

CRUDE OIL TESTING, INC.

DATE 10/31/83

TEST TICKET NO. 3699

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 24 Twp. 10S Range 31W Co. Thomas State KS
 Well Name & Number: #1 Robben Code E6

ENGINEERING	Elevation	2901 KB	Drill Pipe Length	3002	ID 3.8 "
DATA	Mud Viscosity	43	Weight Pipe Length	817	ID 2.76"
	Mud Weight	9.5	Drill Collar Length	184	ID 2.25"
	Water Loss	10	Top Packer Depth		
	Type of Mud Chemical		Bottom Packer Depth	4020	
	Anchor Length	20	Tool Joint Size	4.5	FH
	Hole Size	7 7/8	Test Tool Size	5 1/2	
	Casing Size	8 5/8	Packer Size	6 3/4	
	Surface Choke	3/4	Reversed Out	No	
	Bottom Choke	3/4	Recorder #	11086	
	Extra Equipment		None		

REMARKS DST #1
 Ran 1 conventional packer.

FORMATION	Lansing	Zone E	Test Type	Conventional
	Interval	4020 To 4040	Total Depth	4040
	Open	30	Shut In	30
	Packer(s) Set	03:58PM	Started Off Bottom	06:00PM
	Blow 1st Opening Weak blow died 16 min.			
	2nd Opening No blow.			

RECOVERY	Total Feet	10
	Recovered	10 feet of Rotary mud (light scum of oil)

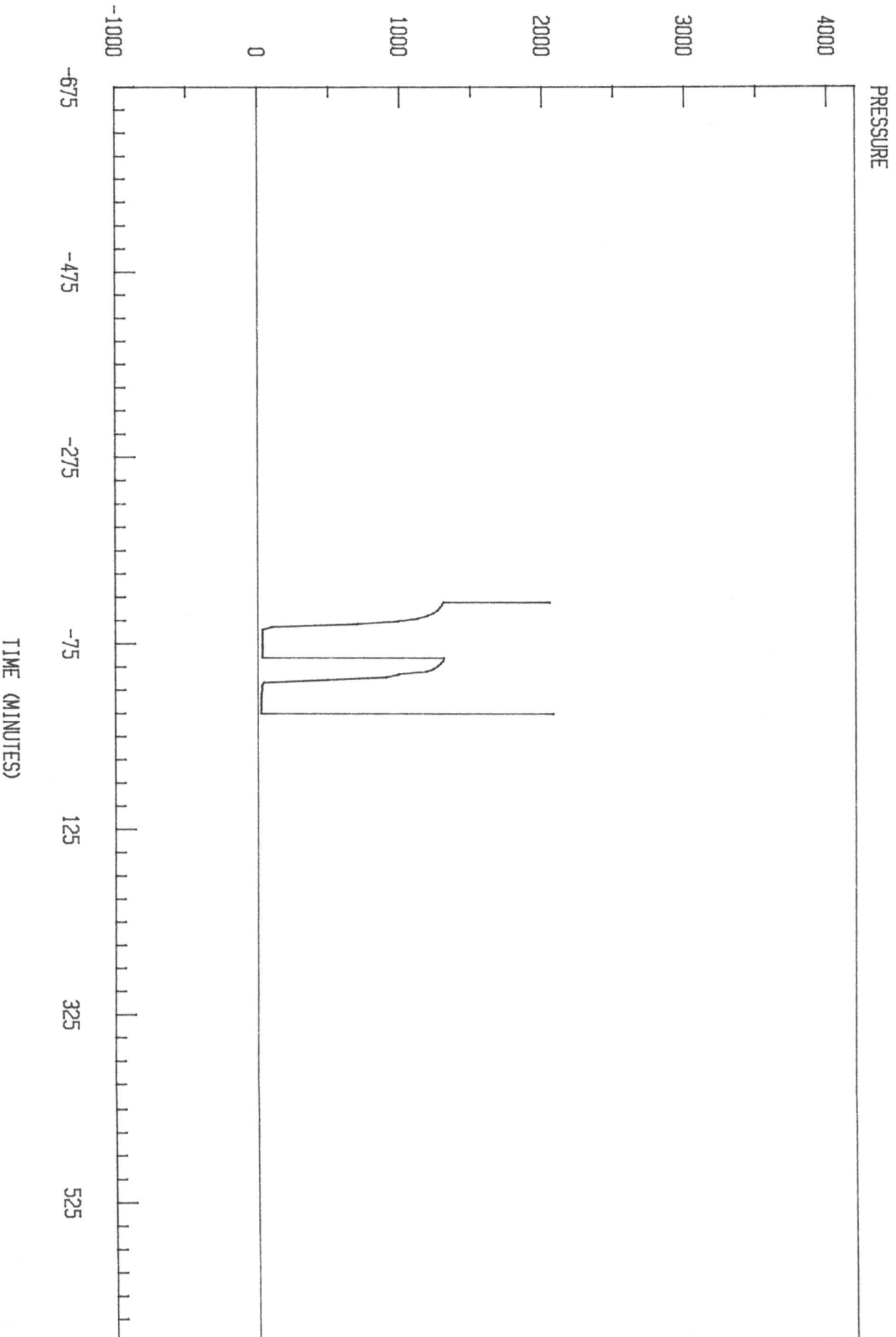
CALCULATED	Gas	Oil	.1	Water	.2	Mud	9.7
RECOVERY	Gravity (Oil)			Test Water Chlorides	4,000	PPM	
	Test Area Temperature	122F	Mud System Chlorides	4,000	PPM		

	FIELD READING	OFFICE READING	
PRESSURE	(A) Initial Hydrostatic Mud	2065	2074 PSI
	(B) First Initial Flow Pressure	21	21 PSI
	(C) First Final Flow Pressure	32	29 PSI
	(D) Initial Closed-In Pressure	1292	1306 PSI
	(E) Second Initial Flow Pressure	32	32 PSI
	(F) Second Final Flow Pressure	32	33 PSI
	(G) Final Closed-In Pressure	1292	1302 PSI
	(H) Final Hydrostatic Mud	2043	2050 PSI

CRUDE OIL TESTING INC Test 3699 DST 1

FOR: A. Scott Ritchie

10/31/83



PRESSURE BREAKDOWN

TEST TICKET NO. 3699

DST Number: 1 Recorder Number: 11086 Clock Number: 19124

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins. Press.		Mins. Press.		Mins. Press.		Mins. Press.	
0	20	0	29	0	31	0	32
3	20	3	39	3	31	3	98
6	21	6	488	6	31	6	693
9	21	9	901	9	32	9	980
12	21	12	987	12	32	12	1119
15	21	15	1184	15	32	15	1189
18	22	18	1233	18	32	18	1234
21	23	21	1262	21	32	21	1262
24	27	24	1285	24	32	24	1277
27	29	27	1301	27	32	27	1293
30	29	30	1306	30	32	30	1301

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 1

TEST TICKET NO. 3699

WELL NAME: #1 Robben

WELL LOCATION: 24-10S-31W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3002.00	3.826	4.50
3	Weight Pipe	817.00	2.760	4.50
4	Drill Collar - 6"	184.00	2.250	6.00
8	Circulating Sub	1.00	3.000	5.00
9	Shut-In Tool	5.45	0.870	5.00
10	Hydraulic Tool	5.60	1.000	5.00
14	Packer	5.35	1.530	6.75
6	Anchor	16.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4039.40		

CALCULATED RECOVERY ANALYSIS

DST Number: 1

TEST TICKET NO. 3699

Sample #	Total Feet	***** Gas %	***** Feet	***** Oil %	***** Feet	***** Mud %	***** Feet
1	5	0.00	0.00	1.00	0.05	97.00	4.85
2	5	0.00	0.00	1.00	0.05	97.00	4.85
TOTAL	<u>10</u>	0.00	<u>0.00</u>	1.00	<u>0.10</u>	97.00	<u>9.70</u>

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	2.00	0.10			
2	2.00	0.10	4,000		
TOTAL	2.00	<u>0.20</u>			

CRUDE OIL TESTING, INC.

DATE 11/1/83

TEST TICKET NO. 3713

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 24 Twp. 10S Range 31W Co. Thomas State KS
 Well Name & Number: #1 Robben Code E6

ENGINEERING DATA	Elevation	2901 KB	Drill Pipe Length	3099	ID 3.8 "
	Mud Viscosity	50	Weight Pipe Length	786	ID 2.76"
	Mud Weight	9.5	Drill Collar Length	184	ID 2.25"
	Water Loss	10.4	Top Packer Depth	4085	
	Type of Mud Chemical		Bottom Packer Depth	4090	
	Anchor Length	60	Tool Joint Size	4.5	FH
	Hole Size	7 7/8	Test Tool Size	5 1/2	
	Casing Size	8 5/8	Packer Size	6 3/4	
	Surface Choke	3/4	Reversed Out	No	
	Bottom Choke	3/4	Recorder #	11086	
	Extra Equipment		None		

REMARKS DST #2
 Ran two packers 5 ft. apart.
 Charts indicate 2 zones on shutins.

FORMATION	Lansing	Zone H & I	Test Type	Conventional
	Interval 4090	To 4150	Total Depth	4150
	Open 30	Shut In 45	Open 30	Shut In 45
	Packer(s) Set	01:58PM	Started Off Bottom	04:30PM
	Blow 1st Opening	Weak blow 1-1/2 in.		
	2nd Opening	Weak blow 1-1/2 in.		

