

Scout Report sent out

Noted in the N'D File

Location map pinned

Approval or Disapproval Letter

Date Completed, P. & A, or operations suspended

Pin changed on location map

Affidavit and Record of A & P

Water Shut-Off Test

Gas-Oil Ratio Test

Well Log Filed

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- 
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- 
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*Wellbore approved*  
*6-5-58 - Clayton Johnson*

FILE NOTATIONS

Entered in N'D File

Entered on S.F. Sheet

Location Map Pinned

Card Indexed

I.W.R. for State or Fee Land

Checked by Chief

Copy N'D to Field Office

Approval Letter

Disapproval Letter

OPERATION DATA

Date Well Completed 7-7-58

CV  NW TA

GW  GS TA

Location

Bond

State of Fee Land

LOGS FILED

Driller's Log 7-25-58

Electric Logs (No.) 3

E  I  E-I  GR  GR-N  Micro

Lat  Mi-L  Sonic  Others Radioactive

UTAH OIL AND GAS CONSERVATION COMMISSION

REMARKS: *Subsequent Lease - Squeeze Cement & Acidizing*  
*12-1-83 Operator name change*

*5-29-86 Applied for water connection*  
*(Have File) Well logs & 3" native logs*

DATE FILED *6-6-58* Nov-14-20-  
 LAND: FEE & PATENTED STATE LEASE NO. PUBLIC LEASE NO. INDIAN *603-353*

DRILLING APPROVED: *6-6-58*

SPUDED IN: *6-8-58*

COMPLETED: *7-7-58*

INITIAL PRODUCTION: *1026 BOPD 3/4"*

GRAVITY A. P. I. *41°*

GOR: *627:1*

PRODUCING ZONES: *5426-5586*

TOTAL DEPTH: *5632*

WELL ELEVATION: *4676 GR 4691 DF*

DATE ABANDONED:

FIELD OR DISTRICT: ~~Ratherford~~ *Aneth*

COUNTY: *San Juan*

WELL NO. *DESERT A-11 (Ratherford 18-14)* *VIC Conversion*

LOCATION: *810* FT. FROM (N) (S) LINE, *600* FT. FROM (E) (W) LINE. *SW 1/4 SW 1/4* QUARTER - QUARTER SEC. *18*

TWP. RGE. SEC. OPERATOR

TWP.	RGE.	SEC.	OPERATOR
<i>41 S</i>	<i>24 E</i>	<i>18</i>	<i>PHILLIPS PETROLEUM</i>

## GEOLOGIC TOPS:

QUATERNARY	Star Point	Sinbad	Brazer
Recent	Wahweap	PERMIAN	Pilot shale
Alluvium	Masuk	Kaibab	Madison
Lake beds	Colorado	Coconino	Leadville
Pleistocene	Mancos	Cutler 2372	Redwall
Lake beds	Upper	Hoskinnini	DEVONIAN
TERTIARY	Middle	DeChelly 2524	Upper
Pliocene	Lower	White Rim	Middle
Humboldt	Emery	Organ Rock 2693	Lower
Salt Lake	Blue Gate	Cedar Mesa	Ouray
Miocene	Ferron	Halgaite tongue	Elbert
Bishop conglomerate	Frontier	Phosphoris	Guilmette
Oligocene	Dakota	Park City	Simonson dolomite
Norwood	Burro Canyon	Rico (Goodridge)	Sevy dolomite
Eocene	Cedar Mountain	Supai	North Point
Duchesne River	Buckhorn	Bird Springs	SILURIAN
Uinta	JURASSIC	CARBONIFEROUS	Laketown dolomite
Bridger	Morrison	Pennsylvanian	ORDOVICIAN
Green River	Salt Wash	Oquirrh	Eureka quartzite
Upper	San Rafael Gr.	Weber	Pogonip limestone
Middle	Summerville	Morgan	CAMBRIAN
Lower	Bluff sandstone	Hermosa	Lynch
Wasatch	Curtis	Upper 4428	Bowman
Colton	Entrade	Lower	Tapeats
Flagstaff	Moab tongue	Molas	Ophir
Almy	Carmel	Paradox 5417	Tintic
Paleocene	Glen Canyon Gr.	A	PRE-CAMBRIAN
Current Creek	Navajo 560	B	
North Horn	Kayento 860	C	
CRETACEOUS	Wingate 940	Manning Canyon	
Montana	TRIASSIC	Mississippian	
Mesaverde	Chinle 1410	Chainman shale	
Price River	Shinarump 2223	Humbug	
Blackhawk	Moenkapi 2702	Joana limestone	

(SUBMIT IN TRIPLICATE)

Indian Agency Navajo


UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Allottee Tribal  
Lease No. 14-20-603-353

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	<input checked="" type="checkbox"/>	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....		SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL.....		SUBSEQUENT REPORT OF REDRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....		SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....		SUPPLEMENTARY WELL HISTORY.....	
NOTICE OF INTENTION TO ABANDON WELL.....			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Denver, Colorado

June 4, 19 58

Desert "A"

Well No. 11 is located 810 ft. from NS line and 660 ft. from EW line of sec. 18

SW/4 SW/4 Section 18

43S

24E

S.L.M.

(¼ Sec. and Sec. No.)

(Twp.)

(Range)

(Meridian)

Ratherford

San Juan

Utah

(Field)

(County or Subdivision)

(State or Territory)

The elevation of the derrick floor above sea level is \_\_\_\_\_ ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Drill 17-1/4" hole to approximately 150', set 150' of 13-3/8" conductor pipe and cement to surface. Drill 11" hole to approximately 1500', set 8-5/8" casing and cement to surface. Drill 7-7/8" hole to total depth of approximately 5700', run 5-1/2" casing and cement with approximately 250 sacks. Complete in Paradox formation.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Phillips Petroleum Company

Address 1200 Denver Club Building

Denver 2, Colorado

By W. M. Schulz  
Division Superintendent

Title \_\_\_\_\_

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MR. FEIGENT-

PLEASE NOTE THE LOCATION SURVEY  
PLAT SHOWS THE WELL 810' FSL & 600' FWL  
OF SEC. 18. FORM 9-331b MAILED TO  
YOU MINUS THE PLAT IS INCORRECT AND  
SHOULD BE DESTROYED. BECAUSE THE WELL  
LOCATION WAS SHOWN AS 810' FSL &  
660' FWL. SEC 18.

# PHILLIPS PETROLEUM COMPANY

1200 Denver Club Building  
Denver 2, Colorado

June 5, 1958

Mr. Cleon B. Feight  
Secretary  
Utah Oil & Gas Conservation Commission  
State Capitol Building  
Salt Lake City, Utah

Dear Mr. Feight:

Confirming telephone conversation with you this date, attached is Form 9-331b Notice of Intention To Drill Desert "A" #11. This well will be 810 feet from the south line and 660 feet from the west line Section 18 T-41S R-24E, San Juan County, Utah.

Since permission was denied to drill Desert "A" #10, it was necessary to stake #11 and the plats have not yet arrived. We will forward plats as soon as received.

This will complete the development of the west half of Section 18 on 80 acre spacing. Thank you very much for your courtesy in approving this location.

Very truly yours,

PHILLIPS PETROLEUM COMPANY



W. M. Schul  
Division Superintendent

CEJ:lb  
Attachment

Company PHILLIPS PETROLEUM COMPANY

Lessee DESERT "A" Well No. 11

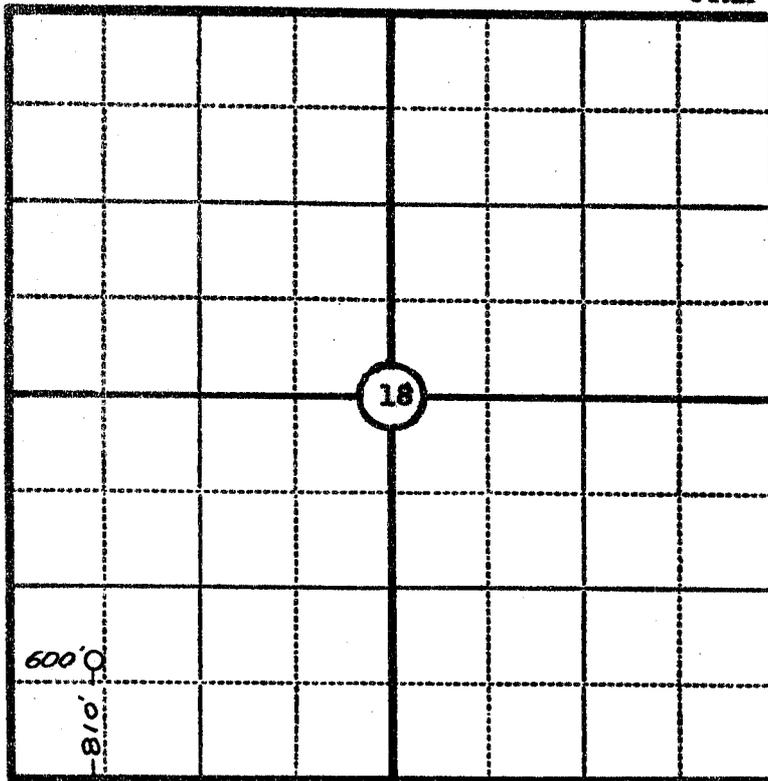
Sec. 18, T 41 SOUTH, R 24 EAST S. L. M.

Location 810' FROM THE SOUTH LINE AND 600' FROM THE WEST LINE.

Elevation 4675.8 UNGRADED GROUND

SAN JUAN COUNTY

UTAH



Scale—4 inches equal 1 mile.

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

Seal:

*James P. Lee*  
Registered Land Surveyor.  
JAMES P. LEESE  
UTAH REG. NO. 1472

Surveyed 21 DECEMBER, 1957

SAN JUAN ENGINEERING COMPANY, FARMINGTON, N. M.

14

June 6, 1958

Phillips Petroleum Company  
1200 Denver Club Building  
Denver 2, Colorado

Attention: W. M. Schul, Division Superintendent

Gentlemen:

With reference to my telephone conversation with Mr. Johnson of your office on June 5, 1958, this letter is to confirm our approval to drill Well No. Desert A-11, which is to be located 810 feet from the south line and 600 feet from the west line of Section 18, Township 41 South, Range 24 East, S1EM, San Juan County, Utah.

Approval to drill the above mentioned well terminates within 90 days if the well is not spudded in within said period.

Yours very truly,

OIL & GAS CONSERVATION COMMISSION

GLEON B. FEIGHT  
SECRETARY

CBF:en

cc: Phil McGrath  
USGS, Farmington,  
New Mexico

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(SUBMIT IN TRIPLICATE)

Indian Agency Navajo


UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Allottee Tribal

Lease No. 14-20-603-353

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	X
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL		SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Denver, Colorado June 10, 1958

Desert "A"

Well No. 11 is located 310 ft. from S line and 600 ft. from W line of sec. 18

SW/4 SW/4 Sec. 18 41S 24E S.L.M.  
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)

Ratherford San Juan Utah  
(Field) (County or Subdivision) (State or Territory)

ungraded ground

The elevation of the ~~surface~~ above sea level is 4676 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Spudded 17-1/4" hole at 4:30 A.M. 6-8-58. Drilled to 174'. Ran 13-3/8" OD 27.1# Armco W SJ casing set at 173' RKB. Cemented with 175 ax. regular cement. Pumped plug to 137', cement circulated. Job complete 4:30 P.M. 6-8-58. WOC 24 hrs. Tested casing with 500# for 30 minutes, held O.K.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Phillips Petroleum Company

Address 1200 Denver Club Building

Denver 2, Colorado

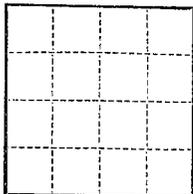
By \_\_\_\_\_

W. E. Schul

Title Division Superintendent

(SUBMIT IN TRIPLICATE)

Indian Agency Navajo



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Allottee Tribal

Lease No. 14-20-603-353

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF	<input checked="" type="checkbox"/>
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL	SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Denver, Colorado June 16, 19 58

Desert "A"

Well No. 11 is located 810 ft. from S line and 600 ft. from W line of sec. 18

SW/4 SW/4 Sec. 18 41S 24E S.L.M.  
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)

Ratherford San Juan Utah  
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~drills floor~~ ungraded ground above sea level is 6676 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Drilled to 1417'. Ran 8-5/8" 24# J-55 casing set at 1416.31' RKB. Cemented with 330 sacks regular cement, 126 sacks Diacel "D", 620# calcium chloride, 165# Floseal, 660# Tuff Plug with 125 sacks regular cement on bottom. Cement circulated and then fell back. Recemented four times thru 1" pipe down annulus with 100 sacks regular cement. Job completed at 5:40 p.m. 6-10-58. WOC 24 hrs. Tested casing with 750# for 30 minutes, held OK.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Phillips Petroleum Company

Address 1200 Denver Club Building  
Denver 2, Colorado

By W. M. Schul  
W. M. Schul

Title Division Superintendent

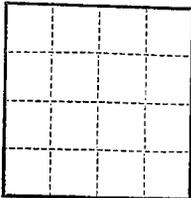
(SUBMIT IN TRIPLICATE)

Indian Agency Navajo

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Allottee Tribal

Lease No. 24-20-609-393



SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF	<input checked="" type="checkbox"/>
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL	SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Denver, Colorado July 21, 1958

Well No. 11 is located 810 ft. from S line and 600 ft. from W line of sec. 18  
34/4 Sec. 18 43E 24E S.1.E.4.  
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)  
Hetherford San Juan Utah  
(Field) (County or Subdivision) (State or Territory)

The elevation of the derrick floor above sea level is 4692 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Drilled to 5632. Ran 5-1/2" casing set at 5631', cemented with 152 sacks regular cement, 100 sacks Diacol "D", 469# calcium chloride. Total of 550 cu.ft. of 40% Diacol "D". Ramped plug to 5597' at 8:30 a.m. 6-27-58. RUC 24 hours, tested casing with 500# for 30 minutes, hold OK.

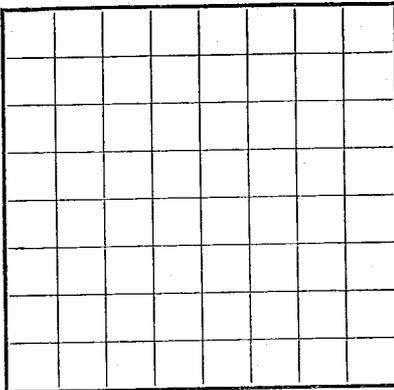
I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Phillips Petroleum Company

Address 1200 Denver Lab Building

Denver 2, Colorado

By [Signature]  
H. H. Schul  
 Title Division Superintendent



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

LOCATE WELL CORRECTLY

Company Phillips Petroleum Co. - Aztec Oil & Gas Co. Address 1200 Denver Club Bldg. Denver 2, Colorado  
Lessor or Tract Desert A Field Ratherford State Utah  
Well No. 11 Sec. 18 T. 41S R. 24E Meridian SLM County San Juan  
Location 810 ft. N. of S Line and 600 ft. E. of W Line of Sec. 18 Elevation 4691  
(Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.  
Signed Wm Schul

Date July 23, 1958 Title Division Superintendent

The summary on this page is for the condition of the well at above date.

Commenced drilling June 8, 1958 Finished drilling June 28, 1958

OIL OR GAS SANDS OR ZONES  
(Denote gas by G)

No. 1, from 5426 to 5586 No. 4, from \_\_\_\_\_ to \_\_\_\_\_  
No. 2, from \_\_\_\_\_ to \_\_\_\_\_ No. 5, from \_\_\_\_\_ to \_\_\_\_\_  
No. 3, from \_\_\_\_\_ to \_\_\_\_\_ No. 6, from \_\_\_\_\_ to \_\_\_\_\_

IMPORTANT WATER SANDS

No. 1, from \_\_\_\_\_ to \_\_\_\_\_ No. 3, from \_\_\_\_\_ to \_\_\_\_\_  
No. 2, from \_\_\_\_\_ to \_\_\_\_\_ No. 4, from \_\_\_\_\_ to \_\_\_\_\_

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From—	To—	
13-3/8"	27.1#	SJ	Armco	160'	Baker				
8-5/8"	24#	8R	J55	1412'	Baker				
5-1/2"	15.5#	8R	J55	172'	Baker			5426-5458, 5464-68, 5506-21	
5-1/2"	14#	8R	J55	5495'				5530-56, 5563-70, 5580-86.	Oil Production

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used	
13-3/8"	174'	175	Circ.			
8-5/8"	1416'	556	Circ.			
5-1/2"	5631'	232	Hallib.			

PLUGS AND ADAPTERS

Heaving plug—Material \_\_\_\_\_ Length \_\_\_\_\_ Depth set \_\_\_\_\_  
Adapters—Material \_\_\_\_\_ Size \_\_\_\_\_

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

FOLD MARK

**MUDDING AND CEMENTING RECORD**

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
13-3/8"	174'	175	Circ.		
8-5/8"	1416'	556	Circ.		
5-1/2"	5631'	232	Hallib.		

**PLUGS AND ADAPTERS**

Heaving plug—Material \_\_\_\_\_ Length \_\_\_\_\_ Depth set \_\_\_\_\_

Adapters—Material \_\_\_\_\_ Size \_\_\_\_\_

**SHOOTING RECORD**

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

**TOOLS USED**

Rotary tools were used from 0 feet to 5632 feet, and from \_\_\_\_\_ feet to \_\_\_\_\_ feet

Cable tools were used from \_\_\_\_\_ feet to \_\_\_\_\_ feet, and from \_\_\_\_\_ feet to \_\_\_\_\_ feet

**DATES**

July 23, \_\_\_\_\_, 1958 Put to producing July 7 \_\_\_\_\_, 1958

The production for the first ~~24~~<sup>4</sup> hours was 171 barrels of fluid of which 100 % was oil; \_\_\_\_\_ % emulsion; \_\_\_\_\_ % water; and \_\_\_\_\_ % sediment. Gravity, °Bé. 41

If gas well, cu. ft. per 24 hours \_\_\_\_\_ Gallons gasoline per 1,000 cu. ft. of gas \_\_\_\_\_

Rock pressure, lbs. per sq. in. 230#

**EMPLOYEES**

Moran Bros., Inc. \_\_\_\_\_, Driller \_\_\_\_\_, Driller

\_\_\_\_\_, Driller \_\_\_\_\_, Driller

**FORMATION RECORD**

FROM—	TO—	TOTAL FEET	FORMATION
560	860	300	Navajo
860	940	80	Kayenta
940	1410	470	Wingate
1410	2223	813	Chinle
2223	2290	67	Shinarump
2290	2372	82	Moenkopi
2372	2524	152	Cutler
2524	2693	169	De Chelly
2693	4428	1735	Organ Rock
4428	5417	989	Upper Hermosa
5417	5632	215	Paradox

## HISTORY OF OIL OR GAS WELL

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

Spudded 17-1/4" hole at 4:30 a.m. 6-8-58. Drilled to 174', ran 13-3/8" OD 27.1# Armco SW SJ casing set at 173' RKB. Cemented with 175 sacks regular. Pumped plug to 137', cement circulated. Job complete 4:30 p.m. 6-8-58. WOC 24 hours, Tested casing with 500# for 30 minutes, held OK. Drilled to 1417', ran 8-5/8" OD 24# J-55 casing set at 1416' RKB. Cemented with 330 sacks regular cement, 126 sacks Diacel "D", 620# calcium chloride, 165# Flocele, 660# Tuf-Plug with 125 sacks regular cement on bottom. Cement circulated then fell back. Recemented four times thru 1" pipe down annulus with 100 sacks regular cement. Job completed 5:40 p.m. 6-10-58. WOC 24 hours, tested casing with 750# for 30 minutes, held OK. Drilled to 5632', ran 5-1/2" OD 14# and 15.5# casing set 5631'. Cemented with 132 sacks regular cement, 100 sacks Diacel "D", 469# calcium chloride. Total of 550 cu. ft. 40% Diacel "D". Pumped plug to 5597' at 8:30 a.m. 6-27-58. WOC 24 hours, tested casing with 500# for 30 minutes, held OK. Checked PID with tubing at 5595. Perforated with 4 shots per foot 5426-58, 5464-68, 5506-21, 5530-56, 5563-70, 5580-86. Ran tubing set 5591, packer at 5395, seating nipple 5362, collar stop 5330. Displaced water with oil, spotted acid, set packer, ~~displaced water with oil, spotted acid, set packer~~, displaced 500 gallons regular and 6,000 gallons Gel X-100. Maximum pressure 3700#, minimum zero. Flushed with 36 barrels oil. Injection rate 5.5 BPM. Shut in 8 hours. Swabbed to 3500', well KO and flowed 2 hours through open 2" to clean up. Shut in overnight. Flowed 171 barrels oil in 4 hours, tubing pressure 200#, final TP 230#. 3/4" choke. GOR 627. 24-hour rate 1026 BOPD.

October 23, 1958

21-K  
10-31

Phillips Petroleum Company  
P. O. Box 548  
Cortez, Colorado

Re: Well No. Desert A-11,  
SW 18-41S-24E, SLBM,  
San Juan County, Utah

Gentlemen:

This letter is to advise you that the well log for the above mentioned well has not as yet been filed with this office as required by our rules and regulations.

Please complete the enclosed Forms OGCC-3, Log of Oil or Gas Well, in duplicate, and forward them to this office as soon as possible.

Yours very truly,

OIL & GAS CONSERVATION COMMISSION

CLEON B. FEIGHT  
SECRETARY

CBB:co

Encls.

R

**PHILLIPS PETROLEUM COMPANY**

Cortez, Colorado  
October 28, 1958

In re: Well # Desert A-11,  
SW 18 -41S-24E

7-10  
10-31

The State of Utah  
Oil & Gas Commission  
Salt Lake City 14, Utah

Attention: Mr. Cleon B. Feight

Dear Sir:

In accordance with your request of October 23, 1958, we are attaching hereto log of Well Desert "A"-11 located in San Juan County Utah.

As agreed in our telephone conversation of this date, we are attaching only one (1) copy of the log instead of duplicate due to the fact that the attached is an extra copy of log we had in our file.

Yours very truly,



C. M. Boles

HGC:bh  
Attach.

W

6

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.

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.)

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

Rutherford Unit

9. WELL NO.

18-14

10. FIELD AND POOL, OR WILDCAT

Greater Aneth Field  
T.T. SEC. 18, E.T. 18, OF BLK. 18  
SURVEY OR AREA

18-415-24E S.L.M.

12. COUNTY OR PARISH

San Juan

13. STATE

Utah

1. OIL WELL  GAS WELL  OTHER

2. NAME OF OPERATOR

Phillips Petroleum Company

3. ADDRESS OF OPERATOR

Drawer 1150, Cortez, Colorado 81321

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

SW, SW, Sec. 18 810' FSL and 600' FWL, Sec. 18

14. PERMIT NO.

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

4691 DF

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

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other)

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other) Squeeze cement and acidize

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

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

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.)\*

Moved in well service unit 7-8-68. Pulled tubing with packer. Ran tubing with Model K cement retainer, set retainer at 5488'. Howco squeezed Desert Creek Zone II and III perforations 5506-21, 5530-56, 5563-70 and 5580-86' to 4000# maximum and holding pressure. Ran retrievable packer and set at 5407', acidized Desert Creek Zone I perforations 5426-58 and 5464-68' with 9000 gallons 15% acid in 3 equal stages with 500 gallons crude oil with 1000# mothball block and 3000 gallons saltwater flush between stages. Swabbed well, pulled packer, reran pumping equipment, resumed pumping 7-12-68.

PREVIOUS PRODUCTION: \*8 BOPD, 16 MCFGPD, 395 BWPD (Greater Aneth Field - Paradox Formation - Desert Creek Zone I, II and III).

\*Note: Production has been 7 BO, 34 MCF Gas, and 7 BW from Zone I only with Zone II and III isolated by packer).

PRESENT PRODUCTION:(Greater Aneth Field - Paradox Formation - Desert Creek Zone I):

38 BOPD, 100 MCFGPD, 0 BWPD

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

SIGNED

G. H. Bliss

(This space for Federal or State office use)

TITLE District Superintendent

DATE 8-12-68

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY:

TITLE

DATE

Distribution:

Orig. & 2 cc: USGS, Farmington, N.M.

2 cc: Utah O&GCC, SLC, Utah

\*See Instructions on Reverse Side

1 cc: B ville

1 cc: Denver

1 cc: Superior

1 cc: File

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE\*  
(Other instructions reverse side)

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

14-20-603-353

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

Navajo Tribal

7. UNIT AGREEMENT NAME

SW-1-4192

8. FARM OR LEASE NAME

Rutherford Unit

9. WELL NO.

13-14

10. FIELD AND POOL, OR WILDCAT

Greater Aneth Field

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

18-415-24E, S14

12. COUNTY OR PARISH 13. STATE

San Juan

Utah

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.)

1. OIL WELL  GAS WELL  OTHER

2. NAME OF OPERATOR  
Phillips Petroleum Company

3. ADDRESS OF OPERATOR  
Drawer 1150, Cortez, Colorado 81321

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

SW, SW, Sec. 18 310' FSL & 600' FWL, Sec. 18

14. PERMIT NO. 15. ELEVATIONS (Show whether DF, RT, GR, etc.)

4691 DF

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) \_\_\_\_\_

(Other) Squeeze cement & Acidize

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

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.)\*

Squeeze cement Zone II and Zone III perforations 5506-5536' OA (4 intervals), acidize Zone I perforations 5426-68' OA (2 intervals) with 9000 gals. 15% acid in 3 stages, return to production.

PREVIOUS PRODUCTION: Last Well Test 5-4-68: 9 BO, 29 MCF Gas, 9 BW in 24 hours with retrievable packer set to produce Zone I only.

DISTRIBUTION: 2 - USGS - Farm.  
2 - Utah O&GCC, SLC, Utah  
1 - Bvils. Prod.  
1 - Denver Prod.  
1 - File

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

SIGNED

*E. W. Brown*

TITLE

District Superintendent

DATE

6-17-68

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

**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.)

<p>1. <input type="checkbox"/> OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER</p> <p>2. NAME OF OPERATOR Phillips Oil Company</p> <p>3. ADDRESS OF OPERATOR P. O. Box 2920, Casper, WY 82602</p> <p>4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface See Attached</p>		<p>5. LEASE DESIGNATION AND SERIAL NO. 96-004192 ✓</p> <p>6. IF INDIAN, ALLOTTED OR TRIBE NAME Navajo</p> <p>7. UNIT AGREEMENT NAME Ratherford Unit ✓</p> <p>8. FARM OR LEASE NAME</p> <p>9. WELL NO.</p> <p>10. FIELD AND POOL, OR WILDCAT N/A</p> <p>11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA See Attached</p>
<p>14. PERMIT NO. See Attached</p>	<p>15. ELEVATIONS (Show whether DF, AT, OR, etc.)</p>	<p>12. COUNTY OR PARISH San Juan</p> <p>13. STATE Utah</p>

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

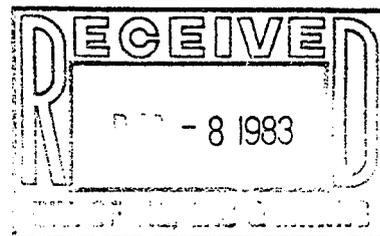
NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> SHOOT OR ACIDIZE <input type="checkbox"/> REPAIR WELL <input type="checkbox"/> (Other) <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/> MULTIPLE COMPLETE <input type="checkbox"/> ABANDON* <input type="checkbox"/> CHANGE PLANS <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/> FRACTURE TREATMENT <input type="checkbox"/> SHOOTING OR ACIDIZING <input type="checkbox"/> (Other) <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/> ALTERING CASING <input type="checkbox"/> ABANDONMENT* <input type="checkbox"/>

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

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.)\*

To show change of Operator only. Phillips Oil Company assumed operations effective December 1, 1983 from Phillips Petroleum Company. See attached for list of wells.

*190 wells  
18-14*



- |  |   |  |
|--|---|--|
| Org. & 3-BLM<br>1-The Navajo Nation<br>1-Mary Wiley Black<br>1-Lawrence E. Brock<br>1-Chevron USA<br>1-Ralph Faxel<br>1-Royal Hogan<br>1-W. O. Keller<br>1-Dee Kelly Corp. | 1-Robert Klabzuba<br>1-Micheal J. Moncrief<br>1-Richard B. Moncrief<br>1-Lee W. Moncrief<br>1-Mary H. Morgan<br>1-W. A. Moncrief<br>1-W. A. Moncrief, Jr.<br>1-L. F. Peterson | 1-Shell Oil Co.<br>1-Southland Royalty Co.<br>1-Superior Oil Co.<br>1-Leroy Shave<br>1-Texaco, Inc.<br>1-Wade Wiley, Jr.<br>1-Edwin W. Word, Jr.<br>1-File |
|--|---|--|

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

SIGNED *A. E. Stuart* A. E. Stuart TITLE Area Manager

DATE 12/6/83

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions on Reverse Side

<u>WELL NO.</u>	<u>WELL LOCATION</u>	<u>API NO.</u>	<u>STATUS</u>
E14-12	SW NW Sec. 14-T41S-R24E	43-037-15998	Act.
E14-13	NW SW Sec. 14-T41S-R24E	43-037-15999	SI
10-44	SE SE Sec. 10-T41S-R24E	43-037-30451	Act.
15-12	SW NW Sec. 15-T41S-R24E	43-037-15715	Act.
15-14	SW SW Sec. 15-T41S-R24E	43-037-15716	SI
15-22	SE NW Sec. 15-T41S-R24E	43-037-30449	Act.
15-32	SW NE Sec. 15-T41S-R24E	43-037-15717	Act.
15-33	NW SE Sec. 15-T41S-R24E	43-037-15718	SI
15-41	NE NE Sec. 15-T41S-R24E	43-037-15719	Act.
15-42	SE NE Sec. 15-T41S-R24E	43-037-3-448	SI
16-12	SW NW Sec. 16-T41S-R24E	43-037-15720	Act.
16-14	SW SW Sec. 16-T41S-R24E	43-037-15721	Act.
16-32	SW NE Sec. 16-T41S-R24E	43-037-15723	Act.
16-34	SW SE Sec. 16-T41S-R24E	43-037-15724	SI
16-41	NE NE Sec. 16-T41S-R24E	43-037-15725	Act.
17-12	SW NW Sec. 17-T41S-R24E	43-037-15726	Act.
17-14	SW SW Sec. 17-T41S-R24E	43-037-15727	Act.
17-23	NE SW Sec. 17-T41S-R24E	43-037-15728	Act.
17-32	SW NE Sec. 17-T41S-R24E	43-037-15729	Act.
17-34	SW SE Sec. 17-T41S-R24E	43-037-15730	Act.
17-41	NE NE Sec. 17-T41S-R24E	43-037-15731	Act.
17-44	SE SE Sec. 17-T41S-R24E	43-037-15732	Act.
18-11	NW NW Sec. 18-T41S-R24E	43-037-15733	SI
18-13	NW SW Sec. 18-T41S-R24E	43-037-15734	Act.
18-14	SW SW Sec. 18-T41S-R24E	43-037-15735	Act.
18-23	NE SW Sec. 18-T41S-R24E	43-037-30244	Act.
18-32	SW NE Sec. 18-T41S-R24E	43-037-15736	Act.
18-34	SW SE Sec. 18-T41S-R24E	43-037-15737	Act.
19-12	SW NW Sec. 19-T41S-R24E	43-037-15739	Act.
19-14	SW SW Sec. 19-T41S-R24E	43-037-15740	SI
19-32	SW NE Sec. 19-T41S-R24E	43-037-15743	Act.
19-34	SW SE Sec. 19-T41S-R24E	43-037-15744	Act.
20-12	SW NW Sec. 20-T41S-R24E	43-037-15746	Act.
20-14	SW SW Sec. 20-T41S-R24E	43-037-15747	Act.
20-32	SW NE Sec. 20-T41S-R24E	43-037-15749	Act.
20-34	SW SE Sec. 20-T41S-R24E	43-037-15750	Act.
21-12	SW NW Sec. 21-T41S-R24E	43-037-15752	Act.
21-14	SW SW Sec. 21-T41S-R24E	43-037-15753	Act.
21-23	NE SW Sec. 21-T41S-R24E	43-037-13754	Act.
21-32	SW NE Sec. 21-T41S-R24E	43-037-15755	Act.
21-33	NW SE Sec. 21-T41S-R24E	43-037-30447	SI
21-34	SW SE Sec. 21-T41S-R24E	43-037-15756	Act.
22-12	SW NW Sec. 22-T41S-R24E	43-037-15757	SI
22-14	SW SW Sec. 22-T41S-R24E	43-037-15758	SI
24-42	SE NE Sec. 24-T41S-R24E	43-037-15863	Act.
28-11	NW NW Sec. 28-T41S-R24E	43-037-30446	Act.
28-12	SW NW Sec. 28-T41S-R24E	43-037-15336	Act.
29-12	SW NW Sec. 29-T41S-R24E	43-037-15337	Act.
29-32	SW NE Sec. 29-T41S-R24E	43-037-15339	Act.

BUREAU OF LAND MANAGEMENT

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.)

RECEIVED

OCT 15 1985

DIVISION OF OIL AND GAS MINING

1. LEASE IDENTIFICATION AND SERIAL NO. 14-20-603-353	
2. WELLS, ALLEGES OR TRADE NAME Navajo	
3. WELL IDENTIFICATION NUMBER SW-I-4192	
4. NAME OF LEASE HOLE Ratherford Unit	
5. WELL NO. 18-14 ✓	
6. FIELD AND FOOT, OR WELDCAT Greater Aneth	
7. SEC., T., R., N., OR S.E. AND SECTION OR AREA Sec. 18-T41S-R24E	
8. COUNTY OR PARISH San Juan	9. STATE Utah
10. IDENTIFY NO. API #43-037-15735	11. ELEVATIONS (Show whether SP, ST, CR, etc.) 4693' RKB

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	<input type="checkbox"/>	WATER SHUT-OFF	<input type="checkbox"/>
FRACTURE TREAT	<input type="checkbox"/>	FRACTURE TREATMENT	<input type="checkbox"/>
SHOOT OR ACIDISE	<input checked="" type="checkbox"/>	SHOOTING OR ACIDISING	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>	(Other)	<input type="checkbox"/>
(Other) Convert to Water Injector	<input type="checkbox"/>	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	
PLUG OR ALTER CASING	<input type="checkbox"/>	REPAIRING WELL	<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>	ALTERING CASING	<input type="checkbox"/>
ABANDON*	<input type="checkbox"/>	ABANDONMENT*	<input type="checkbox"/>
CHANGE PLANS	<input type="checkbox"/>		

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.)

It is proposed to convert Ratherford Unit #18-14 from a Zone I production well to a Zone I water injection well. Upon conversion, the well will be stimulated with 5500 gallons 28% HCL.

A 10' x 8' x 6' fenced pit will be constructed on location in a previously disturbed area. Upon completion of the workover, the pit will be dried and recovered.

- 5-BLM, Farmington, NM
- 2-Utah O&G CC, Salt Lake City, Utah
- 1- P. J. Adamson
- 1- B. Conner, 318 B-TRW
- 1- J. R. Weichbrodt
- 1- C. M. Anderson
- 1- File RC

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

SIGNED *[Signature]* TITLE Area Manager DATE October 8, 1985  
N. C. Gill

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
 CONDITIONS OF APPROVAL, IF ANY: \_\_\_\_\_

\*See Instructions on Reverse Side

STATE OF UTAH  
DIVISION OF OIL, GAS, AND MINING  
ROOM 421 STATE OFFICE BUILDING  
SALT LAKE CITY, UTAH 84114  
(801) 533-5771  
(RULE I-5 & RULE I-4)

FORM NO. DOGM-UIC-1  
(Revised 1982)

IN THE MATTER OF THE APPLICATION OF  
Phillips Petroleum Company  
ADDRESS P. O. Box 2920  
Casper, WY ZIP 82602  
INDIVIDUAL  PARTNERSHIP  CORPORATION   
FOR ADMINISTRATIVE APPROVAL TO DISPOSE OR  
INJECT FLUID INTO THE 18W14 WELL  
SEC. 18 TWP. 41S RANGE 24 E  
San Juan COUNTY, UTAH

CAUSE NO. C-3 (B)

ENHANCED RECOVERY INJ. WELL	<input checked="" type="checkbox"/>
DISPOSAL WELL	<input type="checkbox"/>
LP GAS STORAGE	<input type="checkbox"/>
EXISTING WELL (RULE I-4)	<input type="checkbox"/>

APPLICATION

Comes now the applicant and shows the Corporation Commission the following:

1. That Rule I-5 (g) (iv) authorizes administrative approval of enhanced recovery injections, disposal or LP Gas storage operations.
2. That the applicant submits the following information.

Lease Name <u>Ratherford Unit</u>	Well No. <u>18W14</u>	Field <u>Greater Aneth</u>	County <u>San Juan</u>
Location of Enhanced Recovery Injection or Disposal Well <u>18W14</u> Sec. <u>18</u> Twp. <u>41S</u> Rge. <u>24</u> E			
New Well To Be Drilled Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Old Well To Be Converted Yes <input type="checkbox"/> No <input type="checkbox"/>	Casing Test Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Date _____	
Depth-Base Lowest Known Fresh Water Within 1/2 Mile <u>Wingate 1550'</u>	Does Injection Zone Contain Oil-Gas-Fresh Water Within 1/2 Mile YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		State What Oil & Gas
Location of Injection Source(s) <u>Desert Creek Paradox I &amp; II/ San Juan River</u>	Geologic Name(s) and Depth of Source(s) <u>Desert Creek (5426) San Juan River (Surface)</u>		
Geologic Name of Injection Zone <u>Desert Creek Zone I</u>	Depth of Injection Interval <u>5426 to 5468</u>		
a. Top of the Perforated Interval: <u>5426</u>	b. Base of Fresh Water: <u>1550</u>	c. Intervening Thickness (a minus b) <u>3876</u>	
Is the intervening thickness sufficient to show fresh water will be protected without additional data? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> See previously submitted material, attachment #4			
Lithology of Intervening Zones <u>See previously submitted material, attachment #1</u>			
Injection Rates and Pressures Maximum <u>500</u> B/D <u>Not to exceed approximately 3000</u> PSI			
The Names and Addresses of Those to Whom Notice of Application Should be Sent.			
<u>Navajo Tribe, Minerals Dept., P. O. Box 146, Window Rock, AZ 86515</u>			
<u>Mobil Oil Corp. Attn; Joint Interest Advisor P. O. Box 5444 Denver, CO 80217</u>			
<u>Texaco Inc., P. O. Box 2100, Denver, CO 80201</u>			

State of Wyoming)

Phillips Petroleum Company

County of Natrona)

Applicant

Before me, the undersigned authority, on this day personally appeared D. C. Gill known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states, that he is duly authorized to make the above report and that he has knowledge of the facts stated therein, and that said report is true and correct.

DONALD L. HUDSON, Notary Public  
County of Natrona State of Wyoming  
SEAL

Suscribed and sworn to before me this 4th day of April, 19 86

Donald L. Hudson

My Commission Expires Nov. 3, 1986

Notary Public in and for Natrona Co., Wyoming

(OVER)

INSTRUCTIONS

1. Attach qualitative and quantitative analysis of representative sample of water to be injected and a qualitative and quantitative analysis of the injection formation of water.
2. Attach plat showing subject well and all known oil and gas wells, abandoned, drilling and dry holes within one-half mile, together and with the name of the operator(s).
3. Attach Drillers Log (Form DOGM-UIC-2). (Appropriate Surety must be on file with Conservation Division or appropriate government agencies.)
4. Attach Electric or Radioactivity Log of Subject well (if released).
5. Attach schematic drawing of subsurface facilities including; Size, setting depth, amount of cement used measured or calculated tops of cement surface, intermediate (if any) and production casings; size and setting depth of tubing; type and setting depth of packer; geologic name of injection zone showing top and bottom of injection interval.
6. If the application is for a NEW well the original and six (6) copies of the application and three (3) complete sets of attachments shall be mailed to the Division. For EXISTING well applications (Rule I-4) only ONE copy of the application and ONE complete set of attachments are required to be mailed to the Division.
7. The Division is required to send notice of application to the surface owner of the land within one-half mile of the injection well and to each operator of a producing leasehold within one-half mile of the injection well. List all required names and addresses in the appropriate space provided on the front of this form.
8. Notice that an application has been filed shall be published by the Division in a newspaper of general circulation in the county of publication before the application is approved. The notice shall include the name and address of applicant, location of proposed injection or disposal well, injection zone, injection pressure and volume. If no written objection is received within 15 days from date of publication the application may be approved administratively.
9. A well shall not be used for injection or disposal unless completed machine accounting Form DOGM-UIC-3b is filed by January 31st each year.
10. Approval of this application, if granted, is valid only as long as there is no substantial change in the operations set forth in the application. A substantial operation change requires the approval of a new application.
11. If there is less intervening thickness required by Rule I-5 (b) 4, attach sworn evidence and data.
12. For enhanced recovery projects, information required by Rule I-4 which is common to more than one well, need be reported only once on the application.

