

ORIGINAL

RELEASED SIDE ONE

755-0000  
10/2/91

STATE CORPORATION COMMISSION OF KANSAS  
OIL & GAS CONSERVATION DIVISION  
WELL COMPLETION OR RECOMPLETION FORM  
ACO-1 WELL HISTORY  
DESCRIPTION OF WELL AND LEASE

DEC 1 3 1991

AP.1 NO. 15-033-20-760  
County.....Comanche County.....  
SW.....NE NE Sec...3...Twp.35S...Rge.20... East  
..... West

Operator: License # 4145  
Name Roberts & Murphy, Inc.  
Address P. O. Box 7125  
City/State/Zip Shreveport, LA 71107

4290' Ft North from Southeast Corner of Section  
1000' Ft West from Southeast Corner of Section  
(Note: Locate well in section plat below)

Purchaser KOCH  
Enron Gas Marketing

Lease Name Box Ranch  
Field Name Wildcat

Operator Contact Person Brad Cummings  
Phone 318 - 221-8601

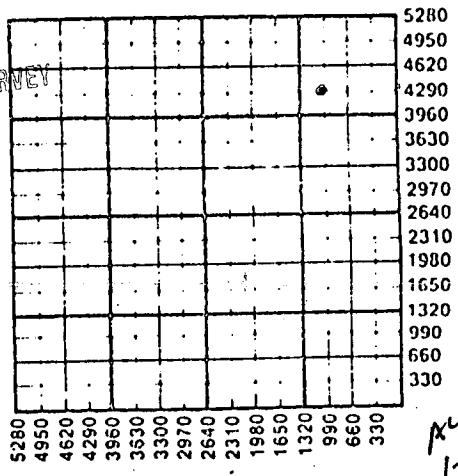
Producing Formation Viola  
Elevation: Ground 1714 KB 1726

Contractor: License # 5654  
Name Rine Drilling

Section Plat

Wellsite Geologist Lee Jenkins  
Phone 221-8601

OCT 12 1991  
KANSAS GEOLOGICAL SURVEY  
WICHITA BRANCH



Designate Type of Completion  
 New Well  Re-Entry  Workover

Oil  SWD  Temp Abd  
 Gas  Inj  Delayed Comp  
 Dry  Other (Core, Water Supply etc.)

OCT 2 1991  
STATE RECEIVED  
CONSERVATION DIVISION  
Wichita, Kansas

If OWWO: old well info as follows:  
Operator  
Well Name  
Comp. Date Old Total Depth

WATER SUPPLY INFORMATION

Disposition of Produced Water:  Disposal  
Docket #  Repressuring

Drilling Method:  
 Mud Rotary  Air Rotary  Cable

Questions on this portion of the ACO-1 call:  
Water Resources Board (913) 296-3717

8-17-89 9-2-89 9-3-1989  
Spud Date Date Reached TD Completion Date  
6550 6473  
Total Depth PBDT

Source of Water:  
Division of Water Resources Permit #

Groundwater.....Ft North from Southeast Corner  
(Well) .....Ft West from Southeast Corner of  
Sec Twp Rge East West

Amount of Surface Pipe Set and Cemented at 850 feet  
Multiple Stage Cementing Collar Used?  Yes  No  
If yes, show depth set.....feet  
If alternate 2 completion, cement circulated  
from.....feet depth to.....w/.....SX cmt  
Cement Company Name HALCO  
Invoice #

Surface Water 2640 Ft North from Southeast Corner  
(Stream, pond etc.) 330 Ft West from Southeast Corner  
Sec 3 Twp 35S Rge 20 East  West

Other (explain).....  
(purchased from city, R.W.D. #)

INSTRUCTIONS: This form shall be completed in duplicate and filed with the Kansas Corporation Commission, 200 Colorado Derby Building, Wichita, Kansas 67202, within 90 days after completion or recompletion of any well. Rule 82-3-130 and 82-3-107 apply.  
Information on side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form. See rule 82-3-107 for confidentiality in excess of 12 months.  
One copy of all wireline logs and drillers time log shall be attached with this form. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature Lee J. Jenkins  
Title Geologist Date 9-6-87

Subscribed and sworn to before me this 28 day of September 1987  
Notary Public Myrtle A. Oksenholt  
Date Commission Expires with life

MYRTLE A. OKSENHOLT, Notary Public  
Caddo Parish, Louisiana  
My Commission is for Life

K.C.C. OFFICE USE ONLY  
 Letter of Confidentiality Attached  
 Wireline Log Received  
 Drillers Timelog Received  
Distribution  
 KCC  SWD/Rep  NGPA  
 KGS  Plug  Other (Specify)  
NP 1909

Operator Name Roberts & Murphy, Inc. Lease Name Box Ranch Well # 3-3

Sec. 3 Twp. 35S Rge. 20  East  West County Comanche

WELL LOG

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all drill stem tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface during test. Attach extra sheet if more space is needed. Attach copy of log.

Drill Stem Tests Taken  Yes  No  
 Samples Sent to Geological Survey  Yes  No  
 Cores Taken  Yes  No

Formation Description  
 Log  Sample

DST #1 6187-6207 30"-60"-60"-90"  
 IHP 2967 FHP 2946  
 IFP 41-41 FFP 31-41  
 ISIP 800 FSIP 1364  
 REC. G-C.M. Rec. 2650' GIP  
100' GCM T. 125°

DST #2 6212-6257 30"-90" (2nd Flow - None)  
 IHP 2998# FHP 2998#  
 IFP 2158 - 2448#  
 ISIP 2469 2448# FSIP 2469#;  
122° T.  
 REC Oil & Gas Cut Mud  
GTS/2"; OTS/4"  
Rec. 55 bbl/oil in 25 min. plus GAS  
(no gauge)

Name	Top	Bottom
Heebner	- 4162	
Lansing	- 4458	
Morrow Sh.	- 5178	
Mississippian	- 5203	
Viola	- 6185	
Simpson	- 6370	
Arbucke	- 6476	

