YATES PETROLEUM CORPORATION
207 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210
TELEPHONE (505) 748-1331

January 27, 1982

Mr. Joe D. Ramey, Director
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Downhole Commingling, Stonewall EP State Com #4, Burton Flats Atoka & Morrow, Unit H, Sec. 30-20S-28E

Dear Sir:

Subject well was recompleted to the Atoka formation on October 19, 1981, in accordance with correspondence from our Mr. Ray Stall and your response of October 1. The well came in flowing 4.4 MMCFPD and depleted rapidly. By December 28, cumulative production was 96.2 MMCF with a BHP of 925 psi, and remaining recoverable reserves was 49.6 MMCF. At this rapid rate of decline it is estimated that some 30.3 MMCF would be produced by February 1, 1982, at which time the Atoka pressure and Morrow pressure would be about equal allowing the Morrow to overcome the back pressure on the standing valve and to flow commingled.

Under the provisions of Rule 303-C as amended by NMOCD Order R-6882, administrative approval is hereby applied for, to permit the downhole commingling of the Burton Flats Atoka and the Burton Flats Morrow in our Stonewall EP State Com No. 4.

The following criteria are satisfied:

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Burton Flats-Atoka - 19.3 MM or 1.2% (gas), 100% (oil)
Burton Flats-Morrow - 136.4 MM or 98.8% (gas), -0- (oil)

Offset operators are notified of this intent by copy of this letter.

Since the Morrow completion loads up with a small quantity of formation water, we are a little anxious to proceed with the commingling while there is energy in the Atoka to help keep the Morrow unloaded. Thank you.

Yours truly,

YATES PETROLEUM CORPORATION

Eddie M. Mahfood
Petroleum Engineer

EMM:jg
enclosures
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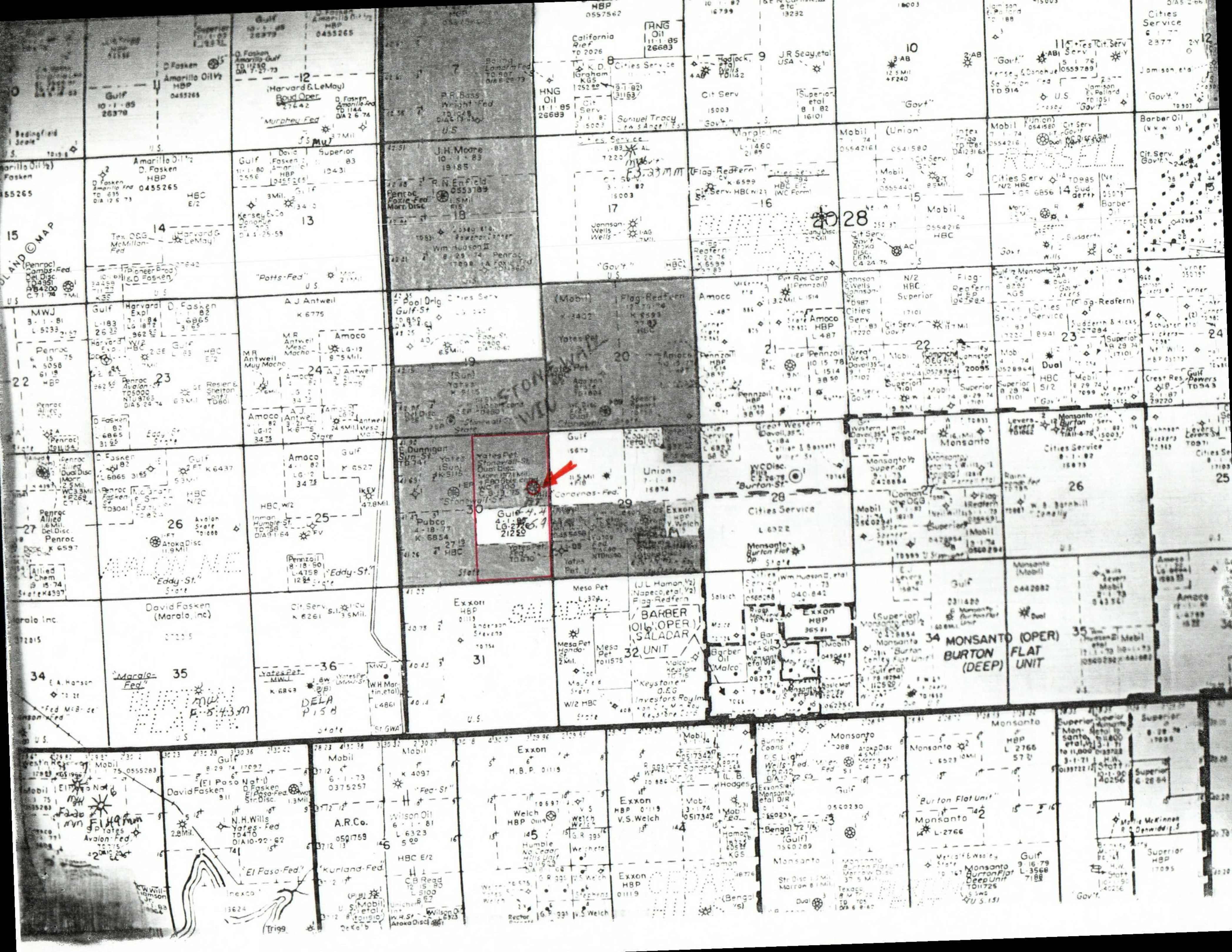
Division Production Manager, Exxon Company, Box 1600, Midland, TX 79701
Operations Manager, Mesa Petroleum Co.,1000 Vaughn Bldg., Midland, TX 79701