RECOVERY Total Feet 270
 Recovered 270 feet of Oil cut watery mud

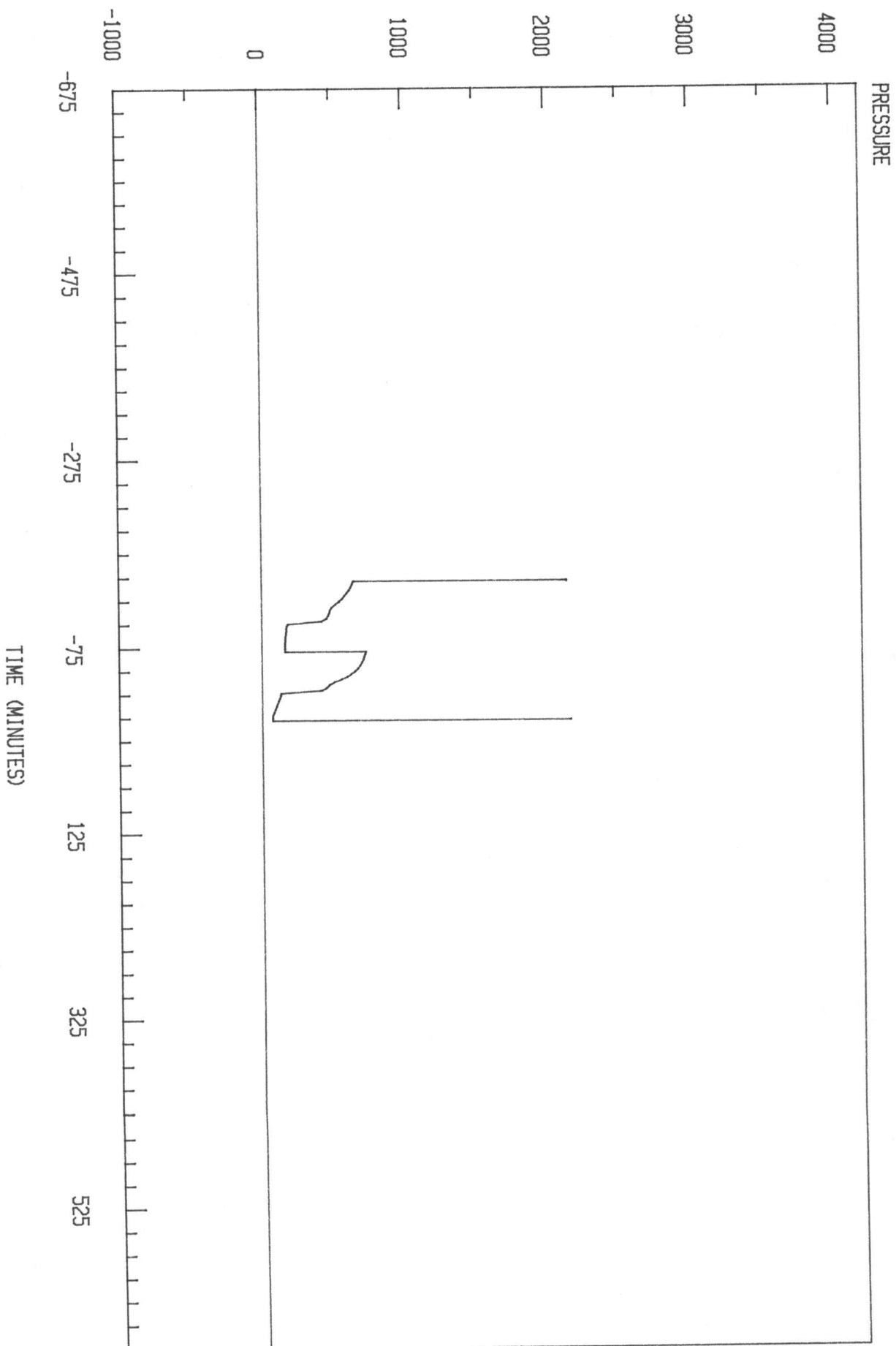
CALCULATED RECOVERY	Gas	36	Oil	15	Water	72	Mud	147
	Gravity (Oil)				Test Water Chlorides	28,000	PPM	
	Test Area Temperature	125F	Mud System Chlorides	4,000	PPM			

		FIELD READING	OFFICE READING	
PRESSURE	(A) Initial Hydrostatic Mud	2185	2157	PSI
	(B) First Initial Flow Pressure	65	71	PSI
	(C) First Final Flow Pressure	131	133	PSI
	(D) Initial Closed-In Pressure	722	728	PSI
	(E) Second Initial Flow Pressure	163	162	PSI
	(F) Second Final Flow Pressure	174	183	PSI
	(G) Final Closed-In Pressure	645	645	PSI
	(H) Final Hydrostatic Mud	2163	2135	PSI

CRUDE OIL TESTING INC Test 3713 DST 2

FOR: A. Scott Ritchie

11/01/83



PRESSURE BREAKDOWN

TEST TICKET NO. 3713

DST Number: 2 Recorder Number: 11086 Clock Number: 19124

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins. Press.		Mins. Press.		Mins. Press.		Mins. Press.	
0	71	0	132	0	162	0	183
3	71	3	418	3	162	3	420
6	74	6	451	6	162	6	453
9	82	9	470	9	162	9	464
12	91	12	503	12	164	12	473
15	99	15	554	15	165	15	478
18	107	18	597	18	169	18	491
21	115	21	625	21	172	21	515
24	122	24	653	24	173	24	541
27	130	27	672	27	176	27	564
29	132	30	687	29	183	30	580
		33	698			33	597
		36	709			36	611
		39	716			39	623
		42	723			42	633
		45	728			45	641
						46	645

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 2

TEST TICKET NO. 3713

WELL NAME: #1 Robben

WELL LOCATION: 24-10S-31W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3099.00	3.826	4.50
3	Weight Pipe	786.00	2.760	4.50
4	Drill Collar - 6"	184.00	2.250	6.00
8	Circulating Sub	1.00	3.000	5.00
9	Shut-In Tool	5.45	0.870	5.00
10	Hydraulic Tool	5.60	1.000	5.00
14	Packer	5.35	1.530	6.75
14	Packer	5.35	1.530	6.75
6	Anchor	54.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4148.75		

CALCULATED RECOVERY ANALYSIS

DST Number: 2

TEST TICKET NO. 3713

Sample #	Total Feet	***** Gas %	***** Feet	***** Oil %	***** Feet	***** Mud %	***** Feet
1	30	10.00	3.00	10.00	3.00	70.00	21.00
2	60	25.00	15.00	5.00	3.00	50.00	30.00
3	60	15.00	9.00	5.00	3.00	50.00	30.00
4	60	10.00	6.00	5.00	3.00	50.00	30.00
5	60	5.00	3.00	5.00	3.00	60.00	36.00
TOTAL	<u>270</u>	13.33	<u>36.00</u>	5.56	<u>15.00</u>	54.44	<u>147.00</u>

Sample #	***** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	10.00	3.00	28,000		
2	20.00	12.00			
3	30.00	18.00			
4	35.00	21.00			
5	30.00	18.00			
TOTAL	26.67	<u>72.00</u>			

CRUDE OIL TESTING, INC.

DATE 11/2/83

TEST TICKET NO. 3714

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 24 Twp. 10S Range 31W Co. Thomas State KS
 Well Name & Number: #1 Robben Code E6

ENGINEERING	Elevation	2901 KB	Drill Pipe Length	3143	ID 3.8 "
DATA	Mud Viscosity	50	Weight Pipe Length	817	ID 2.76"
	Mud Weight	9.5	Drill Collar Length	184	ID 2.25"
	Water Loss	10.4	Top Packer Depth		
	Type of Mud Chemical		Bottom Packer Depth	4161	
	Anchor Length	48	Tool Joint Size	4.5	FH
	Hole Size	7 7/8	Test Tool Size	5 1/2	
	Casing Size	8 5/8	Packer Size	6 3/4	
	Surface Choke	3/4	Reversed Out	No	
	Bottom Choke	3/4	Recorder #	11086	
	Extra Equipment		None		

REMARKS DST #3
 Ran one conventional packer.

FORMATION Lansing Zone J & K Test Type Conventional
 Interval 4161 To 4209 Total Depth 4209
 Open 30 Shut In 45 Open 30 Shut In 45
 Packer(s) Set 08:58AM Started Off Bottom 11:30AM
 Blow 1st Opening Fair blow 2-1/2 in. in bucket.
 2nd Opening Fair blow 2-1/2 in. in bucket.

RECOVERY Total Feet 370
 Recovered 370 feet of Muddy water (few oil spots in tool)

