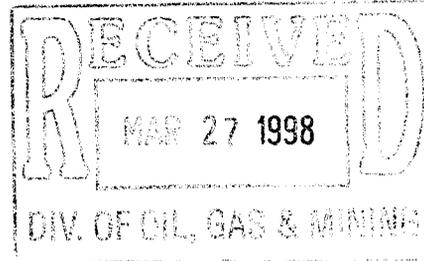


MILLER ENERGY, INC.

March 26, 1998

Mike Hebertson
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801



RE: Miller Energy, Inc.
Horse Canyon Federal 1-3 & 1-4 proposed locations
San Juan Co., Utah

Dear Mike,

Enclosed is a lease map and survey plats for the two locations referenced above. As always, we are in a rush to gain approval on these.

Miller Energy et al, has a farmout letter agreement from Flying J Oil & Gas on the proposed 1-4 location, whereby we would earn the drillsite spacing unit only, with a 180-day option to drill additional wells on their lease. A formal agreement is currently being drafted. As you can see from the map, there is common ownership offsetting the 1-3 location for lease UTU76283.

An exception to the location and siting for both of these wells is requested. 3D seismic is being utilized to locate the optimum position to drill and thus has dictated each of these locations.

I will coordinate with the Moab and Monticello BLM offices to insure timely notification of their approvals to all parties. Let me know if you need anything more at this time.

Sincerely,

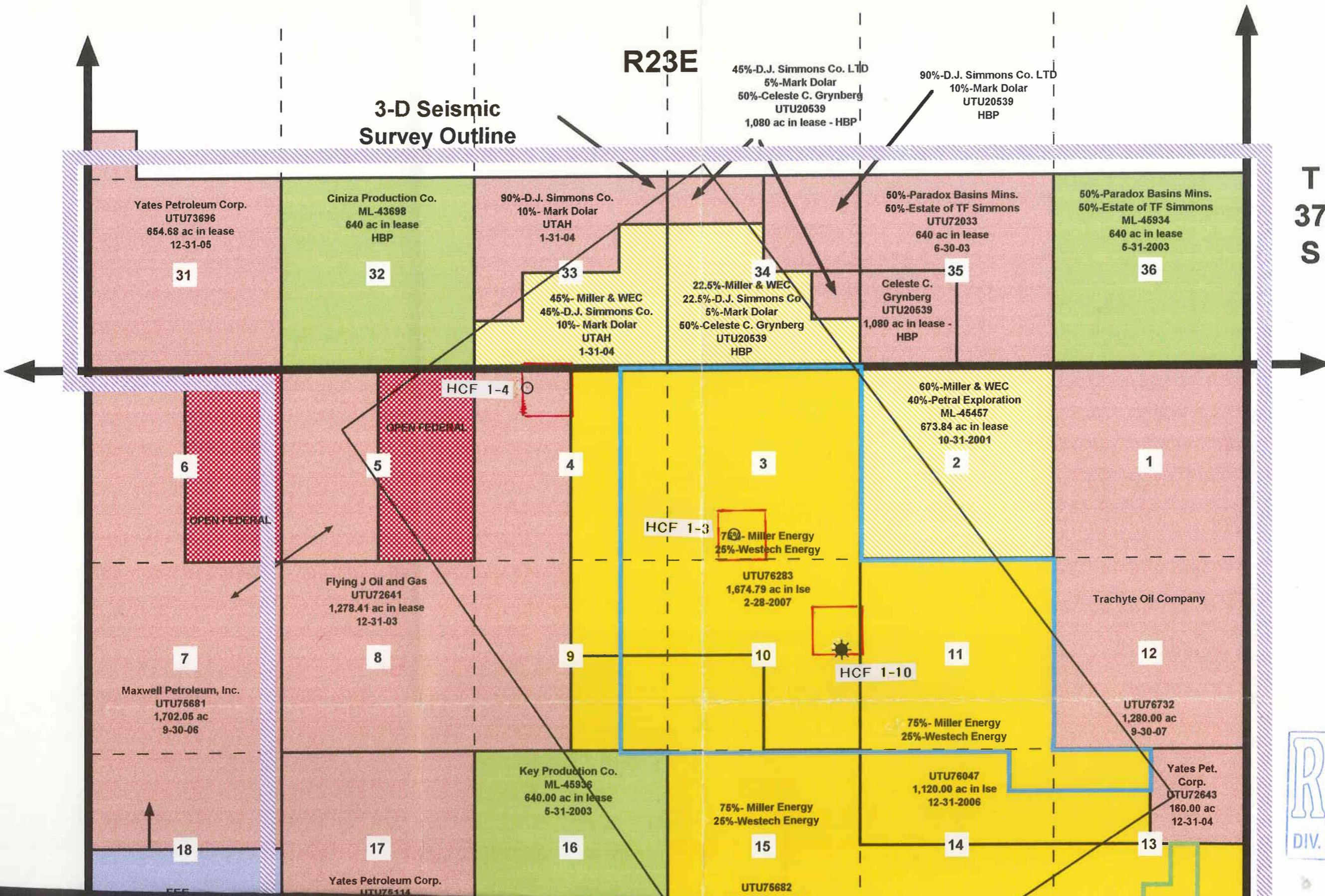
A handwritten signature in black ink, appearing to read "D. Lehman".

Donald D. Lehman
Exploration Manager

R23E

3-D Seismic Survey Outline

T
37
S



Yates Petroleum Corp.
UTU73696
654.68 ac in lease
12-31-05

31

Ciniza Production Co.
ML-43698
640 ac in lease
HBP

32

90%-D.J. Simmons Co.
10%- Mark Dolar
UTAH
1-31-04

33

45%- Miller & WEC
45%-D.J. Simmons Co.
10%- Mark Dolar
UTAH
1-31-04

45%-D.J. Simmons Co. LTD
5%-Mark Dolar
50%-Celeste C. Grynberg
UTU20539
1,080 ac in lease - HBP

34

22.5%-Miller & WEC
22.5%-D.J. Simmons Co.
5%-Mark Dolar
50%-Celeste C. Grynberg
UTU20539
HBP

90%-D.J. Simmons Co. LTD
10%-Mark Dolar
UTU20539
HBP

35

50%-Paradox Basins Mins.
50%-Estate of TF Simmons
UTU72033
640 ac in lease
6-30-03

Celeste C.
Grynberg
UTU20539
1,080 ac in lease -
HBP

50%-Paradox Basins Mins.
50%-Estate of TF Simmons
ML-45934
640 ac in lease
6-31-2003

36

6

OPEN FEDERAL

5

HCF 1-4
OPEN FEDERAL

4

HCF 1-3

3

75%- Miller Energy
25%-Westech Energy

2

60%-Miller & WEC
40%-Petral Exploration
ML-45457
673.84 ac in lease
10-31-2001

1

7

Maxwell Petroleum, Inc.
UTU75681
1,702.05 ac
9-30-06

8

Flying J Oil and Gas
UTU72641
1,278.41 ac in lease
12-31-03

9

10

UTU76283
1,674.79 ac in lse
2-28-2007

11

HCF 1-10

75%- Miller Energy
25%-Westech Energy

12

Trachyte Oil Company

UTU76732
1,280.00 ac
9-30-07

18

17

Yates Petroleum Corp.
UTU75114

16

Key Production Co.
ML-45936
640.00 ac in lease
6-31-2003

15

75%- Miller Energy
25%-Westech Energy

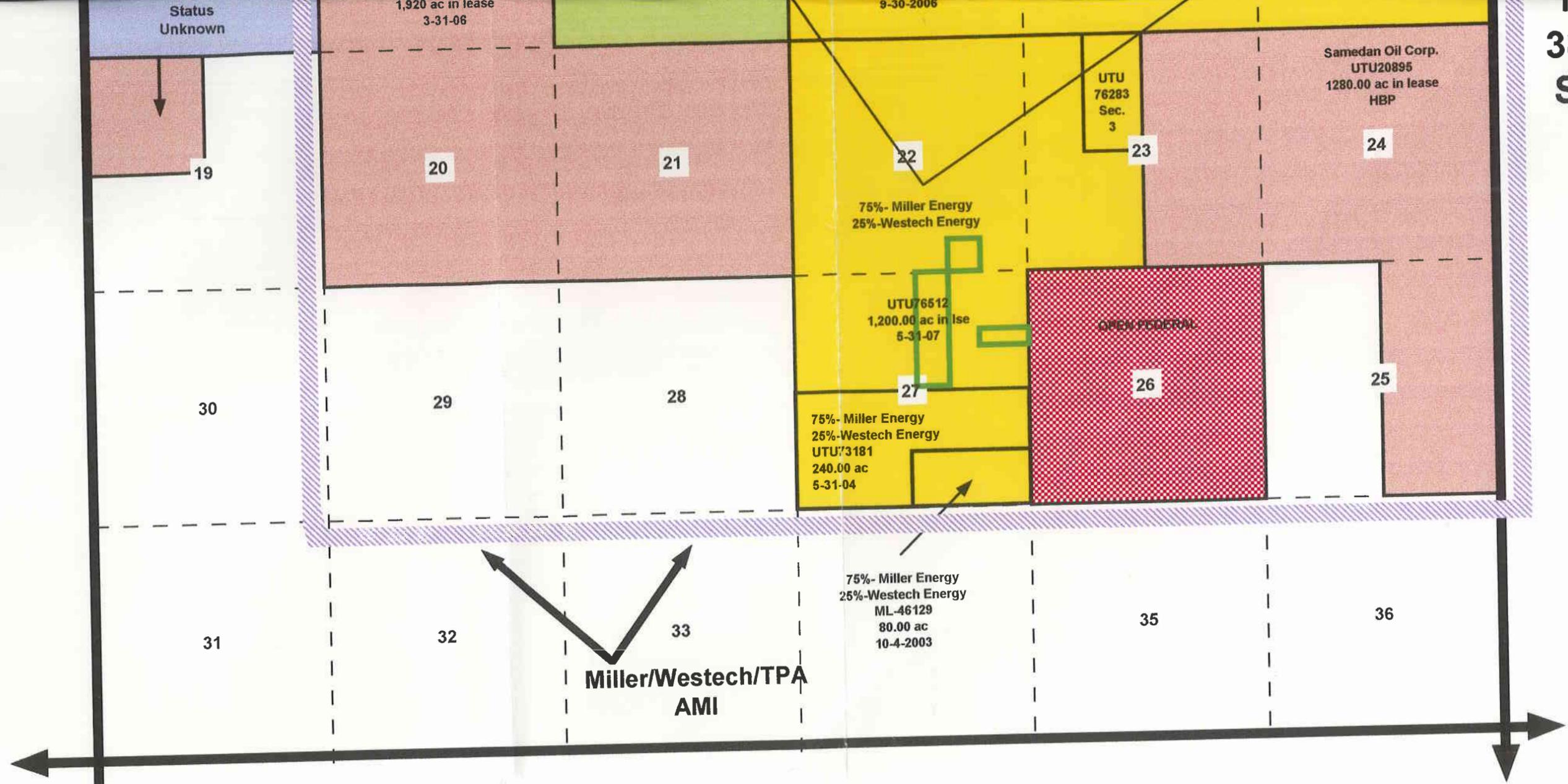
14

UTU76047
1,120.00 ac in lse
12-31-2006

13

Yates Pet.
Corp.
UTU72643
180.00 ac
12-31-04

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MAR 27 1998
DIV. OF OIL, GAS & MINING



-  -Miller/Westech (Leased Federal)
-  -Miller/Westech (EARNED SEISMIC)
-  -Leased Federal
-  -Leased State
-  -Fee
-  -Open Federal for Comp Sale

FEDERAL LEASE STIPULATIONS:

-  Crucial Deer Winter Range NSO Dec 15 thru Apr 30
-  Unconditional NSO
-  40 Acre Drilling Units

MILLER ENGERY, INC.

**Blanding Area
Lease Ownership
San Juan County, Utah**

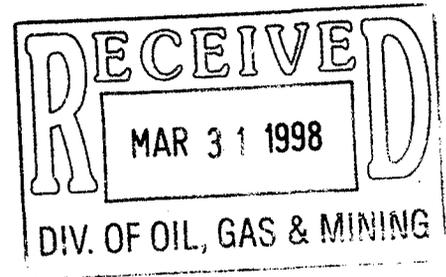
Scale 2" : 1 mile

Prepared by J. Sullivan 11-19-97

MILLER ENERGY, INC.

March 30, 1998

Mike Hebertson
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801



RE: Miller Energy, Inc.
Horse Canyon Federal 1-3 & 1-4 APD's
San Juan Co., Utah

Dear Mike,

Enclosed please find copies of the APD's for the wells referenced above.

Sincerely,

A handwritten signature in cursive script, appearing to read "D. Lehman".

Donald D. Lehman
Exploration Manager

cc: Mike Miller

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

2. NAME OF OPERATOR
 Miller Energy Inc

3. ADDRESS AND TELEPHONE NO.
 7900 Moorsbridge Rd, Kalamazoo, MI 49002 (616) 324-3390

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
 At surface 210
 690' FSL 1720' FWL Sec.3 T38S R 23E
 At proposed prod. zone 624

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
 11 Miles Southeast of Blanding, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any) 690'

16. NO. OF ACRES IN LEASE 1674.79

17. NO. OF ACRES ASSIGNED TO THIS WELL 160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 4000'

19. PROPOSED DEPTH 6500'

20. ROTARY OR CABLE TOOLS Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.) 5595' GL 5610' KB

22. APPROX. DATE WORK WILL START* March 25, 1998

RECEIVED
 MAR 31 1998
 DIV. OF OIL, GAS & MINING

5. LEASE DESIGNATION AND SERIAL NO.
 UTU 76283

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME, WELL NO.
 Horse Canyon Federal 1-3

9. AP WELL NO.

10. FIELD AND POOL, OR WILDCAT
 Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
 Sec.3, T38S, R23E

12. COUNTY OR PARISH San Juan **13. STATE** Utah

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" J55	48#	250'	To surface 300sks class "b"
12-1/4"	9-5/8" J55	36#	2250'	To surface 450 sks class "b"
7-7/8"	5-1/2" J55	15.5#	6500'	From TD to 500' above top most producing zone w/± 400 sks class "h"

See attached Drilling and Surface Use program.

Bond coverage pursuant to CFR 3104 for lease activities is being provided for by Miller Energy Inc. under Federal Statewide Bond # UT1092.

Miller Energy Inc. will be responsible for compliance will all of the lease conditions for that portion of the lease associated with this application.

If necessary, a Utah Spacing Exception will be applied for separately.

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 Robert R. Griffioen TITLE Agent for Miller Energy DATE March 5, 1998

(This space for Federal or State office use)
 PERMIT NO. 43-037-31798 APPROVAL DATE _____
 Federal Approval of this Action is Necessary

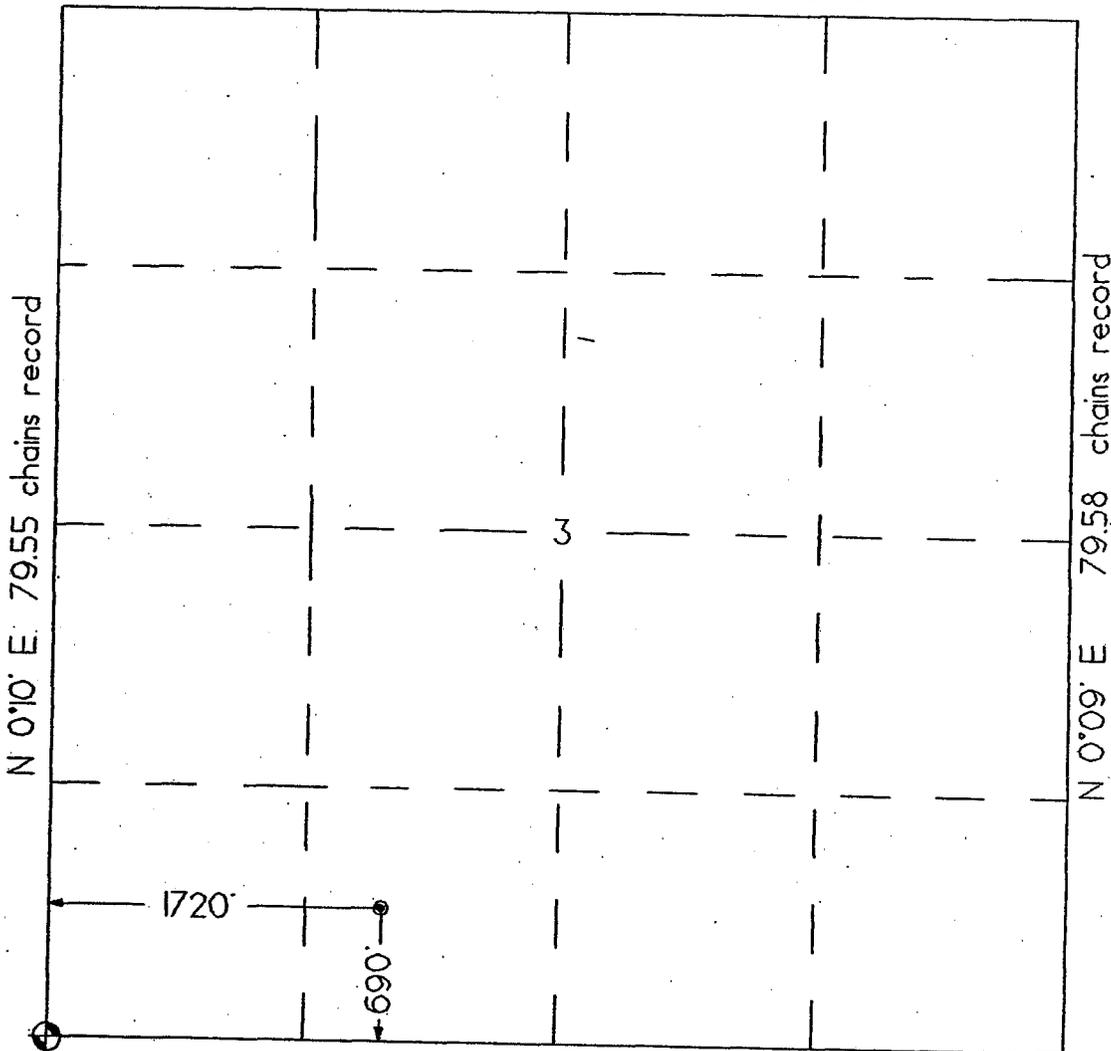
Application approval does not warrant Federal approval of the legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY: Action is Necessary
 APPROVED BY Bradley G. Hill TITLE RECLAMATION SPECIALIST III DATE 4/9/98

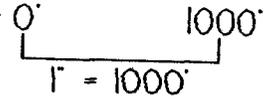
*See Instructions On Reverse Side

Well Location Plat

S 89°48' W 80 chains record



NORTH



⊕ brass cap

□ stone

Well Location Description

MILLER ENERGY, INC.
 Horse Canyon Federal I-3
 690' FSL & 1720' FWL
 Section 3, T.38 S., R.23 E., SLM
 San Juan County, UT
 5595' grd. el. (from GPS)
 state plane : 312.908 N & 2.615.202 E (NAD 27)



27 February 1998

Gerald G. Huddleston

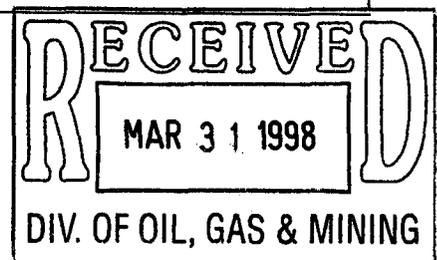
Gerald G. Huddleston, LS

The above is true and correct to my knowledge and belief.

