# DRILLING PROGRAM

Attached to Form 3160-3
Mitchell Energy Corporation
Geronimo Federal No. 11
Surface Location:
2580' FNL & 1650' FWL
SE/NW, Sec. 31, T20S, R33E
Lea Co., N.M.

Bottomhole Location:
2210' FSL & 1850' FWL
NE/SW, Sec. 31, T20S, R33E
Lea Co., N.M.

1. Geologic Name of Surface Formation:

   Permian

2. Estimated Tops of Important Geologic Markers (TVD):

| | |
|---|---|
| Permian | Surface |
| Base of Salt | 2800' |
| Yates | 3000' |
| Delaware | 5250' |
| Bone Spring | 7900' |
| Total Depth | 8200' |

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

| | | |
|---|---|---|
| Upper Permian Sands | 100' | Fresh Water |
| Yates | 3000' | Oil |
| Delaware | 5250' | Oil |
| Delaware (Brushy Canyon) | 7630' | 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 13-3/8" casing at 500' and circulating cement back to surface. All wells on the Geronimo Lease have experienced moderate to severe loss circulation from 3200' to 4000'. In order to eliminate this problem while drilling the lower portion of the hole, it is proposed to set 8-5/8" casing at 4200' (as in Geronimo Federal #5). The loss zone and the Yates productive interval will be covered in the first stage of the cement job up to 2900'. The potash will be protected by placing a cementing stage tool at 2900' and circulating cement to surface in the second stage of the cement job.

The 5-1/2" production casing to be run at TD will be cemented back 500' into the 8-5/8" casing (TOC at 3700') in order to cover all productive zones in the Delaware.

30-025-31958

Form 3160-3
(December 1990)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires: December 31, 1991

# UNITED STATES
# DEPARTMENT OF THE INTERIOR
## BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO.: NM 67111

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ]

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

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

7. UNIT AGREEMENT NAME: N/A

8. FARM OR LEASE NAME, WELL NO.: Geronimo Federal No. 11

2. NAME OF OPERATOR: Mitchell Energy Corporation

9. API WELL NO.:

3. ADDRESS AND TELEPHONE NO.: P.O. Box 4000 The Woodlands, Tx 77387-4000 (713) 377-5500

10. FIELD AND POOL, OR WILDCAT: Geronimo (Delaware)

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 2580' FNL and 1650' FWL (SE/NW) unit F
At proposed prod. zone: 2210' FSL and 1850' FWL (NE/SW) unit K

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 31, T19S, R33E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 32 miles SW of Hobbs, NM

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 |
|---|---|---|
| 990 | 321.72 | 40 |
| **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** |
| 660 | 8,200 TVD | Rotary |

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3576 GR

22. APPROX. DATE WORK WILL START*: 02/15/93

23. PROPOSED CASING AND CEMENTING PROGRAM Secretary's Potash / R-111-P Potash

| SIZE OF HOLE | GRADE, SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
|---|---|---|---|---|
| 17-1/2" | 13-3/8" | 54.5# | 500' | TOC = Surface |
| 12-1/4" | 8-5/8" | 32# | 4200' | TOC = 2900' |
| 12-1/4" | 8-5/8" | Stage Tool | 2900' | TOC = Surface |
| 7-7/8" | 5-1/2" | 17# | TD | TOC = 3700' |

The operator proposes to drill to a depth sufficient to test the Delaware formation for oil. If productive, 5½" casing will be cemented at TD. If non-productive, the well will be plugged and abandoned in a manner consistent with federal regulations. Specific programs as per Onshore Oil & Gas Order #1 are outlined in the following attachments:

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED, and to NMOCD's R-111-P.

**Drilling Program**
**Surface Use & Operating Plan**

**Exhibit #1 & 1A** - Blowout Preventer Equipment
**Exhibit #2** - Location & Elevation Plat
**Exhibit #3** - Planned Access Roads
**Exhibit #4** - One-mile Radius Map
**Exhibit #5** - Production Facilities Layout
**Exhibit #6** - Drilling Rig Layout
**Exhibit #7** - Directional Plan
**Exhibit #8** - Directional Details

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 George Mullen TITLE Reg. Affairs Specialist DATE 01/05/93
George Mullen