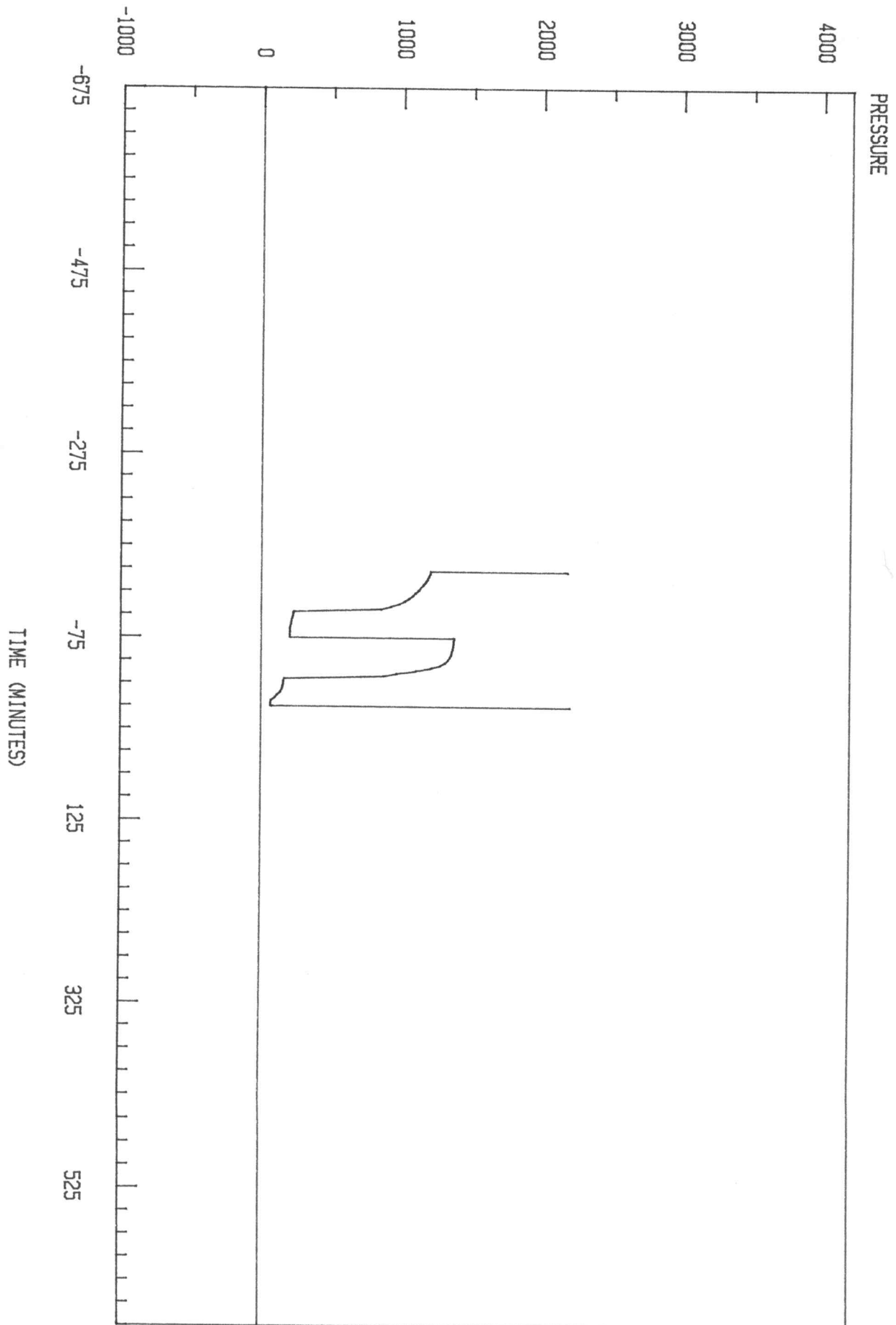
CALCULATED Gas Oil Water 215.5 Mud 154.5
 RECOVERY Gravity (Oil) Test Water Chlorides 40,000 PPM
 Test Area Temperature 126F Mud System Chlorides 4,000 PPM

		FIELD READING	OFFICE READING	
PRESSURE	(A) Initial Hydrostatic Mud	2229	2202	PSI
	(B) First Initial Flow Pressure	65	69	PSI
	(C) First Final Flow Pressure	163	168	PSI
	(D) Initial Closed-In Pressure	1368	1378	PSI
	(E) Second Initial Flow Pressure	196	204	PSI
	(F) Second Final Flow Pressure	229	234	PSI
	(G) Final Closed-In Pressure	1205	1209	PSI
	(H) Final Hydrostatic Mud	2207	2183	PSI

CRUDE OIL TESTING INC Test 3714 DST 3

FOR: A. Scott Ritchie

11/02/83



PRESSURE BREAKDOWN

TEST TICKET NO. 3714

DST Number: 3 Recorder Number: 11086 Clock Number: 19124

First Flow Pressure	Initial Shut-In	Second Flow Pressure	Final Shut-In
Mins. Press.	Mins. Press.	Mins. Press.	Mins. Press.
0 69	0 167	0 204	0 233
3 69	3 875	3 204	3 855
6 74	6 969	6 204	6 929
9 99	9 1103	9 206	9 985
12 116	12 1213	12 209	12 1025
15 139	15 1280	15 214	15 1056
18 150	18 1312	18 217	18 1083
21 155	21 1333	21 222	21 1101
24 159	24 1345	24 228	24 1124
27 162	27 1356	27 232	27 1138
30 167	30 1361	28 233	30 1157
	33 1367		33 1173
	36 1371		36 1185
	39 1373		39 1196
	42 1375		42 1206
	45 1378		45 1208

EQUIPMENT DATA
TOOL SEQUENCE REPORT

DST Number: 3

TEST TICKET NO. 3714

WELL NAME: #1 Robben

WELL LOCATION: 24-10S-31W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3143.00	3.826	4.50
3	Weight Pipe	817.00	2.760	4.50
4	Drill Collar - 6"	184.00	2.250	6.00
8	Circulating Sub	1.00	3.000	5.00
9	Shut-In Tool	5.45	0.870	5.00
10	Hydraulic Tool	5.60	1.000	5.00
14	Packer	5.35	1.530	6.75
6	Anchor	44.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4208.40		

CALCULATED RECOVERY ANALYSIS

DST Number: 3

TEST TICKET NO. 3714

Sample #	Total Feet	***** Gas %	***** Feet	***** Oil %	***** Feet	***** Mud %	***** Feet
1	10	0.00	0.00	0.00	0.00	75.00	7.50
2	60	0.00	0.00	0.00	0.00	81.00	48.60
3	60	0.00	0.00	0.00	0.00	55.00	33.00
4	60	0.00	0.00	0.00	0.00	44.00	26.40
5	60	0.00	0.00	0.00	0.00	35.00	21.00
6	60	0.00	0.00	0.00	0.00	15.00	9.00
7	60	0.00	0.00	0.00	0.00	15.00	9.00
TOTAL	<u>370</u>	0.00	<u>0.00</u>	0.00	<u>0.00</u>	41.76	<u>154.50</u>

Sample #	***** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	25.00	2.50			
2	19.00	11.40			
3	45.00	27.00			
4	56.00	33.60			
5	65.00	39.00			
6	85.00	51.00	40,000		
7	85.00	51.00	40,000		
TOTAL	58.24	<u>215.50</u>			

CRUDE OIL TESTING, INC.

DATE 11/3/83

TEST TICKET NO. 3715

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 24 Twp. 10S Range 31W Co. Thomas State KS
 Well Name & Number: #1 Robben Code E6

ENGINEERING DATA	Elevation	2901 KB	Drill Pipe Length	3243	ID 3.8 "
	Mud Viscosity	50	Weight Pipe Length	756	ID 2.76"
	Mud Weight	9.7	Drill Collar Length	184	ID 2.25"
	Water Loss	9.6	Top Packer Depth	4199	
	Type of Mud Chemical		Bottom Packer Depth	4204	
	Anchor Length	86	Tool Joint Size	4.5	FH
	Hole Size	7 7/8	Test Tool Size	5 1/2	
	Casing Size	8 5/8	Packer Size	6 3/4	
	Surface Choke	3/4	Reversed Out	No	
	Bottom Choke	3/4	Recorder #	11086	
	Extra Equipment		None		

REMARKS DST #4
 Ran two packers.

FORMATION	KC-L Marm.	Zone L	Test Type	Conventional
	Interval	4204 To 4290	Total Depth	4290
	Open	30	Shut In	45
	Packer(s) Set	06:13AM	Started Off Bottom	08:45AM
	Blow 1st Opening	Weak blow top of bucket (decreasing).		
	2nd Opening Weak blow top of bucket (steady).			

RECOVERY Total Feet 180
 Recovered 30 feet of Gas in pipe
 Recovered 180 feet of Oil cut watery rotary mud (gassy)

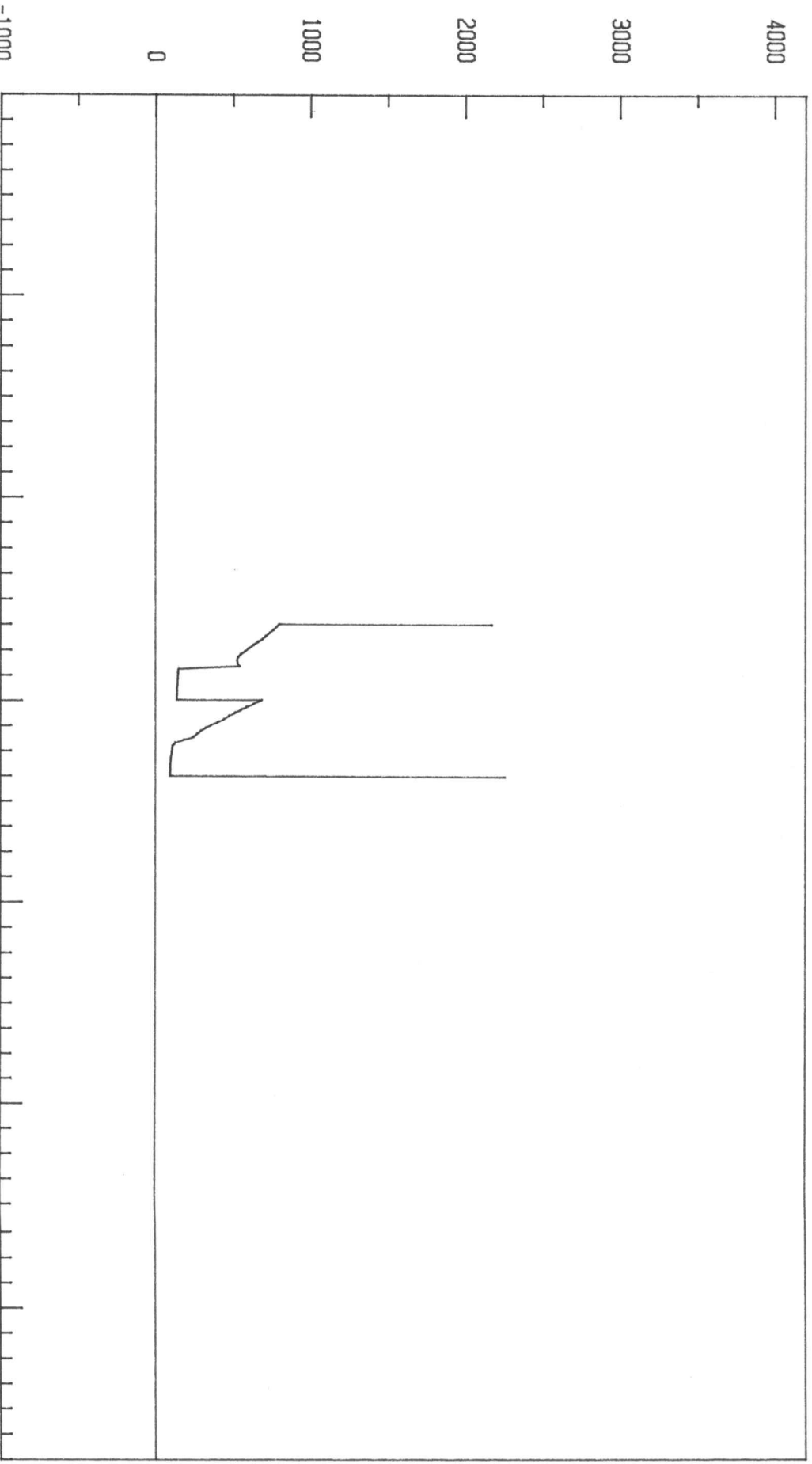
CALCULATED RECOVERY	Gas	21	Oil	10.8	Water	25.2	Mud	123
	Gravity (Oil)				Test Water Chlorides	20,000	PPM	
	Test Area Temperature	126F	Mud System Chlorides	4,000	PPM			