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
Surface 27.1#	13 3/8"	173'	175 SX	Surface	Returns
Intermediate 24#	8 5/8"	1416.3'	681 SX	Surface	Returns
Production 14.15.5#	5 1/2"	5231'	232 <sup>3x</sup> 550 cuft	4170	Calculated
Tubing	2-3/8 or 2-7/8		Name - Type - Depth of Tubing Packer Baker type AB Tension Pkr or Similar (5326)		
PT Total Depth 5488	Geologic Name - Inj. Zone Desert Creek Zone 1	Depth - Top of Inj. Interval 5426	Depth - Base of Inj. Interval 5468		

WELL:  
LOCATION: SWSW Sec 18 - T4N - R24E  
FIELD: GREATER ANOTH  
RESERVOIR: Desert Creek Zone I

COMPLETION: Injector /  
PRESENT STATUS: conversion

RKB 4689  
GL 4676



SURFACE CASING: 1 3/8" 27.1#  
SWSJ

Well # 18-14

INTERMEDIATE CASING: 8 5/8"  
24# J-55

1416.3'

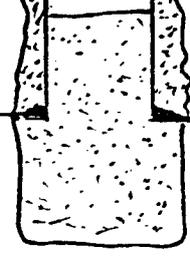
PRODUCTION CASING: 5 1/2"  
14# + 15.5# J-55

PERFORATIONS: \_\_\_\_\_  
5426-58  
5464-68  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PACKER: Baker AB Type or  
Similar Pkr set @  
5326

PBTD: 5488  
OTD: 5595

5631'



Phillips Petroleum Company

Received 4/9/86 mp  
FORM NO. DOGM-UIC-1  
(Revised 1982)

STATE OF UTAH  
DIVISION OF OIL, GAS, AND MINING  
ROOM 4241 STATE OFFICE BUILDING  
SALT LAKE CITY, UTAH 84114  
(801) 533-5771  
(RULE 1-5 & RULE 1-4)

IN THE MATTER OF THE APPLICATION OF  
Phillips Petroleum Company

CAUSE NO. C-3 (B)

ADDRESS P. O. Box 2920  
Casper, WY ZIP 82602

INDIVIDUAL  PARTNERSHIP  CORPORATION

ENHANCED RECOVERY INJ. WELL	<input checked="" type="checkbox"/>
DISPOSAL WELL	<input type="checkbox"/>
LP GAS STORAGE	<input type="checkbox"/>
EXISTING WELL (RULE 1-4)	<input type="checkbox"/>

FOR ADMINISTRATIVE APPROVAL TO DISPOSE OR  
INJECT FLUID INTO THE 18W14 WELL  
SEC. 18 TWP. 41S RANGE 24 E  
San Juan COUNTY, UTAH

APPLICATION

Comes now the applicant and shows the Corporation Commission the following:

1. That Rule 1-5 (g) (iv) authorizes administrative approval of enhanced recovery injections, disposal or LP Gas storage operations.
2. That the applicant submits the following information.

Lease Name <u>Ratherford Unit</u>	Well No. <u>18W14</u>	Field <u>Greater Aneth</u>	County <u>San Juan</u>
Location of Enhanced Recovery Injection or Disposal Well <u>18W14</u> Sec. <u>18</u> Twp. <u>41S</u> Rge. <u>24</u> E			
New Well To Be Drilled Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Old Well To Be Converted Yes <input type="checkbox"/> No <input type="checkbox"/>	Casing Test Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Date _____	
Depth-Base Lowest Known <u>Wingate</u> Fresh Water Within 1/2 Mile <u>1550'</u>	Does Injection Zone Contain Oil-Gas-Fresh Water Within 1/2 Mile YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		State What Oil & Gas
Location of Injection Source(s) <u>Desert Creek Paradox I &amp; II/ San Juan River</u>	Geologic Name(s) and Depth of Source(s) <u>Desert Creek (5426) San Juan River (Surface)</u>		
Geologic Name of Injection Zone <u>Desert Creek Zone I</u>	Depth of Injection Interval <u>5426 to 5468</u>		
a. Top of the Perforated Interval: <u>5426</u>	b. Base of Fresh Water: <u>1550</u>	c. Intervening Thickness (a minus b) <u>3876</u>	
Is the intervening thickness sufficient to show fresh water will be protected without additional data? YES		See previously submitted NO material, attachment #4	
Lithology of Intervening Zones <u>See previously submitted material, attachment #1</u>			
Injection Rates and Pressures Maximum <u>500</u> B/D <u>Not to exceed approximately 3000</u> PSI			
The Names and Addresses of Those to Whom Notice of Application Should be Sent. <u>Navajo Tribe, Minerals Dept., P. O. Box 146, Window Rock, AZ 86515</u> <u>Mobil Oil Corp. Attn; Joint Interest Advisor P. O. Box 5444 Denver, CO 80217</u> <u>Texaco Inc., P. O. Box 2100, Denver, CO 80201</u>			

State of Wyoming

Phillips Petroleum Company

County of Natrona

Applicant

Before me, the undersigned authority, on this day personally appeared D. C. Gill known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states, that he is duly authorized to make the above report and that he has knowledge of the facts stated therein, and that said report is true and correct.

DONALD L. HUDSON - Notary Public  
County of Natrona State of Wyoming  
My Commission Expires Nov. 3, 1986

Subscribed and sworn to before me this 4th day of April, 19 86

Donald L. Hudson  
Notary Public in and for Natrona Co., Wyoming

INSTRUCTIONS

1. Attach qualitative and quantitative analysis of representative sample of water to be injected and a qualitative and quantitative analysis of the injection formation of water.
2. Attach plat showing subject well and all known oil and gas wells, abandoned, drilling and dry holes within one-half mile, together and with the name of the operator(s).
3. Attach Drillers Log (Form DOGM-UIC-2). (Appropriate Surety must be on file with Conservation Division or appropriate government agencies.)
4. Attach Electric or Radioactivity Log of Subject well (if released).
5. Attach schematic drawing of subsurface facilities including; Size, setting depth, amount of cement used measured or calculated tops of cement surface, intermediate (if any) and production casings; size and setting depth of tubing; type and setting depth of packer; geologic name of injection zone showing top and bottom of injection interval.
6. If the application is for a NEW well the original and six (6) copies of the application and three (3) complete sets of attachments shall be mailed to the Division. For EXISTING well applications (Rule I-4) only ONE copy of the application and ONE complete set of attachments are required to be mailed to the Division.
7. The Division is required to send notice of application to the surface owner of the land within one-half mile of the injection well and to each operator of a producing leasehold within one-half mile of the injection well. List all required names and addresses in the appropriate space provided on the front of this form.
8. Notice that an application has been filed shall be published by the Division in a newspaper of general circulation in the county of publication before the application is approved. The notice shall include the name and address of applicant, location of proposed injection or disposal well, injection zone, injection pressure and volume. If no written objection is received within 15 days from date of publication the application may be approved administratively.
9. A well shall not be used for injection or disposal unless completed machine accounting Form DOGM-UIC-3b is filed by January 31st each year.
10. Approval of this application, if granted, is valid only as long as there is no substantial change in the operations set forth in the application. A substantial operation change requires the approval of a new application.
11. If there is less intervening thickness required by Rule I-5 (b) 4, attach sworn evidence and data.
12. For enhanced recovery projects, information required by Rule I-4 which is common to more than one well, need be reported only once on the application.

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
Surface 27.1#	13 3/8"	173'	175 SX	Surface	Returns
Intermediate 24#	8 5/8"	1416.3'	681 SX	Surface	Returns
Production 14, 15.5#	5 1/2"	5231'	2324 <sup>SX</sup> 550 cft	4170	Calculated
Tubing	2-3/8 or 2-7/8		Name - Type - Depth of Tubing Packer Baker type AB Tension Pkr or Similar (5326)		
PS Total Depth 5488	Geologic Name - Inj. Zone Desert Creek Zone 1	Depth - Top of Inj. Interval 5426	Depth - Base of Inj. Interval 5468		

LOCATION: SWSW Sec 16 - T11N R21E  
FIELD: GREATER ANETH  
RESERVOIR: Desert Creek Zone I

WI COMPLETION: Injector /  
PRESENT STATUS: Conversion

RKB 4689  
GL 4676

173'

SURFACE CASING: 1 3/8" 27.1#  
SWSJ

Well # 18-14

INTERMEDIATE CASING: 8 5/8"  
24# J-55

1416.3'

PRODUCTION CASING: 5 1/2"  
14#+15.5# J-55

PERFORATIONS: \_\_\_\_\_  
5426-58  
5464-68  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PACKER: Baker AB Type or  
Similar Pkr set @  
5326

470

PBTD: 5488  
OTD: 5595

5631'

Phillips Petroleum Company

UIC CHECKLIST FOR APPLICATION APPROVAL

OPERATOR Phillips Petroleum WELL NUMBER Rutherford 18-14  
 SEC. 18 T. 41S R. 24E COUNTY SAN JUAN  
 API # 43-037-15735

NEW WELL \_\_\_\_\_ DISPOSAL WELL \_\_\_\_\_ ENHANCED RECOVERY WELL X

- |                                  |              |          |
|----------------------------------|--------------|----------|
| - Plat showing surface ownership | Yes <u>✓</u> | No _____ |
| - Application forms complete     | Yes <u>✓</u> | No _____ |
| - Schematic of well bore         | Yes <u>✓</u> | No _____ |
| - Adequate geologic information  | Yes <u>✓</u> | No _____ |
| - Rate and Pressure information  | Yes <u>✓</u> | No _____ |
| - Fluid source                   | Yes <u>✓</u> | No _____ |
| - Analysis of formation fluid    | Yes <u>✓</u> | No _____ |
| - Analysis of injection fluid    | Yes <u>✓</u> | No _____ |
| - USDW information               | Yes <u>✓</u> | No _____ |
| - Mechanical integrity test      | Yes <u>✓</u> | No _____ |

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
no plugged wells in area of review.  
2 injection wells  
9 producing wells  
500 b/d  
3000 psi max

Reveiwed by *[Signature]* 4/9/86

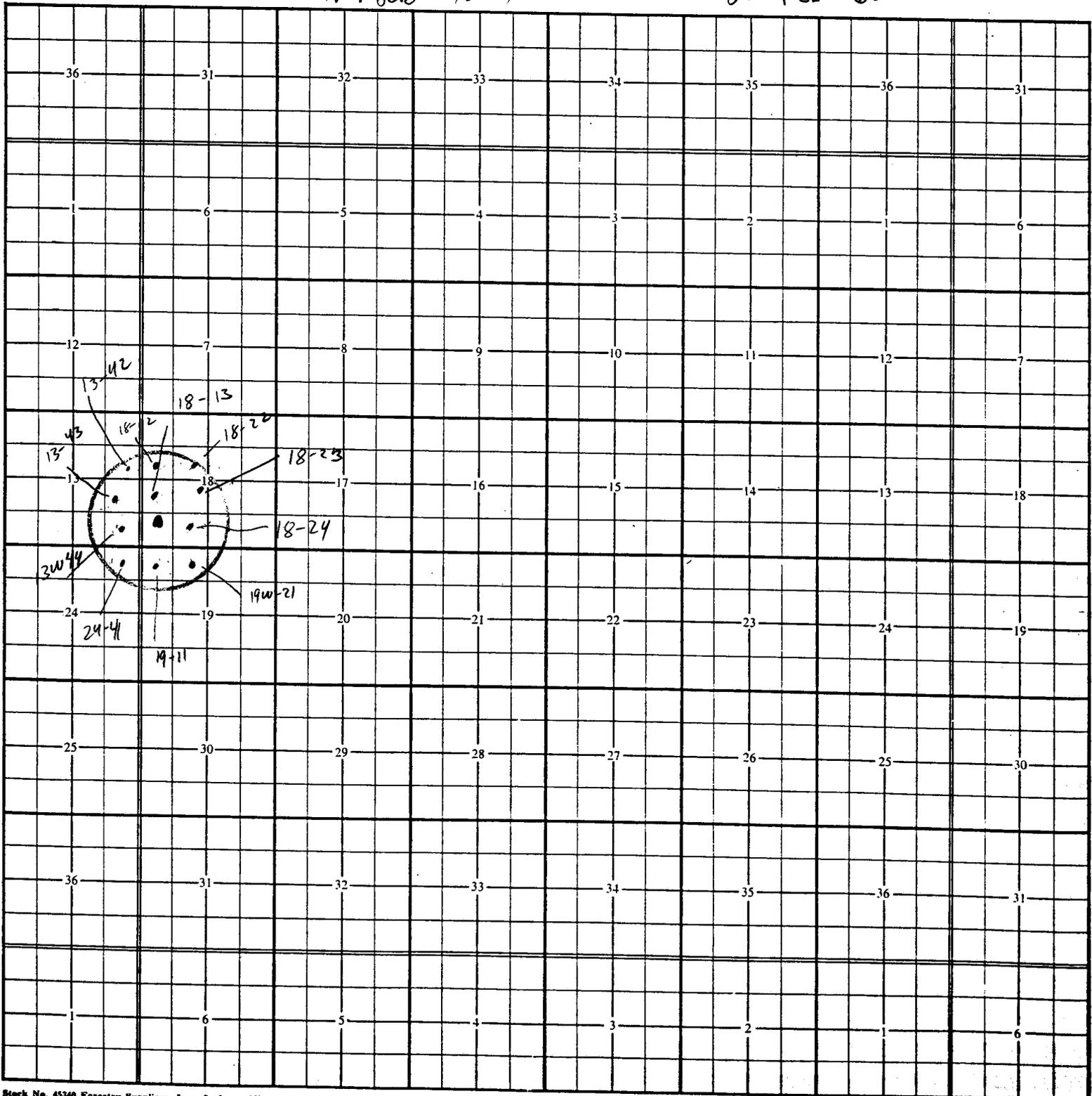
# TOWNSHIP PLAT

Owner Phillips Petroleum Date 4/9/86

Township 41 S Range 24 E County San Juan

RATHER FORD 18-14

810 FSL 60DFWL



Commencement 6/23/86

4

MONTHLY WELL PRODUCTION REPORT

FOHM S/B 7451-N 12-83

DESCRIPTION			COMP. TYPE	W.I.	WELL CLASS	PROD. METHOD	WELL TEST										MONTHLY				REMARK				
LEASE CODE	LEASE NAME	WELL NO.					DATE	CHOKE	WELL HEAD PRESSURE PSIG	SEPARATOR		OIL OR COND. B/D	GAS MCF/D	WATER B/D	GOR CF/B	WTR %	OIL GR. API	DAYS OPD	ALLOWABLE BBLs. or MCF	OIL or COND. BBLs.	GAS MCF	WATER BBLs.	CODE	DATE	
										PRESS. PSIG	TEMP. °F													MO.	DY.
933028NE	NE 13 41S23E	13W41S			Q22WI															15	7	180			
933028SE	SE 13 41S23E	13W44S			Q22WI					70					30			2111	17060	186					
933028NE	SE 14 41S23E	14W43S			Q22WI															15	6	1783			
933028NE	NW 15 41S24E	15W21S			Q22WI					172					30			5146	212	183					
933028NE	SW 15 41S24E	15W23S			Q22WI					76					30			2271	212	183					
933028NE	SE 15 41S24E	15W43S			Q22WI					118					30			3532	212	183					
933028NE	NW 16 41S24E	16W21S			Q22WI					357					30			10719	212	183					
933028NE	SW 16 41S24E	16W23S			Q22WI					231					30			6938	212	183					
933028NE	SE 16 41S24E	16W43S			Q22WI					180					30			5411	1712	285					
933028NE	NW 17 41S24E	17W21S			Q22WI					66					23			1981	1906	2486					
933028NE	SE 17 41S24E	17W43S			Q22WI					116					30			3487	12	83085					
933028SW	SW 18 41S24E	18W14S			Q22WI					530					6			4243	3070	62386					
933028NE	NW 18 41S24E	18W21S			Q22WI					26					30			5421	17	41886					
933028NE	NE 18 41S24E	18W41S			Q22WI					423					30			12701	212	183					
933028NE	SE 18 41S24E	18W43S			Q22WI														1506	1177					
933028NE	NW 19 41S24E	19W21S			Q22WI					164					30			6018	11	92985					
933028NE	SW 19 41S24E	19W23S			Q22WI					238					30			7138	11	21488					
933028NE	NE 19 41S24E	19W41S			Q22WI					78					30			2381	1711	184					
933028NE	SE 19 41S24E	19W43S			Q22WI					262					30			7864	17	13185					
933028NE	NW 20 41S24E	20W21S			Q22WI					12					30			364	11	62084					
933028NE	SW 20 41S24E	20W23S			Q22WI					258					30			7748	11	101384					
933028NE	NE 20 41S24E	20W41S			Q22WI					139					30			4267	11	31685					
933028NE	SE 20 41S24E	20W43S			Q22WI					226					30			8788	17	1	185				
933028NE	NW 21 41S24E	21W21S			Q22WI					130					30			3592	1712	784					
933028NE	NE 21 41S24E	21W41S			Q22WI														15	62183					
933028NE	SE 21 41S24E	21W43S			Q22WI														15	101184					
933028NE	NW 22 41S24E	22W21S			Q22WI														15	92267					
933028NE	NW 24 41S23E	24W21S			Q22WI					525					30			28881	17	6	185				
933028NE	SE 24 41S23E	24W43S			Q22WI					2025					30			18813	1710	184					
933028NE	NW 28 41S24E	28W21S			Q22WI					2150					30			584	17	82485					
933028NE	NW 29 41S24E	29W21S			Q22WI					2075					30			9801	17	1	184				
933028NE	SW 29 41S24E	29W23S			Q22WI														15	1	185				
933028NE	NE 29 41S24E	29W41S			Q22WI					2100					30			12717	11	42285					
933028NE	SE 29 41S24E	29W43S			Q22WI														1910	185					
933028NE	NW 30 41S24E	30W21S			Q22WI														19	7	185				
933028NE	NE 30 41S24E	30W41S			Q22WI					2000					23			1484	1506	2486					
933028NE	SE 30 41S24E	30W43S			Q22WI														15	22477					
			LEASE RESER TOT 933028																						
			RESERVOIR TOTAL			104ANETH - RATHERFORD UNIT																			
															DISTRICT 34			DATE 08 86			PAGE 6				

**COMPLETION TYPE**  
 1st Space U Upper  
 2nd Space M Middle  
 3rd Space C Casing  
 4th Space L Lower  
 5th Space C Casing  
 6th Space T Triple

**WELL CLASSIFICATION**  
 O Oil  
 OC Oil (cond.)  
 AQ Aso. gas (dry)  
 AC Aso. gas (cond.)  
 NG Non-aso. gas (dry)  
 NC Non-aso. gas (cond.)  
 GI Gas injection

**PRODUCING METHOD**  
 WI Water injection  
 WD Salt water disposal  
 WS Water supply  
 M Miscellaneous  
 PL Plunger lift

**WELL TEST DATE**  
 — ES Some data estimated

**CHOKE SIZE**  
 AD Adjustable  
 NO No choke

**MONTHLY ALLOWABLE**  
 D Discovery allow.  
 L Limited allow.  
 M Marginal  
 P Penalized (high GOR)  
**MONTHLY GAS**  
 V Some gas vented  
 E Estimated

**REMARK CODE**  
 01 Drilled and completed  
 02 Acquired  
 03 Trfd. to EDP system  
 04 Recompletion (new)  
 05 New comp. (commingling stopped)  
 06 New comp. (commingling started)  
 07 New classification (converted)

10 New identification  
 11 Stimulation treatment  
 12 Workover, same reservoir  
 13 Artificial lift installed  
 14 Re-classified (oil or gas)  
 15 Shut-down (only)  
 16 Shut-down (service work)  
 17 Activated

20 P&A  
 21 Sold for plugging  
 22 Sold for future operations  
 23 Transferred from EDP system  
 24 Completion abandoned  
 25 Old comp. (commingling stopped)  
 26 Old comp. (before commingling)  
 27 Old classification (converted)

4

080601

DESCRIPTION		WELL NO.	COMP. TYPE	W.I.	WELL CLASS.	PROD. METHOD	WELL TEST										MONTHLY				REMARK															
LEASE CODE	LEASE NAME						DATE	CHOKE SIZE	WELL HEAD PRESSURE PSIG	SEPARATOR PRESS. PSIG	SEPARATOR TEMP. °F	WELL HEAD COND. B/D	GAS MCF/D	WATER B/D	GOR CF/B	WTR %	OIL GR. PAPI	DAYS OPD.	ALLOWABLE BBLs. or MCF	OIL COND. BBLs.	GAS MCF	WATER BBLs.	CODE	DATE												
		MO.   DY.																	MO.   DY.   YR																	
933028NE	13 41S23E	13W41S	Q22WI																15	7	180															
933028SE	13 41S23E	13W44S	Q22WI	X			1650	X		70								2111	1706	0186																
933028NE	14 41S23E	14W43S	Q22WI	X														9146	212	183																
933028NE	15 41S24E	15W21S	Q22WI	X			500			172								2271	212	183																
933028NE	15 41S24E	15W23S	Q22WI	X			2200	X		76								3532	212	183																
933028NE	15 41S24E	15W43S	Q22WI				2150			116								10719	212	183																
933028NE	16 41S24E	16W21S	Q22WI	X			350			397								6938	212	183																
933028NE	16 41S24E	16W23S	Q22WI	X			1529			231								8413	1712	285																
933028NE	16 41S24E	16W43S	Q22WI	X			2129			180								1982	1506	2466																
933028NE	16 41S24E	16W21S	Q22WI	X			2000			66								3487	12	83085																
933028NE	17 41S24E	17W21S	Q22WI	X			2200			118								4243	0706	2386																
933028SW	18 41S24E	18W14S	Q22WI	X			2150			330								842	17	41866																
933028NE	18 41S24E	18W21S	Q22WI	X			2000			26								12704	212	183																
933028NE	18 41S24E	18W41S	Q22WI	X			1375			423								1506	1177																	
933028NE	18 41S24E	18W43S	Q22WI	X														4918	11	92985																
933028NE	19 41S24E	19W21S	Q22WI	X			2150			184								7138	11	21488																
933028NE	19 41S24E	19W23S	Q22WI	X			1025			236								2381	1711	184																
933028NE	19 41S24E	19W41S	Q22WI	X			2100			76								7864	17	13189																
933028NE	19 41S24E	19W43S	Q22WI	X			2000			262								36411	62084																	
933028NE	20 41S24E	20W21S	Q22WI	X			2125			12								7748	11	101384																
933028NE	20 41S24E	20W23S	Q22WI	X			2250			288								4167	11	31688																
933028NE	20 41S24E	20W41S	Q22WI	X			2100			139								6786	17	1185																
933028NE	20 41S24E	20W43S	Q22WI	X			2100			226								3892	1712	784																
933028NE	21 41S24E	21W21S	Q22WI	X			2175			130									15	62183																
933028NE	21 41S24E	21W41S	Q22WI	X															15	101184																
933028NE	21 41S24E	21W43S	Q22WI	X															15	92267																
933028NE	22 41S24E	22W21S	Q22WI	X														2855	17	6185																
933028NE	24 41S23E	24W21S	Q22WI	X			525			982								1661	1710	184																
933028NE	24 41S23E	24W43S	Q22WI	X			2025			554								564	17	62485																
933028NE	28 41S24E	28W21S	Q22WI	X			2150			19								980	17	1184																
933028NE	29 41S24E	29W21S	Q22WI	X			2075			327									15	1185																
933028NE	29 41S24E	29W23S	Q22WI	X														127	1711	42285																
933028NE	29 41S24E	29W41S	Q22WI	X			2100			424									15	10185																
933028NE	29 41S24E	29W43S	Q22WI	X															15	7185																
933028NE	30 41S24E	30W21S	Q22WI	X														1484	1506	2486																
933028NE	30 41S24E	30W41S	Q22WI	X			2000			65									15	22477																
933028NE	30 41S24E	30W43S	Q22WI	X														254323																		
LEASE RESER TOTAL 933028																																				
RESERVOIR TOTAL 104ANETH - RATHERFORD UNIT																																		254323		
DISTRICT 34																																				
DATE 06 86																																				
PAGE 6																																				

**COMPLETION TYPE**  
 1st Space  
 2nd Space  
 3rd Space  
 4th Space  
 5th Space  
 6th Space  
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 42nd Space  
 43rd Space  
 44th Space  
 45th Space  
 46th Space  
 47th Space  
 48th Space  
 49th Space  
 50th Space

**WELL CLASSIFICATION**  
 O Oil  
 OC Oil (cond.)  
 AQ Asso. gas (dry)  
 AC Asso. gas (cond.)  
 NG Non-asso. gas (dry)  
 NC Non-asso. gas (cond.)  
 GI Gas injection

**PRODUCING METHOD**  
 NP Natural flow  
 PL Plunger lift

**WATER INJECTION**  
 WI Water injection  
 WS Salt water disposal  
 WS Water supply  
 M Miscellaneous

**WELL TEST DATE**  
 ES Some data estimated

**CHOKE SIZE**  
 AD Adjustable  
 NO No choke

**MONTHLY ALLOWABLE**  
 D Discovery allow.  
 L Limited allow.  
 M Marginal  
 P Penalized (high GOR)  
**MONTHLY GAS**  
 V Some gas vented  
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**REMARK CODE**  
 01 Drilled and completed  
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 06 New comp. (commingling started)  
 07 New classification (converted)

10 New identification  
 11 Stimulation treatment  
 12 Workover, same reservoir  
 13 Artificial lift installed  
 14 Reclassified (oil or gas)  
 15 Shut-in (no prod.)  
 16 Shut-in (service work)  
 17 Abandoned

20 P&A  
 21 Sold for plugging  
 22 Sold for future operations  
 23 Transferred from EDP system  
 24 Completion abandoned  
 25 New comp. (non-producing)  
 26 New comp. (after completion)  
 27 New classification



**PHILLIPS PETROLEUM COMPANY**

CASPER, WYOMING 82602  
BOX 2920

EXPLORATION AND PRODUCTION GROUP

**RECEIVED**  
APR 09 1986

April 2, 1986

DIVISION OF  
OIL, GAS & MINING

State of Utah  
Oil, Gas and Mining  
Division of Natural Resources  
355 W. North Temple, 3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Attn: Gilbert Hunt

RE: UIC Permit Applications  
Ratherford Unit  
San Juan County, Utah

Dear Mr. Hunt:

Attached are nine applications for the conversion of oil wells to injection at the Ratherford Unit. The required application attachments are the same as those submitted in February and have not been included in this package.

The well conversions applied for are:

13W31	16W14	18W14
14W42	17W14	24W31
16W12	17W41	24W42

Please contact R. C. Taylor of this office with any questions at (307) 237-3791.

Sincerely,

PHILLIPS PETROLEUM COMPANY

*D. C. Gill*  
D. C. Gill  
Area Manager

RCT/fb (39)  
Casper RC



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

April 23, 1986

San Juan Record  
Legal Advertising  
P.O. Box 879  
Monticello, Utah 84535

Gentlemen:

RE: Cause No. UIC-082

Enclosed is a Notice of Application of Administrative Approval before the Division of Oil, Gas and Mining, Department of Natural Resources, State of Utah.

It is requested that this notice be published ONCE ONLY, as soon as possible, but no later than the 7th day of May, 1986. In the event that said notice cannot be published by this date, please notify me immediately by calling 538-5340.

Upon completion of this request, please send proof of publication and statement of cost to the Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203.

Sincerely,

*Marlayne Loubser*  
for

Marjorie L. Anderson  
Administrative Assistant

mfp

Enclosure



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

April 23, 1986

Newspaper Agency Corporation  
Legal Advertising  
143 South Main - Mezzanine Floor  
Salt Lake City, Utah 84110

Gentlemen:

RE: Cause No. UIC-082

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Upon completion of this request, please send proof of publication and statement of cost to the Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203.

Sincerely,

A handwritten signature in cursive script that reads "Marjorie L. Anderson".

for  
Marjorie L. Anderson  
Administrative Assistant

mfp

Enclosure

UIC-082

Utah State Department of Health  
Water Pollution Control  
Attn: Loren Morton  
4241 State Office Building  
Salt Lake City, Utah 84114

Newspaper Agency Corporation  
Legal Advertising  
143 South Main - Mezzanine Floor  
Salt Lake City, Utah 84110

U.S. Environmental Protection Agency  
Suite 1300  
Attn: Mike Strieby  
999 18th Street  
Denver, Colorado 80202-2413

San Juan Record  
Legal Advertising  
PO Box 879  
Monticello, Utah 84535

Bureau of Land Management  
Consolidated Financial Center  
324 South State Street  
Salt Lake City, Utah 84111-2303

Navajo Tribe  
Minerals Department  
PO Box 146  
Window Rock, Arizona 86515

Mobil Oil Corporation  
Attn: Joint Interest Advisor  
PO Box 5444  
Denver, Colorado 80217

Texaco Incorporated  
PO Box 2100  
Denver, Colorado 80201

Phillips Petroleum Company  
PO Box 2920  
Casper, Wyoming 82602

*Marlayne Poulsen*  
\_\_\_\_\_  
April 23, 1986

# Mobil Oil Corporation

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

May 14, 1986

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

**RECEIVED**  
MAY 16 1986

Attn: R. J. Firth  
Associate Director

DIVISION OF  
OIL, GAS & MINING

## 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,



CNE/rd  
CNE8661

R. D. Baker  
Environmental Regulatory Manager



STATE OF UTAH  
 NATURAL RESOURCES  
 Oil, Gas & Mining

Norman H. Bangerter, Governor  
 Dee C. Hansen, Executive Director  
 Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

May 23, 1986

Phillips Petroleum Company  
 P.O. Box 2920  
 Casper, Wyoming 82602

Gentlemen:

RE: Injection Well Approval - Cause No. UIC-082

Administrative approval is hereby granted to convert the following wells to Class II enhanced recovery water injection wells:

RATHERFORD UNIT - San Juan County, Utah

- |                             |                             |
|-----------------------------|-----------------------------|
| #13-31, Sec. 13, T41S, R23E | #16-14, Sec. 16, T41S, R24E |
| #14-42, Sec. 14, T41S, R23E | #17-14, Sec. 17, T41S, R24E |
| #24-42, Sec. 24, T41S, R23E | #17-41, Sec. 17, T41S, R24E |
| #24-31, Sec. 24, T41S, R23E | #18-14, Sec. 18, T41S, R24E |
| #16-12, Sec. 16, T41S, R24E |                             |

This approval is conditional upon full compliance with the UIC rules and regulations adopted by the Board of Oil, Gas and Mining, and construction and operation of the wells as outlined in the applications submitted.

If you have any questions concerning this matter, please do not hesitate to call or write.

Best regards,

Dianne R. Nielson  
 Director

mfp  
 7627U

# Affidavit of Publication

ADM-35B

STATE OF UTAH,  
County of Salt Lake

SS.

.....Cheryl Gierloff.....

BEFORE THE DIVISION OF  
OIL, GAS AND MINING  
DEPARTMENT OF  
NATURAL RESOURCES  
STATE OF UTAH

CAUSE NO. UIC-082  
IN THE MATTER OF THE AP-  
PLICATION OF PHILLIPS PE-  
TROLEUM COMPANY, FOR  
ADMINISTRATIVE APPROVAL  
TO INJECT FLUID INTO  
WELLS TO BE CONVERTED  
TO ENHANCED RECOVERY  
INJECTION WELLS LOCATED  
IN SECTIONS 13, 14 AND 24,  
TOWNSHIP 41 SOUTH, RANGE  
23 EAST; AND SECTIONS 16,  
17, AND 18, TOWNSHIP 41  
SOUTH, RANGE 24 EAST,  
S.L.M. SAN JUAN COUNTY,  
UTAH.

THE STATE OF UTAH TO  
ALL INTERESTED PARTIES IN  
THE ABOVE ENTITLED MAT-  
TER.

Notice is hereby given that  
Phillips Petroleum Company,  
P.O. Box 2920, Casper, Wyo-  
ming 82602, has requested ad-  
ministrative approval from the  
Division to convert the follow-  
ing listed wells to enhanced re-  
covery water injection wells:

- RATHERFORD UNIT  
San Juan County, Utah
- #13-31, Sec. 13, T41S, R23E
- #14-42, Sec. 14, T41S, R23E
- #24-42, Sec. 24, T41S, R23E
- #24-31, Sec. 24, T41S, R23E
- #16-12, Sec. 16, T41S, R24E
- #16-14, Sec. 16, T41S, R24E
- #17-14, Sec. 17, T41S, R24E
- #17-41, Sec. 17, T41S, R24E
- #18-14, Sec. 18, T41S, R24E

INJECTION INTERVAL: Desert  
Creek Formation 5371' to 5640'  
MAXIMUM ESTIMATED SUR-  
FACE PRESSURE: 3000 psig  
MAXIMUM ESTIMATED WA-  
TER INJECTION RATE: 500  
BWPD

Approval of this Application  
will be granted unless objec-  
tions are filed with the Division  
of Oil, Gas and Mining within fif-  
teen days after publication of  
this Notice. Objections, if any,  
should be mailed to the Division  
of Oil, Gas and Mining, Atten-  
tion: UIC Program Manager,  
355 West North Temple, 3 Triad  
Center, Suite 350, Salt Lake  
City, Utah 84180-1203.

DATED this 21st day of April,  
1986.

STATE OF UTAH  
DIVISION OF OIL,  
GAS AND MINING  
MARJORIE L. ANDERSON  
Administrative Assistant

M-52

Being first duly sworn, deposes and says that he/she is  
legal advertising clerk of THE SALT LAKE TRIBUNE,  
a daily newspaper printed in the English language with  
general circulation in Utah, and published in Salt Lake  
City, Salt Lake County, in the State of Utah, and of the  
DESERET NEWS, a daily newspaper printed in the  
English language with general circulation in Utah, and  
published in Salt Lake City, Salt Lake County, in the  
State of Utah.

That the legal notice of which a copy is attached hereto

.....Cause No. UIC-082 - Application of Phillips.....

.....Petroleum Company.....

.....was published in said newspaper on.....

.....May 7, 1986.....

*Cheryl Gierloff*  
Legal Advertising Clerk

Subscribed and sworn to before me this .....20th..... day of

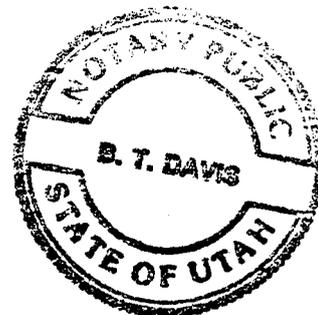
.....May..... A.D. 1986.....

*B. T. Davis*

Notary Public

My Commission Expires

.....March 1, 1988.....



# AFFIDAVIT OF PUBLICATION

## Public notice

**NATURAL RESOURCES  
STATE OF UTAH**

IN THE MATTER OF THE APPLICATION OF PHILLIPS PETROLEUM COMPANY, FOR ADMINISTRATIVE APPROVAL TO INJECT FLUID INTO WELLS TO BE CONVERTED TO ENHANCED RECOVERY INJECTION WELLS LOCATED IN SECTIONS 13, 14 AND 24, TOWNSHIP 41 SOUTH, RANGE 23 EAST; AND SECTIONS 16, 17 AND 18, TOWNSHIP 41 SOUTH, RANGE 24 EAST, S.L.M. SAN JUAN COUNTY, UTAH

\*\*\*

CAUSE NO. UIC-082

IN THE STATE OF UTAH TO ALL INTERESTED PARTIES IN THE ABOVE ENTITLED MATTER.

Notice is hereby given that Phillips Petroleum Company, P.O. Box 2920, Casper, Wyoming 82602, has requested administrative approval from the Division to convert the following listed wells to enhanced recovery water injection wells:

### RATHERFORD UNIT

San Juan County, Utah

#13-31, Sec. 13, T41S, R23E

#14-42, Sec. 14, T41S, R23E

#24-42, Sec. 24, T41S, R23E

#24-31, Sec. 24, T41S, R23E

#16-12, Sec. 16, T41S, R24E

#16-14, Sec. 16, T41S, R24E

#17-14, Sec. 17, T41S, R24E

#17-41, Sec. 17, T41S, R24E

#18-14, Sec. 18, T41S, R24E

INJECTION INTERVAL: Desert Creek Formation 5371' to 5640'

MAXIMUM ESTIMATED SURFACE PRESSURE: 3000 psig

INJECTION RATE: 500 BWPD

Approval of this Application will be granted unless objections are filed with

this Notice. Objections, if any, should be mailed to the Division of Oil, Gas and Mining, Attention: UIC Program Manager, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84108-1203.

DATED this 21st day of April, 1986.

STATE OF UTAH  
DIVISION OF OIL  
of Mr. Angus. Started pullets.  
\* Yearling black Angus bulls out

I, Joyce Martin, be duly sworn,

depose and say that I am the publisher of the San Juan Record, a weekly newspaper of general circulation published at Monticello, Utah, every Wednesday; that notice of Cause No. UIC-082

a copy of which is hereunto attached, was published in the regular and entire issue of each number of said newspaper for a period of one issues, the first publication having been made on April 30, 1986. and the last publication having been made on \_\_\_\_\_

Signature

Joyce A Martin  
Publisher

Subscribed and sworn to before me this 30th day of April, A.D. 1986.

Freid K Adams  
Notary Public  
Residing at Monticello, Utah

My commission expires December 2, 1987

BEFORE THE DIVISION OF OIL, GAS AND MINING  
DEPARTMENT OF NATURAL RESOURCES  
STATE OF UTAH

---oo0oo---

IN THE MATTER OF THE APPLICATION : CAUSE NO. UIC-082  
OF PHILLIPS PETROLEUM COMPANY, :  
FOR ADMINISTRATIVE APPROVAL TO :  
INJECT FLUID INTO WELLS TO BE :  
CONVERTED TO ENHANCED RECOVERY :  
INJECTION WELLS LOCATED IN SEC- :  
TIONS 13, 14 AND 24, TOWNSHIP 41 :  
SOUTH, RANGE 23 EAST; AND SECTIONS :  
16, 17, AND 18, TOWNSHIP 41 SOUTH, :  
RANGE 24 EAST, S.L.M. SAN JUAN :  
COUNTY, UTAH :

---oo0oo---

THE STATE OF UTAH TO ALL INTERESTED PARTIES IN THE ABOVE ENTITLED  
MATTER.

Notice is hereby given that Phillips Petroleum Company, P.O. Box  
2920, Casper, Wyoming 82602, has requested administrative approval from  
the Division to convert the following listed wells to enhanced  
recovery water injection wells:

RATHERFORD UNIT - San Juan County, Utah

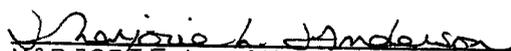
#13-31, Sec. 13, T41S, R23E	#16-14, Sec. 16, T41S, R24E
#14-42, Sec. 14, T41S, R23E	#17-14, Sec. 17, T41S, R24E
#24-42, Sec. 24, T41S, R23E	#17-41, Sec. 17, T41S, R24E
#24-31, Sec. 24, T41S, R23E	#18-14, Sec. 18, T41S, R24E
#16-12, Sec. 16, T41S, R24E	

INJECTION INTERVAL: Desert Creek Formation 5371' to 5640'  
MAXIMUM ESTIMATED SURFACE PRESSURE: 3000 psig  
MAXIMUM ESTIMATED WATER INJECTION RATE: 500 BWPD

Approval of this Application will be granted unless objections are  
filed with the Division of Oil, Gas and Mining within fifteen days  
after publication of this Notice. Objections, if any, should be  
mailed to the Division of Oil, Gas and Mining, Attention: UIC Program  
Manager, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake  
City, Utah 84180-1203.

DATED this 21st day of April, 1986.

STATE OF UTAH  
DIVISION OF OIL, GAS AND MINING

  
MARJORIE L. ANDERSON  
Administrative Assistant

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

SUBMIT IN TRIPLI  
(Other instructions  
verse side)

Form approved.  
Budget Bureau No. 1004-0135  
Expires August 31, 1985

**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.)

1. <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER    Water Injector		3. LEASE DESIGNATION AND SERIAL NO. 14-20-603-353
2. NAME OF OPERATOR Phillips Petroleum Company		6. IF INDIAN, ALLOTTEE OR TRIBE NAME Navajo
3. ADDRESS OF OPERATOR P. O. Box 2920, Casper, WY 82602		7. UNIT AGREEMENT NAME SW-I-4192
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 810' FSL & 660' FWL                      SW SW  API #43-037-15735		8. FARM OR LEASE NAME Ratherford Unit
14. PERMIT NO.	15. ELEVATIONS (Show whether DF, ST, GR, etc.) 4693' RKB	9. WELL NO. 18W14
		10. FIELD AND POOL, OR WILDCAT Greater Aneth
		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 18-T41S-R24E
		12. COUNTY OR PARISH    13. STATE San Juan                      Utah

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

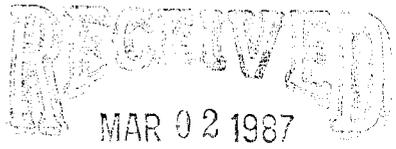
NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <u>Converted to Water Injection</u> <input checked="" type="checkbox"/>	
(Other) <input type="checkbox"/>		(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

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.)\*

June 16, 1986 through June 23, 1986 -

MI WS Unit 6/16/86. Tag top of cmt retainer in hole at 5488'. Circ hole clean. Test tbg and retainer to 2600 psi for 15 min, OK. Acidized Zone I 5426-5468' w/3600 gal 28% HCL Acid. Swbd load back. Ran 2-3/8" Duoline tbg and pkr. Set pkr at 5315'.  
RD WS Unit 6/21/86. Started Injecting 6/23/86 from Zone I Perfs 5426-5468' OA.

Production Before - Shut-in 10/4/85  
Injection After - 530 BWPD at 2150 psi



DIVISION OF  
OIL, GAS & MINING

- |                        |                |
|------------------------|----------------|
| 4-BLM, Farmington, NM  | 1-Chieftain    |
| 2-Utah O&G CC, SLC, UT | 1-Mobil Oil    |
| 1-M. Williams, B'Ville | 1-Texaco, Inc. |
| 1-J. Landrum, Denver   | 1-Chevron USA  |
| 1-J. Reno, Cortez      | 1-File RC      |

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

SIGNED D. C. Gill TITLE Area Manager DATE February 26, 1987

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY: \_\_\_\_\_

\*See Instructions on Reverse Side

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

SUBMIT IN TRIPPLICATE\*  
(Other instructions on re-  
verse side)

Budget Bureau No. 1004-0135  
Expires August 31, 1985

**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.)

<p>1. <input type="checkbox"/> OIL WELL    <input type="checkbox"/> GAS WELL    <input type="checkbox"/> OTHER    WATER INJECTION &amp; WATER SUPPLY WELLS</p> <p>2. NAME OF OPERATOR PHILLIPS PETROLEUM COMPANY</p> <p>3. ADDRESS OF OPERATOR 152 N. DURBIN, 2ND FLOOR, CASPER, WYOMING-82601</p> <p>4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface  <u>SEE ATTACHED</u></p>		<p>5. LEASE DESIGNATION AND SERIAL NO.  SW-I-4192</p> <p>6. IF INDIAN, ALLOTTEE OR TRIBE NAME</p> <p>7. UNIT AGREEMENT NAME RATHERFORD UNIT #7960041920</p> <p>8. FARM OR LEASE NAME</p> <p>9. WELL NO. VARIOUS (see attached)</p> <p>10. FIELD AND POOL, OR WILDCAT GREATER ANETH</p> <p>11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sections 1 thru 30 T41S - R23E &amp; 24E</p> <p>12. COUNTY OR PARISH    13. STATE San Juan                      Utah</p>
<p>14. PERMIT NO.</p>	<p>15. ELEVATIONS (Show whether DF, RT, CR, etc.)  OIL, GAS &amp; MINING</p>	

RECORDED  
MAR 20 1989

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <u>CHANGE OF OWNERSHIP</u> <input checked="" type="checkbox"/>	
(Other) <input type="checkbox"/>		(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

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.)\*

This is to advise all Water Injection and Water Supply Wells on the Ratherford Unit, listed on the attached sheet, were sold to Phillips Petroleum Company, effective August 1, 1985.  
  
