Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

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

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

2. NAME OF OPERATOR: Phillips Oil Company

3. ADDRESS OF OPERATOR: P. O. Box 2920 Casper, WY 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1870' FSL, 1980' FEL (NW SE)
At proposed prod. zone: Same

RECEIVED
JAN 07 1985
DIVISION OF OIL, GAS & MINING

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-353
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo
7. UNIT AGREEMENT NAME: SW-I-4192
8. FARM OR LEASE NAME: Ratherford Unit
9. WELL NO.: #18-33
10. FIELD AND POOL, OR WILDCAT: ✓ Greater Aneth
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 18-T41S-R24E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: Approximately 4 miles southeast of Montezuma Creek, Utah

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

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 3300' east of Ratherford Unit Lease line

16. NO. OF ACRES IN LEASE: 2560 acres

17. NO. OF ACRES ASSIGNED TO THIS WELL: 40 acres

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: 1097' north of #18-34

19. PROPOSED DEPTH: 5700' Desert Creek

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 4807' ungraded ground

22. APPROX. DATE WORK WILL START*: First Quarter 1985

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	13-3/8"	48#	100'	150 sx (Circ to surface)
12-1/4"	9-5/8"	36#	1600'	600 sx (Circ to surface)
8-1/2"	7"	23# & 26#	5700'	600 sx (T.O.C. approx. 2000')

Approval is requested to drill Ratherford Unit #18-33, a Desert Creek Development oil well, to increase the ultimate recovery from the Ratherford Unit.

BOP equipment will be operated daily and tested weekly.

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 1/22/85
BY:

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED A. E. Stuart TITLE Area Manager DATE December 27, 1984

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

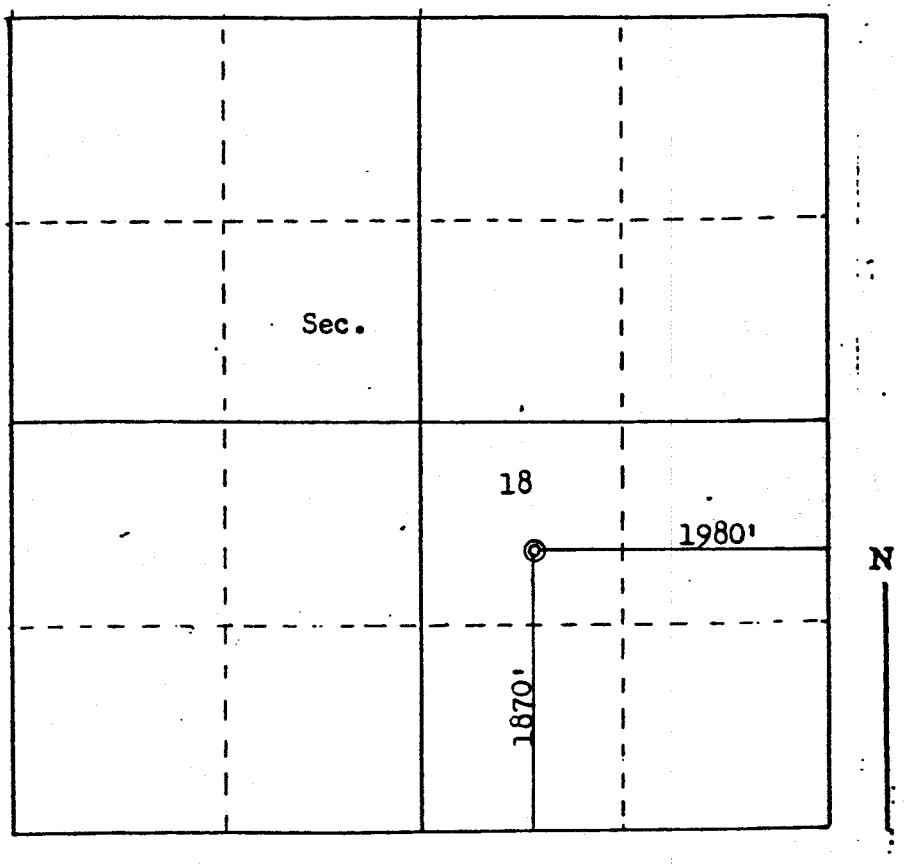
COMPANY PHILLIPS OIL COMPANY

LEASE RATHERFORD UNIT WELL NO. 18-33

SEC. 18, T. 41S R. 24E
San Juan County, Utah

LOCATION 1870'FSL 1980'FEL

ELEVATION 4807 ungraded ground



SCALE—4 INCHES EQUALS 1 MILE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTE OF ACTUAL SURVEYS MADE BY ME UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SEAL

Registered Land Surveyor.
#3950
FRED S. KERR, JR.

SURVEYED May 14, 19 84

FARMINGTON, N. M.

RATHERFORD UNIT #18-33

Supplement to Form 9-331C "Application for Permit to Drill, Deepen, or Plug Back."

DRILLING PROGRAM

1. Surface formation is the Dune Sand, which consists of loose windblown sand, age-recent.

   Estimated tops of geologic markers:

Shinarump	2380'
DeChelly	2680'
Hermosa	4588'
Desert Creek Zone I	5591'

2. Brackish water-bearing sands are expected in the Navajo, Wingate, and DeChelly formations. Oil is expected to be encountered in the Ismay and Desert Creek formations. The top of cement will be approximately at 2000'.

3. Blow-out preventers will be 10" Series 900 equipment to be tested initially to 3000 psi. They will be inspected and operated daily and pressure tested weekly to 1500 psi. Weekly pressure tests will be supervised by representatives of Phillips Oil Company and the drilling contractor. Tests will be recorded on the daily drilling report which will remain on the rig floor during drilling operations. BOP tests will be conducted in accordance with Phillips standards, copy attached.

4. a. Proposed Casing Program:

   1. Conductor casing:

100'	13-3/8"	48#/ft	H-40	ST&C	new

   2. Surface casing:

1600'	9-5/8"	36#/ft	K-55	ST&C	new

      Surface casing will be tested to 1500# before drilling out.

   3. Production casing:

5700'	7"	23# & 26#/ft	K-55	ST&C	new

      Production casing will be tested to 3000#.

b. Proposed Cementing Program:

1. Conductor Casing:

Conductor casing will be cemented with 150 sks Class B cement. Cement will be brought to surface.

2. Surface Casing:

Surface casing will be cemented with 300 sks "light" cement followed with 300 sks Class B cement. Cement will be brought to surface.

3. Production casing:

Production casing will be cemented with "light" cement followed with Class B cement. For cement volume, caliper will be used with 15% excess. The top of the cement should be around 2000'. If other zones with hydrocarbon potential are encountered, they will be covered with cement.

c. Auxiliary Equipment:

Auxiliary equipment will include upper and lower kelly cocks, a drill string safety valve, and a pit level indicator.

5. Drilling Fluid:

Drilling fluid will be a fresh water based mud system. Spud mud is gel and water with a weight of 8.4-8.8 ppg. From the surface to approximately 1600', gel and water will be used. Mud weight may be up to 9 ppg to control water flow from the Wingate formation. A slurry of 8.6-9.5 ppg, 32-38 viscosity, and less than 15cc/30 min. water loss will be used from 1600'-5200'. Mud weight may be increased to 10.4 ppg if a water flow is encountered. From 5200' to total depth mud properties will be 10.5-12.5 ppg, 40-45 viscosity, and below 10 cc water loss.

Adequate quantities of mud materials will be stored at the location to equal the volume of the rigs complete circulating system. A flow sensor will be used.

6. Testing, logging, and coring:

The logging program will consist of DLL, GR, SP, and Caliper from T. D. to the surface casing. A FDC/CNL and a Micro-proximity log will be run from T. D. to 4300'. A temperature or cement bond log will be run to determine cement top. It is proposed to core the Desert Creek Zone I.

7. Downhole Conditions:

Drilling in the area indicates no abnormal pressures, temperatures, or hydrogen sulfide gas.

8. Phillips anticipates starting operations in the first quarter of 1985. Drilling operations are estimated to take fifteen days per well.

CULTURAL RESOURCE REPORT

San Juan College has prepared a cultural resource inventory of the subject wellsite. A copy of the report has been sent to the BLM Farmington office. Pertinent information regarding the subject well is attached.

SURFACE USE PROGRAM

1. Existing Roads

   a. Access to existing lease roads is approximately 4 miles southeast of Montezuma Creek, Utah.

   b. The existing roads will be maintained in the same or better condition.

   c. Refer to the attached access road map for road information.

2. Access Roads

   Planned upgrading of existing access roads is shown on the attached map.

3. Location of Existing Wells.

   Locations of existing wells are shown on the attached maps.

4. Production from the proposed well will be piped to Ratherford Unit Tank Battery #2, located in the NW SE Sec. 12-T41S-R23E San Juan County, Utah. The flowline will be visible from the existing lease roads. A plat of the proposed leadline is attached.

5. Water Supply

   a. The source of water to drill the subject well is from the River Booster, NE/4 Sec. 5., or from the Water Injection Plant, SE/4 Sec. 17 in T41S-R24E, San Juan County, Utah.

   b. The drilling water will be trucked from the water source to the subject well.

   c. A water supply well will not be drilled on the lease.

6. Construction Materials

   a. Only native soils will be used for construction of wellsite and the access road.

b. Pit run rock will be used on the wellsite and access road when needed.

c. The above materials are owned by the Navajo Tribe.

7. Waste Disposal

a. Cuttings: Cuttings will be contained in a fenced reserve pit until dry enough to cover. Upon abandonment, the reserve pit area will be backfilled, shaped to natural topography, and seeded.

b. Drilling Fluid: Drilling fluid will be contained in a fenced reserve pit until dry enough to cover. Upon abandonment, the reserve pit area will be backfilled, shaped to natural topography, and seeded.

c. Garbage/Trash: All garbage and trash will be put in the burn pit. The burn pit will be fenced on four sides. After the burn pit is no longer in use, the trash and garbage will be covered with a minimum of 4 feet of fill.

d. Salt: No salts are anticipated on this well. If salt is present, it will be disposed of in the reserve pit.

e. Chemicals: Chemicals will be disposed of in the reserve pit.

f. Sewage: Dry chemical toilets will be used.

8. Ancillary Facilities

No ancillary facilities are required.

9. Well Site Layout.

a. Refer to attached Rig Layout plat

b. There are no plans to line the reserve pit unless porous soil materials are encountered during construction.

10. Surface Reclamation Plans

a. Construction Program: A cross section of the drill site showing cuts and fills is attached.

b. Well Abandonment: All disturbed areas will be shaped to the natural topography and seeded in accordance with BLM requirements.

c. Producing Well: Those areas not needed for production purposes will be recontoured to the surrounding topography. Seeding will be in accordance with BLM requirements.

d. Pipelines and flowlines: Flowlines will be above ground and follow or be visable from existing roads.

e. Rehabilitation will begin as soon as possible, considering weather and other factors, and proceed per recommendation of the BLM. The reserve pit will be reclaimed once it dries.

11. Surface Ownership: The wellsite location, access road and leadline are on the Navajo Indian Reservation. No dwellings are in the proposed drilling area.

12. Other information:

The reserve pit will be fenced on three sides during drilling and on the fourth side after the rig is moved out.

13. Operator's Representative and Certification.

a. Field Representative:

A. E. Stuart
P. O. Box 2920
Casper, Wyoming 82602
307-237-3791

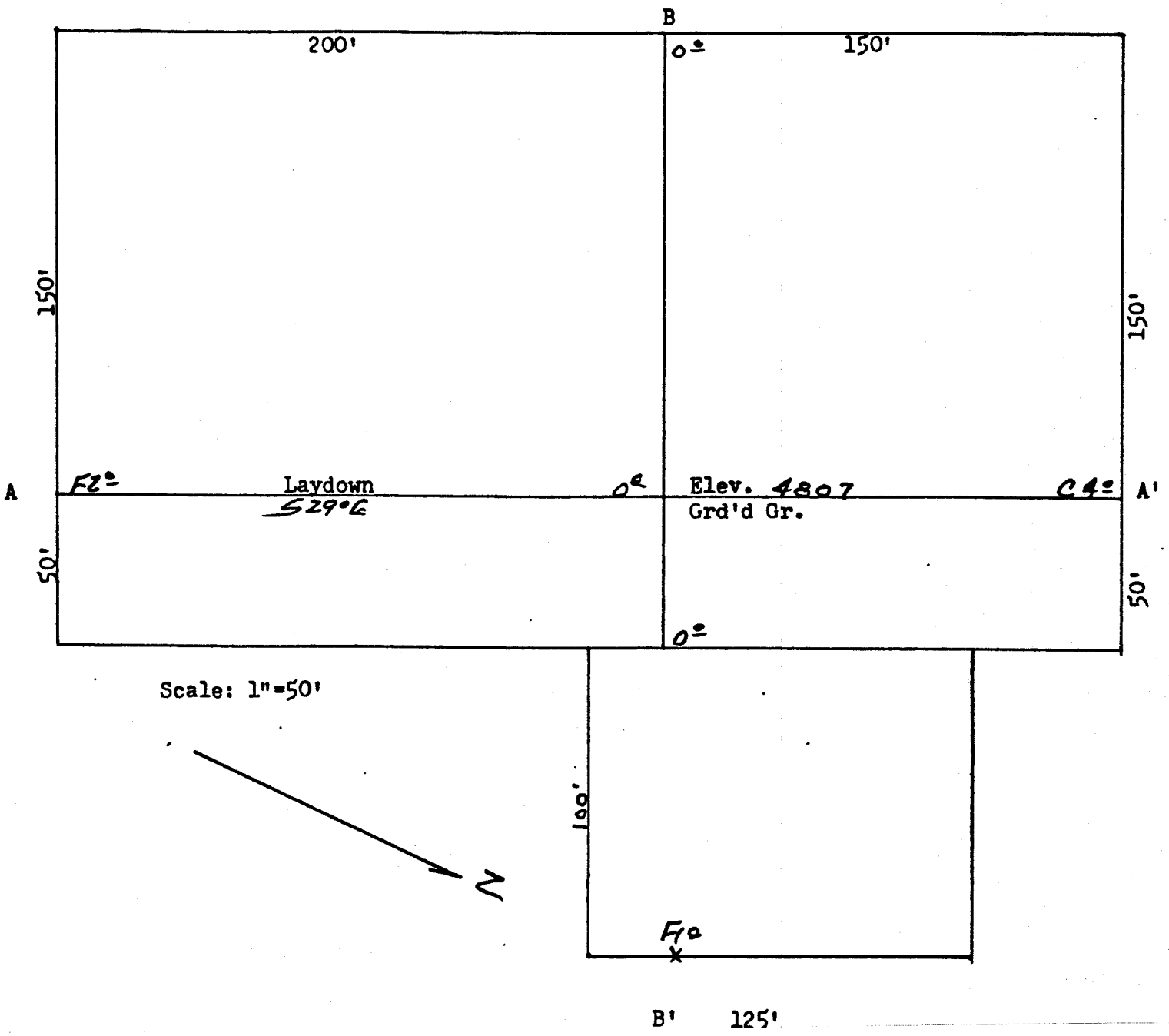
I hereby certify that I or persons under my direct supervision have inspected the proposed drill site and access route; and I am familiar with the conditions which currently exist; that the statements made in this plan are to the best of my knowledge true and correct; and that the work associated with operations proposed herein will be performed by Phillips Oil Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of the 18 U.S.C. 1001 for the filing of a false statement.

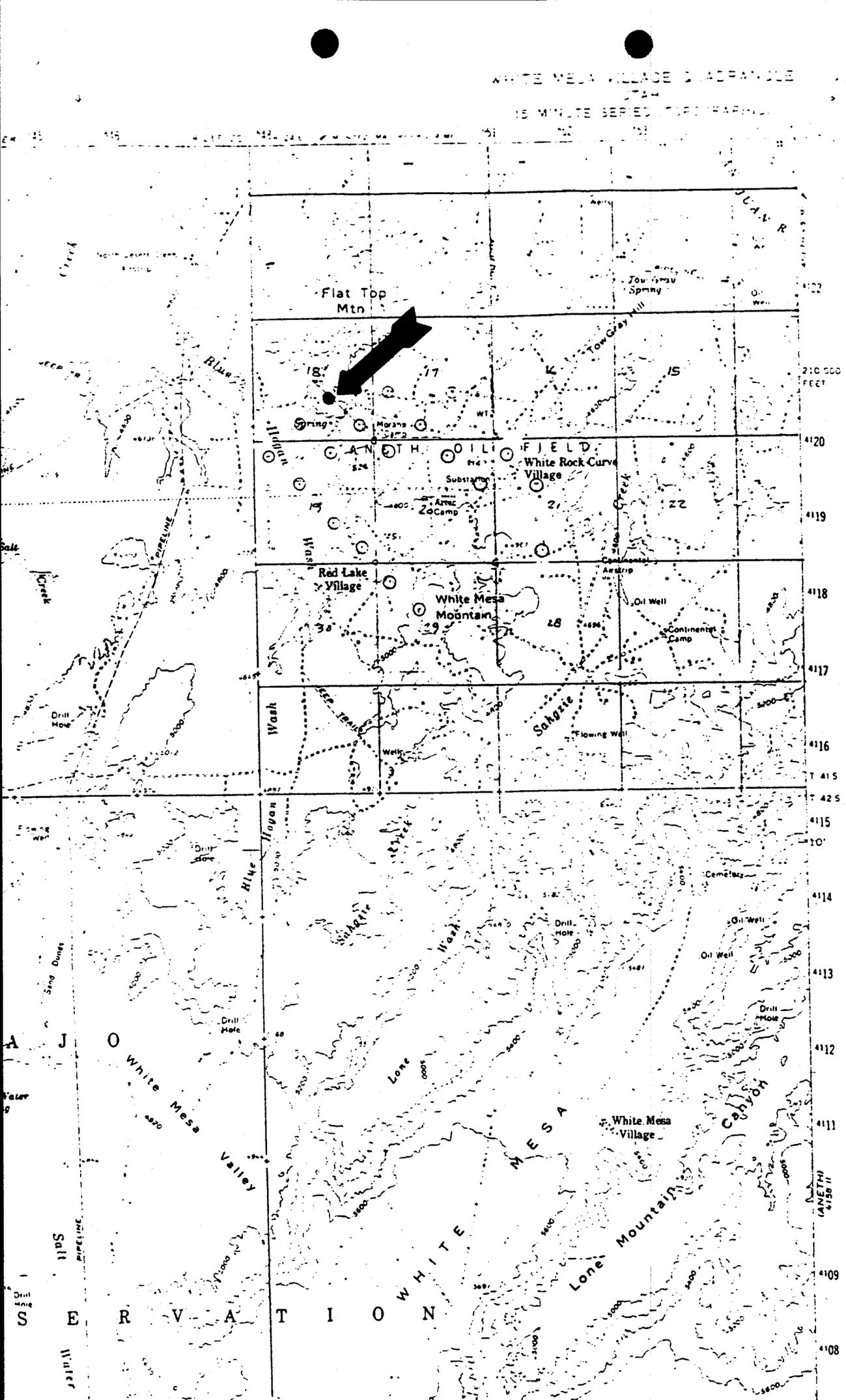
Date December 28, 1984

A. E. Stuart
Area Manager

BJM/fb:lt(18)
Casper - RC

Profile for
PHILLIPS OIL COMPANY #18-33 RATHERFORD UNIT
1870' FSL 1980'FEL Sec. 18-T41S-R24E
SAN JUAN COUNTY, UTAH



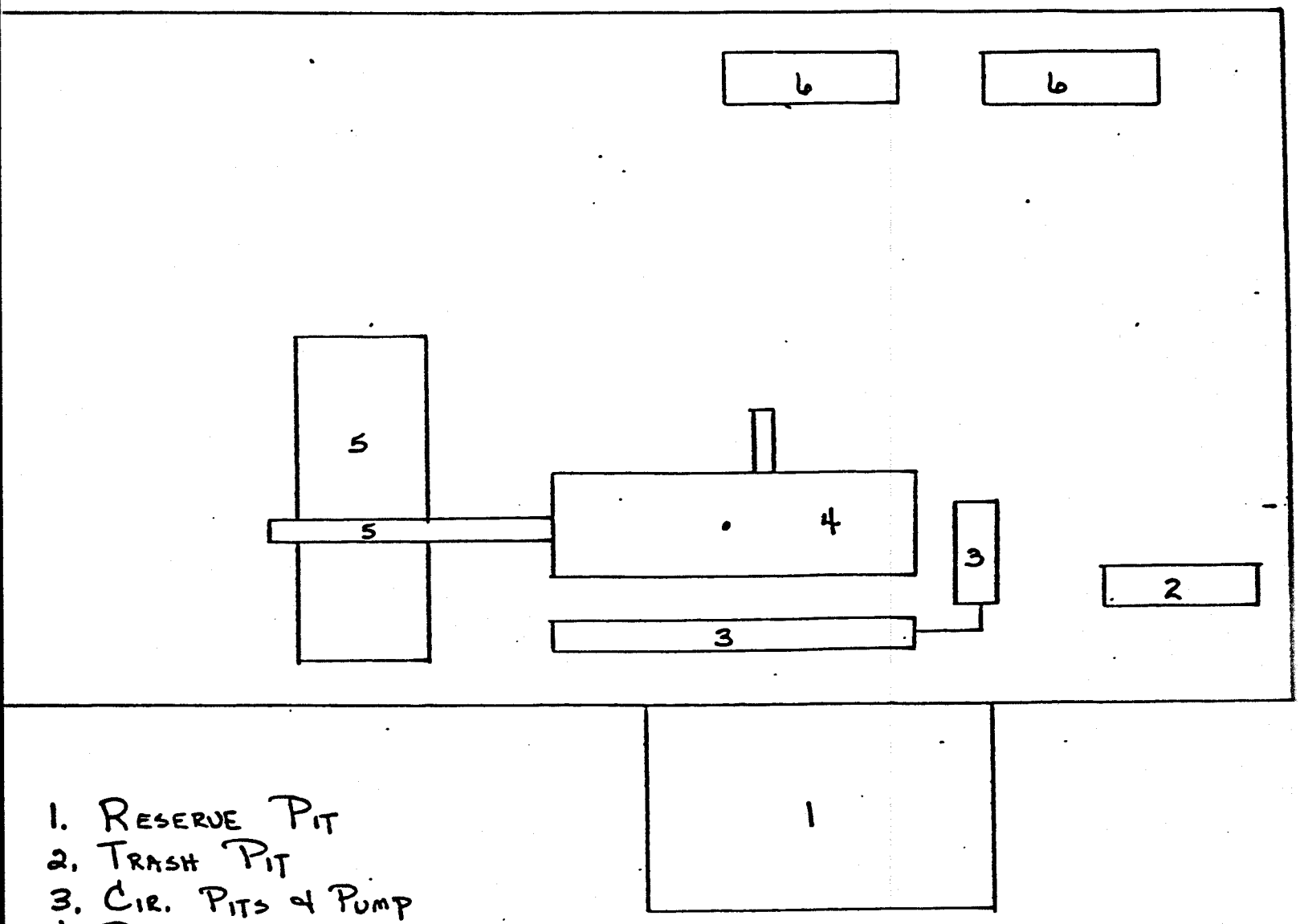


Vicinity Map for
PHILLIPS OIL COMPANY #18-33 RATHERFORD UNIT
1870'FSL 1980'FEL Sec. 18-T41S-R24E
SAN JUAN COUNTY, UTAH

Fatherford Unit

#18-33

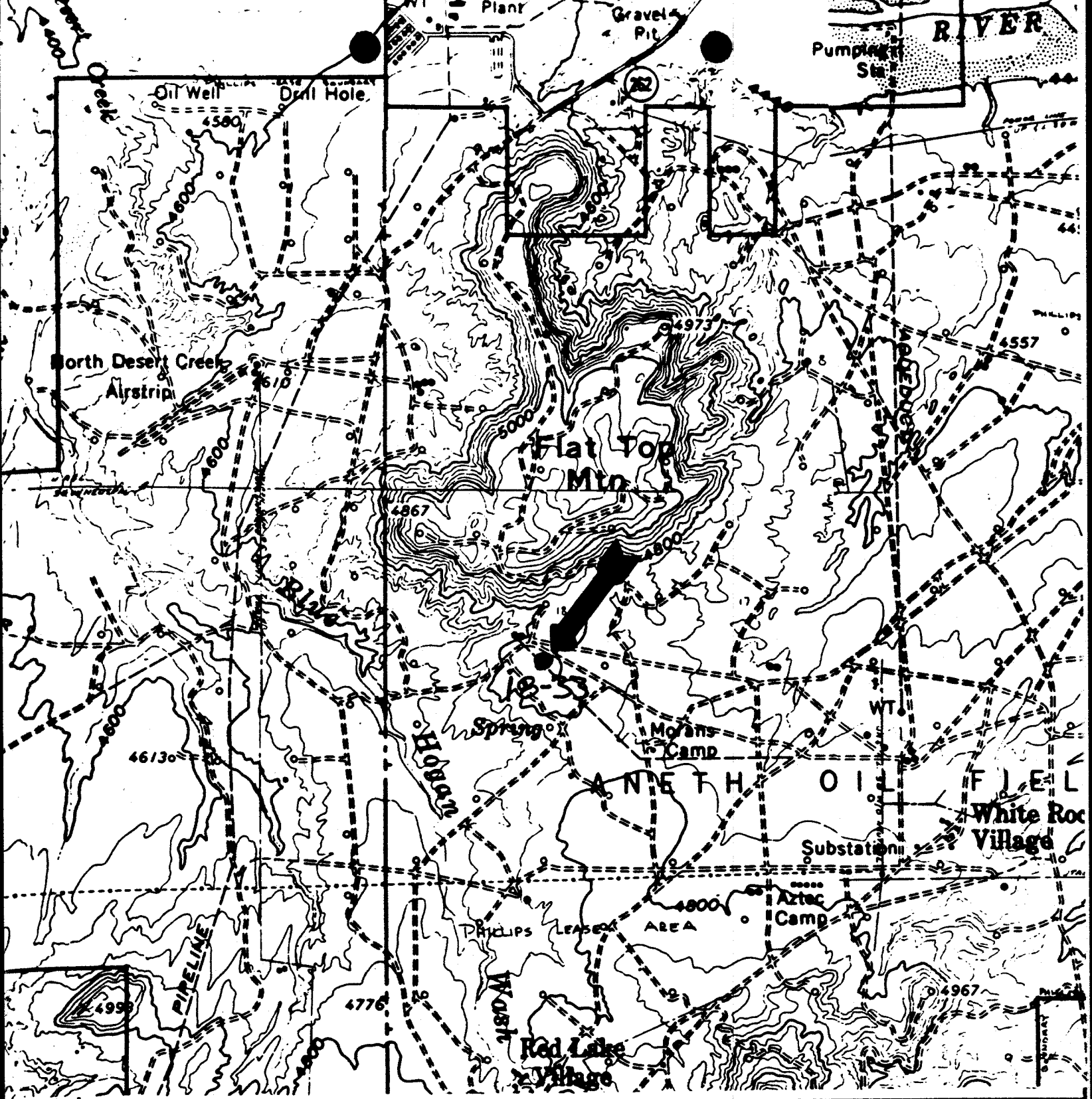
NW SE Sec. 18 T41S-R24E



1. Reserve Pit
2. Trash Pit
3. Cir. Pits & Pump
4. Rig
5. Cat Walk & Pipe Racks
6. Trailers

Drilling Rig Layout

Outline of Location - Approximately 300' x 350'
Not To Scale



NO.	REVISION	BY	DATE	CHKD	APP'D

FOR BIDS
FOR APPR
FOR CONST

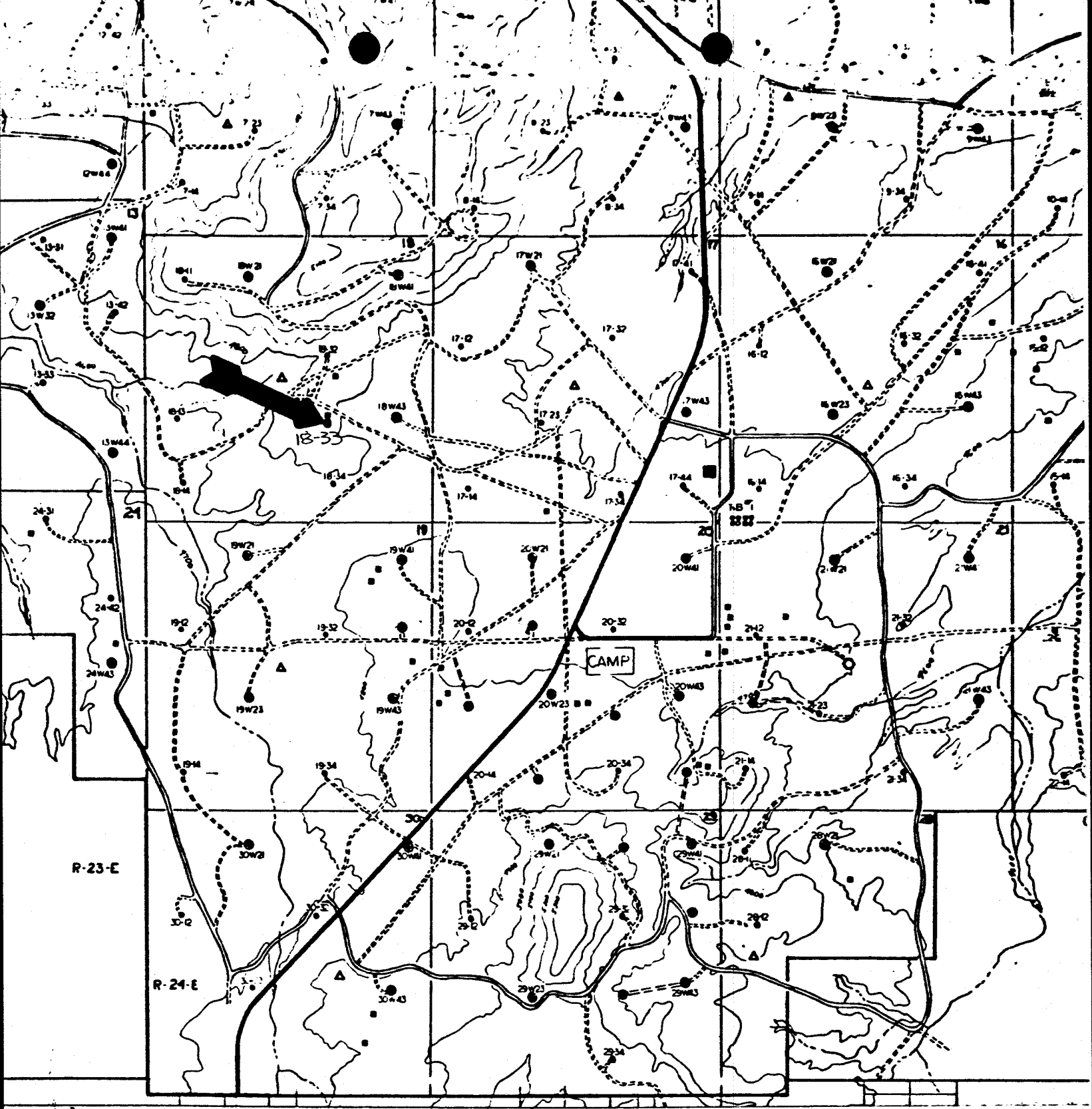
PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

RATHERFORD UNIT WELL 18-33
PROPOSED
NW SE SEC 18 T41S-R24E
SAN JUAN CO., UTAH

DRAWN 3-13-84 BJM
CHECKED
APP'D

JA NO. | FILE CODE
AFE NO. | SCALE 2.2" = 1 mile
DWG NO.
SH NO.

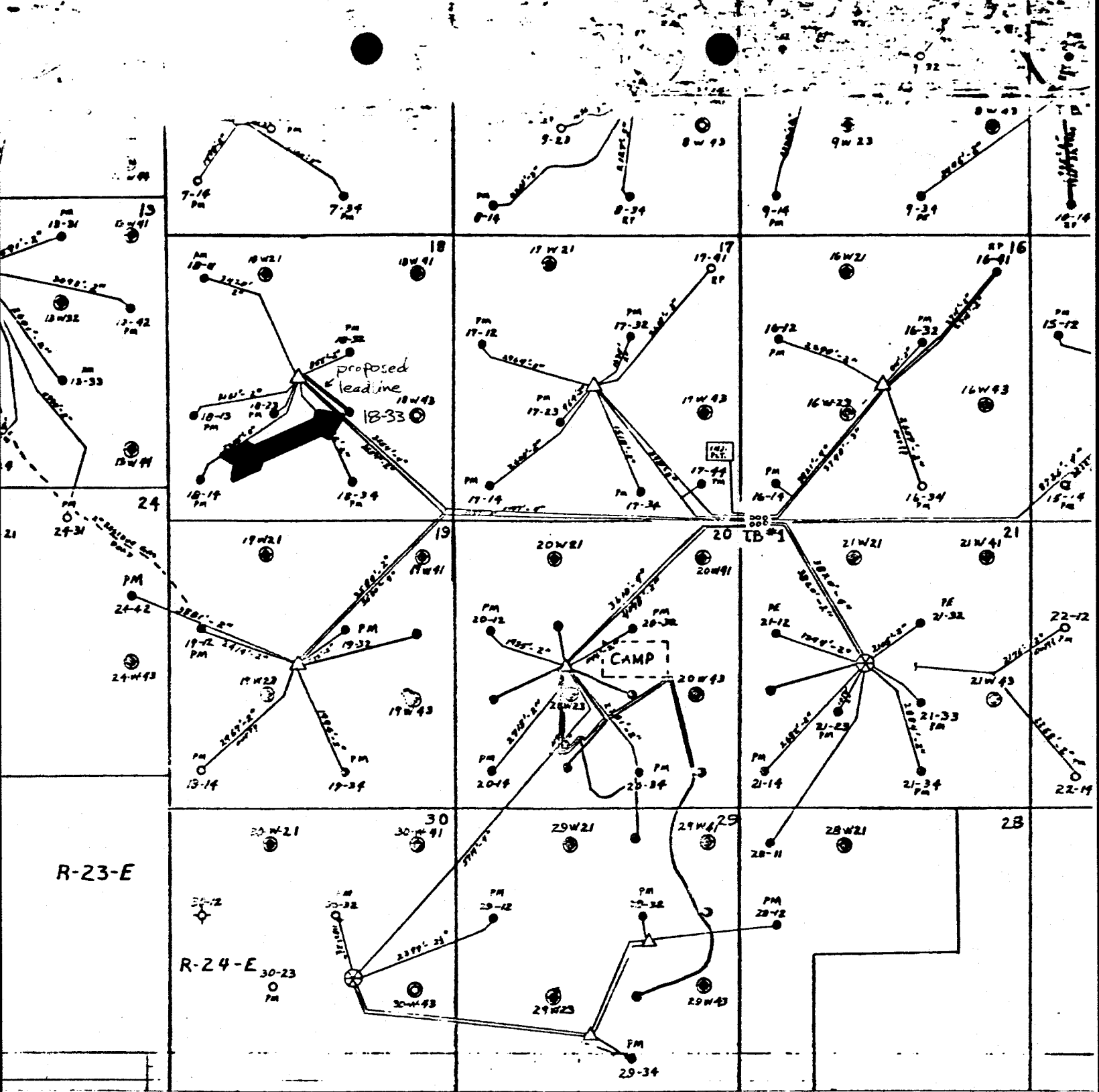
FORM 1779-S 8-81



NO.	REVISION	BY	DATE	CHKD	APP'D

FOR BIDS	PHILLIPS PETROLEUM COMPANY BARTLESVILLE, OKLAHOMA	JA NO.	FILE CODE
FOR APPR		AFE NO.	SCALE 2.2" = 1 mi
FOR CONST	RATHERFORD UNIT WELL 18-33 PROPOSED ROAD PLAT NW SE SEC 18 T41S-R24E SAN JUAN CO., UTAH	DWG NO.	
DRAWN 3-13-84 BJM		SH NO.	
CHECKED			
APP'D			

FORM 1779-S 8-81



NO.	REVISION	BY	DATE	CHKD	APP'D

FOR BIDS

FOR APPR

FOR CONST

DRAWN 3-13-84 BJH

CHECKED

APP'D

PHILLIPS PETROLEUM COMPANY

BARTLESVILLE, OKLAHOMA

RATHERFORD UNIT WELL 18-33
PROPOSED LEADLINE PLAT
NW SE SEC 18 T41S-R24E
SAN JUAN CO., UTAH

JA NO.

FILE CODE

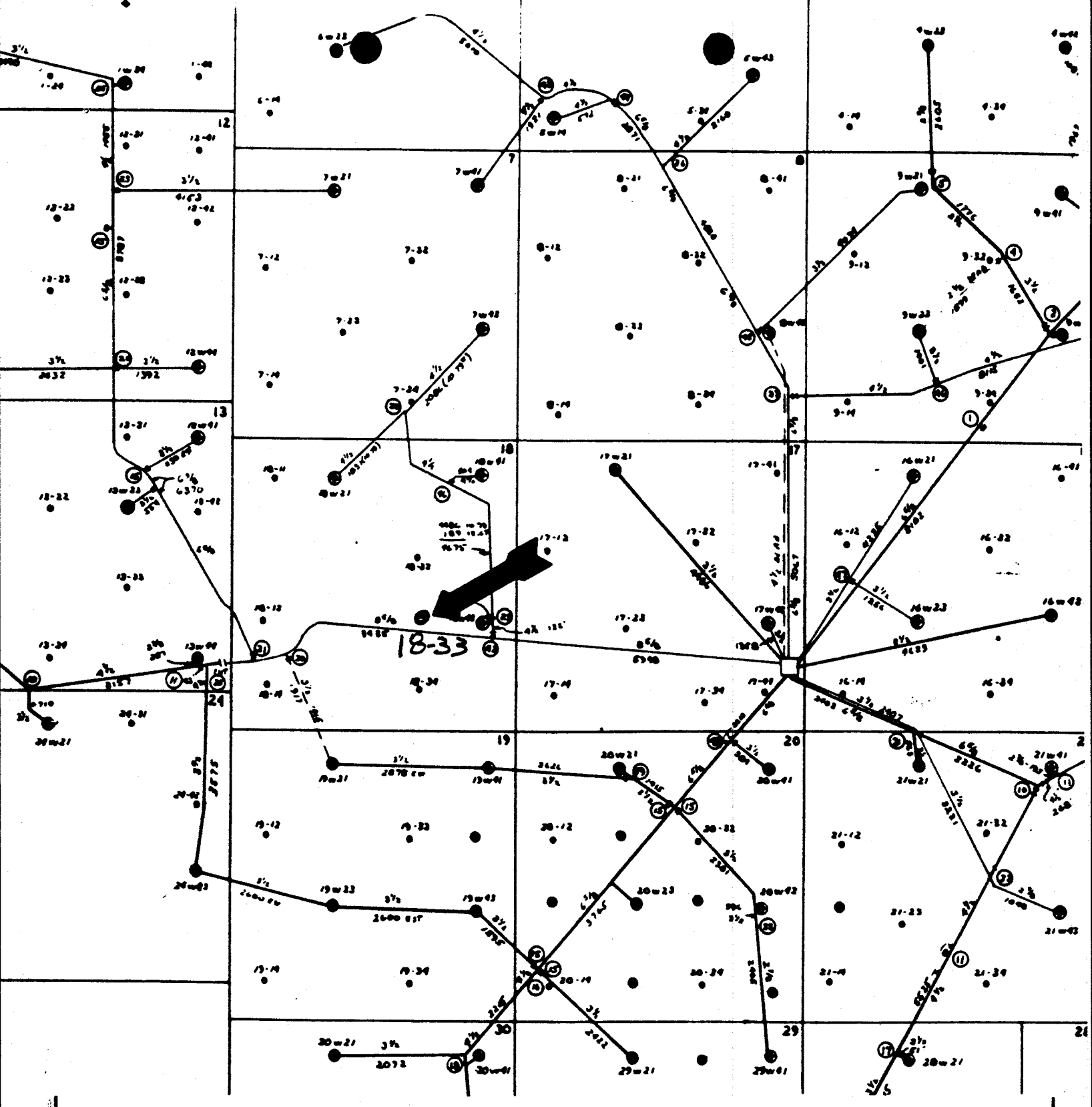
AFE NO.

SCALE 2" = 1 mi.

DWG NO.

SH NO.

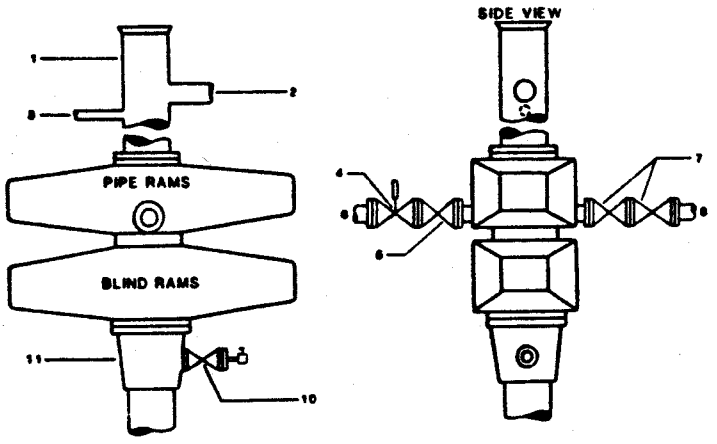
FORM 1779-S 8-81



NO.	REVISION	BY	DATE	CHKD	APP'D

FOR BIDS	PHILLIPS PETROLEUM COMPANY BARTLESVILLE, OKLAHOMA	JA NO.	FILE CODE
FOR APPR		AFE NO.	SCALE 2.2" = 1mi
FOR CONST	RATHERFORD UNIT WELL 18-33 WATER INJECTION LINES NW SE SEC. 18 T41S-R24E SAN JUAN CO., UTAH	DWG NO.	
DRAWN 12/26/84 BJM			
CHECKED		SH NO.	
APP'D			

FORM 1779-S 8-81



1. BELL NIPPLE
2. FLOW LINE
3. FILL-UP LINE
4. 2" FE PRESSURE-OPERATED CHOKE LINE VALVE
5. 2" FE GATE VALVE
6. 2" FE CHOKE LINE TO MANIFOLD
7. 2" FE GATE VALVES
8. 2" FE KILL LINE
10. 2" SE OR FE GATE VALVE WITH NEEDLE VALVE
11. CASING HEAD HOUSING

Figure 7-10. Standard Hydraulic Blowout Preventer Assembly (2 M or 3 M Working Pressure) Alternative 3 (without Drilling Spool)

7.6 Testing Surface Blowout Preventer Equipment

7.6.1 Pressure Test Frequency

All rams, annulars, valves, choke and kill lines, choke manifold, kelly cocks, and safety valves shall be pressure tested at the following frequencies:

(1) Initial installation of blowout preventers.

(2) After setting casing, before drilling cement.

(3) Every 7 days or on first trip out of hole after 7 days since previous pressure test.

(4) After any component of the blowout preventer assembly is disturbed, replaced or repaired (this includes lines, valves, or choke manifold). In this case, the component changed may be the only component tested.

(5) Prior to conducting first drill stem test in a series of one or more DST's.

(6) Any time the Phillips Wellsite Supervisor deems necessary, such as prior to drilling into suspected high pressure zones.

7.6.2 Function Test Frequency

All rams, annulars, valves, and other items specified below, shall be function tested at the following frequencies.

(1) On initial installation from driller control and remote panel.

(2) Each trip out of hole alternating between driller's and remote control panel but not more than once every twenty-four (24) hours. Close pipe rams or annular preventer ONLY on drill pipe.

7.6.3 Test Pressures

Use the following table to identify which test is appropriate and at what pressure.

TEST	DESCRIPTION
Low Pressure	Test to 200-300 psi prior to each high pressure test.
Initial Installation	Test all rams, annulars, valves, choke manifold, kelly cocks, and safety valves to the lesser of the following pressures. . Rated working pressure of the component in the blowout preventer assembly with the exception of annular preventer which is to be tested to 70% of the rated working pressure. . The API rated casing burst pressure of the last casing to be utilized in the well with the BOP assembly being tested. . Rated working pressure of the casing head. . If "Cup Tester" is used do not exceed 80% of the API rated burst pressure of the casing.
Repair	Repaired or replaced components are to be tested to the same pressures used in the Initial Test.

7.6.3, cont'd

TEST	DESCRIPTION
Weekly and After Setting Casing	Test all rams, annulars, valves, choke and kill lines, choke manifold, kelly cocks, and safety valves, to the lesser of the following pressures. . 50% of the rated working pressure of the component to be tested. . 80% of the API rating of the casing burst pressure then in the well. . Test blind rams during internal casing pressure test. (Refer to drilling program for test pressures).
DST Operations	Test all pipe rams, annular preventers, valves, choke and kill lines, choke manifold, kelly cocks, and safety valves to the maximum anticipated surface pressure expected while conducting drill stem tests. Do not test annular to more than 70% of its working pressure.
Shallow Casing	Where cased hole is less than 2000 feet measured depth, the test pressure may be 1.5 psi per foot of casing depth, not to exceed 80% of the API rated burst pressure. In the case of shallow conductor casing or drive pipe (500 feet or less) that is equipped with one BOP, then the test pressures do not need to exceed 1.0 psi per foot of casing depth.
Accumulator	Test accumulator to the manufacturer's rated working pressure. Test the accumulator for time to pump up to specifications.

7.6.4 Blowout Preventer Test Practices

(1) All pressure tests shall be witnessed by Phillips' Representative and the Contractor's Senior Supervisor on Location. All tests shall be recorded on the Phillips' Daily Drilling Report, the IADC Report and the BOP Test Form; see Figure 7-13. A reproducible copy of the BOP Test Form (Figure 7-13) can be found in Section III.

7.6.4, cont'd

(2) Hold all low pressure tests for three minutes and high pressure tests for five minutes or until Phillips Representative and the Contractor's Senior Supervisor are satisfied no leaks exist.

(3) A detail procedure for the testing of blowout preventer and choke manifold equipment will be included in the drilling programs. The procedure is to be distributed for each drilling unit under contract by the operating office. Each operating office must include the following practices:

a. Prior to testing, all lines and valves will be thoroughly flushed to ensure the system is clear. Test all opening and closing control lines to 1500 psi and inspect for leaks.

b. If necessary, run a stand of drill collars below the test plug to prevent unseating the test tool during testing.

c. All precautions must be taken to avoid pressuring the casing below the test tool.

d. The running string is to be full of water (or antifreeze solution) for immediate indication of test tool leakage.

e. All pipe rams, blind/shear rams, blind rams, annular preventers, valves, fail-safe valves, choke and kill lines are to be tested at the frequencies and pressures outlined in this section.

f. Drill pipe safety valve, lower and upper kelly cocks are to be tested from below at pressures and frequencies outlined in this section.

g. All test fluids are to be bled back to the pump unit in safe manner.

7.6.5 Testing Wellhead Pack-offs

The wellhead pack-off is to be pressure tested upon installation for five minutes. Test pressure is to be 80% API rated casing collapse or the rated working pressure of the casing head whichever is the lesser. Casing annulus valve(s) must be in open position to prevent casing collapse during pack-off testing.

When testing the wellhead pack-off, use recorded test pressures and volumes to determine if pack-off is leaking. Pressure should be immediately released at the first indication of a leak.

7.6.6 Safety Precautions

One pumping unit operator is to be stationed at the high pressure pumping unit, and is to remain at this station until all testing has been completed. The pump unit operator is to be in continuous communication with the person who is recording the test data. The Phillips Wellsite Supervisor and Contractor's Senior Supervisor on location will be the only personnel who will go into the test area to inspect for leaks when the equipment involved is under pressure. The rig crews are to stay clear of the area until such time that both the Phillips Wellsite Supervisor and the Contractor's Senior Supervisor have contacted the pumping unit operator and all three have agreed that all pressure has been released, and there is no possibility of pressure being trapped. The rig crews may then go into the area to repair leaks or work as directed.