*DPS  
KCC*

CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (in O.D.)	Weight Lbs/Ft.	Setting Depth	Type of Cement	#Sacks Used	Type and Percent Additives
Conductor	30"	20"		68'	Common		
Surface	10-7/8"	8-5/8"	24#	850'	Common	350	10% Salt, 5% Sil
Production	7-7/8"	4-1/2"	10.5#	6457'	50/50 port	175	75% HALID 322

PERFORATION RECORD		Acid, Fracture, Shot, Cement Squeeze Record	
Shots Per Foot	Specify Footage of Each Interval Perforated	(Amount and Kind of Material Used)	Depth
4SPF	6214-6224		

TUBING RECORD		Liner Run	
Size	Set At	Yes	No
2-3/8	6375 Packer at --	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Date of First Production	Producing Method				
	<input checked="" type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (explain).....				
Estimated Production Per 24 Hours	Oil	Gas	Water	Gas-Oil Ratio	Gravity
	132 Bbls	MCF	Bbls	CFPB	

METHOD OF COMPLETION

Production Interval

Disposition of gas:  Vented  Sold  Used on Lease  
 Open Hole  Perforation  Other (Specify) .....  
 Dually Completed  Commingled

15-033-20755-0000

ORIGINAL RELEASED

KCC

DEC 13 1991

JAN 28 1991

FROM CONFIDENTIAL

ROBERTS AND MURPHY INCORPORATED

LEASE : BOX RANCH

WELL NO. : 3-3

TEST NO. : 1

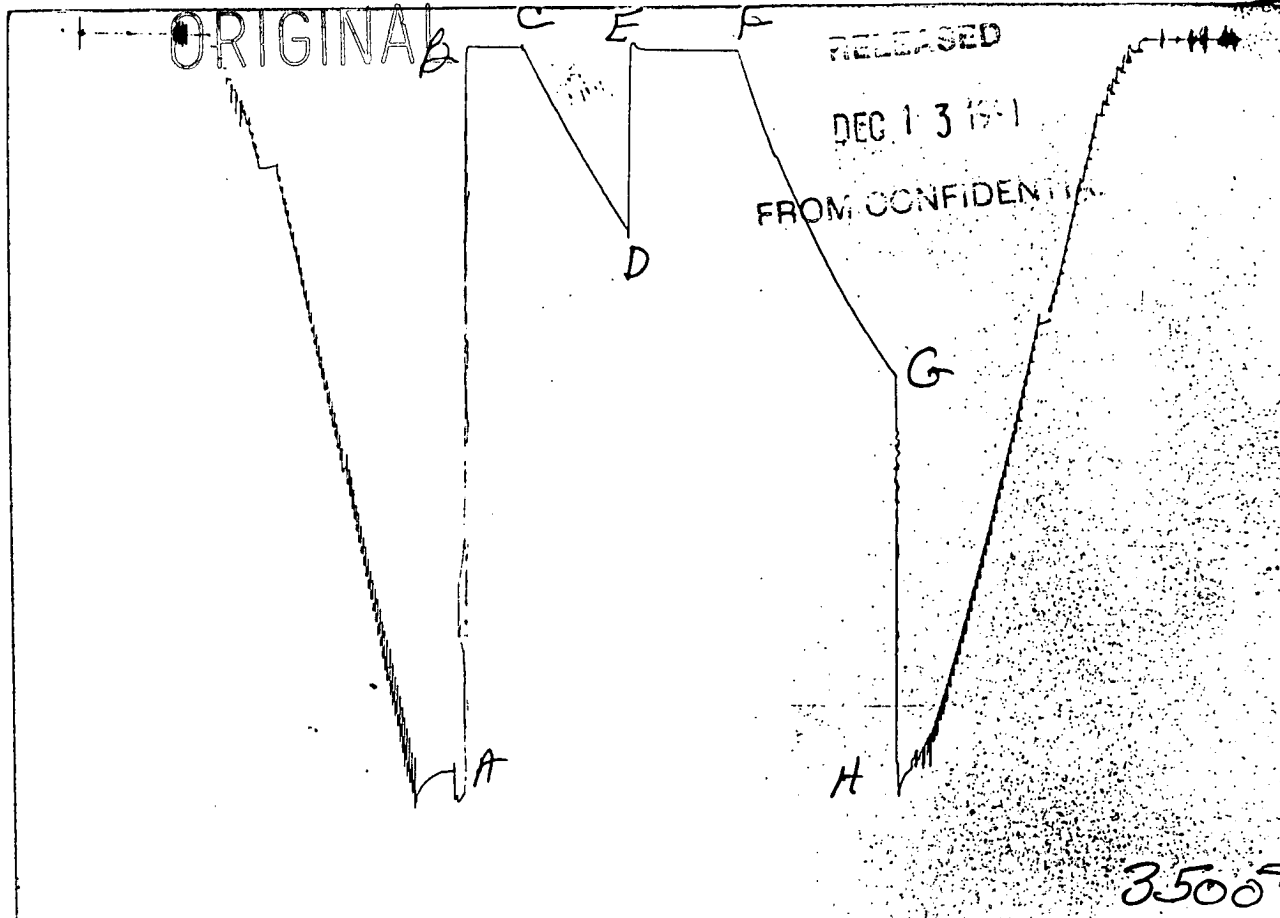
TICKET NO. 81615700

07-SEP-89

PRATT

JAN 28 1991

LEGAL LOCATION SEC - TWP - RNG	3-35-20	FIELD AREA	COUNTY	CORNER/CORNER NAME	STATE	KANSAS	DR
BOX RANCH							
LEASE NAME	3-3	WELL NO.	1	TEST NO.	6187.0 - 6207.0	TESTED INTERVAL	ROBERTS AND MURPHY INCORPORATED
							LEASE OWNER/COMPANY NAME