(former Operator - Phillips Oil Company)

3 - BLM, Farmington, NM  
2 - Utah O&G CC, SLC, UT  
1 - File

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

SIGNED S. H. Oden                      TITLE District Superintendent                      DATE March 17, 1989  
S. H. Oden

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions on Reverse Side

# DOWN HOLE SCHEMATIC

Date: 8/6/97

RATHERFORD Unit # 18W14

Location SW SW Sec. 18  
T41S-R24E

RKB Elev. 4692'

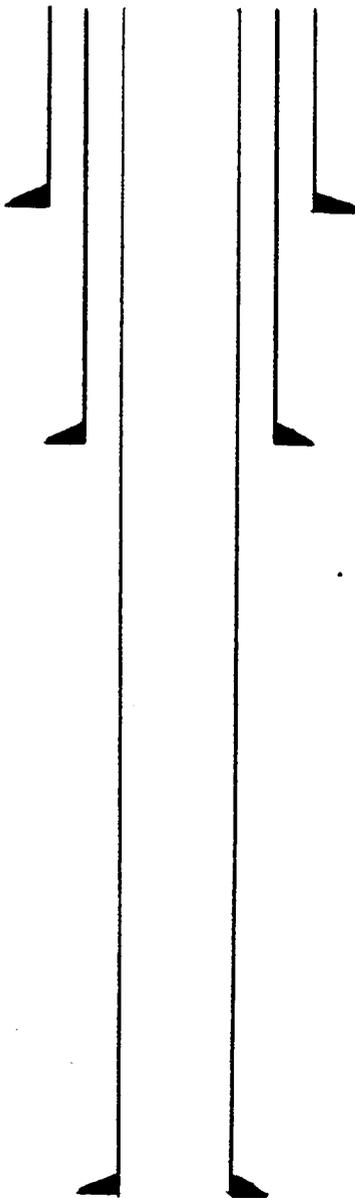
GL Elev. 4681'

RKB Above GL' 11'

Well Drld 6/28/58

Well converted to injector 6/21/86

42.381 50 SHEETS 5 SQUARE  
 42.382 100 SHEETS 5 SQUARE  
 42.389 200 SHEETS 5 SQUARE  
 NATIONAL



CONDUCTOR Csg. 1 3/8" @ 174'

SURFACE Csg. 8 7/8" @ 1416'

TOC 4050' CALC.

Tubing 2 3/8" @ 5315' Duoline HT2

PACKER Otis Inter-lock PKR  
@ 5315'

PERFS	<u>5426 - 5458</u>	_____	_____
	<u>5464 - 5468</u>	_____	_____
	_____	_____	_____
	_____	_____	_____

PBTD 5488'

PRODUCTION Csg. 5 1/2" @ 5631'  
J-55, 14#, 15.5#

All Perfs Zone I unless noted

MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

ACCOUNT NUMBER: N0772

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

RECEIVED

AUG 16 1993

REPORT PERIOD (MONTH/YEAR):

6 / 93

DIVISION OF  
OIL, GAS & MINING

AMENDED REPORT  (Highlight Changes)

Well Name			Producing Zone	Well Status	Days Oper	Production Volumes		
API Number	Entry	Location				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

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 Konkell* Telephone Number: 505 599-3452

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.

SEP 15 1993

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

10. FIELD AND POOL OR WILDCAT

GREATER ANETH

At surface

DIVISION OF OIL, GAS & MINING

At proposed prod. zone

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

14. API NO.

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

12. COUNTY

SAN JUAN

13. STATE

UTAH

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

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF	<input type="checkbox"/>	PULL OR ALTER CASING	<input type="checkbox"/>
FRACTURE TREAT	<input type="checkbox"/>	MULTIPLE COMPLETE	<input type="checkbox"/>
SHOOT OR ACIDIZE	<input type="checkbox"/>	ABANDON	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>	CHANGE PLANS	<input type="checkbox"/>
(Other)			

SUBSEQUENT REPORT OF:

WATER SHUT-OFF	<input type="checkbox"/>	REPAIRING WELL	<input type="checkbox"/>
FRACTURE TREATMENT	<input type="checkbox"/>	ALTERING CASING	<input type="checkbox"/>
SHOOTING OR ACIDIZING	<input type="checkbox"/>	ABANDONMENT*	<input type="checkbox"/>
(Other) CHANGE OF OPERATOR			

(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 JULY 1, 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 Dodd

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:

OCT 25 1993

TRANSFER OF AUTHORITY TO INJECT - UIC FORM 5

Well name and number: \_\_\_\_\_  
Field or Unit name: RATHERFORD UNIT API no. \_\_\_\_\_  
Well location: QQ \_\_\_\_\_ section \_\_\_\_\_ township \_\_\_\_\_ range \_\_\_\_\_ county \_\_\_\_\_  
Effective Date of Transfer: July 1, 1993

CURRENT OPERATOR

Transfer approved by:  
Name Ed Hasely Company Phillips Petroleum Company  
Signature *Ed Hasely* Address 5525 HWY. 64  
Title Environmental Engineer Farmington, NM 87401  
Date October 22, 1993 Phone ( 505 ) 599-3460  
Comments:

NEW OPERATOR

Transfer approved by:  
Name Shirley Todd Company Mobil Exploration & Producing North America  
Signature *Shirley Todd* Address P O Box 633  
Title Env. & Reg. Technician Midland, TX 79702  
Date October 7, 1993 Phone ( 915 ) 688-2585  
Comments:

(State use only)  
Transfer approved by *Lisha Cordova* Title *UIC Manager*  
Approval Date *10-27-93*

BEFORE THE OIL AND GAS CONSERVATION COMMISSION OF THE STATE OF UTAH

APPLICATION OF PHILLIPS PETROLEUM )  
 COMPANY FOR THE APPROVAL OF THE )  
 UNIT OPERATIONS AND PRESSURE MAIN- ) CAUSE NO. 63  
 TENANCE PROGRAM FOR THE RATHERFORD )  
 UNIT IN THE GREATER ANETH AREA, )  
 SAN JUAN COUNTY, UTAH )

ORDER

This Cause came on for hearing before the Oil and Gas Conservation Commission of the State of Utah at 10 o'clock a. m. on Wednesday, September 13, 1961, in the Crystal Room, Hotel Newhouse, Fourth South at Main Street, Salt Lake City, Utah, pursuant to notice duly and regularly given. The entire Commission, except Walter G. Mann, was present, Edward W. Clyde presiding. Appearances were made as follows: Cecil C. Hamilton, attorney, on behalf of Phillips Petroleum Company; Clair M. Senior, attorney, on behalf of Texaco, Inc.; Gordon Mayberry, attorney, on behalf of Continental Oil Company; R. R. Robison on behalf of Shell Oil Company. Others present included Carl Trawick, on behalf of United States Geological Survey; and J. R. White, on behalf of Texaco, Inc.

Evidence in support of the application was introduced by Phillips Petroleum Company, the applicant and Unit Operator of the Ratherford Unit, which embraces as the unit area the following described land in San Juan County, State of Utah, to wit:

TOWNSHIP 41 SOUTH, RANGE 23 EAST, SEEM

Section 1:	All	Sections 12 and 13:	All
Section 2:	3/2	Section 14:	3/2
Section 11:	3/2	Section 24:	All

TOWNSHIP 41 SOUTH, RANGE 24 EAST, SEEM

Section 3:	SW/4	Sections 15	
Section 4:	3/2	through 21:	All
Sections 5 through 9:	All	Section 22:	W/2 of the
Section 10:	3/2 and NW/4		SW/4
	and W/2 of NE/4	Section 23:	NE/4 and
Section 11:	3/2 of SW/4		W/2 of NE/4
Section 14:	1/2		and W/2 of SW/4
		Section 29 and 30:	All
		Section 31:	3/2
		Section 32:	3/2

R. R. Robison on behalf of Shell Oil Company stated that (as contemplated by paragraph No. 5 of the Commission's order of February 24, 1959, in Cause No. 17 authorizing the drilling of certain test wells) Shell would submit to the Commission, as arbiter, the question as between Shell and Superior Oil Company

of the monetary value, if any, to be attributed to three test wells drilled within the Ratherford Unit area pursuant to said order of February 24, 1959.

No objection to the granting of the application was filed or expressed. The Shell Oil Company, Texaco, Inc. and Continental Oil Company expressed their support of the application of Phillips Petroleum Company.

#### FINDINGS OF FACT

The Commission finds that:

1. The unitized operation of the Ratherford Unit Area will enable pressure maintenance operations to be initiated and permit such Area to be operated in a manner which will prevent waste, protect correlative rights and result in greater ultimate recovery of oil and gas.

2. The Ratherford Unit Agreement has been approved by the various signatory parties as fair, reasonable and acceptable.

3. The water injection pressure maintenance program proposed by the applicant appears to be proper and designed to result in the greatest economic recovery of oil and gas to the end that all concerned, including the general public, may realize and enjoy the greatest good from the oil and gas resources of the unitized lands.

#### ORDER

THEREFORE, IT IS ORDERED BY THE COMMISSION, and subject to its continuing jurisdiction, that:

1. Unit operation of the Ratherford Unit Area under the Ratherford Unit Agreement is approved.

2. The plan and program of water injection pressure maintenance operations proposed by applicant in its application filed herein should be and the same is hereby approved and the unit operator is authorized to proceed with and under such plan and program as soon as the Ratherford Unit Agreement becomes effective and operative.

3. If, at any time or from time to time, it appears necessary or desirable to the unit operator to alter or modify the hereby approved plan of pressure maintenance, any such alteration or modification shall be submitted for

and shall be subject to approval by the Commission or its delegated representative, which approval may be given without notice or hearing, unless otherwise ordered or directed by the Commission.

Dated this 13th day of September, 1961.

THE OIL AND GAS CONSERVATION  
COMMISSION OF THE STATE OF UTAH

  
Edward W. Clyde, Commissioner presiding

  
C. R. Henderson, Chairman

  
M. V. Hatch, Commissioner

  
C. S. Thomson, Commissioner

  
Walter G. Mann, Commissioner

SEP 14 1961

# 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 6*  
 DALLAS TX 75221-9031 *CORTEZ, CO. 81321*

UTAH ACCOUNT NUMBER: N7370

REPORT PERIOD (MONTH/YEAR): 7 / 93

AMENDED REPORT  (Highlight Changes)

*\*931006 updated.  
Jc*

ENTITY NUMBER	PRODUCT	GRAVITY	BEGINNING INVENTORY	VOLUME PRODUCED	DISPOSITIONS				ENDING INVENTORY
		BTU			TRANSPORTED	USED ON SITE	FLARED/VENTED	OTHER	
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 ~~ASO~~ 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: 9/5/93

Name and Signature: L. B. Sheffield

Telephone Number: 303 565 2212  
244 658 2528

Sept 29, 1993

TO: Lisha Cordova - Utah Mining  
Oil & Gas

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

Here is copy of Rutherford Unit  
Successor Operator,

4 pages including this one.

*2/1c Ratherford Unit (GC)*

RECEIVED  
BLM

JUL 27 AM 11:44

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

070 FARMINGTON, NM

ARES/543

JUL 28 1993

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

MINERAL DIVISION
DATE
TIME
BY
RECEIVED
ALL SUPV.
FILED

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

RECEIVED  
BLM

DESIGNATION OF OPERATOR

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

JUN 27 11:44

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

070 FARMINGTON, NM

and, pursuant to the terms of the Rutherford 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 Rutherford 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 Rutherford 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 Rutherford Unit.

Phillips Petroleum Company

June 17, 1993

By: M. B. [Signature]  
Attorney-in-Fact

Mobil Exploration and Producing  
North America Inc.

June 11, 1993

By: B. D. [Signature]  
Attorney-in-Fact B.D. MARTINY

[Signature] ACTING AREA DIRECTOR  
APPROVED BY TITLE DATE  
7/9/93

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

<u>Tract Number</u>	<u>Description of Land</u>	<u>Serial Number and Effective Date of Lease</u>	<u>Tract Percentage Participation</u>
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

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) \_\_\_\_\_

Other  
OPERATOR CHANGE  
\_\_\_\_\_  
\_\_\_\_\_

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

2. DOGM Employee (name) L. CORDOVA (Initiated Call   
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 OPERATED BY MEPNA, CURRENTLY  
REPORTED OUT OF DALLAS (MCELMO CREEK).

Division of Oil, Gas and Mining  
**OPERATOR CHANGE WORKSHEET**

Routing:
1-VEC/47-83
2-DPS/58-APL
3-VLC
4-RJF
5-TEC
6-RV

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       Operator Name Change Only

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

TO (new operator) <u>M E P N A</u>	FROM (former operator) <u>PHILLIPS PETROLEUM COMPANY</u>
(address) <u>PO DRAWER G</u>	(address) <u>5525 HWY 64 NBU 3004</u>
<u>CORTEZ, CO 81321</u>	<u>FARMINGTON, NM 87401</u>
<u>GLEN COX (915)688-2114</u>	<u>PAT KONKEL</u>
phone <u>(303)565-2212</u>	phone <u>(505)599-3452</u>
account no. <u>N7370</u>	account no. <u>N0772(A)</u>

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

Name: <b>**SEE ATTACHED**</b>	API: <u>43-037-15735</u>	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**

- Sec 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form). (Reg. 8-20-93) (6/93 Prod. Rpt. 8-16-93)
- Sec 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form). (Reg. 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: \_\_\_\_\_.
- Sec 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.
- Sec 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)
- Sec 6. Cardex file has been updated for each well listed above. (O&G wells 10-6-93) (Wiw's 10-26-93)
- Sec 7. Well file labels have been updated for each well listed above. (O&G wells 10-6-93) (Wiw's 10-26-93)
- Sec 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)
- Sec 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.

ENTITY REVIEW

- 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) no (If entity assignments were changed, attach copies of Form 6, Entity Action Form).
- 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

BOND VERIFICATION (Fee wells only)

- 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) no. Today's date 11-17 1993. If yes, division response was made by letter dated 11-17 1993.

LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY

- 1. (Rule R615-2-10) The former operator/lessee of any fee lease well listed above has been notified by letter dated 11-10-93 1993, 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.
- 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

- 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

931006 BIA/Btm Approved 7-9-93.

✓ 12W-44	43-037-16405	14-20-603-246A	SEC. 12, T41S, R23E	SE/SE 660 FSL; 660 FEL	PA'd
✓ 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	
<del>13W-44</del>	<del>43-037-15853</del>	<del>14-20-603-247</del>	<del>SEC. 13, T41S, R23E</del>	<del>600 FSL; 3300 FEL</del>	
✓ 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	
<del>14-03</del>	<del>NA</del>	<del>14-20-603-4037</del>	<del>SEC. 11, T41S, R23E</del>	<del>SW/SW 660 FSL; 660 FEL</del>	
✓ 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	
<del>18W-32</del>	<del>43-037-15736</del>	<del>14-20-603-353</del>	<del>SEC. 18, T41S, R24E</del>	<del>SW/NE 2140' FNL; 1830' FEL</del>	
✓ 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	PA'd
✓ 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	

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APR 11 1994

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

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)

810' FSL, 600' FWL; 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 18-14

9. API Well No.  
43-037-15735

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

Notice of Intent  
 Subsequent Report  
 Final Abandonment Notice

TYPE OF ACTION

Abandonment  Change of Plans  
 Recompletion  New Construction  
 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.)\*

03-28-94 MIRU. TAG FILL AT 5480'; PUMP 4000 GALS 15% HCL ACROSS PERF INTERVALS 5426-5458, 5464-5468. DISP W/15 BBLs FW, FLOW BACK LOAD. RETURN WELL TO INJECTION.

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

Signed D. Irvine for Shirley Todd Title ENV. & REG. TECHNICIAN Date 04/04/94

(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.

Division of Oil, Gas and Mining  
**OPERATOR CHANGE WORKSHEET**

Routing	
1- <del>LVC</del>	7-PL
2-LWP	8-SJ
3- <del>DTS</del>	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                               Operator Name Change Only

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

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

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

Name: <u>** SEE ATTACHED **</u>	API: <u>037-15735</u>	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.
- Yes 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. 8-21-95
- WJF 7. Well file labels have been updated for each well listed above. 9-28-95
- Yes 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)
- Yes 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.

**ENTITY REVIEW**

- Lee* 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) 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/ Lee* 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. *UTS 8/5/95*
- 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 4 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!*

STATE OF UTAH  
INVENTORY OF INJECTION WELLS

OPERATOR	API NO.	WELL	TNS	RGE	SE	WELLTYPE	INDIAN COUNT
*****	*****	*****	***	***	**	*****	*****
✓MEPNA (MOBIL	43-037-15722	16W23	41S	24E	16	INJW	Y
✓MEPNA (MOBIL	43-037-16414	16W21	41S	24E	16	INJW	Y
✓MEPNA (MOBIL	43-037-16416	17W21	41S	24E	17	INJW	Y
✓MEPNA (MOBIL	43-037-15726	17W12	41S	24E	17	INJW	Y
✓MEPNA (MOBIL	43-037-15731	17W41	41S	24E	17	INJW	Y
✓MEPNA (MOBIL	43-037-16417	17W43	41S	24E	17	INJW	Y
✓MEPNA (MOBIL	43-037-15728	17W23	41S	24E	17	INJW	Y
✓MEPNA (MOBIL	43-037-15730	17W34	41S	24E	17	INJW	Y
✓MEPNA (MOBIL	43-037-15729	17W32	41S	24E	17	INJW	Y
✓MEPNA (MOBIL	43-037-15727	17W14	41S	24E	17	INJW	Y
✓MEPNA (MOBIL	43-037-31153	18W12	41S	24E	18	INJW	Y
✓MEPNA (MOBIL	43-037-15737	18W34	41S	24E	18	INJW	Y
✓MEPNA (MOBIL	43-037-15736	18W32	41S	24E	18	INJW	Y
✓MEPNA (MOBIL	43-037-30244	18W23	41S	24E	18	INJW	Y
✓MEPNA (MOBIL	43-037-15735	18W14	41S	24E	18	INJW	Y
✓MEPNA (MOBIL	43-037-16418	18W21	41S	24E	18	INJW	Y
✓MEPNA (MOBIL	43-037-15738	18W41	41S	24E	18	INJW	Y
✓MEPNA (MOBIL	43-037-15741	19W21	41S	24E	19	INJW	Y
✓MEPNA (MOBIL	43-037-15742	19W23	41S	24E	19	INJW	Y
✓MEPNA (MOBIL	43-037-15745	19W41	41S	24E	19	INJW	Y
✓MEPNA (MOBIL	43-037-16420	19W43	41S	24E	19	INJW	Y
✓MEPNA (MOBIL	43-037-15748	20W23	41S	24E	20	INJW	Y
✓MEPNA (MOBIL	43-037-15751	20W41	41S	24E	20	INJW	Y
✓MEPNA (MOBIL	43-037-16423	20W21	41S	24E	20	INJW	Y
✓MEPNA (MOBIL	43-037-16424	20W43	41S	24E	20	INJW	Y
✓MEPNA (MOBIL	43-037-16427	21W43	41S	24E	21	INJW	Y
✓MEPNA (MOBIL	43-037-16425	21W21	41S	24E	21	INJW	Y
✓MEPNA (MOBIL	43-037-16431	28W21	41S	24E	28	INJI	Y
✓MEPNA (MOBIL	43-037-16433	29W41	41S	24E	29	INJW	Y
✓MEPNA (MOBIL	43-037-16432	29W21	41S	24E	29	INJW	Y
✓MEPNA (MOBIL	43-037-15338	29W23	41S	24E	29	INJI	Y
✓MEPNA (MOBIL	43-037-16434	29W43	41S	24E	29	INJW	Y
✓MEPNA (MOBIL	43-037-15343	30-41	41S	24E	30	INJW	Y
✓MEPNA (MOBIL	43-037-16435	30W21	41S	24E	30	INJI	--

PHONE CONVERSATION DOCUMENTATION FORM

Route original/copy to:

Well File \_\_\_\_\_  
\_\_\_\_\_  
(Location) Sec \_\_\_ Twp \_\_\_ Rng \_\_\_  
(API No.) \_\_\_\_\_

Suspense  
(Return Date) \_\_\_\_\_  
(To - Initials) \_\_\_\_\_

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 ) - 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).

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**RECEIVED**  
MAY 27 1997  
DIVISION OF OIL, GAS & MINING

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 **INJECTOR**

2. Name of Operator **Mobil Exploration & Producing U.S. Inc.  
as Agent for Mobil Producing TX & NM Inc.**

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)  
**810' FSL & 600' FWL  
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                      18-W-14**

9. API Well No.

**43-037-15735**

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

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

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

**LATERAL #1 BHL: 1263' SOUTH & 1138' EAST F/SURFACE SPOT ZONE 1a.  
LATERAL #2 BHL: 376' NORTH & 1033' WEST F/SURFACE SPOT ZONE 1a.**

SEE ATTACHED PROCEDURE.

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

Signed *Shelley Hutchins* Title ENV. & REG. TECHNICIAN Date 05-23-97

(This space for Federal or State office use)

Approved by *John R. Bay* Title Petroleum Engineer Date 6/4/97

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.

**Rutherford Unit Well #18-14  
Multilateral Horizontal Drilling Procedure**

The objective of this procedure is to prepare this wellbore for sidetracking, sidetrack the subject well and drill multiple short and medium radius horizontal laterals (1200-3000 ft).

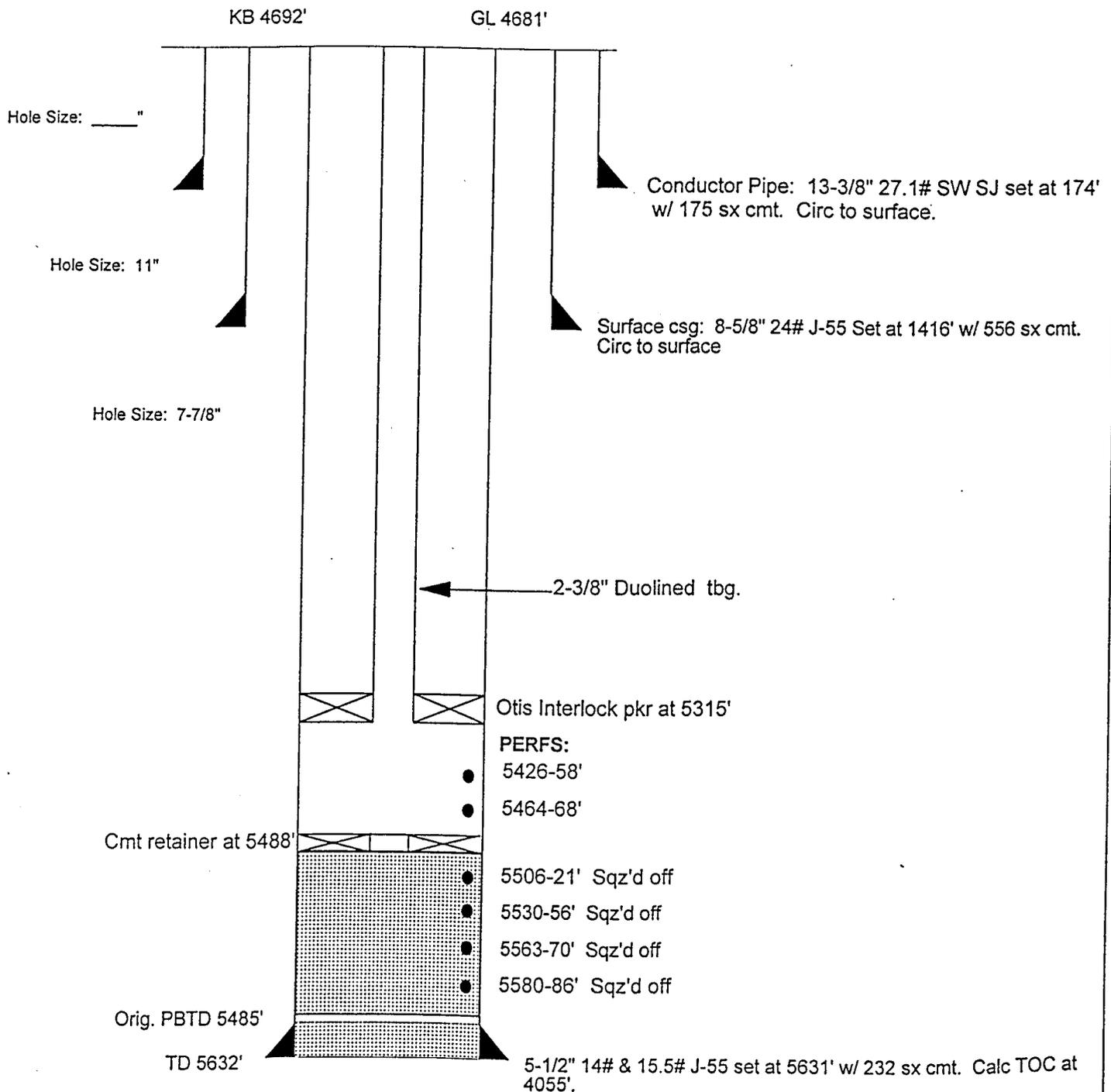
1. Prepare location and dig working pit.
2. MIRU WSU, reverse unit, and H<sub>2</sub>S equipment. Bullhead kill weight fluid down tubing.
3. Release packer, and pick up on wellhead to remove. ND wellhead and NU BOP's. Pressure test BOP's.
4. Continue to POH with tubing.
5. TIH with full gauge bit and casing scraper to PBTB. TOH with bit and scraper.
6. Ensure well will circulate, and set RTBP above perms. **Pressure test casing to 1000 psi.**
7. RDMO WSU.
8. MIRU 24 hr WSU.
9. PU tubing, drill collars, and drill pipe in derrick and run in hole. Then POH and stand back.
10. RU wireline company and run gauge ring for casing down to packer setting depth.
11. Run packer on wireline and set using GR/CCL log to correlate with. RD wireline.
12. PU drillpipe with UBHO sub and latch assembly.
13. Latch into packer. Run gyro and obtain orientation of keyway on packer.
14. POH w/ gyro. POH w/ drill pipe and RIH w/ whipstock oriented on the surface for window azimuth desired.
15. Shear pilot mill bolt and start milling window.
16. POH and PU window mill and watermelon mill to finish window and drill 3 ft of formation.
17. POH w/ mills and RBIH w/ new mills to clean up window.
18. PU drill pipe and directional motors to drill curve. Use the gyro to drill until the inclination dictates that the gyro must be pulled.
19. Pull five stands of drill pipe and run steering tool to finish drilling the curve.
20. POH once curve is finished and PU lateral motor to drill the lateral using MWD.

21. Once lateral TD is reached, POH w/ directional equipment.
22. RIH w/ hook and retrieve whipstock.
23. PU new whipstock with extension in body for next window and orient on surface to desired azimuth.
24. Repeat steps 15-23, for each successive planned lateral.

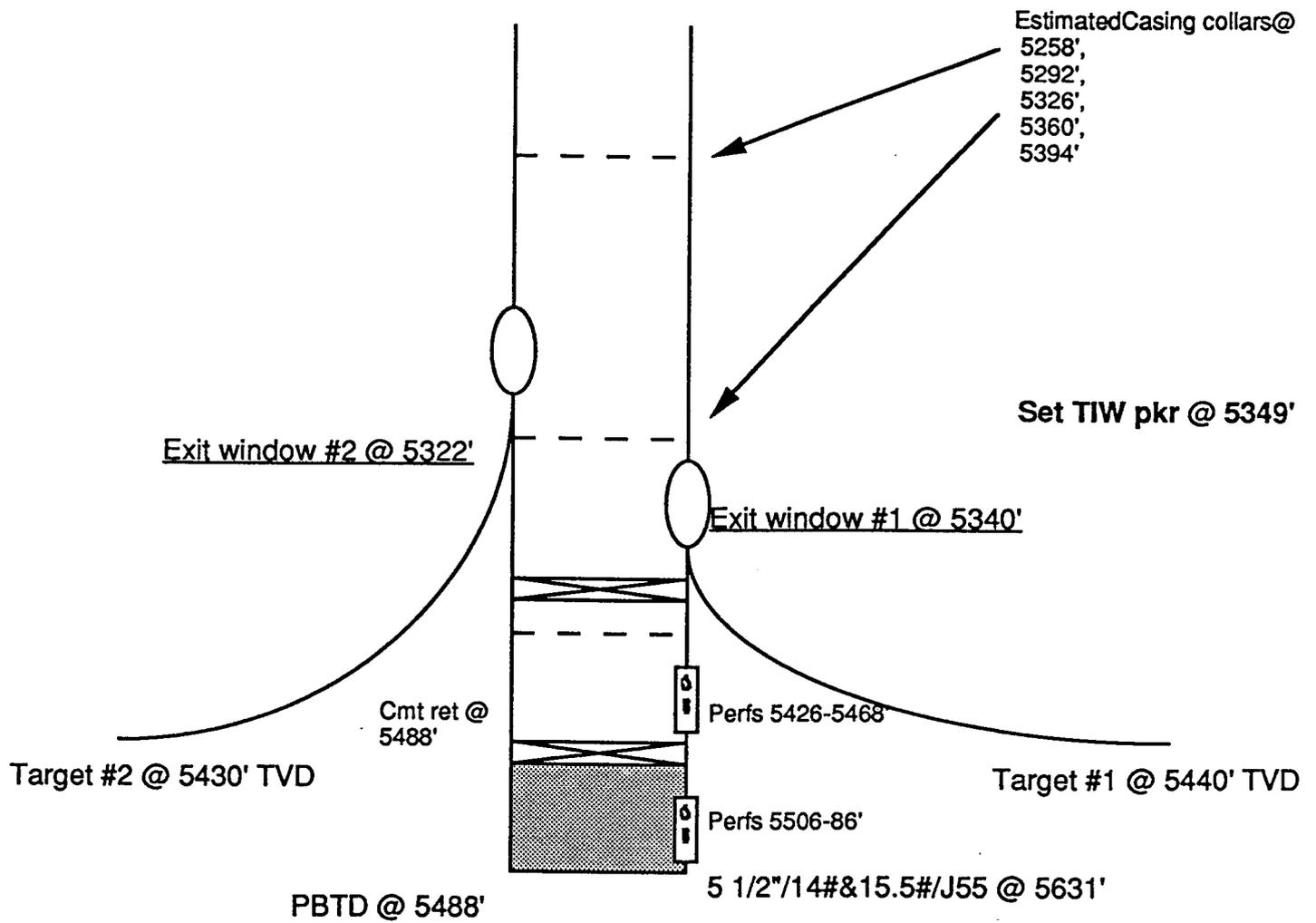
**RATHERFORD UNIT # 18W-14**  
**GREATER ANETH FIELD**  
 600' FWL & 810' FSL  
 SEC 18-T41S-R24E  
 SAN JUAN COUNTY, UTAH  
 API 43-037-15735  
 PRISM 0043063

**INJECTOR**

Capacities:	bbl/ft	gal/ft	cuft/ft
2-7/8" 6.5#	.00579	.2431	.0325
5-1/2" 14#	.0244	1.0249	.1370
5-1/2" 15.5#	.0238	.9997	.1336
2-7/8x5.5"14#	.0164	.6877	
.0919			
2-7/8x5.5"15.5#	.0158	.6625	
.0886			



# Whipstock plan for Ratherford #18-14



Window	Btm-Top of window	Extension length	Curve radius	Bearing	Horiz Displ
1	5340-31	-	100	138	1700
2	5322-13	18	108	290	1100

\*The double spline is 2.42 ft long and the bottom of the whipstock, latch, shear sub, and debris sub are 8.68 ft long. These lengths must be added to the extension lengths to determine the entire whipstock assembly length. 11.1 ft should be added to the extension length above when the double spline is used.

**Casing (btm to top)**

5 Jts (137.17') 15.5#  
 165 Jts (5463.32') 14#  
 1 Jt (16.38') 15.5#

WORKSHEET  
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 05/27/97

API NO. ASSIGNED: 43-037-15735

WELL NAME: RATHERFORD 18-W-14 (MULTI-LEG)  
 OPERATOR: MOBIL EXPL & PROD INC (N7370)

PROPOSED LOCATION:  
 SWSW 18 - T41S - R24E  
 SURFACE: 0810-FSL-0600-FWL  
 BOTTOM: 1900-FNL-1940-FWL  
 SAN JUAN COUNTY  
 GREATER ANETH FIELD (365)

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

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

PROPOSED PRODUCING FORMATION: PRDX

RECEIVED AND/OR REVIEWED:

Plat  
 Bond: Federal  State  Fee   
 (Number \_\_\_\_\_)  
 Potash (Y/N)  
 Oil shale (Y/N)  
 Water permit  
 (Number NAVAJO ALLOTMENT)  
 RDCC Review (Y/N)  
 (Date: \_\_\_\_\_)

LOCATION AND SITING:

R649-2-3. Unit: RATHERFORD UNIT  
 R649-3-2. General.  
 R649-3-3. Exception.  
 Drilling Unit.  
 Board Cause no: \_\_\_\_\_  
 Date: \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

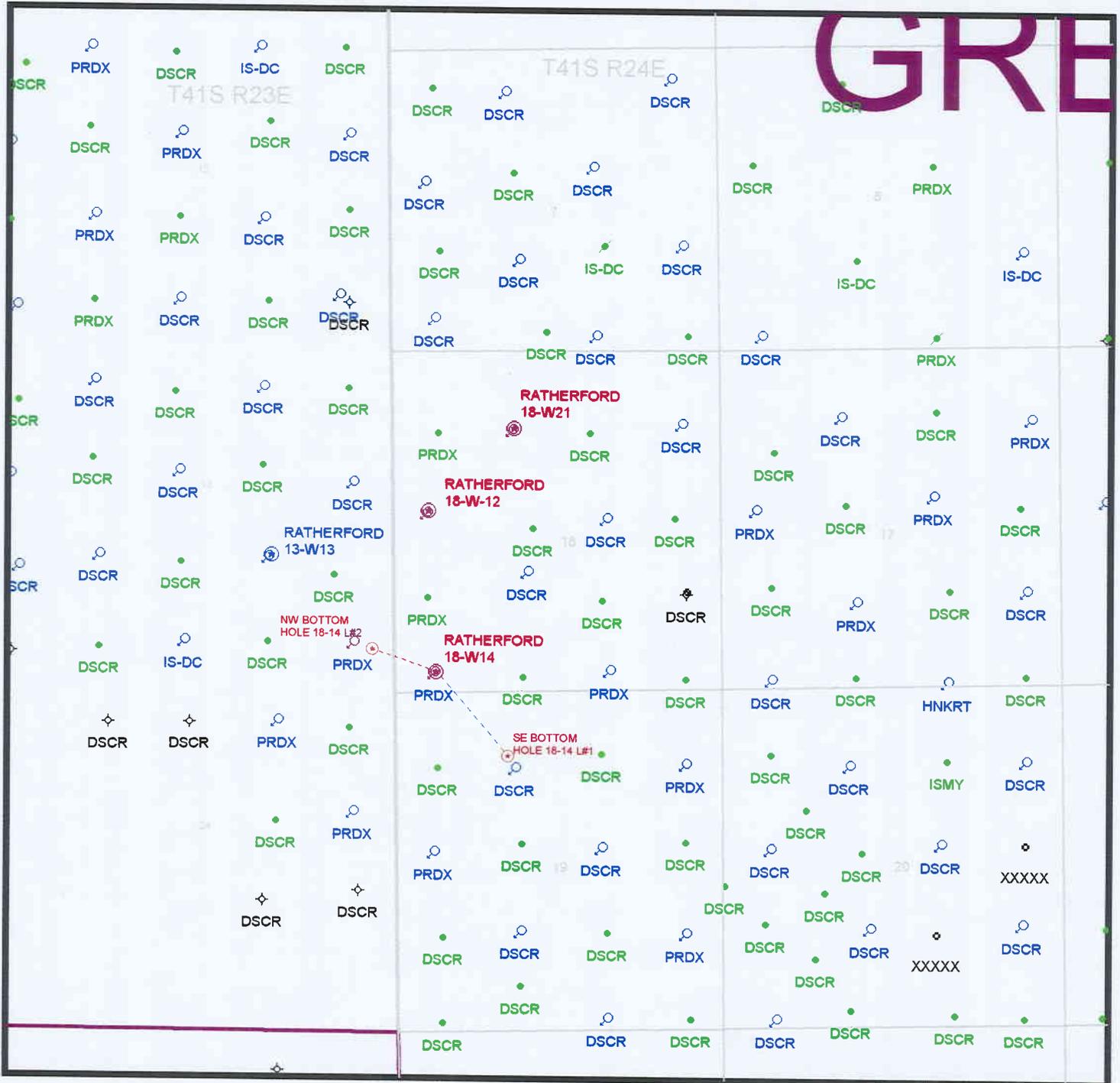
STIPULATIONS: 1. Directional drilling  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

OPERATOR: MOBILI EXPL & PROD (N7370)

FIELD: GREATER ANETH (365)

SEC, TWP, RNG: 18, T41S, R24E

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



PREPARED:  
DATE: 2-JUNE-97



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)

June 4, 1997

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

Re: Ratherford 18-W-14 Well, 810' FSL, 600' FWL, SW SW,  
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 43-037-15735.

Sincerely,

*Lowell P. Braxton*  
Lowell P. Braxton  
Deputy Director

lwp

Enclosures

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



DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

Name of Company: MOBIL E & P

Well Name: RATHERFORD UNIT 18-W-14 (MULTI-LEG)

Api No. 43-037-15735

Section: 18 Township: 41S Range: 24E County: SAN JUAN

Drilling Contractor: BIG "A"

Rig # 25

SPUDDED:

Date: 7/31/97

Time: \_\_\_\_\_

How: ROTARY

Drilling will commence: \_\_\_\_\_

Reported by: BENNY BRIGGS

Telephone NO.: \_\_\_\_\_

Date: 7/31/97 Signed: JLT

✓



# ROCKY MOUNTAIN GEO-ENGINEERING

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

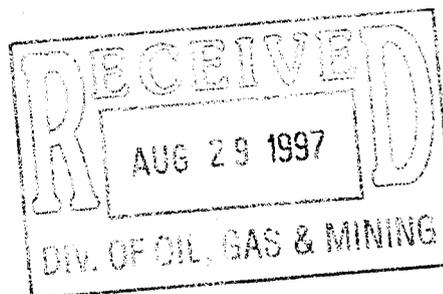
**ROCKY MOUNTAIN GEO-ENGINEERING CORP.**

2450 INDUSTRIAL BLVD. • GRAND JUNCTION, CO 81505

(970) 243-3044 • (FAX) 241-1085

Tuesday, August 26, 1997

Division of Oil & Gas Mining  
State of Utah  
1636 W. North Temple  
Salt Lake City, UT 84116



Re: **Rutherford Unit #18-14 Legs 1 & 2**

Sec. 18, T41S, R24E

San Juan County, Utah

**43 037 15735**

Dear Sirs: **DRL**

Enclosed are the final <sup>**DWSW**</sup> computer colored logs and geology reports for the above referenced well.

**10 LOG FILE 8-29-97**

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.