(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 _____

NM-77

*See Instructions On Reverse Side

BUREAU OF LAND MANAGEMENT RECEIVED JAN 11 1993 ROSWELL DIST. 6 N.M. NEW MEXICO

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

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

# OIL CONSERVATION DIVISION

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

Form C-102
Revised 1-1-89

Exhibit #2
Geronimo Federal No. 11
Lea County, New Mexico

## WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

| Operator | Lease | Well No. |
|---|---|---|
| MITCHELL ENERGY Corporation | GERONIMO FEDERAL | #11 |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| F | 31 | 19S. | 33E. NMPM | LEA |

Actual Footage Location of Well:
1650 feet from the WEST line and 2580 feet from the NORTH line

| Ground level Elev. | Producing Formation | Pool | Dedicated Acreage: |
|---|---|---|---|
| 3576 | Delaware | Geronimo (Delaware) | 40 Acres |

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

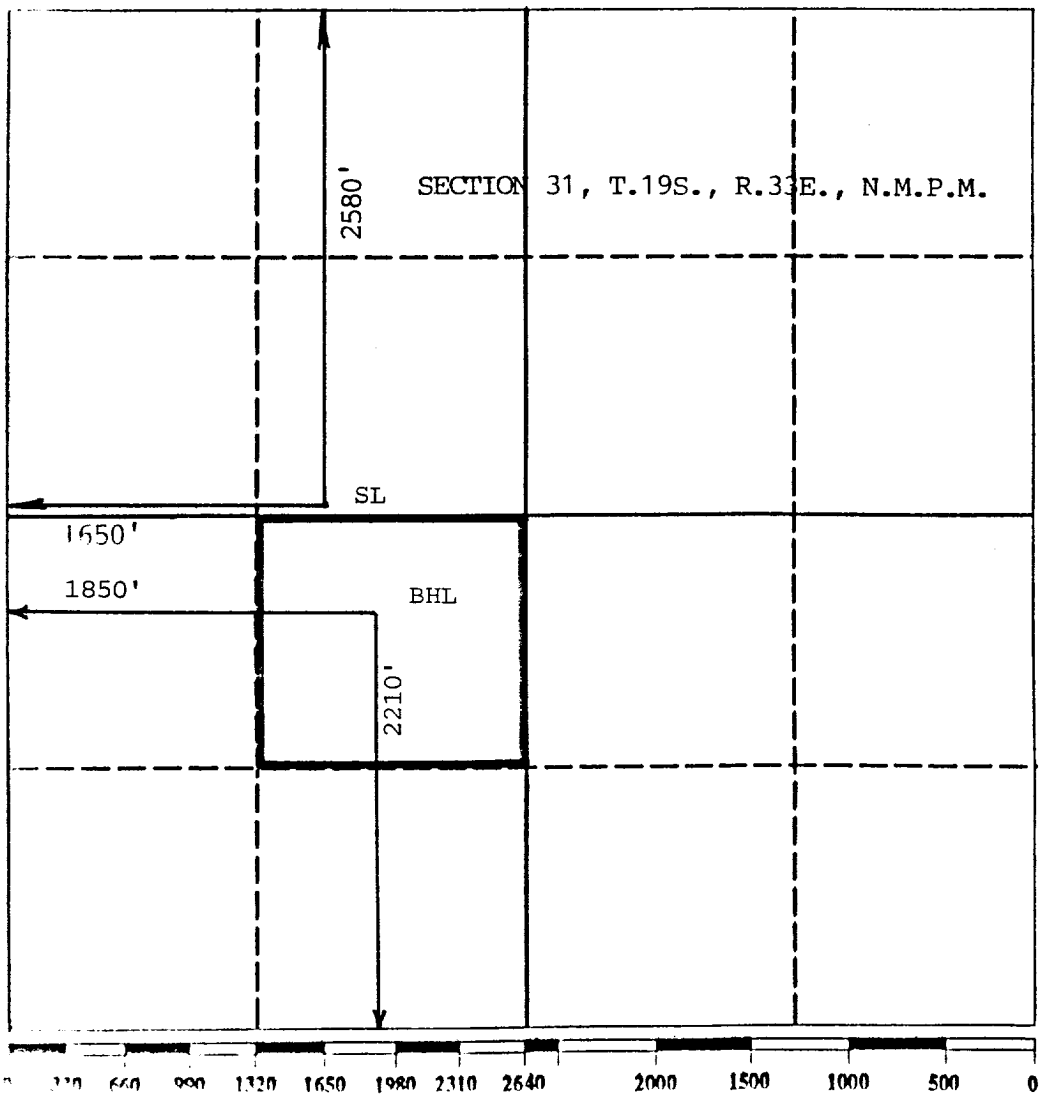
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.




