

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE

(See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

5. LEASE DESIGNATION AND SERIAL NO.
NM-0392082-A

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

7. UNIT AGREEMENT NAME
N/A

8. FARM OR LEASE NAME
Union Federal

9. WELL NO.
2

10. FIELD AND POOL, OR WILDCAT
Jennings Delaware

11. SEC., T. R., M., OR BLOCK AND SURVEY OR AREA
Sec. 4, T-26-S, R-32-E

12. COUNTY OR PARISH
Lea

13. STATE
New Mexico

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ DRY ☐ Other _____

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other _____

2. NAME OF OPERATOR
BLACKROCK OIL COMPANY

3. ADDRESS OF OPERATOR
1000 V & J Tower, Midland, Tx 79701

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*

At surface
Unit B, 660 FNL & 1980 FEL

At top prod. interval reported below

At total depth

14. PERMIT NO. _____ DATE ISSUED _____

15. DATE SPUDDED **12-30-71** 16. DATE T.D. REACHED **1-8-72** 17. DATE COMPL. (Ready to prod.) **1-25-72** 18. ELEVATIONS (DF, REB, RT, GR, ETC.)* **3322' C.L.** 19. ELEV. CASINGHEAD _____

20. TOTAL DEPTH, MD & TVD **4620** 21. PLUG BACK T.D., MD & TVD **4603** 22. IF MULTIPLE COMPL. HOW MANY* **---** 23. INTERVALS DRILLED BY **---** ROTARY TOOLS **0-4620'** CABLE TOOLS _____

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
4565-4573

25. WAS DIRECTIONAL SURVEY MADE
NO

26. TYPE ELECTRICAL AND OTHER LOGS RUN
Guard - Density

27. WAS WELL CORED
NO

28. CASING RECORD (Report all strings set in well)						AMOUNT PULLED
CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD		
8-5/8"	24#	901'	11"	500	sx	None
4-1/2	9.5#	4620'	7-7/8"	125	sx	None

29. LINER RECORD					30. TUBING RECORD		
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
		N O N E			2-3/8"	4451'	4451'

31. PERFORATION RECORD (Interval, size and number)		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
4589'-4594	- 5 holes	DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
		4589'-4594'	250 gal. Acid
		4584'	Baker Model N Bridge Plug
4565'-4573'	- 5 holes	4565'-4573'	500 gal. Acid

33.* PRODUCTION							
DATE FIRST PRODUCTION		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)				WELL STATUS (Producing or shut-in)	
2-2-72		Flowing				SI, waiting on tank btry.	
DATE OF TEST	HOURS TESTED	CHOKE SIZE	PRODN. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
2-3-72	24 hrs.	20/64"	---	100	125	0	1250
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	
750#	950#	---	100	125	0	41°	

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

TEST WITNESSED BY
Leon Toombs

35. LIST OF ATTACHMENTS
C-123, C-104, Deviation Survey, DST, Logs

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

SIGNED **Leon Toombs** TITLE **Production Supt.** DATE **Feb. 22, 1972**

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

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Seals Cement". Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:

SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	GEOLOGIC MARKERS		
				NAME	MEAS. DEPTH	TRUE VERT. DEPTH



FOSTER TESTERS, INC.

ODESSA TEXAS

TEST TICKET NO. 2834

ORDER NO.

DATE JANUARY 9, 1972

COMPANY BLACKROCK OIL COMPANY

LEASE UNION FEDERAL

WELL NO. 2

FIELD WILDCAT

COUNTY

LEA

STATE NEW MEXICO

TEST NO.

1

MAIL CHARTS TO AS DIRECTED

MAIL INVOICE TO BLACKROCK OIL COMPANY, 1000 V & J TOWER, MIDLAND, TEXAS 79701

FORMATION TESTED DELEWARE TOTAL DEPTH 4570' MAIN HOLE 7 7/8" RAT HOLE -
INTERVAL TESTED FROM 4530' TO 4570' PACKER TYPE BT SIZE 6 5/8 NUMBER 2
DRILL PIPE SIZE 4" F.H. I.D. 3.340 DRILL COLLAR SIZE 4" H 90 I.D. 2.25
TIME PACKER SET 4:15 A.M. P.M. PACKER SET 4 HRS. 15 MIN. PRE FLO TIME 15 MINS.
INITIAL FLOW - MINS. 2ND FLOW - MINS. FINAL FLOW 60 MINS.
INITIAL SHUT-IN 60 MINS. 2ND SHUT-IN - MINS. FINAL SHUT-IN 120 MINS.
RECORDER TYPE AK-1 CAPACITY 5550# 6600# NUMBER TOP 2347 BOTTOM 2755
TOP RECORDER DEPTH 4565' BOTTOM RECORDER DEPTH 4570'
MAX. TEMP. 95° TEMP. DEPTH 4566' CHOKE SIZE: TOP 1" ADJ. BOTTOM 5/8
MUD TYPE BRINE MUD WEIGHT 10.0 VISCOSITY 34 FILTER CAKE 2/32 WTR. LOSS 10.0
FLUID CUSHION TYPE - AMOUNT - REVERSED OUT - YES - NO X
CONVENTIONAL TEST YES STRADDLE TEST - CASING TEST - MISS RUN -
SECOND ASSEMBLY YES ROTARY JAR YES SAFETY JOINT YES
SAMPLER YES NO X FFE FLOW TOOL YES NO X CIRC. SUB YES NO X
SURFACE ACTION: OPENED TOOL WITH WEAK BLOW INCREASING TO STRONG BLOW OF AIR. REOPEN
TOOL WITH WEAK INCREASING TO STRONG BLOW. OPENED CHOKE TO 1/4" TEST ON 1/4" FOR
45 MINUTES, GAS TO SURFACE IN 45 MINUTES TO SMALL TO MEASURE.