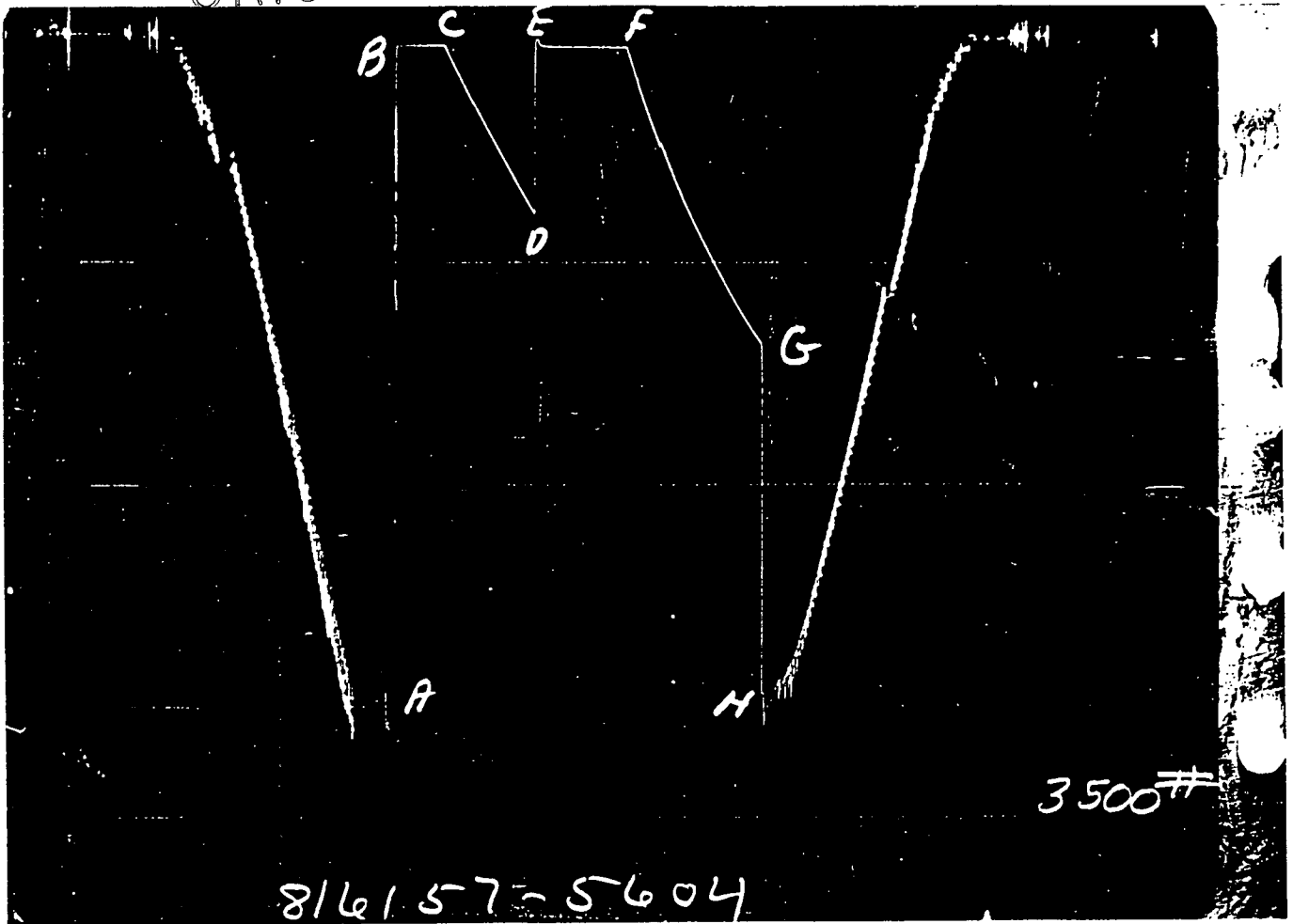


816157-5605

GAUGE NO: 5605 DEPTH: 6166.0 BLANKED OFF: NO HOUR OF CLOCK:

ID	DESCRIPTION	PRESSURE		TIME	
		REPORTED	CALCULATED	REPORTED	CALCULATED
A	INITIAL HYDROSTATIC		2960.4		
B	INITIAL FIRST FLOW		48.8	30.0	30.9
C	FINAL FIRST FLOW		48.8		
C	INITIAL FIRST CLOSED-IN		48.8	60.0	59.8
D	FINAL FIRST CLOSED-IN		784.0		
E	INITIAL SECOND FLOW		29.6	60.0	60.1
F	FINAL SECOND FLOW		57.9		
F	INITIAL SECOND CLOSED-IN		57.9	90.0	89.1
G	FINAL SECOND CLOSED-IN		1365.6		
H	FINAL HYDROSTATIC		2952.9		

ORIGINAL



816157-5604

GAUGE NO: 5604 DEPTH: 6204.0 BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2967	2970.9			
B	INITIAL FIRST FLOW	41	53.1			
C	FINAL FIRST FLOW	41	53.1	30.0	30.9	F
C	INITIAL FIRST CLOSED-IN	41	53.1			
D	FINAL FIRST CLOSED-IN	800	787.9	60.0	59.8	C
E	INITIAL SECOND FLOW	31	27.9			
F	FINAL SECOND FLOW	41	61.3	60.0	60.1	F
F	INITIAL SECOND CLOSED-IN	41	61.3			
G	FINAL SECOND CLOSED-IN	1364	1369.5	90.0	89.1	C
H	FINAL HYDROSTATIC	2946	2960.7			

RELEASED  
 DEC 13 1961  
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### EQUIPMENT & HOLE DATA