All lines, swings, and connections that are used in the testing of the blowout preventers are to be adequately secured in place.

Pressure is to be released only through the pressure release lines that are vented back into the pump unit tanks. The lines are to be clamped down to direct the flow into unit tanks.

Cultural Resources Management Program

San Juan College

Archaeological Surveys of
Six Proposed Well Locations and Associated Flow Lines and Access Routes
in San Juan County, Utah,
Conducted for Phillips Petroleum Company

Report 84-SJC-071B

Federal Antiquities Permit 83-AZ/NM/UT-047 and
Navajo Nation Antiquities Permit #1984-4

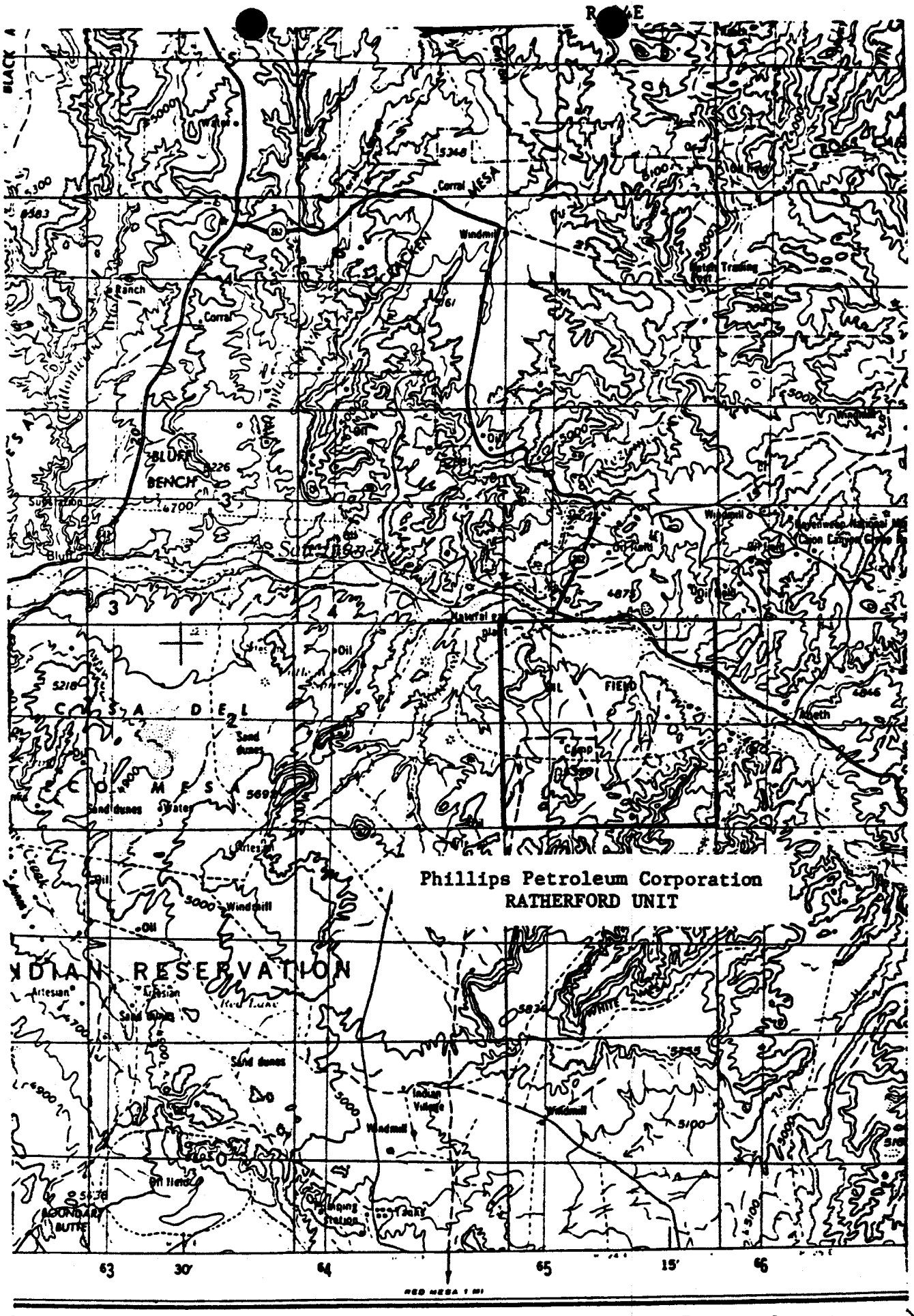
June 13, 1984

Phillips Petroleum Company - Ratherford Unit:

17-33
18-24
18-33
19-11
19-44
21-22

A Cultural Resources Inventory Prepared by Kristin Langenfeld, Archaeologist, Under the Supervision of Dr. Richard P. Watson, Director, Cultural Resources Management Program, San Juan College, Farmington, New Mexico

FRONTISPIECE



Scale 1: 250,000

Project Location

Report 84-SJC-071B

ABSTRACT

On May 21, 22 and 23, 1984 a Class III Archaeological Survey was conducted south of Montezuma Creek, San Juan County, Utah on lands to be used for nineteen proposed well locations, associated access routes and flow lines. A total of eight archaeological sites and eleven isolated occurrences were located during the inspections. This report details the results of archaeological surveys on six of the proposed locations. Approximately 19 hectares (47 acres) in Sections 17, 18, 19 and 21 were inspected for cultural resources in conjunction with the project areas described in this report. A total of eight sites and five isolated occurrences were located. Three sites are undated lithic scatters, four sites are Anasazi manifestations ranging from Basketmaker II-Pueblo III, and one site is Recent Navajo with a possible prehistoric component. Recommendations for management include avoidance of sites by restrictions on pad size and mechanical disturbance (four sites) and archaeological monitoring (two sites). One site is outside the project area and no avoidance or further mitigation is necessary.

The work was conducted by the:

Cultural Resources Management Program
San Juan College
4601 College Blvd.
Farmington, NM 87401-4699
Phone: 505/326-3311, Extension 344

The work was conducted under:

Federal Antiquities Permit 83-AZ/NM/UT-047 and
Navajo Nation Antiquities Permit #1984-4

The work was conducted for:

Phillips Petroleum Company

TABLE OF CONTENTS

LIST OF FIGURES

INTRODUCTION

On May 21, 22, and 23, 1984 Kristin Langenfeld and L. Jean Hooton, from the Cultural Resources Management Program, San Juan College, conducted a Class III Archaeological Survey for Phillips Petroleum Company. The survey was conducted under Federal Antiquities Permit 83-AZ/NM/UT-047 and Navajo Nation Antiquities Permit #1984-4 on lands owned by the Navajo Nation. Mr. Max Isaacs, of Phillips Petroleum Company, accompanied the archaeologists during the inspection.

Nature of Proposed Land Modifications

Land modifications proposed by Phillips Petroleum for the Ratherford Unit include the construction of well locations and, in some cases, access routes. These activities will constitute the major mechanical disturbances in the area. In addition, aboveground flow lines connecting each well with a local gathering station will be laid. These lines usually parallel either existing or proposed roads and will be laid from the road. Mechanical disturbance connected with flow lines will be minimal. Access routes, where required, will either follow existing two-tracks or run cross-country. In a few cases existing, bladed roads will be modified to accommodate drill rigs. Well locations will be 350 feet x 350 feet (107 meters x 107 meters), including pits. Access routes will be 30 feet (10 meters) in width and flow lines will require a 10-foot-wide (3-meter) corridor. Combined flow lines and access routes will require a 40-foot (12-meter) right-of-way.

Methodology

A series of parallel transects spaced 10 to 15 meters apart was used to survey a 450-foot x 450-foot (137-meter x 137-meter) area for each well location. This includes a buffer zone of 50 feet (15 meters) around the perimeter of the project area.

Zigzag transects were used to survey 25-foot-wide (7.6-meter) flow line corridors. This includes a buffer zone of 7.5 feet (2.3 meters) on each side of the right-of-way. Zigzag transects were used to survey 75-foot-wide (23-meter) access or combined access and flow line routes. This includes a buffer zone of between 17.5 feet (5 meters) and 23 feet (7 meters) on each side of the right-of-way.

During the inspection, the presence of recent trash, recent features and existing disturbances within individual project areas was noted. Isolates were mapped relative to a known point using a Brunton compass and pacing. Locations of isolates were plotted on maps provided by Phillips Petroleum. When isolates were encountered, an area with a radius of at least 25 feet (8 meters) around the isolate was closely inspected for features and additional artifacts.

Sites located during the inspection were mapped in a similar manner.

In report preparation, UTM Coordinates were plotted from the USGS White Mesa Village, Utah, 15-Minute Quadrangle (Figure 2). Legal descriptions were made using maps enlarged from the 15-minute quadrangle (Figures 4-9). The project area is on unplatted land, therefore, some discrepancies occur between the two map scales.

PHYSIOGRAPHY AND ENVIRONMENT

The project locations are confined to an area 3.2 kilometers x 4 kilometers (2 miles x 2.5 miles) located approximately 8 kilometers (5 miles) south of Montezuma Creek, San Juan County, Utah. The area is bordered on the north by Flat Top Mesa and on the south by White Mountain Mesa. Blue Hogan Wash and Sahgzie Creek delineate the western and eastern boundaries, respectively (see Figures 1 and 2). Several zones differing in soils, vegetation, topography, terrain and elevation are represented within the survey area. The major characteristics of these zones are outlined below.

Zone A - Mesa Slopes

This zone is confined to the northern slopes of White Mesa Mountain. Terrain is broken and eroded with a slope of up to 32%. Soils are poorly developed and include locally sandy shallow soils on narrow benches and clayey soils with bentonite deposits in badland formations. Sandstone outcrops and exposed bedrock sandstone are common. Surface deposits include lag gravels and numerous sandstone spalls. Numerous arroyos dissect the slopes. Vegetation is generally sparse and includes rabbitbrush, shadscale, Russian thistle and prickly pear cactus. Ground cover ranges from 0% to 20%. Maximum elevation is approximately 1,570 meters (5,150 feet).

Zone B - Badland Formations

This zone includes erosional remnants of both sandstone capped badland hills and somewhat more extensive low mesa shaped remnants.

PROJECT AREA

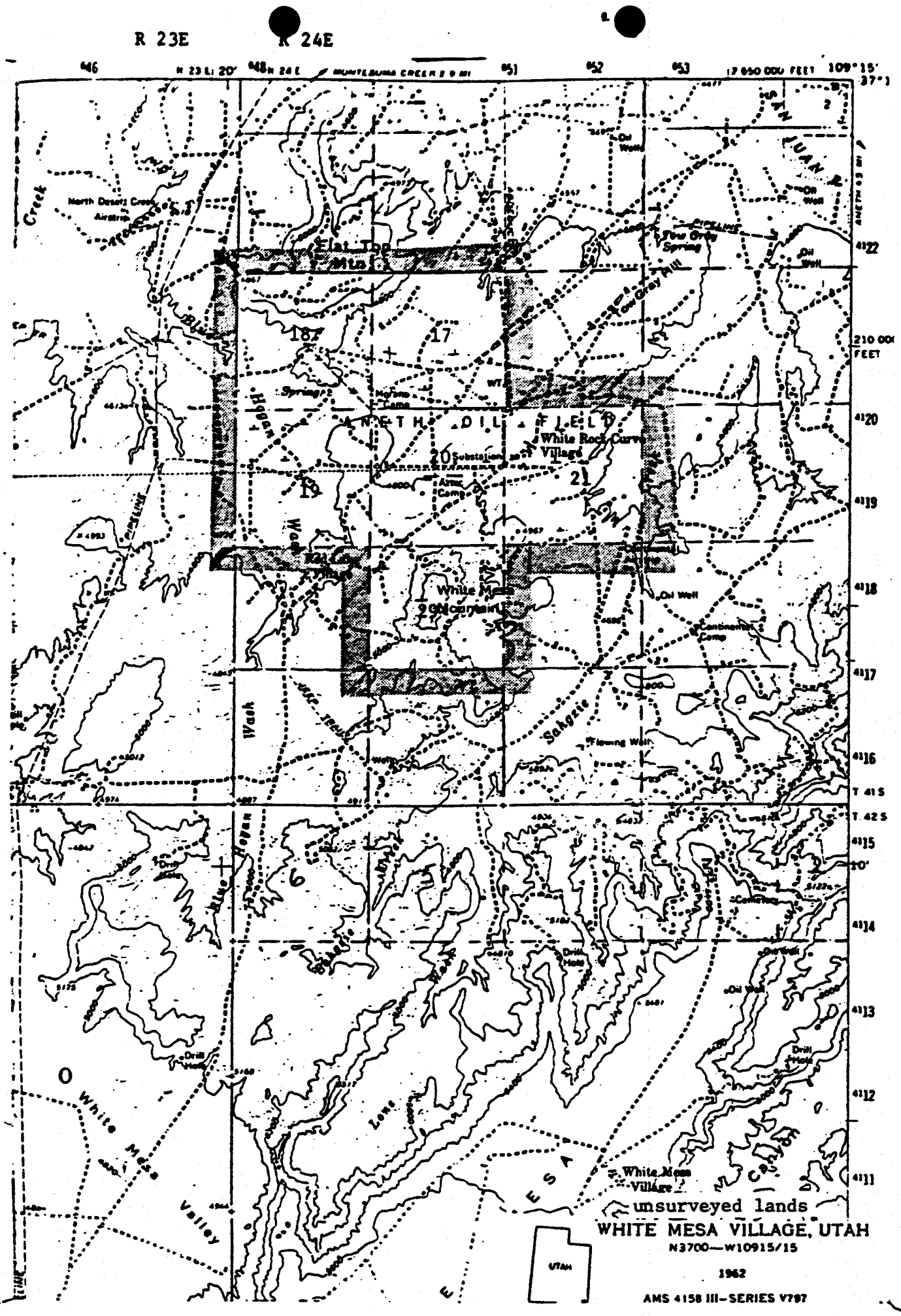
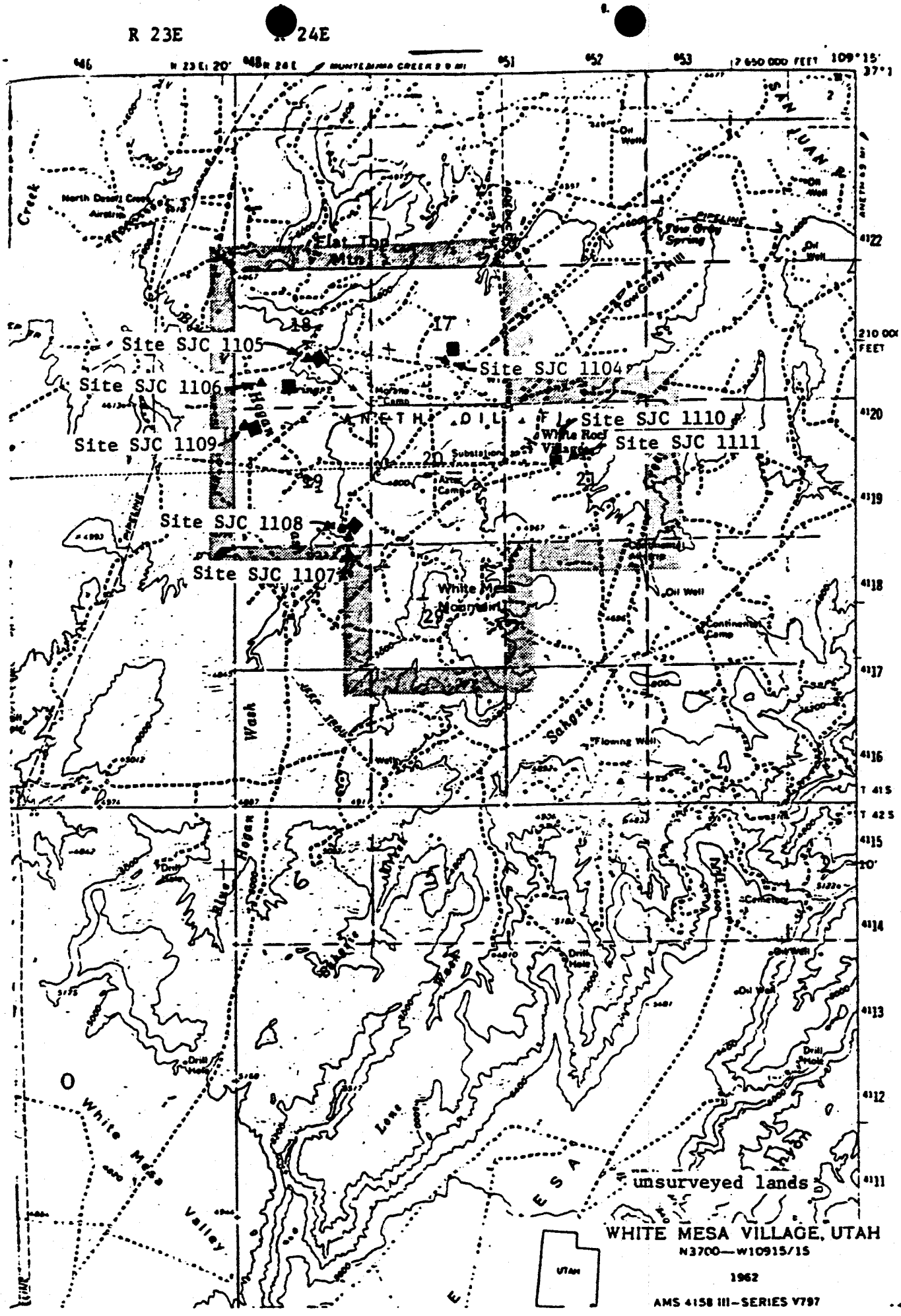


Figure 1 . .
Report 84-SJC-071B

PROJECT AREA



■ proposed wells
▲ archaeological sites

Figure 2

Report 84-SJC-071B

These formations are characterized by steep slopes frequently dissected by arroyos. Soils are generally clayey, shallow and poorly developed with localized bentonitic clay deposits common. In many areas broken, platy shale is exposed. Vegetation is generally quite sparse and limited to scattered snakeweed and grasses. Ground cover ranges from 0% to 20%. In general, the badland formations characterized by Zone B are similar to Zone A except that they are generally lower in elevation, averaging 1,433 meters (4,700 feet), and contain areas with shaley outcrops.

Zone C - Stabilized and Semistabilized Dunes

This zone characterizes the majority of the project locations. Dunes are found in a variety of topographic situations including ridges, arroyo bottoms and mesa tops and slopes. In some areas they are found on or adjacent to badland formations. Terrain ranges from level to rolling and gently rolling with blownout areas common. In some instances the blowouts have acted as seasonal catchments, as evidenced by surface clay deposits left behind as water evaporates or filters down. Soils within the dunal deposits are sandy to very sandy loams and are generally reddish-brown in color. The deposits range from shallow, where the old blowouts have exposed bedrock sandstone or shale, to quite deep. Entrenched arroyos through dunal deposits were noted to exceed 3 meters in depth in some places. Vegetation is of the desertscrub community and includes blackbrush, sagebrush, shadscale, ephedra, rabbitbrush, snakeweed, echinocereus, narrowleaf yucca, prickly pear cactus and Russian thistle. A wide variety of grasses and annuals is also represented and includes grama, galleta, ricegrass,

needle & thread, ring muhly, six-weeks fescue, brome, dropseed, crested wheat, alkali sacaton, globemallow, white asters and lupine. Not all species are represented in all areas and additional unidentified shrubs and grasses are present. Ground cover varies greatly from as little as 10% to as much as 80%. In general, elevations range between 1,425 meters to 1,479 meters (4,675 feet to 4,850 feet).

Zone D - Active Dunes

This zone includes those dunal deposits which are unstable and shifting. Topographic context is the same as for Zone C and active dunes are frequently associated with stabilized dunes. These dunes are long and rounded. Blowouts are common and the white sand of the active dunes displays characteristic wave patterns. The depth of the deposits is variable as with the stabilized and semistabilized dunes. Vegetation is limited to sparse, scattered grasses and low shrubs. Elevations are the same as for Zone C.

Discussion of Zones

No project areas described in this report are located in Zone A. Moreover, only portions of two project areas (Ratherford Units 17-33 and 18-24) are located in areas characterized by Zone B. All six of the project areas contain Zone C deposits and three have Zone D deposits in conjunction with semistabilized dunes. As indicated in the preceding description of the stabilized and semistabilized dunal deposits, these areas are all remarkably similar in terms of soils and terrain. They differ primarily in terms of topographic setting.

direction of slope and degree to which they have been dissected by erosion. The areas represented by Zone C are considered most likely to contain subsurface in-situ cultural materials; 75% of the archaeological sites and the overwhelming majority of the isolates were located in stabilized and semistabilized dune situations. The possibility of subsurface cultural remains with no surface indications in the deposits is acknowledged as quite real.

No project locations were located completely within the active dunes described as Zone D. Active dunes were encountered on portions of two of the project areas described in this report. Potential for cultural materials, with or without surface indications, within these deposits is also considered to be high. Both sites and isolates were located in Zone D. The major distinction between Zones C and D in terms of cultural resources is the likelihood that materials in Zone D are likely to be encountered only in blowouts and are much more likely to be out of context.

Water Sources

Within the project area water sources are generally limited to seasonally running washes, the largest of which are Blue Hogan Wash and Sahgzie Creek. The San Juan River is located approximately 3.2 kilometers (2 miles) northeast of the most easterly portions of the project area. Only one permanent water source, a spring in the southern half of Section 18, is shown on USGS maps. The presence of tamarisk in the southern portion of Section 21 along an east trending feeder of Sahgzie Creek suggests the existence of either an underground

water source or seasonally accumulating water. An earthen dam of relatively recent construction (now broken) is located on Blue Hogan Wash in the NW 1/4 of Section 19 and provided a relatively large catchment area. Tamarisk is present below the dam although no water was present at the time of the survey. In addition, as noted earlier, some catchments seasonally hold small amounts of water. A windmill in the SW 1/4 of Section 24, T. 41 S., R. 23 E., just west of the project area, and a flowing well in the NW 1/4 of Section 12, T. 41 S., R. 23 E., just west of the project area, are also used by local inhabitants for watering livestock. A few isolated, seasonal springs or seeps are reported in the area, however, their locations are not known.

Fauna

Little wildlife was seen within the project area during the archaeological inspection. Lizards were seen frequently and one cottontail rabbit was observed. Large and small rodent burrows were noted and coyote were heard during the survey of the slopes of White Mesa Mountain. According to Mr. Isaacs, hawks are also frequently seen in the vicinity of White Mesa Mountain.

Present Day Land Use

The project area is located in the heart of the Aneth Oil Field where extensive development related to energy exploration and production over the past twenty years has occurred. Well locations dot the area and numerous roads, powerlines, above and below ground pipelines and oil field camps are a direct result of this development.

The area is also used extensively by local Navajo families. Occupied and unoccupied houses and hogans occur frequently throughout the project area. Although no interviews were conducted with customary land users, due in part to the fragility of relations between oil companies and local Navajos, it was noted that the area is intensively utilized for grazing activities. Moreover, both functional sweat houses and the remains of sweat houses attest to the use of the area in ritual activity. In the absence of interviews, it is impossible to know whether sacred areas or graves are present within the project area. Nothing resembling grave sites was noted during the inspection of individual project locations.

RECORDS SEARCH

Prior to the initiation of fieldwork, a records search was conducted using information available at the Cultural Resources Management Program, San Juan College and the Navajo Nation Cultural Resource Management Program, Farmington Office, as well as through phone contact with both the Navajo Nation Cultural Resource Management Program, Window Rock, and several local contract archaeology firms.

Numerous large and small archaeological surveys and excavations have been conducted in southeastern Utah. The majority of these projects have been located north of the San Juan River to the north, northeast and northwest of the project area. Projects have been related to both large parcel inventory surveys (see for example Fike and Lindsay, 1976) and energy and economic development (see for example

Hewett, Powers and Kemrer, 1979; Berge, 1975; Langenfeld, 1982; Reed, 1983). Sites dating from the Archaic Period through recent Historic Periods have been documented.

Within the project area itself few sites have been documented. According to a contact at Phillips Petroleum, previous archaeological surveys in the Phillips Field had been conducted by Complete Archaeological Service Associates of Cortez. Only one site has been recorded by C.A.S.A., and it is a lithic scatter with diagnostic tools dated to the San Jose Phase of the Archaic Period (L. Hammack to R.P. Watson, personal communication). The site is located in the SE 1/4 of the NE 1/4 of Section 29, T. 41 S., R. 24 E. The site number is unknown and its location was plotted on Figure 3 by use of UTM's provided by Mr. Hammack of C.A.S.A.

Two additional sites within the Phillips Field have been documented by the Navajo Nation Cultural Resource Management Program (Martin, 1983). These sites are also located in Sections 29 and 16, T. 41 S., R. 24 E. UT-C-54-3 is described as a permanent Historic Navajo sheep camp with two corrals or lambing pens and possible hogan. UT-C-54-4 is an undated lithic scatter containing complete and broken flakes and burned sandstone. The locations of these sites were also plotted on Figure 3 on the basis of UTM's provided in the report. The actual site location in Section 16 is uncertain. On maps provided by Phillips Petroleum, a large site area is shown in the SW 1/4; however, it has not been determined if this site was recorded by Navajo Nation Cultural Resource Management Program or C.A.S.A.

According to Mr. Isaacs, the Navajo Tribal Utility Authority has worked on the Phillips Lease Area within the last year. In the absence of a known project number, however, it is not possible to obtain information concerning a cultural resource inventory related to the project (Joe Anderson, personal communication).

Three additional sites north of the project area and south of the San Juan River have been recorded by the Navajo Nation Cultural Resource Management Program. Those sites are briefly described below and were plotted on Figure 3 on the basis of information provided by the source listed:

UT-C-54-1: Post 1970 Navajo site (Phillip Stewart, personal communication).

UT-C-54-2: Lithic/ceramic/ground stone scatter located in blowouts; Anasazi, Basketmaker III-Pueblo I (Phillip Stewart, personal communication).

UT-C-54-5: Lithic scatter; undated (McEnany, 1984).

SJC-727: Rubble mound, lithics, ceramics.

None of the previously recorded sites will be impacted by the proposed land modifications.

Name: Ratherford Unit 18-33 (Figure 5)

Land Jurisdiction: Navajo Nation

Legal Description: The proposed well is located in the Center of the NW 1/4 of the SE 1/4 of Section 18, T. 41 S., R. 24 E., S.L.P.M., San Juan County, Utah. The center stake is 1,870 feet from the south line and 1,980 feet from the east line.

Elevation: 1,466 meters (4,807 feet)

UTM Coordinates: Well = Zone 12; 648,970 mE; 4,120,450 mN.

Access: N/A

Actual Project Area: Well = 107 m. x 107 m. (350' x 350')
TOTAL: 1.1 hectares (2.8 acres)

Actual Survey Area: 137 m. x 137 m. (450' x 450')
TOTAL: 1.9 hectares (4.6 acres)

Physiography and Environment:

The project area is located on the south facing slope of a low stabilized dunal ridge in Zone C. Sandstone outcrops are present northwest of the proposed location. Localized active dunes are located approximately 150 m. north of the proposed location. The access and flow line rights-of-way associated with this proposed well have been previously recommended for clearance (Report 84-SJC-071A, Location 18-44) and are not shown again in conjunction with this location.

Cultural Resources:

One archaeological site, SJC-1105, a probable permanent Navajo sheep camp, was located during the inspection (Figures 5 and 9). The site is fully described on the attached Site Form. As indicated by Figure 9, the majority of the site is located in and west of the buffer zone on the west side of the proposed location. Figure 9 shows, in double-dashed line, that the original west side of the well location

would impact the eastern portion of the foundation feature. The west edge of a slightly smaller location (325' x 350') would avoid the feature.

The possible existence of a prehistoric component, indicated by a light, highly dispersed lithic scatter, has been mentioned in conjunction with SJC-1105. No features located on the site suggest earlier cultural affiliation. The chipped stone may simply be isolates or the remains of a site obliterated by the sheep camp occupation. Based on the fact that the chipped stone occurs almost exclusively within the boundaries noted for the historic site, it is felt that decreasing pad size would protect any potential subsurface prehistoric component as well.

Recommendations:

It is recommended that east/west dimensions of the proposed location be cut from 350 feet to 325 feet, thereby avoiding direct impacts to the apparent foundation feature on the eastern portion of the site. It is further recommended that mechanical disturbance both during construction and revegetation be limited to the area 175 feet west of the center stake. If these recommendations are followed, SJC-1105 should not suffer direct impacts as a result of construction activities. While the site does not appear to be used presently, it may contain the remains of a permanent structure and may have been blessed. For this reason, avoidance by limiting the east/west width of the pad is recommended. With this stipulation, archaeological clearance is recommended for the 18-33 project area.

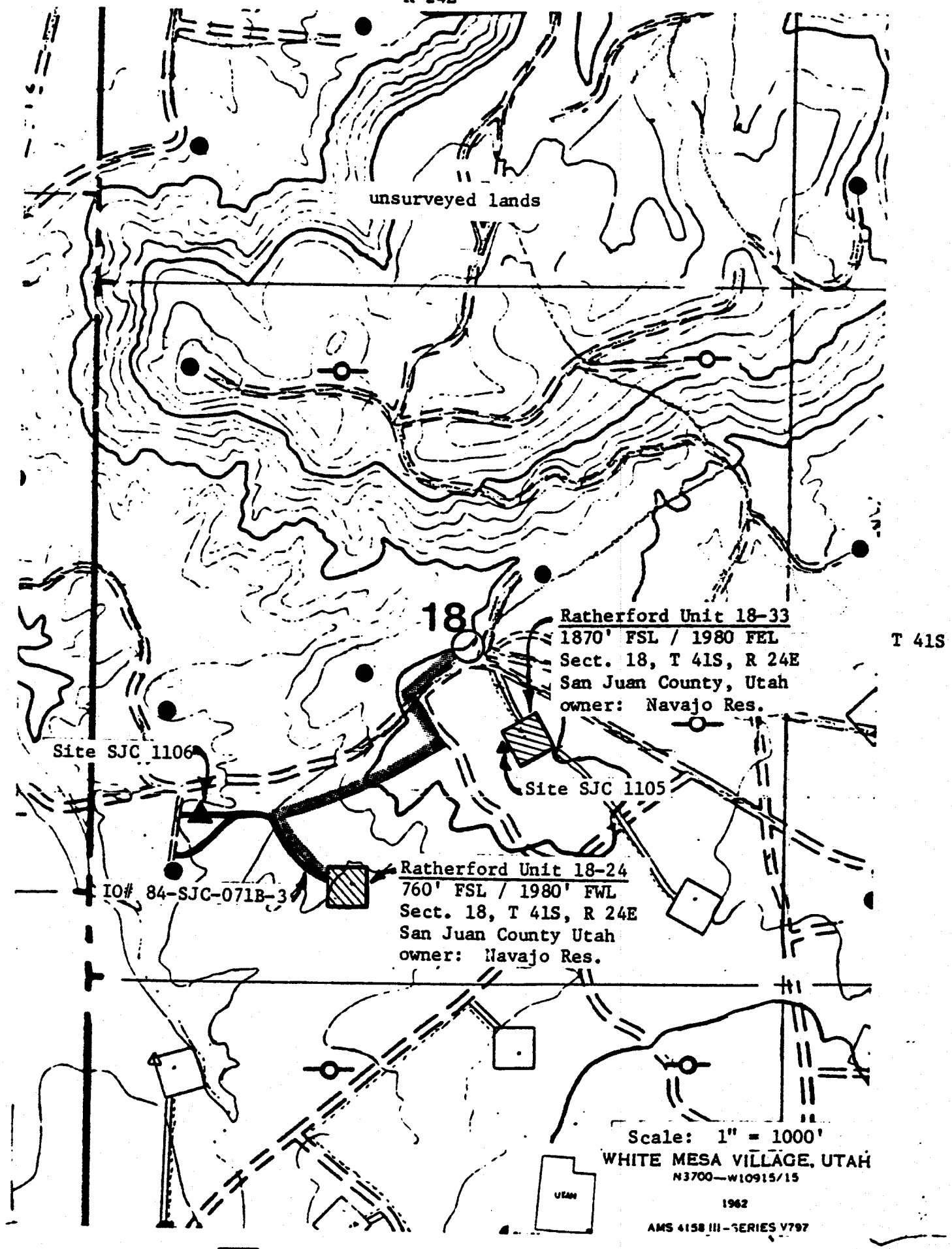

R 24E
unsurveyed lands
18
Ratherford Unit 18-33
1870' FSL / 1980 FEL
Sect. 18, T 41S, R 24E
San Juan County, Utah
owner: Navajo Res.
T 41S
Site SJC 1106
Site SJC 1105
IO# 84-SJC-071B-3
Ratherford Unit 18-24
760' FSL / 1980' FWL
Sect. 18, T 41S, R 24E
San Juan County Utah
owner: Navajo Res.
Scale: 1" = 1000'
WHITE MESA VILLAGE, UTAH
N3700—W10915/15
1962
AMS 4158 III-SERIES V797
UTAH
proposed well
proposed flow line

Figure 5

DISCUSSION OF CULTURAL RESOURCES

A total of five isolates were located during the inspection. Isolates were located on only two project areas - the Ratherford Units 18-24 and 19-44. Two of the isolates (I.O.'s 6 and 7) are located in spatial proximity to sites (SJC-1107 and SJC-1108). I.O. 3 may be associated with a prehistoric component of SJC-1106 (see site description). Given that all six of the project areas contained archaeological sites, the number of isolates recorded seems low. It is noted, however, that while 1.6 isolates per 10 hectares (24.7 acres) were recorded during the nonsite-bearing portion of the survey (Langenfeld and Hooton, 1984), 2.6 isolates per 10 hectares (24.7 acres) were found in the project areas under discussion here. While the relative number of isolates per hectare increases, it does not do so substantially. The suggested reason for this is that artifacts that might have otherwise been recorded as isolates were incorporated into sites during this portion of the survey. In terms of absolute numbers of isolates recorded during the survey, it is suggested that the low numbers are probably the result of the nature of surface deposits in the project area. Isolates are more likely to be obscured in dunal deposits.

The isolates recorded during this portion of the survey are fully described in Table 1.

A total of eight archaeological sites was recorded during the survey. Site density can only validly be calculated by using total survey area size. A total of approximately 55 hectares (140 acres)

TABLE 1: Summary of Isolated Occurrences

I.O. #	Well Name	¼,¼,¼	Sec.	T	R	UTM Coordinates	Description	Comments
3	18-24	Center, N 1/2, SE,SW	18	41 S	24 E	Zone 12; 648,535 E 4,120,105 N	One complete secondary quartzite flake. Single-struck platform. Distal termination hinged. No retouch present. Cultural affiliation unknown.	Information potential exhausted with recording.
6	19-44	Center, SE,SE	19	41 S	24 E	Zone 12; 649,425 E 4,118,445 N	One black-on-white sherd. Heavily tempered with medium sized quartz with small amounts of angular igneous black rock. Heavily slipped and polished interior and exterior. Black paint present exterior. Vessel shape unknown. Design style similar to Mancos Black-on-white (Pueblo II-III, A.D. 900-1150).	Probably related to Site SJC-1107 or SJC-1108. Information potential exhausted with recording.
7	19-44	Center, SE,SE	19	41 S	24 E	Zone 12; 649,450 E 4,118,470 N	One broken tertiary flake of white chert. Platform preparation and distal termination unknown. Lateral edges show some nibbling either from use wear or as a result of exposure to elements. Cultural affiliation inferred as Pueblo II-III (A.D. 900-1150) based on proximity to Sites SJC-1107 & 1106.	Information potential exhausted with recording.

TABLE 1 (Continued)

I.O. #	Well Name	¼,¼,¼	Sec.	T	R	UTM Coordinates	Description	Comments
8	19-44	NW,NE,SE	19	41 S	24 E	Zone 12; 649,390 E 4,118,905 N	One broken gray quartzite flake. Platform prepared, distal termination unknown. No retouch present. Cultural affiliation unknown.	Information potential exhausted with recording.
9	19-44	SW,SE,NE	19	41 S	24 E	Zone 12; 649,290 E 4,119,150 N	One complete secondary quartzite flake. No platform preparation, distal termination hinged, no retouch present. Maximum length 44 m., maximum width 41 mm. Cultural affiliation unknown.	Located on road berm approximately 275 m. (900') north of I.O. #8. Information potential exhausted with recording.

were inspected during the survey. An average of 1.5 sites per 10 hectares (approximately 1 site per 20 acres) were located. This would suggest that given similar topography and terrain an average of over 30 sites per section can be anticipated.

All archaeological sites located during the inspection were found in dunal deposits. As indicated earlier, 75% of the sites are located in Zone C type dunes. The remaining 25% are located in active dunal deposits. Nineteen of the twenty total project areas contained either stable or active dunes, and over 40% of those project areas contained sites.

Prehistoric sites account for 88% (7) of all recorded sites and the one historic site (SJC-1105) may contain a prehistoric component in the form of an undated lithic scatter. Among the prehistoric sites and components, 63% are lithic scatters and 25% are artifact scatters, neither of which contains discernible surface features. Only 12% (1) of the sites shows clear evidence of having functioned as a habitation.

With the exception of SJC-1106, lithic scatters are undated. None contain clearly diagnostic chipped stone artifacts. One of the undated lithic scatters (SJC-1104) contains artifacts made of high-quality raw material which exhibit a quality of flaking and finishing frequently associated with Archaic sites. Based on a small surface sample and the known tendency for curation and reuse of Archaic chipped stone tools by later inhabitants, the suggestion that the site is Archaic in origin is tenuous at best. One Archaic site has been documented in Section 29 (see "Records Search" section). Anasazi Puebloan Period dates have been assigned to 50% (4) of the prehistoric sites and components on the

basis of ceramics. As indicated by the "Records Search" section of this report, Anasazi sites are not extremely well documented in the general vicinity of the project area. The majority of the Anasazi sites recorded during this survey appear to date between A.D. 700–1300; 75% of the Anasazi sites appear to have been classified as limited or specialized activity sites. This term is used to define all those sites that exhibit no surface indications of year-round dwellings. Limited activity sites may have been occupied once or reused periodically. Artifact types on most of the "limited activity" sites suggest that more than one activity was being carried out.

The one historic Navajo site appears to have functioned as a permanent sheep camp. Additional information concerning this site could probably be obtained by interviews with customary land users.

Table 2 presents a summary of archaeological sites by type.

In sum, the variety of sites recorded during the survey appears consistent with previously recorded sites in the vicinity, although the proportion of Puebloan sites appears somewhat higher. Moreover, the project area does not appear to have represented a highly desirable location for permanent habitation sites. This may be explained, in part, by the general paucity of natural resources (i.e. wood, permanent water, sheltered locations) within the area. All these resources are abundantly available closer to the San Juan River. The project area more likely represents a locus for a variety of specialized activity sites.

TABLE 2: Summary of Archaeological Sites

Site Number	Morphological Type	Functional Type	Cultural Affiliation
SJC-1104	Lithic scatter	Unknown	Unknown
SJC-1105	Lithic scatter; foundation, trash	Unknown; sheep camp	Unknown Navajo
SJC-1106	Lithic scatter	Unknown	Anasazi; BM II-P I
SJC-1107	Rubble mound, midden, artifact scatter	Habitation	Anasazi, P II
SJC-1108	Artifact scatter	Limited Activity	Anasazi, P II
SJC-1109	Lithic scatter	Unknown	Unknown
SJC-1110	Artifact scatter	Limited Activity	P II-P III
SJC-1111	Lithic scatter	Lithic Reduction	Unknown

SUMMARY OF RECOMMENDATIONS

Table 3 presents a summary of the recommendations chosen from those options outlined in the "Project Locations" section of the report. With the exception of Sites SJC-1109 and SJC-1111, all the prehistoric sites are suggested to have additional research potential and should be avoided. Although the research potential of Site SJC-1109 and SJC-1111 appears severely limited due to their deflated condition, each is acknowledged as a possible indicator of additional subsurface cultural deposits in the vicinity.

In the event that any or all of the recommendations in this report are accepted it is suggested that a compliance check be conducted following the initiation of construction activities to insure that stipulations are being followed.

In the event that any previously undiscovered archaeolcgical materials are encountered during the course of construction activities, work in the immediate area should cease immediately and the B.I.A. Area Archaeologist should be notified.

Final clearance is the prerogative of the B.I.A. Area Archaeologist and will be granted upon review of this report at his discretion.

TABLE 3: Summary of Recommendations

Site Number	Location	Recommendation
SJC-1104	17-33 Flow Line	Restrict vehicular activity to existing, bladed road southwest of proposed flow line.
SJC-1105	18-24 Access	Monitor of access construction at western end of originally proposed route. Collect surface artifacts.
SJC-1106	18-33 Well Location	Decrease east/west pad dimensions from 350' to 325'. Restrict mechanical disturbance to an area 175' west of center stake.
SJC-1107	19-11 Well Location	Restrict mechanical disturbance and vehicular traffic to area north and east of arroyo on pit side of pad.
SJC-1108	19-11 Flow Line	Outside project area. No recommendation required.
SJC-1109	19-44 Well Location	Monitor well pad construction.
SJC-1110	21-22 Well Location	Move center stake 125' south and rotate pad layout 90 degrees to the east.
SJC-1111	21-22 Access	No avoidance or mitigation is recommended.

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LA _____

Field No. ~~18-24 Access~~ 18-33 well Location

LABORATORY OF ANTHROPOLOGY, MUSEUM OF NEW MEXICO
ARCHEOLOGICAL SITE SURVEY FORM

LA No._____ Site Name_____ Other Inst.# SJC-1105

MNM Proj.#_____ UTM: Zone 12 E 648905 N 4120430

Legal Desc. T 41 ~~N~~/S R 24 ~~E~~/W Sec. 18

SW 1/4 of the NW 1/4 of the SE 1/4

Unplatted____ Grant____ Owner & Address Navajo Nation

*Map Reference: White Mesa Village, Utah Date: 1962 Scale: 1:62500

County San Juan State Utah Nearest Named Drainage Sahgzie Creek

Locational Desc.: Recognized Landmarks Flat Top Mountain

Site Type: foundation, trash areas, lithic scatter

Site Size: Length 60 m. n/s Width 40 m. e/w Elevation (# of Feet) 4,800

Topographic Setting (Location & Access): site is located west of an existing two-track.

___arroyo/wash	flood plain/	___plain/flat
___base of cliff	___valley bottom	___playa
___bench	___hill top	___ridge
___blowout	___hill slope	___saddle
___canyon rim	X low rise	___base talus slope
___cave	___mesa	___terrace
___cliff/scarp	___mountain	other (specify)_____
___constricted cyn	___mt. front/foothill	_____
___dune	___open canyon floor	_____

Local Vegetation rabbitbrush, prickly pear cactus, ricegrass, yucca, snakeweed.

Ecological Zone: forest___ woodland___ scrubland___ grassland___
desertscrub X marshland___ other (specify) _____

*Form must be accompanied by photocopy portion of USGS map showing T., R., scale and quad name.

LA# _____

Field No. _____

Other Inst.# SJC-1105

Soil Type: rocky___ gravelly___ sandy X clayey___ other _____

Local Outcrops: sandstone X shale___ limestone___ basalt___ tuff___ other (specify) _____

Nature & estimated depth of cultural deposits: probably less than .5 m.

Arch. Status: Amount and Type of Work Past and Present no known past work. Present work limited to site recording, mapping.

BLM Category I Rec'd N/A

BLM Category II Rec'd N/A

National and/or State Register Status:

___On State Register
___On National and State Register
___Recommended for National by State, on State Register
___Recommended for National and State Register
___In District, National and State
___In District, National
___In District, State
___Recommended and rejected
___Insufficiently evaluated, potential unknown
___Not nominated, potentially significant(archaeologist's rec'd)
X Not nominated, does not appear to be significant(arch. rec'd)

Condition of Site: intact___ grazed X eroded X mech. disturbance___ vandalized___ other _____

Mitigation: avoid X monitor___ test___ excavate___ not required ___

Surveyed for Phillips Petroleum

Record Form: Surv. Forms X Excav. Forms___ Sketch Map X Photos X

Loc. of Forms, Maps, Photos San Juan College, Cultural Resources Management Program

Surface and/or Subsurface Collections: yes___ no X Strategy _____

Location of Collected Artifacts N/A

Previous Collections? ? When_____ Repository_____

Is there another site close by? No LA or Field Identif.# _____

Artifact Density: ~~X~~ 10's, ~~XXXXXXXXXXXXXXXX~~ average 1/m^2 per unit.

Time/Diagnostic Artifacts: tin cans, historic trash

LA# _____

Field No. _____

Other Inst. # SJC-1105

No. of Temporal Components ?2

(Earliest to Latest)

****

Temporal Component (1)

Features lithic scatter

Culture Unknown Period Unknown Phase Unknown

Site Function: Unknown Best Date Unknown

Method of Date: N/A

****

Temporal Component (2)

Features foundation, three trash areas

Culture Navajo Period Historic Phase Recent

Site Function ? sheep camp Best Date A.D. 1945-Present

Method of Date tin cans, plastic, glass

****

Temporal Component (3)

Features _____

Culture _____ Period _____

Phase _____

Site Function _____ Best Date _____

Method of Date _____

****

Additional Temporal Components

Field No.

Other Inst. # SJC-1105

Published Reference:

Date June, 1984

Institution San Juan College, Cultural Resources Management Program, Farmington, NM

Author and Title Kristin Langenfeld, Archaeological Surveys of Six Proposed Well Locations and Associated Flow Lines and Access Routes in San Juan County, Utah, Conducted for Phillips Petroleum Company (#84-SJC-071B)

Remarks: The site consists of the remains of a Navajo sheep camp with a possible prehistoric component. Evidence of the prehistoric component is limited to a highly dispersed chipped stone scatter, the boundaries of which coincide approximately with those of the historic Navajo site. Less than 15 pieces of chipped stone were located during the inspection of an area approximately 150 m. x 150 m. No concentrations of artifacts were found. Isolated chipped stone flakes and a total of two cores were located in the vicinity of the Navajo component foundation and to the north and west. These artifacts may represent the remains of a surface scatter that has been dispersed by erosion and grazing activities. It is also possible that they are related to an unlocated site outside the project area. The most likely place for such a hypothetical site would be in the semistabilized dune areas approximately 150 m. to the northwest of the project area. No diagnostic chipped stone is present on or adjacent to the Navajo site or proposed well location and, therefore, the cultural affiliation of the lithics is indeterminate. Moreover, the limited number and highly dispersed locations of chipped stone do not suggest the presence of subsurface cultural materials within or adjacent to the project area or Navajo component. The Navajo component of SJC-1105 consists of the remains of a sandstone foundation, two ash and trash areas, a rock concentration of unknown function and scattered historic trash. Only the central feature, containing a portion of the site, is shown on the accompanying site map. The most prominent feature consists of the remains of a relatively large, unshaped sandstone foundation apparently measuring approximately 15 m. in diameter. A portion of one upright juniper post is located at the northern side of the alignment. The shape and size of the alignment suggests the base of a permanent structure as opposed to either a tent base or lambing pen or corral. No materials used in the construction of the super-structure are present on the site. It appears likely that these materials, as well as part of the foundation, have been removed for reuse. Two relatively large (approximately 4 m. in diameter) ash and trash areas are located to the south and west of the foundation. These areas contain tin cans, ash, charcoal, metal pieces, clear and brown glass fragments and several shoes. In addition, a small (approximately 1.5 m. in diameter) concentration of unshaped sandstone is located approximately 6 m. west of the west side of the foundation. No alignments are present and the function of this concentration is unknown. An additional extensive trash scatter is located approximately 150 m. northwest of the foundation area on the top of a low sandstone outcrop. This concentration contains lard buckets, evaporated milk cans, clear glass fragments, potted meat tins, black plastic, small pieces of milled lumber and pieces of a large glass water container. The majority of identifiable trash is located in this area, although the trash is scattered from this concentration downslope to the southwest and south. Although located some distance from the foundation area, it is suggested that at least some of the trash in this scatter is related to the major portion of

Field Recorder Kristin Langenfeld Date 5/23/84

Lab Recorder Kristin Langenfeld Date 5/29/84

Remarks (Continued) SJC-1105:

the site. No additional features were located in this area. The site appears to have functioned as a sheep camp and the presence of a foundation suggests a permanent camp which could be used either year-round or seasonally. A camp is indicated by the predominance of tin containers compared to glass and the general absence of habitation related items such as kitchen utensils, dishes, etc. Types of trash present on the site suggest a post A.D. 1930 date for the site. A few aluminum soda cans and the black plastic suggest either relatively recent reuse of the area or perhaps an isolated instance of trash dumping.