RECOVERY: GAS IN DRILL PIPE, 60' FREE OIL 41 GRAVITY @ 50°, 52' OIL AND WATER GAS
CUT, 480' WATER OIL AND GAS CUT DRILLING MUD. 592' TOTAL FLUID.

PIT SAMPLE= CHLORIDES 190,000 P.P.M., RESISTIVITY .05 @ 60°.
TEST CHLORIDES= 177,000 P.P.M., REC., .08 @ 60°.

REMARKS: 15 MINUTES PRE FLOW TIME.
533' TOTAL DRILL COLLAR LENGTH.
12' PERFORATION LENGTH.

TESTER C. E. MCCORMICKTEST APPROVED BY ZACK MONROE

	RECORDER NO.		RECORDER NO.		RECORDER NO.
A INITIAL HYDROSTATIC PRESSURE	2362	P.S.I.		P.S.I.	
B INITIAL SHUT IN PRESSURE	2369	P.S.I.	B-1	P.S.I.	
C INITIAL FLOW PRESSURE	168	P.S.I.	C-1	P.S.I.	
D FINAL FLOW PRESSURE	265	P.S.I.	D-1	P.S.I.	
E FINAL SHUT IN PRESSURE	2359	P.S.I.		P.S.I.	
F FINAL HYDROSTATIC PRESSURE	2390	P.S.I.		P.S.I.	

FOSTER TESTERS, INC.
Odessa, Texas

DRILL EM TEST PRESSURE BREAKDOWN RESULT

TEST DATE 1-8-72 RECORDER NO 2755 CAPACITY 6600# CLOCK NO. TICKET NO 2834
TYPE RECORDER AK-1 TOP OR BOTTOM RECORDER BOTTOM RECORDER DEPTH 4570' OTHER 4 65'

Initial Flow time, to: 15 min. ISIP time, 60 min. Flow Period Time, to: 00 min. FSIP time: 120 min. Packer Set 255 min.

INITIAL SHUT IN

Press. Point t, min.	to + t	Pressure PSIG
0	-	174
6	3.50	561
12	2.25	1093
18	1.83	1876
24	1.63	2362
30	1.50	2364
36	1.42	2365
42	1.36	2366
48	1.31	2368
54	1.28	2369
60	1.25	2369

FLOW PERIOD

Press.
Point
min.

Pressure
PSIG

FINAL SHUT IN

Press. Point t, min.	to + t	Pressure PSIG
0	-	265
12	6.00	1344
24	3.50	1862
36	2.67	1959
48	2.25	2033
60	2.00	2256
72	1.83	2349
84	1.72	2357
96	1.63	2358
108	1.56	2359
120	1.50	2359

