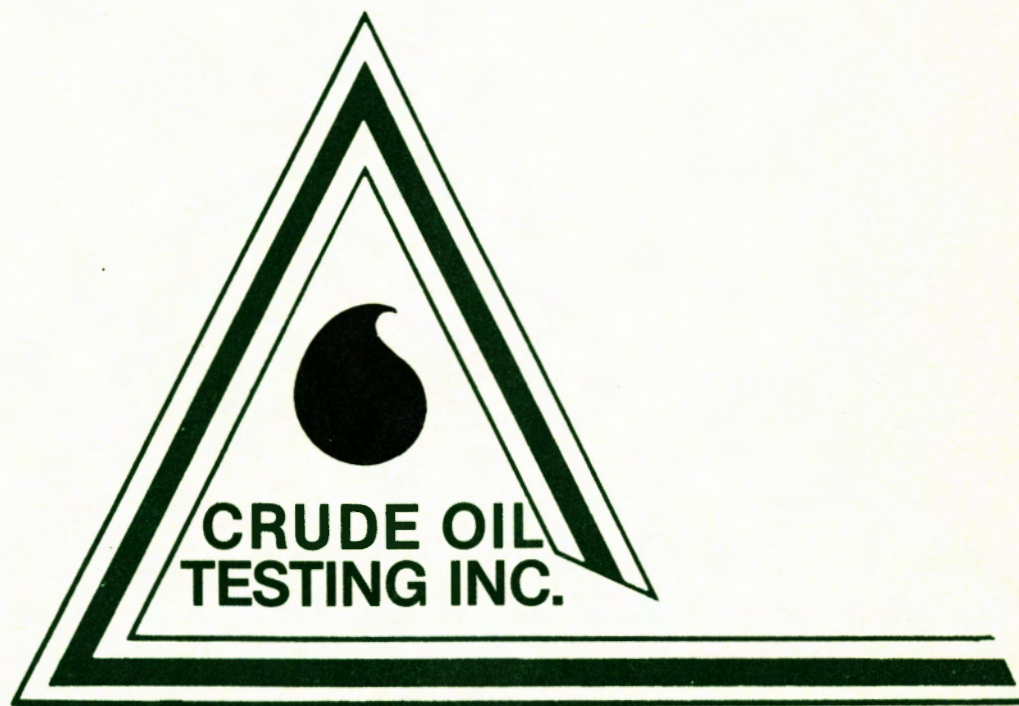




FORMATION TESTING SERVICE REPORT

CRUDE OIL TESTING, INC.

DATE 5/7/84

TEST TICKET NO. 4258

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 3 Twp. 12S Range 22W Co. Trego State KS
 Well Name & Number: #2 Grecian A Code E9

ENGINEERING DATA	Elevation	2391 KB	Drill Pipe Length	3537	ID 3.8 "
	Mud Viscosity	43	Weight Pipe Length		
	Mud Weight	9.4	Drill Collar Length	86	ID 2.25"
	Water Loss	7	Top Packer Depth	3639	
	Type of Mud	Starch	Bottom Packer Depth	3644	
	Anchor Length	56	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 #	13251	
	Extra Equipment		None		

REMARKS DST #1
 Pit sample 39000 ppm.

FORMATION	Lansing	Zone A	Test Type	Conventional
	Interval	3644 To 3700	Total Depth	3700
	Open	30 Shut In 45	Open	30 Shut In 45
	Packer(s) Set	12:02AM	Started Off Bottom	02:35AM
	Blow 1st Opening	Weak blow 1/2 inch in bucket.		
	2nd Opening	Weak blow 1/2 inch in bucket.		