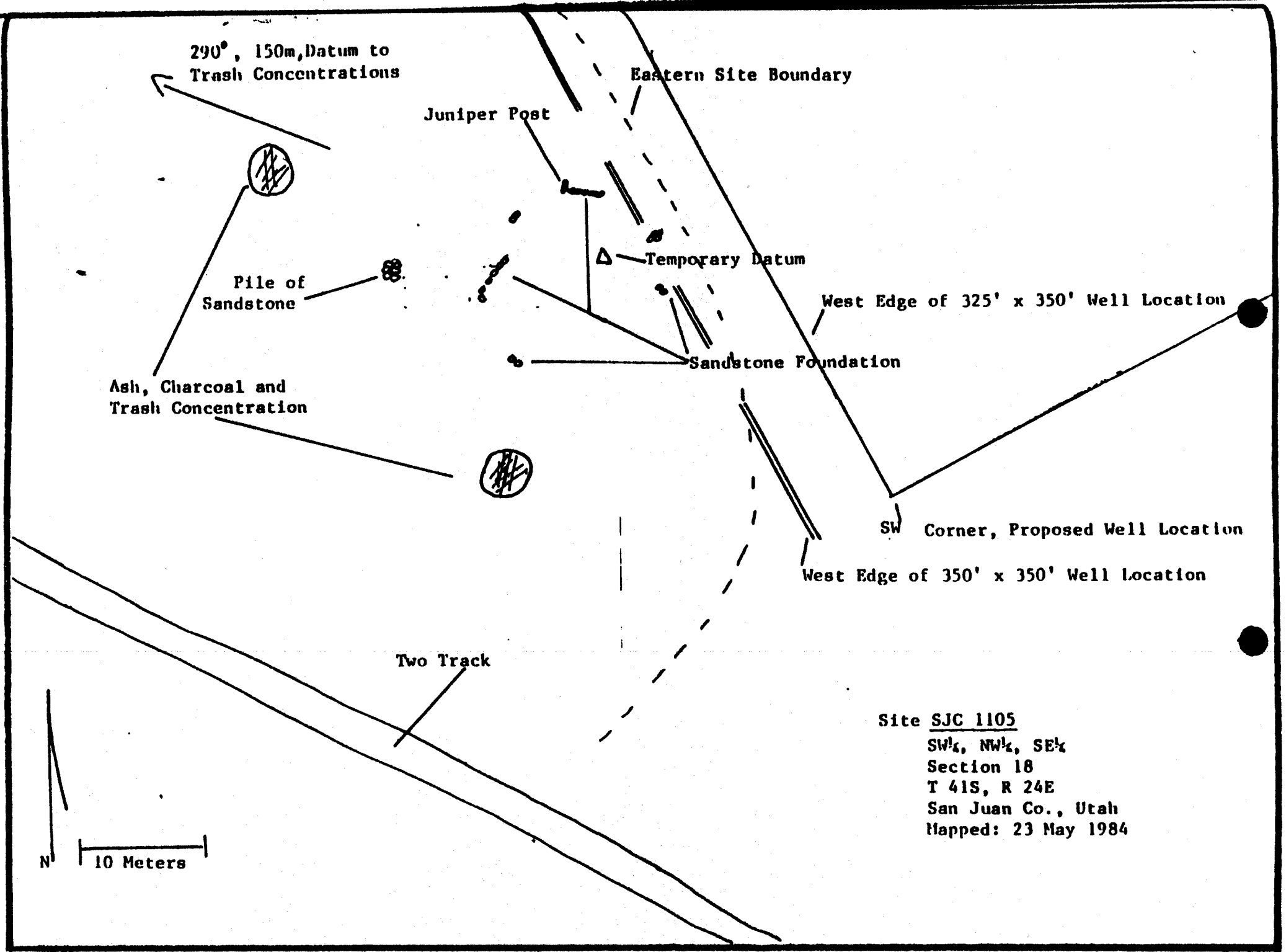

290°, 150m, Datum to
Trash Concentrations
Eastern Site Boundary
Juniper Post
Temporary Datum
Pile of
Sandstone
West Edge of 325' x 350' Well Location
Sandstone Foundation
Ash, Charcoal and
Trash Concentration
SW Corner, Proposed Well Location
West Edge of 350' x 350' Well Location
Two Track
N
10 Meters
Site SJC 1105
SW¼, NW¼, SE¼
Section 18
T 41S, R 24E
San Juan Co., Utah
Mapped: 23 May 1984

Figure 9

MEMORANDUM

San Juan College

TO: Mark Henderson, BIA Archaeologist

FROM: Kristin Langenfeld, Archaeologist kml

DATE: August 8, 1984

SUBJECT: Erratum to Report 84-SJC-071B (Archaeological Surveys of Six Proposed Well Locations and Associated Flow Lines and Access Routes in San Juan County, Utah, Conducted for Phillips Petroleum)

On July 24, 1984 Dr. Terry Del Bene, of the Bureau of Indian Affairs, notified San Juan College of a discrepancy in Table 3, Page 42 of Report 84-SJC-071B. Recommendations for Sites SJC-1105 and SJC-1106 presently read:

Page 42, Lines 5-9:

Presently reads:

SJC-1105	18-24 Access	Monitor of access construction at western end of originally proposed route. Collect surface artifacts.
SJC-1106	18-33 Well Location	Decrease east/west pad dimensions from 350' to 325'. Restrict mechanical disturbance to an area 175' west of center stake.

Page 42, Lines 5-9:

They should read:

SJC-1105	18-33 Well Location	Decrease east/west pad dimensions from 350' to 325'. Restrict mechanical disturbance to an area 175' west of center stake.
SJC-1106	18-24 Access	Monitor of access construction at western end of originally proposed route. Collect surface artifacts.

In addition, Page 49, Line 2 presently reads:

"Field No.: 18-24 Access".

Page 49, Line 2 should read:

"Field No.: 18-33 Well Location".

Page 55, Line 2 presently reads:

"Field No.: 18-33 Well".

Page 55, Line 2 should read:

"Field No.: 18-24 Access".

I thank Dr. Del Bene for pointing out these discrepancies and regret any inconvenience these errors may have caused.

/cap

cc: Mr. Robert Hogg, Phillips Petroleum
Mr. Bill Bingham, BLM, Environmental Protection Specialists Group
Mr. Jerry Elwood, Office of Navajo Land Administration
Mr. Randy Cornett, B.I.A. - Shiprock Agency
Ms. Nellie Jackson, Navajo Nation, Bureau of Land Operations

ARCHAEOLOGICAL SURVEYS OF 13 PROPOSED WELL LOCATIONS, THEIR ASSOCIATED ACCESS ROADS AND FLOW LINE ROUTES, AND 9 MILES OF PROPOSED WATER INJECTION LINE ROUTES IN SAN JUAN COUNTY, SOUTHEASTERN UTAH

12-W24	13-12	13-43
12-34	13-14	18-W12
14-41	13-21	24-41
13-11	13-23	29-22
	13-34	

Water Injection Lines: Mainline and Lines A, B, C, D, E, F, F-1, G, H, I, and J

Prepared by:

Debra Foldi
Archaeological Consultant

Prepared for:

Phillips Oil Company
Cortez, Colorado

Submitted by:

William E. Davis, Director
Abajo Archaeology
Bluff, Utah

August 1984

Navajo Nation Antiquities Permit No. 1984-24
United States Department of the Interior
Bureau of Indian Affairs
Branch of Environmental Quality Control Authorization
BIA-NAO-84-ABA-048-1
and
Utah State Permit No. U-84-8-5-i

TABLE OF CONTENTS

APPENDIX

Site form for SJC-1106

Abajo Archaeology
August 1984

Field No. 18-33 Well

LABORATORY OF ANTHROPOLOGY, MUSEUM OF NEW MEXICO
ARCHEOLOGICAL SITE SURVEY FORM

LA No._____ Site Name_____ Other Inst.# SJC-1106

MNM Proj.#_____ UTM: Zone 12 E 648250 N 4120190

Legal Desc. T 41 ~~N~~S R 24 ~~E~~/W Sec. 18

Center, E½ ~~XXX~~ of the W½ ~~XXX~~ of the SW 1/4

Unplatted____ Grant____ Owner & Address Navajo Nation

*Map Reference: White Mesa Village, Utah Date: 1962 Scale: 1:62500

County San Juan State Utah Nearest Named Drainage Sahgzie Creek, Blue Hogan Wash

Locational Desc.: Recognized Landmarks_____

Site Type: lithic scatter

Site Size: Length 25 m. nw/se Width 84 m. sw/ne Elevation (# of Feet) 4,720

Topographic Setting (Location & Access): site is located in and adjacent to an existing underground pipeline right-of-way and bladed road.

___arroyo/wash	flood plain/	___plain/flat
___base of cliff	___valley bottom	___playa
___bench	___hill top	___ridge
X blowout	___hill slope	___saddle
___canyon rim	___low rise	___base talus slope
___cave	___mesa	___terrace
___cliff/scarp	___mountain	other (specify)_____
___constricted cyn	___mt. front/foothill	
X dune	___open canyon floor	

Local Vegetation rabbitbrush, snakeweed, yucca, ricegrass.

Ecological Zone: forest___ woodland___ scrubland___ grassland___

desertscrub X marshland___ other (specify) _____

*Form must be accompanied by photocopy portion of USGS map showing T., R., scale and quad name.

Abajo Archaeology
August 1984

LA# _____

Field No. _____

Other Inst. # SJC-1106

No. of Temporal Components 1

(Earliest to Latest)

****

Temporal Component (1)

Features lithic scatter

Culture ? Anasazi Period Basketmaker II-Pueblo I Phase Unknown

Site Function: Unknown Best Date _____

Method of Date: partial projectile point

****

Temporal Component (2)

Features _____

Culture _____ Period _____ Phase _____

Site Function _____ Best Date _____

Method of Date _____

****

Temporal Component (3)

Features _____

Culture _____ Period _____

Phase _____

Site Function _____ Best Date _____

Method of Date _____

****

Additional Temporal Components

Abajo Archaeology
August 1984

LA# _____

Field No. _____

Other Inst.# SJC-1106

Soil Type: rocky___ gravelly___ sandy X clayey___ other _____

Local Outcrops: sandstone___ shale___ limestone___ basalt___ tuff___ other (specify) _____

Nature & estimated depth of cultural deposits: possibly up to 2 m.

Arch. Status: Amount and Type of Work Past and Present no known past work. Present work limited to site recording and mapping.

BLM Category I Rec'd N/A

BLM Category II Rec'd N/A

National and/or State Register Status:

___On State Register
___On National and State Register
___Recommended for National by State, on State Register
___Recommended for National and State Register
___In District, National and State
___In District, National
___In District, State
___Recommended and rejected
___Insufficiently evaluated, potential unknown
X Not nominated, potentially significant(archaeologist's rec'd)
___Not nominated, does not appear to be significant(arch. rec'd)

Condition of Site: intact___ grazed X eroded X mech. disturbance X vandalized___ other _____

Mitigation: avoid___ monitor X test___ excavate___ not required ____

Surveyed for Phillips Petroleum

Record Form: Surv. Forms X Excav. Forms___ Sketch Map X Photos_____

Loc. of Forms, Maps, Photos San Juan College, Cultural Resources Management Program

Surface and/or Subsurface Collections: yes___ no X Strategy _____

Location of Collected Artifacts N/A

Previous Collections? ? When_____ Repository_____

Is there another site close by? No LA or Field Identif.# _____

Artifact Density: [illegible] 10's, [illegible]. 2/m^2 in concentrations per unit.

Time/Diagnostic Artifacts: None

Abajo Archaeology
August 1984

LA_____

Field No._____

Other Inst. # SJC-1106

Published Reference:

Date June, 1984

Institution San Juan College, Cultural Resources Management Program, Farmington, NM

Author and Title Kristin Langenfeld, Archaeological Surveys of Six Proposed Well Locations and Associated Flow Lines and Access Routes in San Juan County, Utah, Conducted for Phillips Petroleum Company (#84-SJC-071B)

Remarks: The site consists of a relatively large lithic scatter with no apparent surface features located in an area of stabilized and active dunes. Artifact types include numerous tertiary flakes, both modified and unretouched, bifaces and at least two projectile point fragments. One field-analyzed projectile point appears to be the midsection and basal portion of a reworked Archaic point made of high-quality mottled pink chert. Other raw materials include a variety of high-quality cherts and very fine and moderately fine grained quartzites. In addition, one 1-hand bifacial cobble mano is present on the surface. The vast majority of chipped stone artifacts are exposed in the bladed road and on top of the adjacent underground pipeline. Many of the lithics are broken. Few artifacts are present on the surface of the dunes north and south of the road. The overall suggestion is that additional subsurface cultural deposits of indeterminate depth and lateral extent are presen in the area. The boundaries indicated on the site map show only the extent of infrequent surface artifacts outside the area of mechanical disturbance. Site function is uncertain from surface indications but it appears that the final stages of tool manufacture and tool maintenance activities were conducted on the site. The presence of the mano suggests plant food processing activities. Although no features are present on the surface, the size and density of the scatter suggests either relatively long-term occupation or reuse of the site and subsurface features may well be present in the undisturbed portions of the site. A deeply entrenched arroyo in the northwest portion of the site shows that dunal deposits reach 2 m. in depth in places. No artifacts or features are exposed in the cut walls. Only one potentially diagnostic projectile point fragment is located on the site. The basal portion of the point has been reworked. The form of the point suggests Basketmaker II-Pueblo I affiliations.

Field Recorder K. Langenfeld/L.J. Hooton **Date** 5/21/84

Lab Recorder Kristin Langenfeld **Date** 5/29/84

OPERATOR Phillips Oil Co. DATE 1-17-85

WELL NAME Rathmford Unit #18-33

SEC NW SE 18 T 41S R 24E COUNTY San Juan

43-037-31135	Indian
API NUMBER	TYPE OF LEASE

CHECK OFF:

✓ PLAT	✓ BOND	✓ NEAREST WELL
✓ LEASE	✓ FIELD	✓ POTASH OR OIL SHALE

PROCESSING COMMENTS:

Unit well - ok on P.O.D.

Need water permit

APPROVAL LETTER:

SPACING: ✓ A-3 Rathmford UNIT ☐ c-3-a _____ CAUSE NO. & DATE

☐ c-3-b ☐ c-3-c

STIPULATIONS:

1- Water

11/2/84
25020

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dianne R. Nielson, Ph.D., Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

January 22, 1985

Phillips Oil Company
P. O. Box 2920
Casper, Wyoming

Gentlemen:

Re: Well No. Ratherford Unit #18-33 - NW SE Sec. 18, T. 41S, R. 24E
1870' FSL, 1980' FEL - San Juan County, Utah

Approval to drill the above referenced oil well is hereby granted in accordance with Section 40-6-18, Utah Code Annotated, as amended 1983; and predicated on Rule A-3, General Rules and Regulations and Rules of Practice and Procedure, subject to the following stipulations:

1. Prior to commencement of drilling, receipt by the Division of evidence providing assurance of an adequate and approved supply of water.

In addition, the following actions are necessary to fully comply with this approval:

1. Spudding notification to the Division within 24 hours after drilling operations commence.

2. Submittal to the Division of completed Form OGC-8-X, Report of Water Encountered During Drilling.

3. Prompt notification to the Division should you determine that it is necessary to plug and abandon this well. Notify John R. Baza, Petroleum Engineer, (Office) (801) 538-5340, (Home) 298-7695 or R. J. Firth, Associate Director, (Home) 571-6068.

4. Compliance with the requirements and regulations of Rule C-27, Associated Gas Flaring, General Rules and Regulations, Oil and Gas Conservation.

5. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-037-31135.

Sincerely,

R. J. Firth
Associate Director, Oil & Gas

as
Enclosures
cc: Branch of Fluid Minerals
Bureau of Indian Affairs

9-331
1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

RECEIVED
JUL 11 1985
DIVISION OF OIL
GAS & MINING

1. oil well ☒ gas well ☐ other

2. NAME OF OPERATOR
Phillips Oil Company

3. ADDRESS OF OPERATOR
8055 E. Tufts Ave., Denver, CO 80237

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1870' FSL, 1980' FEL (NW/SE)
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
14-20-603-353

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Navajo

7. UNIT AGREEMENT NAME
SW-I-4192

8. FARM OR LEASE NAME
Ratherford Unit

9. WELL NO.
#18-33

10. FIELD OR WILDCAT NAME
Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 18-T41S-R24E

12. COUNTY OR PARISH
San Juan

13. STATE
Utah

14. API NO.
43-037-31135

15. ELEVATIONS (SHOW DF, KDB, AND WD)
4807' ung. G.L.

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other)			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. 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 depths for all markers and zones pertinent to this work.)*

Drilled 17-1/2" conductor hole to 126' G.L. on 6-17-85. Ran 125' 13-3/8" 54.5# K-55, ST&C casing. Set at 125', cemented with 177 cu.ft. (150 sx) Class B to surface. Finished job and moved out rat hole driller 6-17-85.

Spudded well 7-3-85 with Energy Search Drilling Rig #2. Drilled 12-1/4" hole to 1630'. Ran 9-5/8" 36# K-55, ST&C casing, set at 1630'. Cemented with 726 cu.ft. (300 sx) Class B w/20% Diacel D; tailed with 354 cu.ft. (300 sx) Class B. Circulated to surface, Job complete 7-4-85.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED Linda A Burk TITLE Drilling Manager DATE July 8, 1985

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

6 - BLM, Farmington, NM
2 - Utah O&GCC, SCL
1 - Casper
1 - File (RC)
1 - J. Weichbrodt
1 - Chevron USA, Inc.
1 - Mobil Oil Corp.
1 - Texaco, Inc.
1 - Shell Oil Co.

*See Instructions on Reverse Side

9-331
1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

RECEIVED
JUL 25 1985
DIVISION OF OIL
GAS & MINING

1. oil well [XX] gas well [ ] other

2. NAME OF OPERATOR
PHILLIPS OIL COMPANY

3. ADDRESS OF OPERATOR
8055 E. Tufts Ave., Denver, CO 80237

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1870' FSL, 1980' FEL (NW/SE)
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
16-20-603-353

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Navajo

7. UNIT AGREEMENT NAME
SW-I-4192

8. FARM OR LEASE NAME
Ratherford Unit

9. WELL NO.
#18-33

10. FIELD OR WILDCAT NAME
Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 18-T41S-R24E

12. COUNTY OR PARISH
San Juan

13. STATE
Utah

14. API NO.
43-037-31135

15. ELEVATIONS (SHOW DF, KDB, AND WD)
4807' ung. G.L.

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	[ ]		[ ]
FRACTURE TREAT	[ ]		[ ]
SHOOT OR ACIDIZE	[ ]		[ ]
REPAIR WELL	[ ]		[ ]
PULL OR ALTER CASING	[ ]		[ ]
MULTIPLE COMPLETE	[ ]		[ ]
CHANGE ZONES	[ ]		[ ]
ABANDON*	[ ]		[ ]
(other)			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. 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 depths for all markers and zones pertinent to this work.)*

Drilled 8-3/4" hole to 5688' Ran 7" 23# & 26# K-55 & S-95 LT&C casing; cemented with 1144 cu.ft. (400 sx) Class B w/20% Diacel D. Tailed with 360 cu. ft. (300 sx) Class "B" w/19% salt; set at 5687.05'. Pressure tested casing to 1500 psi. Job completed 7-20-85. Plug back total depth 5663'.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED _____ TITLE Drilling Manager DATE July 22, 1985

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

6-BLM, Farmington, NM
2-Utah O&GCC, SLC
1 - Casper
1 -FILE(RC)
1 - J. Weichbrodt
1-Chevron USA, Inc
1-Mobil Oil Corp.
1-Texaco, Inc
1-Shell Oil Co.

*See Instructions on Reverse Side

Form 3160-4
(November 1983)
(formerly 9-330)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL [XX] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [XX] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

2. NAME OF OPERATOR
Phillips Petroleum Company

3. ADDRESS OF OPERATOR
P. O. Box 2920, Casper, Wyoming 82602

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface 1870' FSL & 1980' FEL, NW SE
At top prod. interval reported below
At total depth

API #43-037-31135

RECEIVED
SEP 03 1985
DIVISION OF OIL GAS & MINING

5. LEASE DESIGNATION AND SERIAL NO.
14-20-603-353

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Navajo

7. UNIT AGREEMENT NAME
SW-I-4192

8. FARM OR LEASE NAME
Ratherford Unit

9. WELL NO.
18-33

10. FIELD AND POOL, OR WILDCAT
Greater Aneth

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA
Sec. 18-T41S-R24E

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
43-037-31135	1-22-85	San Juan	Utah

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
7/3/85	7/16/85	8/17/85	GR 4806', RKB 4820'	--

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
5688'	5661'	--	→	0 - 5688'	--

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
5615' - 5632' Desert Creek Zone I

25. WAS DIRECTIONAL SURVEY MADE
No

26. TYPE ELECTRIC AND OTHER LOGS RUN
DLL-GR-Cal, FDC-CNL, Micro-Cal, RFT, BPWS

27. WAS WELL CORED
Yes

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	54.5#	125'	17-1/2"	177 cu. ft. Class "B"	--
9-5/8"	36#	1630'	12-1/4"	1080 cu. ft. Class "B"	--
7"	23# & 26#	5687'	8-3/4"	1504 cu. ft. Class "B"	--

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
--	--	--	--	--

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	5596'	5564'

31. PERFORATION RECORD (*Interval, size and number*)
5615-5632', 2 SPF, 4" Gun, 34 shots

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5615-32' -	Acidized w/2700 gal 28% HCL w/2 gal/1000 F-801, 3 gal/1000 W-802, 1 gal/1000 A-250 & 6 gal/1000 U-42 w/45, 1.2 sp.gr., ball sealers. Displaced w/42 bbl wtr.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
8/17/85	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
8/24/85	17-1/2	22/64"	→	32	26	6	800

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
50#	--	→	44	35	8	40.0

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)
Sold

TEST WITNESSED BY
--

35. LIST OF ATTACHMENTS
None

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

SIGNED D. C. Gill TITLE Area Manager DATE August 30, 1985

DIST ON BACK

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

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

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.
CORE #1	5602	5640	Cut 38', recovered 37'
CORE #2	5640	5688	Cut 48', recovered 46'

Distribution:
4 - BLM, Farmington, NM
2 - Utah O&G CC, Salt Lake City, UT
1 - The Navajo Nation, Window Rock, AZ
1 - R. Ewing, B'Ville
1 - L. R. Williamson r) G. W. Berk, Denver
1 - T. L. Carten r) P. Bertuzzi, Denver
1 - J. B. Lindemood, Denver
1 - W.I. Owners
1 - J. Weichbrodt, Cortez
1 - File RC

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
LOG TOPS		
Shinarump	2372	
DeChelly	2687'	
Hermosa	4611'	
Ismay	5446'	
Desert Creek Zone I	5609'	

Mobil Oil Corporation

P.O. BOX 5444
DENVER, COLORADO 80217-5444

May 14, 1986

RECEIVED
MAY 16 1986
DIVISION OF
OIL, GAS & MINING

Utah Board of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attn: R. J. Firth
Associate Director

SUPERIOR OIL COMPANY MERGER

Dear Mr. Firth:
On September 20, 1984, The Superior Oil Company (Superior) became a wholly owned subsidiary of Mobil Corporation. Since January 1, 1985, Mobil Oil Corporation (MOC), another wholly owned subsidiary of Mobil Corporation, has acted as agent for Superior and has operated the Superior-owned properties.

On April 24, 1986, Superior was merged with Mobil Exploration and Producing North America Inc. (MEPNA), which is also a wholly owned subsidiary of Mobil Corporation. MEPNA is the surviving company of the merger.

This letter is to advise you that all properties held in the name of Superior will now be held in the name of MEPNA; and that these properties will continue to be operated by MOC as agent for MEPNA.

Attached is a listing of all wells and a separate listing of injection-disposal wells, Designation of Agent and an organization chart illustrating the relationships of the various companies. If you have any questions or require additional documentation of this merger, please feel free to contact me at the above address or (303) 298-2577.

Very truly yours,

R. D. Baker
Environmental Regulatory Manager

CNE/rd
CNE8661

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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

1. Type of Well
☐ Oil Well ☐ Gas Well ☒ Other [redacted]

2. Name of Operator
Phillips Petroleum Company

3. Address and Telephone No.
5525 Hwy 64 NBU 3004, Farmington, NM 87401 (505) 599-3412

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Unit J, Section 18, T41S, R24E
1870' FSL & 1980' FEL

5. Lease Designation and Serial No.
14-20-603-353

6. If Indian, Allottee or Tribe Name
Navajo Tribal

7. If Unit or CA, Agreement Designation
Ratherford Unit
SW-I-4192

8. Well Name and No.
Ratherford Unit #18-33

9. API Well No.
43-037-31135

10. Field and Pool, or Exploratory Area
Greater Aneth

11. County or Parish, State
San Juan, Utah

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

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ 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 depths for all markers and zones pertinent to this work.)*

March 30 thru April 8, 1992
MI & RU equipment. ND WH & NU BOP. COOH w/production string. RU Western Company and frac'd w /28,000 gallons 35# gelled water and 34,500 lbs of 20/40 sand. Max pressure 7300 psi, Max rate 25 BPM. Swabbed well and cleaned out sand to PBTD 5661' and circulated hole clean. TIH w/production tbg and set @ 5638'. ND BOP and NU WH and returned well to production.

RECEIVED
APR 14 1992
DIVISION OF
OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Signed L. E. Robinson Title Sr. Drlg. & Prod. Engr. Date 4-9-92
L. E. Robinson

(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

2

FORM 10

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

P J KONKEL
PHILLIPS PETROLEUM COMPANY
5525 HWY 64 NBU 3004
FARMINGTON NM 87401

RECEIVED
AUG 16 1993
DIVISION OF
OIL, GAS & MINING

UTAH ACCOUNT NUMBER: N0772

REPORT PERIOD (MONTH/YEAR): 6 / 93

AMENDED REPORT ☐ (Highlight Changes)

Well Name / API Number	Entity	Location	Producing Zone	Well Status	Days Oper	Production Volumes OIL(BBL)	GAS(MCF)	WATER(BBL)
#21-23 4303713754	06280	41S 24E 21	DSCR	POW	29	1374	883	58
#3-44 4303715031	06280	41S 24E 3	DSCR	POW	30	111	94	2905
#3-14 4303715124	06280	41S 24E 3	DSCR	POW	30	67	23	302
#9-12 4303715126	06280	41S 24E 9	DSCR	POW	30	112	654	17363
#9-14 4303715127	06280	41S 24E 9	DSCR	POW	30	201	315	423
#28-12 4303715336	06280	41S 24E 28	PRDX	POW	29	112	47	2428
#29-12 4303715337	06280	41S 24E 29	PRDX	POW	29	56	0	672
#29-32 4303715339	06280	41S 24E 29	DSCR	POW	29	1402	287	2224
#29-34 4303715340	06280	41S 24E 29	DSCR	POW	29	757	48	0
#30-32 4303715342	06280	41S 24E 30	DSCR	POW	29	588	1049	3744
#3-12 4303715620	06280	41S 24E 3	DSCR	POW	30	268	11	363
#9-34 4303715711	06280	41S 24E 9	DSCR	POW	30	45	46	9800
#10-12 4303715712	06280	41S 24E 10	DSCR	POW	30	45	23	1088
					TOTALS	5138	3480	41370

USGR 8-18-93

COMMENTS: Effective July 1, 1993, Phillips Petroleum Company has sold its interest in the Ratherford Unit to Mobil Exploration and Producing U.S., Incorporated, P. O. Box 633, Midland, Texas 79702. Mobil assumed operations on July 1, 1993.

I hereby certify that this report is true and complete to the best of my knowledge. Date: 8/11/93

Name and Signature: PAT KONKEL Pat Konkel Telephone Number: 505 599-3452

(6/93)

FORM 9

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION & SERIAL NO.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
NAVAJO TRIBAL

1. OIL WELL ☐ GAS WELL ☐ OTHER

7. UNIT AGREEMENT NAME
RATHERFORD UNIT

2. NAME OF OPERATOR
MOBIL OIL CORPORATION

8. FARM OR LEASE NAME

3. ADDRESS OF OPERATOR
P. O. BOX 633 MIDLAND, TX 79702

9. WELL NO.

RECEIVED
SEP 13 1993

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.
See also space 17 below.)
At surface

At proposed prod. zone

DIVISION OF
OIL, GAS & MINING

10. FIELD AND POOL, OR WILDCAT
GREATER ANETH

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

14. API NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.)	12. COUNTY	13. STATE
		SAN JUAN	UTAH

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) CHANGE OF OPERATOR			
(Other)				(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			
APPROX. DATE WORK WILL START _____				DATE OF COMPLETION _____			

17. 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 depths for all markers and zones pertinent to this work.)

* Must be accompanied by a cement verification report.

AS OF JULY1, 1993, MOBIL OIL CORPORATION IS THE OPERATOR OF THE RATHERFORD UNIT. ATTACHED ARE THE INDIVIDUAL WELLS.

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

SIGNED Shirley Todd TITLE ENV. & REG TECHNICIAN DATE 9-8-93

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

See Instructions On Reverse Side

(3/89)

FORM 11

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

MONTHLY OIL AND GAS DISPOSITION REPORT

OPERATOR NAME AND ADDRESS:

L B Sheffield
~~BRIAN BERRY~~
~~M E P N A~~ MOBIL
~~POB 219031 1807A RENTWR~~ P.O. DRAWER G
DALLAS TX 75221-9031 CORTEZ, Co. 81321

UTAH ACCOUNT NUMBER: N7370

REPORT PERIOD (MONTH/YEAR): 7 / 93

AMENDED REPORT ☐ **(Highlight Changes)**

*931000 updated. fc

ENTITY NUMBER	PRODUCT	GRAVITY BTU	BEGINNING INVENTORY	VOLUME PRODUCED	DISPOSITIONS TRANSPORTED	DISPOSITIONS USED ON SITE	DISPOSITIONS FLARED/VENTED	DISPOSITIONS OTHER	ENDING INVENTORY
05980	OIL			177609	177609	0			
	GAS			72101	66216	5885			
11174	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
TOTALS				249710	243825	5885			

RECEIVED
SEP 13 1993
DIVISION OF
OIL, GAS & MINING

COMMENTS: PLEASE NOTE ADDRESS CHANGE. MOBIL ~~ASSU~~ PRODUCTION REPORTS WILL BE COMPILED AND SENT FROM THE CORTEZ, Co. OFFICE IN THE FUTURE.

I hereby certify that this report is true and complete to the best of my knowledge.

Date: 9/6/93

Name and Signature: Lowell B Sheffield

Telephone Number ~~214 658 2528~~ 303 565 2212

(6/93)

FORM=NR0003.FRM 07/2

Sept 29, 1993

TO: Lisha Cordova - Utah Mining Oil & Gas

FROM: Janice Easley
BLM Farmington, NM
505 599-6355

Here is copy of Ratherford Unit Successor Operator.

4 pages including this one.

Ratherford Unit (GC)

Navajo Area Office
P. O. Box 1060
Gallup, New Mexico 87305-1060

ARES/543

JUL 26 1993

Mr. G. D. Cox
Mobil Exploration and
Producing North America, Inc.
P. O. Box 633
Midland, Texas 79702

Dear Mr. Cox:

Enclosed for your information and use is the approved Designation of Operator between the Phillips Petroleum Company and Mobil Exploration and Producing North America, Inc. for the Ratherford Unit.

Please note that all other concerned parties will be furnished their copy of the approved document.

Sincerely,

ACTING Area Director

Enclosure

cc: Bureau of Land Management, Farmington District Office w/enc.
TNN, Director, Minerals Department w/enc.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

DESIGNATION OF OPERATOR

Phillips Petroleum Company is, on the records of the Bureau of Indian Affairs, operator of the Ratherford Unit,

AREA OFFICE: Window Rock, Arizona
LEASE NO: Attached hereto as Exhibit "A"

and, pursuant to the terms of the Ratherford Unit Agreement, is resigning as Unit Operator effective July 1, 1993, and hereby designates

NAME: Mobil Exploration and Producing North America Inc., duly elected pursuant to the terms of the Ratherford Unit Agreement,

ADDRESS: P. O. Box 633, Midland, Texas 79702
Attn: G. D. Cox

as Operator and local agent, with full authority to act on behalf of the Ratherford Unit lessees in complying with the terms of all leases and regulations applicable thereto and on whom the authorized officer may serve written or oral instructions in securing compliance with the Operating Regulations (43 CFR 3160 and 25 CFR 211 and 212) with respect to (described acreage to which this designation is applicable):

Attached hereto as Exhibit "A"

Bond coverage under 25 CFR 211, 212 or 225 for lease activities conducted by the above named designated operator is under Bond Number 05202782 (attach copy). Evidence of bonding is required prior to the commencement of operations.

It is understood that this designation of operator does not relieve any lessee of responsibility for compliance with the terms of the leases and the Operating Regulations. It is also understood that this designation of operator does not constitute an assignment of any interest in the leases.

In case of default on the part of the designated operator, the lessees will make full and prompt compliance with all regulations, lease terms, stipulations, or orders of the Secretary of the Interior or his representative.

Attached is the appropriate documentation relevant to this document.

The designated operator agrees to promptly notify the authorized officer of any change in the operatorship of said Ratherford Unit.

Phillips Petroleum Company

June 17, 1993 By: M. B. Scott, Jr.
Attorney-in-Fact

Mobil Exploration and Producing
North America Inc.

June 11, 1993 By: B. D. Martiny
Attorney-in-Fact B.D. MARTINY

ACTING AREA DIRECTOR 7/9/93
APPROVED BY TITLE DATE

APPROVED PURSUANT, TO SECRETARIAL REDELEGATION ORDER 209 DM 8 AND 230 DM 3.
This form does not constitute an information collection as defined by 44 U.S.C. 3502 and therefore does not require OMB approval.

EXHIBIT "A"

ATTACHED TO AND MADE A PART OF DESIGNATION OF SUCCESSOR OPERATOR, RATHERFORD UNIT

EXHIBIT "C"

Revised as of September 29, 1992)
SCHEDULE OF TRACT PERCENTAGE PARTICIPATION

Tract Number	Description of Land	Serial Number and Effective Date of Lease	Tract Percentage Participation
1	S/2 Sec. 1, E/2 SE/4 Sec. 2, E/4 Sec. 11, and all of Sec. 12, T-41-S, R-23-E, S.L.M. San Juan County, Utah	14-20-603-246-A Oct. 5, 1953	11.0652565
2	SE/4 and W/2 SW/4 Sec. 5, the irregular SW/4 Sec. 6, and all of Sec. 7 and 8, T-41-S, R-24-E, San Juan County, Utah	14-20-603-368 Oct. 26, 1953	14.4159942
3	SW/4 of Sec. 4, T-41-S, R-24-E, San Juan County, Utah	14-20-603-5446 Sept. 1, 1959	.5763826
4	SE/4 Sec. 4, and NE/4 Sec. 9, T-41-S, R-24-E, San Juan County, Utah	14-20-603-4035 March 3, 1958	1.2587779
5	SW/4 of Sec. 3, T-41-S, R-24-E, S.L.M., San Juan County, Utah	14-20-603-5445 Sept. 3, 1959	.4667669
6	NW/4 of Sec. 9, T-41-S, R-24-E, S.L.M., San Juan County, Utah	14-20-603-5045 Feb. 4, 1959	1.0187043
7	NW/4, W/2 NE/4, and SW/4 Sec. 10, SE/4 Sec. 9, T-41-S, R-24-E, San Juan County, Utah	14-20-603-4043 Feb. 18, 1958	3.5097575
8	SW/4 Sec. 9, T-41-S, R-24-E, S.L.M. San Juan County, Utah	14-20-603-5046 Feb. 4, 1959	1.1141679
9	SE/4 Sec. 10 and S/2 SW/4 Sec. 11 T-41-S, R-24-E, San Juan County, Utah	14-20-603-4037 Feb. 14, 1958	2.6186804
10	All of Sec. 13, E/2 Sec. 14, and E/2 SE/4 and N/2 Sec. 24, T-41-S, R-23-E, S.L.M., San Juan County, Utah	14-20-603-247-A Oct. 5, 1953	10.3108861
11	Sections 17, 18, 19 and 20, T-41-S, R-24-E, San Juan County Utah	14-20-603-353 Oct. 27, 1953	27.3389265
12	Sections 15, 16, 21, and NW/4, and W/2 SW/4 Sec. 22, T-41-S, R-24-E, San Juan County, Utah	14-20-603-355 Oct. 27, 1953	14.2819339
13	W/2 Section 14, T-41-S, R-24-E, San Juan County, Utah	14-20-603-370 Oct. 26,1953	1.8500847
14	N/2 and SE/4, and E/2 SW/4 Sec. 29, NE/4 and E/2 SE/4 and E/2 W/2 irregular Sec. 30, and E/2 NE/4 Sec. 32, T-41-S, R-24-E, San Juan County, Utah	14-20-603-407 Dec. 10, 1953	6.9924969
15	NW/4 Sec. 28, T-41-S, R24-E San Juan County, Utah	14-20-603-409 Dec. 10, 1953	.9416393
16	SE/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6504 July 11, 1961	.5750254
17	NE/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6505 July 11, 1961	.5449292
18	NW/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6506 July 11, 1961	.5482788
19	NE/4 Sec. 4, T-41-S, R24-E San Juan County, Utah	14-20-0603-7171 June 11, 1962	.4720628
20	E/2 NW/4 Sec. 4, T-41-S, R-24-E San Juan County, Utah	14-20-0603-7172 June 11, 1962	.0992482
100% Indian Lands		TOTAL 12,909.74	100.0000000

Division of Oil, Gas and Mining

PHONE CONVERSATION DOCUMENTATION FORM

Route original/copy to:

[] Well File _____

_____

(Location) Sec___Twp___Rng___

(API No.) _____

[] Suspense

(Return Date) _____

(To - Initials) _____

XX Other

OPERATOR CHANGE

1. Date of Phone Call: 10-6-93 Time: 9:30

2. DOGM Employee (name) L. CORDOVA (Initiated Call XX)

Talked to:

Name GLEN COX (Initiated Call []) - Phone No. (915)688-2114

of (Company/Organization) MOBIL

3. Topic of Conversation: OPERATOR CHANGE FROM PHILLIPS TO MOBIL "RATHERFORD UNIT".

(NEED TO CONFIRM HOW OPERATOR WANTS THE WELLS SET UP - MEPNA AS PER BIA APPROVAL

OR MOBIL OIL CORPORATION AS PER SUNDRY DATED 9-8-93?)

4. Highlights of Conversation:

MR. COX CONFIRMED THAT THE WELLS SHOULD BE SET UNDER ACCOUNT N7370/MEPNA AS PER BIA APPROVAL, ALSO CONFIRMED THAT PRODUCTION & DISPOSITION REPORTS WILL NOW BE HANDLED OUT OF THEIR CORTEZ OFFICE RATHER THAN DALLAS.

MEPNA-

PO DRAWER G

CORTEZ, CO 81321

(303)565-2212

*ADDRESS CHANGE AFFECTS ALL WELLS CURRENTLY OPERATORED BY MEPNA, CURRENTLY REPORTED OUT OF DALLAS (MCELMO CREEK).

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

Routing:
1-VLC/7-SJ
2-DTS/8-FILE
3-VLC
4-RJF
5-LEC
6-PL

Attach all documentation received by the division regarding this change.
Initial each listed item when completed. Write N/A if item is not applicable.

XX Change of Operator (well sold) ☐ Designation of Agent
☐ Designation of Operator ☐ Operator Name Change Only

The operator of the well(s) listed below has changed (EFFECTIVE DATE: 7-1-93)

TO (new operator) MEPNA
(address) PO DRAWER G
CORTEZ, CO 81321
GLEN COX (915)688-2114
phone (303) 565-2212
account no. N7370

FROM (former operator) PHILLIPS PETROLEUM COMPANY
(address) 5525 HWY 64 NBU 3004
FARMINGTON, NM 87401
PAT KONKEL
phone (505) 599-3452
account no. N0772(A)

Well(s) (attach additional page if needed): *RATHERFORD UNIT (NAVAJO)

Name: **SEE ATTACHED**	API: 43037.31135	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:

OPERATOR CHANGE DOCUMENTATION

Lec 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form). (Req. 8-20-93) (6/93 Prod. Rpt. 8-16-93)

Lec 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form). (Req. 8-31-93) (Rec'd 9-14-93)

N/A 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes/no) _____ If yes, show company file number: _____.

Lec 4. **(For Indian and Federal Wells ONLY)** The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of **Federal and Indian** well operator changes should take place prior to completion of steps 5 through 9 below.

Lec 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. (O&G wells 10-6-93) (WIW's 10-26-93)

Lec 6. Cardex file has been updated for each well listed above. (O&G wells 10-6-93) (WIW's 10-26-93)

Lec 7. Well file labels have been updated for each well listed above. (O&G wells 10-6-93) (WIW's 10-26-93)

Lec 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. (10-6-93)

Lec 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

– OVER –

PERATOR CHANGE WORKSHEET (CONTINUED) Initial each item when completed. Write N/A if item is not applicable.

ENTITY REVIEW

Lec 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) ___ (If entity assignments were changed, attach copies of Form 6, Entity Action Form).

N/A 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

BOND VERIFICATION (Fee wells only)

Lec/N/A 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond.

__ 2. A copy of this form has been placed in the new and former operators' bond files.

__ 3. The former operator has requested a release of liability from their bond (yes/no) ___. Today's date _____ 19___. If yes, division response was made by letter dated _____ 19___.

LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY

N/A 1. (Rule R615-2-10) The former operator/lessee of any **fee lease** well listed above has been notified by letter dated _____ 19___, of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested.
DTS 11-10-93

N/A 2. Copies of documents have been sent to State Lands for changes involving **State leases.**

FILMING

__ 1. All attachments to this form have been microfilmed. Date: 11-17 1993.

FILING

Lec 1. Copies of all attachments to this form have been filed in each well file.

Lec 2. The original of this form and the original attachments have been filed in the Operator Change file.

