

MARCH

Lease Name

Well No.

Test No.

Tested Interval

Lease Owner/Company Name

Legal Location
Sec. - Twp. - Rng. 12-33-34Field
Area N. LIBERAL, KS.

County

SEWARD

State
KANSAS

ENERGY SOURCES INCORPORATED

FLUID SAMPLE DATA				Date 1-24-79		Ticket Number 432466	
Sampler Pressure _____ P.S.I.G. at Surface				Kind of Job OPEN HOLE		Halliburton District LIBERAL	
Recovery: Cu. Ft. Gas _____				Tester H. PERKINS		Witness D. REYNOLDS	
cc. Oil _____				Drilling Contractor SAGE DRILLING RIG # 1 DR			
cc. Water _____				EQUIPMENT & HOLE DATA			
cc. Mud _____				Formation Tested Topeka			
Tot. Liquid cc. _____				Elevation 2883' GL '2888' RB Ft.			
Gravity _____ ° API @ _____ ° F.				Net Productive Interval 18' Ft.			
Gas/Oil Ratio _____ cu. ft./bbl.				All Depths Measured From Kelly Bushing			
RESISTIVITY _____ CHLORIDE CONTENT _____				Total Depth 4150' Ft.			
Recovery Water @ _____ ° F. _____ ppm				Main Hole/Casing Size 7 7/8"			
Recovery Mud .860 @ 70 ° F. 4,493 ppm				Drill Collar Length 482' I.D. 2.25"			
Recovery Mud Filtrate @ _____ ° F. _____ ppm				Drill Pipe Length 3615' I.D. 3.826"			
Mud Pit Sample 1.142 @ 70 ° F. 2,245 ppm				Packer Depth(s) 4126-4132' Ft.			
Mud Pit Sample Filtrate @ _____ ° F. _____ ppm				Depth Tester Valve 4109' Ft.			
Mud Weight 8.7 vis 46 sec							
TYPE		AMOUNT		Depth Back		Surface	
Cushion				Ft. Pres. Valve		Choke 1/4" Bottom Choke 3/4"	
Recovered 60		Feet of drilling mud					
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Remarks		SEE PRODUCTION TEST DATA SHEET					
TEMPERATURE		Gauge No. 62/3		Gauge No. 62/4		Gauge No.	
Depth: 4111' Ft.		Depth: 4147' Ft.		Depth: _____ Ft.		TIME	
12 Hour Clock		12 Hour Clock		Hour Clock		Tool _____ A.M.	
Blanked Off NO		Blanked Off YES		Blanked Off		Opened 19:20 P.M.	
Est. 4145' ° F.						Opened _____ A.M.	
Actual 112 ° F.						Bypass 00:15 P.M.	
Pressures		Pressures		Pressures			
Field Office		Field Office		Field Office		Reported Computed	
Initial Hydrostatic		1909 1895 1913				Minutes Minutes	
First Period	Flow Initial	30 13 50					
	Flow Final	26 26 39				40 41	
	Closed in	1171 1182 1186				45 44	
Second Period	Flow Initial	38 26 57					
	Flow Final	62 79 70				120 120	
	Closed in	1169 1182 1176				90 90	
Third Period	Flow Initial						
	Flow Final						
	Closed in						
Final Hydrostatic		1876 1868 1898					

Casing perms. _____ Bottom choke _____ Surf. temp _____ °F Ticket No. **432466**
 Gas gravity _____ Oil gravity _____ GOR _____
 Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F
INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED _____

Date Time	a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
1500						On location, rig coming out of hole.
16:30						Picked up tool
17:15						Made up tool, went into hole.
19:16						Tool on bottom
19:20						Opened tool with a weak blow
19:22						Good blow
19:23						Strong blow
20:00						Closed tool
20:45						Opened tool with a strong blow
20:59						Gas to surface
21:00		1/8"	1.5	3.39		
21:05		"	2.5	4.42		
21:10		"	4	5.64		
21:15		"	6	7.06		
21:20		"	7	7.70		
21:25		"	10	9.45		
21:30		"	11	10		
21:35		"	13	11		
21:40		"	14	11.6		
21:45		"	15	12.1		
21:50		"	17	13.1		
21:55		"	19	14		
22:00		"	21	15.1		
22:05		"	23	15.9		
22:10		"	25	16.9		

Casing perms. _____ Bottom choke _____ Surf. temp _____ °F Ticket No. 432466
Gas gravity _____ Oil gravity _____ GOR _____
Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F
INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED _____

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED.