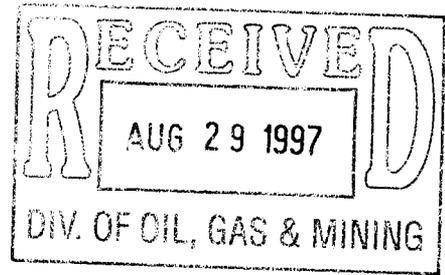
Sincerely,

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



**MOBIL**

**RATHERFORD UNIT #18-14  
SE HORIZONTAL LATERAL LEG #1  
UPPER 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**

**MICROFICHE**

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**WELL SUMMARY**

**OPERATOR:** MOBIL EXPLORATION & PRODUCTION U.S. INC.

**NAME:** RATHERFORD UNIT #18-14 SE HORIZONTAL LATERAL  
LEG#1 IN 1-A UPPER POROSITY BENCH, DESERT CREEK

**LOCATION:** SECTION 18, T41S, R24E

**COUNTY/STATE:** SAN JUAN, UTAH

**ELEVATION:** KB:4692' GL:4681'

**SPUD DATE:** 08/02/97

**COMPLETION DATE:** 08/06/97

**DRILLING ENGINEER:** BENNY BRIGGS

**WELLSITE GEOLOGY:** DAVE MEADE / MARVIN ROANHORSE

**MUDLOGGING ENGINEERS:** DAVE MEADE / MARVIN ROANHORSE

**CONTRACTOR:** BIG "A" RIG 25  
**TOOLPUSHER:** J. DEES

**HOLE SIZE:** 4 3/4"

**CASING RECORD:** SIDETRACK IN WINDOW AT 5341' MEASURED DEPTH

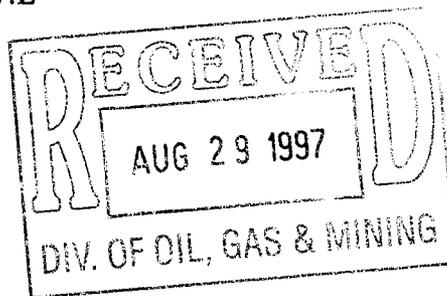
**DRILLING MUD:** M-I  
**ENGINEER:** RON WESTENBERG/ DANNE BEASON  
**MUD TYPE:** FRESH WATER & BRINE WATER W/ POLYMER SWEEPS

**DIRECTIONAL DRILLING CO:** SPERRY-SUN

**ELECTICAL LOGGING:** NA

**TOTAL DEPTH:** 7178' MEASURED DEPTH 5430.36' TVD

**STATUS:** TOH & LAY DOWN TOOLS. PREPARE TO RUN WHIPSTOCK #2



**DRILLING CHRONOLOGY**  
**RATHERFORD UNIT #18-14**  
**1-A SE HORIZONTAL LATERAL LEG#1**

<b>DATE</b>	<b>DEPTH</b>	<b>DAILY</b>	<b>ACTIVITY</b>
7/30/97	8364'	0'	TOH-LAY DOWN DRILL PIPE & COLLARS-RIG DOWN
7/31/97	5310'	0'	MOVE RIG & RIG UP
8/01/97	5333'	0'	RIG UP-PICK UP PIPE & TIH-LATCH IN TO & PULL BRIDGE PLUG-TOH-P.U. PACKER-TIH-SET PACKER-TOH
8/02/97	5333'	9'	TIH-W/WHIPSTOCK & STARTING MILL-LATCH INTO PACKER & SHEAR OFF W/10K- P.U. SWIVEL,CHANGE OUT GRANT RUBBER & BREAK CIR-MILL 5333'-5335'-CIR BTMS UP-TOH/STARTER MILL-LAY DOWN STARTER MILL-TIH W/WINDOW MILL, WATERMELLON MILL & BREAK CIR-MILL 5335'-5341'-PUMP & CIR OUT 8 BBL SWEEP-HANG SWIVEL & TOH-LAY DOWN MILLS-P.U. CURVE BHA,ORIENT & TEST MTR-P.U. 10 JNTS PH-6 TUBING-TIH,BREAK CIR-RIG UP GYRO DATA-SEAT GYRO & GYRO TOOL FACE-TIME DRLG 5341'-5342'
8/03/97	5342'	99'	TIME DRLG 5342'-5345'-DIR DRLG & WIRELINE SURVEYS 5345'-5365'-SURVEY,PULL GYRO & RIG DOWN GYRO DATA-DIR DRLG & SURVEYS-WORK TOOL FACE-MUD MOTOR FAILED-TOH-CHANGE OUT MUD MOTOR-TIH-DIR DRLG & SURVEYS
8/04/97	5421'	104'	DIR DRLG & SURVEYS TO 5515'-PUMP SWEEP & SMPLS OUT-L.D. 3 JNTS D.P.-REAM FROM 5410'-5415'-L.D. 48 JNTS D.P.-L.D. CURVE ASSMEBLY-RIG SERVICE-P.U. 50 JNTS PH-6 D.P. OFF RACK-TIH W/LATERAL BHA & NEW BIT #2-WORK PIPE,P.U. SWIVEL & INSTALL CORROSION RING-DIR DRLG & SURVEYS
8/05/97	5693'	757'	DIR DRLG & SURVEYS
8/06/97	6450'	728'	DIR DRLG & SURVEYS TO TD OF 7178'-PUMP SWEEP & SMPLS OUT-DISPLACE HOLE W/ BRINE-TOH-L.D. MUD MTR(MWD)-P.U. SUPERHOOK & TIH-CIR OUT GAS BUBBLE & OIL-TIH W/SUPERHOOK-CIR BOTTEMS UP @ 1976 STKS,LATCH ONTO WHIPSTOCK @ 5334' & SHEAR OFF-POOH W/WHIPSTOCK

## DAILY ACTIVITY

Operator: MOBIL

Well Name: RATHERFORD UNIT #18-14 SE 1-A HORIZONTAL LATERAL LEG#1

DATE	DEPTH	DAILY	DATE	DEPTH	DAILY
7/31/97		0'			
8/01/97	5333'	0'			
8/02/97	5333'	9'			
8/03/97	5342'	99'			
8/04/97	5421'	272'			
8/05/97	5693'	757'			
8/06/97	6450'	728'			
TD	7178'				

# BIT RECORD

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #18-21 SE 1-A HORIZONTAL LATERAL LEG#1

RUN	SIZE	MAKE	TYPE	IN/OUT	FTG	HRS	FT/HR
#1	4 3/4"	STC	MF-3P	5341'/ 5515'	174'	22.5	7.73
#2	4 3/4"	HTC	STR-20	5515'/ 7178'	1,663'	39.25	42.37

Customer ... : Mobil (Utah)  
 Platform ... : RATHERFORD UINT  
 Slot/Well .. R.U. 18-14 leg #1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5300	1.18	244.89	5298.13	4 S	124.37 W	-80.25	0
5333.85	1.17	242.36	5331.97	4.31 S	124.99 W	-80.43	0.16
5341	4.1	154.27	5339.12	4.57 S	124.95 W	-80.21	59.1
5351	10.1	143.07	5349.04	5.6 S	124.26 W	-78.99	61.29
5361	16.2	140.18	5358.77	7.37 S	122.84 W	-76.72	61.33
5371	23.2	138.84	5368.18	9.93 S	120.65 W	-73.35	70.14
5381	29.5	138.07	5377.13	13.25 S	117.71 W	-68.92	63.09
5391	33.4	137.55	5385.66	17.11 S	114.2 W	-63.7	39.09
5401	34.5	137.18	5393.96	21.22 S	110.42 W	-58.12	11.19
5411	39.1	136.9	5401.96	25.6 S	106.34 W	-52.13	46.03
5421	43.6	136.67	5409.47	30.41 S	101.81 W	-45.52	45.03
5431	47.7	136.48	5416.46	35.61 S	96.9 W	-38.38	41.02
5441	53.1	136.32	5422.83	41.18 S	91.59 W	-30.68	54.01
5451	58.4	136.18	5428.46	47.15 S	85.87 W	-22.42	53.01
5461	63.5	136.05	5433.31	53.45 S	79.81 W	-13.68	51.01
5471	68.8	135.93	5437.35	60.03 S	73.46 W	-4.55	53.01
5481	74.2	135.82	5440.52	66.83 S	66.86 W	4.93	54.01
5493	80.5	135.7	5443.15	75.21 S	58.7 W	16.62	52.51
5503	86	134.1	5444.33	82.22 S	51.67 W	26.53	57.25
5515	89.5	132.2	5444.8	90.42 S	42.92 W	38.48	33.18
5547.9	89.6	132.2	5445.05	112.52 S	18.55 W	71.21	0.3
5579.72	91.9	134	5444.64	134.26 S	4.68 E	102.91	9.18
5611.49	94.1	136.9	5442.98	156.86 S	26.94 E	134.59	11.45
5643.27	94.6	137.6	5440.56	180.13 S	48.45 E	166.28	2.7
5675.05	93.8	137	5438.24	203.42 S	69.94 E	197.97	3.14
5706.82	91.3	137	5436.82	226.63 S	91.58 E	229.7	7.87
5738.62	88.5	135.8	5436.88	249.66 S	113.51 E	261.49	9.58
5770.41	87.5	134.9	5437.99	272.26 S	135.84 E	293.22	4.23
5802.21	88.6	137	5439.07	295.1 S	157.93 E	324.98	7.45
5833.99	89.4	138.3	5439.63	318.58 S	179.34 E	356.76	4.8
5865.72	89	136.2	5440.07	341.88 S	200.87 E	388.48	6.74
5897.56	89.6	136.9	5440.46	364.99 S	222.77 E	420.3	2.9
5929.31	91.1	138.8	5440.26	388.53 S	244.07 E	452.05	7.62
5961.04	91.5	139.5	5439.54	412.53 S	264.82 E	483.77	2.54
5992.85	91.3	140.4	5438.77	436.87 S	285.28 E	515.55	2.9
6024.66	92	140.4	5437.85	461.37 S	305.55 E	547.32	2.2
6056.44	92.1	140.9	5436.71	485.93 S	325.69 E	579.04	1.6
6088.28	89.6	141.1	5436.24	510.67 S	345.72 E	610.83	7.88

Customer ... : Mobil (Utah)  
 Platform ... : RATHERFORD UNIT  
 Slot/Well .. R.U. 18-14 leg #1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
6120.1	88.1	139	5436.88	535.05 S	366.15 E	642.62	8.11
6151.98	87.6	139	5438.08	559.1 S	387.05 E	674.48	1.57
6183.82	89.7	138.4	5438.83	583.01 S	408.06 E	706.3	6.86
6215.68	90	138.4	5438.91	606.83 S	429.21 E	738.16	0.94
6247.49	92.7	139	5438.16	630.72 S	450.2 E	769.96	8.69
6279.33	91.6	138.8	5436.97	654.7 S	471.11 E	801.77	3.51
6311.23	90.2	137.2	5436.46	678.4 S	492.45 E	833.67	6.66
6342.95	89.9	136.3	5436.44	701.5 S	514.19 E	865.38	2.99
6374.79	90.2	135.1	5436.41	724.29 S	536.42 E	897.19	3.88
6406.67	91.5	137	5435.94	747.24 S	558.55 E	929.05	7.22
6438.52	91.1	138.8	5435.21	770.86 S	579.89 E	960.89	5.79
6469.17	93	139.3	5434.12	794 S	599.97 E	991.51	6.41
6500.92	92	139.5	5432.73	818.08 S	620.61 E	1023.22	3.21
6531.88	92.3	138.4	5431.57	841.41 S	640.93 E	1054.15	3.68
6595.36	91.1	138.6	5429.69	888.93 S	682.97 E	1117.6	1.92
6657.45	89.9	138.1	5429.15	935.33 S	724.23 E	1179.69	2.09
6720.28	89.2	137.6	5429.64	981.91 S	766.39 E	1242.52	1.37
6783.79	90	137.7	5430.08	1028.84 S	809.18 E	1306.02	1.27
6846.81	89.9	138.6	5430.14	1075.78 S	851.22 E	1369.04	1.44
6910.42	90.4	137.7	5429.97	1123.17 S	893.66 E	1432.65	1.62
6973.91	90.7	138.8	5429.36	1170.53 S	935.93 E	1496.14	1.8
7037.51	88.5	137.2	5429.81	1217.79 S	978.49 E	1559.73	4.28
7101.16	89.9	136.9	5430.69	1264.37 S	1021.85 E	1623.36	2.25
7147	90.4	137.4	5430.57	1297.98 S	1053.02 E	1669.2	1.54
7178	90.4	137.4	5430.36	1320.8 S	1074.01 E	1700.19	0

# MUD REPORT

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #18-14 SE 1-A HORIZONTAL LATERAL LEG#1

DATE	DEPTH	WT	VIS	PLS	YLD	GEL	pH	WL	CK	CHL	CA	SD	OIL	WTR
7/30/97	0'	NO CHE CK	-	-	-	-	-	-	-	-	-	-	-	-
7/31/97	0'	NO CHE CK	-	-	-	-	-	-	-	-	-	-	-	-
8/01/97	0'	NO CHE CK	-	-	-	-	-	-	-	-	-	-	-	-
8/02/97	5337'	8.5	26	0	0	0/0	9.5	NC	NC	18500	2520	-	0%	100%
8/03/97	5373'	8.6	29	0	0	0/0	10.0	NC	NC	30K	3600	-	6%	94%
8/04/97	5515'	8.6	29	2	1	0/0	10.0	NC	NC	34K	3600	-	6%	94%
8/05/97	5890'	8.7	29	2	1	0/0	10.5	NC	NC	40K	4400	-	4%	96%
8/06/97	6937'	8.6	29	2	1	0/0	9.5	NC	NC	43K	4400	-	12%	88%

## SAMPLE DESCRIPTIONS

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #18-14 SE 1-A HORIZONTAL LATERAL

DEPTH	LITHOLOGY
5341.00 5350.00	"SH blk-dkbrnblk-dkbrn,frm-sft,sbplty-sbsplty-sbblky,rthy-arg-slty,calc-sl dol,sl-occ v carb,sooty"
5350.00 5360.00	"LS ltgy-lt-mgybrn,brn-ltbrn.occ tan,crpxl-micxl,dns/chky-arg prtgs-incl,occ sl slty & mot/SH AA,scat dkbrn CHT frag,tr xl ANHY incl,tt-tr intxl POR,n-vrr scat spty mod bri yel FLOR,n vis STN-CUT "
5360.00 5370.00	"LS AA,incr dkbrn-brnblk & CHT frag,tr ANHY AA,POR AA,NFSOC"
5370.00 5380.00	"DOL brn-dkbrn,occ brnblk,crpxl,occ micxl,dns,sl shy,tr xln calc & ANHY incl,arg ip,occ grd g to dol SH,tt-rr intxl POR,tr-rr scat v dull fnt yel FLOR,tr dkbrn STN,n CUT"
5380.00 5390.00	"LS tan-crm-ltgy,occ ltbrn,ltgybrn,crpxl-micxl,vfxl-sl gran,pred dns/chky prtgs-POR fl,v sl anhy/tr xl ANHY,tr scat DOL AA,tt-tr intxl POR,n-rr scat spty dull-mod bri yel FLOR,n-tr ltbrn STN,n vis CUT"
5390.00 5400.00	"LS AA,pred dns/decr chky prtgs-tr POR fl,v sl anhy/tr xl ANHY,rr rexl calc,tt-tr intxl-rr frac POR,tr scat even-spty mod bri yel FLOR,tr ltbrn STN/rr scat blk dd o STN,g-fr dif/tr slow strm CUT"
5400.00 5410.00	"LS ltgy-crm-tan,crpxl-mixcl,sl dol,anhy ip,v rr frag-intxl-pp vug POR,tr spty dull yel FLOR,n-v rr spty STN,tr v slow dif-rr slow stmg CUT,w/intbd tan-ltbrn,micxl-crpxl DOL'sl rthy,occ anhy,rr mic fos,tr intxl POR,tr dull-bri FLOR,n vis STN,fr CUT"
5410.00 5430.00	"SH blk-dkgybrn,dkgy,sbblky-sbplty,calc,carb,dol,sl mica,occ sooty,sl slty,w/v rr scat crm-tan micxl-crpxl tt v arg DOL & tr-v rr ltgy-gybrn crpxl-micxl arg dol sl chk tt LS"
5430.00 5440.00	"SH AA,grdg to arg sl slty micxl crm-tan DOL,bcmg sl dol v slty-sl sdy wh-crm-tan crpxl-micxl arg chky sl anhy fos LS,NFSOC"
5440.00 5450.00	"LS crm-tan,ltbrn,crpxl-vfxl,gran ip,anhy ip,occ dol,bcmg oolcastic LS GRNST,scat trnsl CHT frag,w/thn tt dns DOL AA,tr-fr intxl-ool POR,v sl alg,tr dull-bri yel FLOR,rr ltbrn STN,fr mod fast dif-tr mod fast stmg CUT"
5450.00 5460.00	"LS AA,v oolcastic-sl oolmoldic,DOL rich cmt-v rr DOL frag,fr-g intxl-ool POR,fr-gbri yel FLOR,g lt-mbrn STN,v rr blk dd o STN,g mod fast-fast stmg CUT"
5460.00 5470.00	"LS AA,w/scat CHT frag,occ crm-wh-ltbrn crpxl LS PKST frag,POR-FLOR-STN-CUT AA"
5470.00 5490.00	"LS ltbrn-brn,crm-wh ip,occ mot,crpxl-vfxl,gran-micsuc ip,pred oolcastic-oolmoldic LS GRNST,scat ool LS PKST,sl anhy,dol ip,scat CHT frag,tt-g ool-intxl POR,mg dull-bri yel FLOR,fr lt-dkbrn-v rr spty blk STN,fr-g mod fast dif-fast stmg CUT"
5490.00 5510.00	"LS AA,sl incr ool LS PKST,scat trnsl CHT frag,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn STN,n-v rr spty blk dd o STN,fr-g mod fast-fast stmg CUT"
5510.00 5515.00	"LS AA,bcmg pred dol ool LS PKST,W/tr-fr intxl-tr ool POR,decr FLOR,STN-CUT AA"

DEPTH	LITHOLOGY
-------	-----------

5515.00 5530.00 "LS tan-ltbrn,occ crm-wh,crpxl-vfxl,gran-micsuc,bcmg plty-chk,pred oolitic-sl oolmoldic LS GRNST,grdg to & bcmg sl ool LS PKST,v sl anhy,occ DOL rich cmt,rr trnsl CHT,tt-g intxl-ool POR,tr bri-fr dull yel FLOR,tr spty brn-rr blk STN,rr stmg-fr dif CUT"

5530.00 5550.00 "LS AA,decr plty-chk prtgs,pred oolitic-oolitic LS GRNST,intbrd/dns oolitic LS PKST,v sl anhy/rr xln ANHY frag,rr DOL rich cmt,rr trnsl CHT,tt-g intxl-ool POR,g even dull-tr scat bri yel FLOR,tr spty brn-rr blk STN,fr-g dif/tr slow stmg CUT"

5550.00 5560.00 "LS AA,incr scat chky plty-ool dns PCKST prtgs,POR-FLOR-STN-CUT AA"

5560.00 5580.00 "LS tan-ltbrn,occ crm-off wh,crpxl-micxl,gran-vfxl,ooliclastic-sl oolmoldic GRNST-intbd/oolitic-occ ooliclastic dns PCKST,rr chky plty prtgs,tt-fr intxl-tr ool POR,g even mod bri-dull yel FLOR,STN AA,g dif/mod fast strm mlky CUT"

5580.00 5600.00 "LS AA,incr crm-off wh,pred oolitic-ooliclastic LS GRNST,intbd dns oolitic-incr chky plty PCKST,v sl DOL,sl anhy/rr xln ANHY incl,fr-g intxl-fr ooliclastic-oolitic/rr pp agal POR,FLOR AA,g ltbrn-brn/scat blk dd o STN,g mod fast-fast strm CUT"

5600.00 5620.00 "LS ltbrn,tan,occ crm-off wh,gran-micxl-vfxl,crpxl,ooliclastic-sl oolmoldic GRNST/tr DOL cmt,intbd/crpxl-ool dns PCKST,tr chky plty prtgs,tt-fr intxl-tr ool POR,g even mod bri-dull yel FLOR,g brn-ltbrn STN/tr scat blk dd o STN,g dif/mod fast strm mlky CUT"

5620.00 5640.00 "LS AA,pred oolitic-ooliclastic LS GRNST/sl incr DOL cmt,intbd/dns crpxl-oolitic PCKST & tr tan-brn CHT incl,rr xln ANHY incl,rr CRIN fos,fr-g intxl-ool-ool/rr pp agal POR,g mod bri-bri yel FLOR,g ltbrn-brn/incr scat blk dd o STN,g fast strm CUT"

5640.00 5650.00 "LS AA,pred ooliclastic GRNST/tr DOL cmt,occ intbd-scat dns PCKST,decr ool PCKST,tran-occ wh CHT frag-incl,POR-FLOR-STN-CUT AA"

5650.00 5670.00 "LS ltbrn-tan,occ crm-off wh,micxl-crpxl,vfxl-gran,occ LS GRNST/intbd dns crpxl-oolitic PCKST,sl DOL,tr mic & CRIN fos,tr CHT AA,rr chky plty prtgs,tt-fr intxl-tr ooliclastic/rr pp agal POR,g FLOR AA,g ltbrn-brn/rr scat blk dd o STN,g mod fast strm CUT"

5670.00 5690.00 "LS AA,incr oolitic LS GRNST,intbd/dns crpxl-oolitic PCKST,v sl DOL,tr mic fos incl,tr CHT AA,rr scat chky plty prtgs,tt-fr intxl-tr ooliclastic-oolitic/rr pp agal POR,g even mod bri-dull yel FLOR,g ltbrn-brn/scat blk dd o STN,g mod fast-fast strm CUT"

5690.00 5710.00 "LS AA,pred oolitic-sl ooliclastic LS GRNST/sl tr DOL cmt,intbd/dns crpxl-oolitic PCKST,tr trnsl-wh CHT frag-incl,tr mic fos-rr CRIN fos,fr-g intxl-ool-ool/rr pp agal POR,g even mod bri-scat bri yel FLOR,g STN AA,g mod fast-fast strm mlky CUT"

5710.00 5720.00 "LS AA,pred oolitic-sl ooliclastic GRNST,intbd/oolitic-crpxl dns PCKST,tr trnsl-wh CHT frag-incl,v rr xln ANHY incl,POR-FLOR-STN-CUT AA"

5720.00 5740.00 "LS ltbrn-tan,occ crm-off wh,micxl-crpxl,vfxl-gran,occ LS GRNST/intbd dns crpxl-oolitic PCKST,sl DOL,tr mic & CRIN fos,tr CHT AA,rr chky plty prtgs,tt-fr intxl-tr ooliclastic/rr pp agal POR,g FLOR AA,g ltbrn-brn/rr scat blk dd o STN,g mod fast strm CUT"

5740.00 5750.00 "LS AA,pred oolitic-sl ooliclastic GRNST,intbd/oolitic-crpxl dns PCKST,tr trnsl-wh CHT frag-incl,v rr xln ANHY incl,POR-FLOR-STN-CUT AA"

DEPTH	LITHOLOGY
5750.00	5770.00 "LS ltbrn,tan,occ brn,crm,micxl-oolitic,gran-vfxln,ool GRNST intbd/dns ool-crpxl PCKST,sl DOLip,tr scat trns-l-wh CHT frag,tr mic fos,sl-occ v chk,vrr xln calc & ANHY,tt-tr intxl-ool/rr pp agal POR,FLOR-STN- AA,g mod fast strm mlky CUT"
5770.00	5780.00 "LS AA,pred oolitic-sl oolitic GRNST/tr DOL cmt,intbd/oolitic-crpxl dns PCKST,incr trns-l-wh CHT frag-incl,POR-FLOR-STN-CUT AA"
5780.00	5800.00 "LS ltbrn-brn,occ tan-crm,crpxl-vfxl,gran-micsuc ip,v oolitic-oolmoldic,pred ool LS GRNST,sl dol,scat tt crpxl dns LS PKST,occ Crin fos,rr ANHY xl-incl & CHT frag,fr intxl-ool POR,fr-g dull-bri yel FLOR,fr-g ltbrn-rr blk STN,fr-g mod fast stmg-dif CUT"
5800.00	5810.00 "LS AA,pred oolitic LS GRNST,scat LS PKST frag w/Crin fos,rr CHT frag,POR-FLOR-STN-CUT AA"
5810.00	5830.00 "LS AA,incr tan-crm crpxl-micxl tt LS PKST,scat Crin fos,wh-bf-trns-l CHT frag,decr intxl-ool POR,FLOR-CUT AA,decr ltbrn-blk STN"
5830.00	5850.00 "LS ltbrn-brn,occ crm-tan,rr wh,crpxl-vfxl,gran ip,v rr micsuc,chk ip,pred oolitic LS GRNST,scat tt dns sl Crin LS PKST,scat ANHY xl-incl-rr trns-l-bf CHT frag,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,g brn-rr blk STN,fr-g mod fast dif-fr stmg CUT"
5850.00	5860.00 "LS AA,incr Crin fos,incr tt dns sl ool LS PKST,n-fr intxl-fr ool POR,fr dull-bri yel FLOR,fr-g ltbrn STN,tr spty blk dd o STN,fr-g mod fast dif-fr slow-mod fast stmg CUT"
5860.00	5870.00 "LS AA,intbd oolitic LS GRNST & tt dns sl ool crinoidal LS PKST,decr POR-FLOR-STN-CUT"
5870.00	5890.00 "LS ltbrn-brn,occ crm-tan,rr wh,crpxl-vfxl,gran ip,v rr micsuc,chk ip,pred oolitic LS GRNST,scat tt dns sl Crin LS PKST,scat ANHY xl-incl-rr trns-l-bf CHT frag,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,g brn-rr blk STN,fr-g mod fast dif-fr stmg CUT"
5890.00	5920.00 "LS ltbrn-brn,occ tan,crm-wh ip,micxl-vfxl,gran,occ micsuc,crpxl-chk ip,v oolitic LS GRNST w/intbd sl ool Crin LS PKST,scat ANHY xl-incl-occ POR fl,rr scat trns-l-bf CHT frag,fr dull-bri yel FLOR,fr-fr ltbrn STN,rr blk dd o STN,fr-g dif-fr mod fast CUT"
5920.00	5930.00 "LS pred sl ool-tt-Crin LS PKST w/intbd oolitic LS GRNST,rr-tr CHT frag,occ ANHY fl POR,fr-fr dull-bri yel FLOR,tt-fr intxl-tr ool POR,STN-CUT AA"
5930.00	5950.00 "LS ltbrn-brn,occ crm-tan,rr wh,crpxl-vfxl,gran ip,v rr micsuc,chk ip,sl dol,pred oolitic LS GRNST,scat tt dns sl Crin LS PKST,scat ANHY xl-incl-rr trns-l-bf CHT frag,fr-g intxl-ool POR,fr dull-bri yel FLOR,g brn-rr blk STN,fr-g mod fast dif-fr stmg CUT"
5950.00	5960.00 "LS AA,scat tt dns crpxl LS PKST,scat Crin fos,rr trns-l-bf CHT frag,fr-g ool-fr intxl POR,fr-fr dull-bri yel FLOR,fr brn STN,rr-tr blk dd o STN,fr mod fast dif-tr slow-mod fast stmg CUT"
5960.00	5980.00 "LS ltbrn-brn,occ tan,crm-wh ip,crpxl-vfxl,gran ip,sl micsuc,oolitic LS PKST w/dns tt occ chk LS PKST,rr scat Crin fos,rr-tr CHT frag,dol ip,occ ANHY xl-incl,fr-g ool-intxl POR,fr-mg dull-bri yel FLOR,fr ltbrn-brn STN,rr blk dd o STN,fr dif-stmg CUT"
5980.00	5990.00 "LS AA,incr LS PKST,occ plty-dns,chk ip,fr-fr dull-bri yel FLOR,tt-fr ool-intxl POR,fr-fr brn STN,rr blk STN,fr mod fast dif-tr slow stmg CUT"

DEPTH	LITHOLOGY
5990.00 6010.00	"LS ltbrn-brn,occ wh-crm,tan,crpxl-vfxl,occ dns-tt plty,pred oolitic LS GRNST,w/intbd & grdg to tt LS PKST,scat Crin fos,tr ANHY xl-incl,tr DOL cmt,rr CHT frag,mfr-fr dull-bri yel FLOR,fr brn STN,rr blk dd o STN,fr-g mod fast dif-tr slow-fast stmg CUT"
6010.00 6020.00	"LS AA,sl incr tt dns sl plty occ ool LS PKST,scat Crin fos,POR-FLOR-STN-CUT AA"
6020.00 6040.00	"LS ltbrn-brn,occ crm-tan,rr wh,crpxl-vfxl,gran ip,v rr micsuc,chk ip,sl dol,pred oolitic LS GRNST,scat tt dns sl Crin LS PKST,scat ANHY xl-incl-rr trnsf-bf CHT frag,fr-g intxl-ool POR,fr dull-bri yel FLOR,g brn-rr blk STN,fr-g mod fast dif-fr stmg CUT"
6040.00 6050.00	"LS AA,v sl incr LS PKST-sl plty,POR-FLOR-STN-CUT AA"
6050.00 6070.00	"LS ltbrn-brn,occ tan,crm-wh ip,micxl-vfxl,gran,occ micsuc,crpxl-chk ip,v oolitic LS GRNST w/intbd sl ool Crin LS PKST,scat ANHY xl-incl-occ POR fl,rr scat trnsf-bf CHT frag,fr dull-bri yel FLOR,fr-fr ltbrn STN,rr blk dd o STN,fr-g dif-fr mod fast CUT"
6070.00 6100.00	"LS tan-brn,occ crm-wh,crpxl-micxl,occ vfxl-gran,occ micsuc,intbd LS PKST & LS GRNST,oolitic,occ plty,scat Crin fos,rr trnsf-wh-bf CHT frag,sl dol,tr ANHY xl-incl-tr POR fl,fr-mg dull-bri yel FLOR,tt-fr ool-intxl POR,fr-brn-v rr blk STN,fr stmg CUT"
6100.00 6110.00	"LS AA,pred oolitic dol LS GRNST,w/scat LS PKST,Crin fos,dol,ANHY xl-incl,fr-g intxl-ool POR,fr dull-bri yel FLOR,fr brn-tr blk dd o STN,fr mod fast dif-tr slow stmg CUT"
6110.00 6140.00	"LS ltbrn-brn,occ tan,crm-wh ip,crpxl-vfxl,gran ip,sl micsuc,oolitic LS PKST w/dns tt occ chk LS PKST,rr scat Crin fos,rr-tr CHT frag,dol ip,occ ANHY xl-incl,fr-g ool-intxl POR,fr-mg dull-bri yel FLOR,fr ltbrn-brn STN,rr blk dd o STN,fr dif-stmg CUT"
6140.00 6150.00	"LS AA,pred oolitic GRNST/dol cmt,scat dns oolitic LS PKST/tr chky fl,POR-FLOR-STN AA,fr-g dif/tr slow strm mlky CUT"
6150.00 6170.00	"LS ltbrn-tan,occ crm,brn,gran-micxl-crpxl,sl micsuc,oolitic GRNST/tr DOL rich cmt,intbd/dns crpxl-oolitic PCKST,rr CRIN fos,rr trnsf-clr xln ANHY incl,fr-g intxl-ool/vrr pp agal POR,g mod bri-dull yel FLOR,g brn-ltbrn STN,rr scat blk STN,g CUT AA"
6170.00 6190.00	"LS AA,pred oolitic GRNST/DOI rich cmt,incr scat plty chky prtgs-tr dns crpxl PCKST incl-frag,rr xln ANHY AA,rr rexl calc incl,vrr CRIN fos,fr intxl-tr oolitic/rr pp agal POR,g-fr even mod bri-dull yel FLOR,STN AA,g dif/tr mod slow strm mlky CUT"
6190.00 6200.00	"LS AA/decr plty chky prtgs,rr CRIN & rexl calc incl,vrr ANHY AA,POR-FLOR-STN-CUT AA"
6200.00 6210.00	"LS ltbrn,tan,occ crm-off wh,brn,micxl-gran-crpxl,oolitic-oolitic GRNST/DOL cmt,intbd/dns tt oolitic PCKST,rr plty prtgs,rr xln ANHY AA,g-fr intxl-ool/rr pp agal POR,g even mod bri-dull yel FLOR,g brn-ltbrn/tr blk STN,g mod fast strm mlky CUT"
6220.00 6240.00	"LS AA,pred oolitic-oolitic GRNST/tr DOL cmt,intbd/dns crpxl-oolitic PCKST,incr scat PCKST frag,rr-rr xl ANHY frag-incl,rr mic fos-rr CRIN fos,vrr tan CHT frag,POR-FLOR AA,g brn-ltbrn STN,rr blk dd o STN,g mod fast-slow strm mlky CUT"

DEPTH	LITHOLOGY
6240.00	6260.00 "LS AA,pred oolitic GRNST/DOL rich cmt,tr dns crpxl PCKST incl-frag,rr chky plty frag & xln ANHY AA,rr rexl calc incl,vrr CRIN fos,g intxl-incr oolitic/rr pp agal POR,g-fr even mod bri-dull yel FLOR,STN AA,g dif/tr mod slow strm mlky CUT"
6260.00	6280.00 "LS ltbrn-tan,occ crm-wh,brn,crpxl-micxl,gran,oolitic GRNST/DOL rich cmt,intbd/dns crpxl-oolitic PCKST,tr chk fl/vrr prtgs,rr CRIN fos,rr xln ANHY incl,g intxl-ool/rr pp agal POR,g mod bri yel FLOR,g brn-ltbrn STN,g mod fast-slow strm mlky CUT"
6280.00	6300.00 "LS ltbrn-tan,occ brn,crm-off wh,gran-crpxl-micxl,occ micsuc-vfxl,pred oolitic GRNST/DOL cmt,intbd/dns crpxl PCKST incl,rr plty chky prtgs,rr CRIN fos & tan CHT,vrr ANHY AA,g-fr intxl-ool/tr pp agal POR,FLOR-STN AA,g dif /mod fast strm mlky CUT"
6300.00	6310.00 "LS AA,pred oolitic GRNST/dol cmt,scat dns crpxl-sl oolitic LS PKST/tr chky fl,POR-FLOR-STN AA,fr-g dif/tr slow strm mlky CUT"
6310.00	6330.00 "LS ltbrn,tan,occ crm-off wh,brn,micxl-gran-crpxl,oolitic-oolitic GRNST/DOL cmt,intbd/dns tt oolitic PCKST,tr plty prtgs,rr xln ANHY incl,g-fr intxl-ool/tr pp agal POR,g even mod bri-dull yel FLOR,g brn-ltbrn STN,g mod fast-slow strm mlky CUT"
6330.00	6350.00 "LS ltbrn-tan,occ brn,crm-off wh,gran-crpxl-micxl,occ micsuc-vfxl,pred oolitic GRNST/DOL cmt,intbd/dns crpxl PCKST incl,rr plty chky prtgs,rr CRIN fos & tan CHT,vrr ANHY AA,g-fr intxl-ool/tr pp agal POR,FLOR-STN AA,g mod fast-slow strm mlky CUT"
6350.00	6370.00 "LS AA,pred oolitic GRNST/tr DOL cmt,intbd dns crpxl/incr scat PCKST frag,rr xl ANHY frag-incl,tr mic fos-rr CRIN fos,vrr tan-brn CHT frag,POR-FLOR AA,g brn-ltbrn STN,rr blk dd o STN,g mod fast-slow strm mlky CUT"
6370.00	6400.00 "LS ltbrn-tan,occ brn,crm-off wh,gran-crpxl-micxl,occ micsuc-vfxl,pred oolitic GRNST/DOL cmt,scat dns crpxl-ool PCKST frag-incl,tr plty chky prtgs,tr mic fos,rr CHT,vrr xl ANHY,g-fr intxl-ool/tr pp agal POR,FLOR-STN AA,g mod fast-slow strm mlky CUT"
6400.00	6430.00 "LS ltbrn,tan,occ crm-wh,incr brn,micxl-gran-vfxl,crpxl,sl micsuc,pred oolitic GRNST/tr DOL cmt,tr dns crpxl-ool PCKST frag,rr tan-trns-l-wh CHT frag,tr mic fos & CRIN,fr-g intxl-ool POR/tr tt-dns strk,g even mod bri-bri yel FLOR,STN & CUT AA"
6430.00	6450.00 "LS AA,pred oolitic-sl oolitic GRNST/tr sl DOL cmt,scat-occ inbd dns crpxl-ool oolitic PCKST frag,vrr xl ANHY frag-incl,tr mic fos,vrr tan CHT frag,g intxl-ool/tr pp agal POR-FLOR AA,g brn-ltbrn STN,vrr blk dd o STN,g mod fast-slow strm mlky CUT"
6450.00	6470.00 "LS ltbrn,tan,occ brn,crm-ltgy,gran-vfxl-crpxl,oolitic-oolitic GRNST,decr dns crpxl-ool oolitic PCKST frag-incl,sl DOL,tr mic-rr CRIN fos,rr xln ANHY frag,fr-g intxl-ool POR,rr pp agal POR,g even mod bri yel FLOR,g STN AA,g fast-mod fast strm CUT"
6470.00	6500.00 "LS AA,pred oolitic-oolitic GRNST/tr sl DOL cmt,scat-occ inbd dns crpxl-ool oolitic PCKST frag,vrr xl ANHY frag-incl,tr mic fos,vrr tan CHT frag,g intxl-oolitic POR-FLOR AA,g brn-ltbrn STN,vrr blk dd o STN,g mod fast-slow strm mlky CUT"
6500.00	6530.00 "LS ltbrn,tan,occ brn,crm-ltgy,gran-vfxl-crpxl,oolitic-oolitic GRNST,tr dns crpxl-ool sl ool PCKST frag-incl,occ sl DOL,tr CRIN & mic fos,rr xln ANHY frag,rr CHT frag,fr-g intxl-ool POR,vrr pp agal POR,FLOR-STN AA,g fast-mod fast strm CUT"

DEPTH	LITHOLOGY
6530.00	6550.00 "LS AA,gran-crpxl-micxl,ooliclastic GRNST/occ sl dol cmt,decr intbd dns crpxl-ool PCKST,tr chk fl/vrr prtgs,tr CRIN & mic fos,vrr xln ANHY incl,g intxl-ool/rr pp agal POR,g mod bri yel FLOR,g brn-ltbrn STN,g mod fast-slow strm mlky CUT"
6550.00	6570.00 "LS AA,pred ooc-bcmg oolimoldic GRNST/tr DOL cmt,intbd dns crpxl/tr ool PCKST frag,vrr xl ANHY frag-incl,tr mic fos-rr CRIN fos,vrr tan-brn CHT frag,POR AA/tr oolmoldic POR,FLOR AA/tr bri yel,g brn-ltbrn STN,rr blk dd o STN,g blooming-fast strm mlky CUT"
6570.00	6600.00 "LS ltbrn,tan,occ brn,crm-ltgy,gran-vfxl-crpxl,ooliclastic-occ oolmoldic GRNST,tr dns crpxl-occ sl ool PCKST frag-incl,DOL cmt,tr mic fos,vrr xln ANHY frag,rr CHT frag,fr-g intxl-ool-oom POR,vrr pp agal POR,FLOR-incr blk STN AA,g fast-mod fast strm CUT"
6600.00	6620.00 "LS AA,pred oolclastic-sl ool-oom GRNST/tr DOL cmt,scat-occ intbd dns crpxl-ool PCKST frag,vrr xl ANHY frag-incl,tr mic fos,rr tan-wh CHT frag,g intxl-ool/tr oom-pp agal POR-FLOR AA,g brn-ltbrn STN,vrr blk dd o STN,g mod fast-slow strm mlky CUT"
6620.00	6650.00 "LS AA,crpxl-micxl,gran-ool,occ oom,ooliclastic GRNST/occ DOL cmt,incr frag-intbd dns crpxl-ool PCKST,tr chk fl/vrr prtgs,tr mic fos/rr CRIN,vrr xln ANHY incl,g intxl-ool tr oom/rr pp agal POR,g FLOR AA,g STN AA,g blooming-mod fast strm mlky CUT"
6650.00	6680.00 "LS ltbrn,tan,occ brn,crm,gran-vfxl-crpxl,ooliclastic-occ ool-oom GRNST,decr dns crpxl-ool oolitic PCKST,tr DOL cmt,tr mic-rr CRIN fos,rr xln ANHY incl,fr-g intxl-ool/tr oom POR,rr pp agal POR,g even mod bri yel FLOR,g STN AA,g blooming-fast strm CUT"
6680.00	6700.00 "LS AA,pred oolclastic/tr oolitic-oolmoldic GRNST,tr scat dns crpxl-sl oolitic PCKST incl-frag,,rr xln ANHY,POR-FLOR AA,g brn-lybrn STN,tr scat blk dd o STN,g mod fast strm mlky CUT"
6700.00	6750.00 "LS ltbrn-brn,occ tan-orm,crpxl-vfxl,gran-micsuc ip,pred oolclastic-oolmoldic LS GRNST,w/sl ool dns Crin sl pty LS PKST,v rr ANHY xl-incl,v rr trnsf-bf CHT frag,fr-g ool-incl POR,fr-g dull-bri yel FLOR,fr ltbrn-v rr blk STN,fr-g mod fast dif-fr stmg CUT"
6750.00	6770.00 "LS AA,POR-FLOR-STN-CUT AA"
6770.00	6780.00 "LS ltbrn-brn,occ tan-orm,crpxl-vfxl,gran-micsuc ip,pred oolclastic-oolmoldic LS GRNST,w/sl pty LS PKST,AA,v rr ANHY xl-incl,tr trnsf-bf CHT frag,decr POR-FLOR-STN-CUT"
6780.00	6800.00 "LS ltbrn-brn,occ tan-orm,crpxl-vfxl,gran-micsuc ip,pred oolclastic-oolmoldic LS GRNST,w/sl ool dns Crin sl pty LS PKST,v rr ANHY xl-incl,v rr trnsf-bf CHT frag,fr-g ool-incl POR,fr-g dull-bri yel FLOR,fr ltbrn-v rr blk STN,fr-g mod fast dif-fr stmg CUT"
6800.00	6840.00 "LS ltbrn-brn,occ tan-orm,crpxl-vfxl,gran-micsuc ip,pred oolclastic-oolmoldic LS GRNST,scat ool dns sl pty LS PKST,rr ANHY xl-incl,v rr trnsf-bf CHT frag,rr Crin,fr-g ool-incl POR,fr-g dull-bri yel FLOR,fr ltbrn-v rr blk STN,fr-g mod fast dif-fr stmg CUT"
6840.00	6870.00 "LS AA,v rr scat tt LS PKST frag-incl,n-v rr trnsf-bf CHT frag,fr-g POR-FLOR-STN-CUT"
6870.00	6890.00 "LS ltbrn-brn,occ tan-orm,crpxl-vfxl,gran-micsuc ip,pred oolclastic-oolmoldic LS GRNST,rr ool occ pty LS PKST,rr ANHY xl-incl,rr-tr trnsf-bf CHT frag,rr Crin fos,fr-g ool-incl POR,fr-g dull-bri yel FLOR,fr ltbrn-v rr blk STN,fr-g mod fast dif-fr stmg CUT"
6890.00	6900.00 "LS AA,n-v rr CHT frag,POR-FLOR-STN-CUT AA"

## DEPTH

## LITHOLOGY

6900.00 6920.00 "LS ltbrn-brn,occ tan-crm,crpxl-vfxl,gran-micsuc ip,pred oolitic-oolmoldic LS GRNST,rr ool occ pty LS PKST,rr ANHY xl-incl,rr-tr trnsf-bf CHT frag,rr Crin fos,fr-g ool-incl POR,fr-g dull-bri yel FLOR,fr ltbrn-v rr blk STN,fr-g mod fast dif-fr stmg CUT"

6920.00 6950.00 "LS ltbrn-brn,occ dkbrn,crpxl-vfxl,gran,occ micsuc,pred oolitic-oolmoldic LS GRNST,scat dns v sl ool LS PKST,rr ANHY xl-incl,dol ip,fr-g ool-intxl POR,fr-g dull-bri yel FLOR,fr ltbrn-tr dkbrn STN,rr blk dd o STN,fr-g mod fast dif-stmg mlky CUT"

6950.00 7000.00 "LS ltbrn-brn,occ dkbrn,crpxl-vfxl,gran,occ micsuc,pred oolitic-oolmoldic LS GRNST,scat dns v sl ool LS PKST,rr-tr ANHY xl-incl,dol ip,fr-g ool-intxl POR,fr-g dull-bri yel FLOR,fr ltbrn-tr dkbrn STN,rr blk dd o STN,fr-g mod fast dif-stmg mlky CUT"

7000.00 7020.00 "LS AA,POR-FLOR-STN-CUT AA"

7020.00 7030.00 "LS ltbrn-brn,occ tan-crm,crpxl-vfxl,gran-micsuc ip,pred oolitic-oolmoldic LS GRNST,rr ool occ pty LS PKST,rr ANHY xl-incl,rr-tr trnsf-bf CHT frag,fr-g ool-incl POR,fr-g dull-bri yel FLOR,fr ltbrn-v rr blk STN,fr-g mod fast dif-fr stmg CUT"

7050.00 7080.00 "LS ltbrn-brn,occ tan-crm,crpxl-vfxl,gran-micsuc ip,pred oolitic-oolmoldic LS GRNST,scat ool LS PKST,rr-tr ANHY xl-incl,n-v rr trnsf-clr CHT frag,fr-g ool-incl POR,fr-g dull-bri yel FLOR,fr ltbrn-v rr blk STN,fr-g mod fast dif-fr stmg CUT"

7080.00 7100.00 "LS ltbrn-brn,occ tan-crm,crpxl-vfxl,gran-micsuc ip,pred oolitic-oolmoldic LS GRNST,rr-tr scat ool LS PKST,rr ANHY xl-incl,rr trnsf-clr CHT frag,v rr mic fos,fr-g ool-incl POR,fr-g dull-bri yel FLOR,fr ltbrn-v rr blk STN,fr-g mod fast dif-fr stmg CUT"

7100.00 7120.00 "LS AA,POR-FLOR-CUT AA,tr-fr ltbrn-brn STN,rr spty blk dd o STN"

7120.00 7150.00 "LS ltbrn-brn,occ tan-crm,crpxl-vfxl,gran-micsuc ip,pred oolitic-oolmoldic LS GRNST,rr-tr scat ool LS PKST,rr ANHY xl-incl,rr trnsf-clr CHT frag,v rr mic fos,fr-g ool-incl POR,fr-g dull-bri yel FLOR,fr ltbrn-rr-tr blk STN,fr-g mod fast dif-fr stmg CUT"

7150.00 7178.00 "LS ltbrn-tan,occ brn-crm,crpxl-vfxl,gran-micsuc ip,pred oolitic-oolmoldic LS GRNST,rr scat ool LS PKST,scat ANHY xl-incl,rr-tr trnsf-clr CHT frag,rr mic fos,fr-g ool-incl POR,fr-g dull-bri yel FLOR,fr ltbrn-rr blk STN,fr-g mod fast dif-fr stmg CUT"

### FORMATION TOPS

**OPERATOR: MOBIL**

**WELL NAME: RATHERFORD UNIT #18-14 SE 1-A HORIZONTAL LATERAL LEG #1**

FORMATION NAME		SAMPLES	SAMPLES	DATUM
		MEASURED DEPTH	TRUE VERTICAL DEPTH	KB:4692'
LOWER ISMAY		5353'	5351	-659'
GOTHIC SHALE		5414'	5404'	-712'
DESERT CREEK		5433'	5418'	-726'
DC 1-A ZONE		5444'	5424'	-723'
TOP DC 1-A/B TRANSITION ZONE		5520'	5445'	-753'

## GEOLOGICAL SUMMARY

### AND

## ZONES OF INTEREST

The Mobil Exploration and Production U.S. Inc., Ratherford Unit #18-14 Horizontal Lateral Leg 1 was a re-entry of the Mobil Ratherford Unit #18-14 located in Section 18, T41S, R24E, and was sidetracked in a southeasterly direction from 5341' measured depth, 5341' true vertical depth, on August 2, 1997. The lateral reached a measured depth of 7178', true vertical depth of 5430.4' at total depth, with a horizontal displacement of 1700.19' and true vertical plane 137.4 degrees, on August 6, 1997, in the upper Desert Creek 1-A zone. The lateral was drilled with only one problem, which was the mud motor failing while drilling the curve section. On August 3rd, the down hole mud motor failed, and was replaced. The curve section was completed on August 4, 1997 at a measured depth of 5515', 5445' true vertical depth, and the lateral section was begun in the 1-A porosity zone. This lateral used fresh water and then an oil and water emulsion with polymer sweeps as the drilling fluid. A very minor amount of oil was noted while drilling the lateral through the 1-A porosity zone beginning at a measured depth of approximately 6500'. The background gases noted on the accompanying mud log showed moderate to good increases while drilling the 1-A porosity. The samples showed a fair amount of oil shows through out the drilling of the lateral in the 1-A section.