Pressure - PSIG @ 4570

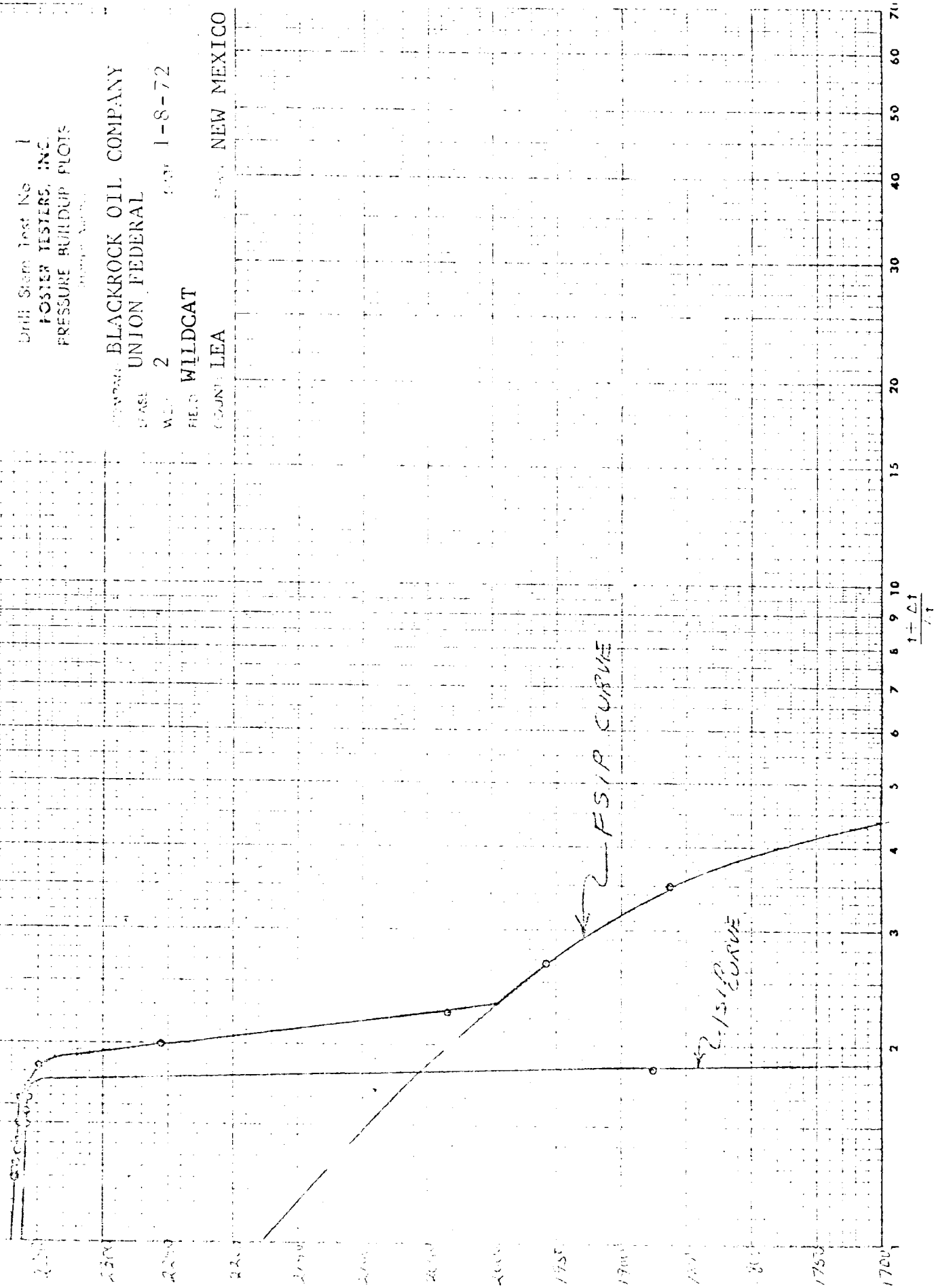
Drill Stem Test No. 1
POSTER TESTERS, INC.
PRESSURE BUILDUP PLOTS

BLACKROCK OIL COMPANY
UNION FEDERAL

LEASE 2
WELL 1-8-72

FIELD WILDCAT

COUNTY LEA NEW MEXICO



FOSTER TESTERS, INC., Odessa, Texas

DRILL STEM TEST CALCULATIONS AND ANALYSIS OIL RESERVOIR

COMPANY BLACKROCK OIL COMPANY

COUNTY LEA

STATE NEW MEXICO

LEASE UNION FEDERAL WELL 2 TEST NO. 1

TEST DEPTHS	PRESSURE DATA	RECOVERY AND FLUID DATA
FORMATION DELEWARE	INITIAL HYDROSTATIC PRESS. IHP 2362 psig	DC SIZE 4 in
ELEVATION	FINAL HYDROSTATIC PRESS. FHP 2332 psig	DC LENGTH 533 ft
TOTAL DEPTH 4570 ft	INITIAL SHUT IN PRESS. ISIP 2369 psig	DP SIZE 4 in
INTERVAL 4530-70 ft	INITIAL FLOWING PRESS. IFP 163 psig	SURFACE
DATUM DEPTH, L	FINAL FLOWING PRESS. FFP 265 psig	OIL PROD. bbls
RECORDER NO. 2755	FINAL SHUT IN PRESS. FSIP 2359 psig	OIL RECOVERY ft
		GAS RECOVERY