		FIELD READING	OFFICE READING	
PRESSURE	(A) Initial Hydrostatic Mud	2262	2256	PSI
	(B) First Initial Flow Pressure	98	95	PSI
	(C) First Final Flow Pressure	109	113	PSI
	(D) Initial Closed-In Pressure	689	688	PSI
	(E) Second Initial Flow Pressure	141	138	PSI
	(F) Second Final Flow Pressure	141	150	PSI
	(G) Final Closed-In Pressure	799	801	PSI
	(H) Final Hydrostatic Mud	2240	2174	PSI

CRUDE OIL TESTING INC Test 3715 DST 4

FOR: A. Scott Ritchie 11/03/83

PRESSURE



PRESSURE BREAKDOWN

TEST TICKET NO. 3715

DST Number: 4 Recorder Number: 11086 Clock Number: 19124

First Flow Pressure	Initial Shut-In	Second Flow Pressure	Final Shut-In
Mins. Press.	Mins. Press.	Mins. Press.	Mins. Press.
0 95	0 113	0 138	0 150
3 95	3 128	3 138	3 544
6 96	6 184	6 139	6 530
9 96	9 247	9 140	9 527
12 97	12 272	12 140	12 533
15 99	15 295	15 142	15 552
18 100	18 326	18 143	18 579
21 104	21 362	21 144	21 604
24 106	24 404	24 145	24 633
27 110	27 443	27 147	27 662
30 113	30 477	30 150	30 693
	33 515		33 715
	36 553		36 739
	39 591		39 763
	42 635		42 784
	45 674		45 800
	46 687		

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 4

TEST TICKET NO. 3715

WELL NAME: #1 Robben

WELL LOCATION: 24-10S-31W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3243.00	3.826	4.50
3	Weight Pipe	756.00	2.760	4.50
4	Drill Collar - 6"	184.00	2.250	6.00
8	Circulating Sub	1.00	3.000	5.00
9	Shut-In Tool	5.45	0.870	5.00
10	Hydraulic Tool	5.60	1.000	5.00
14	Packer	5.35	1.530	6.75
14	Packer	5.35	1.530	6.75
6	Anchor	82.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4290.75		

CALCULATED RECOVERY ANALYSIS

DST Number: 4

TEST TICKET NO. 3715

Sample #	Total Feet	***** Gas %	***** Feet	***** Oil %	***** Feet	***** Mud %	***** Feet
1	60	5.00	3.00	5.00	3.00	85.00	51.00
2	60	25.00	15.00	8.00	4.80	50.00	30.00
3	60	5.00	3.00	5.00	3.00	70.00	42.00
TOTAL	<u>180</u>	11.67	<u>21.00</u>	6.00	<u>10.80</u>	68.33	<u>123.00</u>

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	5.00	3.00	20,000		
2	17.00	10.20			
3	20.00	12.00			
TOTAL	14.00	<u>25.20</u>			

CRUDE OIL TESTING, INC.

DATE 11/4/83

TEST TICKET NO. 3716

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 24 Twp. 10S Range 31W Co. Thomas State KS
 Well Name & Number: #1 Robben Code E6

ENGINEERING DATA	Elevation	2901 KB	Drill Pipe Length	3318	ID 3.8 "
	Mud Viscosity	46	Weight Pipe Length	817	ID 2.76"
	Mud Weight	9.7	Drill Collar Length	184	ID 2.25"
	Water Loss	8.8	Top Packer Depth	4335	
	Type of Mud Chemical		Bottom Packer Depth	4340	
	Anchor Length	50	Tool Joint Size	4.5	FH
	Hole Size	7 7/8	Test Tool Size	5 1/2	
	Casing Size	8 5/8	Packer Size	6 3/4	
	Surface Choke	3/4	Reversed Out	No	
	Bottom Choke	3/4	Recorder #	11086	
	Extra Equipment		None		

REMARKS DST #5
 Ran 2 packers 5 ft. apart.

FORMATION	Pawnee	Zone	Test Type	Conventional
	Interval 4340	To 4390	Total Depth	4390
	Open 30	Shut In 45	Open 30	Shut In 45
	Packer(s) Set	04:13AM	Started Off Bottom	06:45AM
	Blow 1st Opening Weak blow 2 in. in bucket (steady)			
	2nd Opening Weak blow 2 in. in bucket (steady)			

RECOVERY Total Feet 370
 Recovered 370 feet of Muddy water

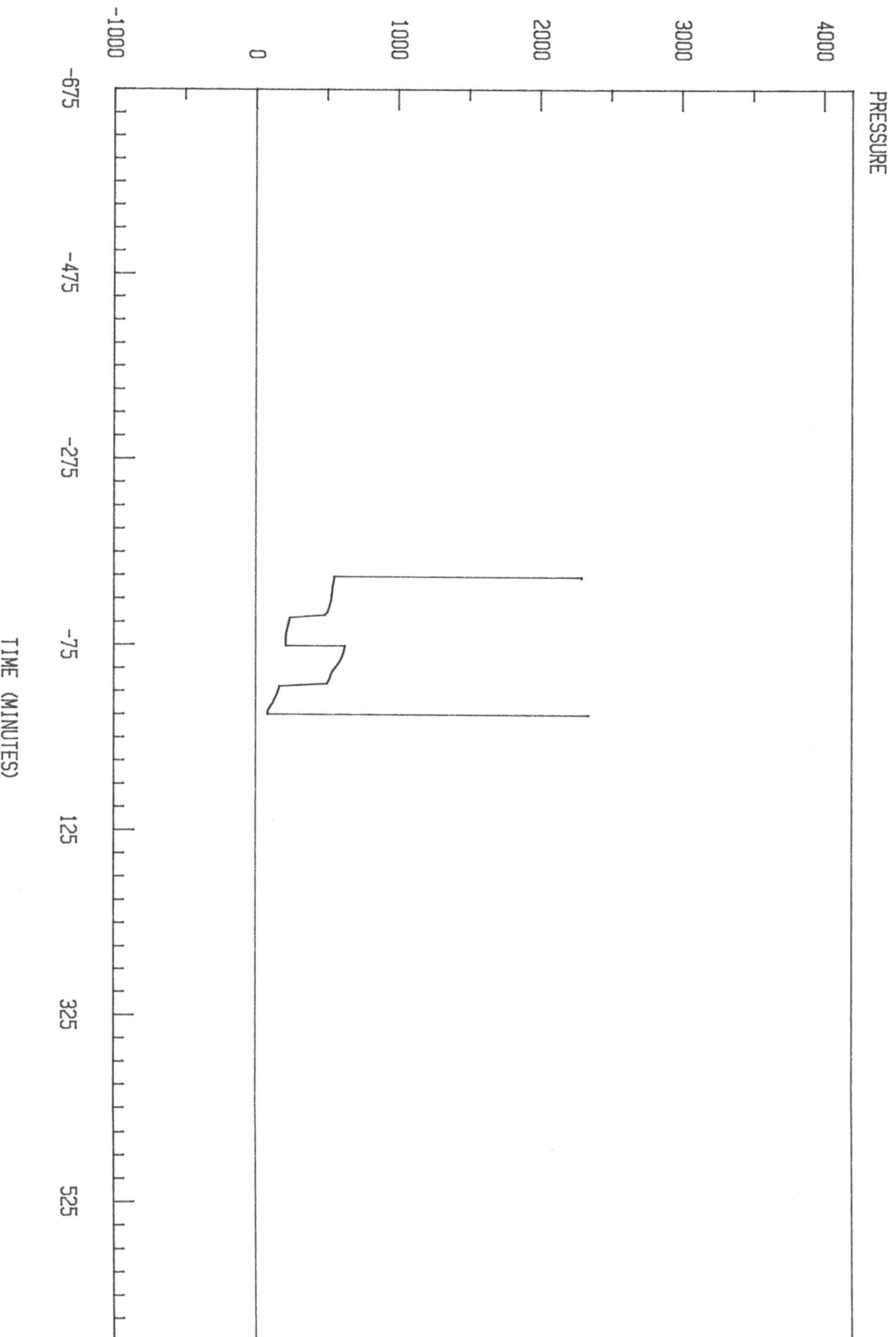
CALCULATED RECOVERY	Gas	Oil	Water 234.4	Mud 135.6
	Gravity (Oil)		Test Water Chlorides	36,000 PPM
	Test Area Temperature	128F	Mud System Chlorides	5,000 PPM

		FIELD READING	OFFICE READING	
PRESSURE	(A) Initial Hydrostatic Mud	2382	2340	PSI
	(B) First Initial Flow Pressure	76	80	PSI
	(C) First Final Flow Pressure	163	165	PSI
	(D) Initial Closed-In Pressure	623	626	PSI
	(E) Second Initial Flow Pressure	207	209	PSI
	(F) Second Final Flow Pressure	240	239	PSI
	(G) Final Closed-In Pressure	546	550	PSI
	(H) Final Hydrostatic Mud	2360	2294	PSI

CRUDE OIL TESTING INC Test 3716 DST 5

FOR: A. Scott Ritchie

11/04/83



PRESSURE BREAKDOWN

TEST TICKET NO. 3716

DST Number: 5

Recorder Number: 11086

Clock Number: 19124

First Flow
Pressure

Initial
Shut-In

Second Flow
Pressure

Final
Shut-In

Mins. Press.