RECOVERY Total Feet 20
 Recovered 20 feet of Drilling mud (no show)

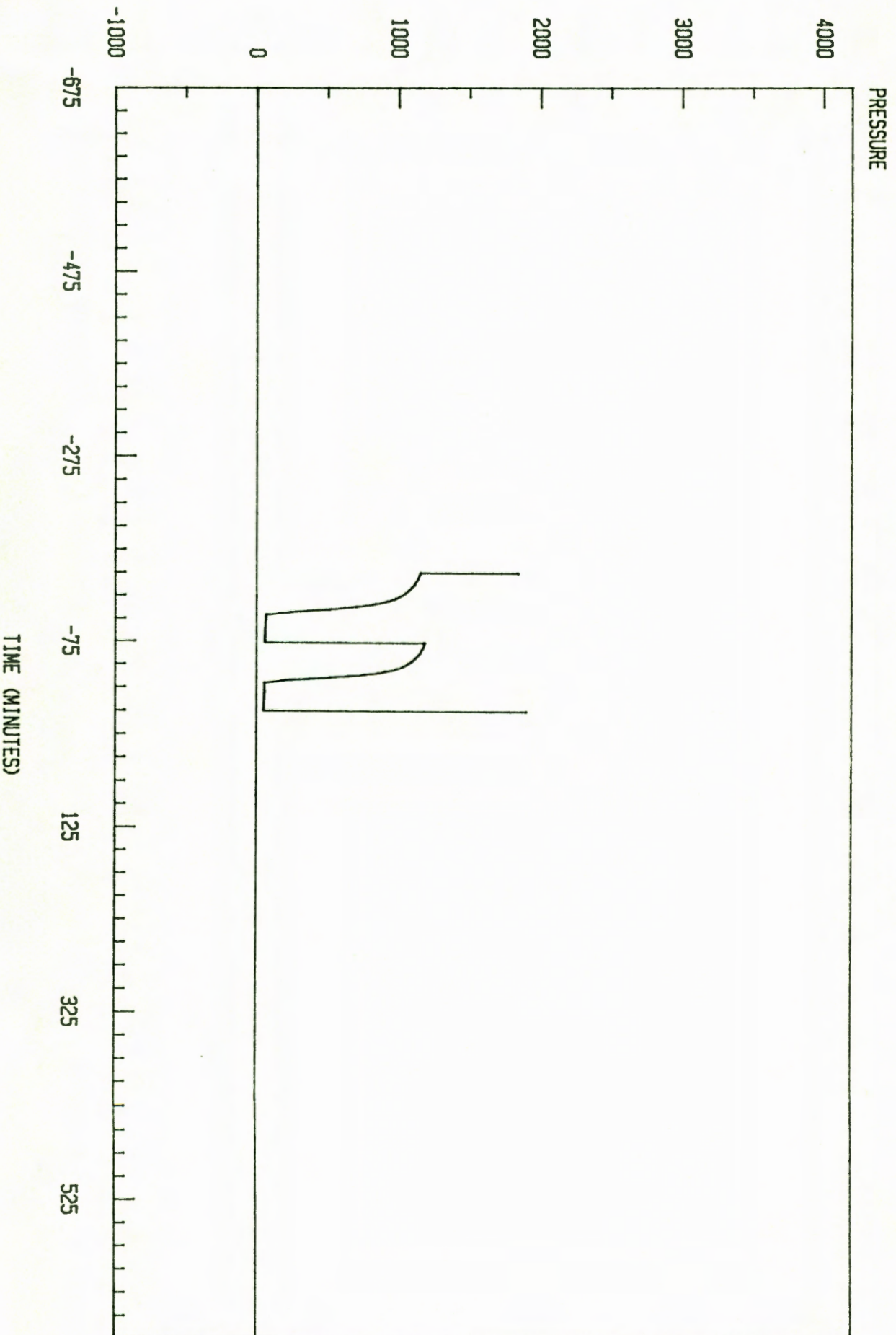
CALCULATED RECOVERY	Gas	Oil	Water	Mud	
	Gravity (Oil)		Test Water Chlorides		PPM
	Test Area Temperature	108F	Mud System Chlorides		PPM