The primary objectives of the Ratherford Unit #18-14 Leg 1 horizontal lateral was the upper 1-A porosity bench of the Desert Creek, to identify and define the porosity with in the bench, the effective porosity, staining and reservoir properties in 1-A zone of the Desert Creek Member of the Upper Paradox Formation. The very base of the Upper Ismay, the entire Lower Ismay, Gothic Shale, and transition zone at the top of the Desert Creek were drilled during the curve section of the lateral. Kick off point for this lateral was 5341', measured and true vertical depth, at the very base of the Upper Ismay member of the Paradox Formation.

The top of the Upper Ismay was not seen during the drilling of the R.U. 13-33 reentry. The very base of the Upper Ismay was predominately light to dark gray brown, light to dark brown, occasionally tan, cryptocrystalline to microcrystalline, chalky to clean, slightly argillaceous, cherty, occasionally fossiliferous limestone and rare, very thin, very marly, gray brown to dark brown, cryptocrystalline, slightly calcareous dolomite. There were very thin dark gray brown to black, carbonaceous, slightly calcareous to dolomitic shales, and scattered brown to black to translucent chert fragments noted at the base of the Upper Ismay. There was no visible porosity noted in the limestones and dolomites of the Upper Ismay, with no visible fluorescence, stain or cut, with no gas increases noted. The very dolomitic limestones at the base of the Upper Ismay graded into the very thin, carbonaceous, dolomitic shale of the Hovenweep.

The top of the Lower Ismay was picked at 5353' measured depth, 5351' true vertical depth, at the base of the very thin Hovenweep shale. The Lower Ismay was predominately a cream to white, tan to dark brown limestone, microcrystalline to cryptocrystalline, scattered streaks of very finely crystalline, occasionally silty to sandy, some clean, very thin algal streaks, cherty with a trace of scattered anhydrite crystals. Through out the Lower Ismay were minor amounts of thin interbedded brown to dark brown, occasionally dark gray brown, cryptocrystalline to microcrystalline, earthy to slightly shaley, dense to microsucrosic dolomite and very thin black carbonaceous shale streaks. Scattered with in the limestones and dolomites were dark brown to black chert fragments and occasional anhydrite crystals and inclusions. Through out the lower 1/3 of the Lower Ismay, were thin streaks of intercrystalline to fracture porosity, with traces of fluorescence, stain and cut in the limestones and very thin interbedd dolomites. From a measure depth of 5405' to 5410', fair to good

intercrystalline to algal porosity, with a trace to moderately fair fluorescence, stain and cut was encountered in the basal limes and dolomites of the Lower Ismay. This drilling break had only a minor gas increase noted. The dolomitic limestones and very thin dolomites at the base of the Lower Ismay became gray brown, very argillaceous and shaley. These basal limestones and dolomites also became very marly and graded into the Gothic Shale.

The top of the Gothic Shale was at 5414' measured depth, 5404' true vertical depth. The Gothic Shale was predominantly dark gray to black, silty, carbonaceous, brittle to firm, subblocky to blocky to platy, 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 gradational from the very thin interbedding of very argillaceous, carbonaceous limestone and very argillaceous, limy dolomite, with the dolomite grading into very dolomitic, carbonaceous shale. The top of the Gothic was picked predominantly by the decrease in penetration rate and a distinct increase in the percentage of shale in the samples.

Between the Gothic Shale and Desert Creek Porosity Members is a transitional zone, which appears to be upwardly gradational. The top of the Desert Creek is commonly picked at the Gothic Shale to transition zone facies change, which in this leg occurred at a measured depth of 5433' and a true vertical depth of 5418'. In this well the zone was a silty to slightly sandy, dolomitic limestone, with very thin interbedded brown, limy, argillaceous to slightly silty dolomites and very thin carbonaceous shales. The limestones were cream to tan, some gray to white to brown to dark brown, mottled light brown dark brown, cryptocrystalline to microcrystalline, some very finely crystalline, argillaceous, and anhydritic, with scattered anhydrite crystals. The limestones had no visible to very rare, very poor intercrystalline porosity, with only a rare, spotty fluorescence and a very poor stain and cut. The interbedded dolomites were microcrystalline, slightly silty and had no to very rare intercrystalline porosity, with no visible sample show.

The transition zone of the Upper Desert Creek graded into the oolitic porosity of the 1-A zone. The top of the Desert Creek 1-A porosity zone was picked at 5444' measured depth, 5424' true vertical depth. The pick was based on sample identification as well as a significant increase in the penetration rate. The top in this lateral was in a very oolitic to slightly oolitic, clean, slightly anhydritic limestone grainstone, which had traces of dolomites cement and very rare scattered chert fragments. Noted in the limestone were thinly interbedded tight, cryptocrystalline, occasionally platy, anhydritic to very slightly dolomitic, slightly oolitic, tight limestone packstones near the top and scattered in varying amounts as inclusions and fragments through the lateral. The limestone was cream to tan, light brown to occasionally brown, with predominately fair to good intercrystalline to oolitic porosity, some very rare algal porosity. It appears that the 1-A porosity bench is possibly defined by the interval 5424' true vertical depth to approximately 5445' true vertical depth. The top of the porosity bench was marked by a sharp facies change as the drill rate increased rapidly. The base of the porosity zone was encountered while landing the curve section of the lateral in this well.

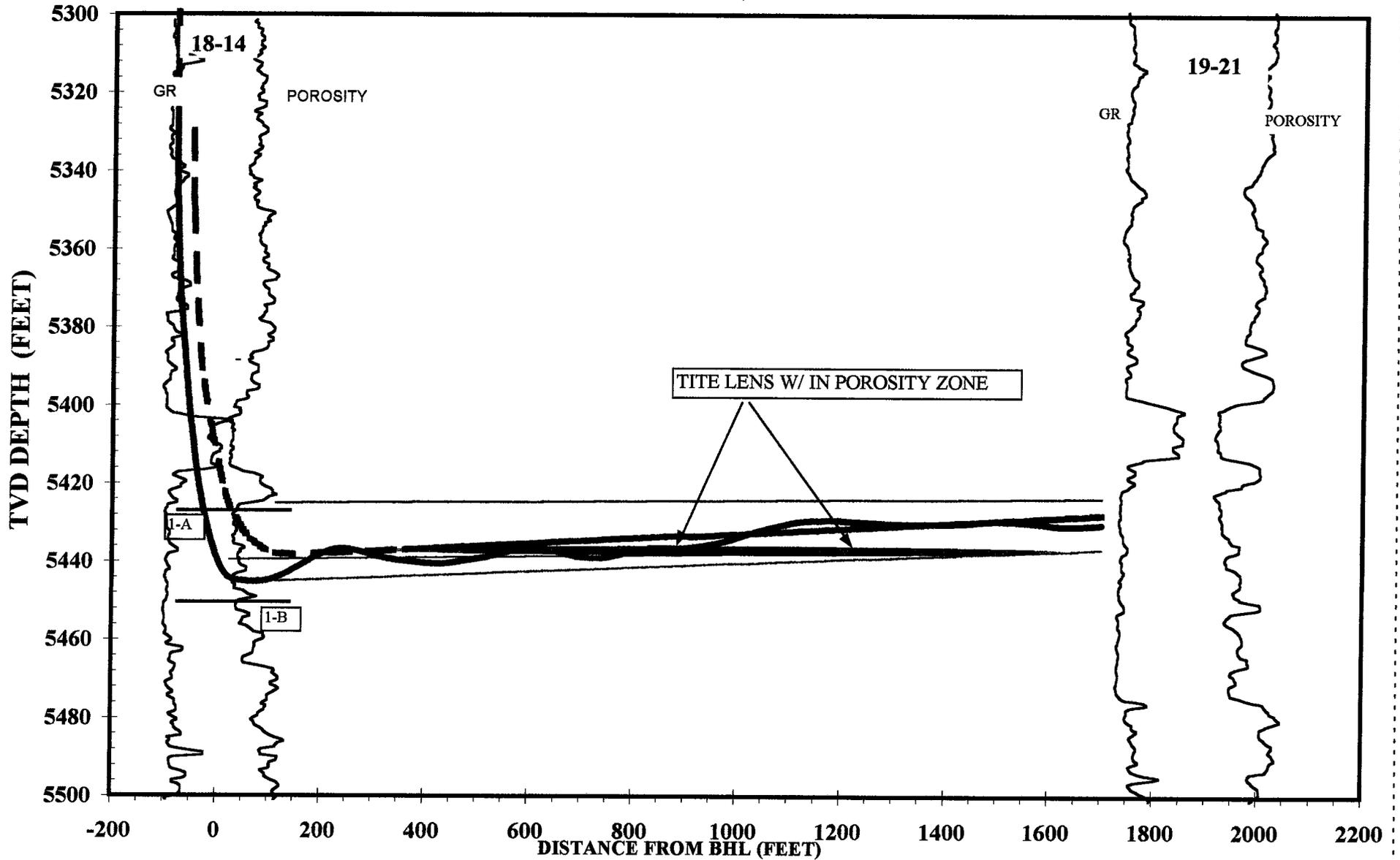
At a measured depth of 5515', 5445' true vertical depth, on August 4, 1997, a trip was made to change from the curve to the lateral bottom hole assemblies, at the top of the 1-A to 1-B transition zone. The well bore was turned upward to climb back up to the proposed target line and the good very oolitic to slightly oolitic, granular porosity in the limestone of the 1-A zone required as soon as the well bore move away from the base of the 1-A porosity zone. These limestones were tan to light brown to brown, microcrystalline to very finely crystalline, very oolitic to slightly oolitic, occasionally very slightly algal. Throughout the zone there were varying amounts of dolomite cement, translucent to buff chert fragments, cryptocrystalline oolitic limestone packstone and anhydrite crystals to inclusions. Scattered anhydrites filled porosities were also noted. The limestones had fair to good intercrystalline to oolitic porosity, fair to good dull to bright yellow fluorescence, fair light brown to brown stain and some scattered black dead oil stain, with a fair to good moderately fast diffuse to slow to moderately fast streaming cut.

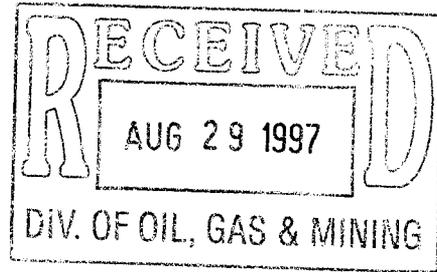
As the well bore was drilled upward toward the target line thin streaks of tight, tan to cream to white, cryptocrystalline, very slightly oolmoldic limestone packstone were encountered. Throughout the lower half of the 1-A porosity zone abundant crinoid fossils were noted. The porosity was fair in the oolitic to slightly oolmoldic limestones, with fair to good fluorescence, stain and cut. These limestones had traces of dolomite cement, traces anhydrite crystals and inclusions, and scattered translucent to white chert fragments. At a measured depth of 5990', true vertical depth of 5438', with a horizontal displacement of 515', a tight, dense, streak of oolitic limestone packstone was encountered, which bumped the well bore down. The base of this hard streak was tracked along until a measured depth of 6446', 5435' true vertical depth, and a horizontal displacement of 970', when the hard streak was penetrated and the target line was paralleled above the line. The hard streak appeared to be continuous through the zone, at least to this point and was about 1' thick.

From a measured depth of 6446' to a total measured depth of 7178', with a true vertical depth of 5430.4', and a horizontal displacement of 1700' the upper one half (1/2) of the 1-A porosity bench was drilled. The upper half of the 1-A porosity zone was a tan to brown, occasionally cream, very good oolitic to oolmoldic limestone grainstone, with slightly dolomite cement, occasional anhydrite crystals to inclusions, very rare scattered chert fragments, with scattered dense, slightly oolitic limestone packstone inclusions. These limestones had very good intercrystalline to oolitic porosity, fair to good dull to bright yellow fluorescence, a fair to occasionally good light brown to brown stain, with rare to fair spotty black dead oil stain, and a moderately fast diffuse to slow to moderately fast streaming milky cut. A significant decrease in crinoid fossils was noted in the upper one half of the 1-A zone. A significant increase in the drill rate was noted after penetrating the upper half of the 1-A zone, as well as an increase in the background gases. The well began flowing at a rate of 10 to 15 barrels of fluid per hour, part of which was oil. At a measured depth of 7178', with a true vertical depth of 5430' and a horizontal displacement of 1700' the lateral was terminated on August 6, 1997. The 1-A zone appeared to be trending upward very slightly as per the projected well path, with the best porosity of the lateral being slightly above the proposed target line.

In conclusion, in tracking the well bore through the 1-A bench, the oolitic limestone grainstone porosity was very good and was consistent throughout its length, with the very best porosity, sample show and gases being in the upper half of the 1-A zone. Predominant facies changes were associated with the vertical changes within the limestones, with no noticeable lateral changes in the 1-A zone. The effective or better porosity was associated with the oolitic, to very slightly algal limestone grainstone facies, which had fair to good, intercrystalline to oolitic porosities, with very minor anhydrite plugging. The limestone packstone at the top, middle and base of the 1-A zone had decreased porosity, poor permeabilities and decreased shows. The upper half of the 1-A zone in this well has the better developed porosity and should enhance the overall effectiveness of this lateral.

### MOBIL, Ratherford #18-14, Southeast Lateral





**MOBIL**

**RATHERFORD UNIT #18-14  
NW HORIZONTAL LATERAL LEG #2  
UPPER 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**

**MICROFICHE**

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WELL SUMMARY

**OPERATOR:** MOBIL EXPLORATION & PRODUCTION U.S. INC.

**NAME:** RATHERFORD UNIT #18-14 NW HORIZONTAL LATERAL  
LEG#2 IN 1-A UPPER POROSITY BENCH, DESERT CREEK

**LOCATION:** SECTION 18, T41S, R24E

**COUNTY/STATE:** SAN JUAN, UTAH

**ELEVATION:** KB:4692' GL:4681'

**SPUD DATE:** 08/07/97

**COMPLETION DATE:** 08/10/97

**DRILLING ENGINEER:** BENNY BRIGGS

**WELLSITE GEOLOGY:** DAVE MEADE / MARVIN ROANHORSE

**MUDLOGGING ENGINEERS:** DAVE MEADE / MARVIN ROANHORSE

**CONTRACTOR:** BIG "A" RIG 25  
**TOOLPUSHER:** J. DEES

**HOLE SIZE:** 4 3/4"

**CASING RECORD:** SIDETRACK IN WINDOW AT 5322' MEASURED DEPTH

**DRILLING MUD:** M-I  
**ENGINEER:** RON WESTENBERG/ DANNE BEASON  
**MUD TYPE:** FRESH WATER & BRINE WATER W/ POLYMER SWEEPS

**DIRECTIONAL DRILLING CO:** SPERRY-SUN

**ELECTICAL LOGGING:** NA

**TOTAL DEPTH:** 6491' MEASURED DEPTH TVD-

**STATUS:** TOH & LAY DOWN LATERAL BHA & PREPARE TO MOVE RIG

**DRILLING CHRONOLOGY**  
**RATHERFORD UNIT #18-14**  
**1-A NW HORIZONTAL LATERAL LEG#2**

DATE	DEPTH	DAILY	ACTIVITY
8/06/97	6450'	728'	DIR DRLG & SURVEYS TO TD OF 7178'-PUMP SWEEP & SMPLS OUT-DISPLACE HOLE W/BRINE-TOH-L.D. MUD MTR(MWD)-P.U. SUPERHOOK & TIH-CIR OUT GAS BUBBLE & OIL-TIH W/SUPERHOOK-CIR BOTTEMS UP @ 1976 STKS,LATCH ONTO WHIPSTOCK @ 5334' & SHEAR OFF-POOH W/WHIPSTOCK
8/07/97	5315'	7'	L.D. WHIPSTOCK-P.U. STARTER MILL& NEW WHIPSTOCK-TIH-LATCH INTO PACKER & SHEAR OFF WHIPSTOCK W/15K-P.U. SWIVEL & BREAK CIR-MILL 5315'-5318'-CIR BOTTOMS UP-DISPLACE W/BRINE-TOH-L.D. STARTER MILL & WATERMELLON MILL-TIH W/MILLS-BREAK CIR-MILL 5315'-5322'-CIR OUT SWEEP & DISPLACE W/BRINE @ 2100 STKS,L.D. MILL ASSEMBLY-P.U. & MAKE UP BIT#1(RR),MOTOR,MWD & UBHO
8/08/97	5322'	153'	MAKE UPUBHO,ORIENT & TEST-TIH(H2S ALARM WHILE TRIPPING @ 20+ppm)-LOAD HOLE W/BRINE-TIH-P.U. 3 JNTS AOH D.P.,TAG UP & L.D. 1 JNT-CIR THROUGH STRING-R.U. GYRO DATA,RUN GYRO & SURVEY-TIME DRLG 5323'-5327'-DRLG & CHECK SHOT SURVEYS-PULL GYRO @ 5350' & R.D. GYRO DATA(L.D. PUP JNT)-DIR DRLG & SURVEYS
8/09/97	5475'	285'	DIR DRLG & SURVEYS TO 5530' CURVE TD-PUMP 10 BBL SWEEP & SMPLS OUT-DISPLACE HOLE W/ 10# BRINE-L.D. 53 JNTS AOH D.P.-TOH-L.D. CURVE BHA,P.U. LATERAL BHA W/NEW BIT #2, & ORIENTE-TIH W/ LATERAL BHA-P.U. 3 JNTS D.P. & SWIVEL,BREAK CIR-DIR DRLG & SUVEYS
8/10/97	5760'	731'	DIR DRLG & SURVEYS TO TD OF 6491'-PUMP 10 BBL SWEEP & CIR. OUT SPLS & SWEEP-PUMP 15 BBL BRINE WATER-TOH TO WINDOW
8/11/97	6491'	TD	TOH TO WINDOW-& DISPLACE W/ 10# BRINE-TOH-L.D. LATERAL BHA-PREPARE WELL & RIG FOR MOVE

## DAILY ACTIVITY

**Operator: MOBIL**

**Well Name: RATHERFORD UNIT #18-14 NW 1-A HORIZONTAL LATERAL LEG#2**

DATE	DEPTH	DAILY	DATE	DEPTH	DAILY
8/6/97	6450'	728'			
8/7/97	5315'	7'			
8/8/97	5322'	153'			
8/9/97	5475'	285'			
8/10/97	5760'	731'			
8/11/97	6491'	TD			

# BIT RECORD

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #18-21 NW 1-A HORIZONTAL LATERAL LEG#2

RUN	SIZE	MAKE	TYPE	IN/OUT	FTG	HRS	FT/HR
#1 (RR)	4 3/4"	HTC	STR-20	5322'/ 5530'	208'	22.5	9.24
#2	4 3/4"	STC	MF15P	5530'/ 6491'	731'	32.0	22.8

# MUD REPORT

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #18-14 NW 1-A HORIZONTAL LATERAL LEG#2

DATE	DEPTH	WT	VIS	PLS	YLD	GEL	pH	WL	EK	CHL	CA	SD	OIL	WTR
8/07/97	5318'	8.8	29	2	1	0/0	9.0	NC	NC	52000	5200	-	10%	90%
8/08/97	5324'	8.9	29	2	1	0/0	10.5	NC	NC	63000	3600	-	8%	92%
8/09/97	5548'	8.9	29	2	1	0/0	10	NC	NC	66000	3600	-	8%	92%
8/10/97	5996'	8.9	29	2	1	0/0	9.5	NC	NC	70000	4000	-	4%	96%

### SAMPLE DESCRIPTIONS

**OPERATOR: MOBIL**

**WELL NAME: RATHERFORD UNIT #18-14 NW 1-A HORIZONTAL LATERAL LEG #2**

DEPTH	LITHOLOGY
5323.00 5335.00	"LS crm-tan,brn,crpxl,occ micxl-vfxl,cln-dns,occ arg,sl dol,sl slty-sdy,plty ip,pred tt LS PKST w/v thn LS GRNST,v thn gybrn micxl calc arg DOL incl,rr brn CHT frag,v sl anhy,tt-v rr intxl POR,rr dull yel FLOR,n vis STN,v p slow dif CUT"
5330.00 5340.00	"LS AA,v arg w/tr ANHY incl-xl,pred tt LS PKST w/v thn arg DOL stks,n-v rr dull yel FLOR,n vis STN,n-v p slow dif CUT"
5340.00 5350.00	"LS AA,incr dol,v shy,sl anhy,pred tt,mrly ip,w/intbd dkgybrn-dkbrn micxl-micsuc shy occ mrly DOL,tr ltgy-brn CHT frag,n-v rr intxl POR,n-v rr FLOR-STN-CUT"
5350.00 5370.00	"LS crm-tan,ltbrn-brn,crpxl-micxl,arg,dol,w/scat ANHY xl-incl,shy-sl mrly,dns,thn intbd tan-brn micxl rthy lmy DOL grdg to v dol SH v sl slty tt-v rr intxl POR,thn blk carb SH lams,trnsf-bf CHT frag,v rr duul yel FLOR,NSOC"
5370.00 5380.00	"LS AA,pred dkgybrn-dkbrn,v shy,mrly,grdg to v lmy sl dol SH ip,DOL AA,scat dkbrn CHT frag,LS & DOL tt-v rr intxl POR,NFSOC"
5380.00 5390.00	"LS AA/tr ltgy-trnsf,micxl-vfxl-occ crpxl,v slty-sl sdy strk,tr chk cmt-mtx fl,dns,occ grdg to calc-lmy v fgr tt SS,NFSOC"
5390.00 5400.00	"LS tan-ltgybrn,ltgy-crm,ltbrn,occ gy,wh,micxl-vfxl,crpxl-sl rexl ip,rthy,occ slty-v slty/tr sdy strk,tr chk fl-mtx,occ grdg to lmy v fgr SS,tt-rr intxl/tr frac POR,v fnt dull yel FLOR,no STN,vp dif/tr v fnt res ring CUT"
5400.00 5410.00	"DOL ltbrn-tan,micsuc-micxl,crpxl,rthy-slty,sl chky,tr xln ANHY,tt-tr intxl POR,fr dull-mod bri yel FLOR,fr ltbrn STN,fr mod fast strm CUT,w/LS AA,POR-FLOR-STN-CUT AA"
5410.00 5430.00	"LS tan-ltgybrn,ltgy-wh,occ ltbrn,micxl-vfxl,crpxl,sl chky,occ sl dol ip,tr xl ANHY,slty/occ v slty strk,tt-tr intxl POR,fr scat dull yel FLOR,tr ltbrn/vrr blk STN,fr-p slow dif CUT,w/incr SH AA & tr scat DOL AA"
5430.00 5440.00	"LS ltbrn-tan,crm,occ ltgybrn,micxl-crpxl,vfxl,rthy,slty-sl shy,chky-sl anhy,occ dol,tt-tr intxl POR,fr-tr scat mod bri-bri yel FLOR,fr ltbrn-tr brn STN,fr dif/tr fnt res ring CUT"
5440.00 5450.00	"LS AA/incr scat chk plty prtgs,pred dns/rr scat oolmoldic-ooliclastic frag,tr scat trnsf ANHY frag,tt-tr intxl POR/rr oom-ool POR,decr FLOR,STN AA,fr dif/tr slow strm CUT"
5450.00 5470.00	"LS AA,gran-vfxl,oolmoldic-ooliclastic,crpxl,pred oom-ool GRNST/scat dns tt PCKST frag-prtgs,sl dol,tr xl ANHY frag,rr tan CHT & chk plty prtgs,rr mic fos,g ool-oom-intxl POR,g scat mod bri yel FLOR,g ltbrn/scat blk STN,g mod fast dif/tr slow strm CUT"
5470.00 5480.00	"LS AA,ool-oom GRNST,tr scat dns-chk plty PCKST frag,tr ANHY & CHT AA,rr mic fos-ool,occ sl dol,POR-FLOR-STN-CUT AA"
5480.00 5500.00	"LS ltbrn-tan,occ crm-wh,gran-vfxl,oolmoldic-ooliclastic,crpxl,pred oom-ool GRNST/tr scat dns tt PCKST frag-prtgs,sl dol,tr xl ANHY frag,rr tan CHT & chk plty prtgs,rr mic fos,g ool-oom-intxl/rr pp agal POR,g incr FLOR AA,g STN AA,g slow-mod fast strm CUT"

DEPTH	LITHOLOGY
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5500.00 5520.00 "LS AA,incr dns oolitic-rr oolmoldic LS GRNST/DOL rich cmt,tr mic fos-ool incl,rr CRIN fos,scat dns-chk plty PCKST incl-prtgs,tt-fr ool-intxl tr oom-rr pp agal POR,fr-g even mod bri-dull yel FLOR,g brn-ltbrn/scat blk dd o STN,g-fr CUT AA"

5520.00 5530.00 "LS AA,dns oolitic-sl oolmoldic GRNST/DOL rich cmt,grdg to dns fos PCKS,rr chk plty prtgs,tt-fr ool-intxl tr oom-rr pp agal POR,fr-g even mod bri-dull yel FLOR,g brn-ltbrn/scat blk dd o STN,g mod fast strm mlky CUT"

5530.00 5550.00 "LS tan-ltbrn-brn,occ crm,crpxl-vfxl,micsuc-gran ip,occ dns,pred ooc-oom LS GRNST w/scat sl ool plty LS PKST,occ trns-l-gybrn CHT frag,DOL cmt,tr-fr ool-intxl POR,tr-g dull-bri yel FLOR,fr lt-dkbrn STN,tr-fr blk dd o STN,fr-g slow-mod fast stmg CUT"

5530.00 5540.00 "TR SH & ARG DOL CVGS AFTER TRIP"

5550.00 5560.00 "LS AA,grdg to ool dol LS PKST,fr intxl-ool POR,FLOR-STN-CUT AA"

5560.00 5570.00 "LS,AA,pred ool dns dol LS PKST,w/stks ooc-oom LS GRNST,tr POR-FLOR-STN-CUT"

5570.00 5590.00 "LS tan-ltbrn/occ crm incl,gran-vfxl-crpxl,dns-frm dol oolitic PCKST-grdg to GRNST,fos,tr dns crpxl incl-frag,tr xln ANHY incl,g intxl-ool/tr oom-rr pp agal POR,tr chky POR fl,g mod bri-dull yel FLOR,g brn-ltbrn/tr blk dd o STN,g slow strm mlky CUT"

5590.00 5600.00 "LS AA,pred dns ool dol PCKST,tr scat GRNST,incr wh-ltgy chky prtgs/tr POR fl,fos,tt-tr inxl/rr ool-oom-agal POR,decr FLOR AA-STN-fr-g slow strm CUT"

5600.00 5620.00 "LS ltbrn,tan,occ crm-ltgybrn,crpxl,gran-micxl,vfxl,dns sl dol oolitic PCKST,tr crpxl & mic fos incl,sl chky/tr POR fl & rr plty prtgs,rr trns-l-clr xl ANHY incl,tt-tr intxl/rr ool-pp agal POR,fr-g mod bri-dull yel FLOR,fr-g ltbrn-brn/tr blk STN,CUT AA"

5620.00 5630.00 "LS AA,pred frm-dns dol oolitic PCKST occ intbd/thn GRNST prtgs,incr chky prtgs-fl,tr CRIN & mic fos,rr wh CHT incl,POR AA,g-fr even mod bri/scat bri yel FLOR,STN & CUT AA "

5630.00 5650.00 "LS ltbrn,tan,occ ltgybrn-crm,crpxl-ool,occ oolmoldic-sl gran,pred frm-dns dol oolitic PCKST-grdg to GRNST ip,tr chky plty prtgs/tr POR fl,tr mic & rr CRIN fos,rr-tr crpxl incl,fr intxl-tr oom-ool/rr pp agal POR,g incr mod bri yel FLOR,STN & CUT AA"

5650.00 5660.00 "LS AA,pred frm-dns dol oolitic PCKST,occ grdg to GRNST,tr mic fos/rr CRIN,tr xl ANHY incl,sl chk/rr plty prtgs-fl,rr crpxl incl,g intxl-oolitic/tr pp agal POR,g even mod bri yel FLOR,g brn-ltbrn STN,rr scat blk STN,g mod fast-fast strm mlky CUT "

5670.00 5680.00 "LS AA,pred dns ool dol PCKST incr grdg to GRNST,rr wh-ltgy chky prtgs/tr POR fl,fos,tt-tr fr inxl/tr ool- pp agal POR,FLOR-STN AA,g slow-mod fast strm mlky CUT"

5680.00 5700.00 "LS ltbrn-tan,occ crm-ltgybrn,vfxl-micxl-crpxl,gran,frm-occ dns oolitic GRNST/DOL cmt,occ grdg to ool PCKST,tr crpxl incl,fos,sl chky-tr POR fl,rr ANHY AA,g intxl-ool grdg to oolmoldic/tr pp agal POR,FLOR-STN-CUT AA"

5700.00 5720.00 "LS ltbrn,tan-crm,occ off wh,vfxl-crpxl-gran,sl dol oolitic GRNST-occ grdg to dns PCKST,intbd/crpxl incl,tr chky-sl anhy prtgs,tr trns-l-wh CHT frag,mic fos,g intxl-ool/tr pp agal POR,g even mod bri yel FLOR,g brn-ltbrn/rr blk STN,g fast strm mlky CUT"

## DEPTH

## LITHOLOGY

5720.00 5730.00 "LS AA,pred frm-occ dns ool dol GRNST,tr scat dns PCKST,tr wh CHT,rr wh-ltgy chky prtgs/tr POR fl,fos,fr-tr inxl-ool/tr pp agal POR,fr scat-sl decr mod bri-dull yel FLOR,g brn-ltbrn STN/rr scat blk STN,fr slow strm mlky-slow dif/tr res ring CUT"

5740.00 5760.00 "LS ltbrn,tan-crm,occ ltgy-off wh,vfxl-crpxl-gran,dns dol ool GRNST-grdg to dns PCKST,intbd/crpxl incl,tr chky-sl anhy prtgs,rr CHT AA,mic fos,g intxl-ool/tr pp agal POR,g even mod bri-dull yel FLOR,g brn-ltbrn/tr blk STN,g mod fast-slow strm mlky CUT"

5760.00 5770.00 "LS AA,pred sl dns-frm GRNST/DOL rich cmt,tr scat dns ool PCKST frag-incl,tr-rr crpxl incl,tr-rr chk prtgs-fl,rr CHT AA,POR-FLOR-STN-CUT AA"

5770.00 5790.00 "LS AA,pred frm-occ dns ool dol GRNST-occ grdg to PCKST/tr scat dns ool PCKST,tr dns crpxl frag & wh-ltgy chky prtgs/incr POR fl,mic fos/vrr CRIN,fr-g intxl-ool/tr pp agal POR,fr even mod bri/scat bri yel FLOR,g STN AA,g-fr slow strm mlky CUT"

5790.00 5800.00 "LS AA,pred frm-occ dns ool dol GRNST-grdg to PCKST/occ crpxl incl,tr chky prtgs-fl AA,mic fos,tt-tr inxl-ool/rr agal POR,FLOR-STN AA,g dif/slow strm mlky CUT"

5800.00 5820.00 "LS ltbrn-tan,occ crm-ltgy-wh,vfxl-micxl-gran,crpxl,frm-occ dns dol ool GRNST-grdg to crpxl PCKST,tr chky-prtgs-fl,occ sl anhy/rr ANHY incl,tr mic/rr CRIN fos,g intxl-ool/tr pp agal POR,g even mod bri-dull yel FLOR,g brn-ltbrn STN/rr blk STN,CUT AA"

5820.00 5830.00 "LS AA,pred frm-occ dns GRNST/tr scat ool PCKST-occ incl,tr chk fl POR,mic fos,rr trnsl ANHY incl,g-fr intxl-ool POR/tr pp agal POR,g even mod bri yel FLOR,g brn-ltbrn STN,g mod fast strm CUT"

5830.00 5850.00 "LS ltbrn,tan-crm,occ ltgy-off wh,vfxl-crpxl-gran,frm-dns dol ool GRNST-grdg to crpxl PCKST,sl chky/rr prtgs,rr xl ANHY incl,mic fos,g intxl-ool/tr pp agal POR,g even mod bri-tr scat bri yel FLOR,g brn-ltbrn/rr blk STN,g mod fast-slow strm mlky CUT"

5850.00 5860.00 "LS AA/incr scat dns dol ool PCKST,sl chky/tr POR fl,tr trnsl xl ANHY,POR AA,g mod bri/scat bri yel FLOR,g STN AA,g mod fast-slow strmg CUT"

5860.00 5870.00 "LS lt-mbrn,occ tan,crpxl-vfxl,micsuc-gran,pred ooc-oom LS GRNST,scat crpxl ool LS PKST,rr trnsl-bf CHT frag,DOL cmt,tr ANHY xl-incl,fr-g dull-bri yel FLOR,fr brn STN,rr blk dd o STN,fr-g slow dif-mod fast stmg CUT"

5870.00 5880.00 "LS AA,incr dol ool LS PKST,tr trnsl-brn CHT frag,tr-fr intxl-ool POR,tr-fr dull-bri yel FLOR,fr lt-mbrn STN,tr blk dd o STN,tr-fr slow-dif-mod fast stmg CUT"

5880.00 5890.00 "LS AA,pred ool LS PKST w/intbd stks ooc-oom LS GRNST,decr POR-FLOR-STN-CUT AA"

5890.00 5900.00 "LS lt-mbrn,occ crm-tan,crpxl-vfxl,dns-gran,micsuc ip,pred ooc-oom LS GRNST,w/dns tt ool LS PKST incl,decr CHT frag,incr POR-FLOR-STN-CUT"

5900.00 5910.00 "LS AA,incr crpxl-micxl,sl ool LS PKST,v rr CHT frag,scat ANHY xl-incl,tr-fr intxl-tr ool POR,tr-fr dull-bri yel FLOR,fr ltbrn-v rr blk STN,rr mod fast stmg-fr slow dif CUT"

5910.00 5930.00 "LS lt-mbrn,occ tan,crpxl-vfxl,micsuc-gran,pred ooc-oom LS GRNST,scat crpxl ool LS PKST,rr trnsl-bf CHT frag,DOL cmt,tr ANHY xl-incl,fr-g dull-bri yel FLOR,fr brn STN,rr blk dd o STN,fr-g slow dif-mod fast stmg CUT"

DEPTH	LITHOLOGY
5930.00 5940.00	"LS lt-mbrn,crm-tan,crpxl-vfxl,occ micsuc-gran,pred dns-micsuc sl ool occ plty LS PKST w/thn stks ooc-oom LS GRNST,decr POR-FLOR-STN-CUT"
5940.00 5960.00	"LS crm-tan,lt-mbrn,crpxl-vfxl,occ micxl-gran,occ DOL cmt,tr ANHY xl-incl,v rr trnsl CHT frag,pred ooc-oom LS GRNST w/scat tt ool LS PKST incl,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g lt-m brn STN,rr blk dd o STN,fr-g mod fast stmg-tr slow dif CUT"
5960.00 5970.00	"LS AA,sl incr trnsl-bf CHT frag,scat Crin fos,sl decr POR,FLOR-STN-CUT AA"
5970.00 5990.00	"LS crm-tan,lt-mbrn,crpxl-vfxl,occ micxl-gran,occ DOL cmt,tr ANHY xl-incl,rr trnsl CHT,pred ooc-oom LS GRNST w/scat tt ool LS PKST incl,rr Crin,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g lt-m brn STN,rr blk dd o STN,fr-g mod fast stmg-tr slow dif CUT"
5990.00 6000.00	"LS AA,incr crpxl-micxl,micsuc ool LS PKST,decr POR,v rr Cor,sl decr FLOR-STN-CUT"
6000.00 6020.00	"LS crm-tan,lt-mbrn,crpxl-vfxl,occ micxl-gran,occ DOL cmt,tr ANHY xl-incl,rr trnsl CHT,pred ooc-oom LS GRNST,w/thn ool-plty LS PKST AA,rr Crin,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g lt-m brn STN,rr blk dd o STN,fr-g mod fast stmg-tr slow dif CUT"
6020.00 6050.00	"LS lt-mbrn,occ tan-crm-wh,micxl-vfxl,micsuc-gran ip,pred ooc-oom LS GRNST w/scat crpxl-micxl ool LS PKST,tr DOL cmt,cht,scat ANHY xl-incl,v rr Crin fos,g dull-bri yel FLOR,fr-g lt-mbrn STN,rr blk dd o STN,fr-g slow-mod fast stmg mlky CUT"
6050.00 6080.00	"LS lt-mbrn,occ tan-crm-wh,micxl-vfxl,micsuc-gran ip,pred ooc-oom LS GRNST w/rr crpxl-micxl ool-sl plty LS PKST,tr DOL cmt,v rr CHT frag,scat ANHY xl-incl,n-v rr Crin fos,g dull-bri yel FLOR,fr-g lt-mbrn STN,rr blk o STN,fr-g mod fast-fast stmg mlky CUT"
6080.00 6100.00	"LS lt-mbrn,crm-tan,crpxl-vfxl,occ micsuc-gran,pred crpxl-micxl,sl micsuc sl ool occ plty LS PKST w/intbd & grdg to ooc-oom LS GRNST,sl incr CHT frag,decr POR-FLOR-STN-CUT"
6100.00 6130.00	"LS ltbrn-brn,occ crm-tan,crpxl-vfxl,occ micsuc-gran,pred ooc-oom LS GRNST w/thn ool crpxl-micxl ooc plty LS PKST,rr CHT frag,scat ANHY xl-incl,occ DOL cmt,tr intxl-fr ool POR,fr-g dull-bri yel FLOR,fr-g brn STN,rr blk dd o STN,fr-g mod fast-fast stmg CUT"
6130.00 6150.00	"LS AA w/intbd LS PKST stks AA,fr POR AA,FR-G FLOR-STN CUT AA"
6150.00 6170.00	"LS lt-mbrn,occ tan-crm-wh,micxl-vfxl,micsuc-gran ip,intbd ooc-oom LS GRNST & dns-micxl ool LS PKST,DOL cmt,scat CHT frag,scat ANHY xl-incl,v rr Crin fos,fr ool-intxl POR,g dull-bri yel FLOR,fr-g lt-mbrn w/rr blk dd o STN,fr-g slow-mod fast stmg mlky CUT"
6170.00 6180.00	"LS AA,pred dns-micxl ool occ plty LS PKST,w/thn intbd ooc-oom LS GRNST,v rr dkbrn crpxl DOL frag,fr-fr intxl-ool POR,fr dull-bri yel FLOR,fr-fr ltbrn STN,rr blk dd o STN,fr g mod fast-fast stmg CUT"
6180.00 6200.00	"LS ltbrn-brn,occ crm-tan,crpxl-vfxl,occ micsuc-gran,pred ooc-oom LS GRNST w/thn ool crpxl-micxl ooc plty LS PKST,rr CHT frag,scat ANHY xl-incl,occ DOL cmt,fr-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"