COMMENTS

931006 BIA/Bkm Approved 7-9-93.

12W-44	43-037-16405	14-20-603-246A	SEC. 12, T41S, R23E	SE/SE 660 FSL; 660 FEL
12W-44A	43-037-31543	14-20-603-246A	SEC. 12, T41S, R23E	SE/SE 807 FEL; 772 FSL
13-11W	43-037-31152	14-20-603-247A	SEC. 13, T41S, R23E	NW/NW 500 FNL; 660 FWL
13-12	43-037-31127	14-20-603-247A	SEC. 13, T41S, R23E	SW/NW 1705 FNL; 640 FWL
13W-13	43-037-15851	14-20-603-247A	SEC. 13, T41S, R23E	NW/SW 1980 FSL; 4620 FEL
13-14	43-037-31589	14-20-603-247A	SEC. 13, T41S, R23E	660 FSL; 660 FWL
13-21	43-037-31128	14-20-603-247A	SEC. 13, T41S, R23E	NE/NW 660 FNL; 1920 FWL
13W-22	43-037-15852	14-20-603-247A	SEC. 13, T41S, R23E	SE/NW 1988 FNL; 3300 FEL
13-23	43-037-31129	14-20-603-247A	SEC. 13, T41S, R23E	NE/SW 1980 FSL; 1930 FWL
~~13W-44~~	~~43-037-15853~~	~~14-20-603-247~~	~~SEC. 13, T41S, R23E~~	~~600 FSL; 3300 FEL~~
13W-32	43-037-16406	14-20-603-247A	SEC. 13, T41S, R23E	1881 FNL; 1979 FEL
13W-33	43-037-15855	14-20-603-247A	SEC. 13, T41S, R23E	NW/SE 1970 FSL; 1979 FEL
13W-34	43-037-31130	14-20-603-247A	SEC. 13, T41S, R23E	SW/SE 660 FSL; 1980 FEL
13-41	43-037-15856	14-20-603-247A	SEC. 13, T41S, R23E	NE/NE 660 FNL; 660 FEL
13W-42	43-037-15857	14-20-603-247A	SEC. 13, T41S, R23E	SE/NE 2139; 585 FEL
13-43	43-037-31131	14-20-603-247A	SEC. 13, T41S, R23E	NE/SE 1700 FSL; 960 FEL
13W-44	43-037-16407	14-20-603-247A	SEC. 13, T41S, R23E	SE/SE 635 FSL; 659 FEL
~~14-03~~	~~NA~~	~~14-20-603-4037~~	~~SEC. 11, T41S, R23E~~	~~SW/SW 660 FSL; 660 FEL~~
14-32	43-037-15858	14-20-603-247A	SEC. 14, T41S, R23E	2130 FNL; 1830 FEL
14-41	43-037-31623	14-20-603-247A	SEC. 14, T41S, R23E	NE/NE 521 FEL; 810 FNL
14W-42	43-037-15860	14-20-603-247A	SEC. 14, T41S, R23E	SE/NE 1976 FNL; 653 FEL
14W-43	43-037-16410	14-20-603-247A	SEC. 14, T41S, R23E	3300 FSL; 4770 FEL
14-33	43-037-15859	14-20-603-247	SEC. 14, T41S, R23E	2130 FSL; 1830 FEL
15-12	43-037-15715	14-20-603-355	SEC. 15, T41S, R24E	1820 FNL; 500 FWL
15W-21	43-037-16411	14-20-603-355	SEC. 15, T41S, R24E	660 FNL; 1820 FWL
15-22	43-037-30449	14-20-603-355	SEC. 15, T41S, R24E	SE/NW, 1980 FNL; 2050 FWL
15-32	43-037-15717	14-20-603-355A	SEC. 15, T41S, R24E	1980 FNL; 1980 FEL
15-33	43-037-15718	14-20-603-355	SEC. 15, T41S, R24E	NW/SE 1650 FSL; 1980 FEL
15-41	43-037-15719	14-20-603-355	SEC. 15, T41S, R24E	660 FNL; 660' FEL
15-42	43-037-30448	14-20-603-355	SEC. 15, T41S, R24E	SE/NE 2020 FNL; 820 FEL
16W-12	43-037-15720	14-20-603-355	SEC. 16, T41S, R24E	SW/NW 1880 FNL; 660 FWL
16-13	43-037-31168	14-20-603-355	SEC. 16, T41S, R24E	1980 FSL; 660 FWL
16W-14	43-037-15721	14-20-603-355	SEC. 16, T41S, R24E	SW/SW 660 FSL; 660 FWL
16W-21	43-037-16414	14-20-603-355	SEC. 16, T41S, R24E	NE/NW 660 FNL; 1880 FWL
16W-23	43-037-15722	14-20-603-355	SEC. 16, T41S, R24E	NE/SW 1980 FSL; 1980 FWL
16-32	43-037-15723	14-20-603-355	SEC. 16, T41S, R24E	1980 FNL; 1980' FEL
16-34	43-037-15724	14-20-603-355	SEC. 16, T41S, R24E	660 FNL; 1980' FEL
16-41	43-037-15725	14-20-603-355	SEC. 16, T41S, R24E	660 FNL; 660 FEL
16W-43	43-037-16415	14-20-603-355	SEC. 16, T41S, R24E	NE/SE 2140 FSL; 820 FEL
17-11	43-037-31169	14-20-603-353	SEC. 17, T41S, R24E	NW/NW 1075' FNL; 800' FWL
17W-12	43-037-15726	14-20-603-353	SEC. 17, T41S, R24E	SW/NW 1980' FNL; 510' FWL
17-13	43-037-31133	14-20-603-353	SEC. 17, T41S, R24E	NW/SW 2100' FSL; 660' FWL
17W-14	43-037-15727	14-20-603-353	SEC. 17, T41S, R24E	SW/SW 660' FSL; 660' FWL
17W-21	43-037-16416	14-20-603-353	SEC. 17, T41S, R24E	510' FNL; 1830' FWL
17-22	43-037-31170	14-20-603-353	SEC. 17, T41S, R24E	1980' FNL; 1980' FWL
17W-23	43-037-15728	14-20-603-353	SEC. 17, T41S, R24E	NE/SW 1980' FWL; 1880' FSL
17-31	43-037-31178	14-20-603-353	SEC. 17, T41S, R24E	NW/NE 500' FNL; 1980' FEL
17-32W	43-037-15729	14-20-603-353	SEC. 17, T41S, R24E	SW/NE 1830' FNL; 2030' FEL
17-33	43-037-31134	14-20-603-353	SEC. 17, T41S, R24E	NW/SE 1980' FSL; 1845' FEL
17-34W	43-037-15730	14-20-603-353	SEC. 17, T41S, R24E	SW/SE 560' FSL; 1880' FEL
17W-41	43-037-15731	14-20-603-353	SEC. 17, T41S, R24E	610' FNL; 510' FEL
17-42	43-037-31177	14-20-603-353	SEC. 17, T41S, R24E	SE/NE 1980; FNL, 660' FEL
17-44	43-037-15732	14-20-603-353	SEC. 17, T41S, R24E	660 FSL; 660' FEL
17W-43	43-037-16417	14-20-603-353	SEC. 17, T41S, R24E	NE/SE 1980' FSL; 660' FEL
18-11	43-037-15733	14-20-603-353	SEC. 18, T41S, R24E	NW/NW 720' FNL; 730' FWL
18-12W	43-037-31153	14-20-603-353	SEC. 18, T41S, R24E	SW/NW 1980' FNL; 560' FWL
18W-21	43-037-16418	14-20-603-353	SEC. 18, T41S, R24E	NE/NW 660' FNL; 1882' FWL
18-22	43-037-31236	14-20-603-353	SEC. 18, T41S, R24E	SW/NW 2200' FNL; 2210' FWL
18W-23	43-037-30244	14-20-603-353	SEC. 18, T41S, R24E	NE/SW 2385' FSL; 2040' FWL
18W-14	43-037-15735	14-20-603-353	SEC. 18, T41S, R24E	SW/SW 810' FSL; 600' FWL
18-24	43-037-31079	14-20-603-353	SEC. 18, T41S, R24E	SE/SW 760' FSL; 1980' FWL
18-31	43-037-31181	14-20-603-353	SEC. 18, T41S, R24E	NW/NE 795' FNL; 2090; FEL
~~18W-32~~	~~43-037-15736~~	~~14-20-603-353~~	~~SEC. 18, T41S, R24E~~	~~SW/NE 2140' FNL; 1830' FEL~~
* 18-33	43-037-31135	14-20-603-353	SEC. 18, T41S, R24E	NW/SE 1870' FSL; 1980' FEL
18-34W	43-037-15737	14-20-603-353	SEC. 18, T41S, R24E	SW/SE 780' FSL; 1860 FEL
18W-41	43-037-15738	14-20-603-353	SEC. 18, T41S, R24E	NE/NE 660' FNL; 660' FEL
18-42	43-037-31182	14-20-603-353	SEC. 18, T41S, R24E	SE/NE 2120' FNL; 745' FEL
18W-43	43-037-16419	14-20-603-353	SEC. 18, T41S, R24E	NE/SE 1980' FSL; 660' FEL
18-44	43-037-31045	14-20-603-353	SEC. 18, T41S, R24E	SE/SE 660' FSL; 660' FEL
19-11	43-037-31080	14-20-603-353	SEC. 19, T41S, R24E	NW/NW 660' FNL; 660' FWL
19-12	43-037-15739	14-20-603-353	SEC. 19, T41S, R24E	600' FWL; 1980' FNL
19-14	43-037-15740	14-20-603-353	SEC. 19, T41S, R24E	600' FSL; 660' FEL

PA'd

PA'd

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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

1. Type of Well
[X] Oil Well [ ] Gas Well [ ] Other

2. Name of Operator
MOBIL EXPLORATION & PRODUCING US, AS AGENT FOR MEPNA

3. Address and Telephone No.
P. O. BOX 633, MIDLAND, TX 79702 **(915) 688-2585**

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1870' FSL, 1980' FEL; SEC 18, T41S, R24E

5. Lease Designation and Serial No.
14-20-603-353

6. If Indian, Allottee or Tribe Name
NAVAJO TRIBAL

7. If Unit or CA, Agreement Designation
RATHERFORD UNIT

8. Well Name and No.
RATHERFORD UNIT 18-33

9. API Well No.
43-037-31135

10. Field and Pool, or exploratory Area
GREATER ANETH

11. County or Parish, State
SAN JUAN, UT

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

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[ ] Other **ACIDIZE**	[ ] 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 depths for all markers and zones pertinent to this work.)*

07/27/93 MIRU. POOH W/RODS & PUMP & TBG. RIH W/BIT & SCRAPER. CLEANED OUT FILL F/5646-5661'.

07/28/93 SPOTTED 250 GALS XYLENE FROM 5657-5467'; LET XYLENE SOAK 1 HR. DUMP 10 BBLS FW DOWN BACKSIDE. ACDZ PERFS F/5615-5632 W/5000 GALS HCL.

07/29/93 PUMPED 2 DRUMS TRETOLITE XC-402 + 33 BBLS FW. LET CHEMICAL SOAK OVERNIGHT.

07/30/93 RIH W/PROD TBG & EQUIP. RDMO. RELEASE WELL TO PROD.

14. I hereby certify that the foregoing is true and correct
Signed D. Irvin for Shirley Todd Title **ENV. & REG. TECHNICIAN** Date **04/26/94**

(This space for Federal or State office use)

Approved by _____ Title _____ Date Tax Credit

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**

FORM 10

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
355 West North Temple, 3 Triad, Suite 350, Salt Lake City, UT 84180-1203

MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

C/O MOBIL OIL CORP
M E P N A
PO DRAWER G
CORTEZ CO 81321

UTAH ACCOUNT NUMBER: N7370

REPORT PERIOD (MONTH/YEAR): 6 / 95

AMENDED REPORT ☐ **(Highlight Changes)**

Well Name / API Number	Entity	Location	Producing Zone	Well Status	Days Oper	Production Volumes OIL(BBL)	GAS(MCF)	WATER(BBL)
RATHERFORD UNIT #13-43 4303731131	06280	41S 23E 13	DSCR					
RATHERFORD UNIT #24-41 4303731132	06280	41S 23E 24	DSCR					
RATHERFORD UNIT 17-13 4303731133	06280	41S 24E 17	DSCR					
RATHERFORD UNIT #17-33 4303731134	06280	41S 24E 17	DSCR					
RATHERFORD UNIT #18-33 4303731135	06280	41S 24E 18	DSCR					
RATHERFORD UNIT #1-14 4303731162	06280	41S 23E 1	DSCR					
RATHERFORD UNIT #7-11 4303731163	06280	41S 24E 7	DSCR					
RATHERFORD UNIT #7-13 4303731164	06280	41S 24E 7	DSCR					
RATHERFORD UNIT #7-22 4303731165	06280	41S 24E 7	DSCR					
RATHERFORD UNIT #7-24 4303731166	06280	41S 24E 7	DSCR					
RATHERFORD UNIT 7-33 4303731167	06280	41S 24E 7	IS-DC					
RATHERFORD UNIT #16-13 4303731168	06280	41S 24E 16	DSCR					
RATHERFORD UNIT #17-11 4303731169	06280	41S 24E 17	DSCR					
					TOTALS			

COMMENTS: _____

I hereby certify that this report is true and complete to the best of my knowledge. Date: _____

Name and Signature: _____ Telephone Number: _____

2/93)

Division of Oil, Gas and Mining

PHONE CONVERSATION DOCUMENTATION FORM

Route original/copy to:

[ ] **Well File** _____

_____

(Location) Sec___Twp___Rng___

(API No.) _____

[ ] Suspense

(Return Date) _____

(To - Initials) _____

XXX Other

OPER NM CHG

_____

_____

1. Date of Phone Call: 8-3-95 Time: _____

2. DOGM Employee (name) L. CORDOVA (Initiated Call [ ])

Talked to:

Name R. J. FIRTH (Initiated Call XX) - Phone No. (___)_____

of (Company/Organization) _____

3. Topic of Conversation: M E P N A / N7370

4. Highlights of Conversation:

OPERATOR NAME IS BEING CHANGED FROM M E P N A (MOBIL EXPLORATION AND PRODUCING NORTH AMERICA INC) TO MOBIL EXPLOR & PROD. THE NAME CHANGE IS BEING DONE AT THIS TIME TO ALLEVIATE CONFUSION, BOTH IN HOUSE AND AMONGST THE GENERAL PUBLIC.

*SUPERIOR OIL COMPANY MERGED INTO M E P N A 4-24-86 (SEE ATTACHED).

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

Routing:

1- LEC	7-PL ✓
2- LWP	8-SJ ✓
3- ~~DTS~~	9-FILE
4- VLC ✓	
5- RJF ✓	
6- LWP ✓	

Attach all documentation received by the division regarding this change.
Initial each listed item when completed. Write N/A if item is not applicable.

☐ Change of Operator (well sold) ☐ Designation of Agent
☐ Designation of Operator XXX Operator Name Change Only

The operator of the well(s) listed below has changed (EFFECTIVE DATE: **8-2-95**)

TO (new operator) **MOBIL EXPLOR & PROD**	FROM (former operator) **M E P N A**
(address) **C/O MOBIL OIL CORP**	(address) **C/O MOBIL OIL CORP**
PO DRAWER G	**PO DRAWER G**
CORTEZ CO 81321	**CORTEZ CO 81321**
phone **(303) 564-5212**	phone **(303)564-5212**
account no. **N7370**	account no. **N7370**

Well(s) (attach additional page if needed):

Name: **** SEE ATTACHED ****	API: 037-31135	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:

OPERATOR CHANGE DOCUMENTATION

N/A 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form).

N/A 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form).

N/A 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes/no) _____ If yes, show company file number: _____.

N/A 4. **(For Indian and Federal Wells ONLY)** The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of **Federal and Indian** well operator changes should take place prior to completion of steps 5 through 9 below.

Lec 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. (8-3-95)

LWP 6. Cardex file has been updated for each well listed above. 8-31-95

LWP 7. Well file labels have been updated for each well listed above. 9-18-95

Lec 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. (8-3-95)

Lec 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

– OVER –

OPERATOR CHANGE WORKSHEET (CONTINUED) Initial each item when completed. Write N/A if item is not applicable.

ENTITY REVIEW

Lec 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) ____ (If entity assignments were changed, attach copies of Form 6, Entity Action Form).

N/A 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

BOND VERIFICATION (Fee wells only) * No Fee Lease Wells at this time!

N/A/Lec 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond.

___ 2. A copy of this form has been placed in the new and former operators' bond files.

___ 3. The former operator has requested a release of liability from their bond (yes/no) ___. Today's date _____ 19___. If yes, division response was made by letter dated _____ 19___.

LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY

N/A 1. (Rule R615-2-10) The former operator/lessee of any **fee lease** well listed above has been notified by letter dated _____ 19___, of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested.

DTS 10/5/95

N/A 2. Copies of documents have been sent to State Lands for changes involving **State leases.**

FILMING

✓ 1. All attachments to this form have been microfilmed. Date: October 6 1995.

FILING

___ 1. Copies of all attachments to this form have been filed in each well file.

___ 2. The original of this form and the original attachments have been filed in the Operator Change file.

COMMENTS

950803 UIC F5/Not necessary!

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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

5. Lease Designation and Serial No.: 14-20-603-353
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT
8. Well Name and No.: RATHERFORD 18-33
9. API Well No.: 43-037-31135
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other
2. Name of Operator: MOBIL PRODUCING TX & NM INC.*
*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM
3. Address and Telephone No.: P.O. Box 633, Midland TX 79702 (915) 688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SECTION 18, T41S, R24E
NW/SE 1870' FSL & 1980 FEL

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

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[ ] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other SIDETRACK	[ ] 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 depths for all markers and zones pertinent to this work.)*

BHL:
LATERAL #1: 990' NORTH & 990' WEST F/SURFACE SPOT (ZONE 1A)
LATERAL #2: 964' SOUTH & 1150' EAST F/SURFACE SPOT (ZONE 1A)

SEE ATTACHED

RECEIVED
DEC 12 1997
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Signed [signature] Title SHIRLEY HOUCHINS/ENV & REG TECH Date 12-09-97

(This space for Federal or State office use)
Approved by [signature] Title Associate Director Date 12/29/97
Conditions of approval, if any: Utah DOGM

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

Ratherford Unit Well #18-33
Horizontal Drilling Procedure

The objective of this procedure is to prepare this wellbore for sidetracking, sidetrack the subject well and drill several short radius horizontal laterals (1400-1500 feet each).

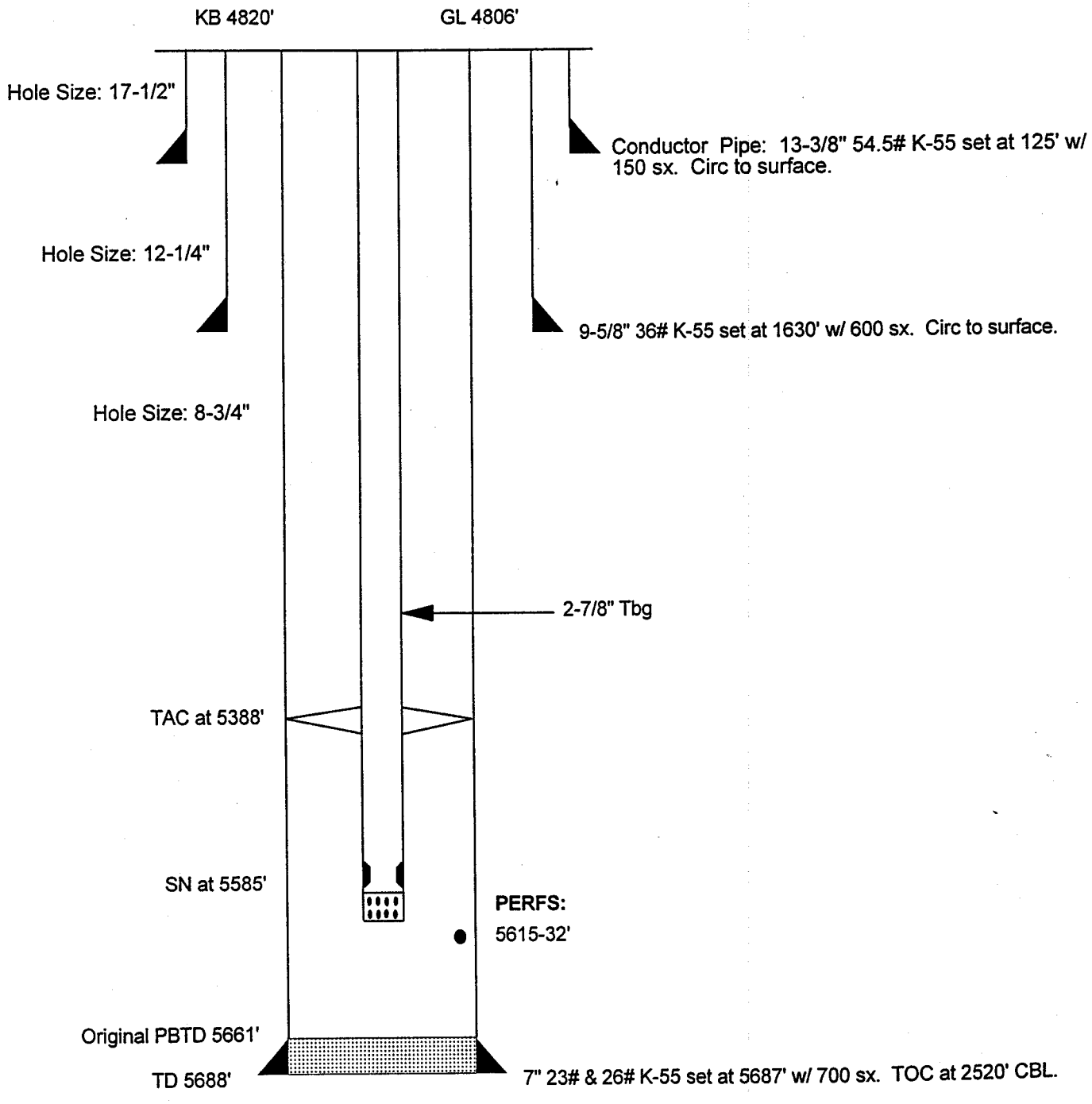
1. Prepare location and dig working pit.
2. MIRU WSU, reverse unit, and H2S equipment. Bullhead kill weight fluid down tubing.
3. ND wellhead and NU BOP's. Pressure test BOP's to working pressure.
4. Continue to POH with related equipment (tubing and rods for producers or tubing and packer for injectors).
5. RU wireline to run any logs desired and run gage ring for casing size and weight.
6. Set retrievable bridge plug on wireline and pressure test casing to 1000 psi.
7. RDMO WSU.
8. MIRU 24 hr. WSU. NU BOP's and pressure test with chart.
9. PU tubing, drilling collars, and drill pipe in derrick and run in hole. Then POH and stand back.
10. Run packer on wireline and set using GR/CCL log to correlate with. RD wireline.
11. PU drillpipe with UBHO sub in string and latch into packer to survey the hole and obtain orientation of keyway. POH w/gyro and drill string.
12. Orient whipstock on surface to desired bearing and RIH on drill pipe. Latch into packer. Shear starter mill bolt and make starter cut.
13. POH w/ starter mill and pick up window mill and watermelon mill and continue to mill window. Drill 1-2 ft of formation
14. POH w/ mills and PU curve building assembly and drill string with UBHO sub in string and RIH.
15. RU gyro to assist in time drilling and starting out of the casing window. POH w/ gyro when inclination dictates it must be pulled.
16. Finish drilling the curve using the MWD.
17. POH once curve is finished and PU lateral motor to drill the lateral using MWD.
18. Once lateral TD is reached, POH w/ directional equipment.
19. PU retrieving hook and RIH on drill pipe. Retrieve whipstock and PU new whipstock oriented for desired bearing to start in hole.
20. Repeat steps 12 through 19 for each subsequent lateral.

RATHERFORD UNIT # 18-33

GREATER ANETH FIELD
1870' FSL & 1980' FEL
SEC 18-T41S-R24E
SAN JUAN COUNTY, UTAH
API 43-037-31135
PRISM 0043070

PRODUCER

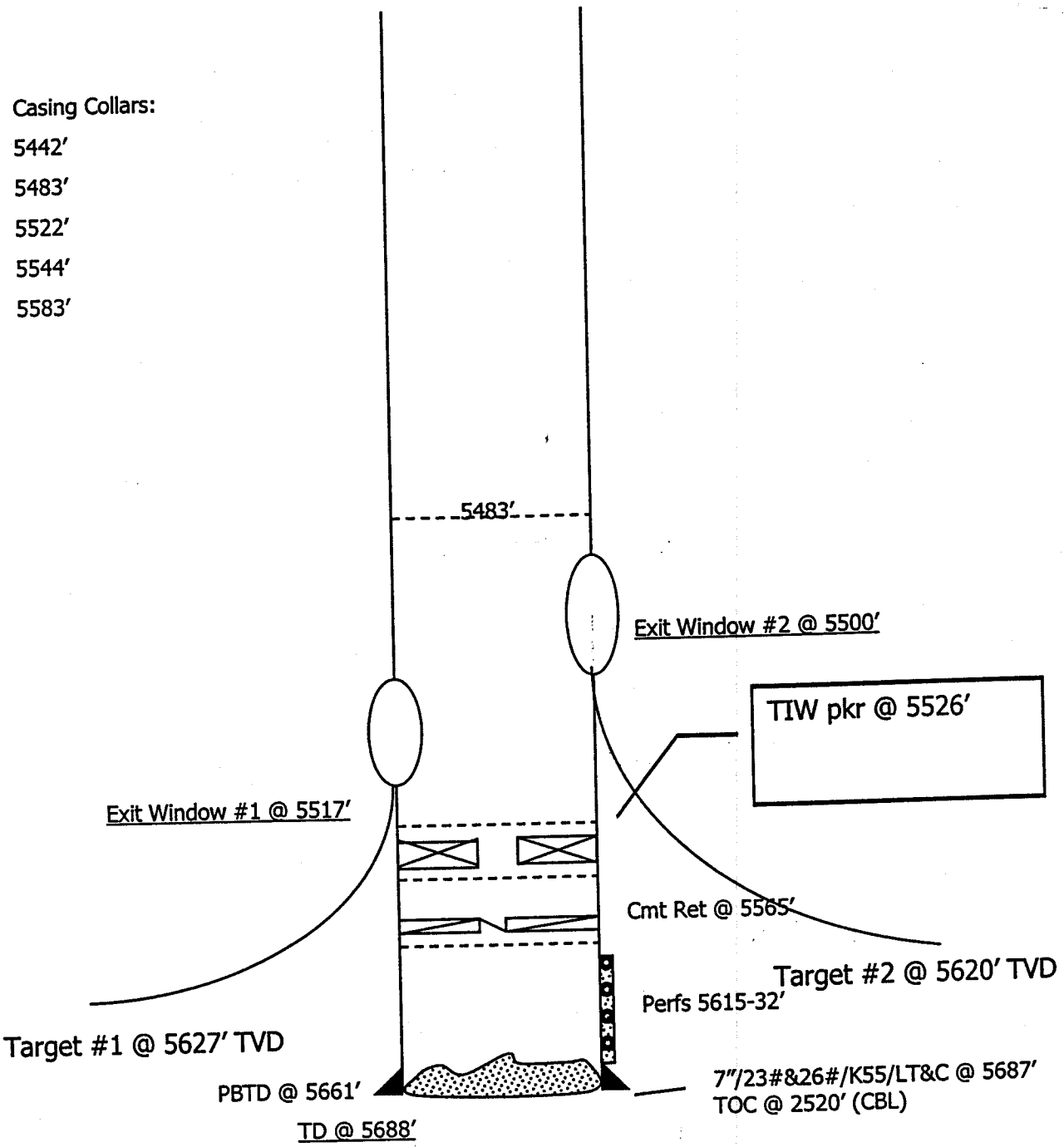
Capacities:	bbl/ft	gal/ft	cuft/ft
2-7/8" 6.5#	.00579	.2431	.0325
7" 23#	.0393	1.6535	.2210
7" 26#	.0382	1.6070	.2148
2-7/8"x7"23#	.0313	1.3162	.1760
2-7/8"x7"26#	.0302	1.2698	.1697



L. A. TUCKER 6-25-96 R.U. # 18-33

Ratherford Unit #18-33

Casing Collars:
5442'
5483'
5522'
5544'
5583'



Window	Btm-Top of Window	Ext length	Curve Radius	Bearing	Horiz Displ
1	5517-09	-------	110	315	1400
2	5500-5492	17	120	130	1500

The double spline is 2.42 ft long and the bottom of the whipstock, the latch, the debris and the shear sub are 8.68 ft long. These lengths must be added to the extension lengths to determine the entire whipstock assembly length.

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 12/12/97

API NO. ASSIGNED: 43-037-31135

WELL NAME: RU 18-33 (MULTI-LEG)
OPERATOR: MOBIL EXPL & PROD (N7370)

PROPOSED LOCATION:
NWSE 18 - T41S - R24E
SURFACE: 1870-FSL-1980-FEL
BOTTOM: ~~1980-FSL-1980-FWL~~ Multi-lateral
SAN JUAN COUNTY
GREATER ANETH FIELD (365)

LEASE TYPE: IND
LEASE NUMBER: 14-20-603-353

PROPOSED PRODUCING FORMATION: DSCR

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

RECEIVED AND/OR REVIEWED:

✓ Plat
✓ Bond: Federal [✓] State [] Fee []
(Number ALREADY BONDED)
N Potash (Y/N)
N Oil shale (Y/N)
✓ Water permit
(Number NAVAJO ALLOTMENT)
N RDCC Review (Y/N)
(Date: _____)

LOCATION AND SITING:

✓ R649-2-3. Unit: RATHERFORD
___ R649-3-2. General.
___ R649-3-3. Exception.
___ Drilling Unit.
Board Cause no: _____
Date: _____

COMMENTS: _____

STIPULATIONS: 1. Directional drilling

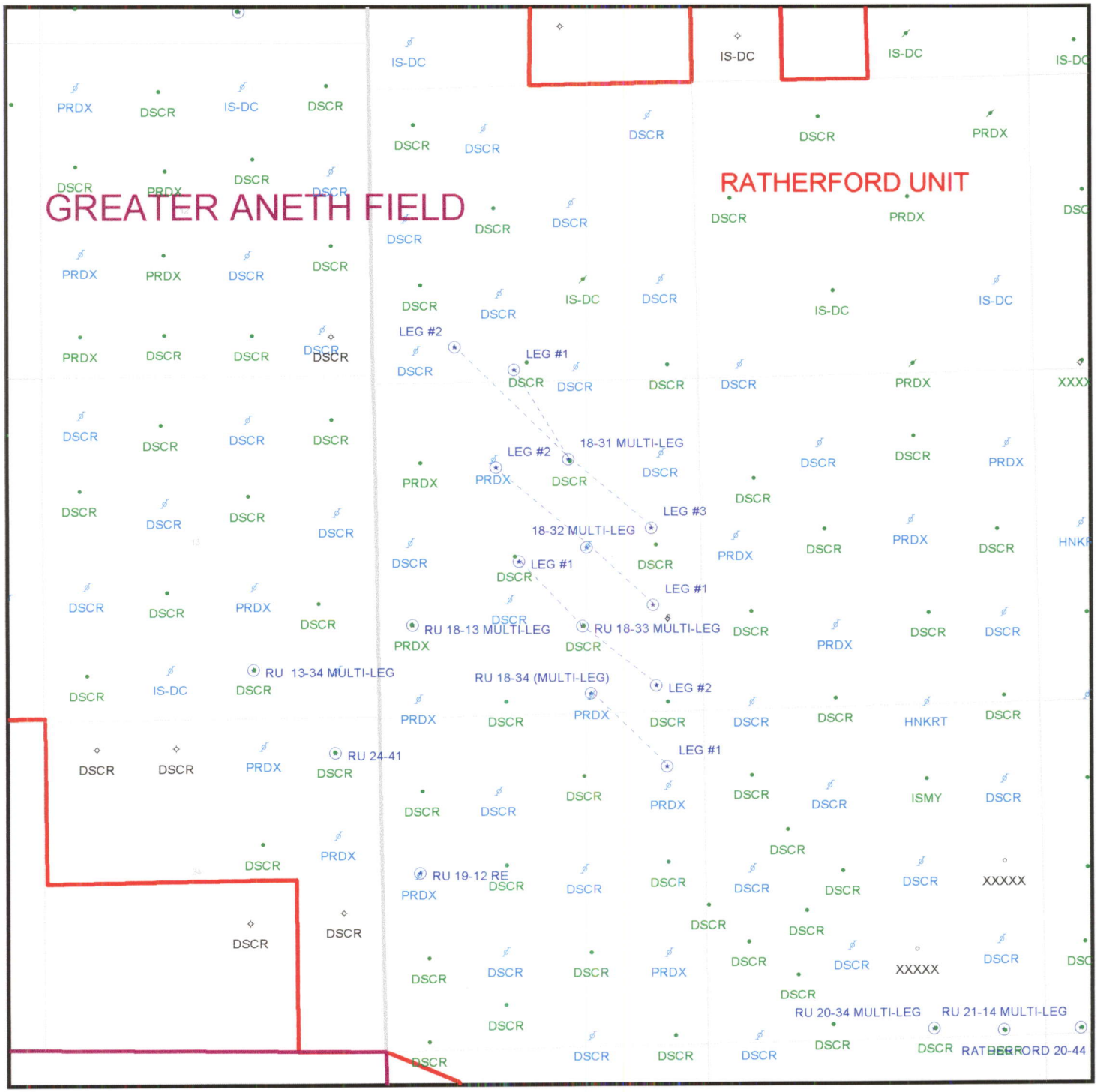
DIVISION OF OIL, GAS & MINING

OPERATOR: MOBIL EXPL & PROD (N7370)

FIELD: GREATER ANETH (365)

SEC. TWP. RNG.: SEC. 18, T41S, R24E

COUNTY: SAN JUAN UAC: R649-2-3 RATHERFORD



DATE PREPARED:
17-DEC-1997

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

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

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

December 24, 1997

Mobil Exploration & Producing U.S., Inc.
P.O. Box 633
Midland, Texas 79702

Re: Ratherford 18-33 Well (Re-entry), 1870' FSL, 1980' FEL, NW SE, Sec. 18, T. 41 S., R. 24 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 re-enter and drill the referenced well is 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 43-037-31135.

Sincerely,

John R. Baza
Associate Director

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

Operator: Mobil Exploration & Producing U.S., Inc.

Well Name & Number: Ratherford 18-33 (Re-entry)

API Number: 43-037-31135

Lease: 14-20-603-353

Location: NW SE **Sec.** 18 **T.** 41 S. **R.** 24 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 John R. Baza (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. In accordance with Utah Admin. R. 649-3-11, Directional Drilling, submittal of a complete angular deviation and directional survey report is required.

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

Name of Company: MOBIL E & P

Well Name: RATHERFORD UNIT 18-33

Api No. 43-037-31135

Section ~~19~~ 18 Township 41S Range 24E County SAN JUAN

Drilling Contractor BIG "A"

Rig # 25

SPUDDED:

Date 1/7/98

Time

How ROTARY

Drilling will commence

Reported by SIMON

Telephone #

Date: 1/7/98 Signed: JLT

ROCKY MOUNTAIN GEO-ENGINEERING

Well Logging • Consulting Geology • Coal Bed Methane Services • Computerized Logging Equipment & Software

ROCKY MOUNTAIN GEO-ENGINEERING CORP.
2450 INDUSTRIAL BLVD. • GRAND JUNCTION, CO 81505
(970) 243-3044 • (FAX) 241-1085

Wednesday, January 28, 1998

Division of Oil & Gas Mining
State of Utah
1594 West North Temple
3 Triad Center, Ste. 1210
Salt Lake City, UT 84116

Re: Ratherford Unit #18-33 Legs 1 & 2
Sec. 18, T41S, R24E
San Juan County, Utah
43 037 31135 DRL

Dear Sirs:

Enclosed are the final computer colored logs and geology reports for the above referenced well.
10 LOG FILE

We appreciate the opportunity to be of service to you and look forward to working with you again in the near future.

If you have any questions regarding the enclosed data, please contact us.

Sincerely,

Bill Nagel
Senior Geologist

BN/dn

Enc. 1 Final Computer Colored Log & 1 Geology Report

cc Letter Only; Dana Larson; Mobil E & P U.S., Inc.; Midland, TX

1

MOBIL

RATHERFORD UNIT #18-33
NW HORIZONTAL LATERAL LEG #1
1-A POROSITY BENCH
DESERT CREEK MEMBER
PARADOX FORMATION
SECTION 18, T41S, R24E
SAN JUAN, UTAH

GEOLOGY REPORT
by
DAVE MEADE / MARVIN ROANHORSE
ROCKY MOUNTAIN GEO-ENGINEERING CORP.
GRAND JUNCTION, COLORADO
(970) 243-3044

TABLE OF CONTENTS

WELL SUMMARY

OPERATOR:	MOBIL EXPLORATION & PRODUCTION U.S. INC.
NAME:	RATHERFORD UNIT #18-33 NW HORIZONTAL LATERAL LEG #1 IN 1-A POROSITY BENCH, DESERT CREEK
LOCATION:	SECTION 18, T41S, R24E
COUNTY/STATE:	SAN JUAN, UTAH
ELEVATION:	KB: 4806' GL: 4820'
SPUD DATE:	01/09/98
COMPLETION DATE:	01/13/98
DRILLING ENGINEER:	SIMMON BERRARA / BENNY BRIGGS
WELLSITE GEOLOGY:	DAVE MEADE / MARVIN ROANHORSE
MUDLOGGING ENGINEERS:	DAVE MEADE / MARVIN ROANHORSE
CONTRACTOR: **TOOLPUSHER:**	BIG "A" RIG 25 J. DEES / M. SMITH
HOLE SIZE:	4 3/4"
CASING RECORD:	KICK OFF POINT IN WINDOW AT 5517' MEASURED DEPTH
DRILLING MUD: **ENGINEER:** **MUD TYPE:**	M-I RON WESTENBURG / DANNE BEASON FRESH WATER & BRINE WATER W/ POLYMER SWEEPS
DIRECTIONAL DRILLING CO:	SPERRY-SUN
ELECTICAL LOGGING:	NA
TOTAL DEPTH:	6979' MEASURED DEPTH; 5620.45' TVD
STATUS:	TOH & LAYING DOWN LATERAL ASSEMBLY - PREPARE WELL FOR LEG #2

DRILLING CHRONOLOGY
RATHERFORD UNIT #18-33
1-A NW HORIZONTAL LATERAL LEG #1

DATE	DEPTH	DAILY	ACTIVITY
01/08/98	5626'	0'	RIG DOWN & MOVE RIG TO 18-33 LOC-RIG UP-NIPPLE UP-RIG UP-PRES. TEST BOP & CASING-SET PACKER W/WIRELINE-M.U. ORIENTING ASSEMBLY & P.U. 19 DRL COLLARS
01/09/98	5526'	2'	P.U. DRL COLLARS & AOH PIPE-RIG REPAIR (POWER TONG HOSE)-P.U. DRLG PIPE-CIR & CLEAN PIPE-LATCH INTO MULE SHOE @ 5518'-RIG UP GYRO DATA & ORIENT-RIG DOWN GYRO DATA-L.D 3 JTS DRL PIPE-TOH-L.D. ANCHOR ASSEMBLY-P.U. WHIPSTOCK & STARTER MILL & ORIENT-TIH-SET WHIPSTOCK-MILL W/ STARTER MILL FROM 5508'-5510'-TOH-P.U. WINDOW & WATERMELON MILLS-TIH
01/10/98	5510'	10'	TIH-MILL W/WINDOW & WATER MELON MILL FROM 5510'-5517'-TOH-L.D. MILLS-P.U. & TEST CURVE ASSEMBLY-ORIENT-TIH-RIG UP GYRO DATA-TIME DRLG 5517' TO 5520'-DIR DRLG & SURVEYS
01/11/98	5520'	177'	DIR DRLG W/WIRE LINE SURVEYS--PULL GYRO @ 5550'-DIR DRLG & SURVEYS,CIRC SPLS & PUMP SWEEP @ 5697'-PUMP 10 BBLS BRINE-L.D. 41 JTS D.P.-TOH- L.D. CURVE ASSEMBLY-P.U. LATERAL ASSEMBLY & TEST MWD-P.U. PH-6 OFF RACK & TIH
01/12/98	5697'	1160'	P.U. SWIVEL & FILL PIPE-DIR DRLG & SURVEYS
01/13/98	6857'	122'	DIR DRLG & SURVEYS-PUMP SWEEP & CIR OUT SPLS @ TD OF 6979'-PUMP 10 BBL SWEEP-L.D. 2 JTS AOH-TOH-L. D. LATERAL ASSEMBLY-P.U. HOOK ASSEMBLY-TIH-LATCH INTO WHIPSTOCK-TOH
01/14/98	6979'	TD	

DAILY ACTIVITY

Operator: MOBIL
Well Name: RATHERFORD UNIT #18-33 NW 1-A HORIZONTAL LATERAL LEG #1

DATE	DEPTH	DAILY	DATE	DEPTH	DAILY
01/08/98	5626'	0'			
01/09/98	5526'	2'			
01/10/98	5510'	10'			
01/11/98	5620'	77'			
01/12/98	5697'	1160'			
01/13/98	6857'	122'			
01/14/98	6979'	TD			

BIT RECORD

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #18-33 NW 1-A HORIZONTAL LATERAL LEG #1

RUN	SIZE	MAKE	TYPE	IN/OUT	FTG	HRS	FT/HR
#1 (RR)	4 3/4"	HTC	STR-20	5517'/ 5697'	180'	16	11.25
#2	4 3/4"	HTC	STR-20	5697'/ 6979'	1,282'	26.5	48.4

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : Mobil (Utah)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/18-33, 1A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5500.00	0.87	27.13	5499.81	4.49 S	12.12 W	5.40	0.00
5508.00	0.88	20.82	5507.81	4.38 S	12.07 W	5.44	1.21
5517.00	4.50	315.00	5516.80	4.07 S	12.30 W	5.82	46.85
5527.00	8.90	325.90	5526.73	3.15 S	13.01 W	6.97	45.61
5537.00	13.50	329.30	5536.54	1.50 S	14.04 W	8.86	46.45
5547.00	18.50	330.90	5546.15	0.89 N	15.41 W	11.52	50.19
5557.00	23.50	331.90	5555.48	4.04 N	17.12 W	14.96	50.13
5567.00	28.50	332.60	5564.46	7.92 N	19.16 W	19.14	50.09
5577.00	34.00	333.10	5573.01	12.53 N	21.52 W	24.08	55.06
5587.00	39.80	333.50	5581.00	17.89 N	24.22 W	29.78	58.05
5597.00	45.30	333.80	5588.37	23.95 N	27.22 W	36.18	55.04
5607.00	50.40	334.10	5595.08	30.61 N	30.47 W	43.19	51.05
5617.00	54.30	333.70	5601.18	37.72 N	33.95 W	50.68	39.13
5627.00	58.40	332.20	5606.72	45.13 N	37.74 W	58.60	42.86
5637.00	62.80	330.40	5611.63	52.77 N	41.93 W	66.96	46.71
5647.00	68.10	329.80	5615.78	60.65 N	46.46 W	75.74	53.28
5657.00	73.10	329.80	5619.10	68.80 N	51.20 W	84.85	50.00
5667.00	77.90	329.70	5621.61	77.16 N	56.08 W	94.21	48.01
5697.00	89.70	328.80	5624.84	102.74 N	71.30 W	123.07	39.45
5733.00	87.80	325.50	5625.63	132.97 N	90.82 W	158.25	10.58
5764.00	87.80	322.60	5626.82	158.05 N	109.01 W	188.84	9.35
5796.00	89.40	319.60	5627.60	182.94 N	129.09 W	220.64	10.62
5827.00	89.50	317.90	5627.90	206.25 N	149.53 W	251.57	5.49
5859.00	90.40	316.80	5627.93	229.78 N	171.21 W	283.54	4.44
5891.00	90.90	316.10	5627.56	252.97 N	193.26 W	315.53	2.69
5923.00	92.50	316.50	5626.61	276.10 N	215.35 W	347.51	5.15
5955.00	93.00	316.00	5625.08	299.19 N	237.46 W	379.46	2.21
5986.00	92.10	315.40	5623.70	321.35 N	259.09 W	410.43	3.49
6017.00	90.20	314.50	5623.08	343.25 N	281.02 W	441.42	6.78
6049.00	89.20	313.70	5623.24	365.51 N	304.00 W	473.42	4.00
6080.00	89.10	313.00	5623.70	386.79 N	326.54 W	504.40	2.28
6111.00	88.90	311.20	5624.25	407.57 N	349.54 W	535.35	5.84
6143.00	89.00	311.70	5624.83	428.75 N	373.52 W	567.29	1.59
6175.00	90.40	311.40	5625.00	449.97 N	397.46 W	599.23	4.47
6207.00	90.40	311.00	5624.78	471.05 N	421.54 W	631.16	1.25
6239.00	91.20	310.70	5624.33	491.98 N	445.74 W	663.07	2.67
6270.00	90.60	312.30	5623.84	512.52 N	468.96 W	694.01	5.51
6302.00	90.50	312.60	5623.53	534.12 N	492.57 W	725.97	0.99

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : Mobil (Utah)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/18-33, 1A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
6334.00	89.30	311.00	5623.59	555.44 N	516.42 W	757.92	6.25
6366.00	88.90	311.20	5624.09	576.48 N	540.53 W	789.84	1.40
6397.00	89.40	310.50	5624.55	596.75 N	563.98 W	820.76	2.77
6429.00	91.50	311.60	5624.30	617.76 N	588.11 W	852.68	7.41
6493.00	89.10	308.90	5623.97	659.11 N	636.95 W	916.45	5.64
6525.00	89.70	309.30	5624.30	679.29 N	661.78 W	948.28	2.25
6555.00	91.20	310.70	5624.07	698.57 N	684.76 W	978.16	6.84
6587.00	92.30	311.00	5623.09	719.49 N	708.95 W	1010.06	3.56
6618.00	91.90	310.70	5621.95	739.75 N	732.39 W	1040.96	1.61
6650.00	86.70	308.40	5622.34	760.12 N	757.05 W	1072.80	17.77
6682.00	86.30	308.00	5624.30	779.87 N	782.15 W	1104.51	1.77
6713.00	89.60	309.30	5625.41	799.22 N	806.34 W	1135.30	11.44
6745.00	90.80	308.20	5625.29	819.25 N	831.29 W	1167.11	5.09
6776.00	93.60	311.60	5624.10	839.11 N	855.05 W	1197.96	14.20
6808.00	93.30	312.10	5622.18	860.42 N	878.85 W	1229.85	1.82
6839.00	90.60	314.20	5621.12	881.61 N	901.45 W	1260.81	11.03
6871.00	90.10	314.20	5620.93	903.92 N	924.39 W	1292.81	1.56
6903.00	90.10	313.80	5620.87	926.15 N	947.41 W	1324.80	1.25
6945.00	90.40	314.00	5620.69	955.27 N	977.67 W	1366.79	0.86
6979.00	90.40	314.00	5620.45	978.89 N	1002.13 W	1400.79	0.00

THE DOGLEG SEVERITY IS IN DEGREES PER 100.00 FEET.
N/E COORDINATE VALUES GIVEN RELATIVE TO WELL SYSTEM REFERENCE POINT.
TVD COORDINATE VALUES GIVEN RELATIVE TO WELL HEAD.
THE VERTICAL SECTION ORIGIN IS WELL HEAD.
THE VERTICAL SECTION WAS COMPUTED ALONG 315.00 (TRUE).
CALCULATION METHOD: MINIMUM CURVATURE.