Mins. Press.

Mins. Press.

Mins. Press.

0	80
3	82
6	92
9	104
12	118
15	128
18	138
21	147
24	154
27	161
30	164

0	164
3	498
6	510
9	519
12	524
15	532
18	544
21	560
24	575
27	588
30	599
33	606
36	613
39	620
42	623
44	625

0	208
3	208
6	208
9	209
12	211
15	215
18	220
21	225
24	230
27	234
30	239

0	239
3	484
6	501
9	509
12	516
15	521
18	525
21	529
24	530
27	533
30	535
33	538
36	542
39	545
42	548
45	549

EQUIPMENT DATA
TOOL SEQUENCE REPORT

DST Number: 5

WELL NAME: #1 Robben

TEST TICKET NO. 3716

WELL LOCATION: 24-10S-31W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3318.00	3.826	4.50
3	Weight Pipe	817.00	2.760	4.50
4	Drill Collar - 6"	184.00	2.250	6.00
8	Circulating Sub	1.00	3.000	5.00
9	Shut-In Tool	5.45	0.870	5.00
10	Hydraulic Tool	5.60	1.000	5.00
14	Packer	5.35	1.530	6.75
14	Packer	5.35	1.530	6.75
6	Anchor	46.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4390.75		

CALCULATED RECOVERY ANALYSIS

DST Number: 5

TEST TICKET NO. 3716

Sample #	Total Feet	***** Gas %	***** Feet	***** Oil %	***** Feet	***** Mud %	***** Feet
1	70	0.00	0.00	0.00	0.00	60.00	42.00
2	60	0.00	0.00	0.00	0.00	38.00	22.80
3	60	0.00	0.00	0.00	0.00	35.00	21.00
4	60	0.00	0.00	0.00	0.00	30.00	18.00
5	60	0.00	0.00	0.00	0.00	28.00	16.80
6	60	0.00	0.00	0.00	0.00	25.00	15.00
TOTAL	<u>370</u>	0.00	<u>0.00</u>	0.00	<u>0.00</u>	36.65	<u>135.60</u>

Sample #	***** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	40.00	28.00			
2	62.00	37.20			
3	65.00	39.00			
4	70.00	42.00	34,000		
5	72.00	43.20			
6	75.00	45.00	36,000		
TOTAL	63.35	<u>234.40</u>			

CRUDE OIL TESTING, INC.

DATE 11/5/83

TEST TICKET NO. 3717

Company: A. Scott Ritchie

Company Address: 125 N. Market Suite 950 Wichita KS 67202

Location: Sec. 24 Twp. 10S Range 31W Co. Thomas State KS

Well Name & Number: #1 Robben Code E6

ENGINEERING	Elevation	2901 KB	Drill Pipe Length	3461	ID 3.8 "
DATA	Mud Viscosity	53	Weight Pipe Length	785	ID 2.76"
	Mud Weight	9.8	Drill Collar Length	184	ID 2.25"
	Water Loss	8.4	Top Packer Depth	4446	
	Type of Mud Chemical		Bottom Packer Depth	4451	
	Anchor Length	84	Tool Joint Size	4.5	FH
	Hole Size	7 7/8	Test Tool Size	5 1/2	
	Casing Size	8 5/8	Packer Size	6 3/4	
	Surface Choke	3/4	Reversed Out	No	
	Bottom Choke	3/4	Recorder #	11086	
	Extra Equipment		None		

REMARKS DST #6
Ran 2 packers 5 ft. apart.
Packers failed to hold (tried to open 3 times) Misrun.

FORMATION	Cherokee	Zone Johnson	Test Type Conventional
	Interval 4451	To 4535	Total Depth 4535
	Open 0	Shut In 0	Open 0 Shut In 0
	Packer(s) Set	06:00AM	Started Off Bottom 06:10AM
	Blow 1st Opening	Strong	
	2nd Opening	0	

RECOVERY Total Feet 270
Recovered 270 feet of Rotary mud

CALCULATED	Gas	Oil	Water	Mud	270
RECOVERY	Gravity (Oil)		Test Water Chlorides		PPM
	Test Area Temperature	118F	Mud System Chlorides	3,000	PPM

	FIELD READING	OFFICE READING	
PRESSURE	(A) Initial Hydrostatic Mud	2436	PSI
	(B) First Initial Flow Pressure		PSI
	(C) First Final Flow Pressure		PSI
	(D) Initial Closed-In Pressure		PSI
	(E) Second Initial Flow Pressure		PSI
	(F) Second Final Flow Pressure		PSI
	(G) Final Closed-In Pressure		PSI
	(H) Final Hydrostatic Mud	2393	PSI

EQUIPMENT DATA TOOL SEQUENCE REPORT

DST Number: 6

WELL NAME: #1 Robben

TEST TICKET NO. 3717

WELL LOCATION: 24-10S-31W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3461.00	3.826	4.50
3	Weight Pipe	785.00	2.760	4.50
4	Drill Collar - 6"	184.00	2.250	6.00
8	Circulating Sub	1.00	3.000	5.00
9	Shut-In Tool	5.45	0.870	5.00
10	Hydraulic Tool	5.60	1.000	5.00
14	Packer	5.35	1.530	6.75
14	Packer	5.35	1.530	6.75
6	Anchor	80.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4535.75		

CRUDE OIL TESTING, INC.

DATE 11/5/83

TEST TICKET NO. 3718

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 24 Twp. 10S Range 31W Co. Thomas State KS
 Well Name & Number: #1 Robben Code E6

ENGINEERING DATA	Elevation 2901 KB	Drill Pipe Length 3425	ID 3.8 "
	Mud Viscosity 53	Weight Pipe Length 785	ID 2.76"
	Mud Weight 9.8	Drill Collar Length 184	ID 2.25"
	Water Loss 8.4	Top Packer Depth 4410	
	Type of Mud Chemical	Bottom Packer Depth 4415	
	Anchor Length 120	Tool Joint Size 4.5	FH
	Hole Size 7 7/8	Test Tool Size 5 1/2	
	Casing Size 8 5/8	Packer Size 6 3/4	
	Surface Choke 3/4	Reversed Out No	
	Bottom Choke 3/4	Recorder # 11086	
	Extra Equipment	None	

REMARKS DST #7 Ran 2 packers 5 ft. apart.
 Lost mud when tool opened - tried 2nd time
 and mud stayed. Weak 1in. blow on 1st shut-
 in. 2in. blow on 2nd shutin.

FORMATION	Cherokee Zone Johnson	Test Type Conventional
	Interval 4415 To 4535	Total Depth 4535
	Open 30 Shut In 30	Open 30 Shut In 30
	Packer(s) Set 10:58AM	Started Off Bottom 01:00PM
	Blow 1st Opening Strong blow off bottom in 15 min.	
	2nd Opening Strong blow off bottom in 17 min.	

RECOVERY Total Feet 620
 Recovered 620 feet of Gassy oil cut mud
 Recovered 120 feet of Gas in pipe

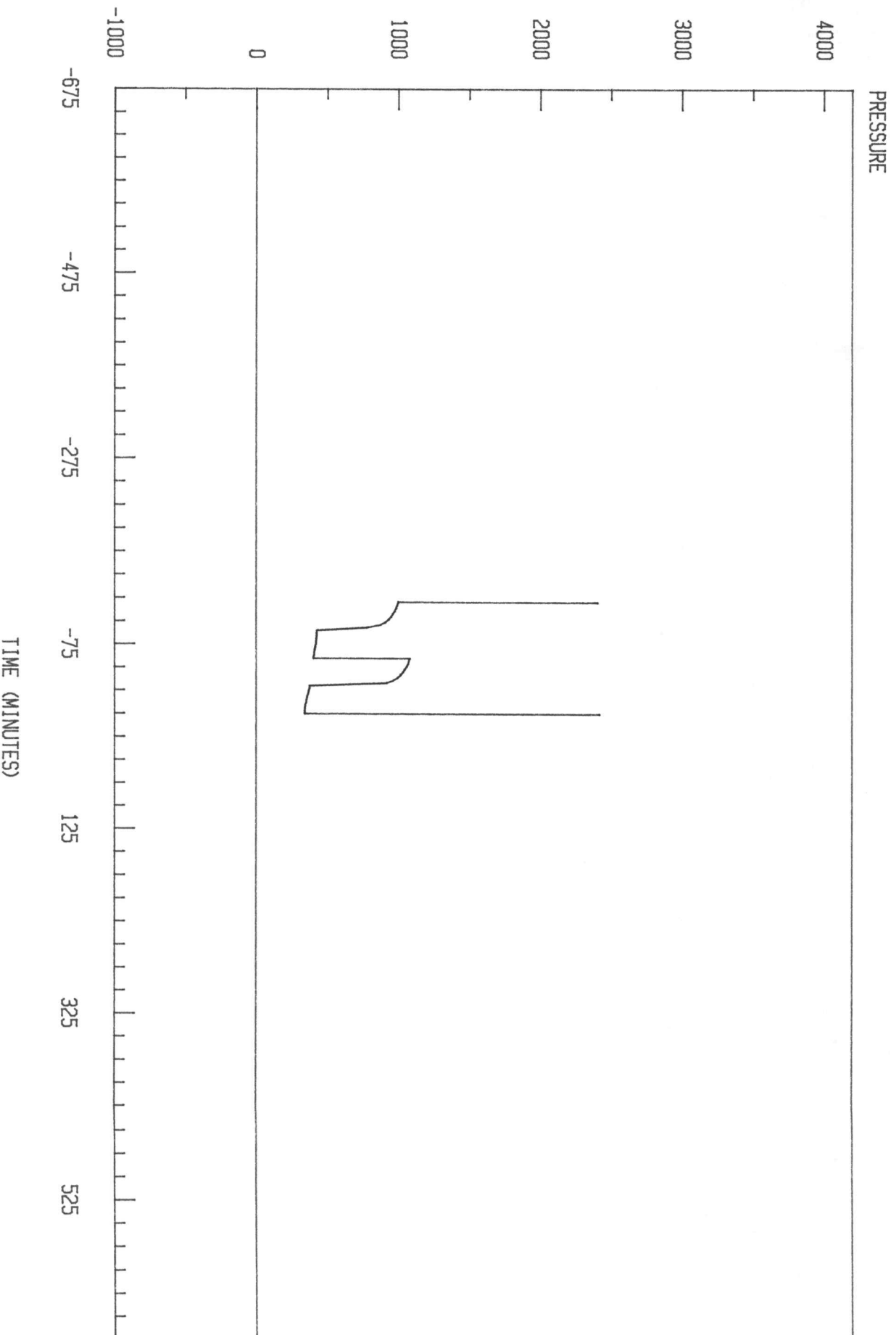
CALCULATED RECOVERY	Gas 355.88	Oil 140.74	Water 110.98	Mud 12.4
	Gravity (Oil)		Test Water Chlorides	PPM
	Test Area Temperature 136F	Mud System Chlorides	3,000	PPM