HUDDLESTON LAND SURVEYING - BOX KK - CORTEZ, CO - (970) 565 -3330

NOTICE OF STAKING

<p>NOTICE OF STAKING (Not to be used in place of Application for Permit to Drill, Form 3160-3)</p>	<p>6. Lease Number: UTU 76283</p>	
<p>1. Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> (Specify)</p>	<p>7. If Indian, Allottee or Tribe Name: n/a</p>	
<p>2. Name of Operator: Miller Energy Inc.</p>	<p>8. Unit Agreement Name:</p>	
<p>3. Name of Specific Contact Person(s): Don Lehman, Miller Energy (616) 324-3390 Robert Griffiee, Twin Star (505) 326-3753 (agent)</p>	<p>9. Farm or Lease Name: Horse Canyon Federal</p>	
<p>4. Address & Phone No. of Operator or Agent: Operator: 7900 Moorsbridge Rd., Kalamazoo MI 49024 Agent: 3005 Northridge Dr., Suite L, Farmington NM 87401</p>	<p>10. Well No. 1-3</p>	
	<p>11. Field Name Development</p>	
<p>5. Surface Location of Well: 710' FSL x 1750' FWL SE/4 SW/4 Section 3 T38S R23E well to be staked based on seismic and topography</p>	<p>12. Sec., T., R., M., or Blk. Section 3, T38S, R23E</p>	
	<p>13. County San Juan</p>	<p>14. State Utah</p>
<p>15. Formation Objective(s) Ismay, Desert Creek, Akah</p>	<p>16. Estimated Total Depth 6500'</p>	
<p>17. Additional Information (include surface owner's name address and telephone number if known). Distance in miles and direction from nearest town or post office.</p> <p>Surface Owner: Bureau of Land Management</p> <p>Location is approximately 10 miles southeast of Blanding Utah</p> <p>See attached topographic maps</p> <p>18. Signed: <u>Robert R. Griffiee</u> Title: <u>Agent</u> Date: <u>February 24, 1998</u></p>		



Miller Energy, Inc.
Horse Canyon Federal 1-3
690' FSL, 1720' FWL (SE/4 SW/4)
Sec. 3, T38S R23E
San Juan County, Utah
Fed. Lse. #UTU-76283

DRILLING PROGRAM

All operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100), Onshore Oil & Gas Orders, the approved plan of operations, and the conditions of approval. The operator is fully responsible for the actions of its subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

BLM Notifications

Notify Jeff Brown of the Monticello BLM Field Office in Monticello, Utah, at (801) 587-1525, or at home (801) 587-2046 for the following:

2 days prior to commencement of dirt work, construction and reclamation;

1 day prior to spudding;

50 feet prior to reaching each casing setting depth;

3 hours prior to testing BOPE

If the person at the above number cannot be reached, notify the Moab BLM Field Office at (801) 259-6111. If unsuccessful, contact one of the people listed below.

Well abandonment operations require 24 hours advance notice and prior approval. In the case of newly drilled dry holes, verbal approval can be obtained by calling the Moab Field Office at (801) 259-6111. If approval is needed after work hours, you may contact the following:

Gary Torres, Petroleum Engineer Office: (801) 587-2141
Home: (801) 587-2705

Eric Jones, Petroleum Engineer Office: (801) 259-2117
Home: (801) 259-2214

SURFACE ELEVATION – 5,595' GL, 5,610' KB

SURFACE FORMATION – Morrison – Fresh water intervals possible to 250'.

ESTIMATED FORMATION TOPS (Water, oil, gas, and/or other mineral bearing formations).

Morrison	Surface	
Entrada	1,310'	Sandstone, shales & siltstones, some water bearing
Navajo	1,980'	Sandstone, shales & siltstones, some water bearing
Chinle	2,510'	Shales & siltstones
Cutler	3,380'	Sandstone, shales & siltstones, some water bearing
Honaker Trail	4,590'	Sandstone, shales & siltstones, some water bearing
Upper Ismay	6,090'	Anhydrite and limestones
Hoverweep Shale	6,210'	Shale

DRILLING PROGRAM

Lower Ismay	6,240'	Dolomites, limestones, and anhydrite, some are water, oil, and/or gas bearing
Gothic Shale	6,295'	Shale
Desert Creek	6,330'	Dolomites, limestones, and anhydrite, some are water, oil, and/or gas bearing
Chimney Rock Shale	6,410'	Shale
Akah	6,430'	Limestones and anhydrites, some are water, oil, and/or gas bearing
TOTAL DEPTH	6,500'	

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and will be cased and cemented. When possible, water flow rates will be measured and samples taken and analyzed with the results being submitted to BLM. All oil and gas shows will be tested to determine commercial potential.

CASING PROGRAM

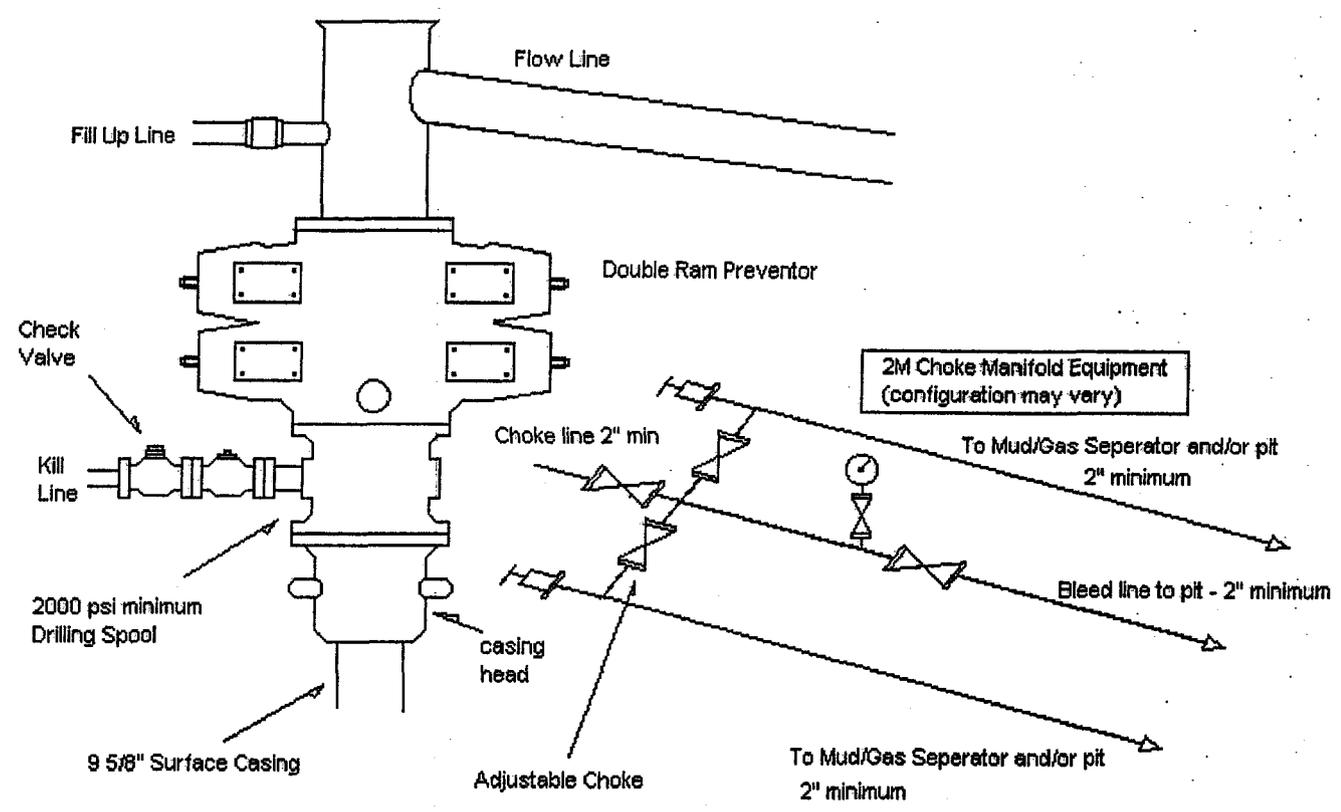
Depth	Hole Dia.	Csg. Dia.	Casing Wt. & Grd	Cement (See below)
0 - 250' (Conductor)	17 1/2"	13 3/8"	J-55 48# STC New	To surface (±300 sks "B")
0 - 2,535' (Surface Csg)	12 1/4"	9 5/8"	J-55 36# LTC New	To surface (±450 sks "B")
0 - TD (Prod. Csg)	7 7/8"	5 1/2"	J-55 15.5# LTC New	TD to 500' above prod Zone (±400 sks "H")

NOTE: Actual Production Casing cement volumes to be based on geological top of the highest potentially productive zone and on actual hole volumes calculated from electric log caliper.

PRESSURE CONTROL (See attached BOPE schematic)

BOP'S and choke manifold will be installed and pressure tested before drilling out from under the surface casing (subsequent pressure testing will be performed whenever pressure seals are broken) and then will be checked daily as to mechanical operating condition. BOP's will be pressure tested at least once every 30 days. Ram type preventors and related pressure control equipment will be pressure tested to rated working pressure of the stack assembly if a test plug is used. If a plug is not used, the stack assembly will be tested to the rated working pressure of the stack assembly or to 70% of the minimum internal yield of the casing, whichever is less. Annular type preventors will be pressure tested to 50% of their rated working pressure. All casing strings will be pressure tested to 0.22 psi/ft. or 1500 psi, whichever is greater, not to exceed 70% of internal yield.

2000 psi Blow-out Preventor Diagram



Annular preventor may be substituted for Double Gate preventor

MUD PROGRAM

0' - 250'	Spud mud
250' - 2,535'	Fresh water/gel/lime mud - water flows possible. Weight to be maintained with production brine water or barite if necessary
2,535' - TD	Low Solids, gel, PHPA Mud Weight 8.4 to 9.3 ppg. Vis 28 - 50 sec W.L. 15cc or less

Sufficient mud materials to maintain mud properties, control lost circulation, and to contain expected formation pressure will be available at the well site. (Note: The possibility of 9.3 ppg mud weight is based on typical mud properties, not on anticipated formation pressure.)

AUXILIARY EQUIPMENT

- A) Upper kelly cock
- B) Inside BOP or stab-in valve (available on rig floor)
- C) Mud system volume will be monitored visually.

LOGGING, CORING, TESTING PROGRAM

- A) Logging: DLL-SFL-GR - TD to base of surface casing
CNL-FDC-GR - TD to base of surface casing
- B) Coring: None
- C) Testing: Two possible DST's - Ismay Fm. Drill Stem tests may be run based on mud log shows and penetration rates.

ABNORMAL CONDITIONS

- A) Pressure: No abnormal conditions are anticipated. Cutler/Ismay/Desert Creek pressure gradient = 0.40 psi/ft (estimated)
- B) Temperatures: No abnormal conditions are anticipated
- C) H2S: None anticipated
- D) Estimated bottomhole pressure: 2,100 psi

ANTICIPATED START DATE

March 25, 1998

COMPLETION

The location pad will be of sufficient size to accommodate all completion activities and equipment. A string of 2-7/8" 6.5# j-55 tubing will be run for a flowing/pumping string. A Sundry Notice will be submitted with a revised completion program if warranted.

SURFACE CASING, BOP & CENTRALIZER DESIGN

Miller Energy, Inc.
Horse Canyon Federal 1-3
690' FSL, 1720' FWL, Sec. 3, T38S R23E
San Juan County, Utah
Fed. Lse. #UTU - 76283

Proposed Total Depth - 6,500'
Proposed Depth - Surface Casing - 2,535'
Estimated Pressure Gradient - 0.43 psi/ft.
Bottom Hole Pressure at 6,500' (T.D.)
 $0.43 \text{ psi/ft} \times 6,500' = 2,795 \text{ psi}$

Hydrostatic head - gas/oil cut mud - 0.22 psi/ft
 $0.22 \text{ psi/ft} \times 6,500' = 1,430 \text{ psi}$

Maximum Design Surface Pressure

Bottom Hole Pressure - hydrostatic head
 $(0.43 \text{ psi/ft} \times 6,500') - (0.22 \text{ psi/ft} \times 6,500')$
 $2,795 \text{ psi} - 1,430 \text{ psi} = 1,365 \text{ psi}$

Casing Strengths - 9 5/8" J-55 STC

<u>Grd & Wt.</u>	<u>Tension (lbs)</u>	<u>Burst (psi)</u>	<u>Collapse (psi)</u>
J-55 36#	394,400	3,520	2,020

Safety Factors

S.F., Tension (in air) = $394400 / (2535 \times 36) = 4.32$

S.F., Burst = $3520 / 1365 = 2.58$

S.F., Collapse = $2020 / (.052 \times 2535 \times 9.3) = 1.65$

- Use 2,535' 9 5/8" J-55 36# STC
- Use 2,000 psi, wp BOP stack

Centralizers

5 centralizers total. One placed in the middle of the bottom joint, one placed every other collar thereafter for three additional centralizers, and one near the surface at appx 160'.

REQUIRED APPROVALS, REPORTS AND NOTIFICATION

Required verbal notification are summarized in Table 1 (enclosed).

Building Location – Contact the BLM Petroleum Engineering technician at the Monticello BLM Field Office at least 48 hours prior to commencing construction of location.

Spud – the spud date will be reported to BLM 24 hours prior to spudding. Written notification in the form of a Sundry Notice (Form 3160-5) will be submitted to the Moab BLM Field Office within 24 hours after spudding, regardless of whether spud was made with a dry hole digger or a standard drilling rig.

Daily Drilling Reports – Daily drilling reports shall detail the progress and status of the well and shall be submitted to the Moab BLM Field Office on a weekly basis.

Monthly Reports of Operations – In accordance with Onshore Oil and Gas Order No. 1, this well shall be reported on Minerals Management Service (MMS) Form 3160, "Monthly Report of Operations," starting the month in which operations commence and continuing each month until the well is physically plugged and abandoned. This report will be filed directly with MMS.

Sundry Notices – there will be no deviation from the proposed drilling and/or workover program without prior approval. "Sundry Notices and Reports on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3162.3-2. Safe drilling and operating practices must be observed.

Drilling Suspensions – Operations authorized by this permit shall not be suspended for more than 30 days without prior approval of the Moab BLM Field Office. All conditions of this approval shall be applicable during any operations conducted with a replacement rig.

Undesirable Events – Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be immediately reported to the BLM in accordance with requirements of NTL-3A.

Cultural Resources – If cultural resources are discovered during construction, work that might disturb the resources is to stop, and the BLM is to be notified.

First Production – Should the well be successfully completed for production, the Moab BLM Field Office will be notified when the well is placed in producing status. Such notification may be made by phone, but must be followed by a sundry notice or letter not later than five (5) business days following the date on which the well is placed into production.

A first production conference will be scheduled as soon as the productivity of the well is apparent. This conference should be coordinated through the Monticello BLM Office. The Monticello BLM Field Office shall be notified prior to the first sale.

Well Completion Report: - Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) will be submitted to the Moab BLM Field Office not later than thirty (30) days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs, core descriptions, core analyses, well test data, geologic summaries, sample description, and all other surveys or data obtained and compiled during the drilling, workover and/or completion operations, will be filed with Form 3160-4. When requested, samples (cutting and/or samples) will be submitted to the Moab BLM Field Office.

Venting/Flaring of Gas – Gas produced from this well may not be vented/flared beyond an initial, authorized tested period of 30 days or 50 MMcf, whichever occurs first, without the prior, written approval of the BLM. Should gas be vented or flared without approval beyond the authorized test period, the well may be ordered shut-in until the gas can be captured or approval to continue the venting/flaring as uneconomic is granted. In such case, compensation to the lessor shall be required for that portion of the gas that is vented/flared without approval and which is determined to have been avoidably lost.

Produced Water – Produced waste water may be confined to an unlined pit for a period not to exceed 90 days after initial production. During the 90 day period, an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted to the Moab Field Office for approval pursuant to Onshore Oil and Gas Order No. 7.

Off-Lease Measurement, Storage, Commingling – Prior approval must be obtained from the Moab BLM Field Office for off-lease storage and/or commingling (either down-hole or at the surface)

Plugging and Abandonment – If the well is completed as a dry hole, plugging instructions must be obtained from the Moab BLM Field Office prior to initiating plugging operations.

A “Subsequent Report of Abandonment” (Form 3160-5) shall be filed with the Moab BLM Field Office within thirty (30) days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restorations. Upon completion of approved plugging, a regulation marker will be erected in accordance with 43 CFR 3162.6. Final abandonment will not be approved until the surface reclamation work required by the approved APD or approval abandonment notice has been completed to the satisfaction of the BLM, or the appropriate surface managing agency.