DEPTH	LITHOLOGY
6200.00 6230.00	"LS lt-mbrn-brn,occ tan,rr crm,crpxl-vfxl,micsuc-gran ip,v ooc-oom sl anhy occ chty LS GRNST,w/v thn LS PKST intbd-incl,DOL rich cmt,v rr Crin fos,fr-g ool-fr intxl POR,fr-g dull-bri yel FLOR,fr-g brn STN,tr blk dd o STN,fr-g mod fast-fast stmg CUT"
6230.00 6250.00	"LS ltbrn-brn,occ crm-tan,crpxl-vfxl,occ micsuc-gran,pred ooc-oom LS GRNST w/thn ool crpxl-micxl ooc plty LS PKST,rr CHT frag,scat ANHY xl-incl,occ DOL cmt,fr-g intxl ool POR,fr-g dull-bri yel FLOR,fr-g brn STN,tr blk dd o STN,fr-g mod fast-fast stmg CUT"
6250.00 6300.00	"LS lt-mbrn-brn,occ crm,crpxl-micxl,vfxl-gran,micsuc ip,pred ooc-oom LS GRNST & thn intbd ool LS PKST-frag,sl DOL cmt,rr Crin fos,tr ANHY xl-incl,rr trnsf-bf CHT frag,fr-g ool-tr intxl POR,fr-g dull-bri yel FLOR,fr brn STN,rr blk STN,fr g mod fast CUT"
6300.00 6320.00	"LS AA,sl incr thn ool micxl-crpxl LS PKST,pred ooc-oom anhy-dol LS GRNST,v rr Crin fos,rr scat trnsf-gybrn-bf CHT frag,fr ool-tr intxl POR,fr dull-bri yel FLOR,fr-fr ltbrn-brn STN,rr blk dd o STN,fr g mod fast stmg CUT"
6320.00 6350.00	"LS brn-mbrn,occ ltbrn,occ tan-crm,crpxl-vfxl,gran-micsuc ip,pred ooc-occ oom LS GRNST,tr ool crpxl-micxl LS PKST frag,occ CHT frag,rr-tr ANHY xl-incl,occ DOL cmt,fr-g ool-fr intxl POR,fr-g dull-bri yel FLOR,fr-g brn-mbrn-tr blk STN,fr-g mod fast stmg CUT"
6350.00 6370.00	"LS AA,pred ooc LS GRNST,w/tr ANHY xl-incl-occ POR fl,fr-g ool-tr intxl POR,fr-g dull-bri yel FLOR,fr lt-mbrn STN,occ blk dd o STN,fr g mod fast dif-fast stmg CUT"
6370.00 6400.00	"LS lt-mbrn-brn,occ crm,crpxl-micxl,vfxl-gran,micsuc ip,pred ooc-oom LS GRNST w/v rr ool sl plty LS PKST lams-frag,sl DOL cmt,rr Crin fos,tr ANHY xl-incl,v rr bf CHT frag,fr-g ool-tr intxl POR,fr-g dull-bri yel FLOR,fr brn STN,rr blk STN,fr g mod fast CUT"
6400.00 6420.00	"LS AA,occ dkbrn crpxl LS WKST frag,incr intbd sl ool-occ plty-chky LS PKST,tr-fr ool-tr intxl POR,fr dull-bri yel FLOR,fr-fr brn STN,tr blk dd o STN,fr-fr mod fast stmg-fr slow-mod fast dif CUT"
6420.00 6430.00	"LS ltbrn-brn,dkbrn-crm-wh ip,crpxl-micxl,vfxl-gran ip,sl micsuc,occ plty,pred ool LS PKST w/intbd ooc-sl oom LS GRNST,cht,rr Crin fos,fr-fr intxl-tr ool POR,fr-fr dull-bri yel FLOR,fr ltbrn-rr blk STN,fr-fr slow-mod fast dif-tr mod fast stmg CUT"
6430.00 6450.00	"LS tan-brn,occ dkbrn,wh-crm ip,AA,w/sl incr tan-mbrn,micxl-vfxl ooc-oom LS GRNST,decr LS PKST,incr ool-intxl POR,fr POR-FLOR-STN-CUT"
6450.00 6460.00	"LS ltbrn-brn,dkbrn-crm-wh ip,crpxl-micxl,vfxl-gran ip,sl micsuc,occ plty,ool LS PKST,grdg to & intbd w/ooc-sl oom LS GRNST,cht,rr Crin fos,fr-fr intxl-tr ool POR,fr-fr dull-bri yel FLOR,fr ltbrn-rr blk STN,fr-fr slow-mod fast dif-tr mod fast stmg CUT"
6460.00 6480.00	"LS ltbrn-brn,dkbrn-crm-wh ip,crpxl-micxl,vfxl-gran ip,sl micsuc,occ plty,pred ooc-sl oom LS GRNST,w/thn intbd sl ool LS PKST,cht,rr Crin fos,fr-g intxl-fr ool POR,fr dull-bri yel FLOR,fr-fr ltbrn-rr blk STN,fr-g slow-mod fast dif-fr mod fast stmg CUT"
6480.00 6491.00	"LS AA,sl incr plty,dns,wh-crm-brn,occ mbrn,occ ool LS PKST,scat CHT frag,decr POR-FLOR-STN-CUT"

**FORMATION TOPS**

**OPERATOR: MOBIL**

**WELL NAME: RATHERFORD UNIT #18-14 NW 1-A HORIZONTAL LATERAL LEG #2**

<b>FORMATION NAME</b>		<b>SAMPLES MEASURED DEPTH</b>	<b>SAMPLES TRUE VERTICAL DEPTH</b>	<b>DATUM KB:4692'</b>
LOWER ISMAY		5358'	5351'	-659'
GOTHIC SHALE		5412'	5400'	-708'
DESERT CREEK		5433'	5414'	-722'
DC 1-A ZONE		5449'	5423'	-731'
TOP DC 1-A/B TRANSITION ZONE		5520'	5439'	-747'

## GEOLOGICAL SUMMARY

### AND

## ZONES OF INTEREST

The Mobil Exploration and Production U.S. Inc., Ratherford Unit #18-14 Horizontal Lateral Leg 2 was a re-entry of the Mobil Ratherford Unit #18-14 injection well located in Section 18, T41S, R24E, and was sidetracked in a northwesterly direction from 5323' measured depth, 5323' true vertical depth, on August 8, 1997. The lateral reached a measured depth of 6491', true vertical depth of 5436' at total depth, with a horizontal displacement of 1100' and true vertical plane 293.7 degrees, on August 10, 1997, in the upper Desert Creek 1-A zone. The curve and lateral sections were drilled with no problems. This lateral used fresh water and then an oil and water emulsion with polymer sweeps as the drilling fluid. Approximately 50 barrels of oil was recovered while tripping into and circulating the hole prior to drilling the curve section, with about 200 barrels of oil recovered while drilling the lateral through the 1-A porosity zone. The background gases noted on the accompanying mud log showed moderate to good increases while drilling the 1-A porosity. The samples showed a fair amount of oil shows through out the drilling of the lateral in the 1-A section.

The primary objectives of the Ratherford Unit #18-14 Leg #2 horizontal lateral was the upper 1-A porosity bench of the Desert Creek, to identify and define the porosity with in the bench, the effective porosity, staining and reservoir properties in 1-A zone of the Desert Creek Member of the Upper Paradox Formation. The lower Upper Ismay, the entire Lower Ismay, the Gothic Shale, the transition zone at the top of the Desert Creek, as well as the 1-A porosity zone were drilled during the curve section of the lateral. Kick off point for this lateral was 5323', measured and true vertical depth, in the lower half of the Upper Ismay member of the Paradox Formation.

The top of the Upper Ismay was not seen during the drilling of the R.U. 18-14 leg #2 reentry. The lower half of the Upper Ismay was predominately cream to tan, light to dark brown, cryptocrystalline to microcrystalline, rare very finely crystalline, slightly chalky to clean, slightly argillaceous, cherty, occasionally fossiliferous limestone packstone and very thin grainstones, with very rare, very thin slightly sandy and silty streaks, and very thin, very marly, gray brown to dark brown, cryptocrystalline, slightly calcareous dolomite. There were very thin dark gray brown to black, carbonaceous, slightly calcareous to dolomitic shales, and scattered brown to black to translucent chert fragments noted through out the lower Upper Ismay seen in the lateral. There was only very rare, scattered streaks of intercrystalline porosity noted in the limestones and dolomites of the Upper Ismay, with no to very rare visible fluorescence and cut, with no visible stain, and only very minor gas increases noted. The very dolomitic limestones at the base of the Upper Ismay graded into the very thin, carbonaceous, dolomitic shale of the Hovenweep.

The top of the Lower Ismay was picked at 5358' measured depth, 5351' true vertical depth, at the base of the very thin Hovenweep shale. The Lower Ismay was predominately a cream to white, tan to dark brown limestone, microcrystalline to cryptocrystalline, scattered streaks of very finely crystalline, occasionally silty to very rare thin streaks of very limy, light gray siltstone, clean to very slightly argillaceous, with a trace of scattered anhydrite crystals. Through out the Lower Ismay were minor amounts of thin interbedded brown to dark brown, occasionally dark gray brown, cryptocrystalline to microcrystalline, earthy to slightly shaley, dense to microsucrosic dolomite and very thin black carbonaceous shale streaks. Scattered with in the limestones and dolomites were translucent to dark brown to black chert fragments. Through out the lower half of the Lower Ismay,

were thin streaks of intercrystalline to fracture porosity, with slight traces of fluorescence, very rare stain, with a poor cut in the limestones and very thin interbedded dolomites. The dolomitic limestones and very thin dolomites at the base of the Lower Ismay became gray brown, very argillaceous and shaley. These basal limestones and dolomites also became very marly and graded into the Gothic Shale.

The top of the Gothic Shale was at 5412' measured depth, 5400' true vertical depth. The Gothic Shale was predominantly dark gray to black, silty, carbonaceous, brittle to firm, subblocky to blocky to platy, 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 gradational from the very thin interbedding of very argillaceous, carbonaceous limestone and very argillaceous, limy dolomite, with the dolomite grading into very dolomitic, carbonaceous shale. The top of the Gothic was picked predominantly by the decrease in penetration rate and a distinct increase in the percentage of shale in the samples.

Between the Gothic Shale and Desert Creek Porosity Members is a transitional zone, which appears to be upwardly gradational. The top of the Desert Creek is commonly picked at the Gothic Shale to transition zone facies change, which in this leg occurred at a measured depth of 5433' and a true vertical depth of 5414'. In this well the zone was a silty to slightly sandy, dolomitic limestone, with very thin interbedded brown, limy, argillaceous to slightly silty dolomites and very thin carbonaceous shales. The limestones were cream to tan, some gray to white to brown to dark brown, mottled light brown dark brown, cryptocrystalline to microcrystalline, some very finely crystalline, argillaceous, and anhydritic, with scattered anhydrite crystals. The limestones had no visible to a slight trace of rare, very poor intercrystalline porosity, with a rare, spotty to a slight trace of fluorescence and a very poor stain and cut. The interbedded dolomites were microcrystalline, slightly silty and had no to very rare intercrystalline porosity, with no visible sample show.

The transition zone of the Upper Desert Creek graded into the oolitic porosity of the 1-A zone. The top of the Desert Creek 1-A porosity zone was picked at 5449' measured depth, 5423' true vertical depth. The pick was based on sample identification as well as a significant increase in the penetration rate. The top in this lateral was in a very oolitic to slightly oolitic, clean, slightly anhydritic limestone grainstone, which had traces of dolomites cement and very rare scattered chert fragments. Noted in the limestone were thinly interbedded tight, cryptocrystalline, occasionally platy, anhydritic to very slightly dolomitic, slightly oolitic, cryptocrystalline to microcrystalline, tighter limestone packstones near the top and increased at base, also scattered in varying amounts as inclusions and fragments through the lateral. These very slightly oolitic, crinoidal tighter limestone packstones also were noted as the well bore approached the top and base of the best porosity in the lateral section. The limestone was predominately cream to tan, light brown to occasionally brown, with predominately fair to good intercrystalline to oolitic porosity, some very rare algal porosity. The 1-A porosity bench is defined in this lateral by the interval 5423' true vertical depth to approximately 5439' true vertical depth. The top of the porosity bench was marked by a sharp facies change as the drill rate increased rapidly, with the drill rate decreasing gradually as the base was approached. The base of the porosity zone was encountered at a measured depth of 5520', 5439' true vertical depth, while landing the curve section of the lateral in this well.

At a measured depth of 5530', 5440.5' true vertical depth, with a horizontal displacement of 224' on August 9, 1997, a trip was made to change from the curve to the lateral bottom hole assemblies, at just into the 1-A to 1-B transition zone. The well bore was turned upward to climb back up toward the proposed target line and to require the good very oolitic to slightly oolitic, granular porosity in the limestone of the 1-A zone. As the well bore was turned upward upon beginning the lateral section, the limestones encountered to a measured depth of 5629', 5434' true vertical depth, with a horizontal displacement of 292', were tan to light brown to brown, occasionally clean, cryptocrystalline to microcrystalline, clean to very slightly chalky, slightly oolitic, occasionally

platy, limestone packstones, with scattered crinoid fossils. Throughout the zone there were streaks of very finely crystalline, very oolitic to slightly oolitic, occasionally very slightly algal, limestone grainstones, varying amounts of dolomite cement, translucent to buff chert fragments, and anhydrite crystals to inclusions. Scattered anhydrites filled porosities were also noted. The limestones had a trace to fair intercrystalline to scattered oolitic porosity, trace to fair dull to bright yellow fluorescence, fair light brown to brown stain and some scattered black dead oil stain, with a fair to good slow to moderately fast diffuse and traces of slow to very rare moderately fast streaming cut.

As the well bore was continued upward toward the target the good oolitic to oolitic limestone grainstones were encountered at a measured depth of 5629'. The porosity was fair to good and increasing in intercrystalline porosity, with fair to good fluorescence, stain and cut. These limestones grainstones had traces of dolomite cement, traces anhydrite crystals and inclusions, and scattered thin tighter, cream to tan, slightly oolitic limestone packstone inclusions to fragments. At a measured depth of 5784', true vertical depth of 5429', with a horizontal displacement of 419', a tight, dense, streak of oolitic limestone packstone was encountered near the top of the apparent best porosity zone, which bumped the well bore down. The well bore, from 5784' to 5875' measured depth, 5432' true vertical depth, with a horizontal displacement of 500', passed back down through the good oolitic to oolitic limestone grainstone porosity, previously described. The porosity zone (streak) at this point appeared to be approximately 3' thick. The base of the porosity streak was interbedded cream to brown, tan, cryptocrystalline to microcrystalline, slightly oolitic, platy, crinoidal limestone packstone and oolitic to oolitic limestone grainstone, with poor to good intercrystalline to oolitic porosity, fluorescence, stain and cut. The base of this porosity streak was tracked along until a measured depth of 5944', 5432.5' true vertical depth, and a horizontal displacement of 562', when the well bore move slightly upward away from the base and back up into the good oolitic to oolitic limestone grainstone porosity. The target line was paralleled at this point at approximately 3' below the line. The hard streak appears to be continuous through the zone, at least to this point and was at a true vertical depth ranging from 5432' to 5433'.

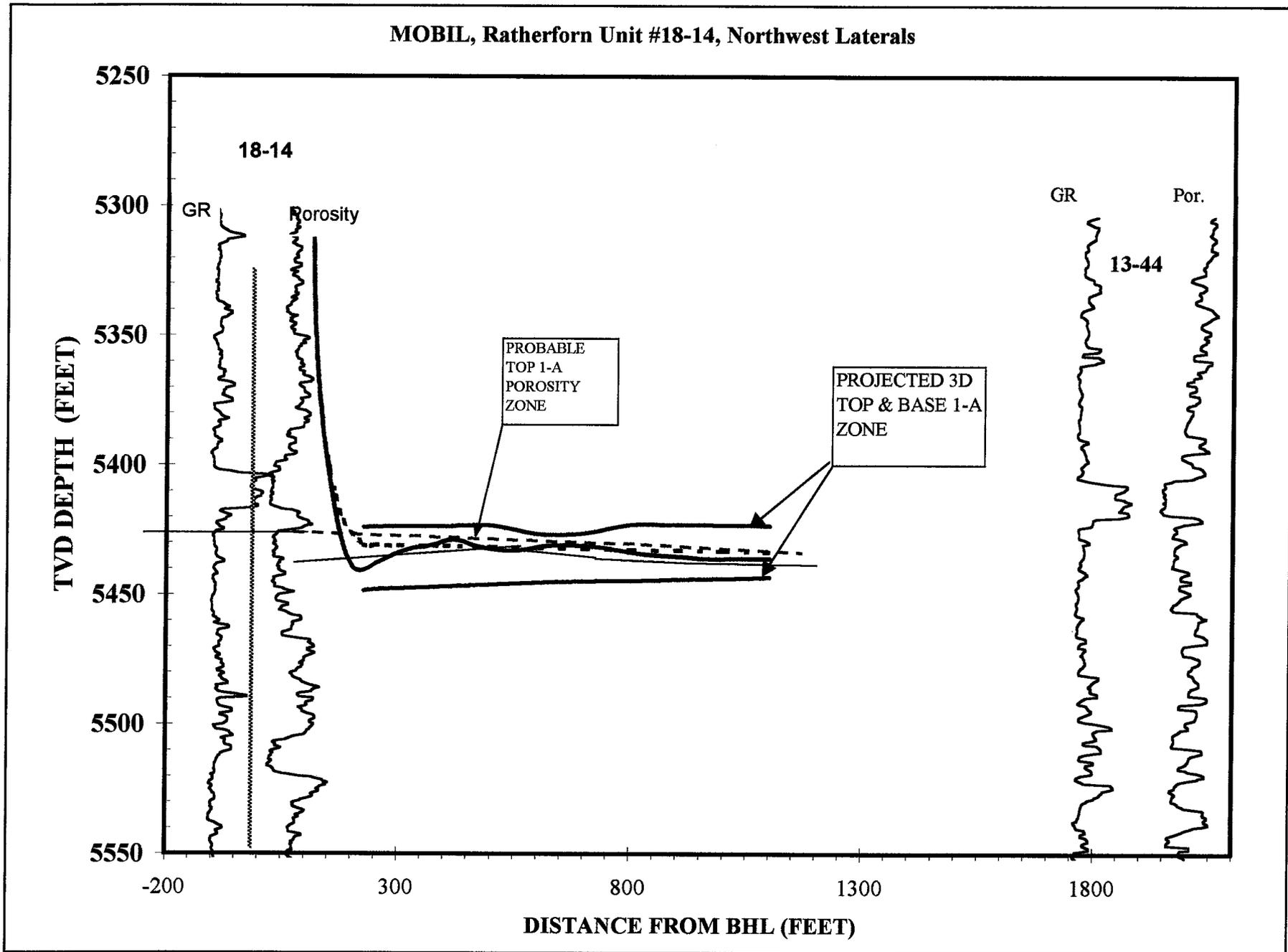
From a measured depth of 5944' to a measured depth of 6080', with a true vertical depth of 5431', and a horizontal displacement of 686' the top of the best porosity in 1-A zone was again encountered. The top of the 1-A porosity zone appeared to be dipping downward at an 89.5 degree angle up to this point in the lateral. The upper tighter limestone packstones were bumped periodically from 6080' to a measured depth of 6180', with a true vertical depth of 5433' as top of the porosity appeared to be dipping at 88.8 degrees. The limestones were a light to medium brown, occasionally cream to tan, oolitic to oolitic limestone grainstone, with slightly dolomite cement, occasional anhydrite crystals to inclusions, very rare scattered chert fragments, with scattered dense, slightly crinoidal to oolitic, occasionally platy limestone packstone inclusions to streaks. The limestone grainstones had very good intercrystalline to oolitic porosity, fair to good dull to bright yellow fluorescence, a fair to occasionally good light brown to brown stain, with rare to fair spotty black dead oil stain, and a moderately fast diffuse to slow to moderately fast streaming milky cut. A decrease in the visible porosity was noted as the top was bumped and the packstones increased.

As the well path trended downward and was slowly turned toward the horizontal, a significant increase in the penetration rate was noted from a measured depth of 6180' to 6418', with a true vertical depth of 5436' and a horizontal displacement of 1028'. At this time the lithology returned to the very good, light to medium brown, occasionally cream, oolitic to oolitic limestone grainstones. The porosity returned to the very good intercrystalline to oolitic porosity, with fair to good dull to bright yellow fluorescence, fair to occasionally good light brown to brown stain and a rare to fair spotty black dead oil stain, and a good moderately fast diffuse to slow to moderately fast streaming milky cut. A decrease in the drill rate was noted from a measured depth of 6418' to a measured depth of 6455', with a true vertical depth of 5436' and a horizontal displacement of 1064'. At this time with the drop in true vertical depth and the well bore turning downward toward the horizontal, it appeared that a rise or slight doming up of the base of the porosity zone was being encountered. As the well path was continued along, virtually a flat horizontal plan the penetration rate

increased from a measured depth of 6455' to the lateral's total depth of 6491' with a true vertical depth of 5435.85' and a horizontal displacement of 1100', which indicated a probable slight bump up in the base of the porosity. The lithology noted in the slower drilling along the base of the porosity was marked by an increase in crinoidal, anhydritic, cherty, slightly oolitic, tan-dark brown, cream to white, limestone packstone, with a decrease in visible porosity, fluorescence, stain and cut. This interval had very thin interbedded oolitic to oolmoldic limestone grainstones, with a trace of fair to good oolitic to a trace of intercrystalline porosity, with a trace to fair fluoresce and cut, with only a trace to rare brown live to very rare spotty black dead oil stain. As the lateral continued, the final 36' of the lateral from 6455' to 6491' measured depths, was once again in the oolitic to lithology limestone grainstone, with good sample shows.

A total measured depth of 6491', with a true vertical depth of 5435.85', and a horizontal displacement of 1100', was reached on August 10, 1997. In tracking the well bore through the 1-A bench, the oolitic limestone grainstone porosity was very good and was consistent through out its length, with the very best porosity, sample show and gases being in the apparent 3' thick porosity near the top of the 1-A zone. Predominant facies changes were associated with the vertical changes with in the limestones, with the thinness of the zone being the most noticeable change in this northwesterly lateral of the 1-A zone. The effective or better porosity was associated with the oolitic, to very slightly algal limestone grainstone facies, which had fair to good, intercrystalline to oolitic porosities, with very minor anhydrite plugging. The limestone packstone at the top and base of the 1-A zone had decreased porosity, poor permabilities and decreased shows. Also of note was that as the lateral was turned to the right to require and track the azimuth plane, the bit wanted to walk left indicating that the top was possibly dipping very slightly downward to the west and the lateral traveling along the strike of the dip. While drilling the lateral section of this well, approximately 200 barrels of oil was recovered. The porosity zone near the top of the 1-A zone in this well has the better developed porosity and should enhance the overall performance of this lateral.

### MOBIL, Ratherform Unit #18-14, Northwest Laterals



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

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

6. If Indian, Allottee or Tribe Name  
**NAVAJO TRIBAL**

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation  
**RATHERFORD UNIT**

1. Type of Well  
 Oil Well  Gas Well  Other

8. Well Name and No.  
**RATHERFORD 18-W-14**

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.  
**43-037-15735**

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
**810' FSL & 600' FWL  
SEC. 18, T41S, R24E**

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
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other <b>INJECTOR/SIDETRACK</b>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

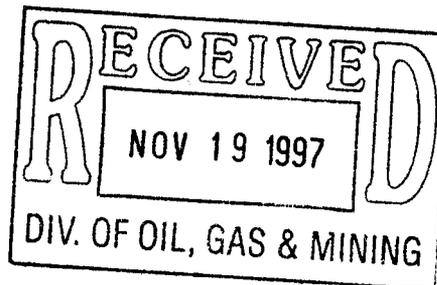
(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

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

BHL:

LATERAL #1A1 (1) 1321' SOUTH & 1074' EAST F/SURFACE SPOT.  
LATERAL #2A1 (2) 8' SOUTH & 1174' WEST F/ SURFACE SPOT.

SEE ATTACHMENT



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

Signed *Shirley Houchins*

Title **SHIRLEY HOUCHINS/ENV & REG TECH**

Date **11-13-97**

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_  
Conditions of approval, if any:

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

07-22-97 MIRU NAVAJO WEST RIG #15, NOTIFY MELVIN CAPITAN W/NAVAJO EPA ON MON 7-21-97 @ 4:10 P.M, OF INTENT TO DIG & LINE EARTH PIT, VOICE MAIL MESSAGE. SWI, READY TO BLEED DOWN TBG TO PIT IN AM. SDFN.

07-23-97 NOTIFIED BLM ON TUEST 7-22-97 @ 10:00 PM OF INTENT TO BEGIN W/O OPERATIONS ON WELL, LEFT VOICE MAIL MESSAGE. 3000 PSI ON TBG, BLEED DOWN TO PIT, ND WH, NU BOP, TEST BOT TO 250#/750# ON CHART. UNSET PKR, POOH & LD 2 3/8" TBG, RIH W/RBP @ 5400'. TEST CSG TO 1000#

07-24-97 CIRC OUT OIL. POOH & LD TBG, ND BOP, ND WELLHEAD. PU ON CSG, REMOVE OLD PACKING & SLIPS. CUT OFF CSG HEAD & CONDUCTOR PIPE, WELL ON NEW CSG HEAD & TEST TO 1000 PSI. POUR READY-MIX CMT AROUND BASEPLATE. RD PU, LET CMT SIT OVERNIGHT. WELL READY FOR DRILLING RIG.

07-31-97 MIRU NAVAJO WEST RIG #25, RIGGING UP.

08-01-97 NOTIFIED STATE OF UTAH @ 7:45 PM 7-31-97 ABOUT STARTING OPERATIONS. FINISH RIGGING UP, WEATHERFORD RIH W/ WL & SET BIG BORE WHIPSTOCK @ 5349'.

08-02-97 RIH W/TIW KEYWAY LATCH ASSY. LATCH INTO PKR @ 5349'. GYRO DATA, RAN GYRO & FOUND GTF OF PKR KEYWAY @ @ 292 DEG & RAN GYRO SURVEY EVERY 200' F/5335.

08-02-97 TOP OF WHIPSTOCK @ 5333 SET @ 138 DEG AZ., CUT WINDOW F/5333-5335' W/STARTER MILL, CIRC HOLE CLEAN, POOH W/STARTER MILL. RIH W/WINDOW & WATERMELLON MILL, MILL WINDOW F/5333-5340'.

08-03-97 MILL WINDOW F/5333-5340' & CUT FORMATION TO 5341'. PUMP SWEEP & CIRC HOLE CLEAN, POOH W/MILLS, LATERAL #1.

08-03-97 RIH W/CURVE DRILLING ASSY, DRILL CURVE F/5341-5410'.

08-04-97 CONTINUE TO DRILL CURVE TO 5515', RIH W/LATERAL ASSY.

08-05-97 SLIDE & ROTATE DRILL LATERAL 1A1 F/5515-6070'.

08-06-97 SLIDE & ROTATE DRILL LATERAL 1A1 F/6070-7168'. 1A ZONE F/5515-7178' TMD, (5444-5429 TVD), 1700 VS, CIRC CLEAN, POOH.

08-07-97 FIN POOH & LD MWD & MUD MOTOR, POOH & LD WHIPSTOCK. RIH W/TIW LATCH ASSY, #2 WHIPSTOCK, CUT 2' W/STARTER MILL F/5315-5317'. POOH W/STARTER MILL, RIH W/WINDOW & WATERMELLON MILLS, MILL WINDOW F/5315-5319'.

08-08-97 MILLED # 2 WINDOW F/5315-5321', FORMATION TO 5322'. POOH LD MILLS, LATERAL #2.

08-08-97 RIH W/CURVE ASSY, DRILL CURVE LATERAL #2A1 F/5350-5365'.

08-09-97 SLIDE DRILL CURVE LATERAL #2A1 F/5365-5530'. CIRC CLEAN, POOH, RIH W/LATERAL ASSY, DRILL LATERAL #2A1 F/5530-5561'.

08-10-97 SLIDE DRILL LATERAL #2A1 F/5561-6200'.

08-11-97 SLIDE/ROTATE DRILL F/6200-6491'. PUMP SWEEP, PULL OUT OF LATERAL TO WINDOW, POOH W/DIRECTIONAL TOOLS, RIH & SET RBP @ 5180'. POOH W/DRILL STRING.

08-12-97 JET PITS, CUT DRLG. LINE, REPLACE BRAKE PADS, TEAR DOWN RIG & MAKE READY TO MOVE. FINAL REPORT PENDING COMPLETION.

ATTACHMENT - FORM 3160-5  
RATHERFORD UNIT #18-W-14  
14-20-603-353  
NAVAJO TRIBAL  
SAN JUAN, UTAH  
PAGE 2

COMPLETION:

08-14-97 MIRU NAVAJO WEST RIG #336, SPOT PIT & LINES. TEST BOPS ON CHART TO 250/750#. GOOD. PU RBP RETRIEVING TOOL, TIH & RELEASE RBP, PRESSURE TO 500 PSI W/FULL COLUMN. FLOW BACK, RE-SET RBP & PLAN TO FLOW BACK IN AM. SDFN.

08-15-97 UNSET RBP & FLOW WELL BACK TO CIRC OUT GAS HEAD. RESET RBP, CIRC. UNSET RBP & POOH. SET EOT @ 5604', PKR @ 5228'. CIRC MUD OUT. TEST PKR TO 500 PSI, HELD GOOD. SDFN.

08-16-97 MIRU DOWELL CT UNIT, RIH TO 6491' ACIDIZE F/6491-5618', WITH 13547 GALS 15% HCL ACID IN LATERAL #2A1. FLOW TO TANKS, SDFN & SUNDAY.

08-18-97 WELL FLOWING @ 140 PSI NO CHOKE. RUN BACK TO BOTTOM W/PIPE. SIFN.

08-19-97 TBG FLOWING @ 140 PSI, POOH W/PKR & PH6, PU WHIPSTOCK RETRIEVING TOOL, RIH & SHEAR OUT OF TIW PKR W/25 OVER. SDFN.

08-20-97 WELL DEAD, BEGIN POOH W/WHIPSTOCK ASSY, LD SAME. PU REENTRY GUIDE, SET INTO PKR, SWI & SDFN.

08-21-97 TIH W/PH6 & PKR, SET PKR, CIRC OUT MUD, TEST PKR TO 300#, TEST GOOD. PREP TO ACIDIZE, SDFN & FRIDAY.

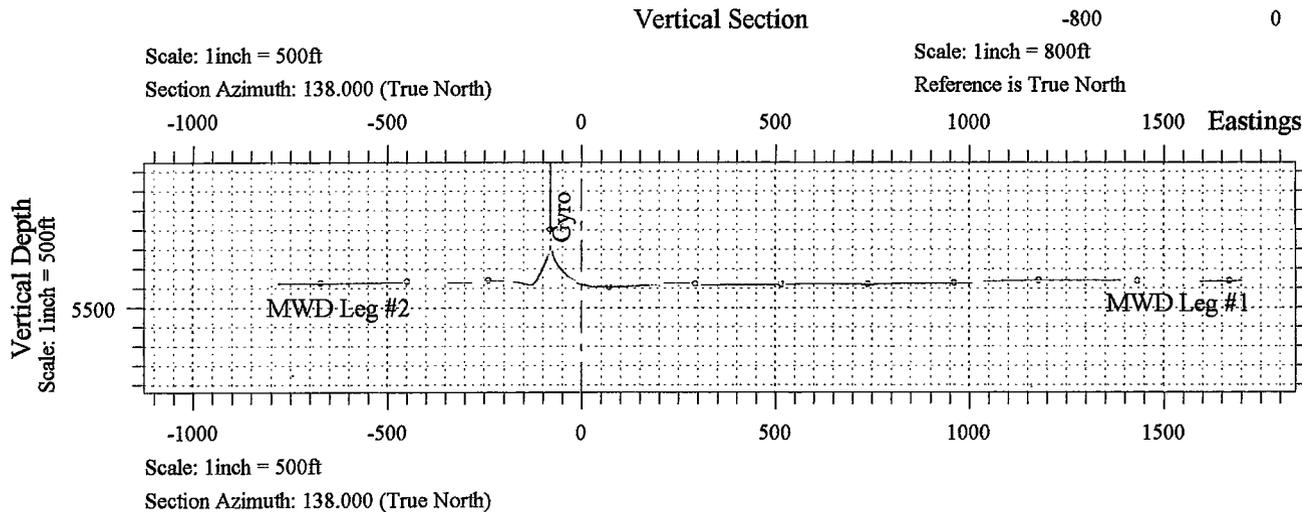
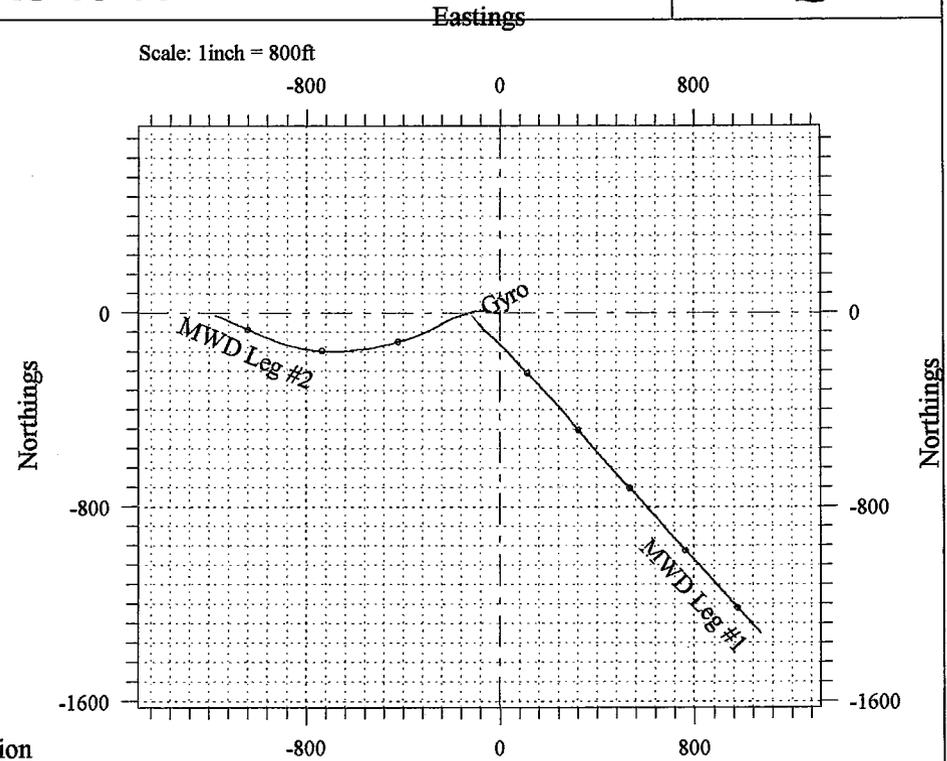
08-23-97 SITP @ 5:00 WAS 100PSI, RU & RIH W/COILED TBG TO 7178', ACIDIZE F/7178-6448 & F/6430-5548' W/33,852 GALS OF 15% HCL ACID. SIFN.

08-24-97 POOH W/PKR & PH6 TAILPIPE, LD PKR, RIH W/RETV TOOL FOR RETV WHIPSTOCK TO 5336', LATCH ONTO WHIPSTOCK, RELEASE. POOH & LAY DOWN EXCESS TBG. LAY DOWN RETV WHIPSTOCK, RIH W/ 2 7/8" OPEN END TBG. (KILL STRING ) TO 5010' SIFN.

08-25-97 SITP & CSG PRESSURE @ 7:30 WAS 0 PSI. SET 5.5 GUIBERSON G-6 PKR RUN ON 2 7/8" CMT LINED TBG TO 5249.51'. TEST PKR TO 1000 PSI. OK. SIFN.

08-26-97 RDMO NAVAJO WEST RIG #36. CLEAN LOCATION. FINAL COMPLETION REPORT. WELL TURN TO PRODUCTION.

Customer: Mobil  
 Folder: Mobil  
 Field: San Juan County  
 Project: Utah  
 Structure: Ratherford Unit  
 Well: RU 18-14



Prepared:

Checked:

Approved:

**sperry-sun**  
**DRILLING SERVICES**

A DRESSER INDUSTRIES, INC. COMPANY

**Mobil**  
**San Juan County**  
**Utah**  
**Ratherford Unit**  
**RU 18-14 - MWD Leg #1**

**SURVEY REPORT**

**8 September, 1997**

Survey Ref: svy1853

# Sperry-Sun Drilling Services

## Survey Report for RU 18-14

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)
<b>Gyro</b>							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
100.00	0.200	229.720	100.00	0.11 S	0.13 W	-0.01	0.200
300.00	0.390	261.980	300.00	0.43 S	1.07 W	-0.40	0.123
500.00	0.620	269.300	499.99	0.54 S	2.83 W	-1.49	0.119
700.00	1.260	274.060	699.96	0.40 S	6.10 W	-3.79	0.322
900.00	2.140	273.540	899.87	0.01 S	12.03 W	-8.04	0.440
1100.00	2.070	272.940	1099.74	0.40 N	19.36 W	-13.25	0.037
1300.00	2.190	276.420	1299.60	1.02 N	26.76 W	-18.66	0.088
1500.00	2.380	283.990	1499.44	2.45 N	34.59 W	-24.96	0.178
1700.00	2.420	283.970	1699.26	4.47 N	42.72 W	-31.91	0.020
1900.00	2.070	284.830	1899.11	6.41 N	50.31 W	-38.43	0.176
2100.00	2.110	283.670	2098.98	8.21 N	57.38 W	-44.49	0.029
2300.00	1.790	271.700	2298.86	9.17 N	64.08 W	-49.69	0.258
2500.00	1.600	265.330	2498.77	9.04 N	69.98 W	-53.54	0.134
2700.00	1.600	268.090	2698.70	8.72 N	75.56 W	-57.03	0.039
2900.00	1.590	269.580	2898.62	8.60 N	81.12 W	-60.67	0.021
3100.00	1.340	276.980	3098.55	8.87 N	86.22 W	-64.28	0.157
3300.00	1.370	277.450	3298.50	9.46 N	90.91 W	-67.86	0.016
3500.00	1.230	270.360	3498.45	9.78 N	95.43 W	-71.12	0.106
3700.00	1.100	269.860	3698.41	9.79 N	99.49 W	-73.85	0.065
3900.00	0.930	259.500	3898.37	9.49 N	103.01 W	-75.98	0.125
4100.00	0.870	249.350	4098.35	8.66 N	106.02 W	-77.38	0.085
4300.00	0.830	245.640	4298.33	7.53 N	108.76 W	-78.37	0.034
4500.00	0.920	232.370	4498.30	5.95 N	111.36 W	-78.93	0.111
4700.00	1.070	230.130	4698.27	3.77 N	114.06 W	-79.12	0.077
4900.00	1.220	232.630	4898.23	1.28 N	117.19 W	-79.37	0.079
5100.00	1.370	229.370	5098.18	1.57 S	120.69 W	-79.60	0.084
5300.00	1.180	244.890	5298.13	4.00 S	124.37 W	-80.25	0.196
<b>MWD Leg #1</b>							
5333.85	1.170	242.360	5331.98	4.31 S	124.99 W	-80.44	0.156
5341.00	4.100	154.270	5339.12	4.57 S	124.95 W	-80.21	59.101
5351.00	10.100	143.070	5349.04	5.59 S	124.26 W	-78.99	61.295
5361.00	16.200	140.180	5358.77	7.37 S	122.84 W	-76.72	61.335
5371.00	23.200	138.840	5368.18	9.93 S	120.65 W	-73.36	70.141
5381.00	29.500	138.070	5377.14	13.24 S	117.71 W	-68.92	63.091
5391.00	33.400	137.550	5385.67	17.11 S	114.20 W	-63.70	39.094
5401.00	34.500	137.180	5393.96	21.22 S	110.42 W	-58.12	11.192
5411.00	39.100	136.900	5401.97	25.60 S	106.34 W	-52.13	46.030
5421.00	43.600	136.670	5409.47	30.41 S	101.81 W	-45.53	45.026

Continued...