		FIELD READING	OFFICE READING	
PRESSURE	(A) Initial Hydrostatic Mud	1909	1900	PSI
	(B) First Initial Flow Pressure	58	45	PSI
	(C) First Final Flow Pressure	58	54	PSI
	(D) Initial Closed-In Pressure	1192	1185	PSI
	(E) Second Initial Flow Pressure	69	54	PSI
	(F) Second Final Flow Pressure	69	64	PSI
	(G) Final Closed-In Pressure	1169	1153	PSI
	(H) Final Hydrostatic Mud	1899	1843	PSI

CRUDE OIL TESTING INC Test 4258 DST 1

FOR: A. Scott Ritchie

05/07/84



EQUIPMENT DATA
TOOL SEQUENCE REPORT

DST Number: 1

TEST TICKET NO. 4258

WELL NAME: #2 Grecian A

WELL LOCATION: 3-12S-22W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3537.00	3.826	4.50
4	Drill Collar - 6"	86.00	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	52.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	3700.75		

CRUDE OIL TESTING, INC.

DATE 5/7/84

TEST TICKET NO. 4259

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 3 Twp. 12S Range 22W Co. Trego State KS
 Well Name & Number: #2 Grecian A Code E9

ENGINEERING DATA	Elevation	2391 KB	Drill Pipe Length	3644	ID 3.8 "
	Mud Viscosity	40	Weight Pipe Length		
	Mud Weight	9.45	Drill Collar Length	86	ID 2.25"
	Water Loss	10.4	Top Packer Depth		
	Type of Mud	Starch	Bottom Packer Depth	3747	
	Anchor Length	19	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 #	13251	
	Extra Equipment		None		

REMARKS DST #2
 Pit sample 33000 ppm.

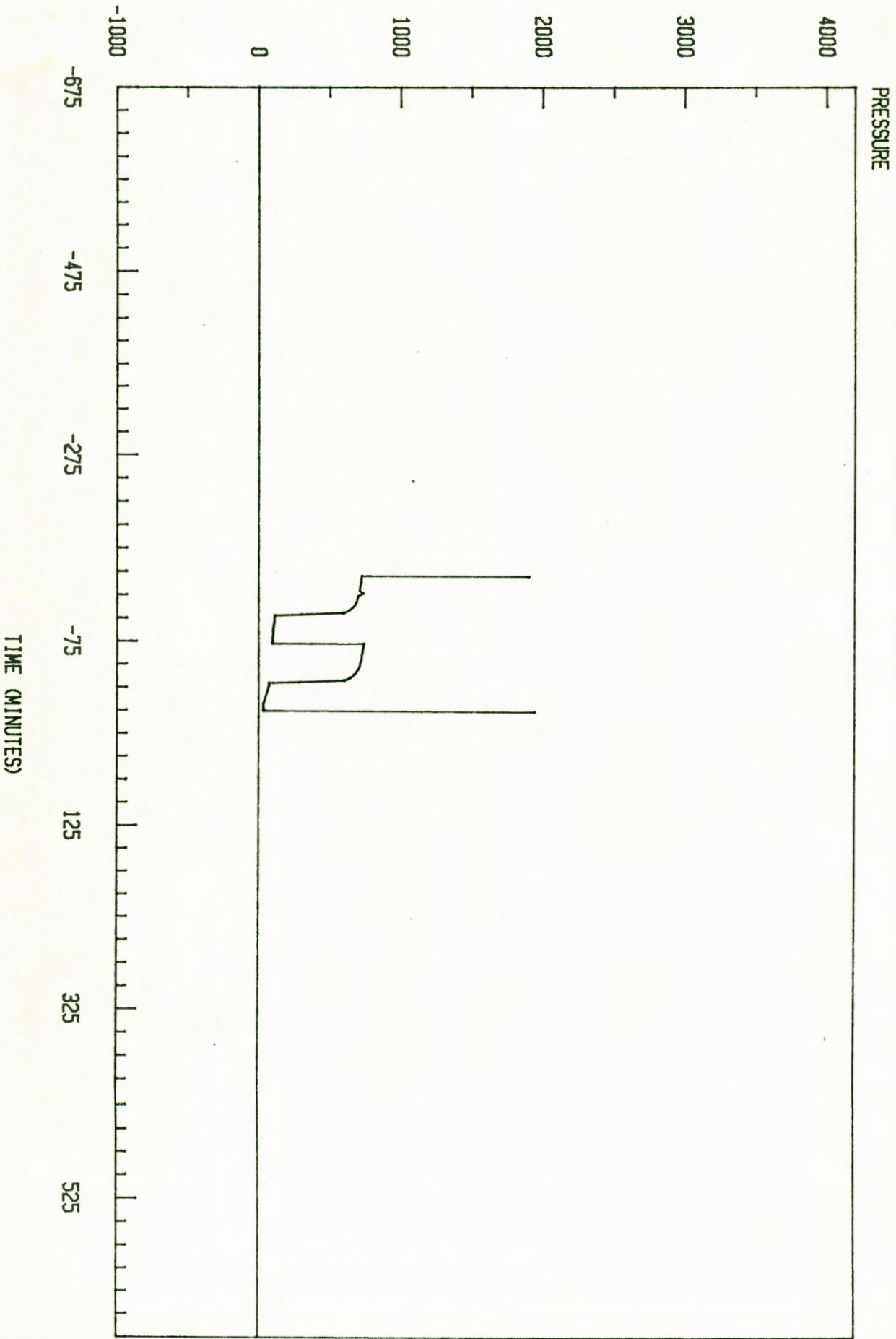
FORMATION	Lansing	Zone 70	Test Type	Conventional
	Interval	3747 To 3766	Total Depth	3766
	Open	30	Shut In	45
	Packer(s) Set	04:58PM	Started Off Bottom	07:30PM
	Blow 1st Opening Weak to good blow off bottom in 20 min. 2nd Opening Good steady blow.			