TABLE 1 - BLM NOTIFICATIONS

Notify Jeff Brown of the Monticello BLM Field Office in Monticello, Utah, at (801) 587-1525, or at home (801) 587-2046 for the following:

2 days prior to commencement of dirt work, construction and reclamation;

1 day prior to spudding

50 feet prior to reaching each casing setting depth;

3 hours prior to testing BOPE

If the person at the above number cannot be reached, notify the Moab BLM Field Office at (801) 259-6111. If unsuccessful, contact one of the people listed below.

Well abandonment operations require 24 hours advance notice and prior approval. In the case of newly drilled by dry holes, verbal approval can be obtained by calling the Moab Field Office at (801) 259-6111. If approval is needed after work hours, you may contact the following:

Gary Torres, Petroleum Engineer Office: (801) 587-2141
Home: (801) 587-2705

Eric Jones, Petroleum Engineer Office: (801) 259-2117
Home: (801) 259-2214

Miller Energy, Inc.
Horse Canyon Federal 1-3
(SE/4, SW/4)
690' FSL, 1720' FWL, Sec. 3, T38S R23E
San Juan County, Utah
Fed. Lse. #UTU-76283

SURFACE USE PLAN

WELL LOCATION AND INTRODUCTION:

The proposed location is 690' FSL and 1720' FWL of section 3. The well site was surveyed and staked on February 27, 1998, by Gerald Huddleston, Surveyor, on a site that was geologically, and topographically acceptable. An on-site meeting was held on February 27, 1998. Attending were Jeff Brown - BLM, and Humber Fierro - Agent for Miller Energy, Inc.

BLM NOTIFICATIONS

Notify Jeff Brown of the Monticello BLM Field Office in Monticello, Utah, at (801) 587-1525, or at home (801) 587-2046 for the following:

2 days prior to commencement of dirt work, construction, and reclamation;

1 day prior to spudding;

50 feet prior to reaching each casing setting depth;

3 hours prior to testing BOPE

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Gary Torres, Petroleum Engineer Office: (801) 587-2141

Home: (801) 587-2705

Eric Jones, Petroleum Engineer Office: (801) 259-2117

Home: (801) 259-2214

DIRECTIONS TO LOCATION

From Blanding, Utah, travel 1 mile south, go east on County Road 219, go southeast on County Road 206 for 8.9 miles, turn south on County Road 208 for 1.8 miles. Location will be 50 yards off County Road 208 to the east.

1) EXISTING ROADS

- A) The well is an Exploratory well.
- B) Existing roads within 2 miles – Graveled county road (CR 206) appx 50 yards west of location.
- C) Plans for improvement and/or maintenance of existing roads are to maintain in as good or better conditions than at present.

2) PLANNED ACCESS ROADS – appx 150 ft of new construction.

- A) Subgrade (Running surface) width to be approximately 16' – 18', total disturbed width to be 45' – 50'.
- B) Borrow ditches to be backsloped 3:1 or shallower.
- C) Maximum grades – 2% for 400'.
- D) Drainage to consist of borrow ditches on both sides. Low water crossings will be used during drilling, as conditions dictate, and upon completion, crossings will be upgraded w/corrugated metal pipes and/or gravel bottomed low water crossing, if necessary. Culvert sizes to be a minimum of 18" diameter, or as stipulated by BLM.
- E) Surfacing material to consist of native material from borrow ditches, topsoil will be buried in road crown. Gravel surfacing will be applied prior to commencing production operations. Gravel will be obtained from permitted commercial sources.
- F) No major cuts are necessary.
- G) Gate and cattleguard installation will not be required at this time.
- H) Surface disturbance and vehicular travel will be limited to the approved location and access road. Any additional area needed must be approved by the area manager in advance.
- I) If a right-of-way is necessary, no surface disturbing activities shall take place on the subject right-of-way until the associated APD is approved. The holder will adhere to conditions of approval of the Surface Use Program of the approved APD, relevant to any right-of-way facilities.
- J) If a right-of-way is secured, boundary adjustments in the lease or unit shall automatically amend the right-of-way to include the portion of the facility no longer contained within the lease or unit. In the event of an automatic amendment to this right-of-way grant, the prior on lease/unit conditions of approval of this facility will not be affected even though they would now apply to facilities outside of the lease/unit as a result of a boundary adjustment. Rental fees, if appropriate, shall be recalculated based on the conditions of this grant and the regulations in effect at the time of an automatic amendment.
- K) If at any time the facilities located on public lands authorized by the terms of the lease are no longer included in the lease (due to a contraction in the unit or other lease or boundary change) the BLM will process a change in authorization to the

1) Planned Access Roads - (continued)

appropriate statute. The authorization will be subject to appropriate rental, or other financial obligations determined by the authorized officer.

- L) If the well is productive, the access road will be rehabilitated or brought to Resource (Class III) Road Standards within 60 days of dismantling the rig. If upgraded, the access road must be maintained at these standards until the well is properly abandoned. If this time frame cannot be met, the Area Manager will be notified so that temporary drainage control can be installed along the access road.

2) LOCATION OF EXISTING WELLS

Within a 2 - mile radius

Drilling	None
Abandoned-	T38S R23E Sec 10:SE/4 Sec 11:NW/4 Sec 14:SE/4 NE/4 Sec 15:NW/4 NW/4
Proposed -	Horse Canyon Federal 1-4, NW/4 section 4
Disposal injection-	None
Shut-In -	None
Completed-	Horse Canyon Federal 1-10, NE/4 section 10

4) LOCATION OF EXISTING PRODUCING FACILITIES OPERATED BY *Miller Energy, Inc.*

Within two miles: Horse Canyon Federal 1-10, NE/4 Section 10

NEW PRODUCTION FACILITIES PROPOSED

- A) Facilities to be constructed on location will be applied for separately. Production equipment will be placed away from edge of "fill."
- B) Dimension of Proposed Facility is approximately 300' x 200'. Pad size will be reduced to minimum size necessary to conduct safe operations cuts and fills will be reduced to 2:1 or shallower.
- C) Site preparation for production will be done with standard excavation equipment using native materials. Additional surface material will be obtained from commercial sources or an approved borrow area.

NEW PRODUCTION FACILITIES PROPOSED (continued)

- D) All above ground permanent structures including production equipment will be painted Juniper Green or as stipulated by the BLM.
- E) Production facilities may vary according to actual reservoir discovered and will be designed upon completion of well tests.
If well is a producer, all production facilities will be authorized by Sundry Notice.
- F) All pits will be fenced on all sides.
- G) No facilities will be constructed off location.
- H) Rehabilitation of unneeded, previously disturbed areas will consist of backfilling and contouring the reserve pit area, back sloping and contouring all cut and fill slopes. These areas will be re-seeded. Refer to plans for restoration of surface for additional details.
- I) Pits which contain oil will be netted.
- J) All site security guidelines identified in 43 CFR 3162.7-5 and Onshore Order No.3 shall be followed.
- K) If a gas meter is constructed, it will be located on lease within 500' of the wellhead. The gas flowline will be buried from the wellhead to the meter and will be buried downstream of the meter until it leaves the well pad. Meter runs will be housed and/or fenced. The gas meter shall be calibrated prior to first sales and shall be calibrated quarterly thereafter. All gas production and measurement shall comply with the provisions of 43 CFR 3162.7-3, Onshore Oil & Gas Order No. 5 and American Gas Association (AGA) Report No. 3.
- L) If a tank battery is constructed on this lease, it will be surrounded by a berm of sufficient capacity to contain 1 ½ times the storage capacity of the largest tank. All loading lines and valves will be placed inside the berm surrounding the tank battery. All oil production and measurement shall conform to the provisions of 43 CFR 3162.7-3 and Onshore Oil & Gas Order No. 4.
- M) Production facilities on location may include a lined or unlined water pit as specified in NTL-2B. If water is produced from the well, an NTL-2B application must be submitted.

5) LOCATION OF WATER SUPPLY

Water will be purchased from the town of Blanding and will be transported by truck. Alternatively, water may be hauled from a private source which has been previously permitted by R&W Water Service. Water may be hauled from Montezuma Creek under R&W Water Service permits.

6) SOURCE OF CONSTRUCTION MATERIALS

- A) Construction materials will consist of native materials from borrow ditches and location areas.
- B) Surfacing materials will be obtained from available permitted sources and consist of pit gravel.

7) WASTE DISPOSAL

- A) Drill cuttings will be buried in reserve pit.
- B) Fresh water drilling fluids will be evaporated then buried in the reserve pit when dry. Oil based fluids will be removed from drill cuttings to the maximum extent possible, then the cuttings solidified and buried in a separate pit.
- C) Produced fluid will be contained in test tanks during completion and testing.
- D) Sewage Disposal facilities will be in accordance with State and Local Regulations. Sewage will not be buried on location or placed in a borehole. Chemical toilets and/or holding tanks will be utilized and the contents hauled to an approved disposal site.
- E) Garbage and other waste – burnable waste will be contained in a possible trash cage which will be totally enclosed with small mesh wire. Cage and contents will be transported to a trash dumped at a D.E.Q. approved Sanitary Landfill upon completion of operations.
- F) Trash will be picked up if scattered and contained in trash cage as soon as practical after rig is moved off.
- G) Reserve pit will be fenced “stock tight” on three sides during drilling operations, and on fourth side at time of rig release. Pit will remain fenced until backfilled. (See Section 9 Wellsite Layout Part E for further reserve pit requirements).
- H) Upon release of the drilling rig, rat hole and mouse hole will be filled. Debris and excess equipment will be removed

8) ANCILLARY FACILITIES

No ancillary facilities will be necessary.

* 9) WELLSITE LAYOUT

- A) See attached drillsite plat and cut/fill diagram.
- B) Reserve pit will not require bentonite lining as per Jeff Brown, BLM.
- C) Flare pit will be located adjacent to the reserve pit at least 100' from the wellbore.
- D) The reserve pit fence will be kept in good repair and maintained in a tight condition. The reserve pit fence will be constructed as follows:

--32" high woven wire fence, with 2 smooth wire stands set 4" and 16" above the woven wire. Total fence height will be 48".

--posts will be set no farther apart than 16.5'

--corners will consist of posts that are at least 6" in diameter (h-brace construction will not be required due to the short distance between corners and temporary nature of the fence. All corners will be stabilized with a “deadman”.

--steel t-posts will be placed between corner posts.

--wire stays will be installed between T-posts

--there will be a 10 wide distance between the top lip of the reserve pit and reserve pit fence..

10) SURFACE RESTORATION

- A) Topsoil will be removed prior to location construction from all disturbed areas that will be in "cut" and from the reserve pit area. Topsoil depth to be removed as stipulated by BLM. Topsoil from fill areas will not be removed but will be stockpiled with any excess material.
- B) Backfilling, leveling and contouring are planned as soon as all pits have dried. Waste and spoils materials will be buried immediately after drilling is completed. If production is obtained, the unused area will be restored as soon as possible.
- C) The soil banked material will be spread over the area. Revegetation will be accomplished by planting mixed grasses as per formula by BLM. Revegetation is recommended for road area as well as around drill pad.
- D) The rehabilitation will begin after the drilling rig is removed. Removal of oil or other adverse substances will begin immediately or area will be flagged and fenced. Other cleanup will be done as needed.
- E) Reclamation of the entire disturbed area will be accomplished by grading the area to approximately the natural contour, applying top soil and re-establishing vegetation over the area. Topsoil shall be spread evenly over the area. A seed shall be prepared by scarifying the soil surface to a depth 4 inches. The operator shall use a harrow, disc or similar implement with tools spaced no greater than six inches apart. Seeds shall be lightly covered if broadcast methods are used. Seeding will be done between October 1, and February 28. The following prescription of pure live seed shall be applied:

2#/ acre PLS - Fourwing saltbush

2#/ acre PLS - Galleta grass

2#/ acre PLS - Indian ricegrass

2#/ acre PLS - Globemallow

1#/ acre PLS - Sand dropseed

9#/ acre PLS - TOTAL

- F) An above-ground tubular metal dry-hole marker will be erected over the drill-hole upon cessation of drilling and/or testing operations. The marker will be inscribed with the operator's name, well number, well location, and federal lease number. Upon request of the surface owner, the casing may be cut off three (3) feet below reclaimed ground surface (or below plow depth) with a metal plate affixed to the top providing the same well information as stated above. This must consist of a piece of pipe not less than four inches in diameter and ten feet in length, of which four feet shall be above the general ground level and the remainder being imbedded in cement. The top of the pipe must be closed by a welded or screw cap, cement or other means.

11) GENERAL INFORMATION

- A) Project area is situated in the undulated uplands west of the Montezuma Creek.
- B) Topographic and geologic features – moderate relief area, moderately drained, silt deposition, surrounded by cliffs and rolling uplands with highly eroded drainages.
- C) Soil characteristics – clay loam.
- D) Flora consists of Shadscale, Fourwing saltbush, Pricklypear cactus, Musterweed, Cheatgrass & short grasses.
- E) Fauna – none observed, assume deer, coyotes, rabbits, raptors, and rodents.
- F) Concurrent surface use – grazing and hunting.
- G) Mineral Lessor – Bureau of Land Management.
- H) Surface Owner – Drillsite – Bureau of Land Management
Access - Bureau of Land Management
- I) Proximity of water, occupied dwellings or other features – County Road #408 – 2 miles southwest of location.
- J) Archaeological, cultural and historical information has been submitted separately by 4 Corners Archaeological Services.
- K) Historic, Cultural, and Paleontological Resources

The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO). Within 5 working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places;
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
- a timeframe for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibilities for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

"the holder of this authorization shall immediately bring any paleontological resources or fossils discovered as a result of operations under this authorization to the attention of the authorized officer. The holder shall suspend all activities in the vicinity of such discovery until notified to proceed by the authorized officer. The authorized officer will evaluate, or will have evaluated, such discoveries not later than 5 working days after being notified, and will determine what action shall be taken with respect to such discoveries. The decision as to the appropriate measures to mitigate adverse effects to significant paleontological resources will be made by the authorized officer after consulting with the holder. The holder may be responsible for the cost of any investigation necessary for the evaluation, and for any mitigative measures."

12) LESSEE'S OR OPERATOR'S REPRESENTATIVE

Operator

Miller Energy, Inc.
2900 Moorsbridge Road
Kalamazoo, MI 49002
(616) 324 - 3390
Don Lehman - Exploration Manager

Agent

Twin Stars Ltd.
3005 Northridge Dr., Suite L
Farmington, NM 87401
(505) 326-3753
Robert R. Griffiee - Consulting Engineer

Please Contact Robert R. Griffiee concerning this permit.

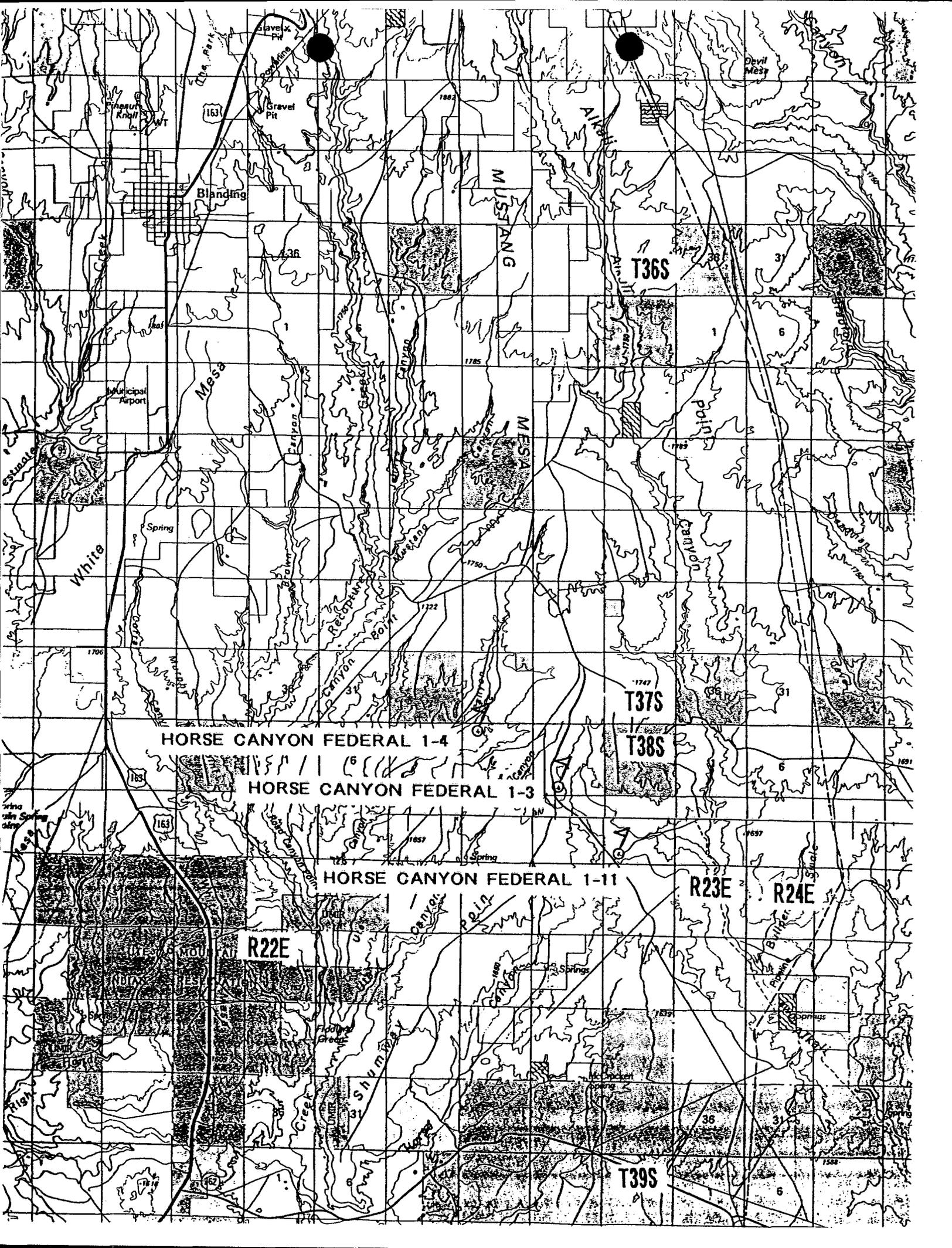
13) CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the drillsite and access road; that I am familiar with the conditions which presently exist; that the statements made in this plan area, to the best of my knowledge, are true and correct; and that the work associated with the operations proposed herein will be performed by Miller Energy, Inc. and its contractors and sub-contractors in conformity with this plan and conditions under which it is approved. I also certify responsibility for the operations conducted on that portion of the leased land associated with this application, with bond coverage being provided under a letter of credit as submitted to the BLM for nationwide bond coverage. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