# Sperry-Sun Drilling Services

## Survey Report for RU 18-14

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)
5431.00	47.700	136.480	5416.46	35.60 S	96.90 W	-38.38	41.022
5441.00	53.100	136.320	5422.83	41.18 S	91.59 W	-30.68	54.014
5451.00	58.400	136.180	5428.46	47.15 S	85.87 W	-22.42	53.013
5461.00	63.500	136.050	5433.31	53.45 S	79.81 W	-13.69	51.013
5471.00	68.800	135.930	5437.36	60.02 S	73.46 W	-4.55	53.011
5481.00	74.200	135.820	5440.53	66.83 S	66.86 W	4.92	54.010
5493.00	80.500	135.700	5443.15	75.21 S	58.70 W	16.62	52.509
5503.00	86.000	134.100	5444.33	82.22 S	51.67 W	26.53	57.247
5515.00	89.500	132.200	5444.80	90.42 S	42.92 W	38.47	33.180
5547.90	89.600	132.200	5445.06	112.51 S	18.55 W	71.20	0.304
5579.72	91.900	134.000	5444.64	134.25 S	4.68 E	102.90	9.178
5611.49	94.100	136.900	5442.98	156.86 S	26.94 E	134.59	11.447
5643.27	94.600	137.600	5440.57	180.13 S	48.45 E	166.28	2.702
5675.05	93.800	137.000	5438.24	203.42 S	69.94 E	197.97	3.144
5706.82	91.300	137.000	5436.83	226.63 S	91.58 E	229.70	7.869
5738.62	88.500	135.800	5436.88	249.65 S	113.51 E	261.48	9.579
5770.41	87.500	134.900	5437.99	272.26 S	135.84 E	293.22	4.231
5802.21	88.600	137.000	5439.07	295.10 S	157.94 E	324.98	7.451
5833.99	89.400	138.300	5439.63	318.58 S	179.34 E	356.75	4.803
5865.72	89.000	136.200	5440.07	341.88 S	200.88 E	388.47	6.737
5897.56	89.600	136.900	5440.46	364.99 S	222.77 E	420.30	2.895
5929.31	91.100	138.800	5440.27	388.52 S	244.08 E	452.05	7.624
5961.04	91.500	139.500	5439.55	412.52 S	264.82 E	483.76	2.540
5992.85	91.300	140.400	5438.77	436.86 S	285.29 E	515.55	2.897
6024.66	92.000	140.400	5437.85	461.36 S	305.55 E	547.31	2.201
6056.44	92.100	140.900	5436.72	485.92 S	325.69 E	579.04	1.603
6088.28	89.600	141.100	5436.25	510.66 S	345.73 E	610.83	7.877
6120.10	88.100	139.000	5436.88	535.05 S	366.15 E	642.62	8.109
6151.98	87.600	139.000	5438.08	559.09 S	387.05 E	674.47	1.568
6183.82	89.700	138.400	5438.83	583.00 S	408.06 E	706.30	6.859
6215.68	90.000	138.400	5438.91	606.83 S	429.21 E	738.16	0.942
6247.49	92.700	139.000	5438.16	630.71 S	450.20 E	769.96	8.695
6279.33	91.600	138.800	5436.97	654.69 S	471.12 E	801.77	3.511
6311.23	90.200	137.200	5436.47	678.39 S	492.46 E	833.66	6.664
6342.95	89.900	136.300	5436.44	701.50 S	514.19 E	865.37	2.991
6374.79	90.200	135.100	5436.41	724.28 S	536.43 E	897.19	3.885
6406.67	91.500	137.000	5435.94	747.23 S	558.55 E	929.04	7.221
6438.52	91.100	138.800	5435.22	770.85 S	579.90 E	960.88	5.788
6469.17	93.000	139.300	5434.12	793.99 S	599.97 E	991.51	6.410
6500.92	92.000	139.500	5432.74	818.07 S	620.62 E	1023.22	3.212
6531.88	92.300	138.400	5431.57	841.40 S	640.93 E	1054.15	3.680
6595.36	91.100	138.600	5429.69	888.92 S	682.98 E	1117.60	1.916
6657.45	89.900	138.100	5429.15	935.32 S	724.24 E	1179.69	2.094
6720.28	89.200	137.600	5429.64	981.90 S	766.40 E	1242.51	1.369
6783.79	90.000	137.700	5430.09	1028.83 S	809.18 E	1306.02	1.269

Continued...

# Sperry-Sun Drilling Services

## Survey Report for RU 18-14

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)
6846.81	89.900	138.600	5430.14	1075.77 S	851.23 E	1369.04	1.437
6910.42	90.400	137.700	5429.98	1123.15 S	893.67 E	1432.65	1.619
6973.91	90.700	138.800	5429.37	1170.52 S	935.94 E	1496.13	1.796
7037.51	88.500	137.200	5429.81	1217.78 S	978.50 E	1559.73	4.277
7101.16	89.900	136.900	5430.70	1264.36 S	1021.86 E	1623.36	2.249
7147.00	90.400	137.400	5430.58	1297.96 S	1053.03 E	1669.19	1.543
7178.00	90.400	137.400	5430.36	1320.78 S	1074.02 E	1700.19	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 138.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 7178.00ft.,  
The Bottom Hole Displacement is 1702.35ft., in the Direction of 140.883° (True).

**sperry-sun**  
**DRILLING SERVICES**

A DRESSER INDUSTRIES, INC. COMPANY

**Mobil**  
**San Juan County**  
**Utah**  
**Ratherford Unit**  
**RU 18-14 - MWD Leg #2**

**SURVEY REPORT**

**8 September, 1997**

**Survey Ref: svy1855**

# Sperry-Sun Drilling Services

## Survey Report for RU 18-14

**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)
<b>Gyro</b>							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
100.00	0.200	229.720	100.00	0.11 S	0.13 W	0.09	0.200
300.00	0.390	261.980	300.00	0.43 S	1.07 W	0.86	0.123
500.00	0.620	269.300	499.99	0.54 S	2.83 W	2.47	0.119
700.00	1.260	274.060	699.96	0.40 S	6.10 W	5.60	0.322
900.00	2.140	273.540	899.87	0.01 S	12.03 W	11.30	0.440
1100.00	2.070	272.940	1099.74	0.40 N	19.36 W	18.33	0.037
1300.00	2.190	276.420	1299.60	1.02 N	26.76 W	25.50	0.088
1500.00	2.380	283.990	1499.44	2.45 N	34.59 W	33.34	0.178
1700.00	2.420	283.970	1699.26	4.47 N	42.72 W	41.67	0.020
1900.00	2.070	284.830	1899.11	6.41 N	50.31 W	49.47	0.176
2100.00	2.110	283.670	2098.98	8.21 N	57.38 W	56.72	0.029
2300.00	1.790	271.700	2298.86	9.17 N	64.08 W	63.35	0.258
2500.00	1.600	265.330	2498.77	9.04 N	69.98 W	68.85	0.134
2700.00	1.600	268.090	2698.70	8.72 N	75.56 W	73.98	0.039
2900.00	1.590	269.580	2898.62	8.60 N	81.12 W	79.17	0.021
3100.00	1.340	276.980	3098.55	8.87 N	86.22 W	84.05	0.157
3300.00	1.370	277.450	3298.50	9.46 N	90.91 W	88.66	0.016
3500.00	1.230	270.360	3498.45	9.78 N	95.43 W	93.02	0.106
3700.00	1.100	269.860	3698.41	9.79 N	99.49 W	96.84	0.065
3900.00	0.930	259.500	3898.37	9.49 N	103.01 W	100.04	0.125
4100.00	0.870	249.350	4098.35	8.66 N	106.02 W	102.59	0.085
4300.00	0.830	245.640	4298.33	7.53 N	108.76 W	104.78	0.034
4500.00	0.920	232.370	4498.30	5.95 N	111.36 W	106.68	0.111
4700.00	1.070	230.130	4698.27	3.77 N	114.06 W	108.47	0.077
4900.00	1.220	232.630	4898.23	1.28 N	117.19 W	110.56	0.079
5100.00	1.370	229.370	5098.18	1.57 S	120.69 W	112.88	0.084
5300.00	1.180	244.890	5298.13	4.00 S	124.37 W	115.50	0.196
<b>MWD Leg #2</b>							
5316.00	1.170	243.700	5314.13	4.14 S	124.67 W	115.73	0.165
5323.00	4.100	263.020	5321.12	4.20 S	124.98 W	116.01	43.154
5333.00	8.800	265.560	5331.06	4.30 S	126.10 W	117.02	47.075
5343.00	13.400	266.490	5340.87	4.43 S	128.02 W	118.78	46.033
5353.00	18.200	266.970	5350.49	4.59 S	130.74 W	121.28	48.017
5363.00	23.100	267.200	5359.84	4.77 S	134.26 W	124.53	49.007
5373.00	27.300	264.000	5368.89	5.10 S	138.50 W	128.40	44.141
5383.00	32.100	261.800	5377.57	5.72 S	143.41 W	132.81	49.215
5393.00	36.600	260.100	5385.83	6.61 S	148.98 W	137.74	46.007
5403.00	41.300	258.000	5393.60	7.81 S	155.15 W	143.12	48.813

Continued...

# Sperry-Sun Drilling Services

## Survey Report for RU 18-14

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)
5413.00	45.100	255.100	5400.89	9.41 S	161.80 W	148.83	42.865
5423.00	48.700	253.000	5407.72	11.42 S	168.82 W	154.73	39.126
5433.00	52.500	250.300	5414.07	13.86 S	176.15 W	160.79	43.345
5443.00	56.800	248.600	5419.85	16.72 S	183.79 W	166.98	45.178
5453.00	61.100	247.500	5425.01	19.93 S	191.73 W	173.35	44.020
5463.00	65.600	246.600	5429.49	23.41 S	199.96 W	179.89	45.713
5473.00	70.100	245.100	5433.26	27.20 S	208.40 W	186.53	47.094
5483.00	74.800	243.900	5436.28	31.31 S	217.01 W	193.21	48.372
5493.00	79.200	241.900	5438.53	35.74 S	225.68 W	199.84	48.120
5503.00	84.000	240.800	5439.99	40.49 S	234.36 W	206.38	49.217
5530.00	93.700	240.700	5440.53	53.66 S	257.88 W	223.98	35.928
5579.58	93.500	245.700	5437.41	75.96 S	302.03 W	257.84	10.073
5611.23	93.900	248.300	5435.37	88.30 S	331.10 W	280.94	8.295
5643.01	93.200	250.600	5433.40	99.44 S	360.80 W	305.03	7.552
5674.79	91.500	252.500	5432.10	109.48 S	390.92 W	329.90	8.018
5706.58	90.900	252.200	5431.43	119.12 S	421.21 W	355.07	2.110
5738.37	92.500	255.300	5430.49	128.01 S	451.71 W	380.69	10.970
5770.14	93.100	258.100	5428.94	135.31 S	482.59 W	407.21	9.003
5801.93	86.500	259.600	5429.05	141.46 S	513.76 W	434.40	21.290
5833.68	87.200	261.500	5430.79	146.66 S	545.03 W	462.00	6.369
5865.51	88.500	263.400	5431.99	150.84 S	576.56 W	490.20	7.229
5897.23	89.000	263.400	5432.68	154.48 S	608.06 W	518.55	1.576
5928.99	89.900	266.100	5432.99	157.39 S	639.68 W	547.28	8.961
5960.80	92.000	268.500	5432.46	158.89 S	671.45 W	576.61	10.024
5992.66	92.100	271.300	5431.32	158.94 S	703.29 W	606.51	8.788
6024.41	89.900	273.100	5430.76	157.72 S	735.01 W	636.73	8.952
6056.23	89.700	276.300	5430.88	155.12 S	766.71 W	667.42	10.076
6088.03	89.800	278.400	5431.01	151.05 S	798.25 W	698.45	6.611
6119.82	88.500	282.400	5431.49	145.31 S	829.51 W	729.78	13.229
6151.68	88.200	285.700	5432.40	137.58 S	860.40 W	761.45	10.396
6183.15	88.500	288.000	5433.31	128.46 S	890.50 W	792.86	7.368
6215.33	88.700	290.300	5434.10	117.91 S	920.89 W	825.03	7.172
6247.13	89.100	293.000	5434.71	106.18 S	950.44 W	856.80	8.582
6278.84	89.500	292.400	5435.09	93.95 S	979.69 W	888.48	2.274
6310.75	89.200	292.100	5435.46	81.87 S	1009.22 W	920.36	1.330
6342.58	89.200	294.700	5435.90	69.23 S	1038.43 W	952.13	8.168
6374.33	90.300	294.400	5436.04	56.04 S	1067.31 W	983.78	3.591
6406.22	90.000	294.400	5435.96	42.86 S	1096.35 W	1015.57	0.941
6460.00	90.100	293.700	5435.91	20.94 S	1145.46 W	1069.22	1.315
6491.00	90.100	293.700	5435.85	8.48 S	1173.85 W	1100.15	0.000

Continued...

# **Sperry-Sun Drilling Services**

*Survey Report for RU 18-14*

**Mobil**  
**San Juan County**

**Utah**  
**Ratherford Unit**

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 290.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 6491.00ft.,  
The Bottom Hole Displacement is 1173.88ft., in the Direction of 269.586° (True).

OPERATOR MOBIL PRODUCING TX & NM, INC.

OPERATOR ACCT. NO. N 7370

ADDRESS P. O. BOX 633, MIDLAND, TX 79702

ACTION CODE	CURRENT ENTITY NO.	NEW ENTITY NO.	API NUMBER	WELL NAME	WELL LOCATION					SPUD DATE	EFFECTIVE DATE
					QQ	SC	TP	RG	COUNTY		
B	99999	06280	43-037-15735	RATHERFORD 18-W-14		18	41S	24E	SAN JUAN	7-22-97	8-26-97
WELL 1 COMMENTS: Entity added 11-19-97. <i>Jec</i> (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**  
NOV 19 1997

*Shirley Houghins*  
Signature SHIRLEY HOUGHINS  
Title ENV & REG TECHNICIAN Date 11-13-97  
Phone No. (915) 688-2585

DIV. OF OIL, GAS & MINING

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

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)  
**810' FSL & 600' FWL**  
**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 18-W-14**

9. API Well No.

**43-037-15735**

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
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other <b>INJECTOR/SIDETRACK</b>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

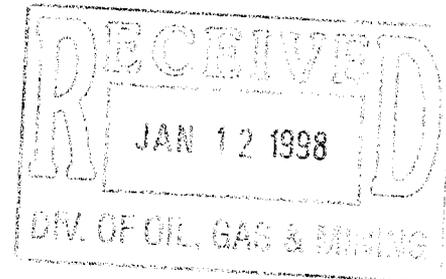
(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

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

BHL:

LATERAL #1A1 (1) 1321' SOUTH & 1074' EAST F/SURFACE SPOT.  
LATERAL #2A1 (2) 8' SOUTH & 1174' WEST F/ SURFACE SPOT.

SEE ATTACHMENT



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

Signed *Shirley Houchins* Title **SHIRLEY HOUCHINS/ENV & REG TECH** Date **11-13-97**

(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

01/24/98  
JRB

## **DRILLED FOOTAGE CALCULATION FOR DIRECTIONAL AND HORIZONTAL WELLS**

Well Name:                   Ratherford 18-W-14  
Surface Location:         810 ' FSL, 600' FWL, Sec. 18, T. 41S, R. 24E

First leg description:                   Leg #1  
    KOP MD:                             5333.85  
    KOP TVD:                            5331.98  
    EOL MD:                             7178.00  
    EOL TVD:                            5430.36  
    Footage drilled:                    1844.15

Second leg description:                Leg #2  
    KOP MD:                             5316.00  
    KOP TVD:                            5314.13  
    EOL MD:                             6491.00  
    EOL TVD:                            5435.85  
    Footage drilled:                    1175.00

Third leg description:  
    KOP MD:  
    KOP TVD:  
    EOL MD:  
    EOL TVD:  
    Footage drilled:

Fourth leg description:  
    KOP MD:  
    KOP TVD:  
    EOL MD:  
    EOL TVD:  
    Footage drilled:

Fifth leg description:  
    KOP MD:  
    KOP TVD:  
    EOL MD:  
    EOL TVD:  
    Footage drilled:

<b>Total Footage Drilled (MD):</b>	<b>3019.15</b>
<b>Deepest point (TVD):</b>	<b>5445.06</b>

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

07-22-97 MIRU NAVAJO WEST RIG #15, NOTIFY MELVIN CAPITAN W/NAVAJO EPA ON  
MON 7-21-97 @ 4:10 P.M, OF INTENT TO DIG & LINE EARTH PIT, VOICE MAIL  
MESSAGE. SWI, READY TO BLEED DOWN TBG TO PIT IN AM. SDFN.

07-23-97 NOTIFIED BLM ON TUEST 7-22-97 @ 10:00 PM OF INTENT TO BEGIN W/O  
OPERATIONS ON WELL, LEFT VOICE MAIL MESSAGE. 3000 PSI ON TBG,  
BLEED DOWN TO PIT, ND WH, NU BOP, TEST BOT TO 250#/750# ON CHART.  
UNSET PKR, POOH & LD 2 3/8" TBG, RIH W/RBP @ 5400'. TEST CSG TO 1000#

07-24-97 CIRC OUT OIL. POOH & LD TBG, ND BOP, ND WELLHEAD. PU ON CSG,  
REMOVE OLD PACKING & SLIPS. CUT OFF CSG HEAD & CONDUCTOR PIPE,  
WELL ON NEW CSG HEAD & TEST TO 1000 PSI. POUR READY-MIX CMT  
AROUND BASEPLATE. RD PU, LET CMT SIT OVERNIGHT. WELL READY FOR  
DRILLING RIG.

07-31-97 MIRU NAVAJO WEST RIG #25, RIGGING UP.

08-01-97 NOTIFIED STATE OF UTAH @ 7:45 PM 7-31-97 ABOUT STARTING  
OPERATIONS. FINISH RIGGING UP, WEATHERFORD RIH W/ WL & SET BIG  
BORE WHIPSTOCK @ 5349'.

08-02-97 RIH W/TIW KEYWAY LATCH ASSY. LATCH INTO PKR @ 5349'. GYRO DATA,  
RAN GYRO & FOUND GTF OF PKR KEYWAY @ @ 292 DEG & RAN GYRO  
SURVEY EVERY 200' F/5335.

08-02-97 TOP OF WHIPSTOCK @ 5333 SET @ 138 DEG AZ., CUT WINDOW F/5333-5335'  
W/STARTER MILL, CIRC HOLE CLEAN, POOH W/STARTER MILL. RIH  
W/WINDOW & WATERMELLON MILL, MILL WINDOW F/5333-5340'.

08-03-97 MILL WINDOW F/5333-5340' & CUT FORMATION TO 5341'. PUMP SWEEP &  
CIRC HOLE CLEAN, POOH W/MILLS, LATERAL #1.

08-03-97 RIH W/CURVE DRILLING ASSY, DRILL CURVE F/5341-5410'.

08-04-97 CONTINUE TO DRILL CURVE TO 5515', RIH W/LATERAL ASSY.

08-05-97 SLIDE & ROTATE DRILL LATERAL 1A1 F/5515-6070'.

08-06-97 SLIDE & ROTATE DRILL LATERAL 1A1 F/6070-7168'. 1A ZONE F/5515-7178'  
TMD, (5444-5429 TVD), 1700 VS, CIRC CLEAN, POOH.

08-07-97 FIN POOH & LD MWD & MUD MOTOR, POOH & LD WHIPSTOCK. RIH W/TIW  
LATCH ASSY, #2 WHIPSTOCK, CUT 2' W/STARTER MILL F/5315-5317'. POOH  
W/STARTER MILL, RIH W/WINDOW & WATERMELLON MILLS, MILL  
WINDOW F/5315-5319'.

08-08-97 MILLED # 2 WINDOW F/5315-5321', FORMATION TO 5322'. POOH LD MILLS,  
LATERAL #2.

08-08-97 RIH W/CURVE ASSY, DRILL CURVE LATERAL #2A1 F/5350-5365'.

08-09-97 SLIDE DRILL CURVE LATERAL #2A1 F/5365-5530'. CIRC CLEAN, POOH, RIH  
W/LATERAL ASSY, DRILL LATERAL #2A1 F/5530-5561'.

08-10-97 SLIDE DRILL LATERAL #2A1 F/5561-6200'.

08-11-97 SLIDE/ROTATE DRILL F/6200-6491'. PUMP SWEEP, PULL OUT OF LATERAL  
TO WINDOW, POOH W/DIRECTIONAL TOOLS, RIH & SET RBP @ 5180'. POOH  
W/DRILL STRING.

08-12-97 JET PITS, CUT DRLG. LINE, REPLACE BRAKE PADS, TEAR DOWN RIG &  
MAKE READY TO MOVE. FINAL REPORT PENDING COMPLETION.

ATTACHMENT - FORM 3160-5  
RATHERFORD UNIT #18-W-14  
14-20-603-353  
NAVAJO TRIBAL  
SAN JUAN, UTAH  
PAGE 2

COMPLETION:

- 08-14-97 MIRU NAVAJO WEST RIG #336, SPOT PIT & LINES. TEST BOPS ON CHART TO 250/750#. GOOD. PU RBP RETRIEVING TOOL, TIH & RELEASE RBP, PRESSURE TO 500 PSI W/FULL COLUMN. FLOW BACK, RE-SET RBP & PLAN TO FLOW BACK IN AM. SDFN.
- 08-15-97 UNSET RBP & FLOW WELL BACK TO CIRC OUT GAS HEAD. RESET RBP, CIRC. UNSET RBP & POOH. SET EOT @ 5604', PKR @ 5228'. CIRC MUD OUT. TEST PKR TO 500 PSI, HELD GOOD. SDFN.
- 08-16-97 MIRU DOWELL CT UNIT, RIH TO 6491' ACIDIZE F/6491-5618', WITH 13547 GALS 15% HCL ACID IN LATERAL #2A1. FLOW TO TANKS, SDFN & SUNDAY.
- 08-18-97 WELL FLOWING @ 140 PSI NO CHOKE. RUN BACK TO BOTTOM W/PIPE. SIFN.
- 08-19-97 TBG FLOWING @ 140 PSI, POOH W/PKR & PH6, PU WHIPSTOCK RETRIEVING TOOL, RIH & SHEAR OUT OF TIW PKR W/25 OVER. SDFN.
- 08-20-97 WELL DEAD, BEGIN POOH W/WHIPSTOCK ASSY, LD SAME. PU REENTRY GUIDE, SET INTO PKR, SWI & SDFN.
- 08-21-97 TIH W/PH6 & PKR, SET PKR, CIRC OUT MUD, TEST PKR TO 300#, TEST GOOD. PREP TO ACIDIZE, SDFN & FRIDAY.
- 08-23-97 SITP @ 5:00 WAS 100PSI, RU & RIH W/COILED TBG TO 7178', ACIDIZE F/7178-6448 & F/6430-5548' W/33,852 GALS OF 15% HCL ACID. SIFN.
- 08-24-97 POOH W/PKR & PH6 TAILPIPE, LD PKR, RIH W/RETV TOOL FOR RETV WHIPSTOCK TO 5336', LATCH ONTO WHIPSTOCK, RELEASE. POOH & LAY DOWN EXCESS TBG. LAY DOWN RETV WHIPSTOCK, RIH W/ 2 7/8" OPEN END TBG. (KILL STRING ) TO 5010' SIFN.
- 08-25-97 SITP & CSG PRESSURE @ 7:30 WAS 0 PSI. SET 5.5 GUIBERSON G-6 PKR RUN ON 2 7/8" CMT LINED TBG TO 5249.51'. TEST PKR TO 1000 PSI. OK. SIFN.
- 08-26-97 RDMO NAVAJO WEST RIG #36. CLEAN LOCATION. FINAL COMPLETION REPORT. WELL TURN TO PRODUCTION.

OPERATOR MOBIL PRODUCING TX & NM, INC.

OPERATOR ACCT. NO. N

ADDRESS P. O. BOX 633, MIDLAND, TX 79702

ACTION CODE	CURRENT ENTITY NO.	NEW ENTITY NO.	API NUMBER	WELL NAME	WELL LOCATION					SPUD DATE	EFFECTIVE DATE
					QQ	SC	TP	RG	COUNTY		
	6280		43-037-15735	RATHERFORD 18-W-14		18	41S	24E	SAN JUAN	7-22-97	8-26-97
WELL 1 COMMENTS: Entity already assigned 11/97. See											
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)

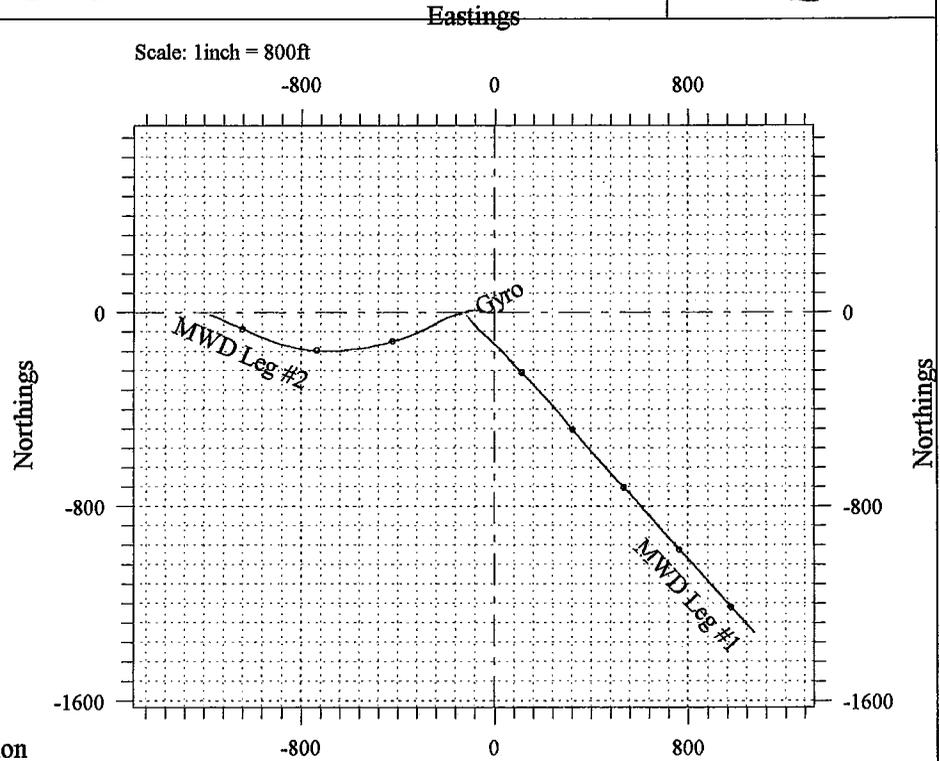
NOTE: Use COMMENT section to explain why each Action Code was selected.

*See Shirley for*  
Signature SHIRLEY HOUGHINS  
ENV & REG TECHNICIAN  
Title  
Date 11-13-97  
Phone No. ( 915 ) 688-2585

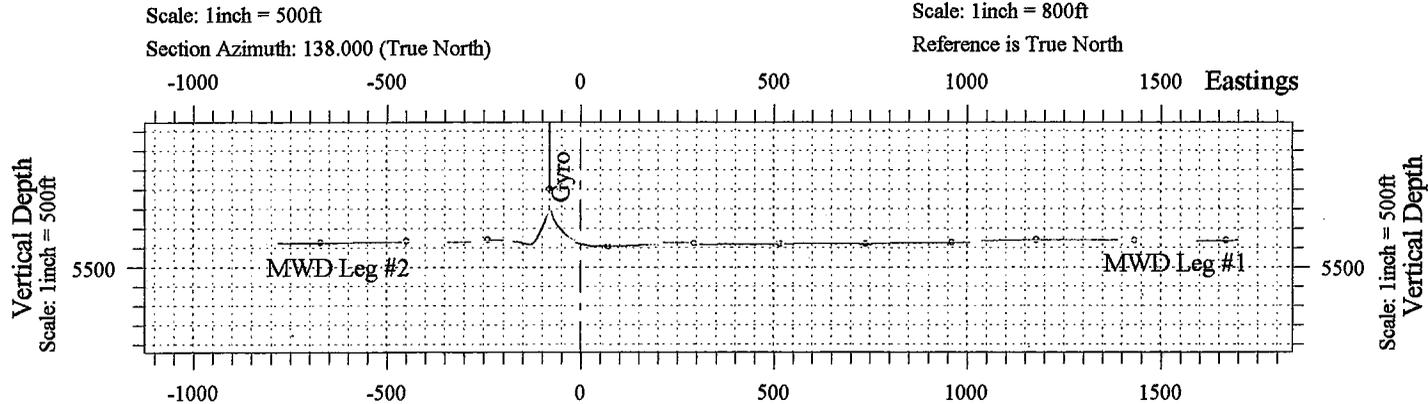
Customer: Mobil  
 Folder: Mobil  
 Field: San Juan County  
 Project: Utah  
 Structure: Ratherford Unit  
 Well: RU 18-14



*[Handwritten signature]*  
 JAN 12 1998  
 [Handwritten text]



Vertical Section



Vertical Section

Prepared: \_\_\_\_\_ Checked: \_\_\_\_\_ Approved: \_\_\_\_\_

**sperry-sun**  
**DRILLING SERVICES**

A DRESSER INDUSTRIES, INC. COMPANY

**Mobil**  
**San Juan County**  
**Utah**  
**Ratherford Unit**  
**RU 18-14 - MWD Leg #1**

**SURVEY REPORT**

**8 September, 1997**

**Survey Ref: svy1853**

# Sperry-Sun Drilling Services

Survey Report for RU 18-14

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)
<b>Gyro</b>							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
100.00	0.200	229.720	100.00	0.11 S	0.13 W	-0.01	0.200
300.00	0.390	261.980	300.00	0.43 S	1.07 W	-0.40	0.123
500.00	0.620	269.300	499.99	0.54 S	2.83 W	-1.49	0.119
700.00	1.260	274.060	699.96	0.40 S	6.10 W	-3.79	0.322
900.00	2.140	273.540	899.87	0.01 S	12.03 W	-8.04	0.440
1100.00	2.070	272.940	1099.74	0.40 N	19.36 W	-13.25	0.037
1300.00	2.190	276.420	1299.60	1.02 N	26.76 W	-18.66	0.088
1500.00	2.380	283.990	1499.44	2.45 N	34.59 W	-24.96	0.178
1700.00	2.420	283.970	1699.26	4.47 N	42.72 W	-31.91	0.020
1900.00	2.070	284.830	1899.11	6.41 N	50.31 W	-38.43	0.176
2100.00	2.110	283.670	2098.98	8.21 N	57.38 W	-44.49	0.029
2300.00	1.790	271.700	2298.86	9.17 N	64.08 W	-49.69	0.258
2500.00	1.600	265.330	2498.77	9.04 N	69.98 W	-53.54	0.134
2700.00	1.600	268.090	2698.70	8.72 N	75.56 W	-57.03	0.039
2900.00	1.590	269.580	2898.62	8.60 N	81.12 W	-60.67	0.021
3100.00	1.340	276.980	3098.55	8.87 N	86.22 W	-64.28	0.157
3300.00	1.370	277.450	3298.50	9.46 N	90.91 W	-67.86	0.016
3500.00	1.230	270.360	3498.45	9.78 N	95.43 W	-71.12	0.106
3700.00	1.100	269.860	3698.41	9.79 N	99.49 W	-73.85	0.065
3900.00	0.930	259.500	3898.37	9.49 N	103.01 W	-75.98	0.125
4100.00	0.870	249.350	4098.35	8.66 N	106.02 W	-77.38	0.085
4300.00	0.830	245.640	4298.33	7.53 N	108.76 W	-78.37	0.034
4500.00	0.920	232.370	4498.30	5.95 N	111.36 W	-78.93	0.111
4700.00	1.070	230.130	4698.27	3.77 N	114.06 W	-79.12	0.077
4900.00	1.220	232.630	4898.23	1.28 N	117.19 W	-79.37	0.079
5100.00	1.370	229.370	5098.18	1.57 S	120.69 W	-79.60	0.084
5300.00	1.180	244.890	5298.13	4.00 S	124.37 W	-80.25	0.196
<b>MWD Leg #1</b>							
5333.85	1.170	242.360	5331.98	4.31 S	124.99 W	-80.44	0.156
5341.00	4.100	154.270	5339.12	4.57 S	124.95 W	-80.21	59.101
5351.00	10.100	143.070	5349.04	5.59 S	124.26 W	-78.99	61.295
5361.00	16.200	140.180	5358.77	7.37 S	122.84 W	-76.72	61.335
5371.00	23.200	138.840	5368.18	9.93 S	120.65 W	-73.36	70.141
5381.00	29.500	138.070	5377.14	13.24 S	117.71 W	-68.92	63.091
5391.00	33.400	137.550	5385.67	17.11 S	114.20 W	-63.70	39.094
5401.00	34.500	137.180	5393.96	21.22 S	110.42 W	-58.12	11.192
5411.00	39.100	136.900	5401.97	25.60 S	106.34 W	-52.13	46.030
5421.00	43.600	136.670	5409.47	30.41 S	101.81 W	-45.53	45.026

Continued...

# Sperry-Sun Drilling Services

## Survey Report for RU 18-14

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)
5431.00	47.700	136.480	5416.46	35.60 S	96.90 W	-38.38	41.022
5441.00	53.100	136.320	5422.83	41.18 S	91.59 W	-30.68	54.014
5451.00	58.400	136.180	5428.46	47.15 S	85.87 W	-22.42	53.013
5461.00	63.500	136.050	5433.31	53.45 S	79.81 W	-13.69	51.013
5471.00	68.800	135.930	5437.36	60.02 S	73.46 W	-4.55	53.011
5481.00	74.200	135.820	5440.53	66.83 S	66.86 W	4.92	54.010
5493.00	80.500	135.700	5443.15	75.21 S	58.70 W	16.62	52.509
5503.00	86.000	134.100	5444.33	82.22 S	51.67 W	26.53	57.247
5515.00	89.500	132.200	5444.80	90.42 S	42.92 W	38.47	33.180
5547.90	89.600	132.200	5445.06	112.51 S	18.55 W	71.20	0.304
5579.72	91.900	134.000	5444.64	134.25 S	4.68 E	102.90	9.178
5611.49	94.100	136.900	5442.98	156.86 S	26.94 E	134.59	11.447
5643.27	94.600	137.600	5440.57	180.13 S	48.45 E	166.28	2.702
5675.05	93.800	137.000	5438.24	203.42 S	69.94 E	197.97	3.144
5706.82	91.300	137.000	5436.83	226.63 S	91.58 E	229.70	7.869
5738.62	88.500	135.800	5436.88	249.65 S	113.51 E	261.48	9.579
5770.41	87.500	134.900	5437.99	272.26 S	135.84 E	293.22	4.231
5802.21	88.600	137.000	5439.07	295.10 S	157.94 E	324.98	7.451
5833.99	89.400	138.300	5439.63	318.58 S	179.34 E	356.75	4.803
5865.72	89.000	136.200	5440.07	341.88 S	200.88 E	388.47	6.737
5897.56	89.600	136.900	5440.46	364.99 S	222.77 E	420.30	2.895
5929.31	91.100	138.800	5440.27	388.52 S	244.08 E	452.05	7.624
5961.04	91.500	139.500	5439.55	412.52 S	264.82 E	483.76	2.540
5992.85	91.300	140.400	5438.77	436.86 S	285.29 E	515.55	2.897
6024.66	92.000	140.400	5437.85	461.36 S	305.55 E	547.31	2.201
6056.44	92.100	140.900	5436.72	485.92 S	325.69 E	579.04	1.603
6088.28	89.600	141.100	5436.25	510.66 S	345.73 E	610.83	7.877
6120.10	88.100	139.000	5436.88	535.05 S	366.15 E	642.62	8.109
6151.98	87.600	139.000	5438.08	559.09 S	387.05 E	674.47	1.568
6183.82	89.700	138.400	5438.83	583.00 S	408.06 E	706.30	6.859
6215.68	90.000	138.400	5438.91	606.83 S	429.21 E	738.16	0.942
6247.49	92.700	139.000	5438.16	630.71 S	450.20 E	769.96	8.695
6279.33	91.600	138.800	5436.97	654.69 S	471.12 E	801.77	3.511
6311.23	90.200	137.200	5436.47	678.39 S	492.46 E	833.66	6.664
6342.95	89.900	136.300	5436.44	701.50 S	514.19 E	865.37	2.991
6374.79	90.200	135.100	5436.41	724.28 S	536.43 E	897.19	3.885
6406.67	91.500	137.000	5435.94	747.23 S	558.55 E	929.04	7.221
6438.52	91.100	138.800	5435.22	770.85 S	579.90 E	960.88	5.788
6469.17	93.000	139.300	5434.12	793.99 S	599.97 E	991.51	6.410
6500.92	92.000	139.500	5432.74	818.07 S	620.62 E	1023.22	3.212
6531.88	92.300	138.400	5431.57	841.40 S	640.93 E	1054.15	3.680
6595.36	91.100	138.600	5429.69	888.92 S	682.98 E	1117.60	1.916
6657.45	89.900	138.100	5429.15	935.32 S	724.24 E	1179.69	2.094
6720.28	89.200	137.600	5429.64	981.90 S	766.40 E	1242.51	1.369
6783.79	90.000	137.700	5430.09	1028.83 S	809.18 E	1306.02	1.269

Continued...

# Sperry-Sun Drilling Services

## Survey Report for RU 18-14

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)
6846.81	89.900	138.600	5430.14	1075.77 S	851.23 E	1369.04	1.437
6910.42	90.400	137.700	5429.98	1123.15 S	893.67 E	1432.65	1.619
6973.91	90.700	138.800	5429.37	1170.52 S	935.94 E	1496.13	1.796
7037.51	88.500	137.200	5429.81	1217.78 S	978.50 E	1559.73	4.277
7101.16	89.900	136.900	5430.70	1264.36 S	1021.86 E	1623.36	2.249
7147.00	90.400	137.400	5430.58	1297.96 S	1053.03 E	1669.19	1.543
7178.00	90.400	137.400	5430.36	1320.78 S	1074.02 E	1700.19	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 138.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 7178.00ft.,  
The Bottom Hole Displacement is 1702.35ft., in the Direction of 140.883° (True).

**SPERRY-SUN**  
**DRILLING SERVICES**

A DRESSER INDUSTRIES, INC. COMPANY

**Mobil**  
**San Juan County**  
**Utah**  
**Ratherford Unit**  
**RU 18-14 - MWD Leg #2**

**SURVEY REPORT**

**8 September, 1997**

**Survey Ref: svy1855**

# Sperry-Sun Drilling Services

## Survey Report for RU 18-14

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)
<b>Gyro</b>							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
100.00	0.200	229.720	100.00	0.11 S	0.13 W	0.09	0.200
300.00	0.390	261.980	300.00	0.43 S	1.07 W	0.86	0.123
500.00	0.620	269.300	499.99	0.54 S	2.83 W	2.47	0.119
700.00	1.260	274.060	699.96	0.40 S	6.10 W	5.60	0.322
900.00	2.140	273.540	899.87	0.01 S	12.03 W	11.30	0.440
1100.00	2.070	272.940	1099.74	0.40 N	19.36 W	18.33	0.037
1300.00	2.190	276.420	1299.60	1.02 N	26.76 W	25.50	0.088
1500.00	2.380	283.990	1499.44	2.45 N	34.59 W	33.34	0.178
1700.00	2.420	283.970	1699.26	4.47 N	42.72 W	41.67	0.020
1900.00	2.070	284.830	1899.11	6.41 N	50.31 W	49.47	0.176
2100.00	2.110	283.670	2098.98	8.21 N	57.38 W	56.72	0.029
2300.00	1.790	271.700	2298.86	9.17 N	64.08 W	63.35	0.258
2500.00	1.600	265.330	2498.77	9.04 N	69.98 W	68.85	0.134
2700.00	1.600	268.090	2698.70	8.72 N	75.56 W	73.98	0.039
2900.00	1.590	269.580	2898.62	8.60 N	81.12 W	79.17	0.021
3100.00	1.340	276.980	3098.55	8.87 N	86.22 W	84.05	0.157
3300.00	1.370	277.450	3298.50	9.46 N	90.91 W	88.66	0.016
3500.00	1.230	270.360	3498.45	9.78 N	95.43 W	93.02	0.106
3700.00	1.100	269.860	3698.41	9.79 N	99.49 W	96.84	0.065
3900.00	0.930	259.500	3898.37	9.49 N	103.01 W	100.04	0.125
4100.00	0.870	249.350	4098.35	8.66 N	106.02 W	102.59	0.085
4300.00	0.830	245.640	4298.33	7.53 N	108.76 W	104.78	0.034
4500.00	0.920	232.370	4498.30	5.95 N	111.36 W	106.68	0.111
4700.00	1.070	230.130	4698.27	3.77 N	114.06 W	108.47	0.077
4900.00	1.220	232.630	4898.23	1.28 N	117.19 W	110.56	0.079
5100.00	1.370	229.370	5098.18	1.57 S	120.69 W	112.88	0.084
5300.00	1.180	244.890	5298.13	4.00 S	124.37 W	115.50	0.196
<b>MWD Leg #2</b>							
5316.00	1.170	243.700	5314.13	4.14 S	124.67 W	115.73	0.165
5323.00	4.100	263.020	5321.12	4.20 S	124.98 W	116.01	43.154
5333.00	8.800	265.560	5331.06	4.30 S	126.10 W	117.02	47.075
5343.00	13.400	266.490	5340.87	4.43 S	128.02 W	118.78	46.033
5353.00	18.200	266.970	5350.49	4.59 S	130.74 W	121.28	48.017
5363.00	23.100	267.200	5359.84	4.77 S	134.26 W	124.53	49.007
5373.00	27.300	264.000	5368.89	5.10 S	138.50 W	128.40	44.141
5383.00	32.100	261.800	5377.57	5.72 S	143.41 W	132.81	49.215
5393.00	36.600	260.100	5385.83	6.61 S	148.98 W	137.74	46.007
5403.00	41.300	258.000	5393.60	7.81 S	155.15 W	143.12	48.813

Continued...