FORMATION TESTED: VIOLA

NET PAY (ft): \_\_\_\_\_

GROSS TESTED FOOTAGE: 20.0

ALL DEPTHS MEASURED FROM: KELLY BUSHING

CASING PERFS. (ft): \_\_\_\_\_

HOLE OR CASING SIZE (in): 7.875

ELEVATION (ft): 1726.0

TOTAL DEPTH (ft): 6207.0

PACKER DEPTH(S) (ft): 6181.6187

FINAL SURFACE CHOKE (in): \_\_\_\_\_

BOTTOM HOLE CHOKE (in): 0.750

MUD WEIGHT (lb/gal): 9.20

MUD VISCOSITY (sec): 48

ESTIMATED HOLE TEMP. (°F): \_\_\_\_\_

ACTUAL HOLE TEMP. (°F): 125 @ 6202.0 ft

TICKET NUMBER: 81615700

DATE: 8-30-89 TEST NO: 1

TYPE DST: OPEN HOLE

FIELD CAMP: PRATT

TESTER: L.R. PARKER

WITNESS: L. JENKINS

DRILLING CONTRACTOR: RINE DRILLING COMPANY

TYPE
TIME
8-30-
0915
1245
1405
1445
1455
1711
1715
1745
1845
1945
2115
2330

### FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm

### SAMPLER DATA

Paig AT SURFACE: \_\_\_\_\_

cu.ft. OF GAS: \_\_\_\_\_

cc OF OIL: \_\_\_\_\_

cc OF WATER: \_\_\_\_\_

cc OF MUD: \_\_\_\_\_

TOTAL LIQUID cc: \_\_\_\_\_

### HYDROCARBON PROPERTIES

OIL GRAVITY (°API): \_\_\_\_\_ @ \_\_\_\_\_ °F

GAS/OIL RATIO (cu.ft. per bbl): \_\_\_\_\_

GAS GRAVITY: \_\_\_\_\_

### CUSHION DATA

TYPE	AMOUNT	WEIGHT
_____	_____	_____
_____	_____	_____

### RECOVERED :

2650' OF GAS IN PIPE  
100' OF SLIGHTLY GAS CUT MUD

RELEASED

DEC 13 1991

FROM CONFIDENTIAL

MEASURED FROM TESTER VALVE

### REMARKS :

-----TIGHT HOLE-----



# ORIGINAL

TICKET NO: 81615700  
 CLOCK NO: 26740 HOUR: 12

GAUGE NO: 5605  
 DEPTH: 6166.0

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
<b>FIRST FLOW</b>					
B 1	0.0	48.8			
C 2	30.9	48.8	0.0		
<b>FIRST CLOSED-IN</b>					
C 1	0.0	48.8			
2	4.0	96.8	48.0	3.6	0.937
3	8.0	152.4	103.7	6.4	0.686
4	12.0	205.1	156.4	8.6	0.554
5	16.0	259.2	210.4	10.5	0.467
6	20.0	305.6	256.8	12.1	0.406
7	24.0	360.7	311.9	13.5	0.360
8	28.0	413.2	364.4	14.7	0.323
9	32.0	464.6	415.9	15.7	0.293
10	36.0	514.5	465.7	16.6	0.269
11	40.0	563.9	515.1	17.4	0.249
12	44.0	608.1	559.3	18.2	0.231
13	48.0	657.4	608.6	18.8	0.216
14	52.0	705.5	656.7	19.4	0.203
15	56.0	750.3	701.5	19.9	0.191
D 16	59.8	784.0	735.2	20.4	0.181
<b>SECOND FLOW</b>					
E 1	0.0	29.6			
2	10.0	57.3	27.7		
3	20.0	57.3	0.0		
4	30.0	57.3	0.0		
5	40.0	57.3	0.0		
6	50.0	58.3	0.9		
F 7	60.1	57.9	-0.3		
<b>SECOND CLOSED-IN</b>					
F 1	0.0	57.9			
2	6.0	191.1	133.2	5.6	1.207
3	12.0	313.4	255.4	10.6	0.933
4	18.0	426.7	368.8	15.0	0.783
5	24.0	519.0	461.0	19.0	0.680
6	30.0	617.1	559.2	22.6	0.606
7	36.0	708.9	651.0	25.8	0.548
8	42.0	797.9	739.9	28.7	0.501
9	48.0	885.9	827.9	31.4	0.462
10	54.0	968.0	910.1	33.9	0.429
11	60.0	1046.2	988.2	36.2	0.401
12	66.0	1118.7	1060.8	38.2	0.377
13	72.0	1190.2	1132.2	40.2	0.355
14	78.0	1254.4	1196.4	42.0	0.336
15	84.0	1321.2	1263.3	43.7	0.319

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$
SECOND CLOSED-IN - CONTINUED				
G 16	89.1	1365.6	1307.7	45.0

RELEASED

DEC 13 1961

FROM CONFIDENTIAL

REMARKS:



TICKET NO: 81615700  
 CLOCK NO: 14285 HOUR: 12

DEC 13 1991

GAUGE NO: 5604  
 DEPTH: 6204.0

FROM CONFIDENTIAL

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	53.1			
C 2	30.9	53.1	0.0		
FIRST CLOSED-IN					
C 1	0.0	53.1			
2	4.1	105.6	52.5	3.6	0.935
3	8.0	160.0	106.9	6.3	0.688
4	12.0	211.2	158.1	8.6	0.553
5	16.0	263.9	210.8	10.5	0.467
6	20.0	309.0	255.9	12.1	0.406
7	24.0	361.1	308.0	13.5	0.359
8	28.0	411.8	358.7	14.7	0.323
9	32.0	461.7	408.6	15.7	0.294
10	36.0	511.0	458.0	16.6	0.269
11	40.0	558.1	505.0	17.4	0.249
12	44.0	607.1	554.0	18.2	0.231
13	48.0	656.1	603.0	18.8	0.216
14	52.0	705.1	652.0	19.4	0.203
15	56.0	749.1	696.0	19.9	0.191
D 16	59.8	787.9	734.8	20.4	0.181
SECOND FLOW					
E 1	0.0	27.9			
2	10.0	59.7	31.8		
3	20.0	60.2	0.5		
4	30.0	61.0	0.8		
5	40.0	61.0	0.0		
6	50.0	61.8	0.8		
F 7	60.1	61.3	-0.5		
SECOND CLOSED-IN					
F 1	0.0	61.3			
2	6.0	186.9	125.6	5.6	1.208
3	12.0	306.3	245.0	10.6	0.934
4	18.0	420.4	359.1	15.1	0.781
5	24.0	507.7	446.4	19.0	0.680
6	30.0	610.2	548.9	22.6	0.606
7	36.0	705.2	643.9	25.8	0.548
8	42.0	795.1	733.8	28.7	0.501
9	48.0	877.9	816.6	31.4	0.462
10	54.0	958.7	897.4	33.9	0.429
11	60.0	1038.1	976.8	36.2	0.401
12	66.0	1113.8	1052.5	38.2	0.377
13	72.0	1188.5	1127.2	40.2	0.355
14	78.0	1254.7	1193.4	42.0	0.336
15	84.0	1321.9	1260.6	43.7	0.319

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND CLOSED-IN - CONTINUED					
G 16	89.1	1369.5	1308.2	45.0	0.306

REMARKS:
















DEC 13 1959.