5500 GYRO TIE ON, 5508 INTERPOLATED TOP WHIPSTOCK
5517-5597 INTERPOLATED AZIMUTHS
6979 EXTRAPOLATED TO BIT

MUD REPORT

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #18-33 NW 1-A HORIZONTAL LATERAL LEG #1

DATE	DEPTH	WT	VIS	PLS	YLD	GEL	pH	WL	CK	CHL	CA	SD	OIL	WTR
01/08/98	5526'	8.5	26	1	1	0/0	11.0	N/C	N/C	25000	600	–	4%	96%
01/10/98	5516'	8.4	27	1	1	0/0	11.0	N/C	N/C	15000	240	–	3%	97%
01/11/98	5580'	8.5	27	2	1	0/0	11.0	N/C	N/C	14500	320	–	2%	98%
01/12/98	5913'	8.6	27	2	1	0/0	11.0	6	1	22000	600	–	10%	90%
01/13/98	6868'	8.5	27	2	1	0/0	11.7	6.8	–	31000	480	–	10%	90%

SAMPLE DESCRIPTIONS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #18-33 NW 1-A HORIZONTAL LATERAL LEG #1

DEPTH	LITHOLOGY

5520.00 5530.00 "LS lt-mbrn,tan,ltgy-gybrn,occ wh,crpxl,occ micxl,chky-sl anhy,mrly-occ sl arg-dol ip,scat tan-occ brn CHT frag,pred dns,tt,NFSOC/tr-rr blk-dkbrnblk SH lam-frag,sl carb,calc-dol ip "

5530.00 5540.00 "LS lt-mbrn,occ crm-tan,crpxl-micxl,rthy-cln,occ chk-sl arg,dol ip,occ anhy,sl mrly,tt,NFSOC,w/thn blk sl carb calc mica SH & gybrn-dkbrn micxl arg mrly lmy tt DOL,rr m-dkbrn CHT frag"

5540.00 5550.00 5544.63 0 "LS AA,pred dns,incr arg-mrly shy DOL,scat SH AA,occ trnsl-brn CHT frag"

5550.00 5560.00 "LS AA,occ wh-plty,incr arg w/mic fos,tt,NFSOC,thn DOL AA,v mrly-arg,tt,NFSOC,thn intbd blk plty calc-dol sl carb SH & scat lt-dkbrn-trnsl CHT frag"

5560.00 5570.00 "LS wh-crm,occ tan-brn,crpxl,occ micxl,pred plty-arg,v sl dol,anhy ip,v sl slty,chky,w/v rr dns crpxl brn sl lmy DOL,v rr thn dkgy-blk plty SH,v rr ltgy CHT frag,tt,NFSOC"

5570.00 5580.00 5573.59 0 "LS wh-crm,occ tan-ltgy,crpxl-micxl,rthy-chk-sl slty,occ cln,grdg to lmy SLTST ip,sl arg,tt,NFSOC,scat trnsl-ltgy CHT frag,rr brn dns-sl arg,occ shy micxl DOL,tt,NFSOC"

5580.00 5590.00 "LS AA,sl incr slty-rr ltgy-crm lmy SLTST incl-lams,tt,NFSOC,w/v rr thn DOL-CHT AA"

5590.00 5600.00 "LS wh-crm,tan-ltbrn,occ ltgy,crpxl,occ micxl,cln-arg-sl rthy,w/v rr arg mbrn micxl DOL & dkgy-blk plty calc-dol sl carb SH ptgs-lams,v rr trnsl-bf CHT frag,v sl slty,tt,NFSOC"

5600.00 5610.00 "LS AA,w/thn & grdg to lt-mbrn arg micxl sl mrly DOL,bcmg pred blk plty-sbblky carb SH"

5610.00 5630.00 "SH blk-dkgy,sbblky-sbplty,sft-mfrm,calc-sl dol,carb-sooty,sl mica,occ v sl slty,w/scat thn crm-tan crpxl-rr micxl dns-cln tt LS & lt-mbrn micxl arg-sl mrly rthy DOL lams-incl tt NFSOC"

5630.00 5640.00 "SH AA,bcmg brn-dkbrn,crpxl-micxl,arg,lmy dns DOL & pred LS wh-crm-tan,rr brn,crpxl-micxl,rthy-cln,occ dns,arg ip,sl dol,tt,NFSOC"

5640.00 5650.00 "LS crm-tan-ltbrn,crpxl-micxl,rthy-cln,occ arg-chk,sl slty,dns,tt-NFSOC,w/scat v thn brn-mbrn crpxl-micxl dns-arg DOL & blk carb SH incl-intbds"

5650.00 5670.00 "LS wh-crm-tan,occ brn-wh,crpxl-vfxl,occ gran-micsuc,dns-sl plty PKST,incr ooc-oom GRNST,tt-fr intxl-ool POR,tr-mfr dull-bri yel FLOR,rr ltbrn-blk STN,tr-fr slow-mod fast stmg CUT,w/v rr micxl-micsuc lmy sl ool DOL incl tt-rr intxl POR & v p FLOR-STN-CUT & scat trnsl-clr-bf CHT frag-tr blk carb SH CVGS"

5670.00 5680.00 "LS AA,incr ooc-oom GRNST,incr POR-FLOR-STN-CUT,v rr dns m-dkbrn crpxl DOL,v rr CHT frag,tr SH CVGS"

5680.00 5697.00 "LS tan,occ crm-ltbrn,rr brn-wh,crpxl-vfxl,gran-micsuc,pred ooc-oom GRNST,w/scat sl ool anhy dns PKST,v rr ANHY xl-POR fl,occ DOL cmt,rr trnsl-bf CHT frag,tr-g ool-intxl POR,mg dull-bri yel FLOR,fr ltbrn-brn STN,rr blk dd o STN,fr-g mod fast-fast stmg CUT"

DEPTH	LITHOLOGY

5697.00 5710.00 "LS AA,crpxl-vfxl,gran-micsuc,pred ooc-oom GRNST,w/scat dns PKST & SH cvgs,v rr ANHY xl-POR fl,fr-g ool-intxl POR,g-fr even dull-bri yel FLOR,STN-CUT AA"

5710.00 5720.00 "LS AA/sl decr PCKST & SH cvgs,g-fr ooc-oom-tr intxl POR,g even mod bri-bri yel FLOR,fr-g ltbrn/tr scat brn-rr blk STN,g mod fast-fast stmg mlky CUT"

5720.00 5740.00 "LS tan-ltbrn,occ ltgybrn-gy,crm-wh,vfxl-gran-micsuc,occ crpxl,pred GRNST AA/tr dns sl ool PKST,chky-sl anhy/tr ANHY xl-POR fl,tr DOL cmt,rr CHT AA,g ool-intxl POR,g even bri-mod bri yel FLOR,g-fr ltbrn/tr brn-rr blk pp dd o STN,g mod fast-slow stmg CUT"

5740.00 5760.00 "LS AA,vfxl-gran-micsuc,occ crpxl,pred oom-ooc GRNST/rr PCKST AA,chky-sl anhy/tr ANHY xl-POR fl,rr DOL cmt,rr CHT AA,g ool-intxl POR,FLOR-STN AA,g mod fast-slow stmg CUT"

5760.00 5780.00 "LS tan-ltbrn,occ brn,ltgybrn,crm-wh,vfxl-gran-micsuc,occ crpxl,pred GRNST AA/tr dns sl ool PKST,chky-sl anhy/tr ANHY xl-POR fl,tr DOL cmt,rr CHT AA,POR-FLOR AA,g-fr ltbrn/tr brn-rr blk pp dd o STN,g mod fast-slow stmg CUT"

5780.00 5800.00 "LS brn-dkbrn-ltgybrn,occ crm-tan,vfxl-micsuc-gran,occ crpxl,oom-ooc GRNST,rr PCKST AA,sl chky-anhy/tr POR fl-rr xln ANHY incl,sl dol/tr DOL rich cmt,vrr sil-CHT incl,g ool/tr intxl POR,g even mod bri-bri yel FLOR,g brn-dkbrn-scat blk dd o STN,CUTAA "

5800.00 5820.00 "LS AA,vfxl-gran,occ micsuc,rr crpxl,oom-ooc GRNST,vrr dns ool-plty PCKST frag,chky-anhy/tr POR fl-xln ANHY,sl dol/tr DOL rich cmt,vrr tan-trnsl sil-CHT incl,g ool/tr intxl POR,FLOR AA,g brn-dkbrn-scat blk dd o/tr ltbrn STN,g slow blooming-stmg mlky CUT"

5820.00 5840.00 "LS brn-dkbrn,occ ltgybrn-crm-tan,vfxl-micsuc-gran,tr crpxl,oom-ooc GRNST,rr PCKST AA,sl incr chky-anhy/tr POR fl-rr xln ANHY incl,dol/tr DOL rich cmt,vrr sil-CHT AA,g ool/tr intxl POR,g even mod bri-bri yel FLOR,g brn-dkbrn-scat blk dd o STN,CUT AA "

5840.00 5850.00 "LS AA,oom-ooc GRNST,tr PCKST AA,decr chky-sl anhy/tr POR fl-rr xl ANHY incl,sl dol/tr DOL cmt,vrr CHT AA,POR-FLOR-STN-CUT AA"

5850.00 5870.00 "LS brn-dkbrn,occ ltgybrn-crm-tan,vfxl-micsuc-gran,tr crpxl,oom-ooc GRNST,rr PCKST AA,sl incr chky-anhy/tr POR fl-rr xln ANHY incl,dol/tr DOL rich cmt,vrr sil-CHT AA,g ool/tr intxl POR,g even mod bri-bri yel FLOR,g brn-dkbrn-scat blk dd o STN,CUT AA "

5870.00 5890.00 "LS lt-mbrn,occ crm-dkbrn,crpxl-vfxl,gran-micsuc,pred ooc-oom GRNST,scat tan crpxl sl ool anhy ip PKST,tr scat ANHY xl-POR fl,occ DOL cmt,v rr CHT frag,tr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g brn STN,rr blk dd o STN,fr-g mod fast-fast stmg CUT "

5890.00 5900.00 "LS AA,incr lt-dkbrn STN,POR-FLOR-CUT AA"

5900.00 5910.00 "LS AA,v sl incr dns PKST,v sl decr intxl POR,fr-g ool POR,FLOR-STN-CUT AA"

5910.00 5920.00 "LS pred lt-mbrn,ooc-oom GRNST,rr scat PKST,decr ANHY fl POR,fr-g bri-dull yel FLOR,g lt-mbrn-tr dkbrn STN,rr spty blk dd o STN,fr-g mod fast-fast stmg mlky CUT"

5920.00 5940.00 "LS crn-ltbrn,occ m-dkbrn,micxl-vfxl,gran-micsuc,pred ooc-oom GRNST,rr scat tan crpxl sl ool anhy ip PKST,occ scat ANHY xl-POR fl,tr DOL cmt,v rr bf CHT frag,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g brn -v rr blk STN,fr-g mod fast-fast stmg CUT "

DEPTH	LITHOLOGY

5940.00 5960.00 "LS AA,pred ooc-oom GRNST,scat-sl incr crm-ltbrn crpxl v sl ool dns PKST,fr-g intxl-fr ool POR,fr-g dull-bri yel FLOR,fr-g lt-occ m brn STN,rr spty blk dd o STN,fr-g mod fast-fast stmg mlky CUT"

5960.00 5980.00 "LS crn-ltbrn,occ m-dkbrn,micxl-vfxl,gran-micsuc,pred ooc-oom GRNST,rr scat tan crpxl sl ool anhy ip PKST,occ scat ANHY xl-POR fl,tr DOL cmt,v rr bf CHT frag,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g brn -v rr blk STN,fr-g mod fast-fast stmg CUT "

5980.00 5990.00 "LS AA,w/v sl incr ool dns occ chky PKST,v sl decr POR,FLOR-STN-CUT AA"

5990.00 6010.00 "LS crn-ltbrn,occ m-dkbrn,micxl-vfxl,gran-micsuc,pred ooc-oom GRNST,scat tan crpxl sl ool anhy ip PKST,occ scat ANHY xl-POR fl,tr DOL cmt,v rr bf CHT frag,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g brn SNT,rr-tr blk STN,fr-g mod fast-fast stmg CUT "

6010.00 6030.00 "LS pred ooc-oom GRNST AA,w/incr amnts crm-tan occ wh crpxl chky-dns tr plty,sl ool occ anhy PKST,fr-g intxl-tr-fr ool POR,fr dull-bri yel FLOR,fr ltbrn-rr blk STN,fr g mod fast stmg CUT"

6030.00 6050.00 "LS AA,intbd ooc-oom GRNST & dns sl ool PKST,scat trnsl-bf CHT frag,sl incr ANHY fl POR,fr-g ool-fr intxl POR,fr-mg dull-bri yel FLOR,tr-fr ltbrn-rr dkbrn STN,rr spty blk dd o STN,tr-fr g mod fast-tr fast stmg mlky CUT"

6050.00 6070.00 "LS pred intbd ooc-oom GRNST & dns occ chky-ool sl anhy PKST AA,tr-fr intxl-tr ool POR,fr dull-bri yel FLOR,tr-fr ltbrn-rr brn STN,v rr spty blk dd o STN,tr-fr g mod fast-fast stmg mlky CUT"

6070.00 6110.00 "LS tan-ltbrn,occ brn-v rr wh,crpxl-vfxl,dns-gran,micsuc ip,bcmg pred ooc-oom GRNST w/thn intbd-lams sl ool tt anhy-v anhy PKST,occ DOL rich cmt,vari amnt ANHY fl POR,tt-g intxl-fr ool POR,tr-fr dull-bri yel FLOR,tr-fr ltbrn-v rr blk STN,fr mg slow-fast stmg mlky CUT"

6110.00 6130.00 "LS crn-ltbrn,incr m-dkbrn,micxl-vfxl,gran-micsuc,pred ooc-oom GRNST,w/decr tan crpxl sl ool anhy ip PKST,tr scat ANHY xl-POR fl,tr DOL cmt,v rr bf CHT frag,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g brn SNT,rr-tr blk STN,fr-g mod fast-fast stmg CUT "

6130.00 6140.00 "LS AA,incr micsuc-suc,pred ooc-oom GRNST,decr PKST,POR-FLOR-STN-CUT AA"

6140.00 6160.00 "LS tan-ltbrn-brn,occ crm-rr wh,micxl-vfxl,gran-micsuc,pred ooc-oom GRNST,w/tr scat dns sl ool crpxl-micxl v sl anhy PKST frag,occ DOL rich cmt,rr-tr ANHY fl POR,v rr bf CHT frag,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr ltbrn-brn-rr blk STN,g fast CUT"

6160.00 6180.00 "LS AA,pred v g ooc-oom GRNST,decr PKST,n-v rr trnsl-bf CHT frag & scat ANHY xl-tr POR fl,fr-g POR-FLOR-STN-CUT AA"

6180.00 6200.00 "LS pred ooc-oom GRNST AA,rr scat PKST AA,w/ POR-FLOR-STN-CUT AA"

6200.00 6220.00 "LS crm-tan-ltbrn,rr brn-v rr wh,micxl-vfxl,gran-micsuc,occ suc,pred ooc-oom GRNST,scat rr sl ool dns occ chk PKST,v rr ANHY xl-POR fl,rr DOL rich cmt,v rr scat CHT frag,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn-rr blk STN,fr-g mod fast CUT"

6220.00 6240.00 "LS pred ooc-oom GRNST AA,v rr scat PKST frag AA,POR-FLOR-STN-CUT AA"

6240.00 6260.00 "LS AA,incr ANHY fl POR & dns sl ool PKST,POR-FLOR-STN-CUT AA"

DEPTH	LITHOLOGY

6260.00 6280.00 "LS crm-tan-ltbrn,rr brn-v rr wh,micxl-vfxl,gran-micsuc,occ suc,pred ooc-oom GRNST,scat rr sl ool dns occ chk PKST,v rr ANHY xl-POR fl,rr DOL rich cmt,v rr scat CHT frag,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn-rr blk STN,fr-g mod fast CUT"

6280.00 6300.00 "LS AA,pred ooc-oom GRNST,w/rr scat dns sl ool PKST,rr ANHY xl-tr POR FL,fr intxl-ool POR,fr-g dull-bri yel FLOR,fr ltbrn-v rr blk STN,fr-g mod fast-fast stmg mlky CUT"

6300.00 6340.00 "LS tan-ltbrn,rr brn-v rr crm-wh,micxl-vfxl,gran-suc,pred ooc-oom GRNST,rr sl ool dns occ chk-sl plty PKST,v rr ANHY xl-POR fl,rr DOL rich cmt,scat CHT frag,g intxl-fr ool POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn-rr blk STN,fr-g mod fast-fast stmg CUT"

6340.00 6380.00 "LS AA,v g ooc-oom GRNST,w/v rr ANHY fl POR,rr scat v sl ool dns PKST,occ sl DOL rich cmt,v g intxl-fr ool POR,g FLOR-STN-CUT AA"

6380.00 6400.00 "LS tan-ltbrn,v rr brn-crm,micxl-vfxl,gran-suc,pred ooc-oom GRNST,occ scat sl ool dns occ chk-sl plty PKST,rr ANHY xl-POR fl,rr DOL rich cmt,scat CHT frag,g intxl-fr ool POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn STN-rr blk STN,fr-g mod fast-fast stmg CUT"

6400.00 6420.00 "LS AA,incr ooc-oom GRNST,rr scat v sl ool PKST,fr-g ool-intxl POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn STN,rr-tr blk dd o STN,fr-g mod fast-fast stmg mlky CUT"

6420.00 6450.00 "LS AA,sl decr brn STN,POR-FLOR-CUT AA"

6450.00 6490.00 "LS tan-ltbrn,v rr crm,micxl-vfxl,gran-suc,pred ooc-oom GRNST,occ scat sl ool dns occ chk-sl plty PKST,rr ANHY xl-POR fl,rr DOL rich cmt,v rr CHT frag,g-fr intxl-ool POR,fr-g dull-bri yel FLOR,fr ltbrn-brn STN-v-rr blk STN,fr-g mod fast-fast stmg mlky CUT"

6490.00 6520.00 "LS tan-crm-ltbrn,rr wh,micxl-vfxl,gran-suc,pred ooc-oom GRNST,occ scat PCKST AA,rr ANHY xl-POR fl,rr DOL rich cmt,v rr CHT frag,POR AA,fr-g even dull-mod bri/scat bri yel FLOR,fr ltbrn/tr brn-pp blk STN,g mod fast-fast stmg mlky CUT"

6510.00 6530.00 "LS AA,ooc-oom GRNST/sl incr scat-occ intbd dns sl ool-rr chky plty PCKST,sl anhy/rr xl ANHY frag,sl dol/tr DOL cmt,vrr crm-trnsl CHT incl,g oom-ooc/tr intxl POR,g even mod bri-bri yel FLOR,g-fr ltbrn/tr brn-rr blk pp STN,g mod fast-fast stmg mlky CUT"

6530.00 6550.00 "LS AA,ooc-oom GRNST/tr scat dns sl ool-rr chky plty PCKST,sl anhy/tr xl ANHY frag-POR fl,POR-FLOR AA,fr-g ltbrn/rr scat brn STN,sl incr scat blk dd o STN,CUT AA"

6550.00 6570.00 "LS tan-crm-ltbrn,occ wh,tr brn,vfxl-gran-micxl,sl micsuc-rr crpxl,ooc-oom GRNST,rr scat PCKST AA,incr chky-sl anhy/incr POR fl-rr xln ANHY,sl dol/tr DOL rich cmt,vrr CHT incl,POR-FLOR AA,g-fr ltbrn/rr brn & pp blk dd o STN,g slow-mod fast stmg mlky CUT"

6570.00 6590.00 "LS AA,ooc-oom GRNST,rr scat dns sl ool-plty PCKST frag,chky-sl anhy/tr POR fl-rr xln ANHY frag,POR-FLOR-STN AA,g slow-tr mod fast stmg mlky CUT"

6590.00 6620.00 "LS tan-crm-ltbrn,occ wh,tr brn,vfxl-gran-micxl,sl micsuc-rr crpxl,ooc-oom GRNST,rr scat PCKST AA,incr chky-sl anhy/incr POR fl-rr xln ANHY,sl dol/tr DOL rich cmt,vrr CHT incl,POR-FLOR AA,g-fr ltbrn/rr brn & pp blk dd o STN,g slow-mod fast stmg mlky CUT"

DEPTH	LITHOLOGY

6620.00 6640.00 "LS AA,ooc-oom GRNST,vrr scat-occ intbd dns al ool-plty PCKST,chky-sl anhy/rr xl ANHY frag,dol/tr DOL cmt,vrr crm-trnsl CHT,g oom-ooc/tr intxl POR,g even mod bri-bri yel FLOR,g-fr ltbrn/tr brn-vrr blk pp STN,g slow-mod fast/tr fast stmg mlky CUT"

6640.00 6650.00 "LS AA/sl incr scat dns sl ool-chky plty PCKST frag,sl anhy/tr xl ANHY frag,sl dol/rr DOL cmt,STN-POR-FLOR-CUT AA"

6650.00 6670.00 "LS AA,pred ooc-oom GRNST,rr scat dns sl ool-plty PCKST frag,chky-sl anhy/tr POR fl-rr xln ANHY frag,g ooc-oom/tr intxl POR,FLOR-STN AA,g slow/tr mod fast stmg mlky CUT"

6670.00 6690.00 "LS AA,ooc-oom GRNST,vrr scat-occ intbd dns al ool-chky plty PCKST,sl anhy/rr xl ANHY frag,sl dol/rr DOL cmt,vrr crm-trnsl CHT frag,g oom-ooc/tr intxl POR,g even mod bri-bri yel FLOR,g-fr ltbrn/tr brn-blk pp STN,g mod fast-tr fast stmg mlky CUT"

6690.00 6720.00 "LS tan-crm-ltbrn,tr wh,brn,vfxl-gran-micxl,sl micsuc-rr crpxl,ooc-oom GRNST,rr scat PCKST AA,chky-sl anhy/tr POR fl-xln ANHY,occ dol/tr DOL rich cmt,tr tan-crm CHT,POR-FLOR AA,g-fr ltbrn/rr brn & pp blk dd o STN,g-fr slow/tr mod fast stmg mlky CUT"

6720.00 6730.00 "LS AA,sl decr brn STN,POR-FLOR-CUT AA"

6730.00 6750.00 "LS AA,pred ooc-oom GRNST,rr scat dns sl ool-plty PCKST frag,chky-sl anhy/tr POR fl-rr xln ANHY frag,g ooc-oom/tr intxl POR,FLOR-STN AA,g slow-mod fast stmg mlky CUT"

6750.00 6780.00 "LS tan-crm-ltbrn,tr wh,brn,vfxl-gran-micxl,sl micsuc-tr crpxl,ooc-oom GRNST,sl incr scat PCKST AA,chky-sl anhy/tr POR fl-xln ANHY,dol/tr DOL rich cmt,tr tan-crm CHT,POR-FLOR AA,g-fr ltbrn/rr brn & pp blk dd o STN,g-fr slow/tr mod fast stmg mlky CUT"

6780.00 6800.00 "LS AA,pred ooc-oom GRNST,rr scat dns sl ool-plty PCKST frag,chky-sl anhy/tr POR fl-rr xln ANHY frag,g ooc-oom/tr intxl POR,FLOR-STN AA,g slow/tr mod fast stmg mlky CUT"

6800.00 6820.00 "LS AA,pred ooc-oom,tr PCKST AA,chky-sl anhy/tr POR fl & rr xln ANHY frag,sl dol/tr DOL cmt,vrr tan-trnsl CHT frag,POR-FLOR-STN-CUT AA"

6820.00 6840.00 "LS tan-crm-ltbrn,tr brn,wh,vfxl-gran,sl micsuc,tr crpxl,ooc-oom GRNST,sl incr scat-occ intbd dns sl ool-rr chky plty PCKST,sl anhy/rr xln ANHY frag,tr DOL cmt,g ooc-oom/tr intxl POR,g even mod bri-bri yel FLOR,fr-g ltbrn-rr brn/rr blk pp STN,CUT AA"

6840.00 6850.00 "LS AA,pred ooc-oom/scat PCKST AA,POR-FLOR-STN AA,fr-g slow/tr mod fast stmg mlky CUT"

6850.00 6860.00 "LS AA,pred ooc-oom/scat dns sl ool-tr chky plty PCKST,decr dol/rr DOL cmt strk,vrr tan-trnsl CHT incl,POR AA,g even mod bri-dull/scat bri yel FLOR,fr-g ltbrn-rr brn STN,vrr blk pp dd o STN,g dif-slow strmg mlky CUT"

6860.00 6880.00 "LS AA,rr brn,wh,vfxl-gran,sl micsuc,occ crpxl,pred ooc-oom GRNST,sl incr scat dns sl ool-rr chky plty PCKST,tr scat ltbrn-tan CHT incl-frag,sl dol/tr DOL cmt,sl anhy/tr POR fl-rr xln ANHY,POR-FLOR AA,g mod fast stmg CUT"

6880.00 6900.00 "LS AA,pred ooc-oom GRNST/scat PCKST AA,chky-sl anhy/tr POR fl-rr xln ANHY frag,rr tan-trnsl CHT frag,sl-v sl dol/rr DOL cmt strk,g-fr ooc-oom/tr intxl POR,g even dull-mod bri/scat bri yel FLOR,STN AA,g fast-mod fast stmg mlky CUT"

DEPTH	LITHOLOGY

6900.00 6920.00 "LS tan-crm-ltbrn,occ brn-dkbrn,tr wh,vfxl-gran-micxl,occ crpxl-sl micsuc,pred ooc-oom GRNST,tr scat-intbd dns sl ool-rr chky plty PCKST,sl anhy/tr POR fl-rr xln ANHY frag,sl dol/tr DOL cmt,vrr CHT AA,POR-FLOR AA,fr-g ltbrn/occ brn- dkbrn STN,tr scat blk dd o STN,g fast-mod fast stmg mlky CUT"

6920.00 6950.00 "LS AA/decr brn-dkbrn,tr wh,vfxl-gran-micxl,occ micsuc-crpxl,ooc-oom GRNST,tr scat dns sl ool-rr chky plty PCKST,sl anhy/tr POR fl,vrr xln ANHY frag,rr tan-crm CHT frag-incl,sl dol/tr DOL cmt,POR-FLOR AA,STN AA/decr brn-dk brn STN,rr blk STN AA,CUT AA"

6950.00 6979.00 "LS crm-tan-ltbrn,tr brn,wh,vfxl-gran,occ micsuc-crpxl,pred ooc-oom GRNST/scat -intbd dns occ ool-chky plty PCKST,sl anhy-rr xl ANHY incl,sl dol/tr DOL cmt,tr CHT AA,g oom-ooc/tr intxl POR,g even mod bri-bri yel FLOR,g-fr ltbrn/tr brn-rr blk pp dd o STN,g-fr slow/tr mod fast stmg mlky CUT"

FORMATION TOPS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #18-33 NW 1-A HORIZONTAL LATERAL LEG #1

FORMATION NAME		SAMPLES MEASURED DEPTH	SAMPLES TRUE VERTICAL DEPTH	DATUM KB:4820'
LOWER ISMAY		5533'	5532'	-712'
GOTHIC SHALE		5603'	5592'	-772'
DESERT CREEK		5633'	5610'	-790'
DC 1-A ZONE		5650'	5617'	-797'

GEOLOGICAL SUMMARY

AND

ZONES OF INTEREST

The Mobil Exploration and Production U.S. Inc., Ratherford Unit #18-33 Northwest Horizontal Lateral Leg #1 was a re-entry of the Mobil Ratherford Unit #18-33 located in Section 18, T41S, R24E. Milling of the northwest Lateral Leg #1 was begun on January 10, 1998. The curve section was completed on January 11, 1998, at a measured depth of 5697', 5625' true vertical depth, 8 feet into the 1-A porosity and the lateral section was begun in the 1-A porosity zone also on January 11, 1998. The lateral reached a measured depth of 6978', true vertical depth of 5620.7', with a horizontal displacement of 1401' and an azimuth of 314 degrees, on January 13, 1998 in the upper Desert Creek 1-A zone. There were no significant problems or water flows encountered while drilling this lateral in the 1-A porosity zone. This lateral used fresh water with polymer sweeps as the drilling fluid, with minor amounts of oil added to the drilling fluid to facilitate the rotating and sliding of the drill pipe. The background gases noted on the accompanying mud log were moderately high and erratic through out the lateral section. The cutting samples had moderately fair to occasionally good oil shows through out the 1-A zone drilled.

The primary objective of the Ratherford Unit #18-33 Leg 1 horizontal lateral was the lithology type, effective porosity and reservoir properties in the 1-A zone of the Desert Creek Member of the Upper Paradox Formation. The basal Upper Ismay, the entire Lower Ismay, Gothic Shale and the transition zone at the top of the Desert Creek were penetrated while drilling the curve section. Kick off point for this lateral was at a measured depth of 5517', 5517' true vertical depth, near the base of the Upper Ismay member of the Paradox Formation.

The top of the Upper Ismay was not seen in the curve section, but was picked at a measured depth of 5445' on the electric log from the vertical well bore. The lithology of the Upper Ismay seen in the curve section of this well, was predominately light gray to tan to brown to medium brown, occasionally white to cream, cryptocrystalline to microcrystalline, chalky to clean and slightly argillaceous to occasionally dolomitic, with scattered dark brown, marly streaks, and had scattered anhydrite crystals and occasional fracture filling. Near the base of the Upper Ismay were thin interbedded brown, cryptocrystalline, very slightly limy, occasionally argillaceous to clean dolomites and streaks of dark brown, limy to dolomitic marlstone. Tan to some dark brown to smoky gray chert fragments and thin laminations of dark gray to black, slightly carbonaceous shale was also noted in Upper Ismay. No significant gas increases and only mineral fluorescence, with no visible staining were noted in the limestones and very thin dolomites. The Hovenweep marker at the base of the Upper Ismay was very poorly developed in this lateral and was seen as a very dark brown to dark graybrown, marly limestone with interbedded black carbonaceous shale, and dark brown, argillaceous, microcrystalline, very shaley dolomites which graded in to the very thin black carbonaceous shales of the Hovenweep.

The top of the Lower Ismay was picked at 5533' measured depth, 5532' true vertical depth, and was based primarily on the slight change in lithology as well as comparison to the well log for the original well bore. The Lower Ismay was predominately a limestone, which was cream to white to tan, brown to medium brown, and occasionally dark gray brown, cryptocrystalline to microcrystalline, dense to clean, occasionally to slightly chalky, slightly fossiliferous, some marly and slightly silty. Thinly laminated in through out the Lower Ismay were brown, cryptocrystalline, slightly argillaceous, occasionally very silty, limy, dense dolomites. Scattered through out the Lower Isamy were brown to translucent chert and thin black carbonaceous shale partings. No shows were noted in these

limestones. With depth the limestones of the Lower Ismay became increasingly lighter in color, with white to cream to light gray predominate. Through out the middle to lower limestones of the Lower Ismay, cream to light gray, slightly sandy, very limy siltstones were noted as very thin interbeds and laminations. These siltstones had a very limestone rich cement and graded to a very silty to very slightly sandy limestone but displayed no shows. The basal 6' to 10' of the Lower Ismay to the top of the Gothic Shale, had limestones which were became increasingly shaley and graded to a medium brown to medium gray, dense, slightly anhydritic, increasingly shalely, light to medium brown, cryptocrystalline, very argillaceous to clean, dense dolomite and then the very limy to dolomitic, black to dark gray brown, carbonaceous shale of the Gothic.

The top of the Gothic Shale was encountered at 5603' measured depth, 5592' true vertical depth and was predominantly gray brown to black, silty, carbonaceous, soft to moderately firm, calcareous to slightly dolomitic and slightly micaceous. Scattered within the Gothic were very thin, cryptocrystalline to microcrystalline, earthy, limestone and dolomite partings to inclusions, with very rare scattered anhydrite crystals. The top of the Gothic was a fairly gradational contact with a decrease in penetration rate and an increase in shale noted. The base of the Gothic was marked by an abrupt decrease in penetration rate as well as a sharp lithology change. Of note was the large gas increase noted near the base of the Gothic Shale. Although gas increases are noted in the Gothic Shale through out the Paradox Basin, no to very minor increases have been note in the Ratherford Unit to date. The reason for the extremely high increase seen on the mud log was due to the oil added to the mud system while drilling the Gothic Shale.

The top of the Desert Creek is commonly picked at the Gothic Shale to transition zone facies change, which in this lateral occurred at a measured depth of 5633' and a true vertical depth of 5610' and was marked by a significant decrease in penetration rate and marked increase in limestones and thinly interbedded dolomites in the samples. The lithology of the transition zone in this well was primarily a white to cream to tan, occasionally light brown, cryptocrystalline to microcrystalline, rare algal to oolitic material, occasionally platy, argillaceous to very slightly silty in part, slightly anhydritic limestones with very thin carbonaceous shale partings and some crystalline anhydrite inclusions. Also thinly interbedded in the limestones were brown to medium, cryptocrystalline to microcrystalline, argillaceous, very limy dolomites. Only very rare intercrystalline to very rare pin point oolitic porosities were noted in the limestones and dolomites, with only a very spotty weak fluorescence, light brown stain, and a very poor slow diffuse to streaming cut. No to very minor gas increase were noted in the transition zone, above the 1-A porosity zone.

The top of the Desert Creek 1-A zone was picked at 5650' measured depth, 5617' true vertical depth and was based on sample identification as well as the significant increase in the penetration rate. The top of the 1-A zone was approximately 3' below the top of the 1-A zone noted on the porosity log for this well. The 1-A porosity zone seen in the curve section was an oolicastic to oomoldic, tan to brown, microcrystalline to very finely crystalline limestone grainstone, with a granular to microsucrosic to traces of sucrosic texture, very rare scattered translucent to clear chert fragments were noted, scattered anhydrite crystals to inclusions and some porosity filling, with a dolomite rich cement and had oomoldic to oolicastic to intercrystalline porosity development. Scattered with in the very good, porous oolitic grainstones were thin, white to cream, tight, dense, slightly oolictic limestone packstones, and rare, slightly oolitic, medium to dark brown, microcrystalline to microsucrosic, anhydritic dolomites with no to very poor visible porosity development and had no visible sample show.

The curve section was completed at a measured depth of 5697', 5624.8' true vertical depth, and a vertical section (horizontal displacement) of 123', in the oolicastic to oolmoldic limestone grainstone porosity, 3.5' below the proposed target line, with an 89.7-degree angle. The well bore turned upward to move away from the base of the 1-A zone, and was slowly turned upward toward the target line in the 1-A zone. As the lateral was continued, the lithology of the 1-A zone was predominately interbedded oolicastic to oolmoldic limestone grainstones and very thin scattered dense

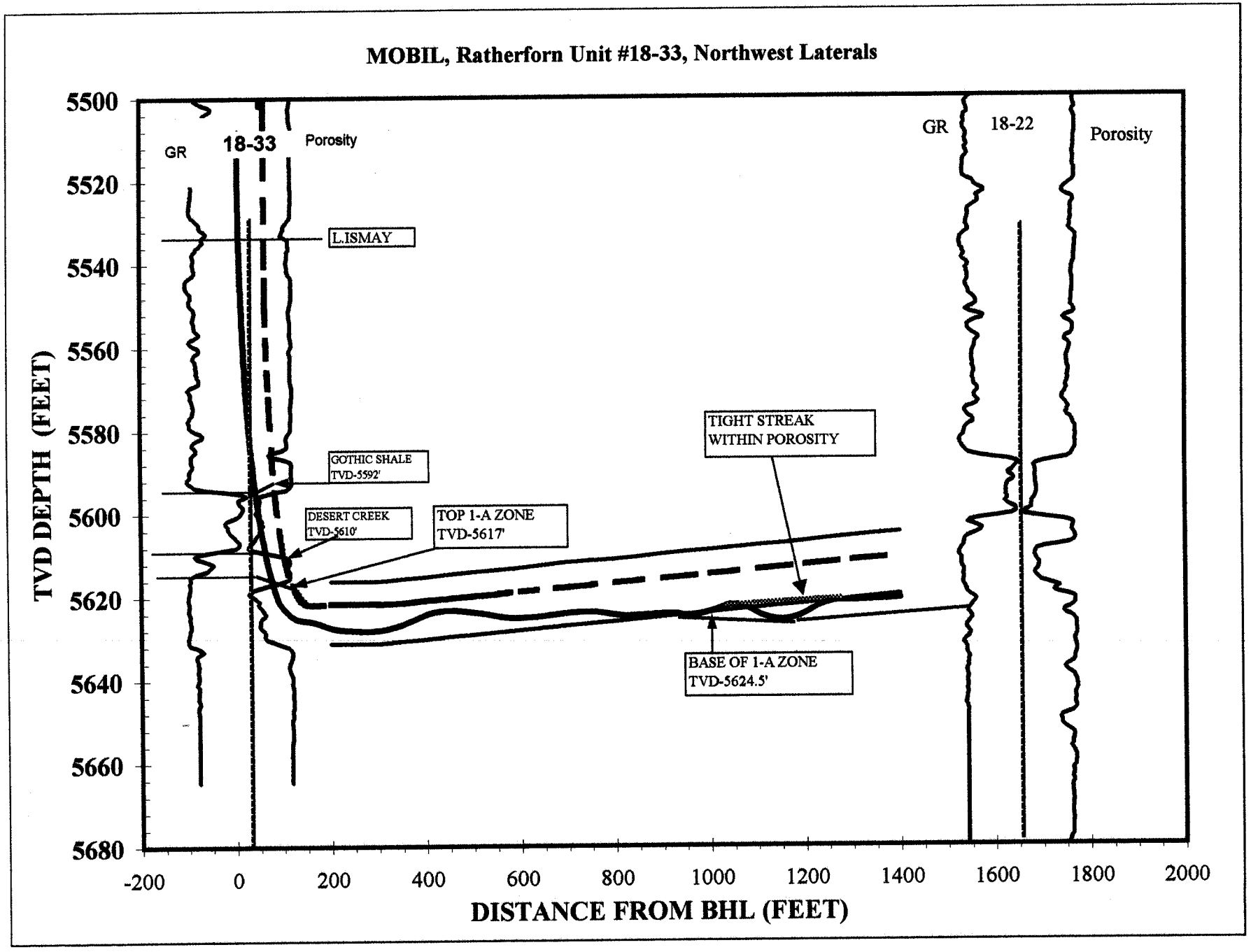
to occasionally platy and chalky limestone packstones with very rare scattered translucent to buff to tan chert fragment. The good oolicastic to oolmoldic porosity zone showed some minor to very rare abundant anhydrite crystals and anhydrite filled porosity. The sample shows had fair to good fluorescence, fair to good light to medium brown stain, with traces of black dead oil stain, and a fair to good streaming cut. As the lateral continued, well path remained low to the target line, but in very good oolicastic to oolmoldic limestones. The well bore was low due to the fact that instead of building angle, as was anticipated when rotating ahead, the well bore dropped angle and eventually bumped the base of the 1-A porosity zone. The base of the porosity zone was bumped at a measured depth of 6535', 5624.5' true vertical depth, with a horizontal displacement of 960', as the base of the zone dipped upward at an angle of 90.4 degrees, very near the projected base for the zone. The lithology near the base of the 1-A zone showed an increase in dense, slightly oolitic, and occasionally platy to chalky, limestone packstones. The packstones had no visible porosity or sample show and showed an increase in anhydrite filled porosities. As the well path turned upward away from the base of the zone, a tight streak within the 1-A zone was encountered at a true vertical depth of 5621.5', with a measured depth of 6635', and a horizontal displacement of 1053'. The tight streak was encountered again at a measured depth of 6822', a true vertical depth of 5621', with a horizontal displacement of 1244'. This tight streak was seen in the samples as an increase in dense, occasionally platy, white to cream to tan, limestone packstone. The tight streak was 9' to 10' below the top of the proposed target line and had a dip angle of 90.2 degrees. The well path was oriented at angles of 90.1 to 90.4 degrees and was rotated ahead to a total measured depth of 6979' with a true vertical depth of 5620.5', with a horizontal displacement of 1401', approximately 10' below the proposed target line. The lateral section was drilled through out the majority of its length in the porosity zone of the 1-A. The lithology of the best porosity of the 1-A zone throughout its length in the lateral remained fairly consistent with only very minor variations in porosity type being noted. The predominate lithology of the 1-A was a cream to tan to light brown, rare brown to white, microcrystalline to very finely crystalline, microsucrosic to occasionally sucrosic, oolicastic to oomoldic limestone grainstone, with scattered anhydrite crystals to inclusions and some porosity filling, slightly dolomitic, with a trace of dolomite rich cement, and scattered, very thin, cryptocrystalline, occasionally oolitic to very slightly fossiliferous limestone packstone inclusions to laminations.

The best porosity of the 1-A zone had good visible porosity and a fair to good sample show through the curve drilled in the best porosity of the 1-A zone and through out the lateral section. Of note was the tight streak encountered with in the lateral section, from a horizontal displacement of 1053', 6635' measured depth with a true vertical depth of 5621.5', and continuing at a shallow upward angle to a measured depth of 6822', 5621' true vertical depth, and a horizontal displacement of 1244'. The lithology through this interval show increases in tight limestone packstones as the base of the tight streak was encountered. The oolicastic to oolmoldic limestones showed fair to very good porosity, with varying amounts of anhydrite and calcite porosity filling was noted. The best gas show was noted as soon as the top of the 1-A porosity zone was penetrated in the curve section at a measured depth of 5650', with a true vertical depth of 5617'. The back ground gases in the lateral remained high through out, due in part to the oil added to the mud system, with no noticeable oil, gas or water flows encountered. Through out the length of the lateral drilled in the 1-A zone, the oolicastic to oolimoldic limestone grainstones were consistent within the best porosity. The top of the 1-A was not encountered the drilling of the lateral. The base of the 1-A was encountered twice, due to the lateral assembly dropping angle while rotating ahead, rather than building angle as was expected. The base was bumped at measured depths of 6535' and 6713', 5624.5' and 5625.5' true vertical depths, with horizontal displacements of 960' and 1135' respectively. Though out the well path of the lateral, the porosity remained consistent and had very good penetration rates, even though the well path was low to the proposed target line.

The limestone packstones encountered near the base of the 1-A porosity zone and in the tight streak noted 4' to 5' above the base of the porosity zone were predominately a cream to tan, rare white, cryptocrystalline to occasionally microcrystalline, occasionally platy, chalky, dense, very slightly anhydritic, occasionally slightly fossiliferous to very slightly oolitic. These tight limestone packstones had no visible sample shows, while the oolicastic to oolmoldic grainstones had a fair to good sample show. The lateral was terminated, at a measured depth of 6979', 5620.5' true vertical depth and a horizontal displacement of 1400' on January 13, 1998.

In tracking the well bore through the 1-A porosity bench, the intercrystalline to oolicastic to oolmoldic porosity was predominately very good, but did show some anhydrite and calcite porosity filling scattered through out the lateral, as well as when the well path approached and encounter the base of the zone and the tight streak noted near the end of the lateral. There were some other minor changes in rock classification, from predominately intercrystalline and oolitic porosities in the limestone grainstones to the tight limestone packstones in thin laminations and inclusions with in the 1-A porosity zone as well as near the base of the zone. Sample shows were predominated good and stayed fairly consistent throughout the length of the lateral. The background gases were low through the curve section, until penetration the 1-A zone, and remained high and fairly contestant in the lateral section. The effective or best porosity was associated with the oolicastic and oolmoldic limestone grainstone facies, which had fair to good intercrystalline to oolitic porosities. The majority of the grainstones showed very minor amount of porosity (anhydrite to calcite) plugging. The well produced very minor amounts of oil and some gas through out the lateral to its termination.

ROCKY MOUNTAIN GEO-ENGINEERING CORP. 2450 INDUSTRIAL BLVD. GRAND JUNCTION, CO 81505 (970) 243-3044



MOBIL

RATHERFORD UNIT #18-33
SE HORIZONTAL LATERAL LEG #2
1-A POROSITY BENCH
DESERT CREEK MEMBER
PARADOX FORMATION
SECTION 18, T41S, R24E
SAN JUAN, UTAH

GEOLOGY REPORT
by
DAVE MEADE / MARVIN ROANHORSE
ROCKY MOUNTAIN GEO-ENGINEERING CORP.
GRAND JUNCTION, COLORADO
(970) 243-3044

TABLE OF CONTENTS

WELL SUMMARY

OPERATOR:	MOBIL EXPLORATION & PRODUCTION U.S. INC.
NAME:	RATHERFORD UNIT #18-33 SE HORIZONTAL LATERAL LEG #2 IN 1-A POROSITY BENCH, DESERT CREEK
LOCATION:	SECTION 18, T41S, R24E
COUNTY/STATE:	SAN JUAN, UTAH
ELEVATION:	KB: 4806' GL: 4820'
SPUD DATE:	01/09/98
COMPLETION DATE:	01/18/98
DRILLING ENGINEER:	BENNY BRIGGS
WELLSITE GEOLOGY:	DAVE MEADE / MARVIN ROANHORSE
MUDLOGGING ENGINEERS:	DAVE MEADE / MARVIN ROANHORSE
CONTRACTOR: **TOOLPUSHER:**	BIG "A" RIG 25 J. DEES / M. SMITH
HOLE SIZE:	4 3/4"
CASING RECORD:	KICK OFF POINT IN WINDOW AT 5500' MEASURED DEPTH
DRILLING MUD: **ENGINEER:** **MUD TYPE:**	M-I DANNE BEASON FRESH WATER & BRINE WATER W/ POLYMER SWEEPS
DIRECTIONAL DRILLING CO:	SPERRY-SUN
ELECTICAL LOGGING:	NA
TOTAL DEPTH:	7079' MEASURED DEPTH; 5610.14' TVD
STATUS:	TOH & LAYING DOWN LATERAL ASSEMBLY - PREPARE WELL FOR COMPLETION & RIG MOVE TO R.U. 17-12 LOCATION

DRILLING CHRONOLOGY
RATHERFORD UNIT #18-33
1-A SE HORIZONTAL LATERAL LEG #2

DATE	DEPTH	DAILY	ACTIVITY
01/14/98	5491'	9'	TOH-L.D. STARTER MILL-P.U. WINDOW & WATERMELLON MILL-TIH-CIRC-MILL FROM 5491'-5500'-PUMP 10 BBL SWEEP & CIRC-TOH-L.D. MILS-P.U. CURVE ASSEMBLY-ORIENT-TIH
01/15/98	5500'	58'	TIH-P.U. PH-6 D.P.-CIRC OUT THRU CHOKE-RIG UP GYRO DATA & RUN GYRO-TIME DRLG 5500'-5004'-DIR DRLG W/WIRELINE SURVEYS FROM 5504'-5534'-PULL & RIG DOWN GYRO-DIR DRLG CURVE & SURVEYS TO 5544'-TOH TO CHANGE OUT MWD,MOTOR PAD & FOR NEW BIT #2-TEST ASSEMBLY-TIH-CIRC OUT THRU CHOKE-TAG BOTTOM-SURVEY-DIR DRLG CURVE & SURVEYS
01/16/98	5542'	10'	DIR DRLG CURVE & SURVEYS,CIRC SPLS & PUMP SWEEP @ 5694'-PUMP 10 BBLS SWEEP-L.D. 51 JTS D.P.-TOH- L.D. CURVE ASSEMBLY-P.U. & M.U. LATERAL ASSEMBLY & ORIENT-TEST LATERAL ASSEMBLY-TIH-CIRC BTMS UP THRU CHOKE-GO TO BTM & DIR DRLG & SURVEYS
01/17/98	5892'	350'	DIR DRLG & SURVEYS
01/18/98	7006'	1,114'	DIR DRLG & SURVEYS TO TD OF 7079'-PUMP SWEEP & CIR OUT SPLS-DISPLACE HOLE WITH 10# BRINE-TOH
01/19/98	7079'	TD	

DAILY ACTIVITY

Operator: MOBIL
Well Name: RATHERFORD UNIT #18-33 SE 1-A HORIZONTAL LATERAL LEG #2

DATE	DEPTH	DAILY	DATE	DEPTH	DAILY
01/14/98	5491'	9'			
01/15/98	5500'	42'			
01/16/98	5542'	350'			
01/17/98	5892'	1,114'			
01/18/98	7006'	73'			
01/19/98	7079'	TD			

BIT RECORD

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #18-33 SE 1-A HORIZONTAL LATERAL LEG #2

RUN	SIZE	MAKE	TYPE	IN/OUT	FTG	HRS	FT/HR
#1 (RR)	4 3/4"	HTC	STR-20	5500'/ 5542'	42'	9	4.7
#2	4 3/4"	STC	MF-3P	5542'/ 7079'	1,537'	34	45.2

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : Mobil (Utah)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/18-33, 2A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5300.00	0.16	358.39	5299.82	6.12 S	12.81 W	-5.88	0.00
5491.00	0.83	26.89	5490.81	4.62 S	12.19 W	-6.37	0.36
5500.00	3.40	130.00	5499.81	4.73 S	11.96 W	-6.12	40.87
5510.00	6.80	143.30	5509.77	5.40 S	11.38 W	-5.25	35.77
5520.00	11.40	146.80	5519.64	6.70 S	10.48 W	-3.72	46.31
5530.00	15.80	148.40	5529.35	8.69 S	9.23 W	-1.48	44.16
5540.00	20.30	149.30	5538.86	11.34 S	7.63 W	1.45	45.09
5550.00	25.50	150.00	5548.07	14.70 S	5.66 W	5.11	52.07
5560.00	31.50	150.40	5556.85	18.84 S	3.30 W	9.59	60.03
5570.00	36.90	150.80	5565.12	23.74 S	0.54 W	14.84	54.05
5580.00	40.40	146.80	5572.93	29.07 S	2.70 E	20.76	42.99
5590.00	43.20	139.30	5580.39	34.38 S	6.71 E	27.24	57.26
5600.00	47.80	134.70	5587.40	39.59 S	11.58 E	34.32	56.48
5610.00	52.90	135.60	5593.78	45.04 S	17.01 E	41.98	51.47
5620.00	57.00	138.70	5599.52	51.05 S	22.57 E	50.10	48.21
5630.00	60.60	144.60	5604.70	57.75 S	27.86 E	58.47	61.97
5640.00	64.70	149.40	5609.30	65.20 S	32.69 E	66.96	59.14
5650.00	67.90	146.80	5613.32	72.97 S	37.53 E	75.66	39.88
5660.00	71.90	142.70	5616.75	80.64 S	42.95 E	84.74	55.51
5670.00	77.30	142.00	5619.41	88.27 S	48.84 E	94.15	54.42
5694.00	88.30	140.70	5622.41	106.83 S	63.69 E	117.46	46.15
5732.00	90.70	137.00	5622.74	135.44 S	88.69 E	155.00	11.60
5764.00	92.40	134.00	5621.88	158.25 S	111.11 E	186.83	10.77
5795.00	90.50	130.90	5621.09	179.16 S	133.97 E	217.79	11.73
5827.00	90.00	129.60	5620.95	199.84 S	158.39 E	249.79	4.35
5858.00	90.40	128.90	5620.85	219.45 S	182.40 E	280.79	2.60
5890.00	90.20	128.00	5620.68	239.35 S	207.46 E	312.77	2.88
5920.00	89.80	127.30	5620.68	257.67 S	231.21 E	342.75	2.69
5952.00	89.30	126.60	5620.93	276.91 S	256.78 E	374.70	2.69
5984.00	88.40	125.90	5621.57	295.83 S	282.58 E	406.63	3.56
6016.00	90.20	128.40	5621.96	315.15 S	308.09 E	438.58	9.63
6047.00	90.10	127.90	5621.88	334.30 S	332.46 E	469.56	1.64
6078.00	89.90	127.90	5621.88	353.34 S	356.93 E	500.54	0.65
6110.00	90.00	127.50	5621.91	372.91 S	382.24 E	532.52	1.29
6142.00	90.80	127.30	5621.69	392.34 S	407.66 E	564.48	2.58
6173.00	90.80	126.60	5621.25	410.98 S	432.44 E	595.44	2.26
6205.00	91.40	126.70	5620.64	430.07 S	458.10 E	627.37	1.90
6237.00	91.80	126.60	5619.75	449.17 S	483.77 E	659.31	1.29

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : Mobil (Utah)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/18-33, 2A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
6269.00	91.10	127.00	5618.94	468.33 S	509.38 E	691.25	2.52
6300.00	91.60	129.10	5618.21	487.43 S	533.79 E	722.22	6.96
6331.00	91.60	128.90	5617.34	506.93 S	557.87 E	753.20	0.64
6363.00	91.00	129.10	5616.61	527.07 S	582.73 E	785.19	1.98
6394.00	91.10	129.10	5616.05	546.61 S	606.78 E	816.18	0.32
6426.00	90.90	130.00	5615.49	566.99 S	631.45 E	848.17	2.88
6457.00	91.90	130.50	5614.73	587.01 S	655.11 E	879.16	3.61
6489.00	92.30	129.80	5613.56	607.63 S	679.55 E	911.14	2.52
6521.00	92.50	130.20	5612.22	628.18 S	704.04 E	943.11	1.40
6553.00	92.60	130.30	5610.79	648.84 S	728.44 E	975.08	0.44
6584.00	90.20	130.70	5610.04	668.96 S	752.00 E	1006.07	7.85
6616.00	89.40	130.90	5610.15	689.87 S	776.23 E	1038.07	2.58
6648.00	89.60	130.90	5610.43	710.82 S	800.41 E	1070.06	0.62
6680.00	90.00	130.70	5610.54	731.73 S	824.64 E	1102.06	1.40
6711.00	90.40	131.40	5610.43	752.09 S	848.02 E	1133.05	2.60
6743.00	91.00	131.40	5610.04	773.25 S	872.02 E	1165.04	1.87
6775.00	91.60	131.90	5609.31	794.51 S	895.92 E	1197.02	2.44
6807.00	92.40	132.10	5608.20	815.91 S	919.69 E	1228.98	2.58
6839.00	90.70	132.10	5607.33	837.35 S	943.42 E	1260.94	5.31
6870.00	89.50	131.40	5607.28	857.99 S	966.55 E	1291.93	4.48
6901.00	89.60	131.20	5607.52	878.45 S	989.84 E	1322.92	0.72
6933.00	92.20	132.10	5607.02	899.72 S	1013.74 E	1354.90	8.60
6964.00	91.10	130.20	5606.13	920.11 S	1037.08 E	1385.88	7.08
6996.00	87.20	126.50	5606.60	939.95 S	1062.16 E	1417.85	16.80
7045.00	87.70	126.10	5608.78	968.93 S	1101.61 E	1466.70	1.31
7079.00	87.70	126.10	5610.14	988.95 S	1129.06 E	1500.59	0.00

THE DOGLEG SEVERITY IS IN DEGREES PER 100.00 FEET.
N/E COORDINATE VALUES GIVEN RELATIVE TO WELL HEAD.
TVD COORDINATE VALUES GIVEN RELATIVE TO WELL HEAD.
THE VERTICAL SECTION ORIGIN IS WELL HEAD.
THE VERTICAL SECTION WAS COMPUTED ALONG 130.00 (TRUE).
CALCULATION METHOD: MINIMUM CURVATURE.