# Sperry-Sun Drilling Services

## Survey Report for RU 18-14

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)
5413.00	45.100	255.100	5400.89	9.41 S	161.80 W	148.83	42.865
5423.00	48.700	253.000	5407.72	11.42 S	168.82 W	154.73	39.126
5433.00	52.500	250.300	5414.07	13.86 S	176.15 W	160.79	43.345
5443.00	56.800	248.600	5419.85	16.72 S	183.79 W	166.98	45.178
5453.00	61.100	247.500	5425.01	19.93 S	191.73 W	173.35	44.020
5463.00	65.600	246.600	5429.49	23.41 S	199.96 W	179.89	45.713
5473.00	70.100	245.100	5433.26	27.20 S	208.40 W	186.53	47.094
5483.00	74.800	243.900	5436.28	31.31 S	217.01 W	193.21	48.372
5493.00	79.200	241.900	5438.53	35.74 S	225.68 W	199.84	48.120
5503.00	84.000	240.800	5439.99	40.49 S	234.36 W	206.38	49.217
5530.00	93.700	240.700	5440.53	53.66 S	257.88 W	223.98	35.928
5579.58	93.500	245.700	5437.41	75.96 S	302.03 W	257.84	10.073
5611.23	93.900	248.300	5435.37	88.30 S	331.10 W	280.94	8.295
5643.01	93.200	250.600	5433.40	99.44 S	360.80 W	305.03	7.552
5674.79	91.500	252.500	5432.10	109.48 S	390.92 W	329.90	8.018
5706.58	90.900	252.200	5431.43	119.12 S	421.21 W	355.07	2.110
5738.37	92.500	255.300	5430.49	128.01 S	451.71 W	380.69	10.970
5770.14	93.100	258.100	5428.94	135.31 S	482.59 W	407.21	9.003
5801.93	86.500	259.600	5429.05	141.46 S	513.76 W	434.40	21.290
5833.68	87.200	261.500	5430.79	146.66 S	545.03 W	462.00	6.369
5865.51	88.500	263.400	5431.99	150.84 S	576.56 W	490.20	7.229
5897.23	89.000	263.400	5432.68	154.48 S	608.06 W	518.55	1.576
5928.99	89.900	266.100	5432.99	157.39 S	639.68 W	547.28	8.961
5960.80	92.000	268.500	5432.46	158.89 S	671.45 W	576.61	10.024
5992.66	92.100	271.300	5431.32	158.94 S	703.29 W	606.51	8.788
6024.41	89.900	273.100	5430.76	157.72 S	735.01 W	636.73	8.952
6056.23	89.700	276.300	5430.88	155.12 S	766.71 W	667.42	10.076
6088.03	89.800	278.400	5431.01	151.05 S	798.25 W	698.45	6.611
6119.82	88.500	282.400	5431.49	145.31 S	829.51 W	729.78	13.229
6151.68	88.200	285.700	5432.40	137.58 S	860.40 W	761.45	10.396
6183.15	88.500	288.000	5433.31	128.46 S	890.50 W	792.86	7.368
6215.33	88.700	290.300	5434.10	117.91 S	920.89 W	825.03	7.172
6247.13	89.100	293.000	5434.71	106.18 S	950.44 W	856.80	8.582
6278.84	89.500	292.400	5435.09	93.95 S	979.69 W	888.48	2.274
6310.75	89.200	292.100	5435.46	81.87 S	1009.22 W	920.36	1.330
6342.58	89.200	294.700	5435.90	69.23 S	1038.43 W	952.13	8.168
6374.33	90.300	294.400	5436.04	56.04 S	1067.31 W	983.78	3.591
6406.22	90.000	294.400	5435.96	42.86 S	1096.35 W	1015.57	0.941
6460.00	90.100	293.700	5435.91	20.94 S	1145.46 W	1069.22	1.315
6491.00	90.100	293.700	5435.85	8.48 S	1173.85 W	1100.15	0.000

Continued...

# **Sperry-Sun Drilling Services**

*Survey Report for RU 18-14*

**Mobil  
San Juan County**

**Utah  
Ratherford Unit**

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 290.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 6491.00ft.,  
The Bottom Hole Displacement is 1173.88ft., in the Direction of 269.586° (True).

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

SUBMIT IN DUPLICATE

(See other instructions on reverse side)

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

**WELL COMPLETION OR RECOMPLETION REPORT AND LOG\***

1a. TYPE OF WELL: OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input type="checkbox"/> Other <input checked="" type="checkbox"/> <b>INJECTOR</b>		5. LEASE DESIGNATION AND SERIAL NO. <b>14-20-603-353</b>	
b. TYPE OF COMPLETION: NEW WELL <input type="checkbox"/> WORK OVER <input type="checkbox"/> DEEP-EN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> Other <input checked="" type="checkbox"/> <b>SIDETRACK</b>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME <b>NAVAJO TRIBAL</b>	
2. NAME OF OPERATOR <b>MOBIL PRODUCING TX &amp; NM INC.*</b> <b>*MOBIL EXPLORATION &amp; PRODUCING US INC. AS AGENT FOR MPTM</b>		7. UNIT AGREEMENT NAME <b>RATHERFORD UNIT</b>	
3. ADDRESS AND TELEPHONE NO. <b>P.O. Box 633, Midland TX 79702 (915) 688-2585</b>		8. FARM OR LEASE NAME, WELL NO. <b>RATHERFORD 18-W-14</b>	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface <b>810' FSL &amp; 600' FWL</b> At top prod. interval reported below		9. API WELL NO. <b>43-037-15735</b>	
At total depth <b>* #37</b>		10. FIELD AND POOL, OR WILDCAT <b>GREATER ANETH</b>	
14. PERMIT NO.		DATE ISSUED	
15. DATE SPUDDED <b>07-22-97</b>		16. DATE T.D. REACHED <b>08-12-97</b>	
17. DATE COMPL. (Ready to prod.) <b>08-26-97</b>		18. ELEVATIONS (DP, RKB, RT, GR, ETC.)* <b>4681' GR, 4692' KB</b>	
19. ELEV. CASINGHEAD		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA <b>SEC. 18, T41S, R24E</b>	
20. TOTAL DEPTH, MD & TVD <b>** #37</b>		12. COUNTY OR PARISH <b>SAN JUAN</b>	
21. PLUG, BACK T.D., MD & TVD <b>** #37</b>		13. STATE <b>UT</b>	
22. IF MULTIPLE COMPL., HOW MANY*		23. INTERVALS DRILLED BY <b>X</b>	
24. PRODUCING INTERVAL(S), OF THIS COMPLETION - TOP, BOTTOM, NAME (MD AND TVD)* <b>** #37 P-P-DX</b>		ROTARY TOOLS <b>X</b>	
25. WAS DIRECTIONAL SURVEY MADE <b>YES</b>		CABLE TOOLS	
26. TYPE ELECTRIC AND OTHER LOGS RUN <b>NO</b>		27. WAS WELL CORED <b>NO</b>	

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"	27.1#	174'		SURFACE	CONDUCTOR
8 5/8"	24#	1416'	11"	SURFACE	
5 1/2"	14 & 15.5#	5631'	7 7/8"	4055' CALC	

29. LINER RECORD				30. TUBING RECORD			
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2 7/8"		5249.51'

31. PERFORATION RECORD (Interval, size and number) <b>LAT #1A1 (1) 5515-7168' TMD</b> <b>LAT #2A1 (2) 5561-6491' TMD</b>		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL (MD)      AMOUNT AND KIND OF MATERIAL USED	
		<b>5618-6491'</b>	<b>ACIDIZE W/13547 GALS 15% HCL</b>
		<b>5548-7178'</b>	<b>ACIDIZE W/33852 GALS 15% HCL</b>

33.* PRODUCTION							
DATE FIRST PRODUCTION <b>10-29-97</b>		PRODUCTION METHOD (Flowing, gas lift, pumping - size and type of pump)				WELL STATUS (Producing or shut-in) <b>PRODUCING</b>	
DATE OF TEST <b>11-03-97</b>	HOURS TESTED <b>24</b>	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL - BBL.	GAS - MCF.	WATER - BBL. <b>1779</b>	GAS - OIL RATIO
FLOW. TUBING PRESS. <b>2450</b>	CASING PRESSURE <b>0</b>	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 Shirley Houchins TITLE **SHIRLEY HOUCHINS/ENV & REG TECH** DATE **11-14-97**

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

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

38.

GEOLOGIC MARKERS

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	TOP	
					MEAS. DEPTH	TRUE VERT. DEPTH
* #4			LAT #1A1(1) 1321' SOUTH & 1074' EAST F/SURF SPOT. LAT #2A1(2) 8' SOUTH & 1174' WEST F/SURF SPOT			
* #20, 21 & 24			LAT #1A1(1) (5444-5430'TVD)(5515-7178'TMD) LAT #2A1(2) (5440-5436'TVD)(5530-6491'TMD)			

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

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  
(SW/SW) 810' FSL & 600' FWL

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 18W-14

9. API Well No.

43-037-15735

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

- Notice of Intent  
 Subsequent Report  
 Final Abandonment Notice

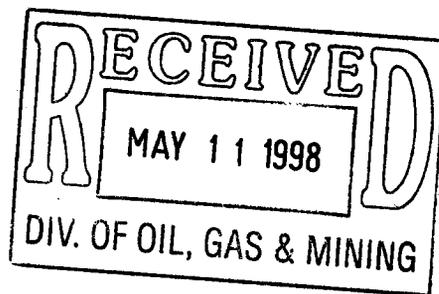
TYPE OF ACTION

- Abandonment  
 Recompletion  
 Plugging Back  
 Casing Repair  
 Altering Casing  
 Other MIT TESTS  
 Change of Plans  
 New Construction  
 Non-Routine Fracturing  
 Water Shut-Off  
 Conversion to Injection  
 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.)\*

SEE ATTACHED MIT AND CHART.



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

Signed

*Shirley Houchins*

Title SHIRLEY HOUCHINS/ENV & REG TECH

Date 5-13-98

(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

# ANNULAR PRESSURE TEST

(Mechanical Integrity Test)

Operator Mobil E. & P., Inc. Date of Test 3-24-97  
Well Name ~~RU# 18W-14~~ RU# 18W-14 EPA Permit No. \_\_\_\_\_  
Location Sec. 18, T41S-R24E Tribal Lease No. 14-20-603-353  
State and County San Juan County, Utah

Continuous Recorder? YES  NO  Pressure Gauge? YES  NO   
Bradenhead Opened? YES  NO  Fluid Flow? YES  NO

<u>TIME</u>	<u>ANNULUS PRESSURE, psi</u>	<u>TUBING PRESSURE, psi</u>
<u>11:00</u>	<u>1100</u>	<u>3000</u>
<u>11:05</u>	<u>1100</u>	<u>3000</u>
<u>11:10</u>	<u>1100</u>	<u>3000</u>
<u>11:20</u>	<u>1095</u>	<u>3000</u>
<u>11:30</u>	<u>1095</u>	<u>3000</u>

MAX. INJECTION PRESSURE: \_\_\_\_\_ PSI  
MAX. ALLOWABLE PRESSURE CHANGE: \_\_\_\_\_ PSI (TEST PRESSURE X 0.05)  
**REMARKS:** Passed? Failed? If failed, cease injection until well passes MIT (40CFR§144.21(c)(6)).

*Passed M.I.T.*

Fritz Johnson  
COMPANY REPRESENTATIVE: (Print and Sign)  
Melvin Capitan Jr.  
INSPECTOR: (Print and Sign)

3-24-97  
DATE  
3-24-97  
DATE

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF INSPECTION

Address (EPA Regional Office) Region 9 Environmental Inspection Agency 215 Fremont Street (W-6-2) San Francisco, CA 94105	Inspection Contractor Navajo EPA <del>THE CALMUS GROUP, INC.</del> <del>CORPORATE OFFICE</del> <del>XXXXXX</del> <del>XXXXXX</del> Waltham, MA 02154 <del>XXXXXX</del> <del>XXXXXX</del>	Firm To Be Inspected Mobil E.&P., Inc. P.O. Box Dawer G Cortez, Co 81321
---	--	--

Date <i>3-21-97</i>	Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300 f et seg.).
Hour <i>12:30 PM</i>	

Reason For Inspection

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable permit or rule.

*RU# 17W-23, WATER INJECTION WELL, M.I.T. - PASSED*

*RU# 17W-34, WATER INJECTION WELL, M.I.T. - PASSED*

*RU# 17W-32, WATER INJECTION WELL, M.I.T. - PASSED*

*RU# 17W-41, WATER INJECTION WELL, M.I.T. - PASSED*

*RU# 18W-14, WATER INJECTION WELL, M.I.T. - PASSED*

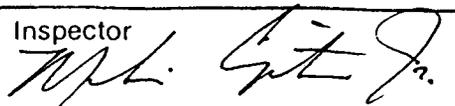
*RU# 18W-32, WATER INJECTION WELL, M.I.T. - FAILED*

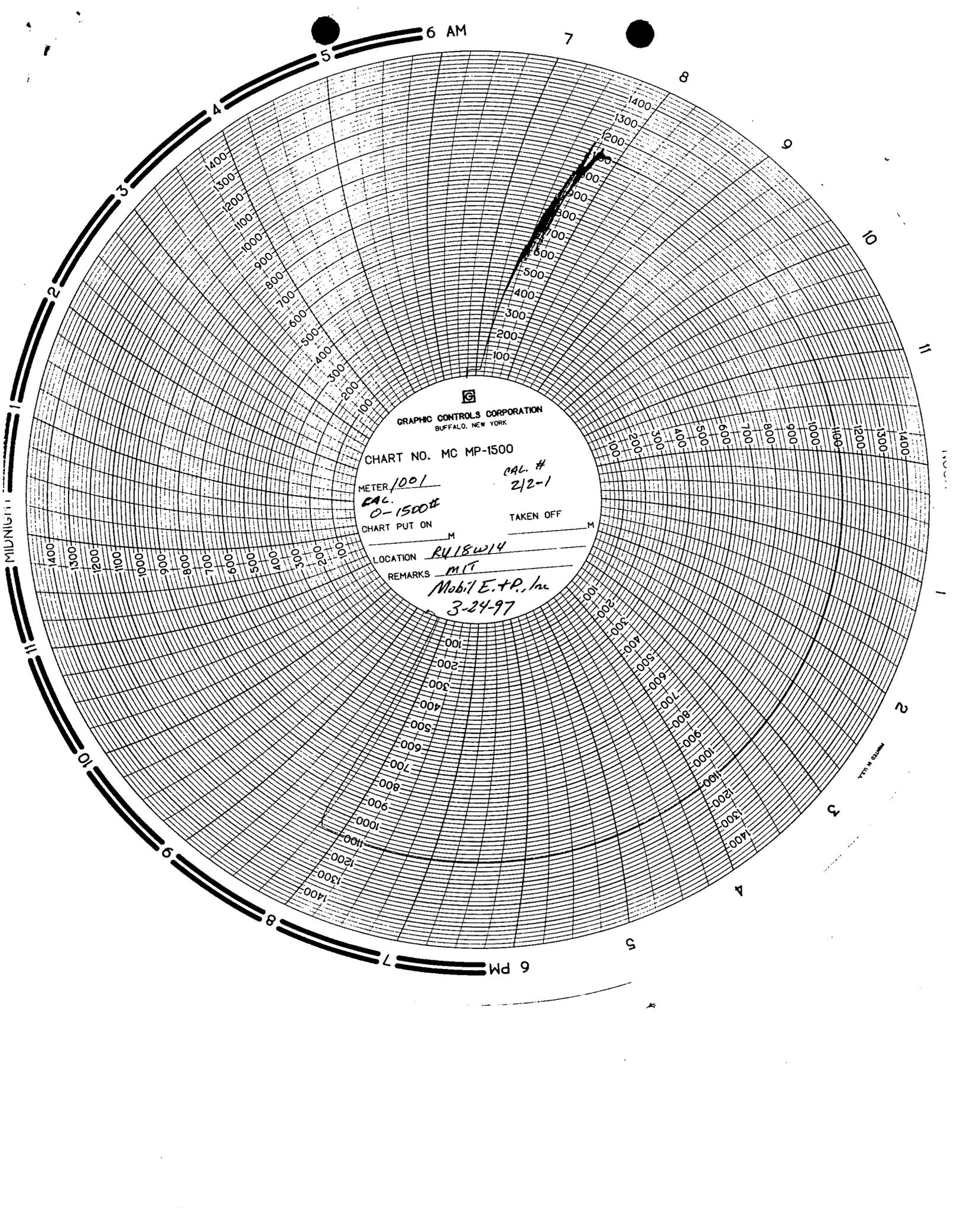
*RU# 18W-34, WATER INJECTION WELL, M.I.T. - PASSED*

*RU# 19W-21, WATER INJECTION WELL, M.I.T. - PASSED*

Section 1445(b) of the SDWA (42 U.S.C. §300 j-4 (b) is quoted on the reverse of this form.

Receipt of this Notice of Inspection is hereby acknowledged.

Firm Representative 	Date <i>3-21-97</i>	Inspector 
---	------------------------	--



GRAPHIC CONTROLS CORPORATION  
BUFFALO, NEW YORK

CHART NO. MC MP-1500

METER 1001

CAL. #  
212-1

CAL. 0-1500#

TAKEN OFF

CHART PUT ON

\_\_\_\_\_ M \_\_\_\_\_ M

LOCATION RU 18W14

REMARKS MIT

Mobil E. + P., Inc

3-24-97

MIDNIGHT

NOON

MADE IN CANADA

**ExxonMobil Production Comp**  
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.

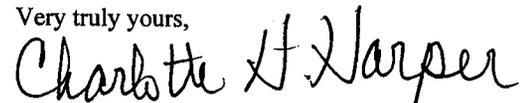
Please note the change of name of MOC to ExxonMobil Oil Corporation in your records pertaining to any MOC permits.

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  
Permitting Supervisor

ExxonMobil Production Company  
a division of Exxon Mobil Corporation,  
acting for ExxonMobil Oil Corporation

RECEIVED

JUN 29 2001

DIVISION OF  
OIL, GAS AND MINING



# United States Department of the Interior

BUREAU OF INDIAN AFFAIRS  
XXXXXXXXXXXXXXXXXXXX  
Navajo Area Office  
NAVAJO REGION

P.O. Box 1060  
Gallup, New Mexico 87305-1060

**AUG 30 2001**

IN REPLY REFER TO:

RRES/543

## 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 1	<i>DB/MC</i>
NATV AM MIN COORD	_____
SOLID MIN TEAM	_____
PETRO MENT TEAM	<i>2</i>
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

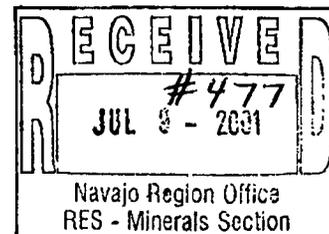
*pb 7/12/01*  
*SN*  
*543*  
*File*

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



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.

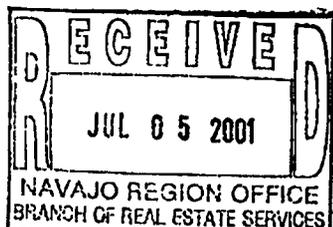
If you have any questions , please contact Alex Correa at (713) 431-1012.

Very truly yours,

*Charlotte H. Harper*

Charlotte H. Harper  
Permitting Supervisor

Attachments



ExxonMobil Production Company  
a division of Exxon Mobil Corporation,  
acting for ExxonMobil Oil Corporation

*NOTE: Check forwarded to Ella Issac*

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	<u>F.A. Risch</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Vice President	<u>K.T. Koonce</u>	Address <u>800 Bell Street Houston, TX 77002</u>
Secretary	<u>F.L. Reid</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Treasure	<u>B.A. Maher</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>

DIRECTORS

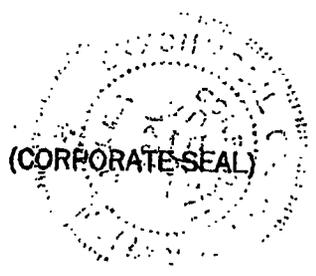
Name	<u>D.D. Humphreys</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Name	<u>P.A. Hanson</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Name	<u>T.P. Townsend</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Name	<u>B.A. Maher</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Name	<u>F.A. Risch</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>

Sincerely,



Alex Correa

This is to certify that the above information pertaining to ExxonMobil Oil Corporation (Corporation) is true 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



Signature

AGENT AND ATTORNEY IN FACT

Title

**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.

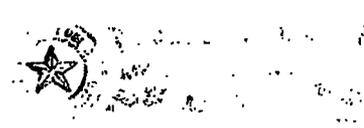
WITNESS, my hand and the seal of the Corporation at Irving, Texas, this 8th day of June, 2001.

*D. A. Milligan*  
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

100 West Loop South, Suite 1400, Houston, Texas 77027-3301  
Houston, TX 77027-4600 • Fax: (713) 297-4750

*Not 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 12<sup>th</sup> of June, 2001.

**ExxonMobil Oil Corporation**

By: 

**FEDERAL INSURANCE COMPANY**

By:   
Mary Pierson, Attorney-in-fact



**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 } ss.  
County of Somerset

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 has thereto subscribed by authority of said **Frank E. Robertson** in the presence of the Notary Public.



Notary Public State of New Jersey  
No. 2231647  
Commission Expires **Oct 29, 2004**

Notary Public

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



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**

CSC

5184334741

06/01 '01 08:46 NO.410 03/05

CSC

06/01 '01 09:06 NO.135 02/04

F010601000187

CERTIFICATE OF AMENDMENT  
OF  
CERTIFICATE OF INCORPORATION  
OF  
MOBIL OIL CORPORATION

CSC 45

(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.

CSC  
CSC

5184334741

06/01 '01 08:47 NO.410 04/05  
06/01 '01 09:06 NO.133 03/04

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 

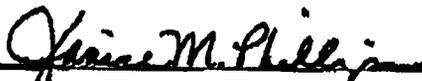
STATE OF TEXAS        )  
COUNTY OF DALLAS    )

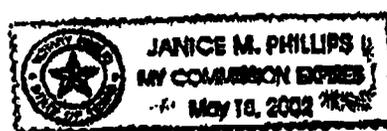
F. L. REID, being duly sworn, deposes and says that he is the Secretary of MOBIL OIL CORPORATION, the corporation mentioned and described in the foregoing instrument; that he has read and signed the same and that the statements contained therein are true.

  
\_\_\_\_\_  
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



CSC  
CSC

5184334741

06/01 '01 09:01 NO.411 02/02  
06/01 '01 09:06 NO.157 04/04  
**F010601000187**

**CSC 45**

**CERTIFICATE OF AMENDMENT**

**OF**

**MOBIL OIL CORPORATION**

Under Section 805 of the Business Corporation Law

*SAC*

**STATE OF NEW YORK  
DEPARTMENT OF STATE**

*100 cc*

Filed by: EXXONMOBIL CORPORATION  
(Name)

FILED JUN 01 2001

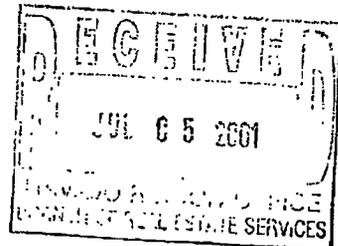
6949 Las Colinas Blvd.  
(Mailing address)

TAX \$ \_\_\_\_\_  
BY: *SAC*

Irving, TX 75039-2298  
(City, State and Zip code)

*ny Albany*

*Cost Ref # 165578 MPJ*



**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**



*Special Deputy Secretary of State*

**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**

<b>FROM:</b> (Old Operator):	<b>TO:</b> ( 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)	SEC TWN RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
NAVAJO A-9 (RATHERFORD 16W23)	16-41S-24E	43-037-15722	99990	INDIAN	WI	A
NAVAJO A-12 (RATHERFORD 16W21)	16-41S-24E	43-037-16414	99990	INDIAN	WI	A
RATHERFORD 16W43	16-41S-24E	43-037-16415	99990	INDIAN	WI	A
RATHERFORD 17-W-12	17-41S-24E	43-037-15726	6280	INDIAN	WI	A
17-14	17-41S-24E	43-037-15727	6280	INDIAN	WI	A
RATHERFORD 17-W-23	17-41S-24E	43-037-15728	6280	INDIAN	WI	A
17-32	17-41S-24E	43-037-15729	6280	INDIAN	WI	A
17-34	17-41S-24E	43-037-15730	6280	INDIAN	WI	A
17-41	17-41S-24E	43-037-15731	6280	INDIAN	WI	I
RATHERFORD 17-W-21	17-41S-24E	43-037-16416	99990	INDIAN	WI	A
RATHERFORD 17W43	17-41S-24E	43-037-16417	99990	INDIAN	WI	A
RATHERFORD 18-W-14	18-41S-24E	43-037-15735	6280	INDIAN	WI	A
18-W-32	18-41S-24E	43-037-15736	6280	INDIAN	WI	A
RATHERFORD 18-W-34	18-41S-24E	43-037-15737	6280	INDIAN	WI	A
DESERT A-4 (RATHERFORD 18W41)	18-41S-24E	43-037-15738	99990	INDIAN	WI	A
DESERT A-3 (RATHERFORD 18-W-21)	18-41S-24E	43-037-16418	99990	INDIAN	WI	A
18-23	18-41S-24E	43-037-30244	6280	INDIAN	WI	A
RATHERFORD U 18-W-12 (SDTRK)	18-41S-24E	43-037-31153	6280	INDIAN	WI	A
RATHERFORD UNIT 18-W-43B	18-41S-24E	43-037-31718	6280	INDIAN	WI	A
RATHERFORD U 19-W-12	19-41S-24E	43-037-15739	6280	INDIAN	WI	A

**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 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

**NOTE: EPA ISSUES UIC PERMIT**

**DATA ENTRY:**

1. Changes entered in the **Oil and Gas Database** on: 04/11/2002
2. Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 04/11/2002
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:**

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Division of Oil, Gas and Mining  
**OPERATOR CHANGE WORKSHEET**

<b>ROUTING</b>
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:		<b>6/1/2006</b>
<b>FROM:</b> (Old Operator): N1855-ExxonMobil Oil Corporation PO Box 4358 Houston, TX 77210-4358 Phone: 1 (281) 654-1936	<b>TO:</b> ( New Operator): N2700-Resolute Natural Resources Company 1675 Broadway, Suite 1950 Denver, CO 80202 Phone: 1 (303) 534-4600	
<b>CA No.</b>	<b>Unit:</b>	<b>RATHERFORD (UIC)</b>

**OPERATOR CHANGES DOCUMENTATION**

Enter date after each listed item is completed

- (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 4/21/2006
- (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 4/24/2006
- The new company was checked on the **Department of Commerce, Division of Corporations Database** on: 6/7/2006
- Is the new operator registered in the State of Utah: YES Business Number: 5733505-0143
- If **NO**, the operator was contacted on: \_\_\_\_\_
- (R649-9-2)Waste Management Plan has been received on: requested
- Inspections of LA PA state/fee well sites complete on: n/a
- Reports current for Production/Disposition & Sundries on: ok
- 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
- Federal and Indian Units:**  
The BLM or BIA has approved the successor of unit operator for wells listed on: not yet
- Federal and Indian Communization Agreements ("CA"):**  
The BLM or BIA has approved the operator for all wells listed within a CA on: n/a
- 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:**

- Changes entered in the **Oil and Gas Database** on: 6/22/2006
- Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 6/22/2006
- Bond information entered in RBDMS on: n/a
- Fee/State wells attached to bond in RBDMS on: n/a
- Injection Projects to new operator in RBDMS on: 6/22/2006
- Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

**BOND VERIFICATION:**

- Federal well(s) covered by Bond Number: n/a
- Indian well(s) covered by Bond Number: PA002769
- (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number n/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:**

- (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:**

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STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

UIC FORM 5

TRANSFER OF AUTHORITY TO INJECT

Well Name and Number See attached list	API Number Attached
Location of Well Footage: See attached list County: San Juan	Field or Unit Name Rutherford Unit
QQ, Section, Township, Range: State: UTAH	Lease Designation and Number See attached list

EFFECTIVE DATE OF TRANSFER: 6/1/2006

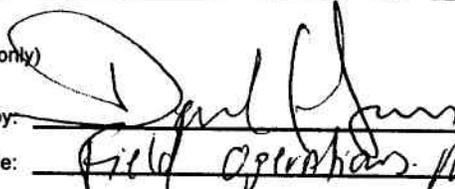
CURRENT OPERATOR

Company: Exxon Mobil Oil Corporation Name: \_\_\_\_\_  
Address: PO Box 4358 Signature: \_\_\_\_\_  
city Houston state TX zip 77210-4358 Title: \_\_\_\_\_  
Phone: (281) 654-1936 Date: \_\_\_\_\_  
Comments: Exxon Mobil has submitted a separate, signed copy of UIC Form 5

NEW OPERATOR

Company: Resolute Natural Resources Company Name: Dwight E Mallory  
Address: 1675 Broadway, Suite 1950 Signature:   
city Denver state CO zip 80202 Title: Regulatory Coordinator  
Phone: (303) 534-4600 Date: 4/20/2006  
Comments: A list of affected UIC wells is attached.  
New bond numbers for these wells are:  
BIA Bond # PA002769 and US EPA Bond # B001252

(This space for State use only)

Transfer approved by:   
Title: Field Operations Manager

Approval Date: 6/12/06

Comments:

RECEIVED  
APR 24 2006

DIV. OF OIL, GAS & MINING

**STATE OF UTAH**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 9

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		5. LEASE DESIGNATION AND SERIAL NUMBER: See attached list
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 Tribe
1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Unit Agreement</u>		7. UNIT or CA AGREEMENT NAME: Ratherford Unit
2. NAME OF OPERATOR: Resolute Natural Resources Company <u>N2700</u>		8. WELL NAME and NUMBER: See attached list
3. ADDRESS OF OPERATOR: 1675 Broadway, Suite 1950 CITY Denver STATE CO ZIP 80202	PHONE NUMBER: (303) 534-4600	9. API NUMBER: Attached
4. LOCATION OF WELL FOOTAGES AT SURFACE: <u>See attached list</u>		10. FIELD AND POOL, OR WILDCAT: Greater Aneth
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: _____		COUNTY: <u>San Juan</u>
		STATE: <u>UTAH</u>

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
<input checked="" type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> 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) <u>Dwight E Malloy</u>	TITLE <u>Regulatory Coordinator</u>
SIGNATURE	DATE <u>4/20/2006</u>

(This space for State use only)

**APPROVED** 6127106  
*Earlene Russell*  
Division of Oil, Gas and Mining  
Earlene Russell, Engineering Technician

**RECEIVED**  
**APR 24 2006**  
DIV. OF OIL, GAS & MINING

(5/2000)

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 9

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		5. LEASE DESIGNATION AND SERIAL NUMBER:
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: <b>Ship Rock</b>
		7. UNIT or CA AGREEMENT NAME: <b>UTU68931A</b>
1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Injection</u>	8. WELL NAME and NUMBER: <b>Ratherford</b>	
2. NAME OF OPERATOR: <b>ExxonMobil Oil Corporation</b> <i>N1855</i>		9. API NUMBER: <b>attached</b>
3. ADDRESS OF OPERATOR: <b>P.O. Box 4358</b> CITY <b>Houston</b> STATE <b>TX</b> ZIP <b>77210-4358</b>	PHONE NUMBER: <b>(281) 654-1936</b>	10. FIELD AND POOL, OR WILDCAT: <b>Aneth</b>
4. LOCATION OF WELL FOOTAGES AT SURFACE:		COUNTY: <b>San Juan</b>
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:		STATE: <b>UTAH</b>

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: <u>6/1/2006</u>	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion:	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> 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 injection wells included in the transfer.

NAME (PLEASE PRINT) Laurie Kilbride TITLE Permitting Supervisor

SIGNATURE *Laurie S. 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

**GREATER ANETH FIELD UIC WELL LIST**  
**Ratherford lease, San Juan County, Utah**

Reg Lease Name	Well ID	API Num	Status	Reg Lease #	Surface Location						
					Qtr 1	Qtr 2	Sec	TN	RNG	NS Foot	EW Foot
RATHERFORD UNIT	1W24	430371583900S1	Shut-in	14-20-603-246A	NE	SE	1	41S	23E	0651FSL	3300FEL
RATHERFORD UNIT	2W44	430371638600S1	Active	14-20-603-246A	SE	SE	2	41S	23E	0810FSL	0510FEL
RATHERFORD UNIT	11W42	430371584100S1	Active	14-20-603-246A	SE	NE	11	41S	23E	3290FSL	4617FWL
RATHERFORD UNIT	11W44	430371584200S1	Shut-in	14-20-603-246A	SE	SE	11	41S	23E	0660FSL	0558FEL
RATHERFORD UNIT	12W11	430371584300S1	Active	14-20-603-246A	NW	NW	12	41S	23E	0678FNL	4620FEL
RATHERFORD UNIT	12W13	430371640400S1	Active	14-20-603-246A	NW	SW	12	41S	23E	1980FSL	4620FEL
RATHERFORD UNIT	12W22	430371584501S1	Active	14-20-603-246A	SE	NW	12	41S	23E	1920FNL	2080FWL
RATHERFORD UNIT	12W24	430373115101S1	Active	14-20-603-246A	SE	SW	12	41S	23E	0775FSL	1980FWL
RATHERFORD UNIT	12W31	430371584700S1	Active	14-20-603-246A	NW	NE	12	41S	23E	0661FNL	1981FEL
RATHERFORD UNIT	12W33	430371584800S1	Active	14-20-603-246A	NW	SE	12	41S	23E	1958FSL	3300FEL
RATHERFORD UNIT	12W42	430371585000S1	Active	14-20-603-246A	SE	NE	12	41S	23E	3275FSL	0662FEL
RATHERFORD UNIT	12W44A	430373154300S1	Shut-in	14-20-603-246A	SE	SE	12	41S	23E	0772FSL	0807FEL
RATHERFORD UNIT	13W11	430373115201S1	Active	14-20-603-247A	NW	NW	13	41S	23E	0500FNL	0660FWL
RATHERFORD UNIT	13W13	430371585100S1	Active	14-20-603-247A	NW	SW	13	41S	23E	1980FSL	4620FEL
RATHERFORD UNIT	13W22	430371585200S1	Active	14-20-603-247A	SE	NW	13	41S	23E	1988FNL	3300FEL
RATHERFORD UNIT	13W24	430371585300S1	Active	14-20-603-247A	SE	SW	13	41S	23E	0660FSL	3300FEL
RATHERFORD UNIT	13W33	430371585501S1	Active	14-20-603-247A	NW	SE	13	41S	23E	1970FSL	1979FEL
RATHERFORD UNIT	13W42	430371585700S1	Shut-in	14-20-603-247A	SE	NE	13	41S	23E	2139FNL	0585FEL
RATHERFORD UNIT	13W44	430371640700S1	Active	14-20-603-247A	SE	SE	13	41S	23E	0653FSL	0659FEL
RATHERFORD UNIT	14-31	430373171700S1	Active	14-20-603-247A	NW	NE	14	41S	23E	0754FNL	1604FEL
RATHERFORD UNIT	14W42	430371586001S1	Active	14-20-603-247A	SE	NE	14	41S	23E	1976FNL	653FEL
RATHERFORD UNIT	24W31	430371586200S1	Shut-in	14-20-603-247A	NW	NE	24	41S	24E	0560FNL	1830FEL
RATHERFORD UNIT	24W42	430371586300S1	Shut-in	14-20-603-247A	SE	NE	24	41S	24E	1980FNL	0660FEL
RATHERFORD UNIT	17W12	430371572601S1	Active	14-20-603-353	SW	NW	17	41S	24E	1980FNL	510FWL
RATHERFORD UNIT	17W14	430371572700S1	Active	14-20-603-353	SW	SW	17	41S	24E	0610FSL	0510FWL
RATHERFORD UNIT	17W21	430371641601S1	Active	14-20-603-353	NE	NW	17	41S	24E	0510FNL	1830FWL
RATHERFORD UNIT	17W23	430371572801S1	Active	14-20-603-353	NE	SW	17	41S	24E	1880FSL	1980FWL
RATHERFORD UNIT	17W32	430371572900S1	TA'd	14-20-603-353	SW	NE	17	41S	24E	1830FNL	2030FEL
RATHERFORD UNIT	17W34	430371573000S1	Active	14-20-603-353	SW	SE	17	41S	24E	0560FSL	1880FEL
RATHERFORD UNIT	17W41	430371573100S1	Shut-in	14-20-603-353	NE	NE	17	41S	24E	0610FNL	0510FEL
RATHERFORD UNIT	17W43	430371641701S1	Active	14-20-603-353	NE	SE	17	41S	24E	1980FSL	0660FEL
RATHERFORD UNIT	18-43B	430373171801S1	Active	14-20-603-353	NE	SE	18	41S	24E	2023FSL	0651FEL
RATHERFORD UNIT	18W12	430373115301S1	Active	14-20-603-353	SW	NW	18	41S	24E	1980FNL	560FWL
RATHERFORD UNIT	18W14	430371573501S1	Active	14-20-603-353	SW	SW	18	41S	24E	0810FSL	0600FWL
RATHERFORD UNIT	18W21	430371641801S1	Active	14-20-603-353	NE	NW	18	41S	24E	660FNL	1882FWL
RATHERFORD UNIT	18W23	430373024400S1	Shut-in	14-20-603-353	NE	SW	18	41S	24E	2385FSL	2040FWL
RATHERFORD UNIT	18W32	430371573601S1	Active	14-20-603-353	SW	NE	18	41S	24E	2140FNL	1830FEL
RATHERFORD UNIT	18W34	430371573701S1	Active	14-20-603-353	SW	SE	18	41S	24E	780FSL	1860FEL
RATHERFORD UNIT	18W41	430371573800S1	TA'd	14-20-603-353	NE	NE	18	41S	24E	0660FNL	0660FEL
RATHERFORD UNIT	19-12	430371573901S1	Active	14-20-603-353	SW	NW	19	41S	24E	1980FNL	0600FWL
RATHERFORD UNIT	19-32	430371574301S1	Active	14-20-603-353	SW	NE	19	41S	24E	2717FNL	2802FEL
RATHERFORD UNIT	19-34	430371574401S1	Active	14-20-603-353	SW	SE	19	41S	24E	0660FSL	1980FEL
RATHERFORD UNIT	19W21	430371574100S1	Shut-in	14-20-603-353	NE	NW	19	41S	24E	0660FNL	1860FWL
RATHERFORD UNIT	19W23	430371574200S1	Shut-in	14-20-603-353	NE	SW	19	41S	24E	2080FSL	1860FWL
RATHERFORD UNIT	19W43	430371642000S1	Shut-in	14-20-603-353	NE	SE	19	41S	24E	1980FSL	0760FEL
RATHERFORD UNIT	20-12	430371574601S1	Active	14-20-603-353	SW	NW	20	41S	24E	0709FNL	0748FEL
RATHERFORD UNIT	20-14	430371574701S1	Active	14-20-603-353	SW	SW	20	41S	24E	0660FSL	0660FWL
RATHERFORD UNIT	20-32	430371574901S1	Active	14-20-603-353	SW	NE	20	41S	24E	0037FNL	0035FWL
RATHERFORD UNIT	20-34	430371575001S1	Active	14-20-603-353	SW	SE	20	41S	24E	0774FNL	0617FWL
RATHERFORD UNIT	20-67	430373159000S1	Active	14-20-603-353	NE	SW	20	41S	24E	2629FSL	1412FWL
RATHERFORD UNIT	20W21	430371642300S1	Active	14-20-603-353	NE	NW	20	41S	24E	0660FNL	1880FWL
RATHERFORD UNIT	20W23	430371574800S1	Active	14-20-603-353	NW	SW	20	41S	24E	2080FSL	2120FWL
RATHERFORD UNIT	20W41	430371575100S1	Active	14-20-603-353	NE	NE	20	41S	24E	0660FNL	0660FEL
RATHERFORD UNIT	20W43	430371642400S1	TA'd	14-20-603-353	NE	SE	20	41S	24E	2070FSL	0810FEL
RATHERFORD UNIT	16W12	430371572000S1	Active	14-20-603-355	SW	NW	16	41S	24E	1880FNL	0660FWL

**GREATER ANETH FIELD UIC WELL LIST**  
**Ratherford lease, San Juan County, Utah**

Reg Lease Name	Well ID	API Num	Status	Reg Lease #	Surface Location						
					Qtr 1	Qtr 2	Sec	TN	RNG	NS Foot	EW Foot
RATHERFORD UNIT	16W14	430371572100S1	Shut-in	14-20-603-355	SW	SW	16	41S	24E	0660FSL	0660FWL
RATHERFORD UNIT	16W21	430371641400S1	Active	14-20-603-355	NE	NW	16	41S	24E	0660FNL	1880FWL
RATHERFORD UNIT	16W23	430371572201S1	Active	14-20-603-355	NE	SW	16	41S	24E	1980FSL	1980FWL
RATHERFORD UNIT	16W43	430371641501S1	Active	14-20-603-355	NE	SE	16	41S	24E	2140FSL	0820FEL
RATHERFORD UNIT	21-14	430371575301S1	Active	14-20-603-355	SW	SW	21	41S	24E	0660FSL	0460FWL
RATHERFORD UNIT	21-67	430373175301S1	Active	14-20-603-355	NE	SW	21	41S	24E	2560FSL	1325FWL
RATHERFORD UNIT	21W21	430371642501S1	Active	14-20-603-355	NE	NW	21	41S	24E	0660FNL	2030FWL
RATHERFORD UNIT	6W14	430371598400S1	Active	14-20-603-368	NE	SE	6	41S	24E	0660FSL	0660FWL
RATHERFORD UNIT	7W12	430371598500S1	Active	14-20-603-368	NE	SE	7	41S	24E	2140FNL	0585FWL
RATHERFORD UNIT	7W14	430371598600S1	Active	14-20-603-368	NE	SE	7	41S	24E	1065FSL	0660FWL
RATHERFORD UNIT	7W21	430371639400S1	Active	14-20-603-368	NE	NW	7	41S	24E	0710FNL	1820FWL
RATHERFORD UNIT	7W34	430371598900S1	Active	14-20-603-368	SW	SE	7	41S	24E	0710FSL	2003FEL
RATHERFORD UNIT	7W43	430371639500S1	Active	14-20-603-368	NE	SE	7	41S	24E	2110FSL	0660FEL
RATHERFORD UNIT	8W14	430371599200S1	Active	14-20-603-368	SW	NE	8	41S	24E	0745FSL	0575FWL
RATHERFORD UNIT	10W43	430371640300S1	TA'd	14-20-603-4037	NE	SE	10	41S	24E	1980FSL	0550FEL
RATHERFORD UNIT	29-12	430371533701S1	Active	14-20-603-407	SW	NW	29	41S	24E	2870FNL	1422FWL
RATHERFORD UNIT	29-32	430371533901S1	Active	14-20-603-407	SW	NE	29	41S	24E	0694FNL	0685FWL
RATHERFORD UNIT	29W21	430371643200S1	Active	14-20-603-407	NE	NW	29	41S	24E	0667FNL	2122FWL
RATHERFORD UNIT	29W41	430371643300S1	Active	14-20-603-407	NE	NE	29	41S	24E	0557FNL	0591FEL
RATHERFORD UNIT	29W43	430371643400S1	Shut-in	14-20-603-407	NE	SE	29	41S	24E	1980FSL	0660FEL
RATHERFORD UNIT	30W41	430371534300S1	Shut-in	14-20-603-407	NE	NE	30	41S	24E	0660FNL	0660FEL
RATHERFORD UNIT	28-12	430371533601S1	Active	14-20-603-409	SW	SE	28	41S	24E	2121FNL	0623FWL
RATHERFORD UNIT	28W21	430371643100S1	Shut-in	14-20-603-409	NE	NW	28	41S	24E	0660FNL	2022FWL
RATHERFORD UNIT	9W23	430371639800S1	Active	14-20-603-5046	NW	SE	9	41S	24E	1980FSL	1980FWL