### OPERATOR CERTIFICATION

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

Signature: George Mullen

Printed Name: George Mullen

Position: Reg. Affairs Specialist

Company: Mitchell Energy Corp.

Date: December 5, 1992

### 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 knowledge and belief.*

Date Surveyed: 11/17/92

Signature & Seal of Professional Surveyor: 6290

Certificate No. 6290

BK. 66, PG. 53

**MINIMUM BLOWOUT PREVENTER REQUIREM S**

**3,000 psi Working Pressure**

**3 MWP**

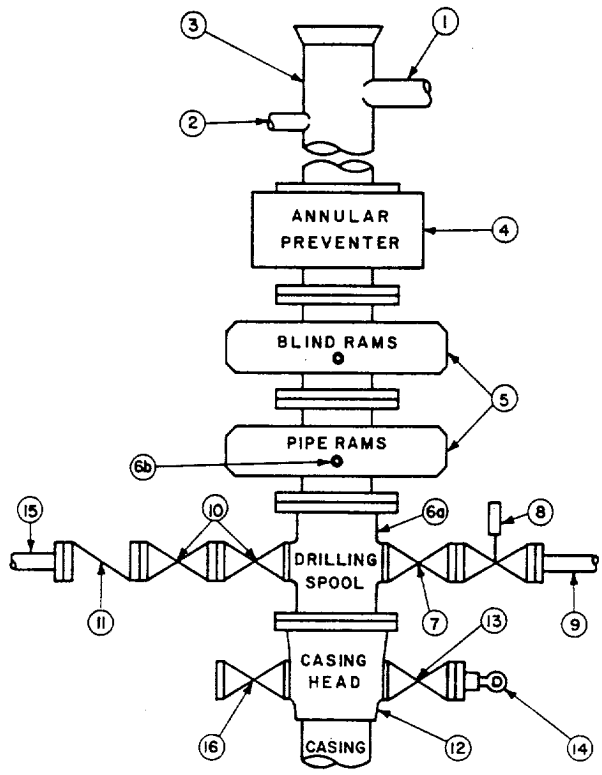
EXHIBIT # 1
Geronimo Federal No. 11
Lea County, New Mexico

## STACK REQUIREMENTS

| No. | Item | Min. I.D. | Min. Nominal |
|---|---|---|---|
| 1 | Flowline | | |
| 2 | Fill up line | | 2" |
| 3 | Drilling nipple | | |
| 4 | Annular preventer | | |
| 5 | Two single or one dual hydraulically operated rams | | |
| 6a | Drilling spool with 2" min. kill line and 3" min choke line outlets | | |
| | —— or —— | | |
| 6b | 2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above.) | | |
| 7 | Valve Gate ☐ Plug ☐ | 3-1/8" | |
| 8 | Gate valve—power operated | 3-1/8" | |
| 9 | Line to choke manifold | | 3" |
| 10 | Valves Gate ☐ Plug ☐ | 2-1/16" | |
| 11 | Check valve | 2-1/16" | |
| 12 | Casing head | | |
| 13 | Valve Gate ☐ Plug ☐ | 1-13/16" | |
| 14 | Pressure gauge with needle valve | | |
| 15 | Kill line to rig mud pump manifold | | 2" |

| OPTIONAL | | | |
|---|---|---|---|
| 16 | Flanged valve | 1-13/16" | |

CONFIGURATION A




**CONTRACTOR'S OPTION TO FURNISH:**

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 3,000 psi, minimum.
2. Automatic accumulator (80 gallon, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers position.
4. Kelly equipped with Kelly cock.
5. Inside blowout prevventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