RECOVERY Total Feet 137
 Recovered 137 feet of Muddy water

CALCULATED RECOVERY	Gas	Oil	Water	74.05	Mud	62.95
	Gravity (Oil)		Test Water Chlorides	80,000 PPM		
	Test Area Temperature 110F		Mud System Chlorides	24,000 PPM		

PRESSURE		FIELD	OFFICE	
		READING	READING	
(A)	Initial Hydrostatic Mud	1955	1944	PSI
(B)	First Initial Flow Pressure	35	32	PSI
(C)	First Final Flow Pressure	81	76	PSI
(D)	Initial Closed-In Pressure	735	740	PSI
(E)	Second Initial Flow Pressure	92	96	PSI
(F)	Second Final Flow Pressure	115	115	PSI
(G)	Final Closed-In Pressure	735	726	PSI
(H)	Final Hydrostatic Mud	1943	1905	PSI

CRUDE OIL TESTING INC Test 4259 DST 2
FOR: A. Scott Ritchie 05/07/84



PRESSURE BREAKDOWN

TEST TICKET NO. 4259

DST Number: 2 Recorder Number: 13251 Clock Number: 23935

First Flow Pressure	Initial Shut-In	Second Flow Pressure	Final Shut-In
Mins. Press.	Mins. Press.	Mins. Press.	Mins. Press.
0 32	0 75	0 95	0 115
3 32	3 606	3 96	3 601
6 33	6 646	6 97	6 640
9 37	9 671	9 99	9 662
12 43	12 688	12 100	12 678
15 48	15 700	15 102	15 687
18 55	18 709	18 105	18 694
21 62	21 714	21 108	21 701
24 67	24 719	24 110	24 736
27 72	27 724	27 111	27 709
30 75	30 726	30 115	30 712
	33 730		33 716
	36 733		36 721
	39 736		39 721
	42 740		42 725
	43 740		43 726

