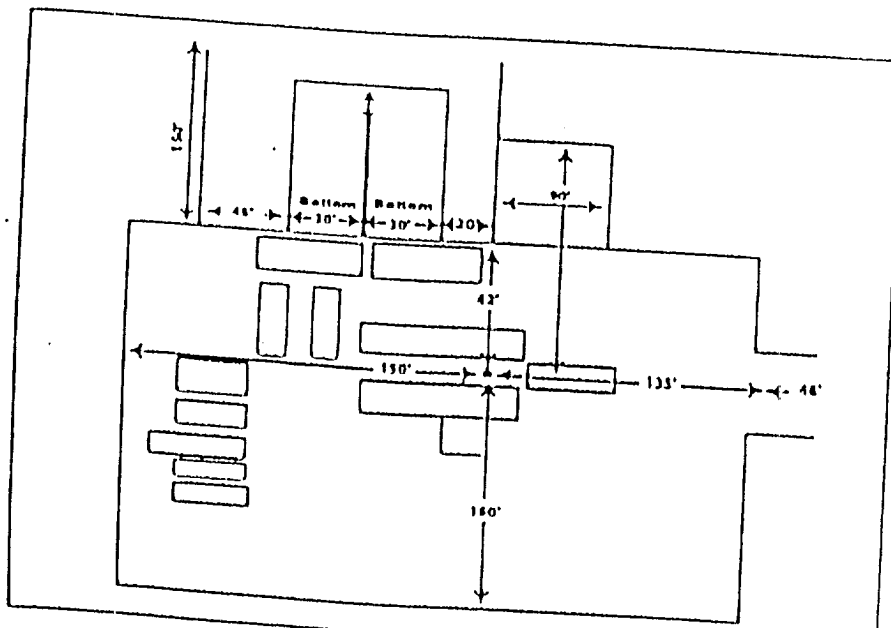
COMMUNICATIONS

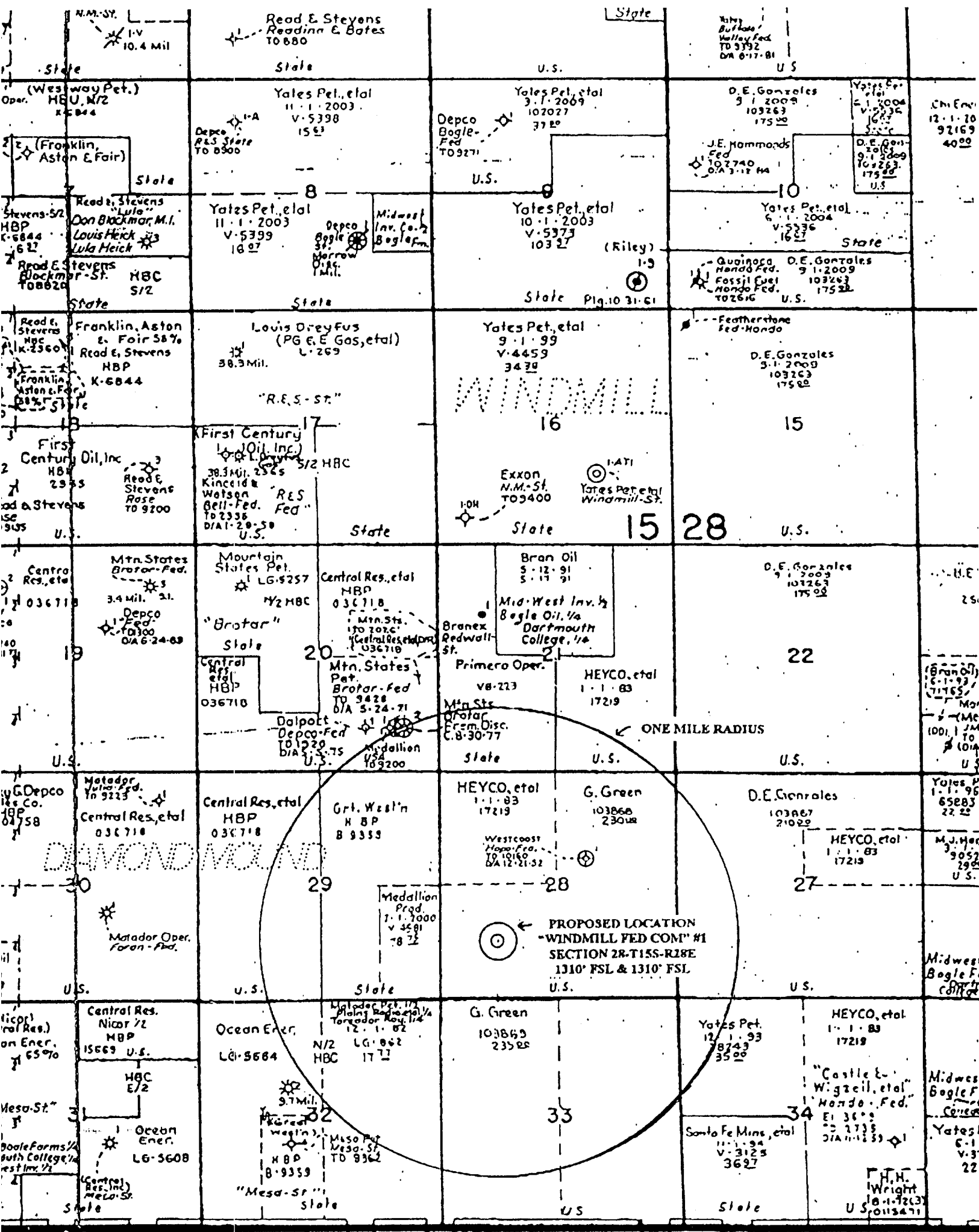
24 hour direct cellular telephone

OTHER EQUIPMENT

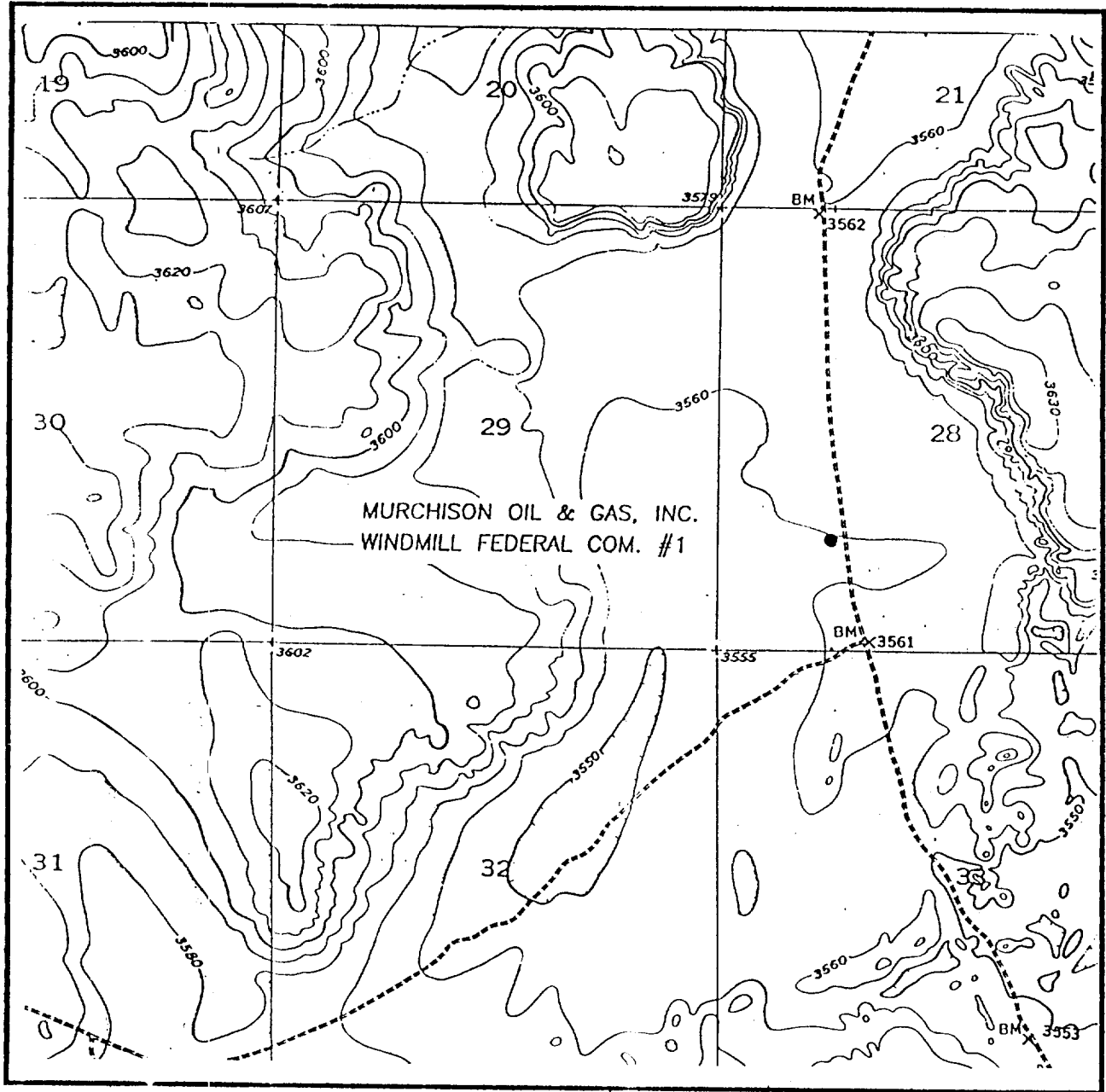
Blocks, Gardner Denver 300 Ton
Hook, Gardner Denver 300 Ton
Swivel, 7 SX Drowster 300 Ton
Rotary Table, Gardner Denver 27 1/2"
Electrical Power, Two 275 kW Generators w/3408 Cat
Fresh Water Storage, 1000 bbls
Housing.