March 5, 1998



Robert R. Griffiee
Agent for Miller Energy, Inc.
Consulting Petroleum Engineer



HORSE CANYON FEDERAL 1-4

HORSE CANYON FEDERAL 1-3

HORSE CANYON FEDERAL 1-11

R22E

R23E

R24E

T36S

T37S

T38S

T39S

Blanding

Municipal Airport

White

Mesa

MESA MUSTANG

MESA

Gravel Pit

Spring

Spring

Spring

Spring

Spring

Spring

Spring

Gravel Pit

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 03/31/98

API NO. ASSIGNED: 43-037-31798

WELL NAME: HORSE CANYON FED 1-3
 OPERATOR: MILLER ENERGY INC (N6720)
 CONTACT: Don Lehman (1016) 324-3390

PROPOSED LOCATION:
 SESW 03 - T38S - R23E
 SURFACE: 0690-FSL-1720-FWL
 BOTTOM: 0690-FSL-1720-FWL
 SAN JUAN COUNTY
 WILDCAT FIELD (001)

INSPECT LOCATION BY: / /		
TECH REVIEW	Initials	Date
Engineering		
Geology		
Surface		

LEASE TYPE: FED
 LEASE NUMBER: UTU-76283
 SURFACE OWNER: BLM

PROPOSED FORMATION: AKAH

RECEIVED AND/OR REVIEWED:

Plat

Bond: Federal State Fee
 (No. KT 1092)

Potash (Y/N)

Oil Shale (Y/N) *190-5(B)

Water Permit
 (No. Blending e' R & W Water Sys)

RDCC Review (Y/N)
 (Date: _____)

N/A St/Fee Surf Agreement (Y/N)

LOCATION AND SITING:

R649-2-3. Unit _____

R649-3-2. General

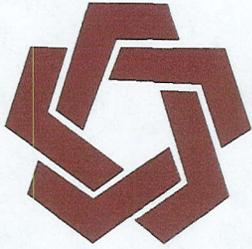
R649-3-3. Exception

Drilling Unit
 Board Cause No: _____
 Date: _____

COMMENTS: Except for - 460' radius around wellbore "Miller Energy"

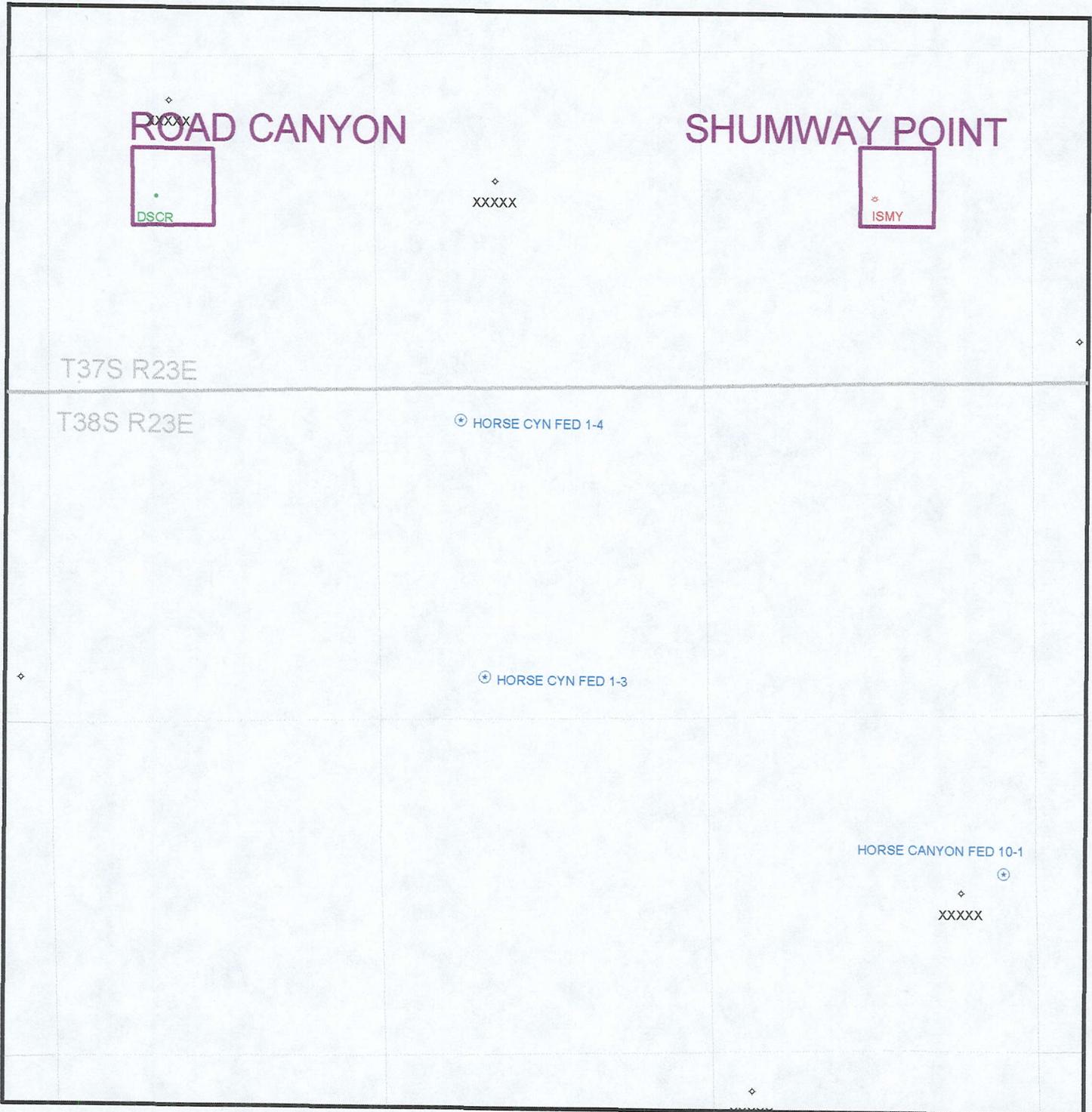
STIPULATIONS: ① APPROPRIATE INFORMATION HAS BEEN SUBMITTED TO DDGM BY MILLER ENERGY INC. AND ADMINISTRATIVE APPROVAL OF THE REQUESTED EXCEPTION LOCATION IS HEREBY GRANTED.

② FEDERAL APPROVAL



DIVISION OF OIL, GAS & MINING

OPERATOR: MILLER ENERGY (N6720)
FIELD: WILDCAT 1-3 (001) UNDESIGNATED 1-4 (002)
SEC. 4, TWP. 38S, RNG. 23E,
COUNTY: SAN JUAN UAC: R649-3-3 EXCEPTION SPACING



DATE PREPARED:
6-APR-1998



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

April 9, 1998

Miller Energy, Inc.
7900 Moorsbridge Road
Kalamazoo, Michigan 49002

Re: Horse Canyon Federal 1-3 Well, 690' FSL, 1720' FWL, SE SW,
Sec. 3, T. 38 S., R. 23 E., San Juan County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann. 40-6-1 et seq., Utah Administrative Code R649-3-1 et seq., and the attached Conditions of Approval, approval to drill the referenced well is granted.

Appropriate information has been submitted to DOGM by Miller Energy, Inc. and administrative approval of the requested exception location is hereby granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-037-31798.

Sincerely,

for John R. Baza
Associate Director

lwp

Enclosures

cc: San Juan County Assessor
Bureau of Land Management, Moab District Office

Operator: Miller Energy, Inc.
Well Name & Number: Horse Canyon Federal 1-3
API Number: 43-037-31798
Lease: UTU-76283
Location: SE SW Sec. 3 T. 38 S. R. 23 E.

Conditions of Approval

1. General

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for Permit to Drill.

2. Notification Requirements

Notify the Division within 24 hours following spudding the well or commencing drilling operations. Contact Jim Thompson at (801)538-5336.

Notify the Division prior to commencing operations to plug and abandon the well. Contact Dan Jarvis at (801) 538-5338 or John R. Baza at (801)538-5334.

3. Reporting Requirements

All required reports, forms and submittals shall be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

4. State approval of this well does not supercede the required federal approval which must be obtained prior to drilling.

RECEIVED
 Form 3160-3
 (July 1992) APR 10 1998
 DIV. OF OIL, GAS & MINING

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

1a. TYPE OF WORK
 DRILL DEEPEN

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

2. NAME OF OPERATOR
 Miller Energy Inc

3. ADDRESS AND TELEPHONE NO.
 7900 Moorsbridge Rd, Kalamazoo, MI 49002 (616) 324-3390

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
 At surface
 690' FSL 1720' FWL Sec.3 T38S R 23E
 At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
 11 Miles Southeast of Blanding, Utah 43-037-31798

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 690'

16. NO. OF ACRES IN LEASE 1674.79

17. NO. OF ACRES ASSIGNED TO THIS WELL 160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 4000'

19. PROPOSED DEPTH

20. ROTARY OR CABLE TOOLS
 Rotary

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

22. APPROX. DATE WORK WILL START*
 March 25, 1998

5. LEASE DESIGNATION AND SERIAL NO.
 UTU 76283

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME, WELL NO.
 Horse Canyon Federal 1-3

9. API WELL NO.

10. FIELD AND POOL, OR WILDCAT
 Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
 Sec.3, T38S, R23E

12. COUNTY OR PARISH
 San Juan

13. STATE
 Utah

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
				"b" s "b" op 400
S				
B				for
b				
M				se
c				
I				

CONDITIONS OF APPROVAL ATTACHED

FLARING OR VENTING OF
SUBJECT TO NTL 4-A
 fill or

24. SIGNED Robert R. Griffes TITLE Agent for Miller Energy DATE March 5, 1998
 (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.

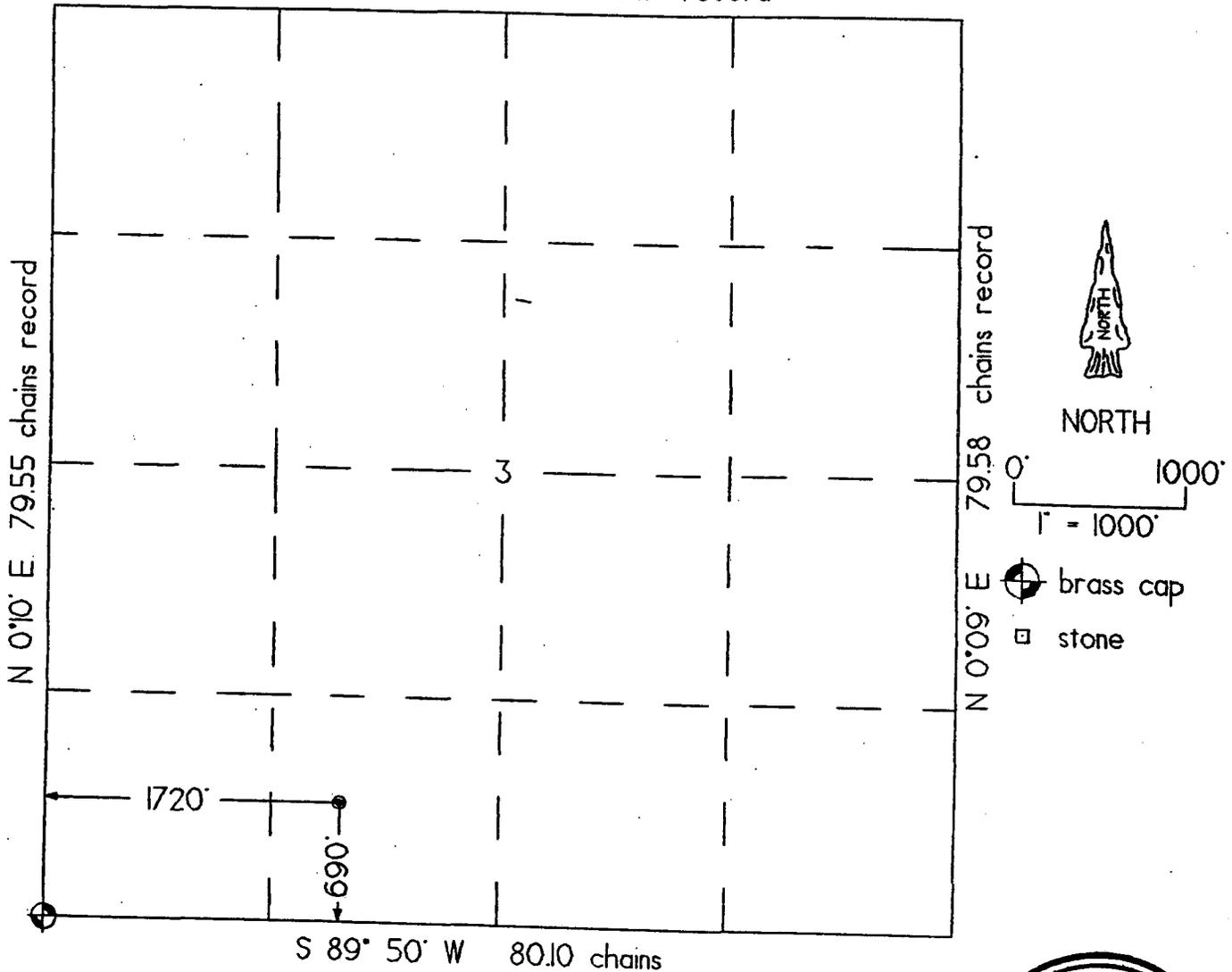
CONDITIONS OF APPROVAL, IF ANY:
 /s/ Brad D. Palmer Assistant Field Manager, Resource Management

APPROVED BY _____ TITLE _____ DATE _____

MAR 31 1998

Well Location Plat

S 89°48' W 80 chains record



Well Location Description

MILLER ENERGY, INC.
 Horse Canyon Federal I-3
 690' FSL & 1720' FWL
 Section 3, T.38 S., R.23 E., SLM
 San Juan County, UT
 5595' grd. el. (from GPS)
 state plane : 312.908 N & 2.615.202 E (NAD 27)



27 February 1998

Gerald G. Huddleston
Gerald G. Huddleston, LS

The above is true and correct to my knowledge and belief.

HUDDLESTON LAND SURVEYING - BOX KK - CORTEZ, CO - (970) 565 -3330

MILLER ENERGY INC
Lease U-76283
SESW Section 03, T. 38 S., R. 23 E.
San Juan County, Utah

CONDITIONS OF APPROVAL

Approval of this application 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.

Be advised that Miller Energy Inc considered to be the operator of the above well and is responsible under the terms and conditions of the lease for the operations conducted on the leased lands.

Bond coverage for this well is provided by UT-1092 (Principal - Miller Energy Inc) via surety consent as provided for in 43 CFR § 3104.2.

This office will hold the aforementioned operator and bond liable until the provisions of 43 CFR § 3106.7-2 continuing responsibility are met.

This permit will be valid for a period of one year from the date of approval. After permit termination, a new application must be filed for approval.

All lease operations will be conducted in full compliance with applicable regulations (43 CFR § 3100), Onshore Oil and Gas Orders, lease terms, notices to lessees, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions and the approved plan will be made available to field representatives to insure compliance.

A. DRILLING PROGRAM

1. The proposed 2M BOP system is adequate. Installation, testing and operation of the system shall be in conformance with Onshore Oil and Gas Order No. 2.
2. Any fluid bearing zones or lost circulation zones encountered while drilling will be isolated behind casing and cement.
3. The TOC for the production casing (5-1/2") must be from TD to a minimum of 500' above potential pay zones. Cement must be circulated to surface for the 13-3/8" and 9-5/8" casing.
4. If a gas meter run is constructed, it will be located on lease within 500 feet of the wellhead. The gas flowline will be buried from the wellhead to the meter and will be buried downstream of the meter until it leaves the pad. Meter runs will be housed and/or fenced. The gas meter shall be calibrated prior to first sales and shall be calibrated quarterly thereafter. All gas production and measurement shall comply with the provisions of 43 CFR § 3162.7-3, Onshore Oil and Gas Order No. 5, and American Gas Association (AGA) Report No. 3.
5. Any air drilling must be conducted in accordance with Onshore Order No. 2, Section E, Special Drilling Operations. Rig must have spark arresters, blooie line, float valve, automatic igniters, etc.

B. SURFACE USE PLAN

The following stipulations have been developed to mitigate adverse environmental impacts which may result from the action permitted by the accompanying decision. The action permitted and its anticipated impacts are fully described in the environmental assessment or categorical exclusion referenced above.

1. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the operator, or any person working on his behalf, on public or Federal land shall be immediately reported to the San Juan Resource Area Manager. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the San Juan Resource Area Manager. An evaluation of the discovery will be made by the San Juan Resource Area Manager to determine appropriate action to prevent the loss of significant cultural or scientific values. The operator will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the operator.
2. Deer winter range restrictions from December 15, through April 30 will be imposed for well location preparation and drilling operations unless an exception is granted by the Area Manager.
3. BLM will complete a raptor survey and clearance of the affected area surrounding the proposed drilling site prior to work initiation if the proposed well is drilled between February 1, and August 31. If the raptor survey locates an active raptor nesting territory which will be affected by this proposal, no work will be allowed until nestlings have fledged. This will apply to peregrine falcons found to be nesting within one mile, golden eagles and all other raptors found to be nesting within 0.5 mile of the proposed site. Discussion will be entered into by the San Juan Resource Area with the U.S. Fish & Wildlife Service to determine the feasibility of allowing drilling of said well closer (0.25 mile) ~~to~~ the proposed action site if it can be proven that activity (noise and visual impacts) can take place without impacting the nesting birds and their offspring. The U.S. Fish & Wildlife Service will be fully consulted if peregrine falcon or golden eagle nesting becomes an issue and given updates on the nesting status of these birds.
4. The reserve pit shall be lined with at least 24 tons of bentonite and worked into all surfaces of the reserve pit with a bulldozer.
5. The reserve pit shall remain free of hydrocarbons at all times. Any hydrocarbons entering the reserve pit will be removed promptly.
6. The netting material installed over the top and sides of the pit will be one inch or less mesh. The netting will be kept in good repair and maintained in a tight condition.