EQUIPMENT DATA
TOOL SEQUENCE REPORT

DST Number: 2

TEST TICKET NO. 4259

WELL NAME: #2 Grecian A

WELL LOCATION: 3-12S-22W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3644.00	3.826	4.50
4	Drill Collar - 6"	86.00	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	15.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	3765.40		

CALCULATED RECOVERY ANALYSIS

DST Number: 2

TEST TICKET NO. 4259

Sample #	Total Feet	***** Gas %	***** Feet	***** Oil %	***** Feet	***** Mud %	***** Feet
1	79	0.00	0.00	0.00	0.00	65.00	51.35
2	58	0.00	0.00	0.00	0.00	20.00	11.60
TOTAL	<u>137</u>	0.00	<u>0.00</u>	0.00	<u>0.00</u>	45.95	<u>62.95</u>

Sample #	**** Water %	**** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	35.00	27.65			
2	80.00	46.40	80,000		
TOTAL	54.05	<u>74.05</u>			

CRUDE OIL TESTING, INC.

DATE 5/9/84

TEST TICKET NO. 4260

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 3 Twp. 12S Range 22W Co. Trego State KS
 Well Name & Number: #2 Grecian A Code E16

ENGINEERING DATA	Elevation	2391 KB	Drill Pipe Length	3915	ID 3.8 "
	Mud Viscosity	42	Weight Pipe Length		
	Mud Weight	9.9	Drill Collar Length	83	ID 2.25"
	Water Loss	8.2	Top Packer Depth	4011	
	Type of Mud	Starch	Bottom Packer Depth	4016	
	Anchor Length	46	Tool Joint Size	4.5	PH
	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 #	13251	
	Extra Equipment		None		

REMARKS DST #3

FORMATION	Marmaton	Zone	Test Type	Conventional
	Interval 4016	To 4062	Total Depth	4062
	Open 30	Shut In 45	Open 30	Shut In 45
	Packer(s) Set	12:45AM	Started Off Bottom	03:15AM
	Blow 1st Opening Fair increasing blow in 25 min.			
2nd Opening Strong blow off bottom of bucket in 12 min.				