	FIELD READING	OFFICE READING	
PRESSURE (A) Initial Hydrostatic Mud	2458	2415	PSI
(B) First Initial Flow Pressure	327	337	PSI
(C) First Final Flow Pressure	371	373	PSI
(D) Initial Closed-In Pressure	1085	1080	PSI
(E) Second Initial Flow Pressure	393	400	PSI
(F) Second Final Flow Pressure	425	424	PSI
(G) Final Closed-In Pressure	986	999	PSI
(H) Final Hydrostatic Mud	2436	2402	PSI

CRUDE OIL TESTING INC Test 3718 DST 7

FOR: A. Scott Ritchie

11/05/83



PRESSURE BREAKDOWN

TEST TICKET NO. 3718

DST Number: 7

Recorder Number: 11086

Clock Number: 19124

First Flow
Pressure

Initial
Shut-In

Second Flow
Pressure

Final
Shut-In

Mins. Press.

Mins. Press.

Mins. Press.

Mins. Press.

0 337
3 337
6 339
9 342
12 348
15 351
18 355
21 361
24 366
27 371
30 373

0 373
3 915
6 964
9 995
12 1016
15 1031
18 1044
21 1057
24 1067
27 1074
30 1079

0 399
3 402
6 404
9 408
12 411
15 416
18 417
21 419
24 421
27 422
30 423

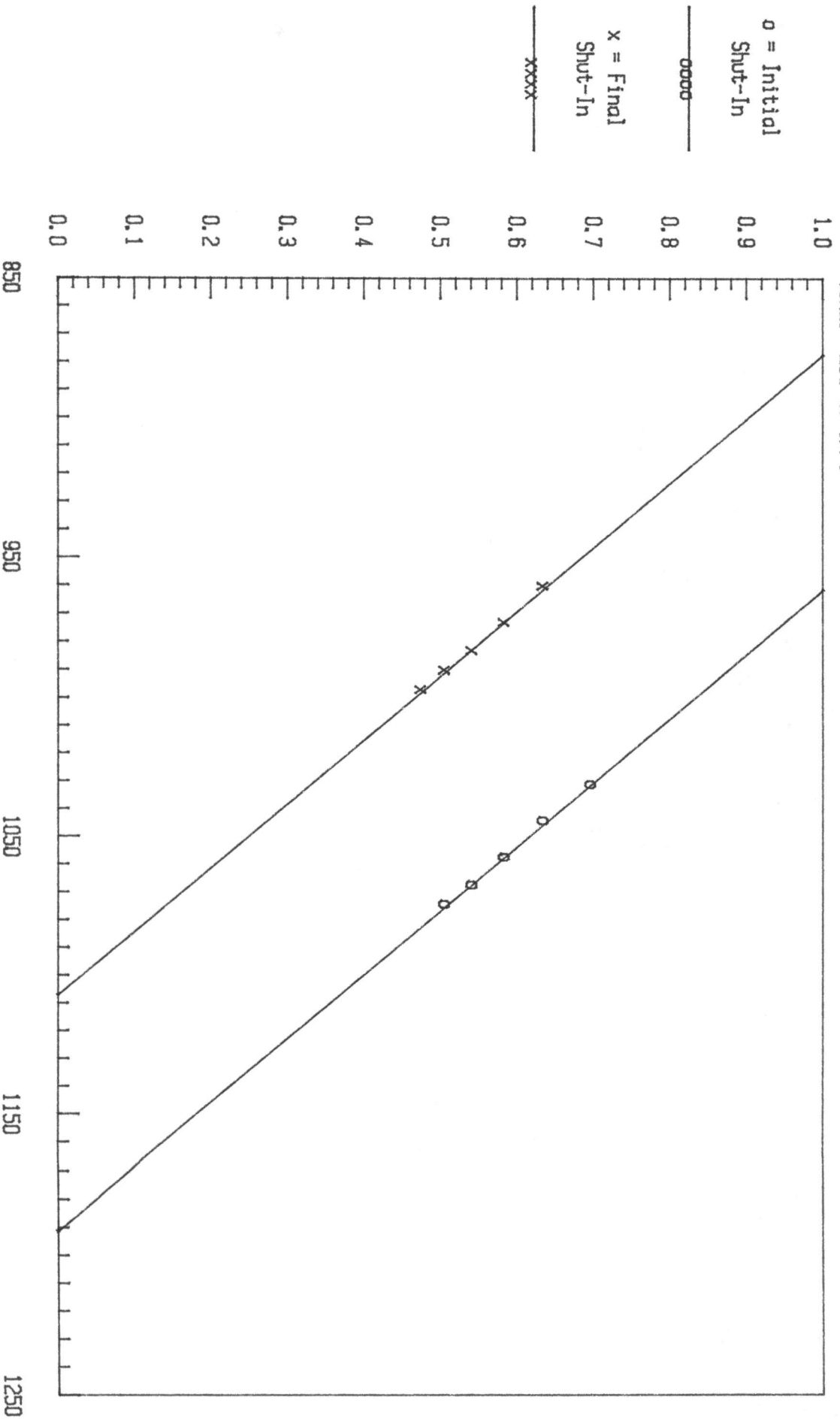
0 423
3 776
6 875
9 908
12 932
15 948
18 960
21 973
24 983
27 990
30 997
31 998

CRUDE OIL TESTING INC TEST 3718 DST 7

FOR: A. Scott Ritchie

11/5/83

TIME: LOG (T+t)/t



ZONE EVALUATION - Page 1

DST NUMBER 7

TEST TICKET NO. 3718

Company: A. Scott Ritchie

Date: 11/5/83

Drill Collar Feet	ID	Weight Feet	Pipe ID	Drill Pipe Feet	Pipe ID	Average ID	Gals/ Foot
141	2.250	0	2.760	0	3.800	2.2500	0.207

Bbls Recovered/Test = 0.6921 Est Bbls/Day = 16.6113 T = 60

PRESS. TIME		Initial Shut-In			
		T/t	(T+t)/t	LOG T/t	LOG (T+t)/t
1074	27	2.222	3.222	0.34679	0.50816
1067	24	2.500	3.500	0.39794	0.54407
1057	21	2.857	3.857	0.45593	0.58627
1044	18	3.333	4.333	0.52288	0.63682
1031	15	4.000	5.000	0.60206	0.69897

Press. Time		Final Shut-In			
		T/t	(T+t)/t	Log T/t	Log (T+t)/t
997	30	2.000	3.000	0.30103	0.47712
990	27	2.222	3.222	0.34679	0.50816
983	24	2.500	3.500	0.39794	0.54407
973	21	2.857	3.857	0.45593	0.58627
960	18	3.333	4.333	0.52288	0.63682

Time Option is Log (T+t)/t						DR	Q1	Pts
IP(0)	IP(1)	FP(0)	FP(1)	M	Kh/B			
1184.6	967.0	1096.8	887.7	209.1	12.916	1.470	24.417	1,3
1185.2	967.0	1096.4	887.7	208.8	12.939	1.471	24.431	1-3
1193.9	959.4	1100.9	883.2	217.7	12.407	1.451	24.110	1-4
1191.3	961.5	1107.2	877.3	229.9	11.748	1.427	23.712	1-5

Graph Data For Points

Initial		Final	
Time	Pressure	Time	Pressure
0.5081	1074	0.4771	997
0.5440	1067	0.5081	990
0.5862	1057	0.5440	983
0.6368	1044	0.5862	973
0.6989	1031	0.6368	960

Graph Data For Lines

0	1191.34	0	1107.16
1	961.47	1	877.25

ZONE EVALUATION - Page 2

DST Number 7

TEST TICKET NO. 3718

Company: A. Scott Ritchie

Date: 11/5/83

P.S.I. Slope Cycle (From Log $\frac{T + t}{t}$)

$$M = G_0 - G_1 \quad 229.91$$

Damage Ratio:

$$DR = .183 \frac{P_s - P_f}{M} \quad 1.43$$

Effective Pay:

$$\frac{Kh}{B} = \frac{162.6 Q}{M} \quad 11.75 \text{ Md. Ft.}$$

Theoretical Potential With
Damage Removed (for DR greater than 1):

$$Q_1 = Q DR \quad 23.71 \text{ Bbls/Day}$$

Production:

0.69 Bbls/Hour

$$Q = \frac{1440 R}{T} \quad 16.61 \text{ Bbls/Day}$$

These calculations are based upon information furnished by you and taken from drill stem test pressure charts and are furnished for your information. In furnishing such calculations and evaluations, Crude Oil Testing Inc. is merely expressing an opinion. You agree that Crude Oil Testing Inc. makes no warranty as to the accuracy of such calculations or opinions, and Crude Oil Testing Inc. shall not be liable for any loss or damage, whether due to negligence or otherwise in connection with such calculations and opinions.