I.D.

LENGTH

DEPTH

FROM CONFIDENTIAL

1		DRILL PIPE.....	4.500	3.826	5534.0	
3		DRILL COLLARS.....	6.000	2.250	527.0	
50		IMPACT REVERSING SUB.....	6.000	2.750	1.0	6061.5
3		DRILL COLLARS.....	6.000	2.250	91.0	
5		CROSSOVER.....	6.000	2.250	1.0	
12		DUAL CIP VALVE.....	5.000	0.870	6.0	
60		HYDROSPRING TESTER.....	5.000	0.750	5.0	6164.0
80		AP RUNNING CASE.....	5.000	2.250	4.0	6166.0
15		JAR.....	5.000	1.750	5.0	
16		VR SAFETY JOINT.....	5.000	1.000	3.0	
70		OPEN HOLE PACKER.....	6.750	1.530	6.0	6181.0
70		OPEN HOLE PACKER.....	6.750	1.530	6.0	6187.0
20		FLUSH JOINT ANCHOR.....	5.000	2.370	12.0	
83		HT-500 TEMPERATURE CASE.....	5.000	2.650	2.0	6202.0
81		BLANKED-OFF RUNNING CASE.....	5.000		4.0	6204.0
TOTAL DEPTH					6207.0	

# TEMPERATURE

# RECORDER

# CHART



10° each circle

Indicated Flow Capacity

$$kh = \frac{.001637 Q_o T}{m}$$

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md-ft

ORIGINAL

DEC 13 1961

Average Effective Permeability

$$k = \frac{kh}{h}$$

FROM CONFIDENTIAL

md

Skin Factor

$$S = 1.151 \left[ \frac{m(P^*) - m(P_i)}{m} - \text{LOG} \left( \frac{k(t/60)}{\phi \mu c r_w^2} \right) + 3.23 \right]$$

Damage Ratio

$$DR = \frac{m(P^*) - m(P_i)}{m(P^*) - m(P_i) - 0.87 mS}$$

Indicated Flow Rate (Maximum)

$$AOF_1 = \frac{Q_o m(P^*)}{m(P^*) - m(P_i)}$$

MCFD

Indicated Flow Rate (Minimum)

$$AOF_2 = Q_o \sqrt{\frac{m(P^*)}{m(P^*) - m(P_i)}}$$

MCFD

Approx. Radius of Investigation

$$r_i = 0.032 \sqrt{\frac{k(t/60)}{\phi \mu c}}$$

ft

Because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, HRS is unable to guarantee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by HRS. HRS personnel will use their best efforts in gathering such information and their best judgment in interpreting it but customer agrees that HRS shall not be responsible for any damages arising from the use of such information except where due to HRS gross negligence or willful misconduct in the preparation of furnishing of information.

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KCC

JAN 28 1991  
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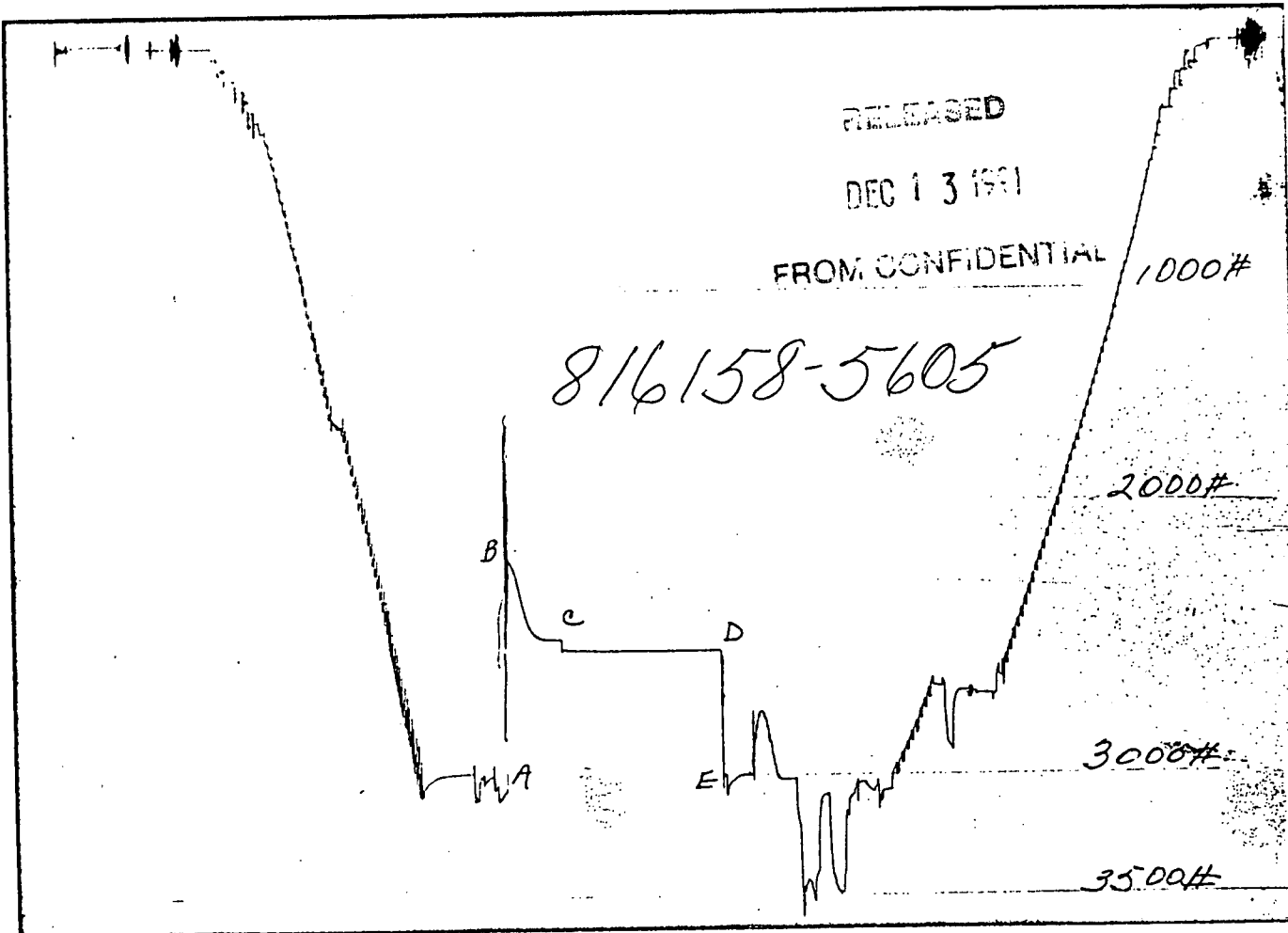
FROM CONFIDENTIAL