RECOVERY Total Feet 195
 Recovered 195 feet of Gassy mud cut oil

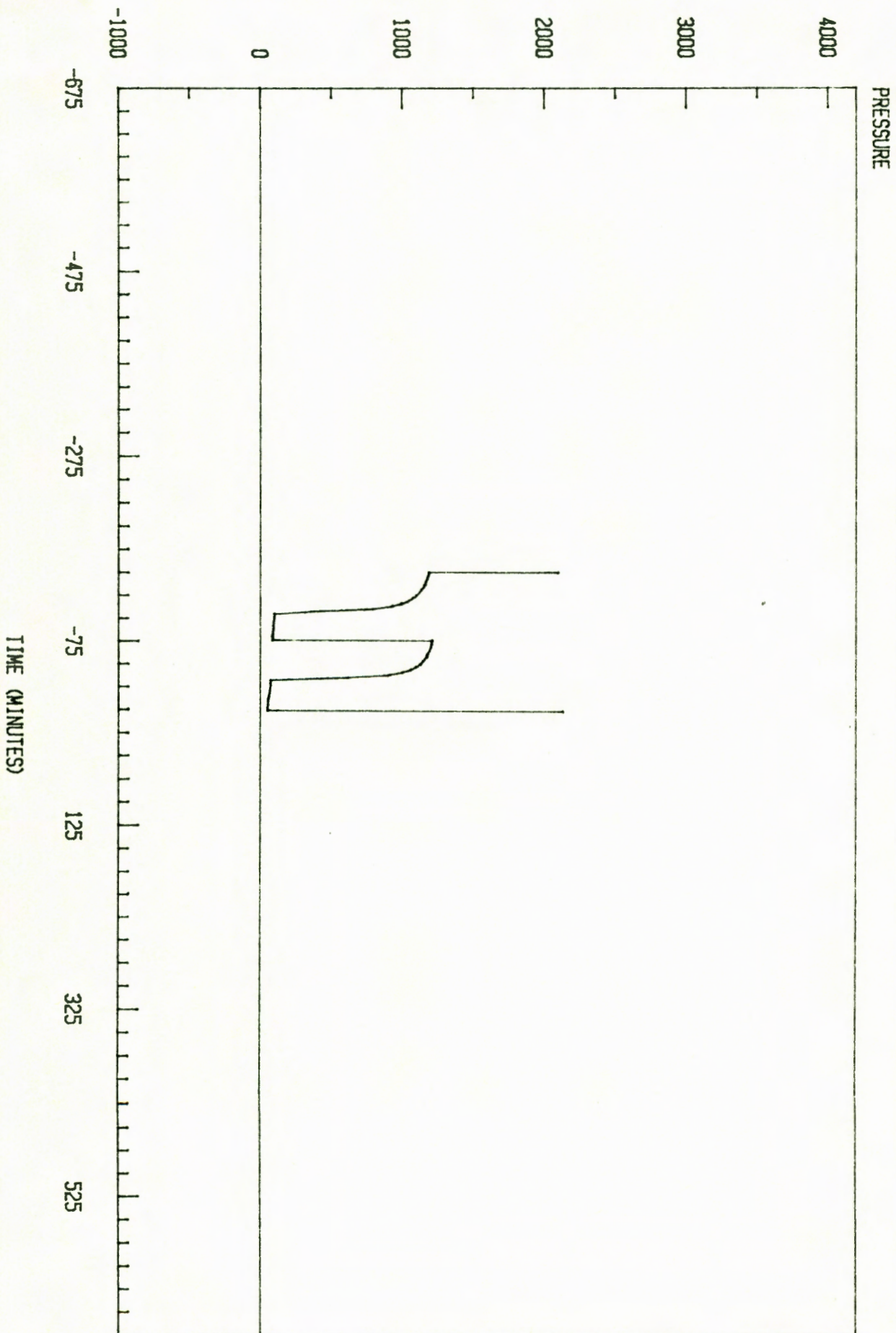
CALCULATED RECOVERY	Gas	22.5	Oil	122.25	Water	24	Mud	26.25
	Gravity (Oil)		Test Water Chlorides		PPM			
	Test Area Temperature 116F		Mud System Chlorides		33,000		PPM	

PRESSURE		FIELD	OFFICE	PSI
		READING	READING	
(A)	Initial Hydrostatic Mud	2102	2132	PSI
(B)	First Initial Flow Pressure	44	51	PSI
(C)	First Final Flow Pressure	66	75	PSI
(D)	Initial Closed-In Pressure	1215	1214	PSI
(E)	Second Initial Flow Pressure	88	87	PSI
(F)	Second Final Flow Pressure	99	101	PSI
(G)	Final Closed-In Pressure	1192	1189	PSI
(H)	Final Hydrostatic Mud	2079	2098	PSI