C. REQUIRED APPROVALS, REPORTS AND NOTIFICATIONS

Required verbal notifications are summarized in Table 1, enclosed.

Building Location- Contact the BLM Petroleum Engineering Technician at the Monticello BLM Field Office at least 48 hours prior to commencing construction of location.

Spud- The spud date will be reported to BLM 24 hours prior to spudding. Written notification in the form of a Sundry Notice (Form 3160-5) will be submitted to the Moab BLM Field Office within 24 hours after spudding, regardless of whether spud was made with a dry hole digger or big rig.

Daily Drilling Reports- Daily drilling reports shall detail the progress and status of the well and shall be submitted to the Moab BLM Field Office on a weekly basis.

Monthly Reports of Operations- In accordance with Onshore Oil and Gas Order No. 1, this well shall be reported on Minerals Management Service (MMS) Form 3160, "Monthly Report of Operations," starting the month in which operations commence and continuing each month until the well is physically plugged and abandoned. This report will be filed directly with MMS.

Sundry Notices- There will be no deviation from the proposed drilling and/or workover program without prior approval. "Sundry Notices and Reports on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR § 3162.3-2. Safe drilling and operating practices must be observed.

Drilling Suspensions- Operations authorized by this permit shall not be suspended for more than 30 days without prior approval of the Moab BLM Field Office. All conditions of this approval shall be applicable during any operations conducted with a replacement rig.

Undesirable Events- Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be immediately reported to the BLM in accordance with requirements of NTL-3A.

Cultural Resources- If cultural resources are discovered during construction, work that might disturb the resources is to stop, and the BLM is to be notified.

First Production- Should the well be successfully completed for production, the Moab BLM Field Office will be notified when the well is placed in producing status. Such notification may be made by phone, but must be followed by a sundry notice or letter not later than five (5) business days following the date on which the well is placed into production.

A first production conference will be scheduled as soon as the productivity of the well is apparent. This conference should be coordinated through the Monticello BLM Field Office. The Monticello BLM Field Office shall be notified prior to the first sale.

Well Completion Report- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) will be submitted to the Moab BLM Filed Office not later than thirty (30) days after completion of the well or after completion of operations being performed, in accordance with 43 CFR § 3162.4-1. Two copies of all logs, core descriptions, core analyses, well test data, geologic summaries, sample description, and

all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. When requested, samples (cuttings and/or samples) will be submitted to the Moab BLM Field Office.

Venting/Flaring of Gas- Gas produced from this well may not be vented/flared beyond an initial, authorized test period of 30 days or 50 MMcf, whichever occurs first, without the prior, written approval of the BLM. Should gas be vented or flared without approval beyond the authorized test period, the well may be ordered shut-in until the gas can be captured or approval to continue the venting/flaring as uneconomic is granted. In such case, compensation to the lessor shall be required for that portion of the gas that is vented/flared without approval and which is determined to have been avoidably lost.

Produced Water- Produced waste water may be confined to an unlined pit for a period not to exceed 90 days after initial production. During the 90 day period, an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted to the Moab BLM Field Office for approval pursuant to Onshore Oil and Gas Order No. 7.

Off-Lease Measurement, Storage, Commingling- Prior approval must be obtained from the Moab BLM Field Office for off-lease measurement, off-lease storage and/or commingling (either down-hole or at the surface).

Plugging and Abandonment- If the well is completed as a dry hole, plugging instructions must be obtained from the Moab BLM Field Office prior to initiating plugging operations.

A "Subsequent Report of Abandonment" (Form 3160-5) shall be filed with the Moab BLM Field Office within thirty (30) days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration. Upon completion of approved plugging, a regulation marker will be erected in accordance with 43 CFR § 3162.6. Final abandonment will not be approved until the surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the BLM, or the appropriate surface managing agency.

TABLE 1. NOTIFICATIONS

Notify Jeff Brown of the Monticello BLM Field Office in Monticello, Utah, at (435) 587-1525, or at home (435) 587-1500 for the following:

2 days prior to commencement of dirt work, construction and reclamation;

1 day prior to spudding;

50 feet prior to reaching each casing setting depth;

3 hours prior to testing BOPE

If the person at the above number cannot be reached, notify the Moab BLM Field Office at (435) 259-6111. If unsuccessful, contact one of the people listed below.

Well abandonment operations require 24 hour advance notice and prior approval. In the case of newly drilled dry holes, verbal approval can be obtained by calling the Moab Field Office at (435) 259-6111. If approval is needed after work hours, you may contact the following:

Gary Torres, Petroleum Engineer	Office:	(435) 587-1524
	Home:	(435) 587-2705
Eric Jones, Petroleum Engineer	Office:	(435) 259-2117
	Home:	(435) 259-2214

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

Name of Company: MILLER ENERGY

Well Name: HORSE CANYON FEDERAL 1-3

Api No. 43-037-31798

Section 10 Township 38S Range 23E County SAN JUAN

Drilling Contractor BIG "A"

Rig # 43

SPUDDED:

Date 4/18/98

Time _____

How ROTARY

Drilling will commence _____

Reported by BILL GRIFFORD

Telephone # _____

Date: 4/27/98 Signed: JLT

↓

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT---" for such proposals

SUBMIT IN TRIPLICATE

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

1. Type of Well
 Oil Gas Other

2. Name of Operator
Miller Energy Inc.

3. Address and Telephone No.
7900 Moorsbridge Road, Kalamazoo MI (616) 324-3390

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
690' FSL x 1720' FWL, Section 3, T38S, R23E

5. Lease Designation and Serial No.
UTU 76283

6. If Indian, Allottee or Tribe Name
NA

7. If Unit or CA, Agreement Designation

8. Well Name and No.
Horse Canyon Federal 1-3

9. API Well No.
43-037-31798

10. Field and Pool, or Exploratory Area
Wildcat

11. County or Parish, State
San Juan County, Utah

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other <u>Weekly Operations</u>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depth for all markers and zones pertinent to this work.)*

4/18/98 MIRU Big A Rig 43. Spud 17 1/2" hole @ 9:15 pm 4/18/98. Drill to 140'.
4/19/98 Drill 17 1/2" hole to 260'. Ran 13 3/8" casing, land at 260'. Cement to surface with 325 sks Class 'b' + 2% CaCl2 + 1/4 #/sk celloflake. Circ 34 bbls to surface. WOC.
4/20/98 Drill out with 12 1/4" bit. Drilling 12 1/4" hole to 1159'.
4/21/98 Drilling 12 1/4" hole to 2335'.
4/22/98 Drill 12 1/4" hole to 2556'. Ran 9 5/8" casing and landed at 2551'. Cement with 500 sks 65/35 poz + 2% CaCl2 + 6 #/sk gilsonite + 1/4 #/sk celloflake. WOC
4/23/98 Perform 60 sk class 'b' top job, circulated cement to surface. NU 2000 psi BOPE and test. Drill out with 7 7/8" bit. Drilling 7 7/8" hole to 2749'.

14. I hereby certify that the foregoing is true and correct

Signed Robert R. Griffie Title Consulting Engineer

Date: 5/30/98

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

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.

*See Instruction on Reverse Side

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

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7900 Moorsbridge Road, Kalamazoo MI (616) 324-3390

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
690' FSL x 1720' FWL, Section 3, T38S, R23E

5. Lease Designation and Serial No.
UTU 76283

6. If Indian, Allottee or Tribe Name
NA

7. If Unit or CA, Agreement Designation

8. Well Name and No.
Horse Canyon Federal 1-3

9. API Well No.
43-037-31798

10. Field and Pool, or Exploratory Area
Wildcat

11. County or Parish, State
San Juan County, Utah

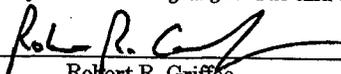
12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA	
TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment <input type="checkbox"/> Change of Plans
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion <input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back <input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair <input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Altering Casing <input type="checkbox"/> Conversion to Injection
	<input checked="" type="checkbox"/> Other <u>Weekly Operations</u> <input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depth for all markers and zones pertinent to this work.)*

4/24/98 Drilling 7 7/8" hole to 3750'.
4/25/98 Drilling 7 7/8" hole to 4318'.
4/26/98 Drilling 7 7/8" hole to 5053'.
4/27/98 Drilling 7 7/8" hole to 5557'.
4/28/98 Drilling 7 7/8" hole to 5960'.
4/29/98 Drilling 7 7/8" hole to 6193'.
4/30/98 Drilling 7 7/8" hole to 6250'. Circ. PU DST tools for DST #1

14. I hereby certify that the foregoing is true and correct

Signed  Title Consulting Engineer Date: 5/30/98
Robert R. Griffie

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
 Conditions of approval, if any: _____

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.

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**UNITED STATES
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5/1/98 DST #1 6165 - 6250'. Gas to surface (50 MCFD rate) on 2nd flow. Recovered 250' gas cut mud, no oil. Drilling 7 7/8" hole to 6367'.
5/2/98 Drilling 7 7/8" hole to 6435'. Circ. PU DST tools for DST #2.
5/3/98 DST #2 6435' - 6350'. Recovered 70' of drilling mud. Drilling 7 7/8" hole to TD of 6441'
5/4/98 Log with Schlumberger. Run #1, DLL/CNL/FDC, microlog (TD to 2500'). Run #2, Sonic. Run #3, Dip meter. Receive plugging orders from BLM.
5/5/98 Set plug #1, 140 sks class 'b', from TD to 6016'. Set plug #2, 100 sks class 'b', from 6385 - 6235', tag plug. Set plug #3, 50 sks class 'b' from 2601 - 2501'. Set plug #4, 25 sks class 'b' from 50' to surface. Released rig at 7:00 pm 5/5/98.

14. I hereby certify that the foregoing is true and correct

Signed Robert R. Griffie Title Consulting Engineer Date: 5/30/98

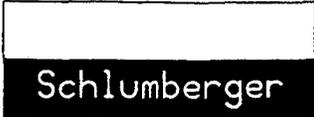
(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
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CALCULATIONS
GAS WELL
LOG-LOG ANALYSIS



LOG (DELTA M (P)) VS. LOG (DELTA T) PLOT
HOMOGENEOUS, INFINITE SYSTEM RESERVOIR MODEL
SKIN AND DECREASING WELLBORE STORAGE
PD VS. TD/CD

DATA IDENTIFICATION

FLOW PERIOD # 4, BUILDUP
M (P) = 1.880E+06 PSI**2/CP @ DELTA T=0
FLOW RATE CHANGE = 48.000 MSCF/D

TYPE-CURVE MATCH

CURVE MATCH, CD*E (2S) = 4.876E+10
PRESSURE MATCH, PD/DELTA M (P) = 3.669E-08 1/(PSI**2/CP)
TIME MATCH, (TD/CD)/DELTA T = 58.503 1/HR

CALCULATIONS

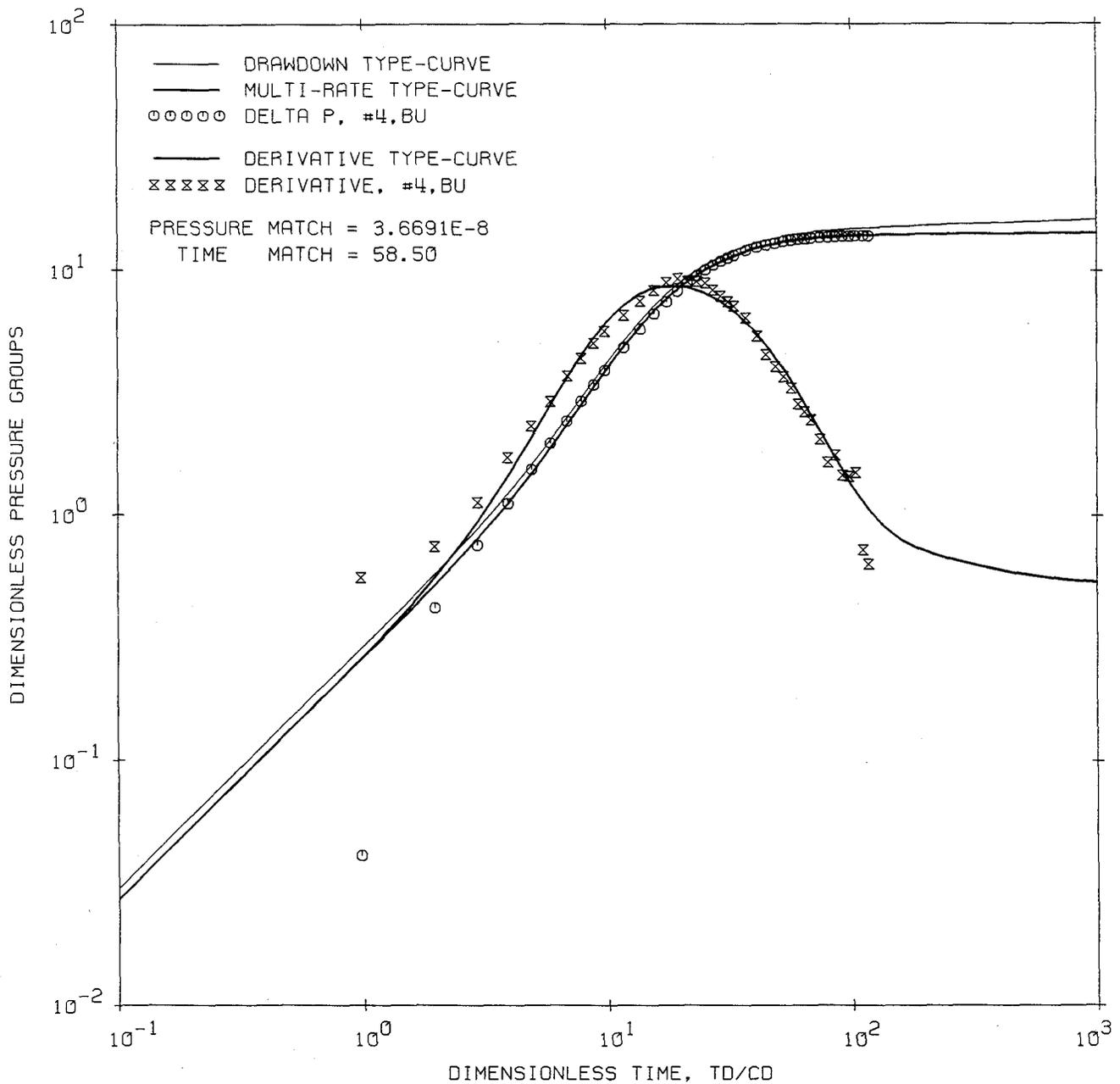
KH 1.487 MD.FT
KH/MU 86.068 MD.FT/CP
K 0.04374 MD
C 4.340E-04 BBL/PSI
CD 3.263
SKIN, S 11.714
RADIUS OF INVESTIGATION ... 9.053 FT (@ 1.25 HR)

COMMENTS

USING HOMOGENEOUS, INFINITE SYSTEM RESERVOIR MODEL WITH
SKIN AND DECREASING WELLBORE STORAGE ;
Ca/C=2.63 CoD=4.68

DIMENSIONLESS MULTI-RATE
PLOT: LOG-LOG MATCH FOR
#4, BU

Schlumberger



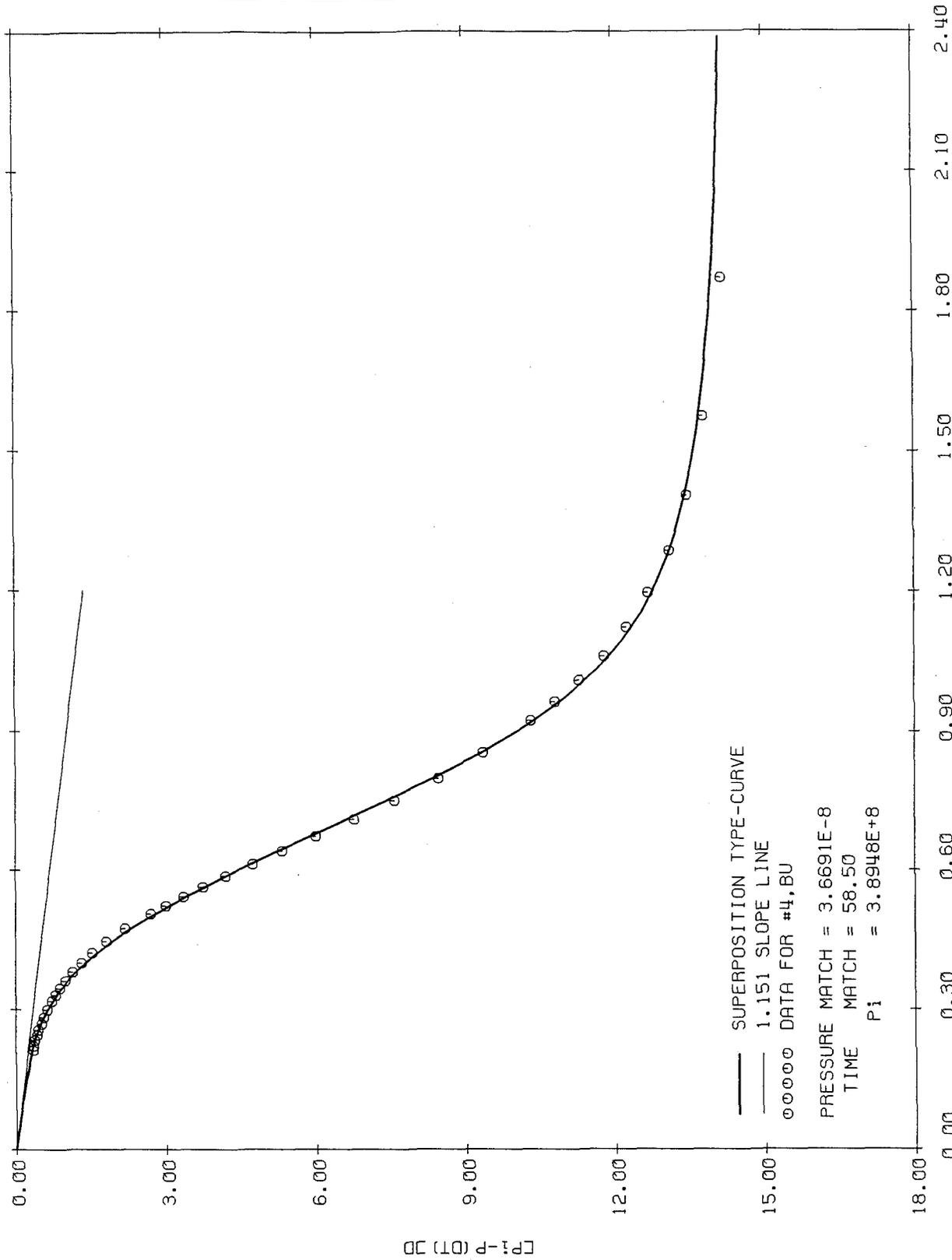
TYPE-CURVE : HOMOGENEOUS SYSTEM, DECREASING WELLBORE STORAGE
CD*E (2S) = 4.88E10 CaD/CD=2.63 CoD=4.68