**ROBERTS AND MURPHY INCORPORATED**  
  
**LEASE : BOX RANCH**  
  
**WELL NO. : 3-3**  
  
**TEST NO. : 2**

**TICKET NO. 81615800**  
**11-SEP-89**  
**PRATT**

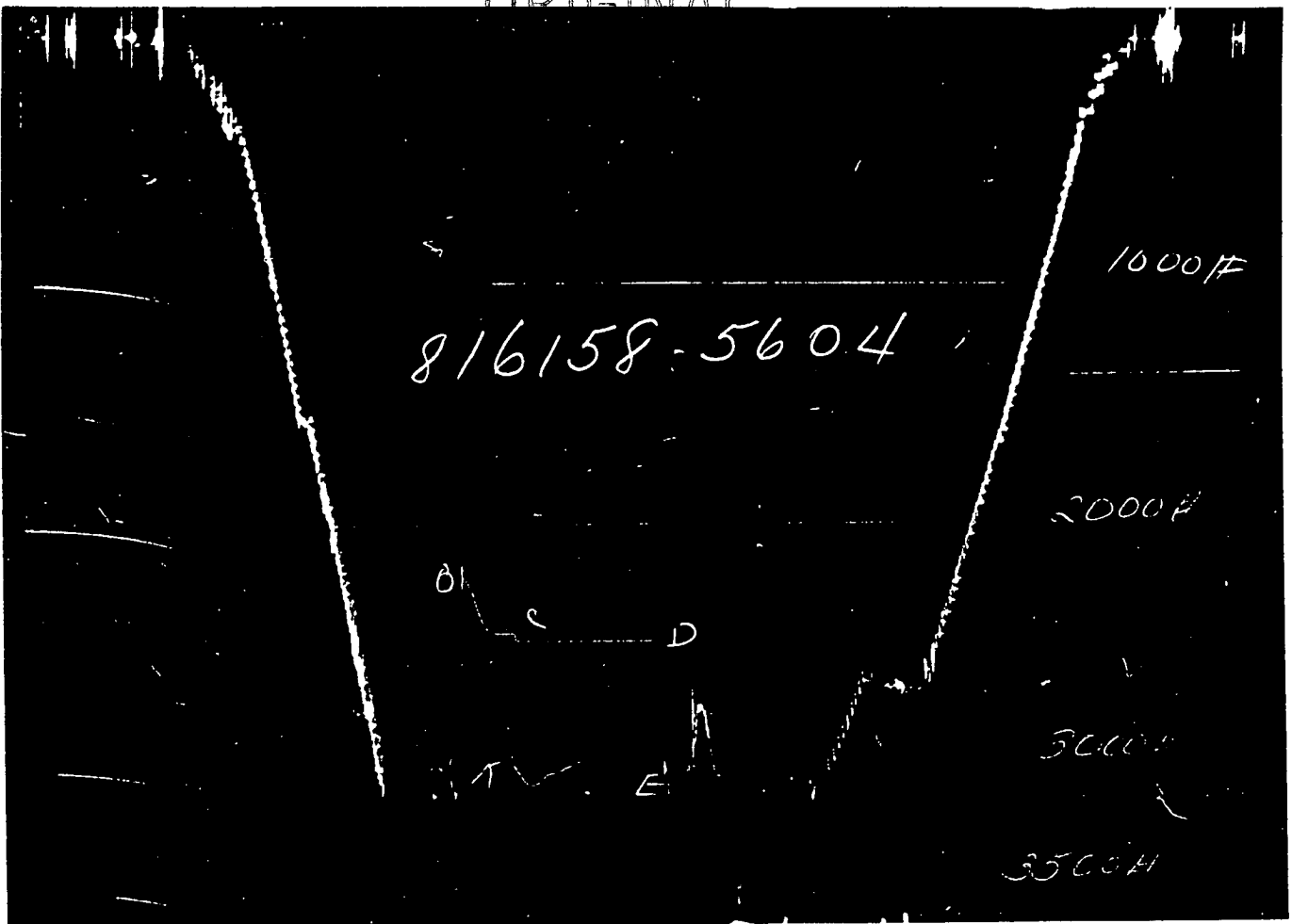
JAN 28 1991

LEGAL LOCATION SEC. - TWP. - RANG.	3-35-20	FIELD AREA	COUNTY	COMANCHE	STATE	KANSAS	SM
LEASE NAME	BOX RANCH	WELL NO.	3-3	TEST NO.	2	TESTED INTERVAL	6212.0 - 6257.0
						LEASE OWNER/COMPANY NAME	ROBERTS AND MURPHY INCORPORATED



GAUGE NO: 5605 DEPTH: 6191.0 BLANKED OFF: NO HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC		3000.9			
B	INITIAL FIRST FLOW		2075.0			
C	FINAL FIRST FLOW		2423.0	30.0	31.6	F
C	INITIAL FIRST CLOSED-IN		2423.0			
D	FINAL FIRST CLOSED-IN		2471.2	90.0	88.4	C
E	FINAL HYDROSTATIC		3000.9			