**MEC TO FURNISH:**

1. Bradenhead or casinghead and side valves.
2. Wear bushing, if required.

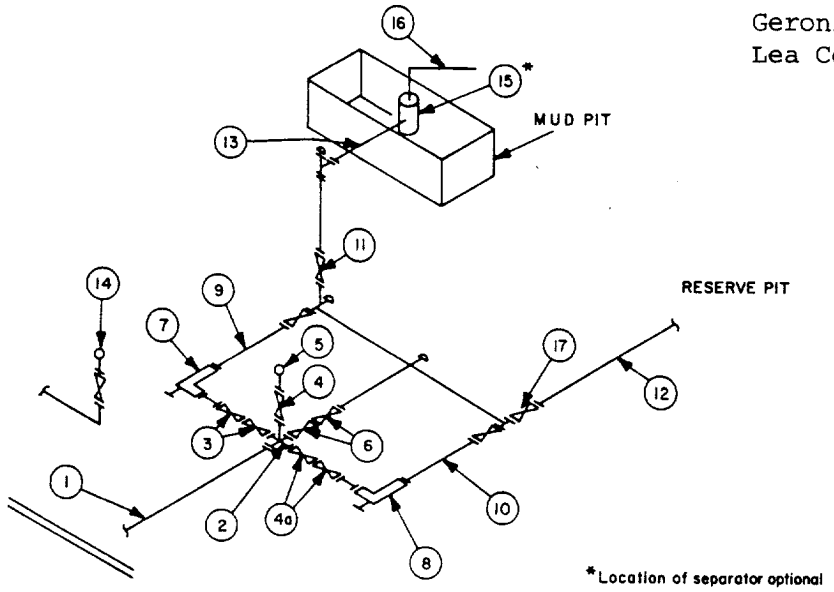
**GENERAL NOTES:**

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke. Valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position.
4. Chokes will be positioned so as not to hamper or delay changing of choke beans. Replaceable parts for adjustable choke, other bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
5. All valves to be equipped with handwheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.
7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (3000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Do not use kill line for routine fill-up operations.

**MINIMUM CHOKE MANIFOLD**
**3,000, 5,000 and 10,000 PSI Working Pressure**

**3 MWP - 5 MWP - 10 MWP**

EXHIBIT 1-A
Geronimo Federal No. 11
Lea County, New Mexico




| MINIMUM REQUIREMENTS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 3,000 MWP | | | 5,000 MWP | | | 10,000 MWP | | |
| No. | | I.D. | NOMINAL | RATING | I.D. | NOMINAL | RATING | I.D. | NOMINAL | RATING |
| 1 | Line from drilling spool | | 3" | 3,000 | | 3" | 5,000 | | 3" | 10,000 |
| 2 | Cross 3"x3"x3"x2" | | | 3,000 | | | 5,000 | | | |
| | Cross 3"x3"x3"x3" | | | | | | | | | 10,000 |
| 3 | Valves(1) Gate ☐ Plug ☐(2) | 3-1/8" | | 3,000 | 3-1/8" | | 5,000 | 3-1/8" | | 10,000 |
| 4 | Valve Gate ☐ Plug ☐(2) | 1-13/16" | | 3,000 | 1-13/16" | | 5,000 | 1-13/16" | | 10,000 |
| 4a | Valves(1) | 2-1/16" | | 3,000 | 2-1/16" | | 5,000 | 3-1/8" | | 10,000 |
| 5 | Pressure Gauge | | | 3,000 | | | 5,000 | | | 10,000 |
| 6 | Valves Gate ☐ Plug ☐(2) | 3-1/8" | | 3,000 | 3-1/8" | | 5,000 | 3-1/8" | | 10,000 |
| 7 | Adjustable Choke(3) | 2" | | 3,000 | 2" | | 5,000 | 2" | | 10,000 |
| 8 | Adjustable Choke | 1" | | 3,000 | 1" | | 5,000 | 2" | | 10,000 |
| 9 | Line | | 3" | 3,000 | | 3" | 5,000 | | 3" | 10,000 |
| 10 | Line | | 2" | 3,000 | | 2" | 5,000 | | 3" | 10,000 |
| 11 | Valves Gate ☐ Plug ☐(2) | 3-1/8" | | 3,000 | 3-1/8" | | 5,000 | 3-1/8" | | 10,000 |
| 12 | Lines | | 3" | 1,000 | | 3" | 1,000 | | 3" | 2,000 |
| 13 | Lines | | 3" | 1,000 | | 3" | 1,000 | | 3" | 2,000 |
| 14 | Remote reading compound standpipe pressure gauge | | | 3,000 | | | 5,000 | | | 10,000 |
| 15 | Gas Separator | | 2'x5' | | | 2'x5' | | | 2'x5' | |
| 16 | Line | | 4" | 1,000 | | 4" | 1,000 | | 4" | 2,000 |
| 17 | Valves Gate ☐ Plug ☐(2) | 3-1/8" | | 3,000 | 3-1/8" | | 5,000 | 3-1/8" | | 10,000 |