REPORT NO.
1245901

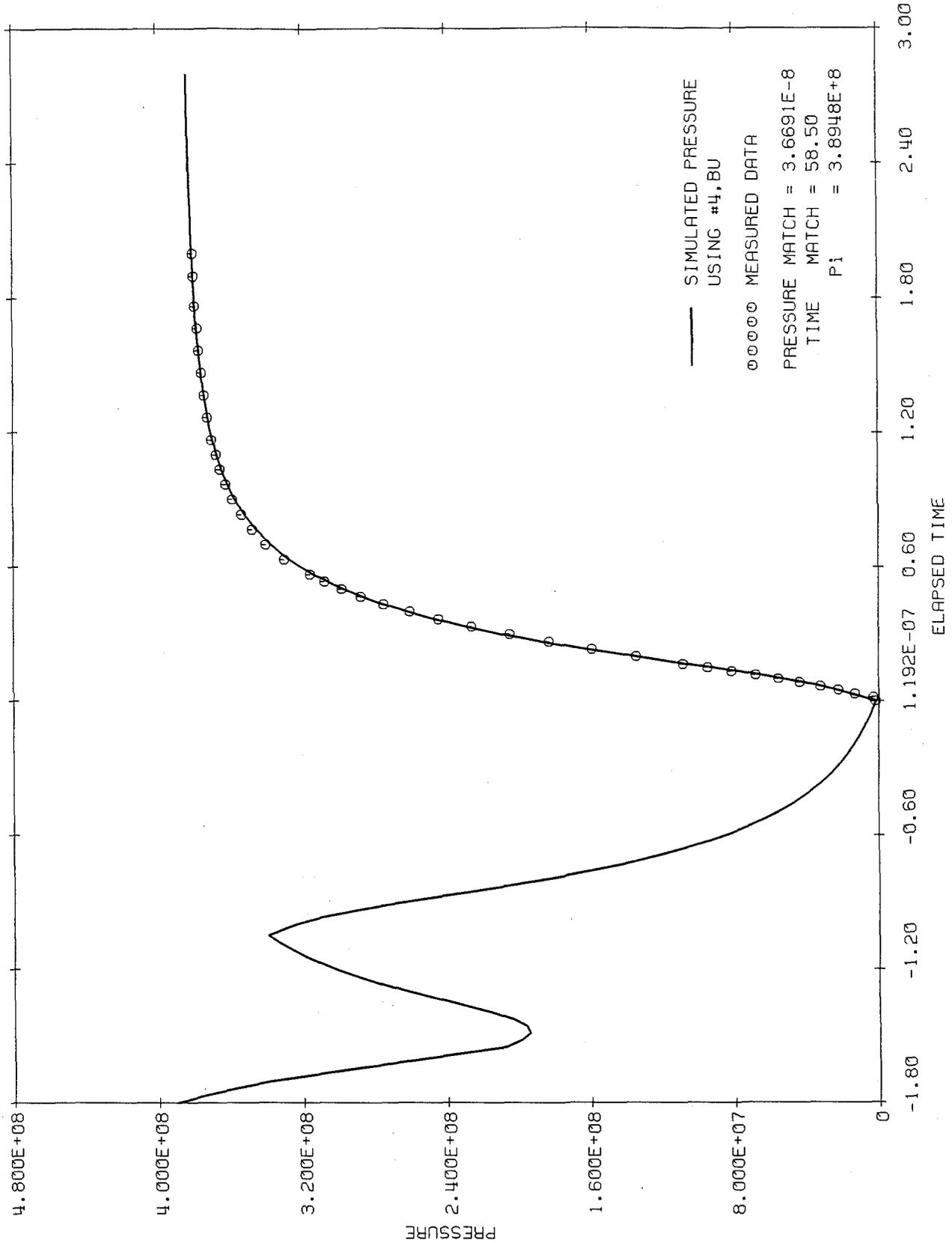
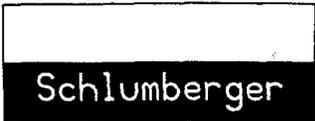
PAGE NO. 4

DIMENSIONLESS SUPERPOSITION
PLOT FOR
#4, BU

Schlumberger

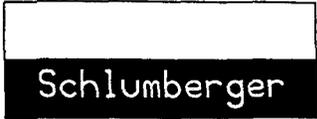


PRESSURE HISTORY MATCH
SIMULATION



TYPE-CURVE : HOMOGENEOUS SYSTEM, DECREASING WELLBORE STORAGE
 CD*E (2S) = 4.86E10 CaD/CD = 2.63 CoD = 4.68

FLOWRATE DATA
USED IN ANALYSIS
HORSE CANYON FED. #1-3



ET VS. FLOWRATE

USING LAST RATE MEASURED AT SURFACE
MILLER ENERGY - HORSE CANYON FED. #1-3 - DST #1

ET (hrs)	PRIOR TO FINAL BUILDUP	GAS FLOWRATE (MSCFD)
1	-1.8000	48.000
2	-1.5500	0.00000E-01
3	-1.0500	48.000
4	0.00000E-01	0.00000E-01

ANY INTERPRETATIONS OR RECOMMENDATIONS ARE OPINIONS AND NECESSARILY BASED ON INFERENCES AND EMPIRICAL FACTORS AND ASSUMPTIONS, WHICH ARE NOT INFALLIBLE. ACCORDINGLY, SCHLUMBERGER - GEOQUEST CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION OR MEASUREMENT. UNDER NO CIRCUMSTANCES SHOULD ANY INTEPRETATION OR MEASUREMENT BE RELIED UPON AS THE SOLE BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT OR PRODUCTION DECISION OR ANY PROCEDURE INVOLVING RISK TO THE SAFETY OF ANY DRILLING VENTURE, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE CUSTOMER HAS FULL RESPONSIBILITY FOR ALL DRILLING, COMPLETION, WELL TREATMENT, AND PRODUCTION PROCEDURES, AND ALL OTHER ACTIVITIES RELATING TO THE DRILLING OR PRODUCTION OPERATION.

THIS IS SCHLUMBERGER'S MODEL-VERIFIED (tm) INTERPRETATION REPORT. WITH MODEL-VERIFIED (tm) INTERPRETATION, THE GOAL OF THE SCHLUMBERGER ANALYST IS TO CONSTRUCT A TOTAL SYSTEM RESERVOIR MODEL THAT MATCHES ALL OF YOUR WELL TEST DATA. THIS PROVIDES YOU WITH RELIABLE ANSWERS THAT YOU CAN HAVE CONFIDENCE IN.

FROM THE DIAGNOSTIC LOG-LOG PLOT OF PRESSURE AND PRESSURE DERIVATIVE, THE SCHLUMBERGER ANALYST IDENTIFIES THE FLOW REGIMES GOVERNED BY THE INNER BOUNDARY CONDITIONS, BASIC RESERVOIR BEHAVIOR, AND OUTER BOUNDARY CONDITIONS. A RESERVOIR MODEL IS THEN CONSTRUCTED AND THE TEST DATA ARE MATCHED TO IT. IN ORDER TO VERIFY THE QUALITY OF THE MATCH, THE THEORETICAL MODEL RESPONSE (TYPE CURVE) AND THE TEST DATA ARE PLOTTED TOGETHER. THE PRESENTATION OF THE MATCH CAN BE SHOWN IN ANY OF THREE DIFFERENT FORMS.

- 1) LOG-LOG PLOT (DELTA PRESSURE AND DERIVATIVE vs. DELTA TIME)
- 2) SEMI-LOG PLOT (PRESSURE vs. SUPERPOSITION TIME)
- 3) CARTESIAN PLOT (PRESSURE vs. TIME)

SCHLUMBERGER USES SUPERPOSITION TECHNIQUES (MULTI-RATE ANALYSIS) TO ACCOUNT FOR THE WELL'S PRIOR PRODUCTION HISTORY. ESPECIALLY IN CASES WHERE THE PRIOR PRODUCTION IS ERRATIC OR UNUSUAL, SUPERPOSITION IS THE ONLY MEANS OF PROVIDING AN ACCURATE TYPE CURVE MATCH OF THE WELL TEST DATA. FOR GAS WELLS, THE PSEUDO-PRESSURE TECHNIQUE IS USED TO ACCOUNT FOR THE CHANGE IN GAS PROPERTIES WITH CHANGING PRESSURE.

IN SOME INSTANCES, THE WELL TEST DATA WILL NOT BE UNIQUE, i.e., MORE THAN ONE RESERVOIR MODEL WILL MATCH THE TEST DATA. THE MOST APPROPRIATE MODEL CAN BE DETERMINED AS WE WORK WITH YOU AND DISCUSS THE AREA LITHOLOGY AND GEOLOGY.

THE RESERVOIR ANSWERS DERIVED FROM MODEL-VERIFIED (tm) INTERPRETATION CAN INCLUDE: EFFECTIVE PERMEABILITY (K), SKIN DAMAGE (s), RESERVOIR PRESSURE (P*), FRACTURE HALF-LENGTH (Xf), FRACTURE CAPACITY (Kfw), BOUNDARY CONDITIONS AND DISTANCE TO BOUNDARIES, AS WELL AS THE MODEL OF BASIC RESERVOIR BEHAVIOR.

USING THE RESERVOIR MODEL DETERMINED BY MODEL-VERIFIED (tm) INTERPRETATION, FLOWRATE PREDICTIONS CAN BE MADE FOR THE WELL. ADDITIONALLY, WE CAN HELP YOU OPTIMIZE WELL PERFORMANCE BY USING SCHLUMBERGER'S NODAL ANALYSIS SOFTWARE TO EXAMINE THE WELL'S SENSITIVITY TO DIFFERENT COMPLETION DESIGNS (e.g., FRACTURE HALF-LENGTH, TUBING SIZE, WELLHEAD PRESSURE, SKIN VALUE, SHOT DENSITY). THIS AFFORDS YOU THE OPPORTUNITY TO FORECAST PRODUCTION POTENTIAL FOR THE WELL BEFORE MAKING FINAL COMPLETION/RECOMPLETION DECISIONS.

WELL TEST MODELS

Schlumberger

THE SCHLUMBERGER ANALYST CONSTRUCTS THE TOTAL SYSTEM RESERVOIR MODEL THAT BEST MATCHES YOUR TEST DATA BY CHOOSING THE INNER BOUNDARY CONDITION(S), A BASIC RESERVOIR MODEL, AND THE OUTER BOUNDARY CONDITION(S). THESE COMPONENTS ARE PUT TOGETHER INTO ONE RESERVOIR MODEL AND THE TEST DATA IS MATCHED BY ADJUSTING THE MODEL PARAMETERS (e.g., PERMEABILITY AND SKIN) TO OBTAIN THE BEST FIT. THE FOLLOWING IS A PARTIAL LIST OF THE MODEL COMPONENTS AVAILABLE TO THE SCHLUMBERGER ANALYST FOR MATCHING YOUR WELL TEST DATA.

INNER BOUNDARY CONDITION

NO WELLBORE STORAGE
CONSTANT WELLBORE STORAGE
VARIABLE WELLBORE STORAGE
FINITE CONDUCTIVITY VERTICAL FRACTURE
INFINITE CONDUCTIVITY VERTICAL FRACTURE
UNIFORM FLUX VERTICAL FRACTURE
HORIZONTAL FRACTURE
PARTIAL PENETRATION

BASIC RESERVOIR MODEL

HOMOGENEOUS
DUAL POROSITY, PSEUDO STEADY STATE INTERPOROSITY FLOW
DUAL POROSITY, TRANSIENT INTERPOROSITY FLOW
TRIPLE POROSITY
DUAL PERMEABILITY
RADIAL COMPOSITE

OUTER BOUNDARY CONDITION

INFINITE SYSTEM
SINGLE SEALING NO FLOW BOUNDARY
PARTIALLY SEALING BOUNDARY
SINGLE CONSTANT PRESSURE BOUNDARY
TWO INTERSECTING NO FLOW BOUNDARIES (WEDGE GEOMETRY)
PARALLEL NO FLOW BOUNDARIES (CHANNEL)
GAS CAP/BOTTOM WATER DRIVE
CLOSED (NO FLOW) CIRCLE
CONSTANT PRESSURE CIRCLE
CLOSED (NO FLOW) RECTANGLE
CONSTANT PRESSURE RECTANGLE
MIXED BOUNDARY RECTANGLE

FOR SOME APPLICATIONS, SUCH AS HORIZONTAL AND LAYERED RESERVOIR TESTS, ALL OF THE POSSIBLE COMBINATIONS ARE NOT AVAILABLE. REFERENCES ON MOST MODEL COMPONENTS CAN BE FOUND IN SPE PAPERS.

REPORT NO.
1245901

PAGE NO. 9

SEQUENCE OF EVENTS

Schlumberger

DATE	TIME (HR:MIN)	DESCRIPTION	ET (MINS)	BHP (PSIA)	WHP (PSIG)
01-MAY	07:40	HYDROSTATIC MUD	-3		
	07:43	START FLOW 1/4" choke 2" blow in bucket	0		
	07:45	bottom of bucket	2		
	07:51	1/8" CHOKE	8		
	07:58	END FLOW & START SHUT-IN	15		1.50
	08:38	END SHUT-IN	55		
	08:31	START FLOW 1/4" CHOKE	48		5.0
	08:41		58		8.0
	08:51		68		11.0
	09:11		88		15.5
	09:21	45 MCF	98		18.0
	09:31	48 MCF	108		20.5
	09:31	END FLOW & START SHUT-IN	108		
	11:31	END SHUT-IN	228		
	11:35	HYDROSTATIC MUD	232		

REPORT NO.
1245901

PAGE NO. 10

DISTRIBUTION OF REPORTS

Schlumberger

SCHLUMBERGER has sent copies of this report to the following:

=====

MILLER ENERGY, INC.
7900 MOORSBRIDGE ROAD
KALAMAZOO, MI 49024
Attn: DON LEHMAN
(8 copies)

ATLAS ENERGY CORP.
311 ROUSER ROAD
P.O. BOX 611
MOON TOWNSHIP, PA 15108
Attn: BOB HEIM
(2 copies)

POWELL ENERGY, LLC
4350 SHAWNEE MISSION HWY.
SUITE 280
FAIRWAY, KS 66205
Attn: NICHOLAS K. POWELL
(2 copies)

WESTECH ENERGY CORP.
4643 S. ULSTER STREET
SUITE 1190
DENVER, CO 80237
Attn: DALE ANDREWS
(2 copies)

MUSKEGON DEVELOPMENT CO.
1425 S. MISSION ROAD
MT. PLEASANT, MI 48858
Attn: BILL MYLER, JR.
(1 copy)

ALPAR RESOURCES, INC.
320 SE 24TH STREET
P. O. BOX 1046
PERRYTON, TX 79070
Attn: BRENT ALLEN
(2 copies)

TPA
1100 STOUT STREET.
SUITE 1400
DENVER, CO 80204
Attn: DICK LOUDEN
(1 copy)

Any interpretations or recommendations are opinions and necessarily based on inferences and empirical factors and assumptions, which are not infallible. Accordingly, Schlumberger (Flopetrol Johnston) cannot and does not warrant the accuracy of correctness of any interpretation or measurement. Under no circumstances should any interpretation or measurement be relied upon as the sole basis for any drilling, completion, well treatment or production decision or any procedure involving risk to the safety of any drilling venture, drilling rig or its crew or any other individual. The Customer has full responsibility for all drilling, completion, well treatment, and production procedure, and all other activities relating to the drilling or production operation.