CALCULATIONS AND ANALYSIS

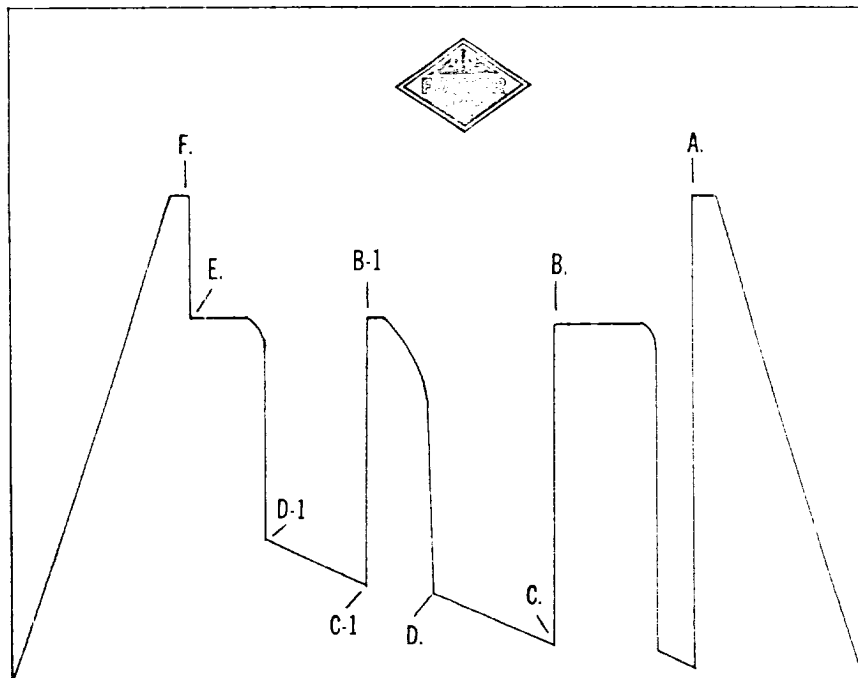
CALCULATIONS	FORMULA	RESULTS
1. EXTRAPOLATED STATIC PRESSURE Initial Final	Po, Po,	psig psig
2. RESERVOIR PRESSURE GRADIENT	$G = \frac{P_{oi}}{L}$	0.475 psi/ft
3. CALCULATED HYDROSTATIC PRESSURE	$CHP = L \frac{MW}{8.33} (.433)$	2378 psig
4. PRESSURE ELEMENT ACCURACY	$E = \frac{IHP(100)}{CHP}$	99.6 %
5. SLOPE OF FSIP (Horner Plot)	M	470 psi/cycle
6. OIL PRODUCTION RATE	$Q_o = 24 \frac{Rec.}{T}$	62.7 bopd
7. TRANSMISSABILITY	$\frac{K_{oh}}{\mu} = \frac{162.6 Q_o B_o}{M}$	23.8 md-ft/cp
8. PERMEABILITY CAPACITY	$K_{oh} = \frac{K_{oh}}{\mu_o} \mu_o$	38.2 md-ft.
9. EFFECTIVE OIL PERMEABILITY	$K_o = \frac{K_{oh}}{h}, h = 40'$	0.955 md.
10. DAMAGE RATIO	$DR = .183 \frac{P_{oi} - P_f}{M}$	0.74
11. PRODUCTIVITY INDEX	$PI = \frac{Q_o}{P_{oi} - P_f}$	0.033 bopd/psi
12. PRODUCTION WITH DAMAGE REMOVED	$Q_{o,} = Q_o DR$	62.7 bopd
13. APPROX. RADIUS OF INVESTIGATION	$a \approx \sqrt{K_o T}$	3.5 ft.

REMARKS:

THIS IS A TEST OF AN OIL BEARING ZONE WITH FAIR PERMEABILITY. NO WELL BORE DAMAGE, AS CALCULATED FROM TEST DATA, WAS SHOWN TO HAVE EXISTED DURING THIS TEST. IT IS BELIEVED THAT DUE TO HOLE CONDITIONS, (e.g. fillup) SHUT IN PRESSURES REFLECTED HYDROSTATIC PRESSURES AT THE END OF EACH PERIOD, AS A RESULT OF BY PASSING THE PACKERS. THE FINAL SHUT IN CURVE SHOWS A NORMAL BUILDUP DURING THE EARLY PORTION OF THE CURVE. RESULTS OBTAINED FROM CALCULATIONS ARE APPROXIMATIONS, BUT CAN BE USED AS A GUIDE AND ARE BELIEVED TO BE REASONABLE. RECOVERY, PARTICULARLY OF THE DRILLING FLUID PORTION, IS PROBABLY HIGHER THAN WOULD NORMALLY BE RECOVERED FROM THIS ZONE. NO DEPLETION CHECK CAN BE MADE DUE TO THE NATURE OF THESE BUILDUPS.

NOTICE These calculations and all remarks are designed to furnish you with the facts of the Drill Stem Test, and as such are

IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. INITIAL HYD. FLUID
- B. INITIAL SHUT IN
- C. INITIAL FLOW
- D. FINAL FLOW
- E. FINAL SHUT IN
- F. FINAL HYD. FLUID
- B-1 SECOND SHUT IN
- C-1 SECOND FLOW
- D-1 FINAL FLOW