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 7 Ran 2 packers 5 ft. apart.
TEST TICKET NO. 3718

WELL NAME: #1 Robben

WELL LOCATION: 24-10S-31W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3425.00	3.826	4.50
3	Weight Pipe	785.00	2.760	4.50
4	Drill Collar - 6"	184.00	2.250	6.00
8	Circulating Sub	1.00	3.000	5.00
9	Shut-In Tool	5.45	0.870	5.00
10	Hydraulic Tool	5.60	1.000	5.00
14	Packer	5.35	1.530	6.75
14	Packer	5.35	1.530	6.75
6	Anchor	116.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4535.75		

CALCULATED RECOVERY ANALYSIS

DST Number: 7 Ran 2 packers 5 ft. apart.
ST TICKET NO. 3718

TEST

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	62	36.00	22.32	15.00	9.30	47.00	29.14
2	62	50.00	31.00	18.00	11.16	30.00	18.60
3	62	54.00	33.48	24.00	14.88	20.00	12.40
4	62	52.00	32.24	26.00	16.12	20.00	12.40
5	62	62.00	38.44	28.00	17.36	7.00	4.34
6	62	70.00	43.40	23.00	14.26	5.00	3.10
7	62	64.00	39.68	24.00	14.88	10.00	6.20
8	62	50.00	31.00	27.00	16.74	20.00	12.40
9	62	66.00	40.92	23.00	14.26	10.00	6.20
10	62	70.00	43.40	19.00	11.78	10.00	6.20
TOTAL	<u>620</u>	57.40	<u>355.88</u>	22.70	<u>140.74</u>	17.90	<u>110.98</u>

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	2.00	1.24			
2	2.00	1.24			
3	2.00	1.24			
4	2.00	1.24			
5	3.00	1.86			
6	2.00	1.24			
7	2.00	1.24			
8	3.00	1.86			
9	1.00	0.62			
10	1.00	0.62			
TOTAL	2.00	<u>12.40</u>			

CRUDE OIL TESTING, INC.

DATE 11/6/83

TEST TICKET NO. 3719

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 24 Twp. 10S Range 31W Co. Thomas State KS
 Well Name & Number: #1 Robben Code E6

ENGINEERING DATA	Elevation 2901 KB	Drill Pipe Length 3428	ID 3.8 "
	Mud Viscosity 44	Weight Pipe Length 785	ID 2.76"
	Mud Weight 9.6	Drill Collar Length 184	ID 2.25"
	Water Loss 10.8	Top Packer Depth 4414	
	Type of Mud Chemical	Bottom Packer Depth	
	Anchor Length 50	Tool Joint Size 4.5	FH
	Hole Size 7 7/8	Test Tool Size 5 1/2	
	Casing Size 8 5/8	Packer Size 6 3/4	
	Surface Choke 3/4	Reversed Out No	
	Bottom Choke 3/4	Recorder # 11086	
	Extra Equipment	Extra packer	

REMARKS DST #8 Bottom packers for blank off at 4464 ft. & 4469 ft. App. 20 min. into 1st shutin bottom packer leaked. Before leak shutin was 887# 20 min. 2nd shutin 777#.

FORMATION	Ft. Scott Zone	Test Type Straddle
	Interval 4414 To 4464	Total Depth 4464
	Open 45 Shut In 45	Open 45 Shut In 45
	Packer(s) Set 06:58PM	Started Off Bottom 10:00PM
	Blow 1st Opening Strong blow off bottom of bucket in 5 min.	
	2nd Opening Strong blow off bottom of bucket in 5 min.	

RECOVERY Total Feet 630
 Recovered 134 feet of Clean gassy oil
 Recovered 496 feet of Gassy mud cut oil
 Recovered 485 feet of Gas in pipe

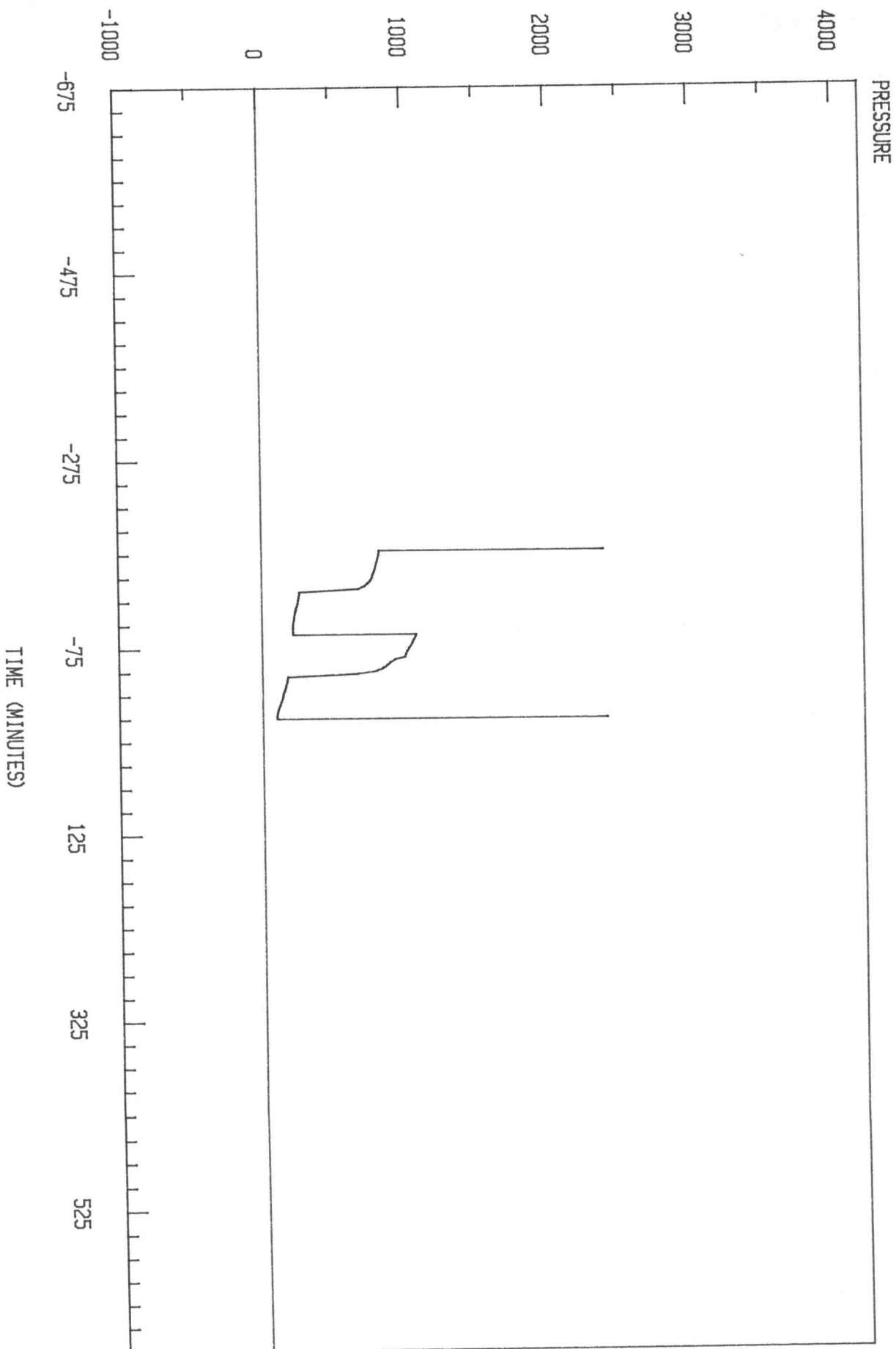
CALCULATED RECOVERY	Gas 268.46	Oil 265.44	Water 83.08	Mud 13.02
	Gravity (Oil) 44	Test Water Chlorides	PPM	
	Test Area Temperature 122F	Mud System Chlorides	4,000 PPM	

	FIELD READING	OFFICE READING	
PRESSURE (A) Initial Hydrostatic Mud	2447	2402	PSI
(B) First Initial Flow Pressure	98	99	PSI
(C) First Final Flow Pressure	174	179	PSI
(D) Initial Closed-In Pressure	1074	1074	PSI
(E) Second Initial Flow Pressure	218	215	PSI
(F) Second Final Flow Pressure	262	262	PSI
(G) Final Closed-In Pressure	821	820	PSI
(H) Final Hydrostatic Mud	2403	2385	PSI