GAUGE NO: 5604 DEPTH: 6254.0 BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2998	3020.6			
B	INITIAL FIRST FLOW	2158	2224.1	30.0	31.6	F
C	FINAL FIRST FLOW	2448	2454.2			
C	INITIAL FIRST CLOSED-IN	2448	2454.2	90.0	88.4	C
D	FINAL FIRST CLOSED-IN	2469	2487.2			
E	FINAL HYDROSTATIC	2998	3020.6			

RELEASED

DEC 13 1961

FROM CONFIDENTIAL

# ORIGINAL

## EQUIPMENT & HOLE DATA

FORMATION TESTED: VIOLA DEC 13 1989

NET PAY (ft): \_\_\_\_\_

GROSS TESTED FOOTAGE: 45.0 FROM CONFIDENTIAL

ALL DEPTHS MEASURED FROM: KELLY BUSHING

CASING PERFS. (ft): \_\_\_\_\_

HOLE OR CASING SIZE (in): 7.875

ELEVATION (ft): 1726.0

TOTAL DEPTH (ft): 6257.0

PACKER DEPTH(S) (ft): 6206, 6212

FINAL SURFACE CHOKE (in): 0.50000

BOTTOM HOLE CHOKE (in): 0.750

MUD WEIGHT (lb/gal): 9.10

MUD VISCOSITY (sec): 62

ESTIMATED HOLE TEMP. (°F): \_\_\_\_\_

ACTUAL HOLE TEMP. (°F): 122 @ 6252.0 ft

TICKET NUMBER: 81615800

DATE: 8-31-89 TEST NO: 2

TYPE DST: OPEN HOLE

FIELD CAMP: PRATT

TESTER: L.R. PARKER

WITNESS: L. JENKINS

DRILLING CONTRACTOR: RINE DRILLING COMPANY

### FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm

### SAMPLER DATA

Psig AT SURFACE: \_\_\_\_\_

cu.ft. OF GAS: \_\_\_\_\_

cc OF OIL: \_\_\_\_\_

cc OF WATER: \_\_\_\_\_

cc OF MUD: \_\_\_\_\_

TOTAL LIQUID cc: \_\_\_\_\_

### HYDROCARBON PROPERTIES

OIL GRAVITY (°API): \_\_\_\_\_ @ \_\_\_\_\_ °F

GAS/OIL RATIO (cu.ft. per bbl): \_\_\_\_\_

GAS GRAVITY: \_\_\_\_\_

### CUSHION DATA

TYPE	AMOUNT	WEIGHT
_____	_____	_____
_____	_____	_____

### RECOVERED :

FLOWED 55 BBLs. OF OIL & GAS IN 25 MINUTES.....

MEASURED FROM TESTER VALVE

### REMARKS :

-----TIGHT HOLE INFORMATION-----





ORIGINAL

RELEASED

TICKET NO: 81615800

DEC 13 1961

GAUGE NO: 5605

CLOCK NO: 26740 HOUR: 12

DEPTH: 6191.0

FROM CONFIDENTIAL

REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	2075.0			
2	1.0	2081.8	6.8		
3	2.0	2093.9	12.2		
4	3.0	2106.8	12.9		
5	4.0	2122.4	15.5		
6	5.0	2141.5	19.1		
7	6.0	2167.4	25.9		
8	7.0	2199.6	32.2		
9	8.0	2232.0	32.4		
10	9.0	2264.2	32.2		
11	10.0	2296.1	31.9		
12	11.0	2324.3	28.2		
13	12.0	2344.5	20.2		
14	13.0	2364.0	19.5		
15	14.0	2379.9	15.8		
16	15.0	2390.8	10.9		
17	16.0	2399.4	8.6		
18	17.0	2406.0	6.6		
19	18.0	2410.5	4.5		
20	19.0	2414.2	3.7		
21	20.0	2417.1	2.9		
22	21.0	2418.6	1.5		
23	22.0	2420.3	1.7		
24	23.0	2420.8	0.5		
25	24.0	2421.2	0.4		
26	25.0	2421.2	0.0		
27	26.0	2421.2	0.0		
28	27.0	2421.9	0.7		
29	28.0	2422.1	0.2		
30	29.0	2422.4	0.2		
31	30.0	2422.4	0.0		
32	31.0	2422.4	0.0		
C 33	31.6	2423.0	0.6		
FIRST CLOSED-IN					
C 1	0.0	2423.0			
2	1.0	2462.4	39.4	1.0	1.499
3	2.0	2463.1	40.1	1.9	1.223
4	3.0	2464.1	41.1	2.7	1.063
5	4.0	2464.9	42.0	3.5	0.951
6	5.0	2465.6	42.6	4.3	0.863
7	6.0	2465.7	42.7	5.0	0.798
8	7.0	2466.3	43.3	5.7	0.741
9	8.0	2466.4	43.4	6.4	0.695
10	9.0	2466.9	43.9	7.0	0.656
11	10.0	2467.0	44.1	7.6	0.619
12	12.0	2467.4	44.4	8.7	0.560
13	14.0	2467.7	44.7	9.7	0.512
14	16.0	2468.3	45.3	10.6	0.473
15	18.0	2468.7	45.7	11.5	0.440

REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST CLOSED-IN - CONTINUED					
16	20.0	2468.7	45.7	12.2	0.400
17	22.0	2468.7	45.7	13.0	0.360
18	24.0	2468.9	45.9	13.6	0.330
19	26.0	2469.3	46.4	14.3	0.300
20	28.0	2469.9	46.9	14.9	0.270
21	30.0	2470.1	47.1	15.4	0.250
22	35.0	2470.1	47.1	16.6	0.210
23	40.0	2470.2	47.2	17.6	0.180
24	45.0	2470.2	47.2	18.6	0.160
25	50.0	2470.4	47.4	19.3	0.150
26	55.0	2470.4	47.4	20.1	0.140
27	60.0	2470.9	47.9	20.7	0.130
28	70.0	2470.9	47.9	21.8	0.120
29	80.0	2470.9	47.9	22.6	0.110
D 30	88.4	2471.2	48.2	23.3	0.100

REMARKS:

ORIGINAL

RELEASED

DEC 13 1951

TICKET NO: 81615800

GAUGE NO: 5604

CLOCK NO: 14285 HOUR: 12

DEPTH: 6254.0

REF	MINUTES	PRESSURE	AP	$\frac{t \pm \Delta t}{t \pm \Delta t}$	$\log \frac{t \pm \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	2224.1			
2	1.0	2225.1	0.9		
3	2.0	2230.0	5.0		
4	3.0	2240.8	10.8		
5	4.0	2252.2	11.4		
6	5.0	2264.5	12.3		
7	6.0	2284.3	19.8		
8	7.0	2305.5	21.2		
9	8.0	2327.7	22.3		
10	9.0	2349.5	21.7		
11	10.0	2369.6	20.1		
12	11.0	2389.4	19.9		
13	12.0	2404.6	15.1		
14	13.0	2418.4	13.9		
15	14.0	2428.4	9.9		
16	15.0	2435.6	7.2		
17	16.0	2441.4	5.8		
18	17.0	2445.4	4.0		
19	18.0	2448.1	2.7		
20	19.0	2450.5	2.4		
21	20.0	2452.1	1.6		
22	21.0	2452.8	0.7		
23	22.0	2453.0	0.2		
24	23.0	2453.6	0.6		
25	24.0	2454.0	0.4		
26	25.0	2454.2	0.2		
27	26.0	2454.2	0.0		
28	27.0	2454.2	0.0		
29	28.0	2454.2	0.0		
30	29.0	2454.2	0.0		
31	30.0	2454.2	0.0		
32	31.0	2454.2	0.0		
C 33	31.6	2454.2	0.0		
FIRST CLOSED-IN					
C 1	0.0	2454.2			
2	1.0	2482.2	28.0	1.0	1.499
3	2.0	2483.5	29.3	1.9	1.221
4	3.0	2484.5	30.2	2.7	1.062
5	4.0	2484.7	30.4	3.5	0.949
6	5.0	2484.7	30.4	4.3	0.862
7	6.0	2484.7	30.4	5.0	0.797
8	7.0	2485.0	30.7	5.7	0.743
9	8.0	2485.2	31.0	6.4	0.693
10	9.0	2485.3	31.1	7.0	0.655
11	10.0	2485.3	31.1	7.6	0.619
12	12.0	2485.4	31.2	8.7	0.560
13	14.0	2485.4	31.2	9.7	0.512
14	16.0	2485.4	31.2	10.6	0.473
15	18.0	2486.1	31.9	11.5	0.440

REF	MINUTES	PRESSURE	AP	$\frac{t \pm \Delta t}{t \pm \Delta t}$	$\log \frac{t \pm \Delta t}{\Delta t}$
FIRST CLOSED-IN - CONTINUED					
16	20.0	2486.1	31.9	12.2	0.412
17	22.0	2486.2	32.0	13.0	0.386
18	24.0	2486.5	32.3	13.6	0.364
19	26.0	2486.5	32.3	14.3	0.345
20	28.0	2486.5	32.3	14.8	0.328
21	30.0	2486.5	32.3	15.4	0.312
22	35.0	2486.5	32.3	16.6	0.279
23	40.0	2486.5	32.3	17.6	0.253
24	45.0	2486.5	32.3	18.6	0.231
25	50.0	2486.5	32.3	19.4	0.212
26	55.0	2486.5	32.3	20.1	0.197
27	60.0	2486.5	32.3	20.7	0.184
28	70.0	2487.0	32.7	21.8	0.162
29	80.0	2487.0	32.7	22.6	0.144
D 30	88.4	2487.2	32.9	23.3	0.133

REMARKS:

RELEASED

TICKET NO. 816158

DEC 13 1991

O.D.

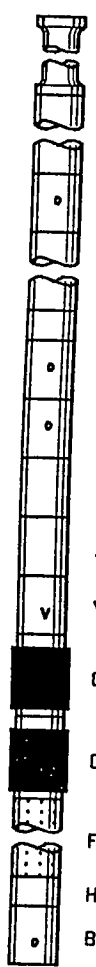
I.D.

LENGTH

DEPTH

FROM CONFIDENTIAL

		O.D.	I.D.	LENGTH	DEPTH
1	DRILL PIPE.....	4.500	3.826	5559.0	
3	DRILL COLLARS.....	6.000	2.250	527.0	
50	IMPACT REVERSING SUB.....	6.000	2.750	1.0	6086.5
3	DRILL COLLARS.....	6.000	2.250	91.0	
5	CROSSOVER.....	6.000	2.250	1.0	
12	DUAL CIP VALVE.....	5.000	0.870	6.0	
60	HYDROSPRING TESTER.....	5.000	0.750	5.0	6189.0
80	AP RUNNING CASE.....	5.000	2.250	4.0	6191.0
15	JAR.....	5.000	1.750	5.0	
16	VR SAFETY JOINT.....	5.000	1.000	3.0	
70	OPEN HOLE PACKER.....	6.750	1.530	6.0	6206.0
70	OPEN HOLE PACKER.....	6.750	1.530	6.0	6212.0
20	FLUSH JOINT ANCHOR.....	5.000	2.370	37.0	
83	HT-500 TEMPERATURE CASE.....	5.000	2.650	2.0	6252.0
81	BLANKED-OFF RUNNING CASE.....	5.000		4.0	6254.0
TOTAL DEPTH					6257.0



# TEMPERATURE RECORDER CHART



10° each circle

Indicated Flow Capacity	$kh = \frac{.001637 Q_g T}{m}$	ORIGINAL	md-ft
Average Effective Permeability	$k' = \frac{kh}{h}$		md
Skin Factor	$S = 1.151 \left[ \frac{m(P^*) - m(P_i)}{m} \cdot \text{LOG} \left( \frac{k (v/60)}{\phi \mu c_f r_w^2} \right) + 3.23 \right]$		
Damage Ratio	$DR = \frac{m(P^*) - m(P_i)}{m(P^*) - m(P_i) - 0.87 \cdot mS}$		
Indicated Flow Rate (Maximum)	$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_i)}$		MCFD
Indicated Flow Rate (Minimum)	$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_i)}}$		MCFD
Approx. Radius of Investigation	$r_i = 0.032 \sqrt{\frac{k(v/60)}{\phi \mu c_f}}$		ft

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