5500 TO 5570 HAVE INTERPOLATED AZIMUTHS
5580 TO 5670 MAGNETIC INTERFERENCE
7079 EXTRAPOLATED TO THE BIT

MUD REPORT

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #18-33 SE 1-A HORIZONTAL LATERAL LEG #2

DATE	DEPTH	WT	VIS	PLS	YLD	GEL	pH	WL	CK	CHL	CA	SD	OIL	WTR
01/14/98	5493'	8.5	27	1	1	0/0	11.7	6.1	N/C	33000	480	--	11%	89%
01/15/98	5500'	8.6	27	2	1	0/0	11.6	21.6	N/C	36000	540	--	11%	89%
01/16/98	5550'	8.5	27	2	1	0/0	11.7	26.2	N/C	35000	540	--	10%	90%
01/17/98	5869'	8.6	27	2	1	0/0	11.7	29.4	N/C	33000	480	--	10%	90%
01/18/98	7079'	8.6	27	2	1	0/0	11.7	30.1	N/C	31000	480	--	10%	90%

SAMPLE DESCRIPTIONS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #18-33 SE 1-A HORIZONTAL LATERAL LEG #2

DEPTH	LITHOLOGY

5500.00 5520.00 "LS tan-ltbrn-brn,occ gybrn-dkbrn,crpxl-micxl,arg,rthy,occ chk,mrly ip,sl dol,occ cln,n-v rr spty intxl POR,fnt dull yel FLOR,n vis STN-CUT,w/rr scat dkbrn CHT frag,tr blk calc-carb,sl dol SH lams & mbrn-brn micxl rthy lmy DOL incl-v rr intxl POR,rr spty fnt dull yel FLOR,v rr brn STN,v p slow dif-rr slow stmg CUT"

5520.00 5530.00 "LS AA,incr tan-ltbrn,crpxl,sl incr brn-gybrn-blk CHT frag,w/v rr thn blk sl carb calc-dol SH ptgs,scat thn v lmy DOL lams AA"

5530.00 5540.00 "LS brn-ltgybrn-ltbrn,mbrn,crpxl-micxl,rthy-chk,arg-sl dol,w/scat ltgybrn CHT frag,v rr thn blk-dkgybrn sbblky sl calc-carb SH ptgs,tr m-dkbrn micxl-crpxl rthy-cln sl lmy DOL lams-tt-rr intxl POR,v rr dull yel FLOR,lt-m brn STN,v rr slow dif CUT"

5540.00 5550.00 "LS AA,sl incr POR-FLOR-STN,w/tt DOL NFSOC,rr smky gy CHT,v thn SH ptgs AA"

5550.00 5560.00 "LS tan-ltbrn,occ brn-wh,crpxl-micxl,rthy-cln,sl arg,AA,rr CHT & SH AA,thn intbd DOL AA"

5560.00 5570.00 "LS wh-crm-tan,rr brn,crpxl-micxl,rthy-chk,sl slty-slty,anhy ip,v sl dol,rr Crin fos,tt-v rr intxl POR,spty dull yel FLOR,n vis STN,v p slow dif-slow stmg CUT,rr smky gy CHT frag,intbd brn-dkbrn micxl-crpxldns-rthy DOL shy,NFSOC"

5570.00 5580.00 "LS AA,w/rr-tr scat POR-FLOR-STN-CUT AA,tr smky gy-brn CHT AA,rr thn intbd DOL AA w/n-v rr POR-FLOR-STN-CUT"

5580.00 5600.00 "LS wh-crm-tan,rr brn,crpxl-micxl,rthy-chk,sl slty-slty,anhy ip-rr ANHY fl frac,sl dol,rr mic fos,tt-v rr intxl POR,tr spty dull yel FLOR,n vis STN,v p slow dif-slow stmg CUT, thn intbd brn-dkbrn micxl-crpxl dns-rthy DOL sl mrly-shy,tt-rr intxl POR,n-v rr dull FLOR,v p vis STN,p slow dif CUT"

5600.00 5610.00 "LS AA,incr mrly,bcmg v dol,tt,NFSOC,grdg to brn-dkbrn micxl-occ crpxl rthy-cln mrly pred tt DOL w/scat Crin fos-dkbrn CHT frag & grdg to dkgy-blk dol-calc carb-sooty SH"

5620.00 5630.00 "SH blk-dkbrnblk-dkbrn,sbblky-sbplty-plty,frm-mhd,carb,sl slty,calc,sooty"

5630.00 5640.00 "LS tan-crm-wh,occ ltbrn,crpxl-micxl,pred plty chky-sl anhy PCKST,occ dns-sl slty -shy ip,tt-rr inxl POR,tr scat dull-spty mod bri yel FLOR,n-tr ltbrn-rr brn STN,p dif/tr res ring CUT/scat SH & DOL AA "

5640.00 5650.00 "LS AA,pred dns-chky plty PCKST,v rr oom-ooc GRNST frag,POR-FLOR-STN AA,tr DOL brn,micxl-sl micsuc,rthy,sl calc,arg ip,NFSOC "

5650.00 5660.00 "LS tan-ltbrn,occbrn,crm,vfxl-gran,micsuc,occ crpxl,ooc-oom GRNST,rr dns-chky plty PCKST,sl dol/tr DOL cmt,rr brn CHT frag,sl ANHY/tr POR fl,g ool/intxl POR,g even bri yel FLOR,g ltbrn-scat brn/blk dd o STN,g blooming-fast stmg mlky CUT"

5660.00 5670.00 "LS AA,oom-ooc GRNST,rr PCKST AA,POR-FLOR-STN-CUT AA"

5670.00 5680.00 "LS AA,pred ooc-oom GRNST/rr chky plty-dns PCKST,sl dol/tr DOL rich cmt,sl anhy/rr POR fl,g ooc-oom/tr intxl POR,FLOR AA,g brn-ltbrn/tr blk dd o STN,CUT AA"

DEPTH	LITHOLOGY

5680.00 5694.00 "LS ltbrn-brn-tan,rr crm-wh,gran-micsuc-vfxl,rr crpxl,ooc-oom GRNST,rr dns-chky plty PCKST,sl dol/tr DOL cmt,sl ANHY/tr POR fl,g ooc-oom/intxl POR,g even bri yel FLOR,g brn-ltbrn-scat blk dd o STN,g blooming-fast stmg mlky CUT"

5694.00 5700.00 "LS AA,pred ooc-oom GRNST/tr thn intbd chky-sl anhy dns sl slty-sdy PCKST,POR-FLOR-STN-CUT AA "

5700.00 5720.00 "LS ltbrn-brn-tan,occ dkbrn,ltgy-wh,gran-vfxl,occ micxl-crpxl,pred ooc-oom GRNST,tr scat dns-chky plty PCKST,rr sl dol slty-sl sdy frag,sl anhy/tr POR fl-rr xl ANHY incl,g oom-ooc POR,g even bri-mod bri yel FLOR,g brn-ltbrn/scat blk dd o STN,CUT AA"

5720.00 5740.00 "LS AA,pred ooc-oom GRNST,tr scat dns sl ool-chky plty PCKST,v rr sl dol slty-sl sdy frag,sl anhy/tr POR fl-v rr xl ANHY,sl dol/rr DOL cmt,POR-FLOR AA,g ltbrn-brn/scat blk dd o STN,g blooming-fast stmg mlky CUT"

5740.00 5760.00 "LS ltbrn-brn-tan,occ dkbrn,rr wh,gran-vfxl,occ crpxl,pred ooc-oom GRNST,tr scat dns sl ool-chky plty PCKST,sl anhy/tr POR fl-v rr xl ANHY,POR-FLOR AA,g brn-ltbrn/scat blk dd o STN,CUT AA"

5760.00 5780.00 "LS AA,pred ooc-oom GRNST/tr scat-occ intbd dns sl ool-chky plty PCKST,sl anhy/tr POR fl,sl dol/tr DOL rich cmt,POR-FLOR-STN-CUT AA "

5780.00 5800.00 "LS ltbrn-brn-tan,occ dkbrn,rr ltgy-wh,gran-vfxl,occ micxl-crpxl,pred ooc-oom GRNST,tr scat PCKST AA,sl dol/tr DOL cmt,sl anhy/tr POR fl-rr xl ANHY incl,g oom-ooc POR,g even bri-mod bri yel FLOR,g brn-ltbrn/scat blk dd o STN,g blooming-fast stmg mlky CUT"

5800.00 5820.00 "LS AA,gran-vfxl-sl micsuc,occ crpxl,pred ooc-oom GRNST,tr scat dns sl ool-chky plty PCKST,sl anhy/tr POR fl-v rr xl ANHY,POR-FLOR AA,g brn-ltbrn/scat blk dd o STN,CUT AA"

5820.00 5840.00 "LS tan-ltbrn-brn,occ dkbrn,rr wh,gran-vfxl,occ crpxl,pred ooc-oom GRNST,tr scat dns sl ool-chky plty PCKST,sl anhy/tr POR fl-v rr xl ANHY,POR-FLOR AA,g brn-ltbrn/scat blk dd o STN,CUT AA"

5840.00 5860.00 "LS AA,pred ooc-oom GRNST/tr scat-occ intbd dns sl ool-chky plty PCKST,sl anhy/tr POR fl,sl dol/tr DOL rich cmt,POR-FLOR-STN-CUT AA "

5860.00 5880.00 "LS AA,gran-vfxl-sl micsuc,occ crpxl,pred ooc-oom GRNST,tr scat dns sl ool-chky plty PCKST,sl anhy/tr POR fl-v rr xl ANHY,POR-FLOR AA,g brn-ltbrn/scat blk dd o STN,CUT AA"

5880.00 5900.00 "LS ltbrn-brn-tan,occ dkbrn,crm,rr wh,gran-vfxl,occ crpxl,pred ooc-oom GRNST,tr scat-occ intbd dns sl ool-rr chky plty PCKST,sl anhy/tr POR fl-vrr xl ANHY,sl dol/tr DOL cmt,POR-FLOR AA,g brn-ltbrn/scat blk dd o STN,g blooming-fast stmg mlky CUT"

5900.00 5920.00 "LS ltbrn-tan,brn,occ dkbrn,crm-ltgybrn,rr wh,gran-vfxl,occ micsuc-crpxl,ooc-oom GRNST,tr PCKST AA,sl anhy/tr POR fl,v rr xln ANHY incl,vsl dol/rr DOL cmt,g ooc-oom/tr intxl POR,g even bri yel FLOR,g ltbrn-brn/scat dkbrn-blk dd o STN,CUT AA"

5920.00 5940.00 "LS AA,pred ooc-oom GRNST,tr scat-occ intbd dns sl ool-rr chky plty PCKST,sl anhy/tr POR fl-xl ANHY frag,rr tan-crm CHT incl,vsl dol ip,POR-FLOR AA,g ltbrn-brn/occ dkbrn & blk dd o STN,g blooming-fast stmg mlky CUT"

DEPTH		LITHOLOGY
5940.0	5960.00	"LS AA,pred ooc-oom GRNST/tr scat-occ intbd dns sl ool-rr chky plty PCKST,sl anhy/tr POR fl-xl ANHY incl,sl dol/tr DOL rich cmt,POR-FLOR-STN-CUT AA "
5960.00	5980.00	"LS ltbrn-tan,brn,occ dkbrn,crm-ltgybrn,gran-vfxl,occ micsuc-crpxl,ooc-oom GRNST,tr PCKST AA,sl anhy/tr POR fl,v rr xln ANHY incl,sl dol/tr DOL cmt,g ooc-oom/tr intxl POR,g even bri yel FLOR,g ltbrn-brn/scat dkbrn-blk dd o STN,CUT AA"
5980.00	6000.00	"LS AA,pred ooc-oom GRNST,tr scat-occ intbd dns sl ool-rr chky plty PCKST,sl anhy/tr POR fl-xl ANHY frag, POR-FLOR AA,g ltbrn-brn/occ dkbrn & blk dd o STN,g blooming-fast stmg mlky CUT"
6000.00	6020.00	"LS AA,pred ooc-oom GRNST/tr scat-occ intbd dns sl ool-chky plty PCKST,sl anhy/tr POR fl,v sl dol/tr DOL rich cmt,POR-FLOR-STN-CUT AA "
6020.00	6040.00	"LS AA,pred ooc-oom GRNST,tr scat-occ intbd dns sl ool-rr chky plty PCKST,sl anhy/tr POR fl-xl ANHY frag,rr tan-crm CHT incl,vsl dol ip,POR-FLOR AA,g ltbrn-brn/occ dkbrn & blk dd o STN,g blooming-fast stmg mlky CUT"
6040.00	6060.00	"LS AA,pred ooc-oom,rr scat-tr intbd dns sl ool-vrr chky plty PCKST,v sl anhy/tr POR fl & rr xl ANHY incl,sl dol/tr DOL cmt strk,v rr crm-tan CHT incl,g ooc-oom-intxl POR,g even bri yel FLOR,STN AA,g mod fast stmg mlky CUT"
6060.00	6080.00	"LS ltbrn-tan,occ dkbrn,crm,rr wh,vfxl-gran-sl micsuc,occ crpxl,ooc-oom GRNST,tr scat-occ intbd PCKST AA,sl anhy/tr POR fl-rr xl ANHY incl,sl dol/tr DOL cmt ip,g ooc-oom-intxl POR,g even bri yel FLOR,g ltbrn-brn/scat dkbrn-tr blk dd o STN,CUT AA"
6080.00	6100.00	"LS AA,ooc-oom GRNST,tr PCKST AA,sl dol ip/tr DOL cmt,POR-FLOR-STN-CUT AA"
6100.00	6120.00	"LS ltbrn-tan-brn,occ dkbrn,crm-ltgybrn,gran-vfxl,occ micsuc-crpxl,ooc-oom GRNST,sl incr dns-chky PCKST,sl anhy/POR fl,v rr xln ANHY,sl dol/tr DOL cmt,g ooc-oom/tr intxl POR,g even bri yel FLOR,g ltbrn-brn/scat dkbrn-blk dd o STN,g blooming-fast stmg CUT"
6120.00	6140.00	"LS AA,ooc-oom GRNST,sl decr scat dns occ ool-chky plty PCKST frag,sl anhy/tr POR fl,sl dol/tr DOL cmt strk,POR-FLOR-STN-CUT AA"
6140.00	6160.00	"LS AA,pred ooc-oom GRNST,tr scat-occ intbd dns sl ool-rr chky plty PCKST,sl anhy/tr POR fl-xl ANHY frag,rr tan-crm CHT incl,v sl dol ip,POR-FLOR AA,g ltbrn-brn/occ dkbrn & blk dd o STN,g blooming-fast stmg mlky CUT"
6160.00	6180.00	"LS AA,ooc-oom GRNST,tr PCKST AA,sl dol ip/tr DOL cmt,POR-FLOR-STN-CUT AA"
6180.00	6200.00	"LS ltbrn-tan-brn,occ dkbrn,crm,gran-vfxl,occ micsuc-crpxl,ooc-oom GRNST,tr dnssl ool-rr chky plty PCKST,sl anhy/POR fl-rr xln ANHY,sl dol/tr DOL cmt,POR AA,g even bri-mod bri yel FLOR,g ltbrn-brn/scat dkbrn-rr blk pp dd o STN,g blooming-fast stmg CUT"
6200.00	6220.00	"LS AA,ooc-oom GRNSt,tr scat-occ intbd dns sl ool-rr chky plty PCKST,sl anhy/tr POR fl-v rr xln ANHY,v rr crm-tan CHT-sil incl,POR-FLOR AA,g ltbrn-scat brn/tr dkbrn-rr blk pp dd o STN,g fast stmg-sl blooming mlky CUT "
6220.00	6250.00	"LS ltbrn-tan-brn,occ dkbrn,crm,gran-vfxl,occ micsuc-crpxl,ooc-oom GRNST,tr PCKST AA,sl anhy/tr POR fl-v rr xln ANHY,n-v sl dol/v rr DOL cmt strk,POR AA,g even bri-mod bri yel FLOR,g ltbrn-brn/sl incr dkbrn-tr blk dd o STN,g fast stmg mlky CUT"

DEPTH	LITHOLOGY

6250.00 6270.00 "LS AA,ooc-oom GRNST,tr PCKST AA,bcmg incr sl dol/tr DOL cmt strk,sl anhy/tr POR fl-v rr xl ANHY incl,POR-FLOR AA,g ltbrn-brn/scat dkbrn-tr blk dd o STN,g fast stmg mlky CUT"

6270.00 6300.00 "LS tan-ltbrn-crm,occ brn,tr ltgybrn-wh,vfxl-gran-sl micsuc,tr crpxl,GRNST AA,rr dns sl ool-chky plty PCKST frag,sl anhy/tr POR fl-rr xln ANHY incl,v rr trnsl CHT incl,v sl dol,g ooc-oom/tr intxl POR,g even bri yel FLOR,STN AA/rr blk pp dd o STN,CUT AA "

6300.00 6310.00 "LS AA,bcmg incr brn,ooc-oom GRNST,rr PCKST AA,v sl dol/tr DOL cmt strk,POR-FLOR AA,g ltbrn/incr brn-dkbrn STN & rr blk dd o STN,g slow blooming-mod fast stmg mlky CUT"

6310.00 6325.00 "LS brn-ltbrn/occ crm incl,occ tan-crm,v rr wh,vfxl-gran-sl micsuc,rr crpxl,ooc-oom GRNST,rr dns sl ool-chky plty PCKST,sl anhy/tr POR fl-v rr xln ANHY incl,occ sl dol/rr DOL cmt,g ooc-oom/tr intxl POR,FLOR AA,g brn-ltbrn/scat dkbrn-rr blk pp dd o STN,g blooming-fast stmg mlky CUT"

6330.00 6360.00 "LS AA,ooc-oom GRNST,rr scat-occ intbd dns-chky plty PCKST,sl anhy/tr POR fl-rr xln ANHY incl,v sl dol/tr DOL rich cmt,v rr crm-tan CHT incl,g ooc-oom/tr intxl POR,g even bri yel FLOR,g brn-ltbrn/scat dkbrn-rr blk STN,g fast stmg-sl blooming mlky CUT"

6360.00 6390.00 "LS AA,ooc-oom GRNST,rr PCKST AA,sl dol/rr DOL cmt,POR-FLOR-STN-CUT AA"

6390.00 6420.00 "LS brn-ltbrn/occ crm incl,occ tan,vrr wh,vfxl-gran-sl micsuc,rr crpxl,ooc-oom GRNST,rr dns sl ool-chky plty PCKST,sl anhy/tr POR fl-v rr xln ANHY incl,v rr tan-crm CHT incl,sl dol/rr DOL cmt,POR-FLOR-STN AA,g fast stmg mlky CUT"

6420.00 6450.00 "LS AA,vfxl-gran-sl micsuc,occ micxl-rr crpxl,pred ooc-oom GRNST,tr dns sl ool-chky plty PCKST,sl anhy/tr POR fl-rr xln ANHY incl,sl dol/rr DOL cmt,g ooc-oom/tr intxl POR,FLOR-STN-CUT AA"

6450.00 6480.00 "LS brn-ltbrn/occ crm incl,occ tan,v rr wh,vfxl-gran-sl micsuc,rr crpxl,ooc-oom GRNST,tr dns sl ool-rr chky plty PCKST,sl anhy AA,sl dol/rr DOL cmt,g ooc-oom/tr intxl POR,g even bri yel FLOR,g brn-ltbrn/scat dkbrn-tr blk dd o STN,g blooming-fast stmg CUT"

6480.00 6500.00 "LS ltbrn-brn-tan/occ crm incl,rr ltgybrn,v rr wh,vfxl-gran-sl micsuc,rr crpxl,GRNST AA,tr PCKST AA,sl anhy/tr POR fl-rr xln ANHY incl,dol ip/tr DOL cmt,g ooc-oom/tr intxl POR,g even bri yel FLOR,g ltbrn-brn/scat dkbrn-rr blk dd o STN,g fast stmg mlky CUT"

6500.00 6540.00 "LS tan-ltbrn-crm,occ brn,rr ltgybrn-wh,vfxl-gran-sl micsuc,tr crpxl,ooc-oom GRNST,tr dns sl ool-rr chky plty PCKST,sl anhy/tr POR fl-rr xln ANHY,v rr crm CHT incl,v sl dol,g ooc-oom/tr intxl POR,g even mod bri-bri yel FLOR,g-fr ltbrn/tr brn-v rr blk pp dd o STN,g-fr mod fast-fast stmg mlky CUT"

6540.00 6570.00 "LS ltbrn-tan,occ brn,crm,vfxl-gran-micsuc ip,rr crpxl,ooc-oom GRNST,rr scat dns sl ool-plty PCKST,sl chky-anhy/rr POR fl,v rr xl ANHY & tan-crm CHT incl,dol ip/tr DOL cmt,g ooc-oom/tr intxl POR,g even bri yel FLOR,g ltbrn/scat brn-rr blk STN, g mod fast-slow blooming mlky CUT"

6570.00 6590.00 "LS AA,pred ooc-oom GRNST/rr dns sl ool-chky plty PCKST,sl anhy/rr POR fl-v rr xl ANHY frag,v rr CHT AA,sl dol/tr DOL cmt,g ooc-oom/tr intxl POR,g even bri yel FLOR,g ltbrn-brn/scat dk brn-rr blk dd o STN,g slow blooming-fast stmg mlky CUT "

6590.00 6600.00 "LS AA,pred ooc-oom GRNST/incr scat thn chky plty frag-tr dns sl ool PCKST,sl incr anhy/tr POR fl & v rr xln ANHY frag,sl dol/tr DOL cmt,POR-FLOR-STN-CUT AA"

DEPTH	LITHOLOGY

6600.00 6630.00 "LS ltbrn-tan,occ brn-dkbrn,tr crm-ltgybrn-wh,gran-vfxl-micsuc,occ crpxl,ooc-oom GRNST,tr scat PCKST AA,sl anhy/tr POR fl-vrr xln ANHY,rr tan CHT incl,sl dol/rr DOL cmt,POR-FLOR AA,g-fr ltbrn/scat brn-dkbrn-rr blk dd o STN,g fast stmg-sl blooming mlky CUT"

6630.00 6650.00 "LS tan-crm-ltbrn ip,occ wh-ltgy,tr brn,vfxl-gran-occ grdg to crpxl,tr micsuc-micxl,pred ooc-oom GRNST/sl incr dns sl ool-rr plty PCKST,sl incr chky-sl anhy/tr POR fl-xl ANHY,tr scat tan CHT frag,POR AA/incr inxl POR,fr-g mod bri/scat spty bri yel FLOR,fr-g ltbrn/v rr brn & blk STN,fr-g slow stmg mlky CUT "

6650.00 6680.00 "LS tan-ltbrn,occ brn,tr crm-wh,vfxl-gran-grdg to crpxl ip,tr micsuc,pred ooc-oom GRNST/tr dns sl ool-v rr plty PCKST,chky-sl anhy/tr POR fl-v rr xl ANHY,decr CHT AA,g-fr ooc-oom-intxl POR,g mod bri-bri yel FLOR,g-fr ltbrn-rr brn & blk pp dd o STN,g fast dif/tr mod fast stmg mlky CUT"

6680.00 6700.00 "LS AA,vfxl-gran-grdg to crpxl ip,tr micsuc,pred ooc-oom GRNST/tr scat-occ intbd thn PCKST AA,chky-sl anhy/tr POR fl-v rr xl ANHY,rr tan-crm-occ trnsl CHT frag,POR-FLOR AA,g-fr ltbrn-rr brn & vrr blk pp dd o STN,g mod fast-tr fast stmg mlky CUT"

6700.00 6730.00 "LS tan-ltbrn/occ crm incl,occ brn,rr ltgybrn & wh,vfxl-gran-sl micsuc,occ crpxl,ooc-oom GRNST,tr scat PCKST AA,sl chky-anhy/tr POR fl,rr xln ANHY incl,tr CHT AA,v sl dol/rr DOL cmt,g-fr ooc-oom-intxl POR,g mod bri/scat bri yel FLOR,STN AA,CUT AA "

6730.00 6750.00 "LS AA,pred ooc-oom GRNST/scat PCKST AA,tr tan CHT frag-incl,sl chky-anhy/tr POR fl-v rr xln ANHY frag,sl dol/rr DOL cmt strk,POR-FLOR-STN-CUT AA"

6750.00 6780.00 "LS tan-ltbrn/tr crm incl,incr brn,rr wh,tr brn,gran-vfxl-micsuc,tr crpxl-micxl,pred ooc-oom GRNST/tr dns sl ool-v rr plty PCKST,sl chky-anhy/rr POR fl-xl ANHY,rr CHT AA,g ooc-oom/tr intxl POR,g mod bri-scat bri yel FLOR,g ltbrn- incr brn/tr scat dkbrn-rr blk dd o STN,g slow-mod fast stmg mlky CUT"

6780.00 6800.00 "LS AA,pred ooc-oom GRNST/tr scat PCKST AA,sl incr chk/POR fl-tr xl ANHY incl,rr tan CHT frag-incl,v sl dol ip/rr DOL cmt,g ooc-oom-intxl POR,g even mod bri-scat bri yel FLOR,g ltbrn-scat brn/tr dkbrn-rr blk pp dd o STN,g mod fast stmg mlky CUT"

6800.00 6840.00 "LS tan-ltbrn-crm,occ brn,rr wh,vfxl-gran-sl micsuc,tr crpxl-micxl,pred ooc-oom GRNST/tr dns sl ool-v rr plty PCKST,sl chky-anhy/tr POR fl-xl ANHY,rr scat tan CHT frag,POR-FLOR AA,fr-g ltbrn-tr brn/v rr dkbrn-blk STN,g fast stmg-sl blooming mlky CUT"

6840.00 6860.00 "LS AA,pred ooc-oom GRNST/incr scat dns sl ool-tr thn plty PCKST,incr chky-sl anhy/tr POR fl-rr xln ANHY,vrr tan-crm CHT,occ v sl dol ip,g-fr ooc-oom/tr intxl POR,g even mod bri-bri yel FLOR,g-fr ltbrn/tr brn STN,r dkbrn-vrr blk pp dd o STN,g fast dif/tr mod fast stmg mlky CUT"

6860.00 6870.00 "LS AA,pred ooc-oom GRNST,sl decr PCKST AA,decr chky-sl anhy/tr POR fl-rr xln ANHY,tr tan-crm CHT frag,v sl dol ip,POR-FLOR-STN-CUT AA"

6870.00 6900.00 "LS tan-crm-ltbrn,occ brn,rr wh,vfxl-micxl-gran,sl micsuc,occ crpxl,pred ooc-oom GRNST/scat dns sl ool-plty PCKST,incr chky-sl anhy/POR fl-rr xl ANHY,rr CHT AA,incr dol ip/tr DOL cmt,fr-g ooc-oom-intx POR,g- fr even dull-mod bri/tr scat bri yel FLOR,fr-g ltbrn-tr brn/rr blk STN,fr-g slow stmg mlky CUT"

6900.00 6920.00 "LS AA,pred ooc-oom GRNST/incr scat thn chky plty frag-tr dns sl ool PCKST,sl incr anhy/tr POR fl & v rr xln ANHY frag,sl dol/tr DOL cmt,POR-FLOR-STN-CUT AA"

DEPTH	LITHOLOGY

6920.00 6950.00 "LS AA,vfxl-micxl-crpxl,gran-sl micsuc,pred ooc-oom GRNST/scat dns sl ool-rr plty PCKST,chky-sl anhy/POR fl-rr xl ANHY,tr tan-crm CHT,vsl dol ip,fr-g ooc-oom-intxl POR,g-fr even dull-mod bri/tr scat bri yel FLOR,fr-g ltbrn/tr brn STN,g mod fast stmg CUT"

6950.00 6980.00 "LS AA,pred ooc-oom GRNST/scat dns sl ool-tr chky plty PCKST,tr tan CHT frag-incl,sl chky-anhy/tr POR fl-vrr xln ANHY frag,sl dol/rr DOL cmt strk,POR-FLOR-STN-CUT AA"

6980.00 7000.00 "LS tan-crm,occ ltbrn,rr brn,wh,vfxl-micxl-gran,sl micsuc,occ crpxl,pred GRNST AA,scat-occ intbd PCKST AA,chky-sl anhy/POR fl-rr xl ANHY,sl incr tan-crm CHT,occ dol ip/tr DOL cmt,fr-g ooc-oom-intx POR,FLOR-STN AA,g mod fast-slow stmg mlky CUT"

7000.00 7030.00 "LS tan-crm-ltbrn,tr brn,wh,vfxl-micxl-gran,sl micsuc,occ crpxl,pred GRNST AA,tr scat dns sl ool-thn plty PCKST,sl incr chky-sl anhy/POR fl,rr xln ANHY incl,tr CHT AA,bcmg sl incr dol/tr DOL cmt,POR AA,g even mod bri/scat bri yel FLOR,fr-g ltbrn STN/rr brn-dkbrn STN,g mod fast-fast stmg mlky CUT"

7030.00 7060.00 "LS tan-ltbrn-crm,tr brn,wh,vfxl-gran-micxl,occ crpxl-sl micsuc,pred ooc-oom GRNST/tr dns sl ool-thn plty PCKST,chky-sl anhy/sl incr POR fl-tr xl ANHY,incr tan-crm CHT,vsl dol,fr-g ooc-oom-intxl POR,FLOR AA,fr-g ltbrn/tr brn STN,g mod fast stmg CUT"

7060.00 7079.00 "LS AA,pred ooc-oom GRNST,scat dns sl ool-tr thn plty PCKST,chky-sl anhy AA,scat tan-crm CHT,sl dol/rr DOL cmt strk,POR-FLOR-STN-CUT AA"

FORMATION TOPS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #18-33 SE 1-A HORIZONTAL LATERAL LEG #2

FORMATION NAME		SAMPLES MEASURED DEPTH	SAMPLES TRUE VERTICAL DEPTH	DATUM KB:4820'
LOWER ISMAY		5532'	5532'	-712'
GOTHIC SHALE		5606'	5591'	-772'
DESERT CREEK		5633'	5610'	-790'
DC 1-A ZONE		5656'	5615'	-795'

GEOLOGICAL SUMMARY

AND

ZONES OF INTEREST

The Mobil Exploration and Production U.S. Inc., Ratherford Unit #18-33 Southeast Horizontal Lateral Leg #2 was a re-entry of the Mobil Ratherford Unit #18-33 located in Section 18, T41S, R24E. Milling of the Southeast Lateral Leg #2 was begun on January 13, 1998. The curve section was completed on January 16, 1998, at a measured depth of 5694', 5622.41' true vertical depth, 7 feet into the 1-A porosity and the lateral section was begun in the 1-A porosity zone also on January 16, 1998. The lateral reached a measured depth of 7097', true vertical depth of 5610.14', with a horizontal displacement of 1500.59' and an azimuth of 126 degrees, on January 18, 1998 in the upper Desert Creek 1-A zone. Only two minor problems were encountered while drilling this lateral; the first occurred early in the curve section at a measured depth 5542', when it was determined that not enough angel was being built in order to land the curve in the proposed zone. The MWD, Motor pad and bit were subsequently tripped out of the hole and changed. The second problem became apparent later in the lateral section with a gradual slow decrease in the drill rate from less than a minute per foot to as high as four minutes a foot, at a measured depth of 6735'-6810', 5610'-5608' TVD. This slight decrease in drill rate was attributed to cuttings building up in the hole because of the previously mentioned fast drill rate. Working the drill pipe string and circulating out the cuttings rectified the problem. No significant water flows were encountered while drilling this lateral in the 1-A porosity zone. This lateral used fresh water with polymer sweeps as the drilling fluid, with minor amounts of oil added to the drilling fluid to facilitate the rotating and sliding of the drill pipe. The background gases noted on the accompanying mud log were moderately high and continuous through out the lateral section due to the add oil to the mud system. A steady 15'-20' flare was also noted during the drilling and occasionally reaching the 20'-25' length at connections. The cuttings samples had moderately fair to occasionally good oil shows through out the 1-A zone drilled.

The primary objective of the Ratherford Unit #18-33 Leg 2 horizontal lateral was the lithology type, effective porosity and reservoir properties in the 1-A zone of the Desert Creek Member of the Upper Paradox Formation. The basal Upper Ismay, the entire Lower Ismay, Gothic Shale and the transition zone at the top of the Desert Creek were penetrated while drilling the curve section. Kick off point for this lateral was at a measured depth of 5500', 5500' true vertical depth, near the base of the Upper Ismay member of the Paradox Formation.

The top of the Upper Ismay was not seen in the curve section, but was picked at a measured depth of 5445' on the electric log from the vertical well bore. The lithology of the Upper Ismay seen in the curve section of this well, was predominately tan to light brown to brown, occasionally light gray to gray brown and white to cream, with a trace of dark brown, cryptocrystalline to microcrystalline, chalky to clean and slightly argillaceous to occasionally dolomitic, with scattered dark brown, marly streaks, and had scattered anhydrite crystals and occasional fracture filling. Near the base of the Upper Ismay were thin interbedded brown, cryptocrystalline, very slightly limy, occasionally argillaceous to clean dolomites and streaks of dark brown, limy to dolomitic marlstone. Tan to some dark brown to smoky gray chert fragments and thin laminations of dark gray to black, slightly carbonaceous shale was also noted in Upper Ismay. No significant gas increases and only mineral fluorescence, with no visible staining were noted in the limestones and very thin dolomites. The Hovenweep marker at the base of the Upper Ismay was very poorly developed in this lateral and was seen as a very dark brown to dark gray brown, marly limestone with interbedded black carbonaceous shale, and dark brown, argillaceous, microcrystalline, very shaly dolomites which graded in to the very thin black carbonaceous shales of the Hovenweep.

The Lower Ismay top was picked at 5532' measured depth, 5532' true vertical depth, and was based primarily on the slight change in lithology as well as comparison to the well log from the original well bore. The Lower Ismay was predominately a limestone, which was cream to white to tan, brown to medium brown, and occasionally light to dark gray brown, cryptocrystalline to microcrystalline, dense to clean, occasionally slightly chalky, slightly fossiliferous, with some marly and slightly silty streaks. Thinly laminated through out the Lower Ismay were brown, cryptocrystalline, slightly argillaceous, occasionally very silty, limy, dense dolomites. Interbedded through out the Lower Isamy were brown to translucent chert and thin black carbonaceous shale partings. No shows were noted in these limestones or dolomites. With depth the limestones of the Lower Ismay became increasingly lighter in color, with white to cream to light gray predominate. Within the middle to lower sections of the Lower Ismay the cream to light gray limestones became slightly sandy and very limy siltstones were noted as very thin interbeds and laminations. These siltstones had very limestone rich cement and graded to a very silty to very slightly sandy limestone but displayed no shows. The basal 6' to 10' of the Lower Ismay to the top of the Gothic Shale, had limestones which became increasingly shaley and graded to a medium brown to medium gray, dense, slightly anhydritic, increasingly shaly, light to medium brown, cryptocrystalline, very argillaceous to clean, dense dolomite, overlaying the very limy to dolomitic, black to dark gray brown, carbonaceous shale of the Gothic.

The top of the Gothic Shale was encountered at 5606' measured depth, 5591' true vertical depth and was predominantly black to dark brown black to dark brown, silty, carbonaceous, soft to moderately firm, calcareous to slightly dolomitic and slightly micaceous. Scattered within the Gothic were very thin, cryptocrystalline to microcrystalline, earthy, limestone and dolomite partings to inclusions, with very rare scattered anhydrite crystals. The top of the Gothic was a fairly gradational contact with a decrease in penetration rate and an increase in shale noted. The base of the Gothic was marked by an abrupt decrease in penetration rate as well as a sharp lithology change. Only a slight gradual increase in the background gas was noted near the base of the Gothic Shale; unlike the first lateral drilled on the 15 of January when a large amount of gas was noted. The reason for the high increase in the first lateral was due to the oil added to the mud system while drilling the Gothic Shale, but by the second lateral the oil in mud system had stabilized. Although gas increases are noted in the Gothic Shale through out the Paradox Basin, no to very minor increases have been note in the Ratherford Unit to date.

The top of the Desert Creek is commonly picked at the base of Gothic Shale and composed of a transition zone facies change, which in this lateral occurred at a measured depth of 5633' and a true vertical depth of 5610'. The Desert Creek became further distinctive by a significant decrease in penetration rate and an increase in limestones and thinly interbedded dolomites in the samples. The lithology of the transition zone was primarily a tan to cream to white, occasionally light brown, cryptocrystalline to microcrystalline, predominately dense and tight with rare algal to oolitic material, interbedded with chalky platy partings, occasionally argillaceous to very slightly silty streaks in part, slightly anhydritic limestones with very thin carbonaceous shale partings and some crystalline anhydrite inclusions. Also thinly interbedded in the limestones were brown to medium, cryptocrystalline to microcrystalline, argillaceous, very limy dolomites. Only very rare intercrystalline to very rare pin point oolitic porosities were noted in the limestones and dolomites, with only a very spotty weak fluorescence, light brown stain, and a very poor slow diffuse to streaming cut. No to very minor gas increase were noted in the transition zone, above the 1-A porosity zone.

The top of the Desert Creek 1-A zone was picked at 5656' measured depth, 5615' true vertical depth based on sample identification and the significant increase in the penetration rate. The 1-A porosity zone seen in the curve section was an oolicastic to oomoldic, tan to light brown and became increasing brown as drilling continued laterally, microcrystalline to very finely crystalline limestone grainstone, with a granular to microsucrosic to traces of sucrosic texture, very rare scattered translucent to clear chert fragments were noted, scattered anhydrite crystals to inclusions and some

porosity filling, with a dolomite rich cement and had oomoldic to oolicastic to intercrystalline porosity development. Scattered with in the very good, porous oolitic grainstones were thin, white to cream, tight, dense, slightly oolitic limestone packstones, and rare, slightly oolitic, medium to dark brown, microcrystalline to microsucrosic, anhydritic dolomites with no to very poor visible porosity development and had no visible sample show. The top of the 1-A zone was approximately 1' below the top of the 1-A zone noted on the porosity log for this well.

The curve section was completed at a measured depth of 5694', 5622.4' true vertical depth, at a vertical section (horizontal displacement) of 117', in the oolicastic to oolmoldic limestone grainstone porosity, 4.4' below the proposed target line, with an 88.3 degree angle. This low landing of the curve had little consequences, because this particular lateral was characterized by a rather fortuitous 11'-12' thick 1-A porosity zone with a relatively gentle up dipping trend. The well bore remained at fairly level angle for approximately the first 600' and finally began to build an upward angle, following the regional trend, as result of rotation and not due to sliding (orientation). The lithology of the 1-A zone through this section was predominately interbedded oolicastic to oolmoldic limestone grainstones with very thin scattered dense occasionally oolitic to platy and chalky limestone packstones and very rare scattered translucent to buff to tan chert fragments, that increased with depth. Included in this good oolicastic to oolmoldic porosity zone were some minor anhydrite porosity filling and very rare anhydrite crystal inclusions. The sample shows had a good even bright to moderately bright yellow fluorescence, good medium to light brown stain, with scattered dark brown and black dead oil stain, resulting in a good blooming to fast streaming milky cut. The continual rotation while drilling the lateral created a slight upward build of the well path angle and while this remained low to the target line, the well bore remained in very good oolicastic to oolmoldic limestones. As the well bore was rotated ahead, the well path climbed on its own and appeared to have glanced off and than tracked along the top of the best porosity at a measured depth of 6553', with a horizontal displacement of 975', and a true vertical depth of 5610.79'.

The lithology near the top of the 1-A zone was characterized by slightly increasing tan to cream to light brown dense slightly oolitic to chalky platy limestone packstones and a sudden influx of tan to occasionally cream chert fragments as the well bore rebounded downward after touching the top. The packstones had no visible to a slight trace of intercrystalline porosity with anhydrite filled porosities, a slight trace to rare moderate bright to dull fluorescence, fair to moderately good light brown stain, resulting in a fair to very poor residual ring cut. Samples form this section also appeared to have been subjected to minor localized dolomitization with a trace of dolomitic rich cement. The downward trend of the well bore became subjected to a decrease in rate of penetration at a measured depth of 6711', 5610.43' true vertical depth with a horizontal displacement of 1,133', when drilling cuts began to fill the drill hole. This became apparent when the weight on bit decreased and the pump pressure increased, this situation continued over a 96' interval and concluded at a measured depth of 6807', 5608.20' true vertical depth with a horizontal displacement of 1,229', by working the drill pipe string and circulating the cuttings out. The well path than momentarily leveled out; but because of rotating ahead, began to slowly build angle within the good oolicastic to oolmoldic limestone. The well path reached the highest point of the lateral at a measured depth of 6964', 5606' true vertical depth with a horizontal displacement of 1,386', as a result of the continual rotation and probably approached the top of the 1-A zone for a second time. The calculated dip angle of 89.3 degrees indicated that the top of the 1-A porosity zone had decreased from the predicated 90.9 degree dip. The final 114' of vertical section proceeded in a downward trend as a result of both a down set orientation and slight encounter of the top of 1-A zone.

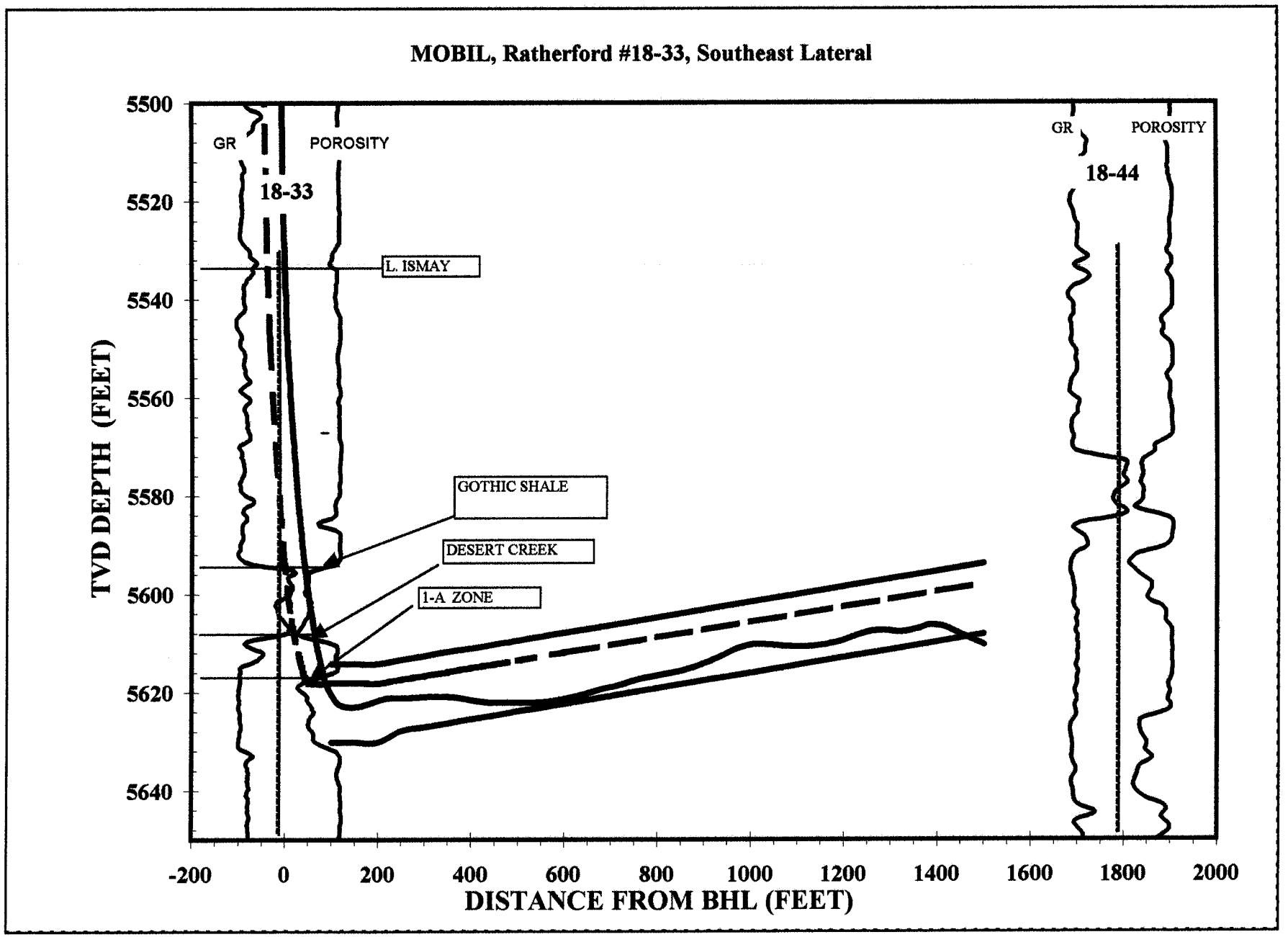
The well bore was drilled to termination approximately 12.2' below the proposed target line; however, the lateral section was drilled entirely in the 1-A porosity zone. The lithology throughout the length of 1-A zone porosity in this lateral remained fairly consistent with very minor variations in porosity type being noted. The lithology of the 1-A porosity zone from 975' to 1500' of horizontal displacement, termination of the lateral, remained predominately oolicastic to oolmoldic limestone grainstones, light to medium brown to tan, rare dark brown, microcrystalline to very finely crystalline, microsucrosic to occasionally sucrosic, with scattered anhydrite crystals to inclusions and some porosity filling, slightly dolomitic, with a trace of dolomite rich cement, and very thin, scattered cream to tan, cryptocrystalline, occasionally oolitic to very slightly fossiliferous limestone packstone inclusions to laminations.