Objection to downhole commingling of the Burton Flats-Atoka and Burton Flats-Morrow in Yates Petroleum Corporation's Stonewall EP State No. 4 is hereby waived.

By:_____



MONSANTO (OPER)
BURTON FLAT UNIT
(DEEP)
BARBER
OIL (OPER)
SALADAR
UNIT
Cities Service
Amoco
Exxon

NEW MEXICO OIL CONSERVATION COMMISSION

GAS-OIL RATIO TESTS

C-116
Revised 1-1-65

Operator: Yates Petroleum Corporation | Pool: Burton Flats-Atoka | County: Eddy

Address: 207 South 4th, Artesia, NM 88210 | TYPE OF TEST - (X) | Scheduled ☐ | Completion ☐ | Special ☒

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS - OIL RATIO CU.FT/BBL
Burton Flats-Atoka Stonewall EP State Com	4	H	30	20s	28e	1-5-82	F	26/64	485	-	24	0	52	2	1128	564000
Burton Flats-Morrow Stonewall EP State Com	4	H	30	20s	28e	9-30-81	F	32/64	235	-	24	0 (well loading up)	-	0	280	-

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

Eddie M. Walford
(Signature)

Engineer - 1-27-82
(Title)

Stonewall EP State Com #4 H-30-20s-28E

Calculations of Remaining Reserves

Morrow pfs 11136-181

Cumulative production to 2-1-82: 1,222,375 mcf gas + 2718 BO.

Original BHP (7/78) P_o = 4235 psig, BHT = 167°F, P_c = 673.5, T_c = 365.5, Z_o = 0.935

Last BHP (9-30-81) P_1 = 689 psig, Z_1 = 0.941

Abandonment BHP P_a = 300 psig, Z_a = 0.972

$$\text{Remaining Reserves} = N_p\left(P_1/Z_1 - P_a/Z_a\right)\Big/\left(P_o/Z_o - P_1/Z_1\right) = 1222375\ \frac{\frac{702.2}{.941} - \frac{313.2}{.972}}{\frac{4248.2}{.935} - \frac{702.2}{.941}} = 136.4 \text{ mmcf}$$