CRUDE OIL TESTING INC Test 4260 DST 3

FOR: A. Scott Ritchie

05/09/84



PRESSURE BREAKDOWN

TEST TICKET NO. 4260

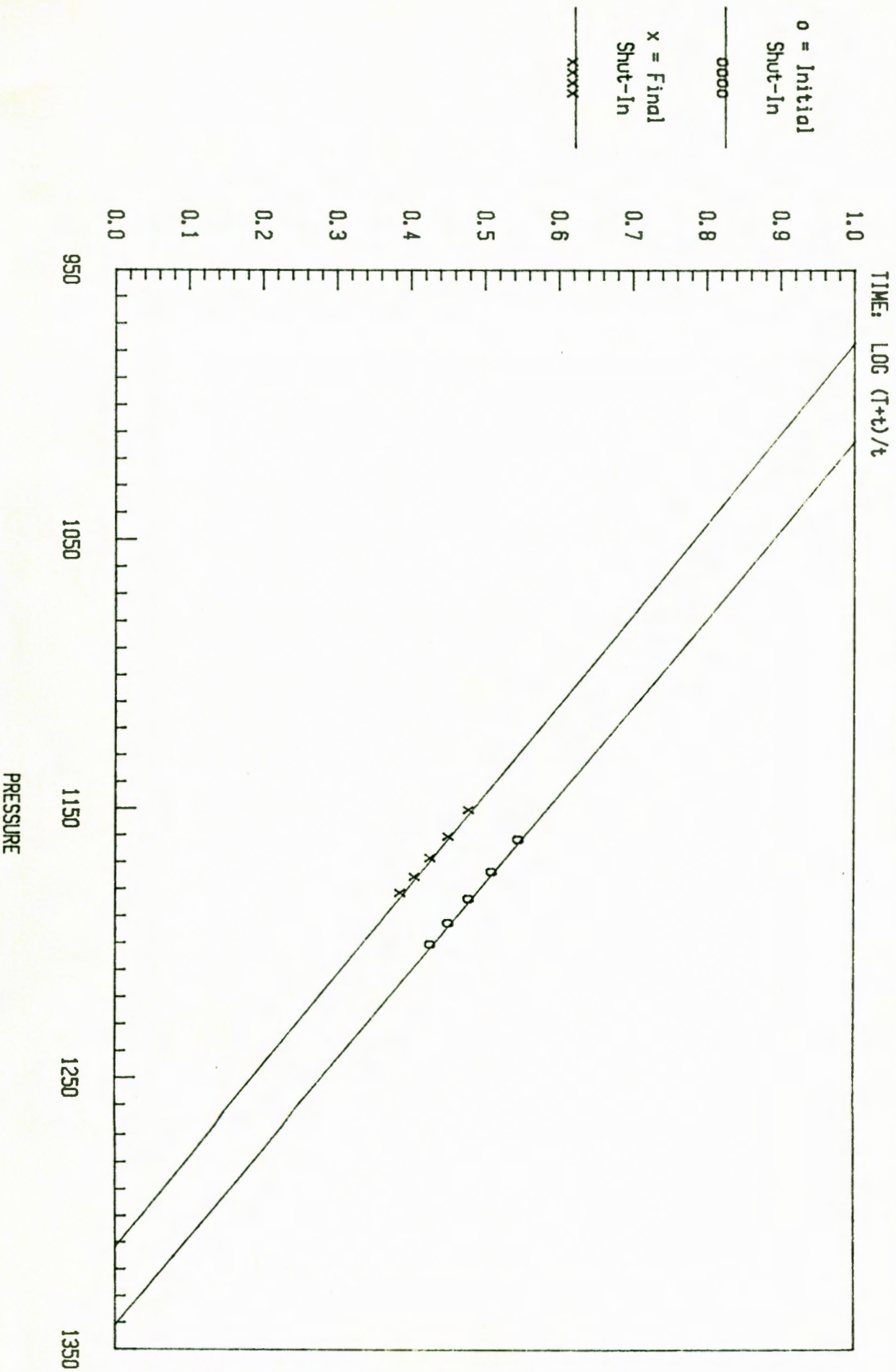
DST Number: 3 Recorder Number: 13251 Clock Number: 23935

First Flow Pressure	Initial Shut-In	Second Flow Pressure	Final Shut-In
Mins. Press.	Mins. Press.	Mins. Press.	Mins. Press.
0 50	0 74	0 87	0 101
3 50	3 618	3 88	3 357
6 52	6 909	6 88	6 795
9 53	9 1007	9 89	9 926
12 58	12 1063	12 92	12 998
15 62	15 1102	15 93	15 1045
18 65	18 1128	18 94	18 1077
21 67	21 1147	21 97	21 1102
24 70	24 1161	24 99	24 1121
27 72	27 1173	27 101	27 1134
30 73	30 1183	28 101	30 1150
33 74	33 1192		33 1160
	36 1200		36 1168
	39 1205		39 1175
	42 1209		42 1181
	44 1213		45 1186
			47 1188