The 1-A porosity zone of this particular lateral had good visible porosity and a good to fair sample show throughout the entire lateral drilled. The only questionable porosity noted was the very streaky porosity encountered as the lateral section was begun at a horizontal displacement of 67', 5640' measured depth with a true vertical depth of 5609.3', and ending at a measured depth of 5650', 5613.3' true vertical depth, and a horizontal displacement of 75'. The lithology through this interval had traces of streaks with oolicastic to oolmoldic limestone grainstones interbedded with chalky platy and dense tight limestone packstones, a fairly consistent characteristic of the Desert Creek transition zone.

The remaining 1,425' of the lateral can be characterized as good oolicastic to oolmoldic limestones with good to moderately good to fair porosity, and a varying amount of anhydrite and chalky porosity filling. The best gas show noted, at an average of 10,500 units, occurred later in the lateral, as the angle of the drill path began to build towards the 2' porosity streak encountered just below the top of the 1-A porosity zone, from 6337' to 6644' measured depths. The back ground gases in the lateral, after reacquiring the 1-A porosity at a measured depth of 6807' were only moderate (averaging 10,000 units), and with the background gases decreasing to an average of 8,500 units over the last 271' of the lateral. The top of the 1-A was encountered twice during the drilling of the lateral at the intervals discussed above; however, the base of the 1-A was never encountered. These occurrences of when and where the tops of the 1-A zone were encountered is determined by the decrease in penetration rate, the decrease in the angle of the well path, and the significant increase in the amount of packstones and chert in the samples. The lateral was terminated, at a measured depth of 7079', 5610.14' true vertical depth and a horizontal displacement of 1500' on January 18, 1998.

In tracking the well bore through the 1-A porosity bench, the intercrystalline to oolicastic to oolmoldic porosity was predominately very good, but did show some anhydrite and calcite porosity filling early in the lateral. There were only minor changes in rock classification, from predominately intercrystalline and oolitic porosities in the limestone grainstones to the tight limestone packstones in thin laminations and inclusions with in the 1-A porosity zone as well as near the top of the zone. Sample shows were predominated good and stayed fairly consistent throughout the length of the lateral. The background gases were steady through out the entire curve section, the lateral section, and only slightly increased when nearing the top of the 1-A from a horizontal displacement of 753' to 1,102', and then continued to decrease throughout out the rest of the lateral. This gas signature is a result of the mud system becoming stabilized with the added oil from the previous lateral. The effective or best porosity was associated with the oolicastic and oolmoldic to very minor algal limestone grainstone facies, which had fair to good intercrystalline to oolitic porosities. The majority of the grainstones showed only very minor amounts of porosity plugging (anhydrite to calcite). The well produced a moderate amount of gas with a minor amount of oil.

ROCKY MOUNTAIN GEO-ENGINEERING CORP. 2450 INDUSTRIAL BLVD. GRAND JUNCTION, CO 81505 (970) 243-3044



Form 3160-4
(July 1992)

RECEIVED
APR 10 1998
DIV. OF OIL, GAS & MINING

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*

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-353

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO TRIBAL

7. UNIT AGREEMENT NAME: RATHERFORD UNIT

8. FARM OR LEASE NAME, WELL NO.: 18-33

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other X SIDETRACK

2. NAME OF OPERATOR: MOBIL PRODUCING TX & NM INC.*
*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM

3. ADDRESS AND TELEPHONE NO.: P.O. Box 633, Midland TX 79702 (915) 688-2585

9. API WELL NO.: 43-037-31135

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 1870' FSL & 1980' FEL(NW/SE)
At top prod. interval reported below
At total depth: *#37

10. FIELD AND POOL, OR WILDCAT: GREATER ANETH

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: SEC. 18, T41S, R24E

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: SAN JUAN | 13. STATE: UT

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
12-27-97	1-19-98	2-27-98	4807' GR / 4820' KB	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
**#37	**#37		→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION - TOP, BOTTOM, NAME (MD AND TVD)*
**#37 DSCR

25. WAS DIRECTIONAL SURVEY MADE: YES

26. TYPE ELECTRIC AND OTHER LOGS RUN: NO

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"	54.5# K55	125'	17 1/2"	SURFACE / 150 SXS	
9 5/8"	36# K55	1630'	12 1/4"	SURFACE / 600 SXS	
7"	23 & 26# K55	5687'	8 1/2"	2000' CALC / 700 SXS	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8"	5396'	5396'

31. PERFORATION RECORD (Interval, size and number)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5723-7079'	LAT #2A1 / ACIDIZE W/5544 GALS 15% HCL & 39312 GALS SXE ACID
5700-6974'	LAT #1A1 / ACIDIZE W/5124 GALS 15% HCL & 36162 GALS SXE ACID

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping - size and type of pump)	WELL STATUS (Producing or shut-in)
2-26-98	2 1.2"X2"X24' PUMP	PRODUCING

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL - BBL.	GAS - MCF.	WATER - BBL.	GAS - OIL RATIO
2-27-98	24			36	23	22	639

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
DIRECTIONAL SURVEY

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

SIGNED Sue Moseley for TITLE SHIRLEY HOUCHINS/ENV & REG TECH DATE 4-7-98

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

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

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.
*#4		LAT #1A1	979' NORTH & 1002' WEST FROM SURFACE SPOT.
		LAT #2A1	988' SOUTH & 1129' EAST FROM SURFACE SPOT.
**#20, 21 & 24		LAT #1A1	(5517-6979' TMD)(5517-5621' TVD)
		LAT #2A1	(5500-7079' TMD)(5500-5610' TVD)

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH

U.S. GOVERNMENT PRINTING OFFICE: 1992-774-672

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

ENTITY ACTION FORM - FORM 6

OPERATOR MOBIL PRODUCING TX & NM, INC.

ADDRESS P. O. BOX 633
MIDLAND, TX 79702

OPERATOR ACCT. NO. N 7370

ACTION CODE	CURRENT ENTITY NO.	NEW ENTITY NO.	API NUMBER	WELL NAME	WELL LOCATION QQ	SC	TP	RG	COUNTY	SPUD DATE	EFFECTIVE DATE
B	99999	06280	43-037-31135	RATHERFORD #18-33	NW/SE	18	41S	24E	SAN JUAN	12-27-97	2-27-98
WELL 1 COMMENTS: Entity added 4-15-98. fec (Ratherford Unit)											
WELL 2 COMMENTS:											
WELL 3 COMMENTS:											
WELL 4 COMMENTS:											
WELL 5 COMMENTS:											

ACTION CODES (See instructions on back of form)
- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (explain in comments section)

NOTE: Use COMMENT section to explain why each Action Code was selected.

(3/89)

RECEIVED
APR 10 1998
DIV. OF OIL, GAS & MINING

Lucy Mosley for
Signature SHIRLEY HOUGHINS
ENV & REG TECH
Title
4-7-98
Date
Phone No. (915) 688-2584

RECEIVED
APR 10 1998
DIV. OF OIL, GAS & MINING

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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

5. Lease Designation and Serial No.: 14-20-603-353
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT
8. Well Name and No.: RATHERFORD 18-33
9. API Well No.: 43-037-31135
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other
2. Name of Operator: MOBIL PRODUCING TX & NM INC.*
*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM
3. Address and Telephone No.: P.O. Box 633, Midland TX 79702 (915) 688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SECTION 18, T41S, R24E
NW/SE 1870' FSL & 1980 FEL

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

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[ ] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other SIDETRACK	[ ] 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 depths for all markers and zones pertinent to this work.)*

BHL:
LATERAL #1: 979' NORTH & 1002' WEST F/SURFACE SPOT (ZONE 1A)
LATERAL #2: 988' SOUTH & 1129' EAST F/SURFACE SPOT (ZONE 1A)

SEE ATTACHED (2-27-98 COMPLETION)

14. I hereby certify that the foregoing is true and correct
Signed Kee Moseley for Title SHIRLEY HOUCHINS/ENV & REG TECH Date 4-7-98

(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**

04/23/98
RJK

DRILLED FOOTAGE CALCULATION FOR DIRECTIONAL AND HORIZONTAL WELLS

Unit, Well Name:	Ratherford Unit, Well 18-33
Surface Location:	1870' FSL, 1980' FEL(NW/SE), Sec. 18, T. 41S, R. 24
API Well #:	14-037-15737
Well Completion:	Horizontal, Producer, 2 Laterals

First leg description:		Lateral #1A1
Kick Off Point	KOP MD:	5508.00
End of Leg	EOL MD:	6979.00
	Footage drilled:	1471.00
Maximum Recorded Depth		5627.93

Second leg description:		Lateral #2A1
	KOP MD:	5510.00
	EOL MD:	7079.00
	Footage drilled:	1569.00
Maximum Recorded Depth		5622.77

Total Footage Drilled (MD):	***3040.00***
Deepest point (TVD):	***5627.93***

Mobil

San Juan County
Utah
Ratherford Unit
RU 18-33 - MWD Survey Leg 1

SURVEY REPORT

5 February, 1998

sperry-sun
DRILLING SERVICES
A [illegible] COMPANY

Survey Ref: svy2290

Sperry-Sun Drilling Services

Survey Report for RU 18-33

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
Gyro							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
100.00	0.170	262.330	100.00	0.02 S	0.15 W	0.09	0.170
300.00	0.150	211.760	300.00	0.28 S	0.58 W	0.21	0.069
500.00	0.160	212.390	500.00	0.74 S	0.87 W	0.09	0.005
700.00	0.170	229.630	700.00	1.17 S	1.24 W	0.05	0.025
900.00	0.310	251.650	900.00	1.53 S	1.98 W	0.32	0.083
1100.00	0.470	280.980	1099.99	1.55 S	3.30 W	1.24	0.125
1300.00	0.680	295.560	1299.98	0.88 S	5.18 W	3.04	0.127
1500.00	0.970	319.140	1499.96	0.92 N	7.35 W	5.85	0.220
1700.00	0.900	317.630	1699.93	3.36 N	9.52 W	9.11	0.037
1900.00	0.850	312.450	1899.91	5.52 N	11.67 W	12.16	0.047
2100.00	0.630	292.690	2099.89	6.94 N	13.78 W	14.66	0.167
2300.00	0.630	277.340	2299.88	7.51 N	15.89 W	16.54	0.084
2500.00	0.230	268.830	2499.88	7.64 N	17.38 W	17.69	0.202
2700.00	0.110	147.370	2699.88	7.47 N	17.68 W	17.78	0.151
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3100.00	0.390	137.790	3099.87	6.25 N	15.31 W	15.25	0.143
3300.00	0.260	172.440	3299.86	5.30 N	14.80 W	14.21	0.115
3500.00	0.310	177.910	3499.86	4.31 N	14.72 W	13.45	0.028
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4700.00	0.480	165.620	4699.83	3.88 S	13.36 W	6.70	0.015
4900.00	0.280	172.020	4899.83	5.17 S	13.08 W	5.59	0.102
5100.00	0.220	163.870	5099.82	6.03 S	12.91 W	4.87	0.035
5300.00	0.160	358.390	5299.82	6.12 S	12.81 W	4.73	0.189
5500.00	0.870	27.130	5499.81	4.49 S	12.12 W	5.40	0.367
MWD Survey Leg 1							
5508.00	0.880	20.820	5507.81	4.38 S	12.08 W	5.44	1.210
5517.00	4.500	315.000	5516.80	4.06 S	12.30 W	5.83	46.850
5527.00	8.900	325.900	5526.73	3.14 S	13.01 W	6.98	45.606
5537.00	13.500	329.300	5536.54	1.50 S	14.04 W	8.87	46.452
5547.00	18.500	330.900	5546.15	0.89 N	15.41 W	11.53	50.189
5557.00	23.500	331.900	5555.48	4.04 N	17.12 W	14.96	50.127
5567.00	28.500	332.600	5564.47	7.92 N	19.16 W	19.15	50.093
5577.00	34.000	333.100	5573.01	12.54 N	21.53 W	24.08	55.061
5587.00	39.800	333.500	5581.01	17.90 N	24.22 W	29.78	58.049
5597.00	45.300	333.800	5588.37	23.96 N	27.22 W	36.19	55.037

Continued...

Sperry-Sun Drilling Services

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Mobil
San Juan County

Utah
Ratherford Unit

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5607.00	50.400	334.100	5595.08	30.61 N	30.47 W	43.20	51.048
5617.00	54.300	333.700	5601.19	37.72 N	33.96 W	50.69	39.128
5627.00	58.400	332.200	5606.73	45.13 N	37.74 W	58.60	42.857
5637.00	62.800	330.400	5611.64	52.77 N	41.93 W	66.96	46.708
5647.00	68.100	329.800	5615.79	60.65 N	46.46 W	75.74	53.280
5657.00	73.100	329.800	5619.11	68.80 N	51.21 W	84.86	50.000
5667.00	77.900	329.700	5621.61	77.16 N	56.08 W	94.22	48.010
5697.00	89.700	328.800	5624.85	102.75 N	71.31 W	123.08	39.446
5733.00	87.800	325.500	5625.63	132.98 N	90.83 W	158.25	10.575
5764.00	87.800	322.600	5626.82	158.05 N	109.01 W	188.84	9.348
5796.00	89.400	319.600	5627.60	182.95 N	129.10 W	220.65	10.622
5827.00	89.500	317.900	5627.90	206.25 N	149.53 W	251.58	5.493
5859.00	90.400	316.800	5627.93	229.79 N	171.21 W	283.55	4.441
5891.00	90.900	316.100	5627.57	252.98 N	193.26 W	315.54	2.688
5923.00	92.500	316.500	5626.62	276.10 N	215.36 W	347.51	5.154
5955.00	93.000	316.000	5625.08	299.19 N	237.46 W	379.47	2.208
5986.00	92.100	315.400	5623.70	321.35 N	259.09 W	410.44	3.488
6017.00	90.200	314.500	5623.08	343.25 N	281.02 W	441.43	6.782
6049.00	89.200	313.700	5623.25	365.52 N	304.00 W	473.42	4.002
6080.00	89.100	313.000	5623.71	386.80 N	326.54 W	504.41	2.281
6111.00	88.900	311.200	5624.25	407.58 N	349.54 W	535.36	5.841
6143.00	89.000	311.700	5624.84	428.75 N	373.52 W	567.29	1.593
6175.00	90.400	311.400	5625.00	449.98 N	397.47 W	599.23	4.474
6207.00	90.400	311.000	5624.78	471.06 N	421.54 W	631.16	1.250
6239.00	91.200	310.700	5624.33	491.98 N	445.75 W	663.08	2.670
6270.00	90.600	312.300	5623.85	512.52 N	468.96 W	694.01	5.512
6302.00	90.500	312.600	5623.54	534.12 N	492.57 W	725.98	0.988
6334.00	89.300	311.000	5623.60	555.45 N	516.43 W	757.93	6.250
6366.00	88.900	311.200	5624.10	576.48 N	540.54 W	789.85	1.398
6397.00	89.400	310.500	5624.56	596.75 N	563.98 W	820.77	2.775
6429.00	91.500	311.600	5624.31	617.77 N	588.11 W	852.69	7.408
6493.00	89.100	308.900	5623.97	659.11 N	636.95 W	916.45	5.644
6525.00	89.700	309.300	5624.31	679.29 N	661.78 W	948.28	2.253
6555.00	91.200	310.700	5624.07	698.57 N	684.76 W	978.17	6.839
6587.00	92.300	311.000	5623.09	719.49 N	708.96 W	1010.07	3.563
6618.00	91.900	310.700	5621.96	739.76 N	732.39 W	1040.97	1.613
6650.00	86.700	308.400	5622.35	760.12 N	757.05 W	1072.81	17.767
6682.00	86.300	308.000	5624.30	779.88 N	782.15 W	1104.52	1.766
6713.00	89.600	309.300	5625.41	799.22 N	806.34 W	1135.31	11.440
6745.00	90.800	308.200	5625.30	819.25 N	831.30 W	1167.11	5.087
6776.00	93.600	311.600	5624.11	839.12 N	855.06 W	1197.96	14.201
6808.00	93.300	312.100	5622.18	860.43 N	878.85 W	1229.85	1.820
6839.00	90.600	314.200	5621.13	881.61 N	901.45 W	1260.82	11.031
6871.00	90.100	314.200	5620.93	903.92 N	924.39 W	1292.81	1.562
6903.00	90.100	313.800	5620.88	926.15 N	947.41 W	1324.81	1.250

Continued...

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6945.00	90.400	314.000	5620.69	955.27 N	977.67 W	1366:80	0.858
6979.00	90.400	314.000	5620.46	978.89 N	1002.13 W	1400.79	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 315.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 6979.00ft.,
The Bottom Hole Displacement is 1400.89ft., in the Direction of 314.328° (True).

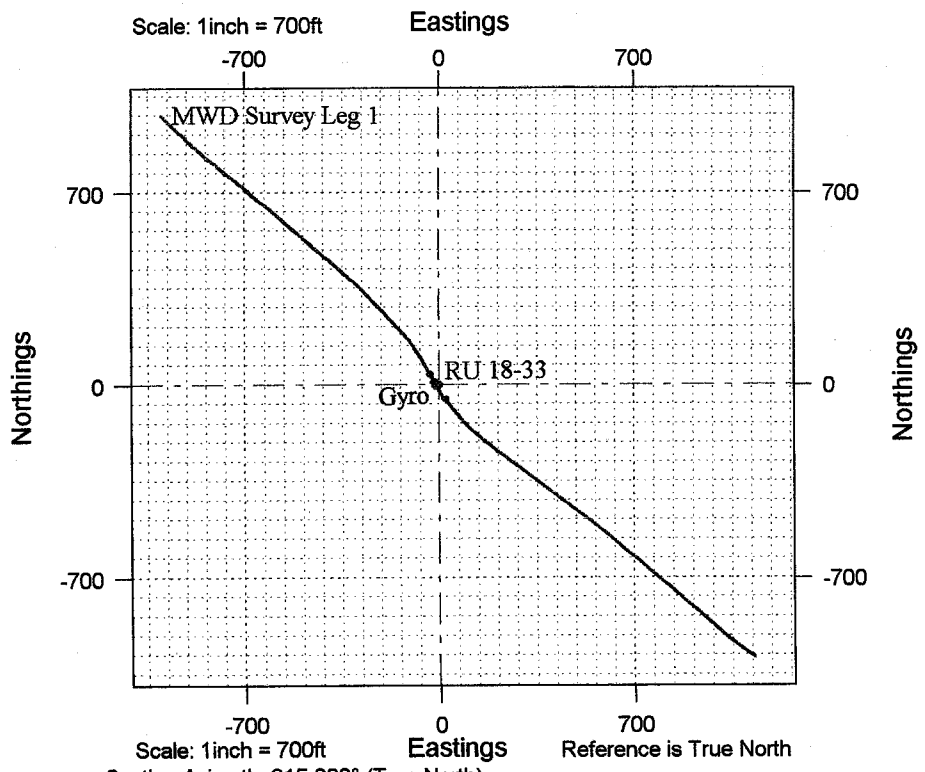
sperry-sun DRILLING SERVICES

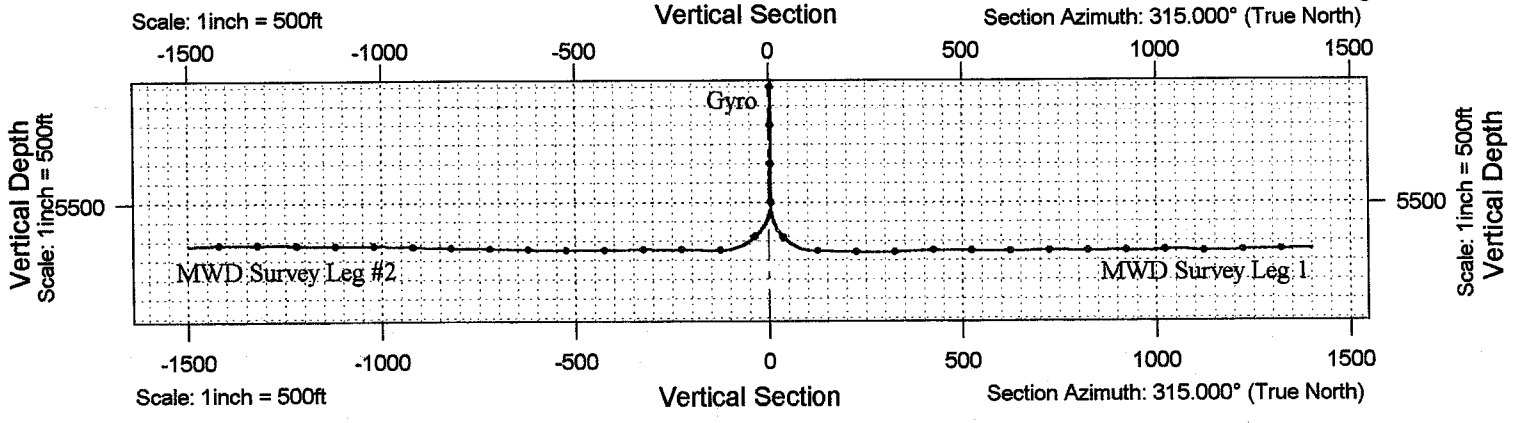
Mobil

DrillQuest

San Juan County
Utah
Ratherford Unit
RU 18-33 Legs #1 & #2

Mobil





Prepared:	Checked:	Approved:

ATTACHMENT - FORM 3160-5
RATHERFORD UNIT - WELL #18-33
14-20-603-353
NAVAJO TRIBAL
SAN JUAN, UTAH

12-27-97	CALLED NAVAJO EPA @ 10:47 ON 12-23-97, LEFT MESSAGE OF INTENT TO DIG & LINE SURFACE PIT FOR DRLG. CALLED BLM @ 10:49 ON 12-23-97, MESSAGE TO WAYNE TOWNSEND OF INTENT TO PREP WELL FOR DRLG RIG, SET CEMENT RETAINER & SQZ OF EXISTING PERFS. MOVE IN RIG UP NAVAJO RIG #36, CHANGE OUT TBG, SITP @ 9:30 WAS 1500 PSI. RIG UP & KILL WELL. NIPPLE DOWN WELL HEAD, NIPPLE UP BOPE. SWIFN.
12-28-97	SITP @ 7:30 WAS 0 PSI. SICP @ 7:30 WAS 0 PSI. RIG UP & TEST CSG TO 1000 PSI. OK. RELEASE PKR @ 5568.40'. CSG PRESSURE TO 1500 PSI. KILL WELL. CSG PRESSURE F/1500 TO 280 PSI. SIFN.
12-29-97	SIP @ 7:30 WAS 75 PSI. KILL WELL, RD F/PUMP. POOH & LD TBG & PKR. RIG UP WIRELINE. RIH W/GUAGE RING. LOG GAMMA RAY & CCL. SET CMT RET. @ 5565'. SI
12-30-97	FIN TIH W/TBG & STINGER STING INTO RET @ 5565'. PULL OUT OF RET. RIG UP DOWELL, CIRC HOLE, PULL OUT MIX & PUMP 50 SX GL-G W .4%D-156, 1%D-65, 50 SX CL-G NEAT, WITH CMT @ BTM OF TBG STING BACK SQZ PERFS .5BPM-840# UP TO 1645# S/D SQ HOLDING 1570# PULL OUT OF RET, REV OUT 7 BBLS CMT, REV CLEAN. LD TBG &: STINGER. N/D BOP, N/U WELLHEAD. SIFN
12-31-97	DIG OUT CELLAR CK. SURFACE HEAD, GOOD COND. REMOVE TBG HD, INSTALL NEW ONE & TEST TO 1500#, HELD GOOD, CLEAN LOCATION, FINAL REPORT PREP.
01-08-98	NOTIFED STATE OF UTAH, MIRU NAVAJO RIG #25.
01-09-98	FIN. RIGGING UP ROTARY RIG. RU BASIN WL. RIH W/TIW BIG BORE PKR. & WL SET TOP OF PKR @5526'. RDWL. TIH W/ANCHOR LATCH ASSY. PU DC'S & DP (RABBIT DP), CONT. PU DP & RIH TO 5500'. PUMP DN DP TO CLEAR PRIOR TO RIH W/GYRO. LATCH ANCHOR INTO PKR. RIH W/GYRO & TOOK READINGS PKR. GTF @ 300 & SURVEY TO SURFACE. RDWL, POOH W/ANCHOR LATCH ASSY. FINAL REPORT FOR RE-ENTRY.
01-10-98	PU TIH W/TIW LATCH ASSY. TOP OF BIG BORE TIW PKR @ 5526', TOP OF WHIPSTOCK @ 5508', TOP OF WINDOW @ 5507', BTM OF WINDOW @ 5516'., DRILL 1' FORMATION TO 5517'. PUMP SWEEP & CIRC OUT. POOH W/MILLS & LD SAME. FINAL REPORT FOR LATERAL 1 PREP.
01-11-98	LATERAL 1A1, TIH W/CURVE BLDG ASSY. DRILL CURVE F/5517-5697'. CIRC SWEEP. LAST SURVEY @ TD 5667' MD, 77.90. ANGLE, 32970 AX.M 5621.61 TVD, 94.21 VS. PROJECTED @ 5697' MD, 90 ANGLE, 329.70 AZ., 5624.76 TVD, 123.02 VS.
01-12-98	CIRC. SWEEP OUT. POOH LD AOHDP. & CURVE BLDG ASSY. PU LATERAL BLDG ASSY. & ADDITIONAL PH-6 TBG. SLIDE/ROTATE DRILL & SURVEY F/5697-6463'.
01-13-98	SLIDE & ROTATE DRILL LATERAL 1A1 F/6463-6979' TMD, TD. 90.4 ANGLE, 314 DIRECTION, 5620' TVD, 1400' VS. POLYMER SWEEP & CIRC HOLE CLEAN. POOH & LD MWD & MUD MOTOR, RIH W/SUPER HOOK, CAUGHT & SHEARED WHIPSTOCK @ 5510', POOH W/WHIPSTOCK. FINAL REPORT FOR LATERAL 1A1.

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RATHERFORD UNIT - WELL #18-33
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SAN JUAN, UTAH
PAGE 2

01-14-98	LATERAL #2A1 / RIH W/WHIPSTOCK, CUT WINDOW F/5491-5493' W/STARTING MILL, POOH RIH W/WINDOW & WATERMELLON MILLS, CUT WINDOW F/5491-5498'.
01-15-98	MILL WINDOW F/5498-5499 & 1' FORMATION TO 5500'. POLY SWEEP & CIRC CLEAN. POOH & LD MILLS. FINAL PREP LATERAL #2A1.
01-15-98	RIH W/CURVE DRILLING ASSY, CIRC OUT GAS, RIH W/GYRO, TIME DRILL & SLIDE CURVE LATERAL 2A1 F/5500-5534'.
01-16-98	CONTINUE SLIDE DRILL CURVE W/GYRO F/5534-5694', LANDED CURVE @ ANGLE 90 DEG. DIRECTION 142 DEG, 5622' TVD., VS 117'. POLYMER SWEEP & CIRC CLEAN, POOH W/CURVE ASSY.
01-17-98	RIH W/LATERAL ASSY., CIRC OUT GAS, DRILL LATERAL 2A1 F/5694-6667'.
01-18-98	CONTINUE SLIDE & ROTATE DRILL LATERAL 2A1 F/6667-7079' TD LATERAL #2A1. POLYMER SWEEP, CIRC CLEAN. DISPLACE HOLE W/BRINE WTR, KILL WELL, POOH & LD LATERAL ASSY, RIH W/7" GUIBERSON RBP & 2 7/8" PH-6 & AOHDP, SET RBP @ 5374', PRESS TEST RBP & CSG TO 750#, HELD OK. POOH & LD AOHDP & PH6 TBG.
01-19-98	FIN POOH LD DP & DC'S, ND BOP & CAP WELL W/FLANGED WELLHEAD, RIG DOWN, FINAL REPORT LATERAL #2A1 FINAL REPORT, PENDING COMPLETION

COMPLETION

02-12-98	CALL DIANA BAUER & INFORM OF INTENT TO COMPLETE WELL, MIRU NAVAJO WEST RIG #36. SIP @ 10:30 WAS 0 PSI. NIPPLE DN WELLHEAD CAP NIPPLE UP BOPE. MAKE UP RETV. HD FOR BRIDGE PLUG. PICK-UP & TALLY IN HOLE TO 5374' REL. PLUG. POOH TO 2500. SIFN.
02-13-98	SIP @ 7:30 WAS 750 PSI. FLOW WELL TO TEST TANK. RU & KILL WELL. FIN. OUT OF HOLE W/BRIDGE PLUG. RIH W/ TAIL PIPE & PKR. SET PKR @ 5414.65'. TEST PKR TO 500 PSI. OK. MIRU DOWELL COILED TBG. UT & PUMP TRUCKS. SIFN.
02-14-98	FIN RU DOWELL CT PACK-OFF. SITP @ 2AM WAS 700 PSI. RIH W/CT TO 5705'. POOH RIG DN COILED TBG UT. RIH W/PH-6 PIPE TO 5723'. RIH W/CT TO 7079'. ACIDIZE LATERAL #2A1 F/5723-7079'. W/5544 GAL OF 15% HCL AND 39312 GALS OF SXE ACID.
02-15-98	POOH W/COILED TBG. RD CT UT. SITP @ 6 AM WAS 1000 PSI. OPEN TO TEST TANK. FLOW WELL TO TEST TANK. SWIFN.
02-16-98	SITP @ 6AM WAS 1200 PSI. OPEN TO TEST TANK. KILL WELL, RELEASE PKR POOH TO 5357' POOH & LD. PICK-UP RETV. TOOLS FOR WHIPSTOCK, LATCH ONTO @ 5491' & REL. SWIFN.
02-17-98	SIP @ 7:30 WAS 800 PSI. SITP @ 7:30 WAS 800 PSI. RU TO PUMP. KILL WELL, POOH W/WHIPSTOCK, LD WHIPSTOCK. RIH W/OPEN END TBG TO 3800'. (KILL STRING) SIFN.
02-18-98	SIP @ 7:30 WAS100 PSI. SITP @ 7:30 WAS 100 PSI. RU & KILL WELL. MAKE UP RETV WHIPSTOCK. ORIENT WHIPSTOCK TO 315 DEG. WINDOW AZ. 200 DEG. PKR AZ. LD EXTENSION. RIH TO 5516'. SET RETV WHIPSTOCK. POOH LD RUNNING TOOLS. PICK-UP RIH W/TAILPIPE, PKR & PH-6 TBG TO 5698.89', PKR DEPTH OF 5414'. SIFN
02-19-98	SIP @ 7:30 WAS 0 PSI. RU & DISPLACE ANN W/FRESH WTR. SET GUIBERSON UNI PKR VI @ 5414.45'. ENDOF TAIL PIPE @ 5698.89'. TEST PKR TO 1000 PSI. OK. SIFN.

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PAGE 3

02-20-98	MIRU DOWELL COILED TBG. UT. RIH W/COILED TBG TO 5700' CIRC TO 6979'. ACIDIZE LATERAL 1A1 F/5700-6974' W/5124 GALS 15% HCL. AND 36162 GALS OF SXE ACID., DISIPLACE W/FRESH WTR. POOH W/CT UT.
02-21-98	OPEN WELL TO TEST TANK & FLOW WELL. SHUT WELL IN. RIG UP & KILL WELL, REL PKR PULL TO 5500 (+-). WELL FLOWING ON ANN COULD NOT KILL. SHUT IN UNTILL MONDAY.
02-23-98	WHP=900. OPEN WELL & FLOW BACK TO TANK. KILL WELL. SIFN.
02-24-98	TBG DEAD, CSG=100 BLED GAS OFF TO FLUID FLOWING ON 85# KILL ANN. SD PULLING OPERATIONS DUE TO HIGH WINDS. CSG BUILT TO 150#, RET. MUD F/18-12. SI & SDFN.
02-25-98	TBG=0, CSG=300, OPEN & BLED OFF P/U RET. TOOL TIH W/RET. W/S TOOL, L/D CHANGE OUT PUMP & HOOK LINES. L/D WORK STRING. SI & SDFN.
02-26-98	FIN TOH LD PH-6 W/S & WHIPSTOCK TOOLS, PU GUIB G-6 PKR, TIH W/ 2 7/8" TBG, SET PKR @ 5396.28', CIRC HOLE W/PKR FLUID. SI & SDFN.
02-27-98	RIG DN UT & AUX EQUIP. TURN TO PRODUCTION.

Mobil

San Juan County
Utah
Ratherford Unit
RU 18-33 - R.U. 18-33 Leg #2

SURVEY REPORT

17 February, 1998

sperry-sun
DRILLING SERVICES
A DIVISION OF DRESSER INDUSTRIES, INC.

Survey Ref: svy2305

Sperry-Sun Drilling Services

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Mobil
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3500.00	0.310	177.910	3499.86	4.31 N	14.72 W	-14.04	0.028
3700.00	0.320	178.130	3699.86	3.21 N	14.68 W	-13.31	0.005
3900.00	0.320	171.030	3899.85	2.10 N	14.57 W	-12.51	0.020
4100.00	0.450	168.600	4099.85	0.78 N	14.33 W	-11.48	0.065
4300.00	0.450	172.620	4299.84	0.77 S	14.08 W	-10.29	0.016
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4700.00	0.480	165.620	4699.83	3.88 S	13.36 W	-7.74	0.015
4900.00	0.280	172.020	4899.83	5.17 S	13.08 W	-6.70	0.102
5100.00	0.220	163.870	5099.82	6.03 S	12.91 W	-6.01	0.035
5300.00	0.160	358.390	5299.82	6.12 S	12.81 W	-5.88	0.189
5500.00	0.870	27.130	5499.81	4.49 S	12.12 W	-6.40	0.367
MWD Survey Leg #2							
5510.00	6.800	143.300	5509.79	4.89 S	11.74 W	-5.84	72.258
5520.00	11.400	146.800	5519.66	6.20 S	10.84 W	-4.32	46.311
5530.00	15.800	148.400	5529.38	8.18 S	9.59 W	-2.08	44.156
5540.00	20.300	149.300	5538.89	10.84 S	7.99 W	0.85	45.085
5550.00	25.500	150.000	5548.10	14.19 S	6.02 W	4.51	52.070
5560.00	31.500	150.400	5556.88	18.33 S	3.65 W	8.99	60.030
5570.00	36.900	150.800	5565.15	23.23 S	0.90 W	14.25	54.047
5580.00	40.400	146.800	5572.96	28.56 S	2.34 E	20.16	42.987
5590.00	43.200	139.300	5580.42	33.88 S	6.35 E	26.64	57.259
5600.00	47.800	134.700	5587.42	39.08 S	11.22 E	33.72	56.479

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 18-33

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5610.00	52.900	135.600	5593.80	44.54 S	16.65 E	41.38	51.468
5620.00	57.000	138.700	5599.55	50.54 S	22.21 E	49.50	48.211
5630.00	60.600	144.600	5604.73	57.25 S	27.51 E	57.87	61.972
5640.00	64.700	149.400	5609.32	64.70 S	32.34 E	66.36	59.136
5650.00	67.900	146.800	5613.34	72.47 S	37.18 E	75.06	39.882
5660.00	71.900	142.700	5616.78	80.13 S	42.60 E	84.14	55.512
5670.00	77.300	142.000	5619.44	87.76 S	48.48 E	93.55	54.420
5694.00	88.300	140.700	5622.44	106.33 S	63.33 E	116.86	46.146
5732.00	90.700	137.000	5622.77	134.93 S	88.33 E	154.40	11.605
5764.00	92.400	134.000	5621.91	157.74 S	110.75 E	186.23	10.772
5795.00	90.500	130.900	5621.12	178.66 S	133.61 E	217.19	11.726
5827.00	90.000	129.600	5620.98	199.33 S	158.04 E	249.19	4.353
5858.00	90.400	128.900	5620.87	218.95 S	182.04 E	280.19	2.601
5890.00	90.200	128.000	5620.71	238.84 S	207.10 E	312.17	2.881
5920.00	89.800	127.300	5620.71	257.17 S	230.85 E	342.15	2.687
5952.00	89.300	126.600	5620.96	276.40 S	256.43 E	374.10	2.688
5984.00	88.400	125.900	5621.60	295.32 S	282.23 E	406.03	3.563
6016.00	90.200	128.400	5621.99	314.64 S	307.73 E	437.98	9.626
6047.00	90.100	127.900	5621.91	333.79 S	332.11 E	468.96	1.645
6078.00	89.900	127.900	5621.91	352.83 S	356.57 E	499.94	0.645
6110.00	90.000	127.500	5621.94	372.40 S	381.89 E	531.92	1.288
6142.00	90.800	127.300	5621.71	391.84 S	407.31 E	563.88	2.577
6173.00	90.800	126.600	5621.28	410.47 S	432.08 E	594.84	2.258
6205.00	91.400	126.700	5620.67	429.57 S	457.75 E	626.78	1.901
6237.00	91.800	126.600	5619.77	448.66 S	483.41 E	658.71	1.288
6269.00	91.100	127.000	5618.96	467.83 S	509.02 E	690.65	2.519
6300.00	91.600	129.100	5618.23	486.93 S	533.43 E	721.62	6.962
6331.00	91.600	128.900	5617.37	506.43 S	557.51 E	752.60	0.645
6363.00	91.000	129.100	5616.64	526.56 S	582.37 E	784.59	1.976
6394.00	91.100	129.100	5616.07	546.11 S	606.43 E	815.58	0.323
6426.00	90.900	130.000	5615.51	566.48 S	631.10 E	847.57	2.881
6457.00	91.900	130.500	5614.76	586.50 S	654.75 E	878.56	3.606
6489.00	92.300	129.800	5613.58	607.12 S	679.19 E	910.54	2.518
6521.00	92.500	130.200	5612.24	627.67 S	703.68 E	942.51	1.397
6553.00	92.600	130.300	5610.82	648.33 S	728.08 E	974.48	0.442
6584.00	90.200	130.700	5610.06	668.46 S	751.65 E	1005.47	7.849
6616.00	89.400	130.900	5610.18	689.36 S	775.87 E	1037.47	2.577
6648.00	89.600	130.900	5610.45	710.32 S	800.06 E	1069.46	0.625
6680.00	90.000	130.700	5610.57	731.23 S	824.28 E	1101.46	1.398
6711.00	90.400	131.400	5610.46	751.58 S	847.66 E	1132.45	2.601
6743.00	91.000	131.400	5610.07	772.74 S	871.66 E	1164.44	1.875
6775.00	91.600	131.900	5609.34	794.00 S	895.56 E	1196.42	2.440
6807.00	92.400	132.100	5608.22	815.40 S	919.33 E	1228.38	2.577
6839.00	90.700	132.100	5607.36	836.85 S	943.06 E	1260.34	5.312
6870.00	89.500	131.400	5607.30	857.49 S	966.19 E	1291.33	4.481

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 18-33

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
6901.00	89.600	131.200	5607.55	877.95 S	989.48 E	1322.32	0.721
6933.00	92.200	132.100	5607.05	899.21 S	1013.39 E	1354.30	8.598
6964.00	91.100	130.200	5606.15	919.60 S	1036.72 E	1385.28	7.080
6996.00	87.200	126.500	5606.63	939.45 S	1061.80 E	1417.25	16.797
7045.00	87.700	126.100	5608.81	968.43 S	1101.25 E	1466.10	1.306
7079.00	87.700	126.100	5610.17	988.44 S	1128.70 E	1499.99	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 130.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 7079.00ft.,
The Bottom Hole Displacement is 1500.33ft., in the Direction of 131.210° (True).

Found

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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

5. Lease Designation and Serial No.: 14-20-603-353
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT
8. Well Name and No.: RATHERFORD 18-33
9. API Well No.: 43-037-31135
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other
2. Name of Operator: MOBIL PRODUCING TX & NM INC.*
*MOBIL EXPLORATION & PRODUCING US INC, AS AGENT FOR MPTM
3. Address and Telephone No.: P.O. Box 633, Midland TX 79702 (915) 688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SEC. 18, T41S, R24E
NW/SE 1870' FSL & 1980' FEL

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

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other WORKOVER	[ ] 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 depths for all markers and zones pertinent to this work.)*

SUNDRY FILED FOR WELL RECORD.

11-26-97 MIRU NAVAJO WEST #15, RU PUMP & PIT, RU LUB, RIH TAG TOP OF FISH. FISH OUT SLICKLINE F/24' TO 3878' RECOV. SIFN.
11-28-97 SITP @ 7:30 WAS 0 PSI. RIH W/FISHING TOOLS. COULD NOT ADVANCE. RDWH NU BOPE, REL. PKR, POH W/TBG & PKR TO 3999'. RECV. FIN OUT OF HOLE, SIFN.
11-29-97 SICP @ 7:30 WAS 0 PSI. LD FISH, RIH W/TBG & SET PKR @ 5545', RUWH TEST PKR. SIFN.
12-01-97 SITP @ 0, RD W/H NUBOP. REL PKR LD, PUT WELL DOWN F/L SDFN.
12-02-97 P/U 1 JT 2 7/8" NDBOP NU-W/H SET PKR, TEST PKR & CSG TO 1000# HELD 30 MIN. RD UNIT. TURN TO PRODUCTION

14. I hereby certify that the foregoing is true and correct
Signed Sue Thousley for Title SHIRLEY HOUCHINS/ENV & REG TECH Date 9-29-98

(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

WO tax credit 10/98

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS

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Use "APPLICATION FOR PERMIT - " for such proposals

SUBMIT IN TRIPLICATE

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7. If Unit or CA, Agreement Designation: RATHERFORD UNIT
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10. Field and Pool, or exploratory Area: GREATER ANETH
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1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other
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*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM
3. Address and Telephone No.: P.O. Box 633, Midland TX 79702 (915) 688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SEC. 18, T41S, R24E
NW/SE 1870' FSL & 1980' FEL

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

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other WORKOVER	[ ] 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 depths for all markers and zones pertinent to this work.)*

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11-26-97 MIRU NAVAJO WEST #15, RU PUMP & PIT, RU LUB, RIH TAG TOP OF FISH. FISH OUT SLICKLINE F/24' TO 3878' RECOV. SIFN.
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12-01-97 SITP @ 0, RD W/H NUBOP. REL PKR LD, PUT WELL DOWN F/L SDFN.
12-02-97 P/U 1 JT 2 7/8" NDBOP NU-W/H SET PKR, TEST PKR & CSG TO 1000# HELD 30 MIN. RD UNIT. TURN TO PRODUCTION

RECEIVED
OCT 01 1998
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Signed Sue Thoseley for Title SHIRLEY HOUCHENS/ENV & REG TECH Date 9-29-98

(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

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS

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Use "APPLICATION FOR PERMIT - " for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: 14-20-603-353
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT
8. Well Name and No.: RATHERFORD 18-33
9. API Well No.: 43-037-31135
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other
2. Name of Operator: MOBIL PRODUCING TX & NM INC.*
*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM
3. Address and Telephone No.: P.O. Box 633, Midland TX 79702 (915) 688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SEC. 18, T41S, R24E
NW/SE 1870' FSL & 1980' FEL

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

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[X] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other SIDETRACK	[ ] 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 depths for all markers and zones pertinent to this work.)*

LATERAL #1 979' NORTH & 1002' WEST F/SURFACE SPOT.
LATERAL #2 988' SOUTH & 1129' EAST F/SURFACE SPOT.

12-27-97 -- 2-27-98 HORIZONTAL RECOMPLETION.

ATTACHED FORM 15

RECEIVED
FEB 01 1999
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Signed Sue Moseley for Title SHIRLEY HOUCHINS/ENV & REG TECH Date 1-28-99

(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

WTC 2-25-99 RJK

ExxonMobil Production Compa
U.S. West
P.O. Box 4358
Houston, Texas 77210-4358

June 27, 2001

ExxonMobil
Production

Mr. Jim Thompson
State of Utah, Division of Oil, Gas and Mining
1549 West North Temple
Suite 1210
Salt Lake City, UT 84114-5801

Change of Name – Mobil Oil Corporation to
ExxonMobil Oil Corporation

Dear Mr. Thompson

Effective June 1, 2001, Mobil Oil Corporation (MOC) changed its name to ExxonMobil Oil Corporation (EMOC). This was a name change only; EMOC is the same corporation as Mobil Oil Corporation, but with a new name. No facility or other asset was transferred from one corporation to another by virtue of the name change. Specifically, EMOC will remain the owner and operator of its existing exploration and production oil and gas properties and facilities, as well as relevant permits.

There is no change to the name of Exxon Mobil Corporation, the ultimate shareholder of EMOC.

Please note the change of name of MOC to ExxonMobil Oil Corporation in your records pertaining to any MOC permits.

The Federal Identification Number for MOC (13-5401570) will remain the same for EMOC.

A copy of the Certification, Bond Rider and a list of wells are attached.

If you have any questions please feel free to call Joel Talavera at 713-431-1010

Very truly yours,

Charlotte H. Harper

Charlotte H. Harper
Permitting Supervisor

ExxonMobil Production Company
a division of Exxon Mobil Corporation,
acting for ExxonMobil Oil Corporation

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
~~XXXXXXXXXXXXXXX~~
Navajo Area Office
NAVAJO REGION
P.O. Box 1060
Gallup, New Mexico 87305-1060

IN REPLY REFER TO:

RRES/543

AUG 30 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Charlotte H. Harper, Permitting Supervisor
Exxon Mobil Production Company
U. S. West
P. O. Box 4358
Houston, TX 77210-4358

Dear Ms. Harper:

This is to acknowledge receipt of your company's name change from Mobil Oil Corporation to ExxonMobil Oil Corporation effective June 1, 2001. The receipt of documents includes the Name Change Certification, current listing of Officers and Directors, Listing of Leases, Financial Statement, filing fees of $75.00 and a copy of the Rider for Bond Number 8027 31 97. There are no other changes.

Please note that we will provide copies of these documents to other concerned parties. If you need further assistance, you may contact Ms. Bertha Spencer, Realty Specialist, at (928) 871-5938.