REPORT NO.
1245901

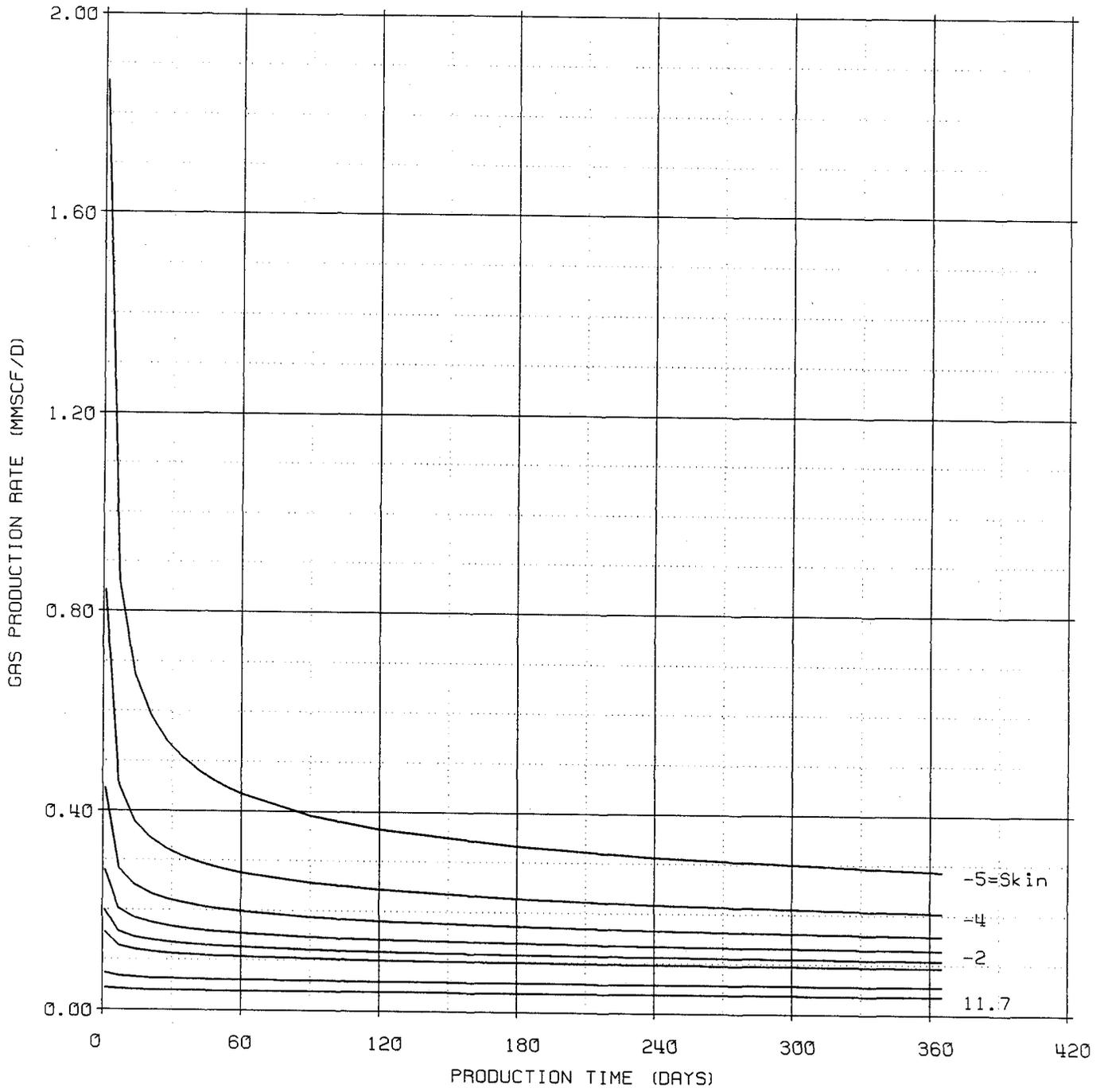
PAGE NO. 11

SENSITIVITY ANALYSIS
RATE VS. TIME (VS. S)
SKIN SENSITIVITY ANALYSIS

Schlumberger

RESERVOIR PRESSURE: 2236 PSI
PERMEABILITY: 0.044 MD
NET THICKNESS: 34 FT

LIQUID/GAS RATIO: 0.0 STB/MMSCF
TUBING SIZE: 2.441 IN (ID)
WELLHEAD PRESSURE: 50 PSI



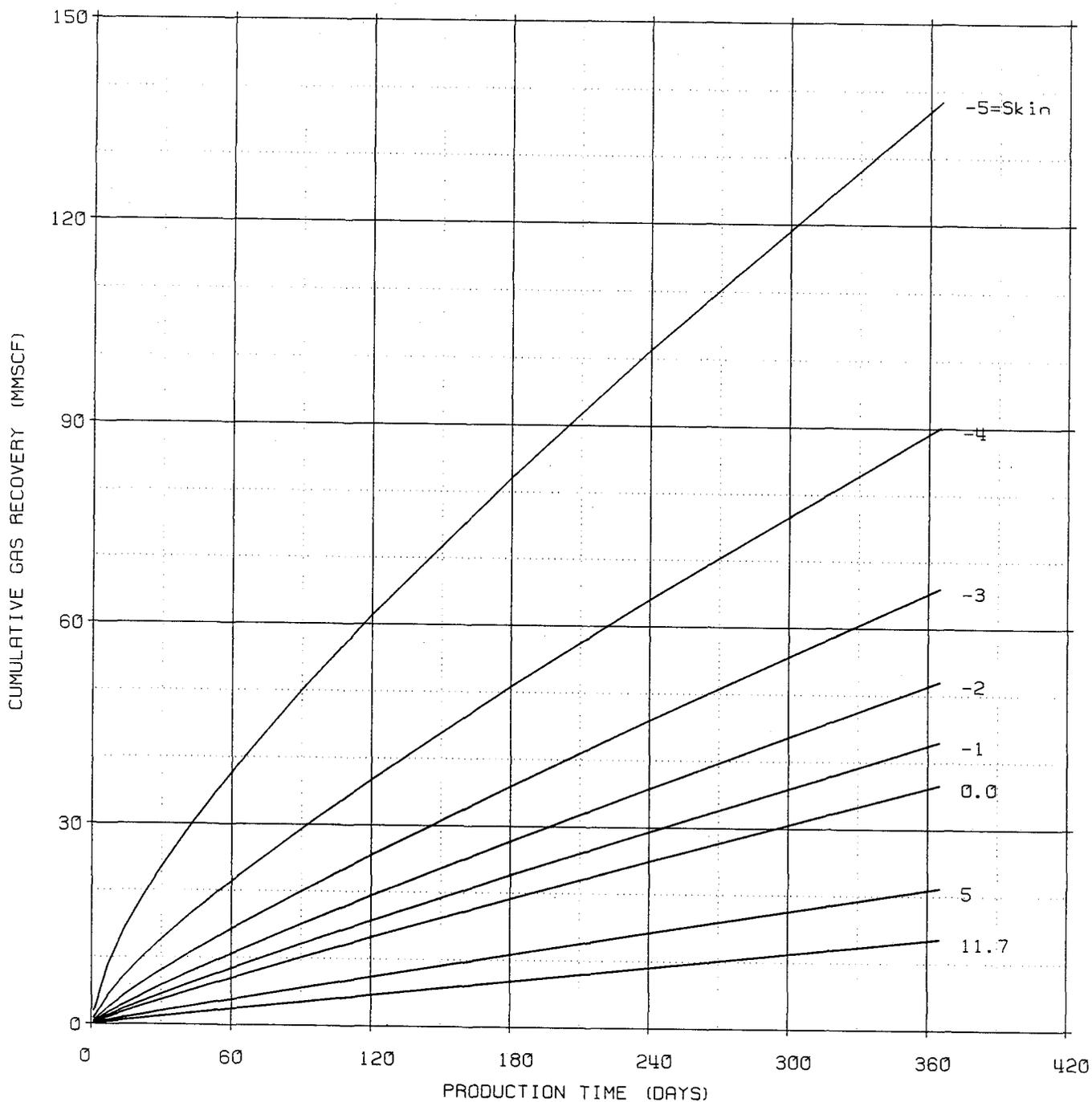
EFFECT OF TIME ON PRODUCTION RATE, FOR SKIN VALUES
FROM -5.000 TO 11.70 : SKIN SENSITIVITY ANALYSIS

SENSITIVITY ANALYSIS
RECOVERY VS. TIME (VS. S)
SKIN SENSITIVITY ANALYSIS

Schlumberger

RESERVOIR PRESSURE: 2236 PSI
PERMEABILITY: 0.044 MD
NET THICKNESS: 34 FT

LIQUID/GAS RATIO: 0.0 STB/MMSCF
TUBING SIZE: 2.441 IN (ID)
WELLHEAD PRESSURE: 50 PSI



EFFECT OF TIME ON CUMULATIVE RECOVERY, FOR SKIN VALUES
FROM -5.000 TO 11.70 : SKIN SENSITIVITY ANALYSIS

BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 124590

COMPANY : MILLER ENERGY

INSTRUMENT NO. J-2527

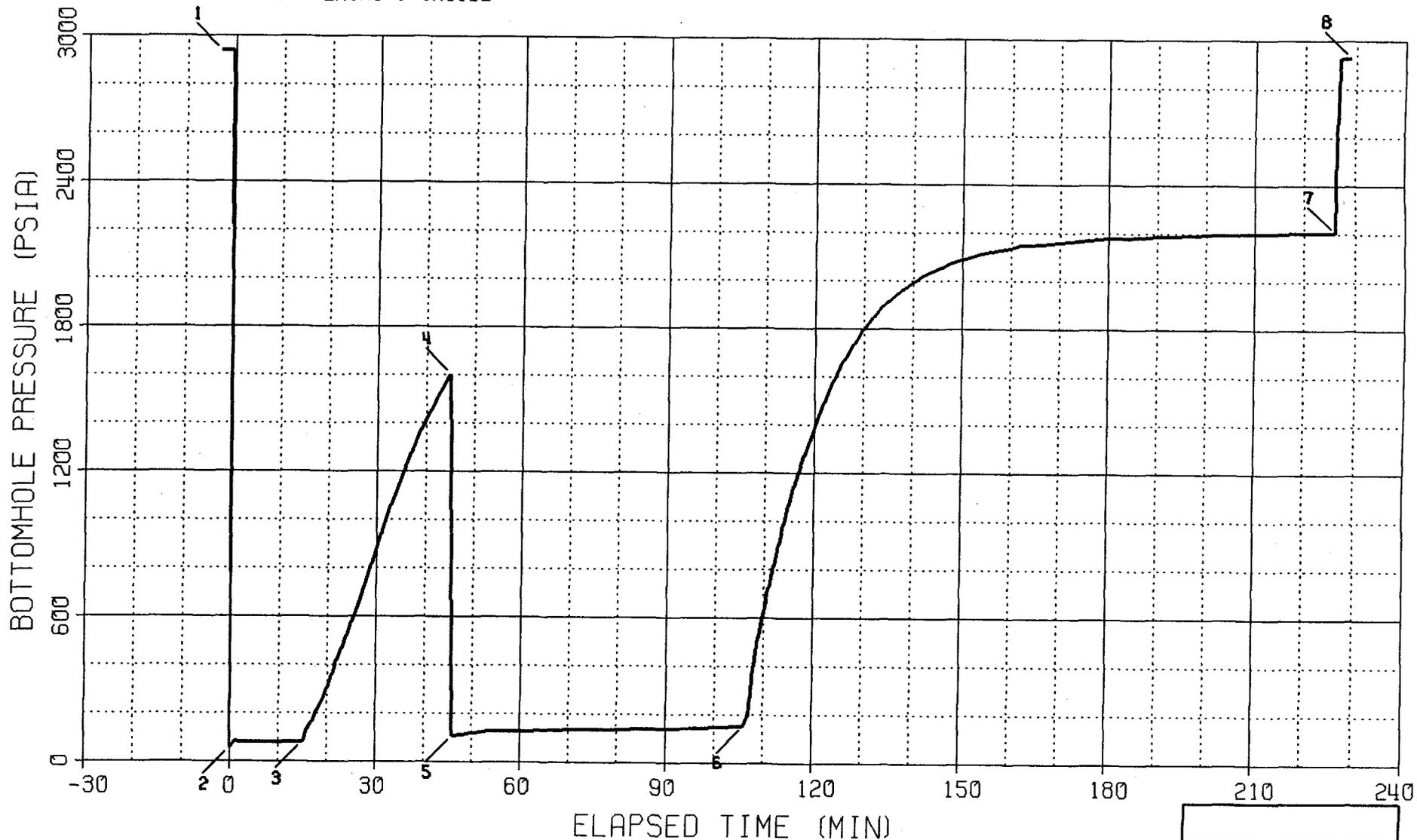
WELL : HORSE CANYON FED. 1-3

DEPTH : 6140 FT

CAPACITY : 4700 PSI

MECHANICAL PRESSURE DATA

PORT OPENING : INSIDE

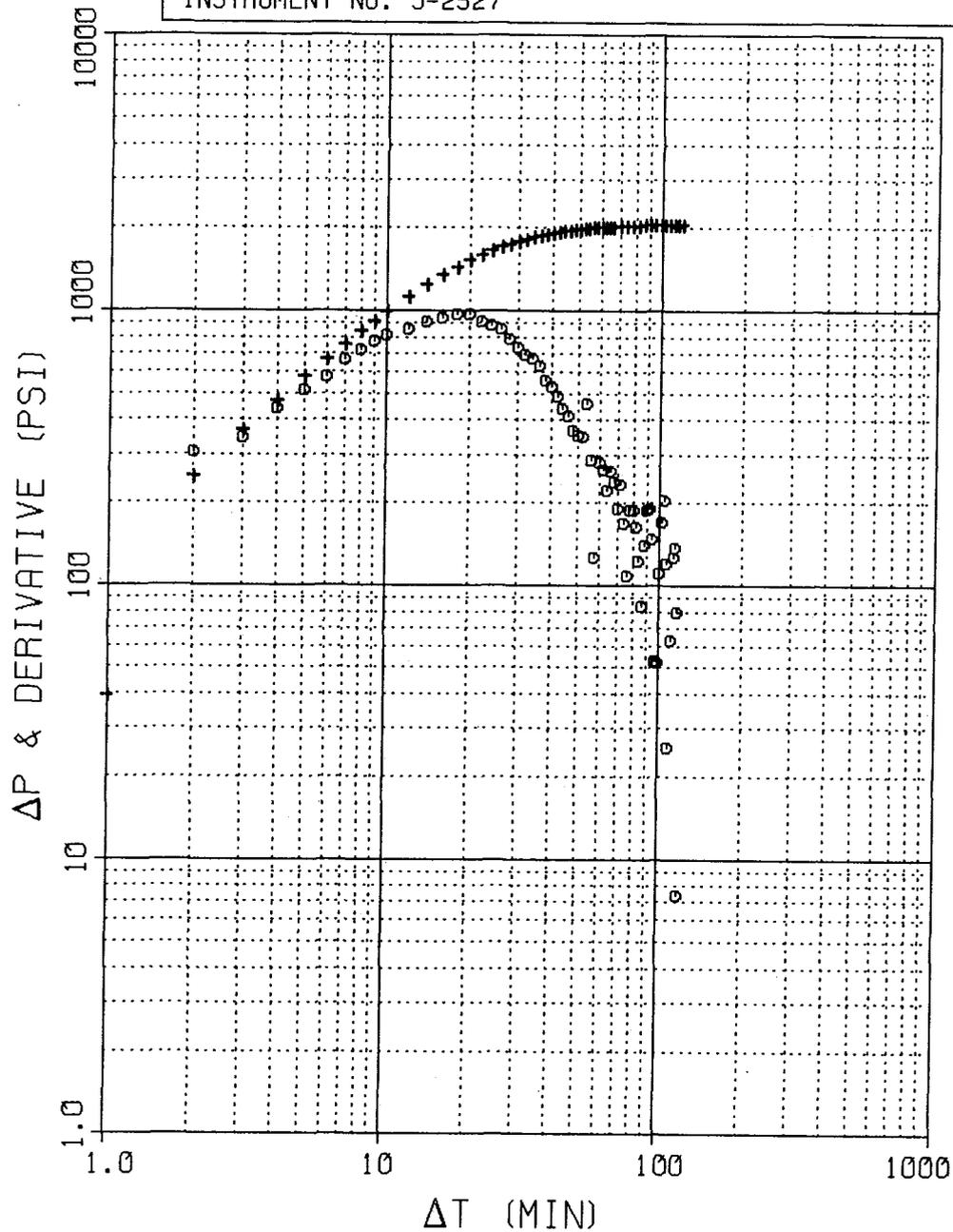


Schlumberger

LOG LOG PLOT

COMPANY : MILLER ENERGY
WELL : HORSE CANYON FED. 1-3
FIELD REPORT NO. 124590
INSTRUMENT NO. J-2527

SHUTIN #2 : PRODUCING TIME (T_p): 75.0 MIN
FINAL FLOW PRESSURE (P_{wf}): 151 PSIA
PLOT ELAPSED TIME RANGE: 107.0 TO 226.0 MIN
 ΔT TIME RANGE: 1.0 TO 120.0 MIN



ΔT (MIN)

0.76 1.2 1.9 3.1 5.1 8.3 14 25 50 128 ∞

HORNER PLOT

FIELD REPORT NO. 124590
INSTRUMENT NO. J-2527

COMPANY : MILLER ENERGY

WELL : HORSE CANYON FED. 1-3

SHUTIN #2 : FINAL FLOW PRESSURE (P_{wf}): 151 PSIA

PLOT ELAPSED TIME RANGE: 107.0 TO 226.0 MIN

ΔT TIME RANGE: 1.0 TO 120.0 MIN

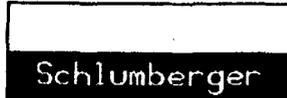
PRODUCING TIME (T_p): 75.0 MIN

PRESSURE (PSIA)