Atoka pfs 10553-575

Cumulative production to 1-1-82 = 96226 mcf + BO

Cumulative production 11-3-81 to 12-28-81 = 63379 mcf + BO

Original BHP (10-19-81) = 2301 psig, BHT = 162°F, P_c = 691, T_c = 370, Z_o =

75 hr. SIBHP 11-3-81, P_1 = 1657 psig, Z_1 = 0.872

126 hr SIBHP 12-28-81, P_2 = 925 psig, Z_2 = 0.918

Abandonment pressure P_a = 300 psig, Z_a = 0.970

P_3 = 689 psig, Z_3 = 0.937

$$\text{Remaining Reserves} = N_p\left(P_2/Z_2 - P_a/Z_a\right)\Big/\left(P_1/Z_1 - P_2/Z_2\right) = 63379\ \frac{\frac{938.2}{.918} - \frac{313.2}{.970}}{\frac{1670.2}{.872} - \frac{938.2}{.918}} = 49.6 \text{ mmcf}$$

$$\text{When Atoka pres. = Morrow pres = 689 psig, remaining res} = 63379\ \frac{\frac{938.2}{.918} - \frac{702.2}{.937}}{\frac{1670.2}{.872} - \frac{938.2}{.918}} = 19.3 \text{ mmcf}$$

Suggested Allocation of Remaining Reserves: or Future Production:

Burton Flats Atoka 19.3 mm/155.7 = 1.2%

Burton Flats Morrow 136.4 mm/155.7 = 98.8%

BENNETT-CATHEY WIRE LINE SERVICE
P. O. BOX 787
ARTESIA, NEW MEXICO 88210
Phone 746-3281

BOTTOM HOLE PRESSURE SURVEY REPORT

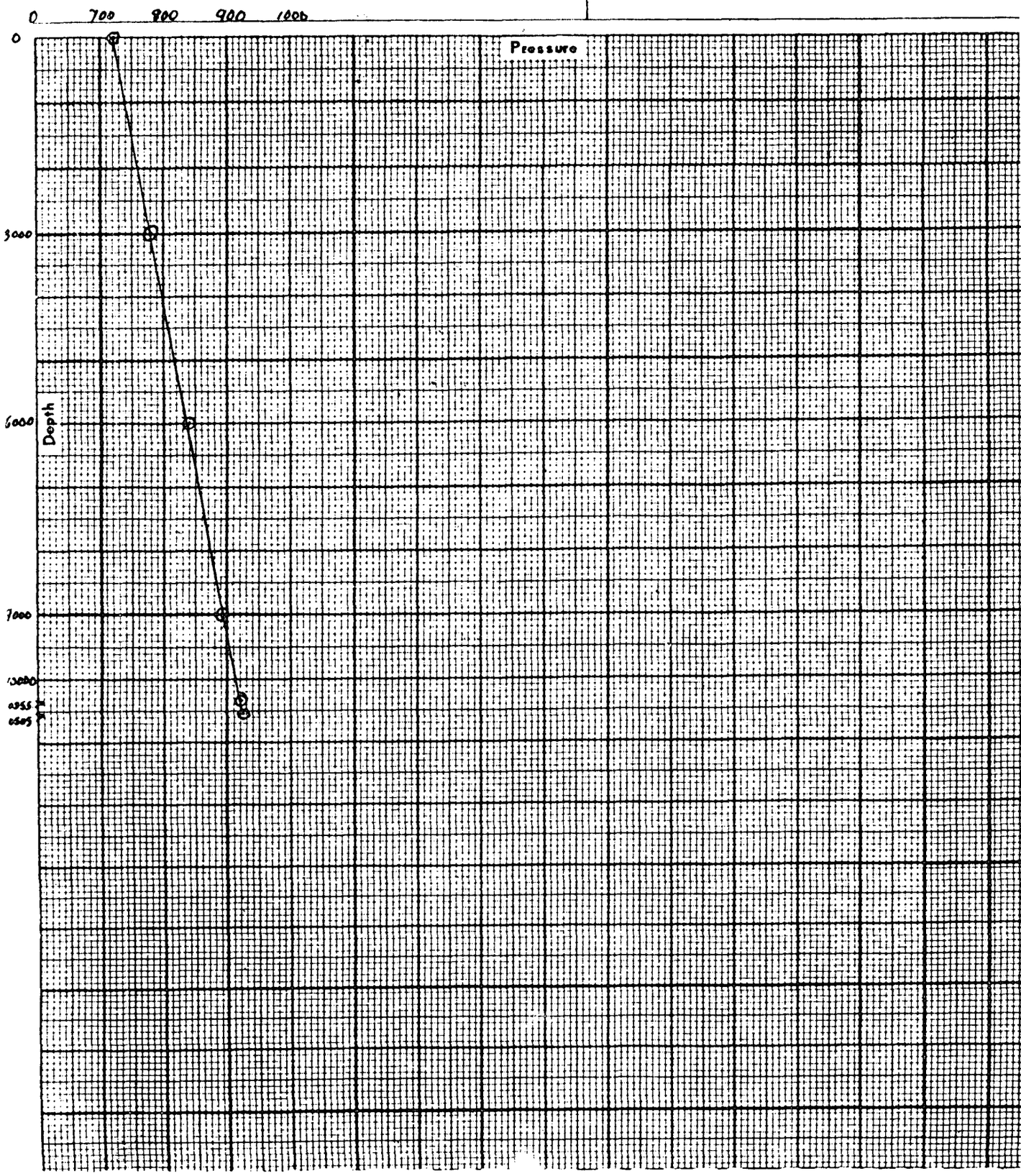
OPERATOR YATES PETROLEUM CORP.
LEASE STONEWALL "EP"
WELL NO. 4
POOL _____ **FORMATION** _____
DATE 12-28-81 **TIME** 1343 HOURS