Sincerely,

GENNI DENETSONE

Regional Realty Officer

cc: BLM, Farmington Field Office w/enclosures
Navajo Nation Minerals Office, Attn: Mr. Akhtar Zaman, Director/w enclosures

MINERAL RESOURCES
ADM
NATV AM MIN COORD
SOLID MIN TEAM
PETRO MGMT TEAM
O & G INSPECT TEAM
ALL TEAM LEADERS
LAND RESOURCES
ENVIRONMENT
FILES

ExxonMobil Production Company
U.S. West
P.O. Box 4358
Houston, Texas 77210-4358

PBS 7/12/2001

543

File

June 27, 2001

ExxonMobil
Production

Certified Mail
Return Receipt Requested

Ms. Genni Denetsone
United States Department of the Interior
Bureau of Indian Affairs, Navajo Region
Real Estate Services
P. O. Box 1060
Gallup, New Mexico 87305-1060
Mail Code 543

RECEIVED
#477
JUL 9 - 2001
Navajo Region Office
RES - Minerals Section

Change of Name –
Mobil Oil Corporation to
ExxonMobil Oil Corporation

Dear Ms. Denetsone:

Effective June 1, 2001, Mobil Oil Corporation (MOC) changed its name to ExxonMobil Oil Corporation (EMOC). This was a name change only; EMOC is the same corporation as Mobil Oil Corporation, but with a new name. No facility or other asset was transferred from one corporation to another by virtue of the name change. Specifically, EMOC will remain the owner and operator of its existing exploration and production oil and gas properties and facilities, as well as relevant permits.

There is no change to the name of Exxon Mobil Corporation, the ultimate shareholder of EMOC.

Please note the change of name of MOC to ExxonMobil Oil Corporation in your records pertaining to any MOC permits.

The Federal Identification Number for MOC (13-5401570) will remain the same for EMOC.

Attached is the Name Change Certification, Current listing of Officers and Directors, Filing Fee of $75/-, Listing of Leases, Financial Statement and a copy of the Rider for Bond number 8027 31 97. The original Bond Rider has been sent to Ms. Barbar Davis at your Washington Office.

If you have any questions , please contact Alex Correa at (713) 431-1012.

Very truly yours,

Charlotte H. Harper

Charlotte H. Harper
Permitting Supervisor

Attachments

RECEIVED
JUL 05 2001
NAVAJO REGION OFFICE
BRANCH OF REAL ESTATE SERVICES

ExxonMobil Production Company
a division of Exxon Mobil Corporation,
acting for ExxonMobil Oil Corporation

NOTE: Check forwarded to Ella Jossie

Bureau of Indian Affairs
Navajo Region Office
Attn: RRES - Mineral and Mining Section
P.O. Box 1060
Gallup, New Mexico 87305-1060

Gentlemen:

The current listing of officers and director of ExxonMobil Oil Corporation (Name of Corporation), of New York (State) is as follows:

OFFICERS

President	F.A. Risch	Address	5959 Las Colinas Blvd. Irving, TX 75039
Vice President	K.T. Koonce	Address	800 Bell Street Houston, TX 77002
Secretary	F.L. Reid	Address	5959 Las Colinas Blvd. Irving, TX 75039
Treasure	B.A. Maher	Address	5959 Las Colinas Blvd. Irving, TX 75039

DIRECTORS

Name	D.D. Humphreys	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	P.A. Hanson	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	T.P. Townsend	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	B.A. Maher	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	F.A. Risch	Address	5959 Las Colinas Blvd. Irving, TX 75039

Sincerely,

Alex Correa

This is to certify that the above information pertaining to ExxonMobil Oil Corporation (Corporation) is trust and correct as evidenced by the records and accounts covering business for the State of Utah and in the custody of Corporation Service Company (Agent), Phone: 1 (800) 927-9800, whose business address is One Utah Center, 201 South Main Street, Salt Lake City, Utah 84111-2218

(CORPORATE SEAL)

Signature

AGENT AND ATTORNEY IN FACT
Title

SAL

CERTIFICATION

I, the undersigned Assistant Secretary of ExxonMobil Oil Corporation. (formerly Mobil Oil Corporation), a corporation organized and existing under the laws of the State of New York, United States of America, DO HEREBY CERTIFY, That, the following is a true and exact copy of the resolutions adopted by the Board of Directors on May 22, 2001:

CHANGE OF COMPANY NAME

WHEREAS, the undersigned Directors of the Corporation deem it to be in the best interest of the Corporation to amend the Certificate of Incorporation of the Corporation to change the name and principal office of the Corporation:

NOW THEREFORE BE IT RESOLVED, That Article 1st relating to the corporate name is hereby amended to read as follows:

"1st The corporate name of said Company shall be,

ExxonMobil Oil Corporation",

FURTHER RESOLVED, That the amendment of the Corporation's Certificate of Incorporation referred to in the preceding resolutions be submitted to the sole shareholder of the Corporation entitled to vote thereon for its approval and, if such shareholder gives its written consent, pursuant to Section 803 of the Business Corporation Law of the State of New York, approving such amendment, the proper officers of the Corporation be, and they hereby are, authorized to execute in the name of the Corporation the Certificate of Amendment of Certificate of Incorporation, in the form attached hereto;

FURTHER RESOLVED, That the proper officers of the Corporation be and they hereby are authorized and directed to deliver, file and record in its behalf, the Certificate of Amendment of Certificate of Incorporation, and to take such action as may be deemed necessary or advisable to confirm and make effective in all respects the change of this Company's name to EXXONMOBIL OIL CORPORATION.

WITNESS, my hand and the seal of the Corporation at Irving, Texas, this 8th day of June, 2001.

D. A. Millican
Assistant Secretary

COUNTY OF DALLAS)
STATE OF TEXAS)
UNITED STATES OF AMERICA)
Sworn to and subscribed before me at Irving, Texas, U. S. A. on this the 8th day of June, 2001.

Janice M. Phillips
Notary Public

LISTING OF LEASES OF MOBIL OIL CORPORATION

	Lease Number
1)	14-20-0603-6504
2)	14-20-0603-6505
3)	14-20-0603-6506
4)	14-20-0603-6508
5)	14-20-0603-6509
6)	14-20-0603-6510
7)	14-20-0603-7171
8)	14-20-0603-7172A
9)	14-20-600-3530
10)	14-20-603-359
11)	14-20-603-368
12)	14-20-603-370
13)	14-20-603-370A
14)	14-20-603-372
15)	14-20-603-372A
16)	14-20-603-4495
17)	14-20-603-5447
18)	14-20-603-5448
19)	14-20-603-5449
20)	14-20-603-5450
21)	14-20-603-5451

6/1/01

CHUBB GROUP OF INSURANCE COMPANIES

[illegible] South, Suite 1500, Houston, Texas 77027-3301
[illegible] 297-4600 • Facsimile: (713) 297-4750

NM Bond

FEDERAL INSURANCE COMPANY RIDER
to be attached to and form a part of

BOND NO 8027 31 97
wherein
Mobil Oil Corporation and Mobil Exploration and Producing U.S., Inc. is named as Principal and

FEDERAL INSURANCE COMPANY AS SURETY,

in favor of **United States of America, Department of the Interior Bureau of Indian Affairs**

in the amount of **$150,000.00**
bond date: 11/01/65

IT IS HEREBY UNDERSTOOD AND AGREED THAT effective **June 1, 2001** the name of the Principal is changed

FROM: **Mobil Oil Corporation and Mobil Exploration and Producing U.S., Inc.**

TO : **ExxonMobil Oil Corporation**

All other terms and conditions of this Bond are unchanged.

Signed, sealed and dated this **12th** of **June, 2001**.

ExxonMobil Oil Corporation

By :

FEDERAL INSURANCE COMPANY

By: Mary Pierson
Mary Pierson, Attorney-in-fact

Chubb Surety

POWER OF ATTORNEY

Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company

Attn.: Surety Department
15 Mountain View Road
Warren, NJ 07059

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint R.F. Bobo, Mary Pierson, Philana Berros, and Jody E. Specht of Houston, Texas----------

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this 10th day of May, 2001.

Kenneth C. Wendel, Assistant Secretary

Frank E. Robertson, Vice President

STATE OF NEW JERSEY }
County of Somerset } ss.

On this 10th day of May, 2001, before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Kenneth C. Wendel being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By-Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that he is acquainted with Frank E. Robertson, and knows him to be Vice President of said Companies; and that the signature of Frank E. Robertson, subscribed to said Power of Attorney is in the genuine handwriting of Frank E. Robertson, and was thereto subscribed by authority of said Boards and in deponent's presence.

KAREN A. PRICE NOTARY PUBLIC NEW JERSEY

Karen A. Price
Notary Public State of New Jersey
No. 2231647
Commission Expires Oct. 28, 2004

Karen A. Price
Notary Public

CERTIFICATION

Extract from the By-Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Kenneth C. Wendel, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

(i) the foregoing extract of the By-Laws of the Companies is true and correct,
(ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U. S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U. S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
(iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this 12th day of June, 2001.

FEDERAL INSURANCE COMPANY INDIANA

PACIFIC INDEMNITY COMPANY INCORPORATED JAN. 10, 1903 WISCONSIN

VIGILANT INSURANCE COMPANY NEW YORK

Kenneth C. Wendel, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY
Telephone (908) 903-3485 Fax (908) 903-3656 e-mail: surety@chubb.com

15-10-0225 (Ed. 4-99) CONSENT

F010601000187

CSC 45

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

OF

MOBIL OIL CORPORATION

(Under Section 805 of the Business Corporation Law)

Pursuant to the provisions of Section 805 of the Business Corporation Law, the undersigned President and Secretary, respectively, of Mobil Oil Corporation hereby certify:

FIRST: That the name of the corporation is MOBIL OIL CORPORATION and that said corporation was incorporated under the name of Standard Oil Company of New York.

SECOND: That the Certificate of Incorporation of the corporation was filed by the Department of State, Albany, New York, on the 10th day of August, 1882.

THIRD: That the amendments to the Certificate of Incorporation effected by this Certificate are as follows:

(a) Article 1st of the Certificate of Incorporation, relating to the corporate name, is hereby amended to read as follows:

"1st The corporate name of said Company shall be,

ExxonMobil Oil Corporation",

(b) Article 7th of the Certificate of Incorporation, relating to the office of the corporation is hereby amended to read as follows:

The office of the corporation within the State of New York is to be located in the County of Albany. The Company shall have offices at such other places as the Board of Directors may from time to time determine.

FOURTH: That the amendments to the Certificate of Incorporation were authorized by the Board of Directors followed by the holder of all outstanding shares entitled to vote on amendments to the Certificate of Incorporation by written consent of the sole shareholder dated May 22, 2001.

IN WITNESS WHEREOF, this Certificate has been signed this 22nd Day of May, 2001.

F. A. Risch, President

STATE OF TEXAS)
COUNTY OF DALLAS)

F. L. REID, being duly sworn, deposes and says that he is the Secretary of MOBIL OIL CORPORATION, the corporation mentioned and described in the foregoing instrument; that he has read and signed the same and that the statements contained therein are true.

F. L. REID, Secretary

SUBSCRIBED AND SWORN TO before me, the undersigned authority, on this the 22nd day of May, 2001.

[SEAL]

NOTARY PUBLIC, STATE OF TEXAS

JANICE M. PHILLIPS
MY COMMISSION EXPIRES
May 16, 2002

CSC
CSC

5184334741

06/01 '01 09:01 NO.411 02/02
06/01 '01 09:06 NO.155 04/04

F010601000187

CSC 45

CERTIFICATE OF AMENDMENT

OF

MOBIL OIL CORPORATION

Under Section 805 of the Business Corporation Law

SAC

100 cc

STATE OF NEW YORK
DEPARTMENT OF STATE
FILED JUN 01 2001
TAX $
BY: SAC

Filed by: EXXONMOBIL CORPORATION
(Name)

5959 Las Colinas Blvd.
(Mailing address)

Irving, TX 75039-2298
(City, State and Zip code)

Cust Ref # 165578MPT

RECEIVED
JUL 05 2001
REAL ESTATE SERVICES

010601000195

State of New York }
Department of State } ss:

I hereby certify that the annexed copy has been compared with the original document in the custody of the Secretary of State and that the same is a true copy of said original.

Witness my hand and seal of the Department of State on JUN 01 2001

STATE OF NEW YORK ★ DEPARTMENT OF STATE ★ EXCELSIOR

Special Deputy Secretary of State

DOS-1266 (7/00)

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. GLH
2. CDW ✓
3. FILE

Change of Operator (Well Sold) — Designation of Agent

X Operator Name Change — Merger

The operator of the well(s) listed below has changed, effective: **06-01-2001**

FROM: (Old Operator):		**TO:** (New Operator):
MOBIL EXPLORATION & PRODUCTION		EXXONMOBIL OIL CORPORATION
Address: P O BOX DRAWER "G"		Address: U S WEST P O BOX 4358
CORTEZ, CO 81321		HOUSTON, TX 77210-4358
Phone: 1-(970)-564-5212		Phone: 1-(713)-431-1010
Account No. N7370		Account No. N1855

CA No. **Unit:** **RATHERFORD**

WELL(S)

NAME	SEC TWN RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
RATHERFORD UNIT 17-33	17-41S-24E	43-037-31134	6280	INDIAN	OW	P
RATHERFORD UNIT 17-11	17-41S-24E	43-037-31169	6280	INDIAN	OW	S
RATHERFORD UNIT 17-22	17-41S-24E	43-037-31170	6280	INDIAN	OW	P
RATHERFORD UNIT 17-42	17-41S-24E	43-037-31177	6280	INDIAN	OW	P
RATHERFORD UNIT 17-31	17-41S-24E	43-037-31178	6280	INDIAN	OW	P
18-11	18-41S-24E	43-037-15733	6280	INDIAN	OW	P
RATHERFORD 18-13	18-41S-24E	43-037-15734	6280	INDIAN	OW	P
RATHERFORD UNIT 18-44	18-41S-24E	43-037-31045	6280	INDIAN	OW	P
RATHERFORD UNIT 18-24	18-41S-24E	43-037-31079	6280	INDIAN	OW	P
RATHERFORD UNIT 18-33	18-41S-24E	43-037-31135	6280	INDIAN	OW	P
RATHERFORD UNIT 18-31	18-41S-24E	43-037-31181	6280	INDIAN	OW	P
RATHERFORD UNIT 18-42	18-41S-24E	43-037-31182	6280	INDIAN	OW	P
RATHERFORD UNIT 18-22	18-41S-24E	43-037-31236	6280	INDIAN	OW	P
19-42	19-41S-24E	43-037-30916	6280	INDIAN	OW	P
RATHERFORD UNIT 19-22	19-41S-24E	43-037-31046	6280	INDIAN	OW	P
RATHERFORD UNIT 19-31	19-41S-24E	43-037-31047	6280	INDIAN	OW	P
RATHERFORD UNIT 19-33	19-41S-24E	43-037-31048	6280	INDIAN	OW	P
RATHERFORD UNIT 19-11	19-41S-24E	43-037-31080	6280	INDIAN	OW	P
RATHERFORD UNIT 19-44	19-41S-24E	43-037-31081	6280	INDIAN	OW	P
RATHERFORD 19-97	19-41S-24E	43-037-31596	6280	INDIAN	OW	P

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 06/29/2001
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 06/29/2001
3. The new company has been checked through the **Department of Commerce, Division of Corporations Database on:** 04/09/2002
4. Is the new operator registered in the State of Utah: YES Business Number: 579865-0143
5. If **NO**, the operator was contacted contacted on: N/A

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BIA-06/01/01

7. **Federal and Indian Units:**
The BLM or BIA has approved the successor of unit operator for wells listed on: 06/01/2001

8. **Federal and Indian Communization Agreements ("CA"):**
The BLM or BIA has approved the operator for all wells listed within a CA on: N/A

9. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: N/A

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 04/15/2002
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 04/15/2002
3. Bond information entered in RBDMS on: N/A
4. Fee wells attached to bond in RBDMS on: N/A

STATE WELL(S) BOND VERIFICATION:

1. State well(s) covered by Bond Number: N/A

FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: N/A

INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: 80273197

FEE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number N/A
2. The **FORMER** operator has requested a release of liability from their bond on: N/A
The Division sent response by letter on: N/A

LEASE INTEREST OWNER NOTIFICATION:

3. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

COMMENTS:

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. DJJ
2. CDW

X Change of Operator (Well Sold) Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective: **6/1/2006**

FROM: (Old Operator):	**TO:** (New Operator):
N1855-ExxonMobil Oil Corporation	N2700-Resolute Natural Resources Company
PO Box 4358	1675 Broadway, Suite 1950
Houston, TX 77210-4358	Denver, CO 80202
Phone: 1 (281) 654-1936	Phone: 1 (303) 534-4600

CA No. **Unit:** **RATHERFORD**

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 4/21/2006
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 4/24/2006
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** 6/7/2006
4. Is the new operator registered in the State of Utah: YES Business Number: 5733505-0143
5. If **NO**, the operator was contacted contacted on:

6a. (R649-9-2)Waste Management Plan has been received on: requested

6b. Inspections of LA PA state/fee well sites complete on: n/a

6c. Reports current for Production/Disposition & Sundries on: ok

7. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM n/a BIA not yet
8. **Federal and Indian Units:** The BLM or BIA has approved the successor of unit operator for wells listed on: not yet
9. **Federal and Indian Communization Agreements ("CA"):** The BLM or BIA has approved the operator for all wells listed within a CA on: n/a
10. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 6/12/2006

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 6/22/2006
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 6/22/2006
3. Bond information entered in RBDMS on: n/a
4. Fee/State wells attached to bond in RBDMS on: n/a
5. Injection Projects to new operator in RBDMS on: 6/22/2006
6. Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: n/a
2. Indian well(s) covered by Bond Number: PA002769
3. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number n/a

a. The **FORMER** operator has requested a release of liability from their bond on: n/a
The Division sent response by letter on: n/a

LEASE INTEREST OWNER NOTIFICATION:

4. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: n/a

COMMENTS:

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER:	See attached list
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:	Navajo Tribe
7. UNIT or CA AGREEMENT NAME:	Ratherford Unit
8. WELL NAME and NUMBER:	See attached list
9. API NUMBER:	Attached
10. FIELD AND POOL, OR WILDCAT:	Greater Aneth

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER Unit Agreement

2. NAME OF OPERATOR: Resolute Natural Resources Company N2700

3. ADDRESS OF OPERATOR: 1675 Broadway, Suite 1950 CITY Denver STATE CO ZIP 80202 PHONE NUMBER: (303) 534-4600

4. LOCATION OF WELL
FOOTAGES AT SURFACE: See attached list COUNTY: San Juan
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: _____	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☑ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
_____	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Effective June 1, 2006 Exxon Mobil Oil Corporation resigns as operator of the Ratherford Unit. Also effective June 1, 2006 Resolute Natural Resources Company is designated as successor operator of the Ratherford Unit.

A list of affected producing and water source wells is attached. A separate of affected injection wells is being submitted with UIC Form 5, Transfer of Authority to Inject.

As of the effective date, bond coverage for the affected wells will transfer to BIA Bond # PA002769.

NAME (PLEASE PRINT) Dwight E Mallory TITLE Regulatory Coordinator

SIGNATURE Dwight E Mallory DATE 4/20/2006

(This space for State use only)

APPROVED 6/27/06
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

RECEIVED
APR 24 2006
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER:

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Ship Rock

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

7. UNIT or CA AGREEMENT NAME: UTU68931A

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER

8. WELL NAME and NUMBER: Ratherford

2. NAME OF OPERATOR: ExxonMobil Oil Corporation N1855

9. API NUMBER: attached

3. ADDRESS OF OPERATOR: P.O. Box 4358 CITY Houston STATE TX ZIP 77210-4358

PHONE NUMBER: (281) 654-1936

10. FIELD AND POOL, OR WILDCAT: Aneth

4. LOCATION OF WELL

FOOTAGES AT SURFACE:

COUNTY: San Juan

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: 6/1/2006	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
Date of work completion:	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

ExxonMobil Oil Corporation is transferring operatorship of Greater Aneth field, Ratherford lease to Resolute Natural Resources Company. All change of operator notices should be made effective as of 7:00 AM MST on June 1, 2006.

Attached please find a listing of producers and water source wells included in the transfer.

NAME (PLEASE PRINT) Laurie Kilbride TITLE Permitting Supervisor

SIGNATURE Laurie B. Kilbride DATE 4/19/2006

(This space for State use only)

APPROVED 6/27/06
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

(See Instructions on Reverse Side)

RECEIVED
APR 21 2006
DIV. OF OIL, GAS & MINING

(5/2000)

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	01-14	430373116200S1	Producing	1420603246A	1	41S	23E	SWSW	0660FSL	0660FWL
Ratherford	01-34	430371638501S1	SI	1420603246A	1	41S	23E	SWSE	1133FSL	1980FEL
Ratherford	11-41	430373154400S1	Producing	1420603246A	11	41S	23E	NENE	0860FNL	0350FEL
Ratherford	11-43	430373162201S1	Producing	1420603246A	11	41S	23E	NESE	1980FSL	0660FEL
Ratherford	12-12	430373119000S1	Producing	1420603246A	12	41S	23E	SWNW	1850FNL	0660FWL
Ratherford	12-14	430371584400S1	SI	1420603246A	12	41S	23E	SWSW	0660FSL	4622FEL
Ratherford	12-21	430373120100S1	Producing	1420603246A	12	41S	23E	NENW	0660FNL	1980FWL
Ratherford	12-23	430371584601S1	Producing	1420603246A	12	41S	23E	NESW	1958FSL	3300FEL
Ratherford	12-32	430373120300S1	Producing	1420603246A	12	41S	23E	SWNE	1820FNL	1820FEL
Ratherford	12-34	430373112600S1	Producing	1420603246A	12	41S	23E	SWSE	0675FSL	1905FEL
Ratherford	12-43	430373120200S1	SI	1420603246A	12	41S	23E	NESE	2100FSL	0660FEL
Ratherford	13-12	430373112701S1	Producing	1420603247A	13	41S	23E	SWNW	1705FNL	0640FWL
Ratherford	13-14	430373158900S1	Producing	1420603247A	13	41S	23E	SWSW	0660FSL	0660FWL
Ratherford	13-21	430373112801S1	SI	1420603247A	13	41S	23E	NENW	0660FNL	1920FWL
Ratherford	13-23	430373112900S1	Producing	1420603247A	13	41S	23E	NESW	1980FSL	1930FWL
Ratherford	13-34	430373113001S1	Producing	1420603247A	13	41S	23E	SWSE	0660FSL	1980FEL
Ratherford	13-41	430371585601S1	Producing	1420603247A	13	41S	23E	NENE	660FNL	660FEL
Ratherford	13-43	430373113100S1	Producing	1420603247A	13	41S	23E	NESE	1700FSL	0960FEL
Ratherford	14-32	430371585801S1	Producing	1420603247A	14	41S	23E	SWNE	2130FNL	1830FEL
Ratherford	14-41	430373162300S1	Producing	1420603247A	14	41S	23E	NENE	0521FNL	0810FEL
Ratherford	24-32	430373159300S1	Producing	1420603247A	24	41S	23E	SWNE	2121FNL	1846FEL
Ratherford	24-41	430373113200S1	Producing	1420603247A	24	41S	23E	NENE	0660FNL	0710FEL
Ratherford	17-11	430373116900S1	Producing	1420603353	17	41S	24E	NWNW	1075FNL	0800FWL
Ratherford	17-13	430373113301S1	Producing	1420603353	17	41S	24E	NWSW	2100FSL	0660FWL
Ratherford	17-22	430373117001S1	Producing	1420603353	17	41S	24E	SENW	1882FNL	1910FWL
Ratherford	17-24	430373104400S1	Producing	1420603353	17	41S	24E	SESW	0720FSL	1980FWL
Ratherford	17-31	430373117800S1	Producing	1420603353	17	41S	24E	NWNE	0500FNL	1980FEL
Ratherford	17-33	430373113400S1	Producing	1420603353	17	41S	24E	NWSE	1980FSL	1845FEL
Ratherford	17-42	430373117700S1	Producing	1420603353	17	41S	24E	SENE	1980FNL	0660FEL
Ratherford	17-44	430371573201S1	Producing	1420603353	17	41S	24E	SESE	0660FSL	0660FEL
Ratherford	18-11	430371573300S1	SI	1420603353	18	41S	24E	NWNW	0720FNL	0730FWL
Ratherford	18-13	430371573401S1	Producing	1420603353	18	41S	24E	NWSW	1980FSL	0500FWL
Ratherford	18-22	430373123600S1	Producing	1420603353	18	41S	24E	SENW	2200FNL	2210FWL
Ratherford	18-24	430373107900S1	Producing	1420603353	18	41S	24E	SESW	0760FSL	1980FWL
Ratherford	18-31	430373118101S1	Producing	1420603353	18	41S	24E	NWNE	0795FNL	2090FEL
Ratherford	18-33	430373113501S1	Producing	1420603353	18	41S	24E	NWSE	1870FSL	1980FEL
Ratherford	18-42	430373118200S1	Producing	1420603353	18	41S	24E	SENE	2120FNL	0745FEL
Ratherford	18-44	430373104500S1	SI	1420603353	18	41S	24E	SESE	0660FSL	0660FEL
Ratherford	19-11	430373108000S1	Producing	1420603353	19	41S	24E	NWNW	0660FNL	0660FWL
Ratherford	19-13	430373171900S1	Producing	1420603353	19	41S	24E	NWSW	1980FSL	0660FWL
Ratherford	19-22	430373104601S1	Producing	1420603353	19	41S	24E	SENW	1840FNL	1980FWL
Ratherford	19-24	430373175401S1	Producing	1420603353	19	41S	24E	SESW	0600FSL	1980FWL
Ratherford	19-31	430373104701S1	Producing	1420603353	19	41S	24E	NWNE	510FNL	1980FEL
Ratherford	19-33	430373104800S1	Producing	1420603353	19	41S	24E	NWSE	1980FSL	1980FEL
Ratherford	19-42	430373091600S1	Producing	1420603353	19	41S	24E	SENE	1880FNL	0660FEL
Ratherford	19-44	430373108100S1	Producing	1420603353	19	41S	24E	SESE	0660FSL	0660FEL
Ratherford	19-97	430373159600S1	Producing	1420603353	19	41S	24E	SENE	2562FNL	0030FEL
Ratherford	20-11	430373104900S1	Producing	1420603353	20	41S	24E	NWNW	0500FNL	0660FWL
Ratherford	20-13	430373091700S1	Producing	1420603353	20	41S	24E	NWSW	2140FSL	0500FWL
Ratherford	20-22	430373093000S1	Producing	1420603353	20	41S	24E	SENW	2020FNL	2090FWL
Ratherford	20-24	430373091800S1	Producing	1420603353	20	41S	24E	SESW	0820FSL	1820FWL

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	20-31	430373105001S1	Producing	1420603353	20	41S	24E	NWNE	0660FNL	1880FEL
Ratherford	20-33	430373093100S1	Producing	1420603353	20	41S	24E	NWSE	1910FSL	2140FEL
Ratherford	20-42	430373105100S1	Producing	1420603353	20	41S	24E	SENE	1980FNL	0660FEL
Ratherford	20-44	430373091501S1	Producing	1420603353	20	41S	24E	SESE	0620FSL	0760FEL
Ratherford	20-66	430373159201S1	Producing	1420603353	20	41S	24E	SWNW	1369FNL	1221FWL
Ratherford	20-68	430373159100S1	Producing	1420603353	20	41S	24E	NWSW	1615FSL	1276FWL
Ratherford	15-12	430371571501S1	Producing	1420603355	15	41S	24E	SWNW	1820FNL	0500FWL
Ratherford	15-22	430373044900S1	SI	1420603355	15	41S	24E	SENW	1980FNL	2050FWL
Ratherford	15-32	430371571700S1	Producing	1420603355	15	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	15-33	430371571800S1	Producing	1420603355	15	41S	24E	NWSE	1650FSL	1980FEL
Ratherford	15-41	430371571900S1	TA	1420603355	15	41S	24E	NENE	0660FNL	0660FEL
Ratherford	15-42	430373044800S1	Producing	1420603355	15	41S	24E	SENE	2020FNL	0820FEL
Ratherford	16-13	430373116801S1	Producing	1420603355	16	41S	24E	NWSW	1980FSL	660FWL
Ratherford	16-32	430371572300S1	Producing	1420603355	16	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	16-41	430371572500S1	Producing	1420603355	16	41S	24E	NENE	0660FNL	0660FEL
Ratherford	16-77	430373176800S1	Producing	1420603355	16	41S	24E	NESW	2587FSL	2410FWL
Ratherford	21-23	430371375400S1	Producing	1420603355	21	41S	24E	NESW	1740FSL	1740FWL
Ratherford	21-24	430373172001S1	SI	1420603355	21	41S	24E	SESW	487FSL	2064FWL
Ratherford	21-32	430371575500S1	SI	1420603355	21	41S	24E	SWNE	1880FNL	1980FEL
Ratherford	21-77	430373175801S1	SI	1420603355	21	41S	24E	NWSE	2511FSL	2446FEL
Ratherford	07-11	430373116300S1	Producing	1420603368	7	41S	24E	NWNW	0660FNL	0710FWL
Ratherford	07-13	430373116400S1	Producing	1420603368	7	41S	24E	NWSW	2110FSL	0740FWL
Ratherford	07-22	430373116500S1	Producing	1420603368	7	41S	24E	SENW	1980FNL	1980FWL
Ratherford	07-24	430373116600S1	Producing	1420603368	7	41S	24E	SESW	0880FSL	2414FWL
Ratherford	07-44	430373118900S1	SI	1420603368	7	41S	24E	SESE	0737FSL	0555FEL
Ratherford	08-12	430371599100S1	Producing	1420603368	8	41S	24E	SWNW	1909FNL	0520FWL
Ratherford	08-21	430371599300S1	Producing	1420603368	8	41S	24E	NENW	0616FNL	1911FWL
Ratherford	08-23	430371599400S1	Producing	1420603368	8	41S	24E	NESW	1920FSL	2055FWL
Ratherford	08-32	430371599500S1	Producing	1420603368	8	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	08-34	430371599600S1	Producing	1420603368	8	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	04-34	430371616400S1	Producing	14206034035	4	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	11-14	430371616700S1	Producing	14206034037	11	41S	24E	SWSW	0660FSL	0660FWL
Ratherford	09-34	430371571100S1	SI	14206034043	9	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	10-12	430371571200S1	Producing	14206034043	10	41S	24E	SWNW	1980FNL	0660FWL
Ratherford	10-14	430371571300S1	Producing	14206034043	10	41S	24E	SWSW	0510FSL	0710FWL
Ratherford	10-32	430371571400S1	TA	14206034043	10	41S	24E	SWNE	2080FNL	1910FEL
Ratherford	10-44	430373045100S1	TA	14206034043	10	41S	24E	SESE	0820FSL	0510FEL
Ratherford	29-11	430373105300S1	Producing	1420603407	29	41S	24E	NWNW	0770FNL	0585FWL
Ratherford	29-22	430373108200S1	Producing	1420603407	29	41S	24E	SENW	2130FNL	1370FWL
Ratherford	29-31	430373091401S1	Producing	1420603407	29	41S	24E	NWNE	0700FNL	2140FEL
Ratherford	29-33	430373093200S1	SI	1420603407	29	41S	24E	NWSE	1860FSL	1820FEL
Ratherford	29-34	430371534000S1	SI	1420603407	29	41S	24E	SWSE	0817FSL	2096FEL
Ratherford	29-42	430373093700S1	SI	1420603407	29	41S	24E	SENE	1850FNL	0660FEL
Ratherford	30-32	430371534200S1	Producing	1420603407	30	41S	24E	SWNE	1975FNL	2010FEL
Ratherford	28-11	430373044600S1	Producing	1420603409	28	41S	24E	NWNW	0520FNL	0620FWL

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	09-12	430371512600S1	Producing	14206035045	9	41S	24E	SWNW	1865FNL	0780FWL
Ratherford	09-14	430371512700S1	Producing	14206035046	9	41S	24E	SWSW	0695FSL	0695FWL
Ratherford	04-14	430371616300S1	Producing	14206035446	4	41S	24E	SWSW	0500FSL	0660FWL
Ratherford	03-12	430371562000S1	Producing	14206036506	3	41S	24E	SWNW	2140FNL	0660FWL

Water Source Wells (Feb 2006)

RU	S1	4303700001	Active
RU	S2	4303700002	Active
RU	S3	4303700003	Active
RU	S4	4303700004	Active
RU	S5	4303700005	Active
RU	S6	4303700006	Active
RU	S7	4303700007	Active
RU	S8	4303700008	Active
RU	S9	4303700009	Active
RU	S10	4303700010	Active
RU	S11	4303700011	Active
RU	S12	4303700012	Active
RU	S13	4303700013	Active
RU	S14	4303700014	Active
RU	S16	4303700016	Active
RU	S17	4303700017	Active

Sundry Number: 47449 API Well Number: 43037311350000

FEDERAL APPROVAL OF THIS ACTION IS NECESSARY

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER:
14-20-603-353

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
NAVAJO

7.UNIT or CA AGREEMENT NAME:
RATHERFORD

1. TYPE OF WELL
Oil Well

8. WELL NAME and NUMBER:
RATHERFORD UNIT 18-33

2. NAME OF OPERATOR:
RESOLUTE NATURAL RESOURCES

9. API NUMBER:
43037311350000

3. ADDRESS OF OPERATOR:
1675 Boradway Ste 1950 , Denver, CO, 80202

PHONE NUMBER:
303 534-4600 Ext

9. FIELD and POOL or WILDCAT:
GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
1870 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: NWSE Section: 18 Township: 41.0S Range: 24.0E Meridian: S

COUNTY:
SAN JUAN

STATE:
UTAH

11.
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
✓ NOTICE OF INTENT Approximate date work will start: 2/4/2014	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	✓ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute proposes to attempt repairs to the tubing and parted rods in the subject well to enhance oil production. The proposed procedure and well bore schematic is attached.

Accepted by the Utah Division of Oil, Gas and Mining

Date: February 04, 2014

By: Dark K Quist

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Sherry Glass	303 573-4886	Sr Regulatory Technician

SIGNATURE	DATE
N/A	2/3/2014

RECEIVED: Feb. 03, 2014

RESOLUTE
NATURAL RESOURCES

RU 18-33
1870' FSL, 1980' FEL
NWSE section 18-T41S-R24E
43-037-31135
ESP Replacement

Job Scope

Job Scope includes: Pull 2-7/8 tubing & ESP, make bit & scraper trip, clean out to PBD, and run replacement ESP.
(Acid planned? N; Change of tubing size? N; Paraffin expected? N)

Work History

8/13/2003: Parted rods - Parted at 25th 1" rod; also found #62 x 7/8 rod parted at the pin. Replaced rods & 2" insert pump.
10/3/2007: Rod pump replacement - 2" insert pump had stuck plunger.
1/8/2008: Tubing Repair - Pulled rods, unseated TAC & pulled tubing; bad collars below 60th jt, hole at 139th jt; Tubing corroded and scaled with rod cutting inside - LD all tubing; made bit & scraper run to 5499'; set RBP at 5469' and pressure tested csg to 1000 psi/15 min - OK; pulled RBP; ran new bha, pumped biocide & corrosion inhibitor down tubing; RIH w/T-66 rods & 2" insert pump. Returned to production.
3/17/2008: Rods to ESP - Pulled tbg, TAC, & rod pumping BHA; found holes in tubing from jt 145 down; Ran bit & scraper to top of upper lateral at 5499'; Ran new tubing & landed ESP. Returned to production.
12/27/2010: ESP Replacement - Pulled tbg & ESP; tbg on top of ESP packed with scale, heavy scale on outside of the bottom 25 jts of tbg; Made bit & scraper trip to 5491' KB, top of upper window/PBD 5661' KB. Acidized w/2000 gal. inhibited 28% HCl, Ran new ESP w/60' cap string & YB tubing. Landed tbg, ND BOP, NU tree, started ESP - pumped up OK.
9/27/2011: ESP Replacement - Killed well, pulled tbg & failed ESP; made bit & scraper run, tagged at 5332.6' KB/PBD at 5661' KB, no cleanout & cable w/60' cap string; Landed tbg, ND BOP, NU tree, RDMO.

Procedure

Horsley Witten: NO

1) MIRU WSU. LOTO equipment. Test rig anchors as required.
2) Kill well as necessary.
3) NDWH. NU BOP. Test BOP.
4) MIRU ESP cable spooler & cap string spooler.
5) POOH with the 2-7/8" tubing, ESP assembly, ESP cable, and 60' capillary string.
6) Lay down tubing & inspect for condition. Call Bill Albert for tubing inspection at (970) 371-9682 or if unavailable, call Tech Support: Virgil Holly (435) 444-0020 or Julius Claw (435) 444-0156.
7) Send laid down tubing for inspection; Lay down failed ESP assembly.
8) Make bit & scraper trip to 5491' KB/top of upper window. POOH.
9) RIH with replacement ESP assembly & Centinel, ESP cable, new FBNAU 2-7/8" tubing, including 2-7/8" check valve two joints above the ESP &'XA'sliding sleeve w/1.81 X profile 1 joint above the check valve. Run new 1/4" cap string to 60' depth.
10) Land tubing w/ ESP assembly bottom at ~5400'.
11) Perform WH penetrator tie-ins at tubing hanger for ESP cable & capillary string and land tubing.
12) ND BOPE. NUWH. Re-connect to VSD and transformer.
13) Perform necessary tests to ensure that the pump is ready to be returned to production.
14) Notify Operations Supervisor Alfred Redhouse (435) 619-7227 that the well is ready to return to production.
15) RDMOL.
16) Hook up appropriate chemical treatment equipment.

RECEIVED: Feb. 03, 2014

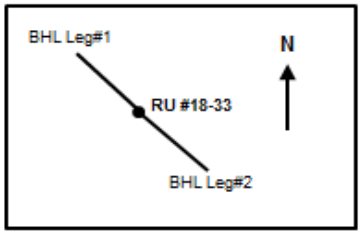
RATHERFORD UNIT # 18-33
GREATER ANETH FIELD
Surface Loc: 1870' FSL & 1980' FEL
SEC 18-T41S-R24E

B.H. Location Lateral #1:
979' N & 1002' W of Surface Location

B.H. Location Lateral #2:
989' S & 1129' E of Surface Location

PRODUCER

SAN JUAN COUNTY, UTAH
API 43-037-31135
PRISM 0043070



KB 4820' GL 4806'

Hole Size: 17.5"

Conductor Pipe: 13-3/8" 54.5# K-55 set at 125' w/ 150 sx. Circ to surface. 6-16-85

Hole Size: 12-1/4"

9-5/8" 36# K-55 set at 1630' w/ 600 sx cmt. Circ to surface. 6-16-85

Hole Size: 8-3/4"

ESP BHA dtd 10/3/2011:
172 jts 2-7/8" 6.5# J-55 Tbg
2-7/8" Sliding Sleeve @ 5282.7' KB
2-7/8" Check valve @ 5317' KB
Top of pump @ 5385.5' KB
Pump Intake @ 5401.8' KB
Seal @ 5404.4' KB
Motor @ 5411.4 -5418.1' KB
Centinel @ 5418.1 – 5422.2' KB
Tbg Pup Jt/Centralizer 5422.2 – 5427.7' KB

Openhole Lateral #2 5499-7089' TD MD
(window in csg at 5491-99')

Lateral #2:
TMD 7079', TVD 5610',
Inc. 87.7, Azimuth 126.1,
South 989', East 1129',
VS 1501'. 2-26-98

Openhole Lateral #1 5516-6979' TD MD
(window in csg at 5507-16')

Lateral #1 :
TMD 6979', TVD 5620'
Inc. 90.4, Azimuth 314.0,
North 979', West 1002',
VS 1401'. 2-26-98

TIW Big Bore Pkr at 5526'
Pkr keyway at 200 deg Az 1-19-98

Perf'd w/ 2 spf 8-23-85 5615-5632'

Orig. PBTD 5661' 8-23-85

TD 5688' 6-16-85

7" 26# & 23# K-55 set at 5687' w/ 700 sx.
TOC at 2520' CBL. 6-16-85

K.B. Duhon 11-25-02 R.U. # 18-33HZ

RECEIVED: Feb. 03, 2014

Sundry Number: 54030 API Well Number: 43037311350000

FEDERAL APPROVAL OF THIS ACTION IS NECESSARY

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER: 14-20-603-353

SUNDRY NOTICES AND REPORTS ON WELLS

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6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO

7.UNIT or CA AGREEMENT NAME: RATHERFORD

1. TYPE OF WELL Oil Well

8. WELL NAME and NUMBER: RATHERFORD UNIT 18-33

2. NAME OF OPERATOR: RESOLUTE NATURAL RESOURCES

9. API NUMBER: 43037311350000

3. ADDRESS OF OPERATOR: 1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535

PHONE NUMBER: 303 534-4600 Ext

9. FIELD and POOL or WILDCAT: GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 1870 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NWSE Section: 18 Township: 41.0S Range: 24.0E Meridian: S

COUNTY: SAN JUAN

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
✓ NOTICE OF INTENT Approximate date work will start: 8/8/2014	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
☐ SPUD REPORT Date of Spud:	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	✓ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: ESP Replacement

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute Natural Resources respectfully submits this sundry as notice of a Tubing Repair and ESP replacement on the above well. Attached are the procedures and schematic.

Accepted by the Utah Division of Oil, Gas and Mining
Date: August 15, 2014
By: Dark K Quist

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Erin Joseph	303 573-4886	Sr. Regulatory Analyst
SIGNATURE N/A		**DATE** 8/4/2014

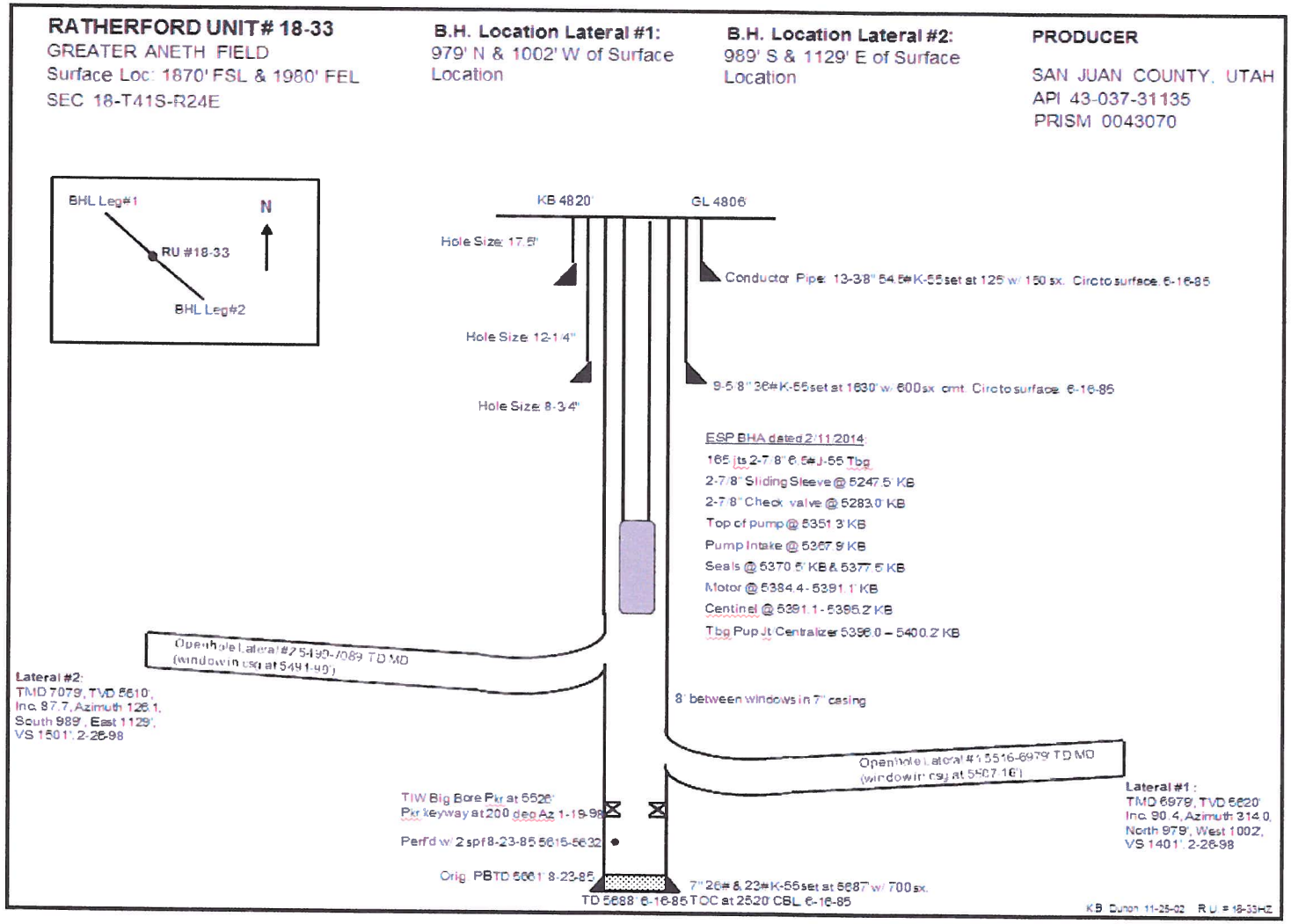
RECEIVED: Aug. 04, 2014

RESOLUTE
NATURAL RESOURCES

RU 18-33 Tubing Repair & ESP Replacement

Procedure
Horsley Witten: NO

1) MIRU WSU. LOTO equipment. Test rig anchors as required.
2) Kill well as necessary.
3) NDWH. NU BOP. Test BOP.
4) MIRU ESP cable spooler & cap string spooler.
5) POOH with the 2-7/8" tubing, ESP assembly, ESP cable, and 60' capillary string; look for HIT.
6) Stand back tubing & inspect for condition. Call Bill Albert for tubing inspection at (970) 371-9682 or call Tech Support: Virgil Holly (435) 444-0020 or Nate Dee (435) 730-5442.
7) Lay down failed ESP assembly, documenting the condition & if possible, cause of failure.
8) Make bit & scraper trip to 5491' KB/top of upper window. POOH.
9) RIH with replacement ESP assembly & Centinel, ESP cable, 2-7/8" tubing, including 2-7/8" check valve two joints above the ESP & sliding sleeve w/2.313 'X' profile 1 joint above the check valve. Run new 1/4" cap string to 60' depth.
10) Land tubing w/ ESP assembly bottom at ~5400' as before.
11) Perform WH penetrator tie-ins at tubing hanger for ESP cable & capillary string and land tubing.
12) ND BOPE. NUWH. Re-connect to VSD and transformer.
13) Perform necessary tests to ensure that the pump is ready to be returned to production.
14) Notify Operations Supervisor Alfred Redhouse (435) 619-7227 that the well is ready to return to production.
15) RDMOL.
16) Hook up appropriate chemical treatment; Evaluate possible changes in treatment given short time to apparent failure.



STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER:
14-20-603-353

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
NAVAJO

7.UNIT or CA AGREEMENT NAME:
RATHERFORD

1. TYPE OF WELL
Oil Well

8. WELL NAME and NUMBER:
RATHERFORD UNIT 18-33

2. NAME OF OPERATOR:
RESOLUTE NATURAL RESOURCES

9. API NUMBER:
43037311350000

3. ADDRESS OF OPERATOR:
1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535

PHONE NUMBER:
303 534-4600 Ext

9. FIELD and POOL or WILDCAT:
GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
1870 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: NWSE Section: 18 Township: 41.0S Range: 24.0E Meridian: S

COUNTY:
SAN JUAN

STATE:
UTAH

11.
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT Approximate date work will start:	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
✓ SUBSEQUENT REPORT Date of Work Completion: 8/12/2014	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
☐ SPUD REPORT Date of Spud:	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ DRILLING REPORT Report Date:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: ESP Replacement

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute Natural Resources respectfully submits this sundry as notice that the ESP Replacement was complete on 8/12/14 according to previously submitted procedures

Accepted by the
Utah Division of
Oil, Gas and Mining
FOR RECORD ONLY
September 25, 2014

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Erin Joseph	303 573-4886	Sr. Regulatory Analyst
SIGNATURE		**DATE**
N/A		9/23/2014

RECEIVED: Sep. 23, 2014