*(1) Only one required in Class 3M.*

*(2) Gate valves only shall be used for Class 10M.*

*(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.*

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

1. All connections in choke manifold **shall** be welded, studded, flanged or Cameron clamp of comparable rating.
2. All flanges **shall** be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
3. All lines **shall** be securely anchored.
4. Chokes **shall** be equipped with tungsten carbide seats and needles, and replacements **shall** be available.
5. Choke manifold pressure and standpipe pressure gauges **shall** be available at the choke manifold to assist in regulating chokes. As an alternate with automatic chokes, a choke manifold pressure gauge **shall** be located on the rig floor in conjunction with the standpipe pressure gauge.
6. Line from drilling spool to choke manifold should be as straight as possible. Lines downstream from chokes **shall** make turns by large bends or 90° bends using bull plugged tees.
7. Discharge lines from chokes, choke bypass and from top of gas separator should vent as far as practical from the well.

**ATTACHMENT TO EXHIBIT #1**
**NOTES REGARDING THE BLOWOUT PREVENTERS**
**GERONIMO FEDERAL NO. 11**
**LEA COUNTY, NEW MEXICO**

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. Blowout preventer and all fittings must be in good condition, 3000 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 3000 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. Blowout preventer control to be located as close to driller's position as feasible.

11. Blowout 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.

3SURF11.FED

Exhibit #7
Geronimo Federal No. 11
Lea County, New Mexico

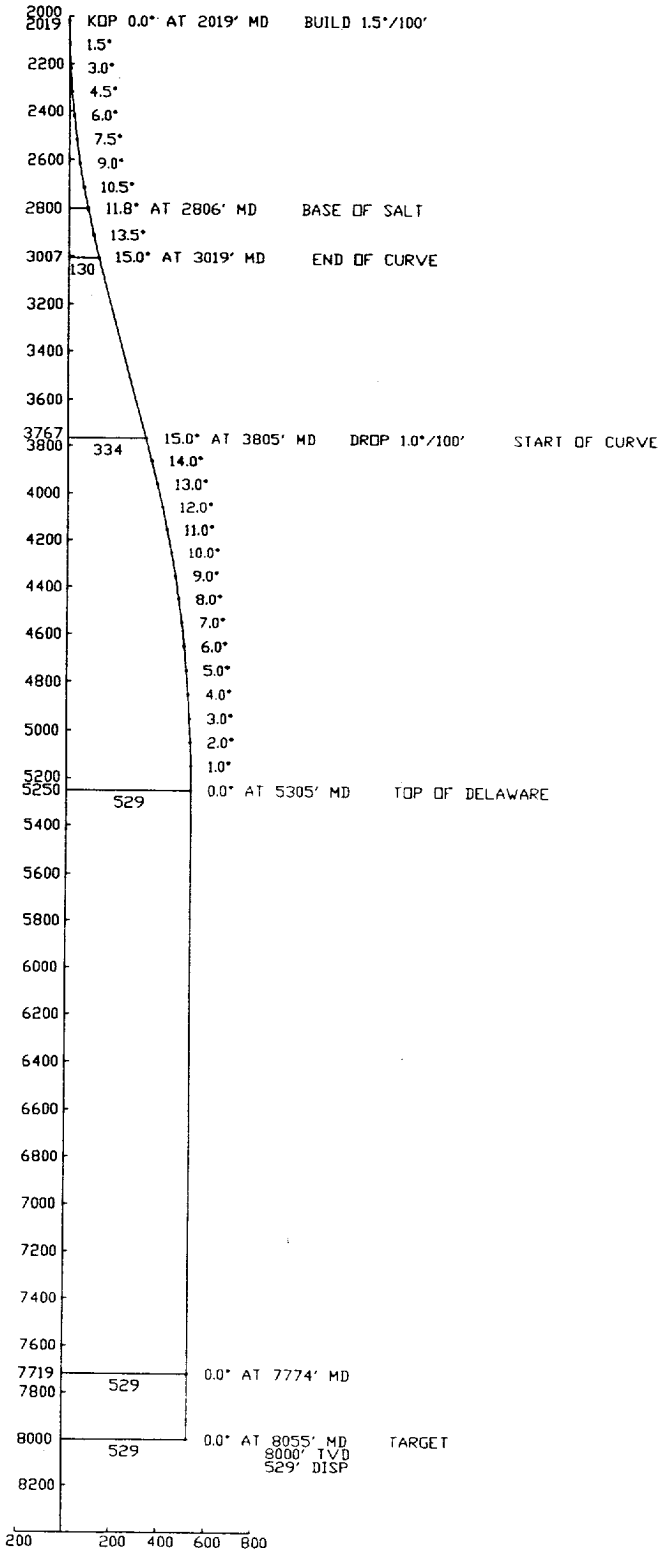
File: mitchene.dat Tue Dec 22 1992

# MITCHELL ENERGY
# GERONIMO FED. # 11
# SEC. 31, T19S, R33E
# LEA COUNTY, NEW MEXICO

DIG

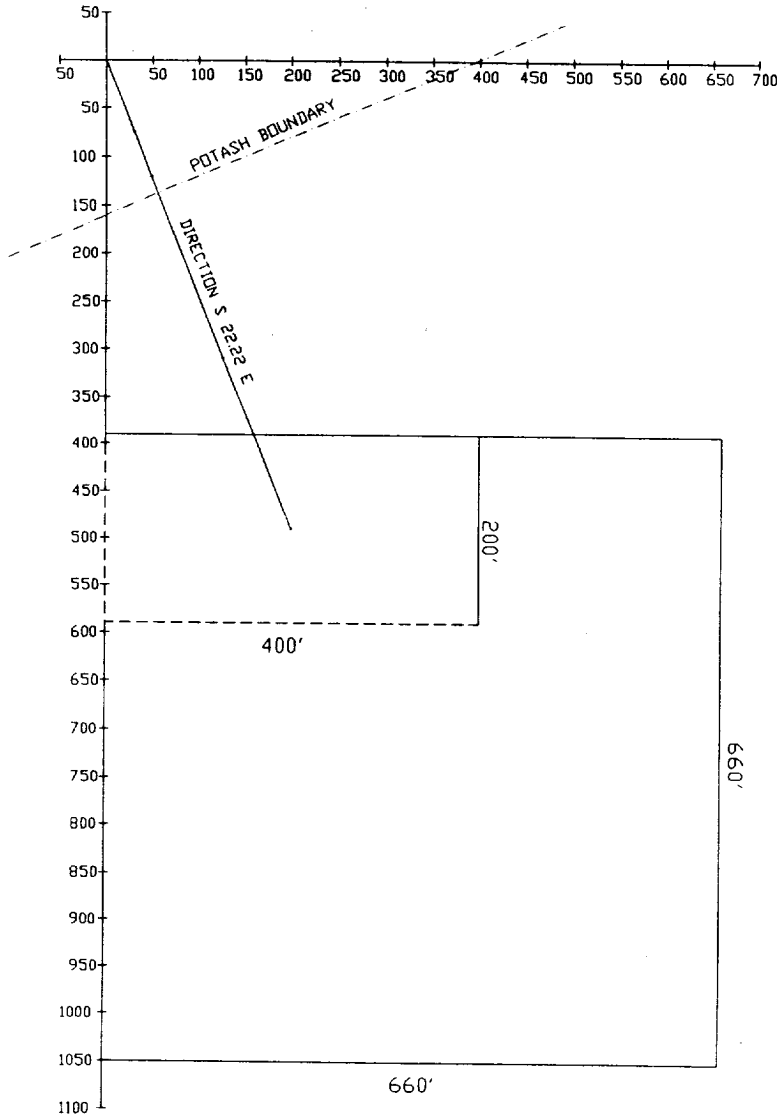
## VERTICAL SECTION

SCALE: 200 FEET/DIVISION
REFERENCE: WELL HEAD




## HORIZONTAL PLAN

SCALE: 50 FEET/DIVISION
REFERENCE: WELL HEAD




Bottom Hole Location
MD: 8055.27 Feet
Incl: 0.00 Deg.
Dir: N 0.00 E
TVD: 8000.00 Feet
N/S: 489.72 Feet S from Well Head
E/W: 200.05 Feet E from Well Head
Closure: 529.00 Feet @ S 22.22 E from Well Head
VS: 529.00 Feet @ S 22.22 E from Well Head