CRUDE OIL TESTING INC Test 3719 DST 8

FOR: A. Scott Ritchie

11/06/83



PRESSURE BREAKDOWN

TEST TICKET NO. 3719

DST Number: 8

Recorder Number: 11086

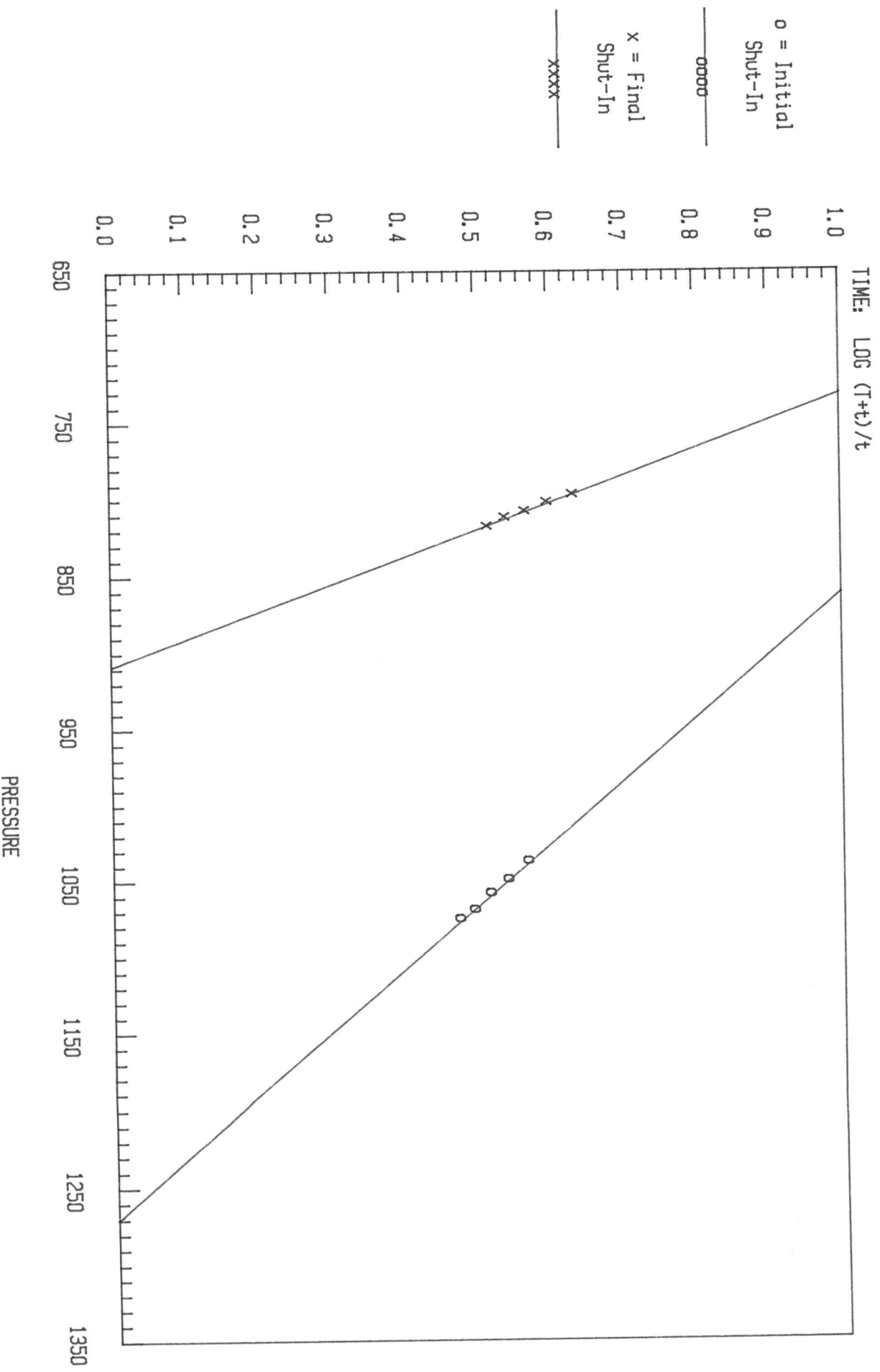
Clock Number: 19124

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins. Press.		Mins. Press.		Mins. Press.		Mins. Press.	
0	98	0	178	0	215	0	262
3	98	3	661	3	215	3	674
6	102	6	799	6	215	6	718
9	105	9	844	9	215	9	740
12	113	12	871	12	218	12	759
15	120	15	891	15	222	15	769
18	126	18	922	18	225	18	774
21	135	21	995	21	228	21	783
24	140	24	1002	24	232	24	789
27	144	27	1010	27	237	27	796
30	152	30	1022	30	243	30	801
33	158	33	1036	33	249	33	807
36	163	36	1048	36	252	36	811
39	169	39	1057	39	256	39	817
42	174	42	1068	42	261	42	820
45	178	45	1074	45	262	44	820

CRUDE OIL TESTING INC TEST 3719 DST 8

FOR: A. Scott Ritchie

11/6/83



ZONE EVALUATION - Page 1

DST NUMBER 8

TEST TICKET NO. 3719

Company: A. Scott Ritchie

Date: 11/6/83

Drill Collar Feet	ID	Weight Feet	Pipe ID	Drill Pipe Feet	Pipe ID	Average ID	Gals/ Foot
184	2.250	81	2.760	0	3.800	2.4065	0.236

Bbls Recovered/Test = 0.9955 Est Bbls/Day = 15.9282 T = 90

PRESS.	TIME	Initial Shut-In			
		T/t	(T+t)/t	LOG T/t	LOG (T+t)/t
1074	45	2.000	3.000	0.30103	0.47712
1068	42	2.143	3.143	0.33099	0.49732
1057	39	2.308	3.308	0.36318	0.51953
1048	36	2.500	3.500	0.39794	0.54407
1036	33	2.727	3.727	0.43573	0.57139

Press.	Time	Final Shut-In			
		T/t	(T+t)/t	Log T/t	Log (T+t)/t
817	39	2.308	3.308	0.36318	0.51953
811	36	2.500	3.500	0.39794	0.54407
807	33	2.727	3.727	0.43573	0.57139
801	30	3.000	4.000	0.47712	0.60206
796	27	3.333	4.333	0.52288	0.63682

IP(0)	IP(1)	FP(0)	FP(1)	Time Option is Log (T+t)/t		DR	Q1	Pts
				M	Kh/B			
1265.3	864.4	917.2	724.4	192.8	13.433	1.507	24.001	1,3
1266.8	864.3	916.3	724.3	191.9	13.494	1.509	24.038	1-3
1265.3	865.8	914.5	725.8	188.7	13.725	1.518	24.177	1-4
1269.9	861.2	908.1	731.2	176.9	14.641	1.552	24.727	1-5

Graph Data For Points

Initial		Final	
Time	Pressure	Time	Pressure
0.4771	1074	0.5195	817
0.4973	1068	0.5440	811
0.5195	1057	0.5713	807
0.5440	1048	0.6020	801
0.5713	1036	0.6368	796

Graph Data For Lines

0	1269.88	0	908.08
1	861.21	1	731.18

ZONE EVALUATION - Page 2

DST Number 8

TEST TICKET NO. 3719

Company: A. Scott Ritchie

Date: 11/6/83

P.S.I. Slope Cycle (From Log $\frac{T + t}{t}$)

$$M = G_0 - G_1 \quad 176.90$$

Damage Ratio:

$$DR = .183 \frac{P_s - P_f}{M} \quad 1.55$$

Effective Pay:

$$\frac{Kh}{B} = \frac{162.6 Q}{M} \quad 14.64 \text{ Md. Ft.}$$

Theoretical Potential With
Damage Removed (for DR greater than 1):

$$Q_1 = Q DR \quad 24.73 \text{ Bbls/Day}$$

Production:

1.00 Bbls/Hour

$$Q = \frac{1440 R}{T} \quad 15.93 \text{ Bbls/Day}$$

These calculations are based upon information furnished by you and taken from drill stem test pressure charts and are furnished for your information. In furnishing such calculations and evaluations, Crude Oil Testing Inc. is merely expressing an opinion. You agree that Crude Oil Testing Inc. makes no warranty as to the accuracy of such calculations or opinions, and Crude Oil Testing Inc. shall not be liable for any loss or damage, whether due to negligence or otherwise in connection with such calculations and opinions.

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 8 Bottom packers for blank off at 4464

TEST TICKET NO. 3719

WELL NAME: #1 Robben

WELL LOCATION: 24-10S-31W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3428.00	3.826	4.50
3	Weight Pipe	785.00	2.760	4.50
4	Drill Collar - 6"	184.00	2.250	6.00
9	Shut-In Tool	5.45	0.870	5.00
10	Hydraulic Tool	5.60	1.000	5.00
14	Packer	5.35	1.530	6.75
6	Anchor	50.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
7	Changeover Sub	2.00	3.000	5.00
14	Packer	5.35	1.530	6.75
14	Packer	5.35	1.530	6.75
6	Anchor	131.00	2.750	5.00
16	Bull Plug	2.00		5.00
	Total Depth	4610.10		

CALCULATED RECOVERY ANALYSIS

DST Number: 8 Bottom packers for blank off at 4464
EST TICKET NO. 3719

Sample #	Total Feet	***** Gas %	***** Feet	***** Oil %	***** Feet	***** Mud %	***** Feet
1	10	0.00	0.00	100.00	10.00	0.00	0.00
2	124	33.00	40.92	67.00	83.08	0.00	0.00
3	62	35.00	21.70	45.00	27.90	18.00	11.16
4	62	40.00	24.80	47.00	29.14	10.00	6.20
5	62	35.00	21.70	45.00	27.90	18.00	11.16
6	62	50.00	31.00	33.00	20.46	15.00	9.30
7	62	60.00	37.20	26.00	16.12	10.00	6.20
8	62	60.00	37.20	28.00	17.36	10.00	6.20
9	62	47.00	29.14	28.00	17.36	23.00	14.26
10	62	40.00	24.80	26.00	16.12	30.00	18.60
TOTAL	<u>630</u>	42.61	<u>268.46</u>	42.13	<u>265.44</u>	13.19	<u>83.08</u>

Sample #	***** Water %	***** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	0.00	0.00			
2	0.00	0.00			
3	2.00	1.24			
4	3.00	1.86			
5	2.00	1.24			
6	2.00	1.24			
7	4.00	2.48			
8	2.00	1.24			
9	2.00	1.24			
10	4.00	2.48			
TOTAL	2.07	<u>13.02</u>			