"Hole Requirements will dictate actual Reserve Pit size (TOOLPUSHER SHOULD BE CONSULTED)"





LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL - 10'

SEC. 28 TWP. 15-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY CHAVES

DESCRIPTION 1310' FSL & 1310' FWL

ELEVATION 3561

OPERATOR MURCHISON OIL & GAS, INC.

LEASE WINDMILL FEDERAL COM.

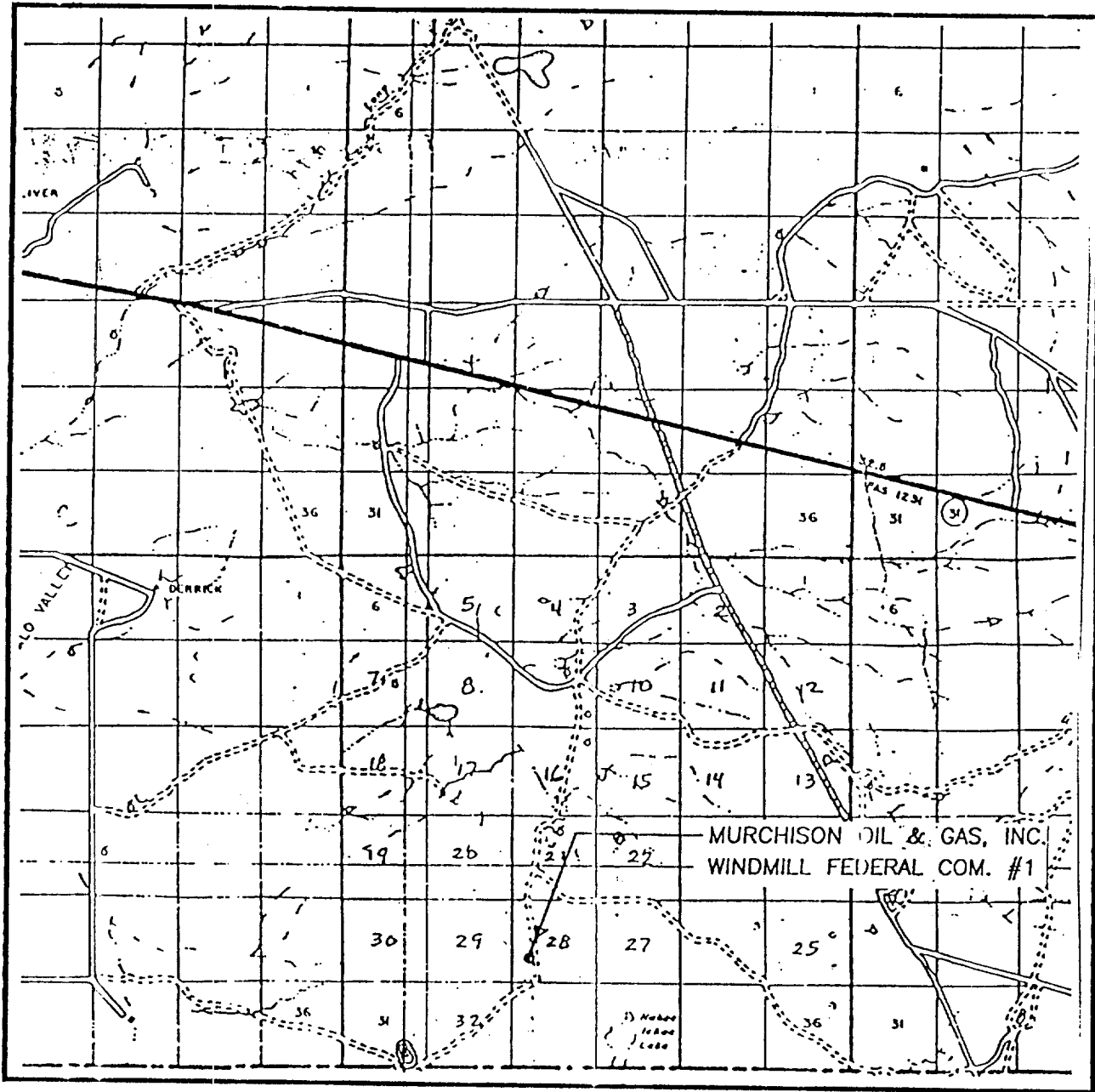
U.S.G.S. TOPOGRAPHIC MAP

DIAMOND MOUND, N.M.

**JOHN WEST SURVEYING
HOBBS, NEW MEXICO**

(505) 393-3117

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 28 TWP. 15-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY CHAVES

DESCRIPTION 1310' FSL & 1310' FWL

ELEVATION 3561

OPERATOR MURCHISON OIL & GAS, INC.

LEASE WINDMILL FEDERAL COM.

JOHN WEST SURVEYING
HOBBS, NEW MEXICO

(505) 393-3117