Proposed

Exhibit #8
Geronimo Federal No. 11
Lea County, New Mexico

MITCHELL ENERGY
GERONIMO FED. # 11
SEC. 31, T19S, R33E
LEA COUNTY, NEW MEXICO

Calculated by Minimum Curvature Method
Vert Sect Plane: S 22.22 E

- DIRECTIONAL WELLPLAN -

| MEASURED DEPTH (FT) | INCL ANGLE (DEG) | D R I F T DIRECTION (DEG) | COURSE LENGTH (FT) | TRUE VERTICAL DEPTH | T O T A L RECTANGULAR COORDINATES (FT) | | VERTICAL SECTION (FT) | C L O S U R E DISTANCE (FT) | DIRECTION (DEG) | BUILD RATE (DG/100') | DOGLEG SEVERITY (DG/100') |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2018.56 | 0.00 | N 0.00 E | 0.00 | 2018.56 | 0.00 N | 0.00 E | 0.00 | 0.00 | N 0.00 E | 0.00 | 0.00 |
| 2118.56 | 1.50 | S 22.22 E | 100.00 | 2118.55 | 1.21 S | 0.49 E | 1.31 | 1.31 | S 22.22 E | 1.50 | 1.50 |
| 2218.56 | 3.00 | S 22.22 E | 100.00 | 2218.47 | 4.85 S | 1.98 E | 5.23 | 5.23 | S 22.22 E | 1.50 | 1.50 |
| 2318.56 | 4.50 | S 22.22 E | 100.00 | 2318.25 | 10.90 S | 4.45 E | 11.77 | 11.77 | S 22.22 E | 1.50 | 1.50 |
| 2418.56 | 6.00 | S 22.22 E | 100.00 | 2417.83 | 19.37 S | 7.91 E | 20.92 | 20.92 | S 22.22 E | 1.50 | 1.50 |
| 2518.56 | 7.50 | S 22.22 E | 100.00 | 2517.13 | 30.25 S | 12.36 E | 32.68 | 32.68 | S 22.22 E | 1.50 | 1.50 |
| 2618.56 | 9.00 | S 22.22 E | 100.00 | 2616.10 | 43.53 S | 17.78 E | 47.03 | 47.03 | S 22.22 E | 1.50 | 1.50 |
| 2718.56 | 10.50 | S 22.22 E | 100.00 | 2714.65 | 59.21 S | 24.19 E | 63.96 | 63.96 | S 22.22 E | 1.50 | 1.50 |
| BASE OF SALT | | | | | | | | | | | |
| 2805.56 | 11.80 | S 22.22 E | 87.00 | 2800.00 | 74.79 S | 30.55 E | 80.79 | 80.79 | S 22.22 E | 1.50 | 1.50 |
| 2818.56 | 12.00 | S 22.22 E | 13.00 | 2812.72 | 77.27 S | 31.57 E | 83.47 | 83.47 | S 22.22 E | 1.50 | 1.50 |
| 2918.56 | 13.50 | S 22.22 E | 100.00 | 2910.26 | 97.70 S | 39.91 E | 105.54 | 105.54 | S 22.22 E | 1.50 | 1.50 |
| 3018.56 | 15.00 | S 22.22 E | 100.00 | 3007.18 | 120.49 S | 49.22 E | 130.15 | 130.15 | S 22.22 E | 1.50 | 1.50 |
| END OF CURVE | | | | | | | | | | | |
| 3018.56 | 15.00 | S 22.22 E | 0.00 | 3007.18 | 120.49 S | 49.22 E | 130.15 | 130.15 | S 22.22 E | 0.00 | 1.50 |
| 3425.24 | 15.00 | S 22.22 E | 406.68 | 3400.00 | 217.93 S | 89.02 E | 235.41 | 235.41 | S 22.22 E | 0.00 | 0.00 |
| START OF CURVE | | | | | | | | | | | |
| 3805.26 | 15.00 | S 22.22 E | 380.02 | 3767.07 | 308.98 S | 126.22 E | 333.77 | 333.77 | S 22.22 E | 0.00 | 0.00 |
| 3905.26 | 14.00 | S 22.22 E | 100.00 | 3863.88 | 332.16 S | 135.69 E | 358.81 | 358.81 | S 22.22 E | -1.00 | 1.00 |
| 4005.26 | 13.00 | S 22.22 E | 100.00 | 3961.12 | 353.77 S | 144.52 E | 382.15 | 382.15 | S 22.22 E | -1.00 | 1.00 |
| 4105.26 | 12.00 | S 22.22 E | 100.00 | 4058.75 | 373.81 S | 152.70 E | 403.79 | 403.79 | S 22.22 E | -1.00 | 1.00 |
| 4205.26 | 11.00 | S 22.22 E | 100.00 | 4156.74 | 392.26 S | 160.24 E | 423.73 | 423.73 | S 22.22 E | -1.00 | 1.00 |
| 4305.26 | 10.00 | S 22.22 E | 100.00 | 4255.06 | 409.13 S | 167.13 E | 441.95 | 441.95 | S 22.22 E | -1.00 | 1.00 |
| 4405.26 | 9.00 | S 22.22 E | 100.00 | 4353.69 | 424.41 S | 173.37 E | 458.46 | 458.46 | S 22.22 E | -1.00 | 1.00 |
| 4505.26 | 8.00 | S 22.22 E | 100.00 | 4452.59 | 438.10 S | 178.96 E | 473.24 | 473.24 | S 22.22 E | -1.00 | 1.00 |
| 4605.26 | 7.00 | S 22.22 E | 100.00 | 4551.73 | 450.18 S | 183.90 E | 486.29 | 486.29 | S 22.22 E | -1.00 | 1.00 |
| 4705.26 | 6.00 | S 22.22 E | 100.00 | 4651.09 | 460.66 S | 188.18 E | 497.61 | 497.61 | S 22.22 E | -1.00 | 1.00 |
| 4805.26 | 5.00 | S 22.22 E | 100.00 | 4750.63 | 469.53 S | 191.80 E | 507.20 | 507.20 | S 22.22 E | -1.00 | 1.00 |
| 4905.26 | 4.00 | S 22.22 E | 100.00 | 4850.32 | 476.79 S | 194.77 E | 515.04 | 515.04 | S 22.22 E | -1.00 | 1.00 |
| 5005.26 | 3.00 | S 22.22 E | 100.00 | 4950.13 | 482.45 S | 197.08 E | 521.15 | 521.15 | S 22.22 E | -1.00 | 1.00 |