STATUS SHUT IN **TEST DEPTH** 10,505 FEET
TIME S.I. 0700 HOURS **LAST TEST DATE** 11-3-81
DATE S.I. 12-23-81 **BHP LAST TEST** 1,654 LBS.
TUB. PRES. 720LBS. **BHP CHANGE** -730 LBS.
ELE. _____ **FLUID TOP** _____
DATUM PLANE _____ **WATER TOP** _____
DATUM PSIA 937LBS. **RUN BY** BOB HERREN
TEMP 184° **PRESSURE RANGE** 4,000 LBS.
CLOCK NO. _____
ELEMENT NO. RPG3# 36641

DEPTH	PRESSURE	GRADIENT
0	720	
3,000	780	2.0
6,000	840	2.0
9,000	893	1.8
10,355	921	2.1
10,505	924	2.0
10536	925	

TIME B.H.P. MEASURED 1343 HOURS

LENGTH OF TIME WELL SHUT IN 126 HRS. 43



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BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR YATES PETROLEUM
LEASE STONEWALL 'EP' STATE COM.
WELL NO. 4
POOL _____ FORMATION ATOKA
DATE 11-3-81 TIME 0914 HOURS

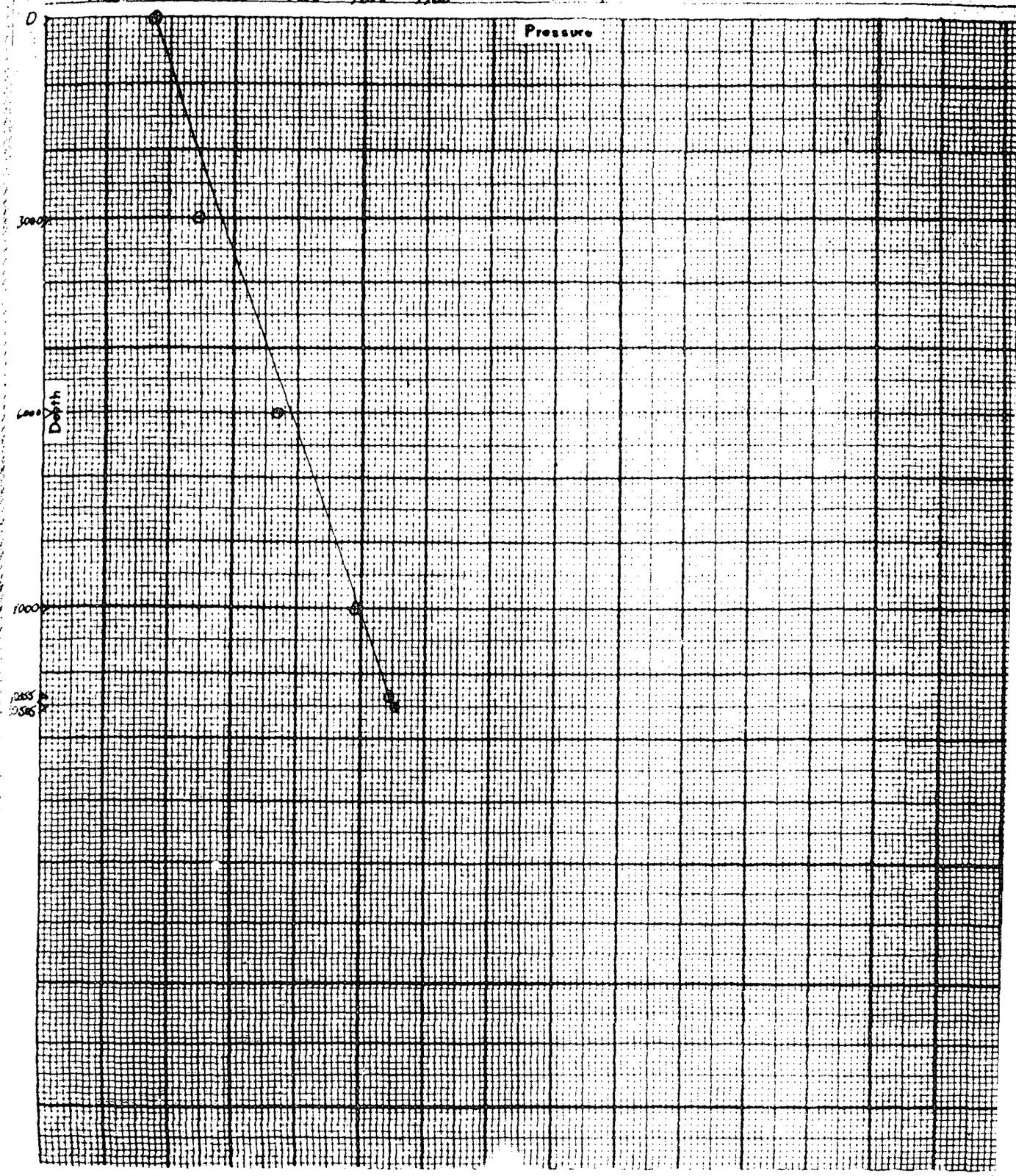
STATUS SHUT IN TEST DEPTH 10,505
TIME S.I. 0615 HRS. LAST TEST DATE 9-5-81
CAS. PRES. 10-31-81 BHP LAST TEST 685
TUB. PRES. 1274 BHP CHANGE +969
ELE. _____ FLUID TOP _____
DATUM PLANE _____ WATER TOP _____
DATUM PSIA 1667 RUN BY BOB HERREN
TEMP 174° PRESSURE RANGE 3,500
CLOCK NO. _____
ELEMENT NO. RPG3 #37882

DEPTH	PRESSURE	GRADIEN
0	1274	
3,000	1347	2.4
6,000	1468	4.0
9,000	1591	4.1
10,355	1646	4.1
10,355	1646	4.0
10,505	1654	5.3
[illegible]	[illegible]	

TIME B.H.P. MEASURED: 0914 HOURS

LENGTH OF TIME WELL SHUT IN: 74 H
59 M

1300 1300 1400 1500 1600 1700



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BOTTOM HOLE PRESSURE SURVEY REPORT