CRUDE OIL TESTING INC TEST 4260 DST 3

FOR: A. Scott Ritchie

5/9/84



ZONE EVALUATION - Page 1

DST NUMBER 3

TEST TICKET NO. 4260

Company: A. Scott Ritchie

Date: 5/9/84

Drill Collar Feet	ID	Weight Feet	Pipe ID	Drill Pipe Feet	Pipe ID	Average ID	Gals/ Foot
83	2.250	0	0.000	39	3.800	2.7476	0.308

Bbls Recovered/Test = 0.8819 Est Bbls/Day = 20.8178 T = 61

PRESS. TIME		Initial Shut-In			
		T/t	(T+t)/t	LOG T/t	LOG (T+t)/t
1200	36	1.694	2.694	0.22903	0.43047
1192	33	1.848	2.848	0.26682	0.45461
1183	30	2.033	3.033	0.30821	0.48192
1173	27	2.259	3.259	0.35397	0.51312
1161	24	2.542	3.542	0.40512	0.54921

Press. Time		Final Shut-In			
		T/t	(T+t)/t	Log T/t	Log (T+t)/t
1181	42	1.452	2.452	0.16208	0.38959
1175	39	1.564	2.564	0.19427	0.40894
1168	36	1.694	2.694	0.22903	0.43047
1160	33	1.848	2.848	0.26682	0.45461
1150	30	2.033	3.033	0.30821	0.48192

Time Option is Log (T+t)/t								
IP(0)	IP(1)	FP(0)	FP(1)	M	Kh/B	DR	Q1	Pts
1342.2	1011.8	1304.9	986.9	318.0	10.645	1.604	33.385	1,3
1342.2	1011.8	1305.0	986.9	318.1	10.640	1.603	33.380	1-3
1340.6	1013.8	1307.1	983.7	323.4	10.467	1.594	33.176	1-4
1341.0	1013.3	1311.9	976.9	335.0	10.105	1.573	32.747	1-5

Graph Data For Points

Initial		Final	
Time	Pressure	Time	Pressure
0.4304	1200	0.3895	1181
0.4546	1192	0.4089	1175
0.4819	1183	0.4304	1168
0.5131	1173	0.4546	1160
0.5492	1161	0.4819	1150

Graph Data For Lines

0	1341.02	0	1311.89
1	1013.31	1	976.89

ZONE EVALUATION - Page 2

DST Number 3

TEST TICKET NO. 4260

Company: A. Scott Ritchie

Date: 5/9/84

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

$$M = G_0 - G_1$$

334.99

Damage Ratio:

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

1.57

Effective Pay:

$$\frac{Kh}{B} = \frac{162.6 Q}{M}$$

10.10 Md. Ft.

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

$$Q_1 = Q DR$$

32.75 Bbls/Day

Production:

0.88 Bbls/Hour

$$Q = \frac{1440 R}{T}$$

20.82 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: 3

TEST TICKET NO. 4260

WELL NAME: #2 Grecian A

WELL LOCATION: 3-12S-22W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3915.00	3.826	4.50
4	Drill Collar - 6"	83.00	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	42.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4065.75		

CALCULATED RECOVERY ANALYSIS

DST Number: 3

TEST TICKET NO. 4260

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	15	30.00	4.50	35.00	5.25	20.00	3.00
2	60	5.00	3.00	75.00	45.00	10.00	6.00
3	60	5.00	3.00	70.00	42.00	10.00	6.00
4	60	20.00	12.00	50.00	30.00	15.00	9.00
TOTAL	<u>195</u>	11.54	<u>22.50</u>	62.69	<u>122.25</u>	12.31	<u>24.00</u>

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	15.00	2.25			
2	10.00	6.00			
3	15.00	9.00			
4	15.00	9.00			
TOTAL	13.46	<u>26.25</u>			