Survey Ref: Well Head  Closure Ref: Well Head  Vert Sect Ref: Well Head
Tue Dec 22 1992  13:38:29  File: MITCHENE.DAT



Proposed

MITCHELL ENERGY
GERONIMO FED. # 11
SEC. 31, T19S, R33E
LEA COUNTY, NEW MEXICO

Calculated by Minimum Curvature Method
Vert Sect Plane: S 22.22 E

- DIRECTIONAL WELLPLAN -

| MEASURED DEPTH (FT) | INCL ANGLE (DEG) | D R I F T DIRECTION (DEG) | COURSE LENGTH (FT) | TRUE VERTICAL DEPTH | T O T A L RECTANGULAR COORDINATES (FT) | VERTICAL SECTION (FT) | C L O S U R E DISTANCE (FT) | C L O S U R E DIRECTION (DEG) | BUILD RATE (DG/100') | DOGLEG SEVERITY (DG/100') |
|---|---|---|---|---|---|---|---|---|---|---|
| 5105.26 | 2.00 | S 22.22 E | 100.00 | 5050.03 | 486.48 S 198.73 E | 525.51 | 525.51 | S 22.22 E | -1.00 | 1.00 |
| 5205.26 | 1.00 | S 22.22 E | 100.00 | 5150.00 | 488.91 S 199.72 E | 528.13 | 528.13 | S 22.22 E | -1.00 | 1.00 |
| 5305.26 | 0.00 | N 0.00 E | 100.00 | 5249.99 | 489.72 S 200.05 E | 529.00 | 529.00 | S 22.22 E | -1.00 | 1.00 |
| TOP OF DELAWARE | | | | | | | | | | |
| 5305.27 | 0.00 | N 0.00 E | 0.01 | 5250.00 | 489.72 S 200.05 E | 529.00 | 529.00 | S 22.22 E | -1.00 | 1.00 |
| 7774.13 | 0.00 | N 0.00 E | 2468.86 | 7718.86 | 489.72 S 200.05 E | 529.00 | 529.00 | S 22.22 E | 0.00 | 0.00 |
| TARGET | | | | | | | | | | |
| 8055.27 | 0.00 | N 0.00 E | 281.14 | 8000.00 | 489.72 S 200.05 E | 529.00 | 529.00 | S 22.22 E | 0.00 | 0.00 |

Survey Ref: Well Head  Closure Ref: Well Head  Vert Sect Ref: Well Head
Tue Dec 22 1992  13:38:29  File: MITCHENE.DAT



Proposed