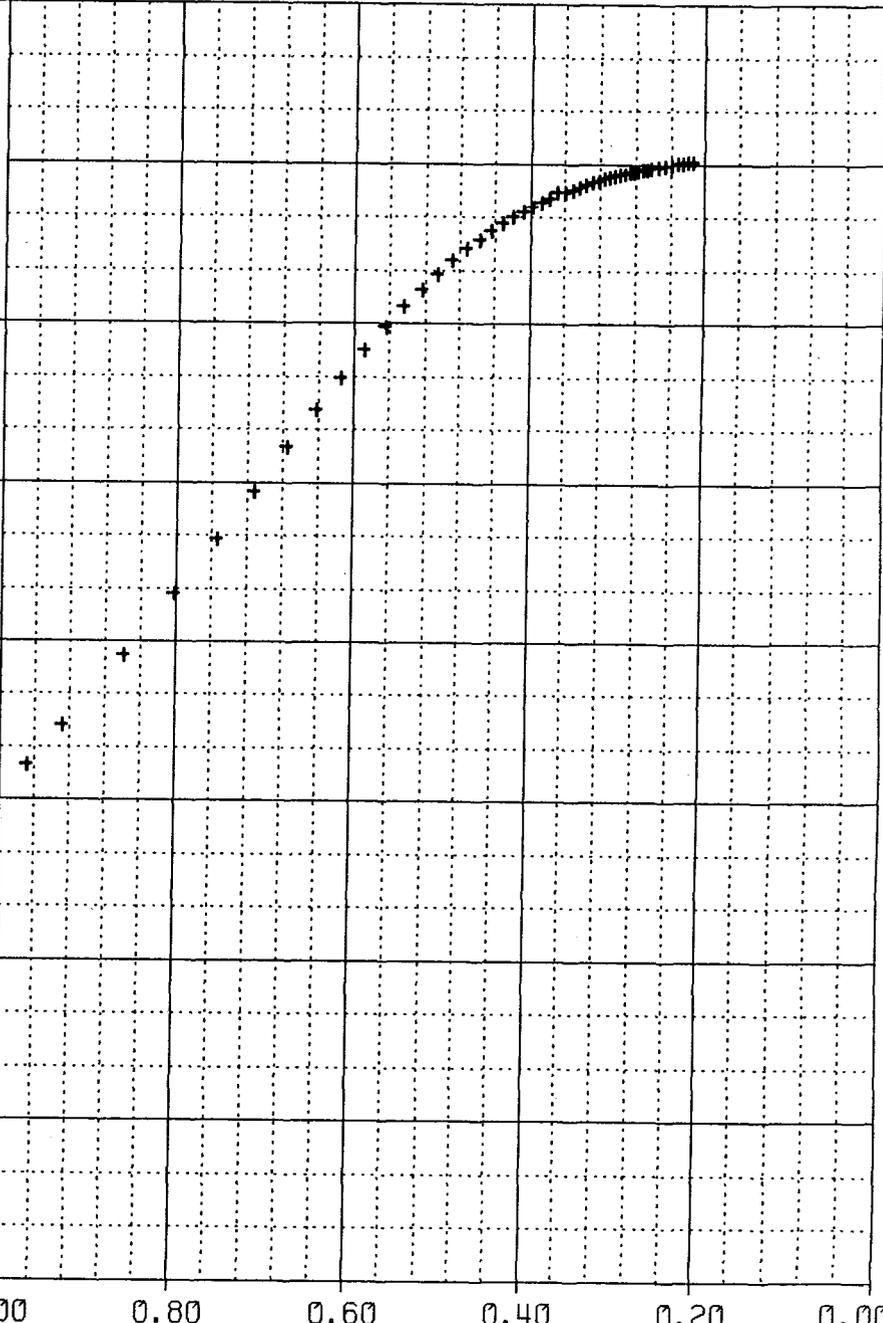
2500
2200
1900
1600
1300
1000
700
400
100

2.00 1.80 1.60 1.40 1.20 1.00 0.80 0.60 0.40 0.20 0.00

$\text{LOG} [(T_p + \Delta T) / \Delta T]$



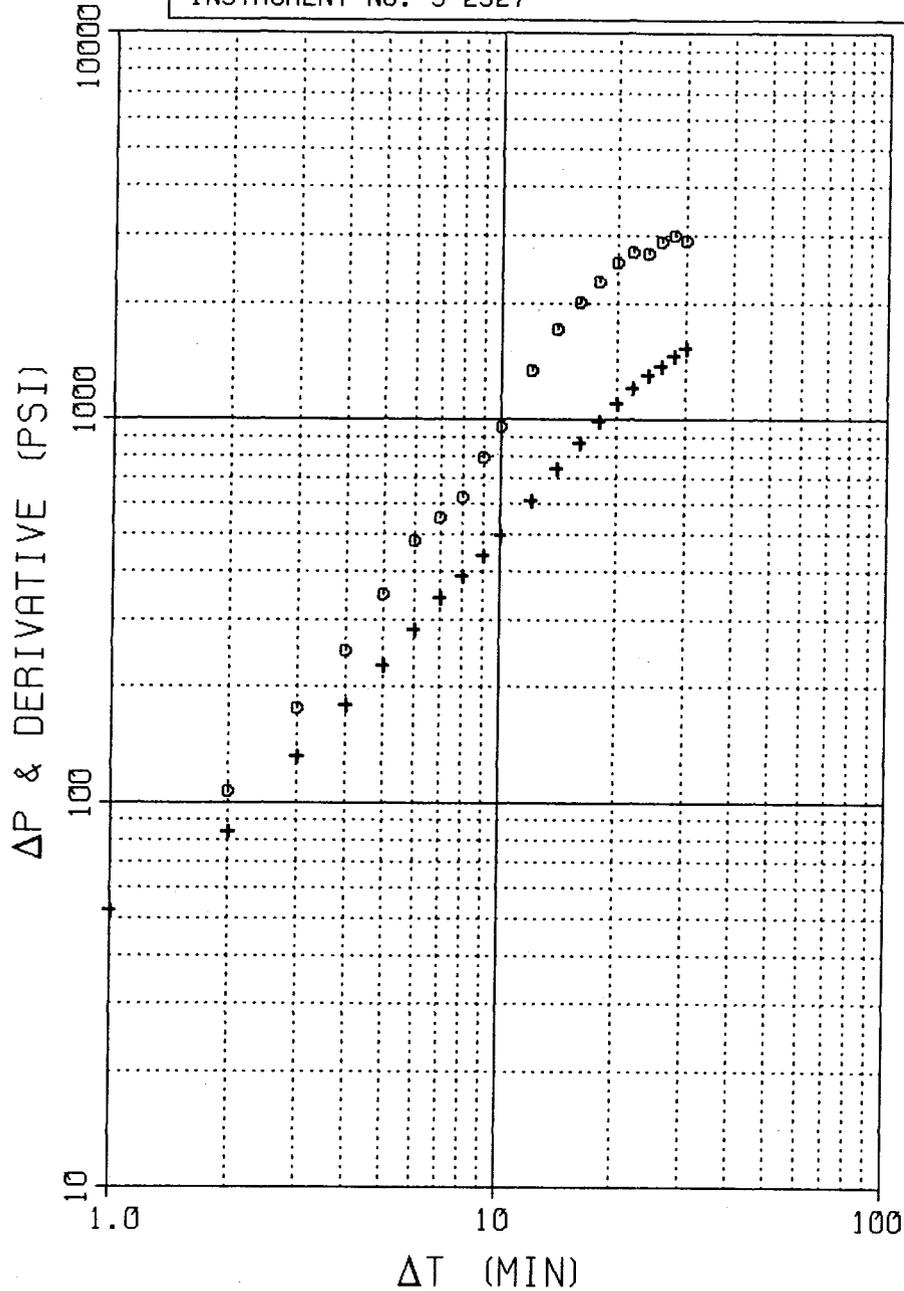
Schlumberger



LOG LOG PLOT

COMPANY : MILLER ENERGY
WELL : HORSE CANYON FED. 1-3
FIELD REPORT NO. 124590
INSTRUMENT NO. J-2527

SHUTIN #1 : PRODUCING TIME (T_p): 15.0 MIN
FINAL FLOW PRESSURE (P_{wf}): 77 PSIA
PLOT ELAPSED TIME RANGE: 16.0 TO 45.0 MIN
 ΔT TIME RANGE: 1.0 TO 30.0 MIN



Schlumberger

 ** WELL TEST DATA PRINTOUT **

COMPANY: MILLER ENERGY
 WELL: HORSE CANYON FED. 1-3

FIELD REPORT NO. 124590
 INSTRUMENT NO. J-2527

RECORDER CAPACITY: 4700 PSI PORT OPENING: INSIDE DEPTH: 6140 FT
 TEMPERATURE: 134 DEG F

LABEL POINT INFORMATION

#	TIME OF DAY HH:MM:SS	DATE DD-MMM	EXPLANATION	ELAPSED TIME, MIN	BOT HOLE PRESSURE PSIA
1	7:40:00	1-MAY	HYDROSTATIC MUD	-3.00	2940
2	7:43:00	1-MAY	START FLOW	0.00	53
3	7:58:00	1-MAY	END FLOW & START SHUT-IN	15.00	77
4	8:28:00	1-MAY	END SHUT-IN	45.00	1600
5	8:29:00	1-MAY	START FLOW	46.00	106
6	9:29:00	1-MAY	END FLOW & START SHUT-IN	106.00	151
7	11:29:00	1-MAY	END SHUT-IN	226.00	2205
8	11:32:00	1-MAY	HYDROSTATIC MUD	229.00	2931

SUMMARY OF FLOW PERIODS

PERIOD	START ELAPSED TIME, MIN	END ELAPSED TIME, MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	INITIAL PRESSURE PSIA
1	0.00	15.00	15.00	53	77	53
2	46.00	106.00	60.00	106	151	106

SUMMARY OF SHUTIN PERIODS

PERIOD	START ELAPSED TIME, MIN	END ELAPSED TIME, MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	15.00	45.00	30.00	77	1600	77	15.00
2	106.00	226.00	120.00	151	2205	151	75.00

TEST PHASE: FLOW PERIOD # 1

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA
HH:MM:SS	DD-MMM			
7:43:00	1-MAY	0.00	0.00	53
7:58:00	1-MAY	15.00	15.00	77

TEST PHASE: SHUTIN PERIOD # 1

FINAL FLOW PRESSURE = 77 PSIA
PRODUCING TIME = 15.00 MIN

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
HH:MM:SS	DD-MMM					
7:58:00	1-MAY	15.00	0.00	77	0	
7:59:00	1-MAY	16.00	1.00	129	52	1.2041
8:00:00	1-MAY	17.00	2.00	161	84	0.9294
8:01:00	1-MAY	18.00	3.00	209	132	0.7782
8:02:00	1-MAY	19.00	4.00	256	179	0.6767
8:03:00	1-MAY	20.00	5.00	304	228	0.6021
8:04:00	1-MAY	21.00	6.00	358	281	0.5441
8:05:00	1-MAY	22.00	7.00	417	340	0.4973
8:06:00	1-MAY	23.00	8.00	466	389	0.4586
8:07:00	1-MAY	24.00	9.00	518	441	0.4260
8:08:00	1-MAY	25.00	10.00	575	498	0.3979
8:10:00	1-MAY	27.00	12.00	688	611	0.3522
8:12:00	1-MAY	29.00	14.00	817	740	0.3163
8:14:00	1-MAY	31.00	16.00	940	863	0.2872
8:16:00	1-MAY	33.00	18.00	1058	981	0.2632
8:18:00	1-MAY	35.00	20.00	1169	1093	0.2430
8:20:00	1-MAY	37.00	22.00	1276	1199	0.2258
8:22:00	1-MAY	39.00	24.00	1371	1294	0.2109
8:24:00	1-MAY	41.00	26.00	1450	1373	0.1978
8:26:00	1-MAY	43.00	28.00	1532	1455	0.1863
8:28:00	1-MAY	45.00	30.00	1600	1523	0.1761

TEST PHASE: FLOW PERIOD # 2

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA
HH:MM:SS	DD-MMM			
8:29:00	1-MAY	46.00	0.00	106
8:45:00	1-MAY	62.00	16.00	127
9:01:00	1-MAY	78.00	32.00	134
9:17:00	1-MAY	94.00	48.00	141
9:29:00	1-MAY	106.00	60.00	151

TEST PHASE: SHUTIN PERIOD # 2

FINAL FLOW PRESSURE = 151 PSIA
PRODUCING TIME = 75.00 MIN

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
HH:MM:SS	DD-MMM					
9:29:00	1-MAY	106.00	0.00	151	0	
9:30:00	1-MAY	107.00	1.00	190	39	1.8808
9:31:00	1-MAY	108.00	2.00	400	249	1.5855
9:32:00	1-MAY	109.00	3.00	518	367	1.4150

TEST PHASE: SHUTIN PERIOD # 2

FINAL FLOW PRESSURE = 151 PSIA

PRODUCING TIME = 75.00 MIN

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
HH:MM:SS	DD-MMM					
9:33:00	1-MAY	110.00	4.00	621	470	1.2956
9:34:00	1-MAY	111.00	5.00	724	573	1.2041
9:35:00	1-MAY	112.00	6.00	815	664	1.1303
9:36:00	1-MAY	113.00	7.00	902	751	1.0687
9:37:00	1-MAY	114.00	8.00	988	837	1.0160
9:38:00	1-MAY	115.00	9.00	1066	915	0.9700
9:39:00	1-MAY	116.00	10.00	1141	991	0.9294
9:41:00	1-MAY	118.00	12.00	1273	1123	0.8603
9:43:00	1-MAY	120.00	14.00	1389	1238	0.8033
9:45:00	1-MAY	122.00	16.00	1492	1342	0.7549
9:47:00	1-MAY	124.00	18.00	1583	1433	0.7132
9:49:00	1-MAY	126.00	20.00	1667	1516	0.6767
9:51:00	1-MAY	128.00	22.00	1737	1586	0.6443
9:53:00	1-MAY	130.00	24.00	1796	1645	0.6154
9:55:00	1-MAY	132.00	26.00	1849	1698	0.5893
9:57:00	1-MAY	134.00	28.00	1894	1743	0.5657
9:59:00	1-MAY	136.00	30.00	1932	1781	0.5441
10:05:00	1-MAY	142.00	36.00	2019	1868	0.4890
10:11:00	1-MAY	148.00	42.00	2075	1924	0.4449
10:17:00	1-MAY	154.00	48.00	2110	1960	0.4087
10:23:00	1-MAY	160.00	54.00	2135	1984	0.3782
10:29:00	1-MAY	166.00	60.00	2152	2001	0.3522
10:35:00	1-MAY	172.00	66.00	2165	2014	0.3297
10:41:00	1-MAY	178.00	72.00	2175	2024	0.3100
10:47:00	1-MAY	184.00	78.00	2182	2031	0.2926
10:53:00	1-MAY	190.00	84.00	2188	2037	0.2771
10:59:00	1-MAY	196.00	90.00	2192	2041	0.2632
11:05:00	1-MAY	202.00	96.00	2197	2046	0.2507
11:11:00	1-MAY	208.00	102.00	2198	2048	0.2394
11:17:00	1-MAY	214.00	108.00	2202	2051	0.2290
11:23:00	1-MAY	220.00	114.00	2204	2053	0.2196
11:29:00	1-MAY	226.00	120.00	2205	2054	0.2109

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

(See other instructions on reverse side)

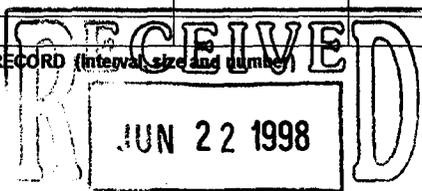
FORM APPROVED
OMB NO. 1004-0137
Expires: February 28, 1995

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input checked="" type="checkbox"/> Other _____		5. LEASE DESIGNATION AND SERIAL NO. UTU 76283	
b. TYPE OF COMPLETION: NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEP-EN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> Other _____		6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
2. NAME OF OPERATOR Miller Energy Inc.		7. UNIT AGREEMENT NAME	
3. ADDRESS AND TELEPHONE NO. 7900 Moorsbridge Road, Kalamazoo MI (616) 324-3390		8. FARM OR LEASE NAME, WELL NO. Horse Canyon Federal 1-3	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface 690' FSL x 1720' FWL, Section 3, T38S, R23E At top prod. interval reported below same At total depth same		9. API WELL NO. 43-037-31798	
14. PERMIT NO.		DATE ISSUED 03/31/98	12. COUNTY OR PARISH San Juan
15. DATE SPUNDED 04/18/98		16. DATE T.D. REACHED 05/03/98	13. STATE Utah
17. DATE COMPL. (Ready to prod.) 05/05/98	18. ELEVATIONS (DF, RKB, RT, GE, ETC.)* 5610' KB, 5595' GL	19. ELEV. CASINGHEAD n/a	
20. TOTAL DEPTH, MD & TVD 6441	21. PLUG, BACK T.D., MD & TVD n/a	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY →
24. PRODUCING INTERVAL(S), OF THIS COMPLETION-TOP, BOTTOM, NAME (MD AND TVD)* P&A, no commercial intervals		ROTARY TOOLS X	CABLE TOOLS
25. WAS DIRECTIONAL SURVEY MADE No			26. TYPE ELECTRIC AND OTHER LOGS RUN DLL/CNL/FDC, microlog, Sonic, Dip meter
27. WAS WELL CORED No			28. CASING RECORD (Report all strings set in well)

26. TYPE ELECTRIC AND OTHER LOGS RUN DLL/CNL/FDC, microlog, Sonic, Dip meter						27. WAS WELL CORED No	
28. CASING RECORD (Report all strings set in well)							
CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED		
13 3/8, H40	48	260	17 1/2"	surface, 325 sks class 'b'	n/a		
9 5/8, J55	36	2551	12 1/4"	surface, 500 sks 65/35 poz, 60 sks 'b'	n/a		

29. LINER RECORD				30. TUBING RECORD			
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
n/a					n/a		
31. PERFORATION RECORD (interval, size and number) n/a				32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.			
				DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED		
				n/a			



33. * PRODUCTION							
DATE FIRST PRODUCTION		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)				WELL STATUS (Producing or shut-in) P&A	
DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)						TEST WITNESSED BY	

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Rob R. Cy TITLE Consulting Engineer DATE 05/30/98

*(See Instructions and Spaces for Additional Data on Reverse Side)

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof, cored intervals; and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Morrison	surface	732	
Bluff Ss	732	902	
Wanakah	902	1072	
Entrada Ss	1072	1270	
Navajo Ss	1270	1762	
Kayenta Fm	1762	1873	
Wingate Ss	1873	2224	
Chinle Fm	2224	2865	
Shinarump Cgl	2865	3003	
Moenkopi Fm	3003	3072	
Cutler Grp	3072	3210	
De Chelly Ss	3210	3311	
Organ Rock Sh	3311	3804	
Cedar Mesa Ss	3804	4592	
Halgaito Sh	4592	5060	
Honaker Trail Fm	5060	6066	
Upper Ismay	6066	6173	non commercial rate of natural gas
Hovenweep Shale	6173	6193	
Lower Ismay	6193	6247	
Gothic Shale	6247	6275	
Desert Creek	6275	6348	
Lower Desert Creek	6348	6377	
Chimney Rock Sh	6377	6404	
Akah	6404		
TD	6440		

38. GEOLOGICAL MARKERS			38. GEOLOGICAL MARKERS		
NAME	TOP		NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH		MEAS. DEPTH	TRUE VERT. DEPTH