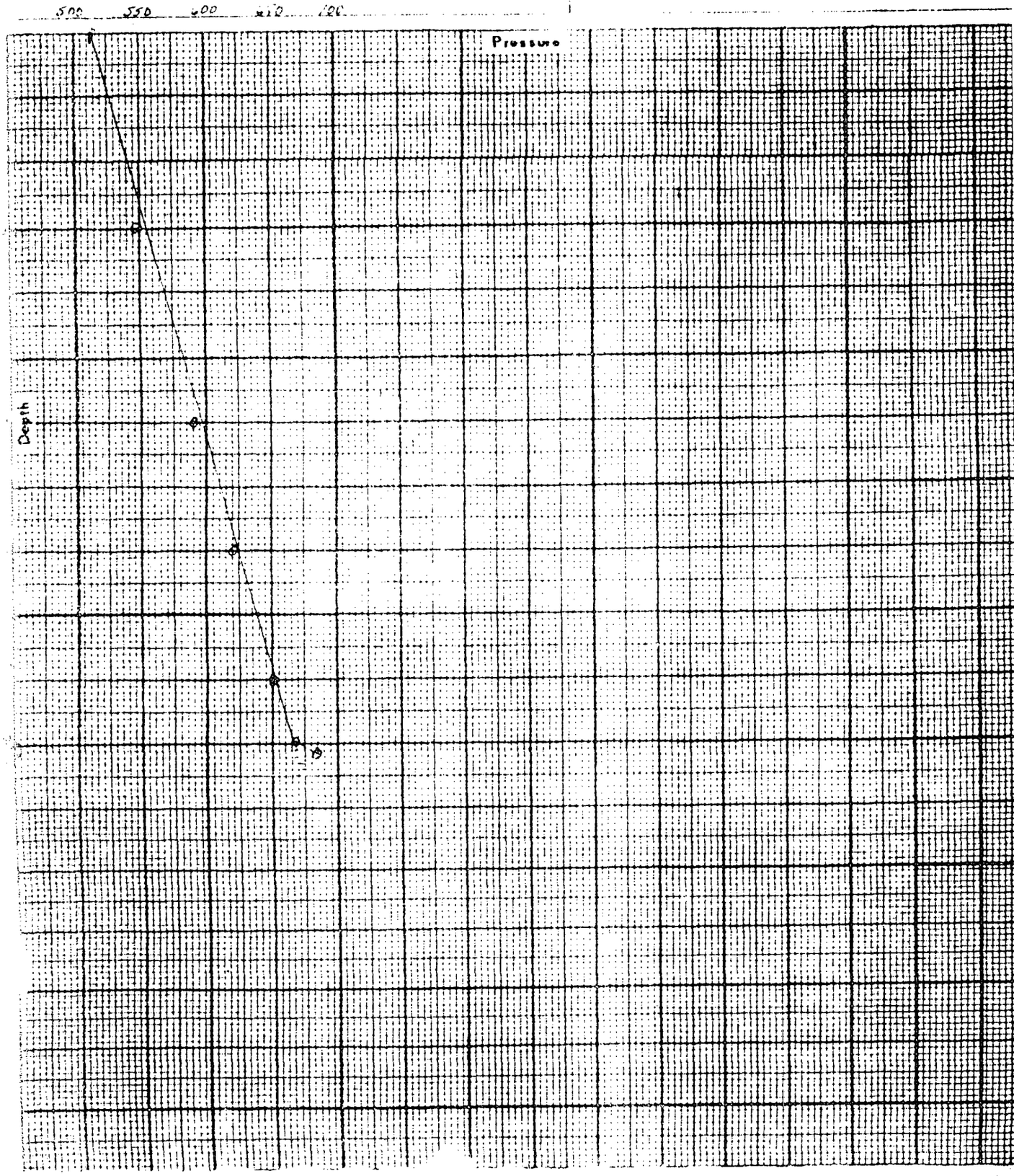
OPERATOR YATES PETROLEUM
LEASE STONEWALL "DEEP" STATE
WELL NO. NO. 4
POOL _____ FORMATION _____
DATE 9-5-81 TIME 1804 HOURS

STATUS SHUT IN TEST DEPTH 11,125
TIME S.I. 1530 HOURS LAST TEST DATE 11-23-79
9/2/81 BHP LAST TEST 945
TUB. PRES. 514 BHP CHANGE -260
ELE. _____ FLUID TOP _____
DATUM PLANE _____ WATER TOP _____
DATUM PSIA 698 RUN BY BOB
TEMP 182° PRESSURE RANGE 3200 LBS.
CLOCK NO. _____
ELEMENT NO. Z2011

DEPTH	PRESSURE	GRADIENT
0	514	
5,000	548	1.13
8,000	591	1.43
9,000	621	1.5
10,000	651	1.5
10,980	668	1.7
11,127	685	11.56
[illegible]	689	

TIME B.H.P. MEASURED: 1902 HOURS
LENGTH OF TIME WELL SHUT IN: 75 HOU
MINUTE

500 550 600 650 700



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By: Marion E. Carey
Mesa Petroleum Co.

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By: C. F. Kalteyer, C. F. Kalteyer
Chief Proration Engineer
Gulf Oil Corporation

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By: J. K. Tyll for Exxon Corp. 2-9-82