[illegible]

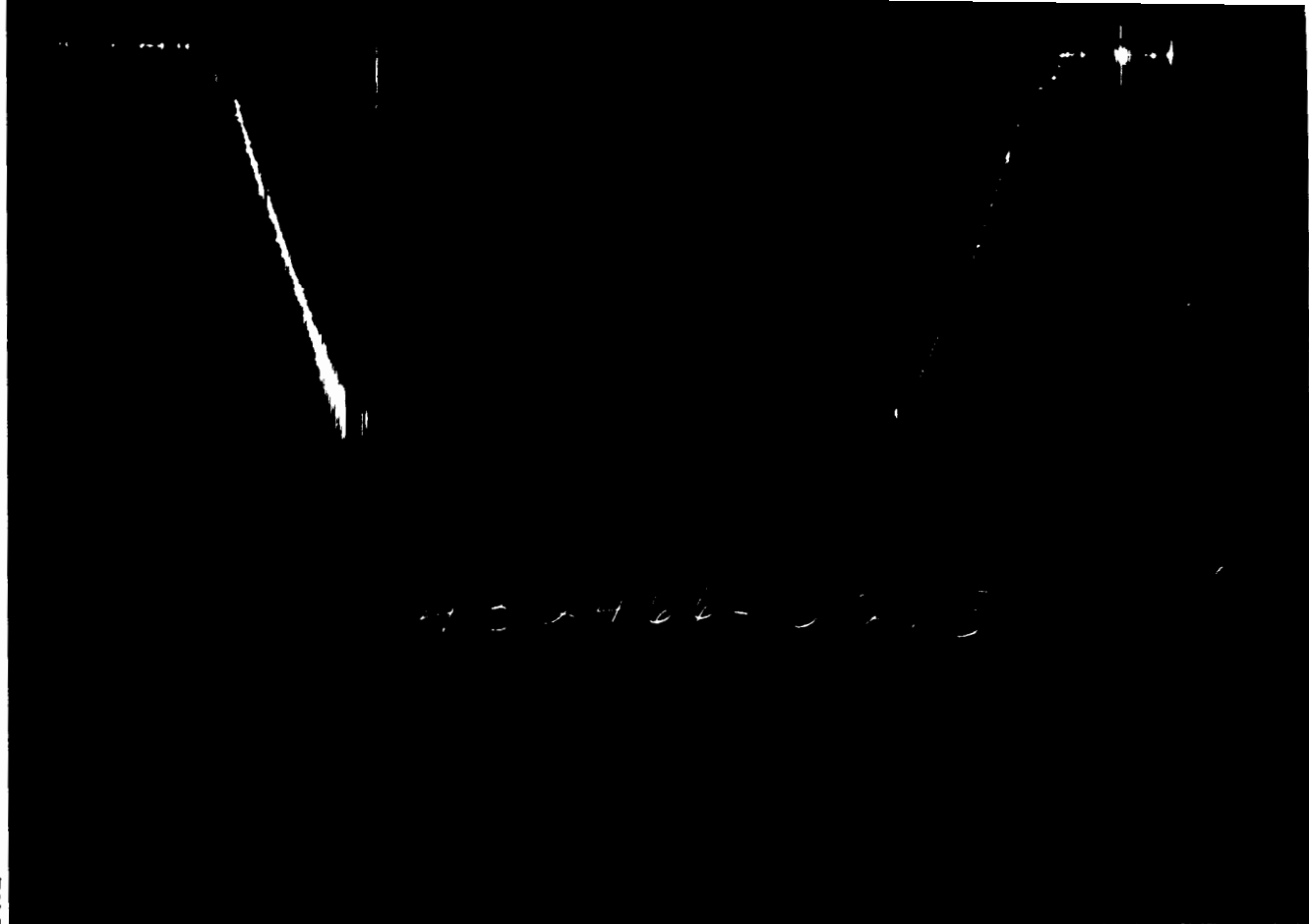
Gauge No. 6273		Depth 4111'		Clock No. 3462		12 hour		Ticket No. 432466	
First Flow Period		First Closed In Pressure		Second Flow Period		Second Closed In Pressure		Third Flow Period	
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.
0 .000	30	.000	26	.000	38	.000	62		
1 .0404	17*	.0135	157**	.1347	31	.0404	886		
2 .0875	20	.0338	344	.2693	41	.0808	1045		
3 .1346	21	.0540	516	.4040	50	.1212	1088		
4 .1818	22	.0743	664	.5387	60	.1616	1113		
5 .2289	24	.0945	791	.6734	70	.2020	1129		
6 .2760	26	.1148	896	.8080	62	.2424	1139		
7		.1350	984			.2828	1146		
8		.1553	1047			.3232	1151		
9		.1755	1091			.3636	1155		
10		.1958	1119			.4040	1159		
11		.2160	1138			.4444	1161		
12		.2363	1150			.4848	1164		
13		.2565	1161			.5252	1167		
14		.2768	1167			.5656	1168		
15		.2970	1171			.6060	1169		

Gauge No. 6274		Depth 4147'		Clock No. 6524		hour 12	
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.
0 .000	50	.000	39	.000	57	.000	70
1 .0405	30*	.0135	169**	.1333	37	.0403	853
2 .0878	34	.0338	342	.2667	50	.0807	1039
3 .1351	36	.0540	512	.4000	58	.1210	1093
4 .1824	37	.0743	669	.5333	71	.1613	1121
5 .2297	38	.0945	812	.6667	80	.2017	1136
6 .2770	39	.1148	923	.8000	70	.2420	1144
7		.1350	1008			.2823	1151
8		.1553	1068			.3226	1156
9		.1755	1109			.3630	1164
10		.1958	1136			.4033	1171
11		.2160	1154			.4436	1173
12		.2363	1167			.4840	1175
13		.2565	1176			.5243	1176
14		.2768	1182			.5656	1176
15		.2970	1186			.6050	1176

Reading Interval	7	3	20	6	Minutes
REMARKS: *-6 minutes ** -2 minutes					

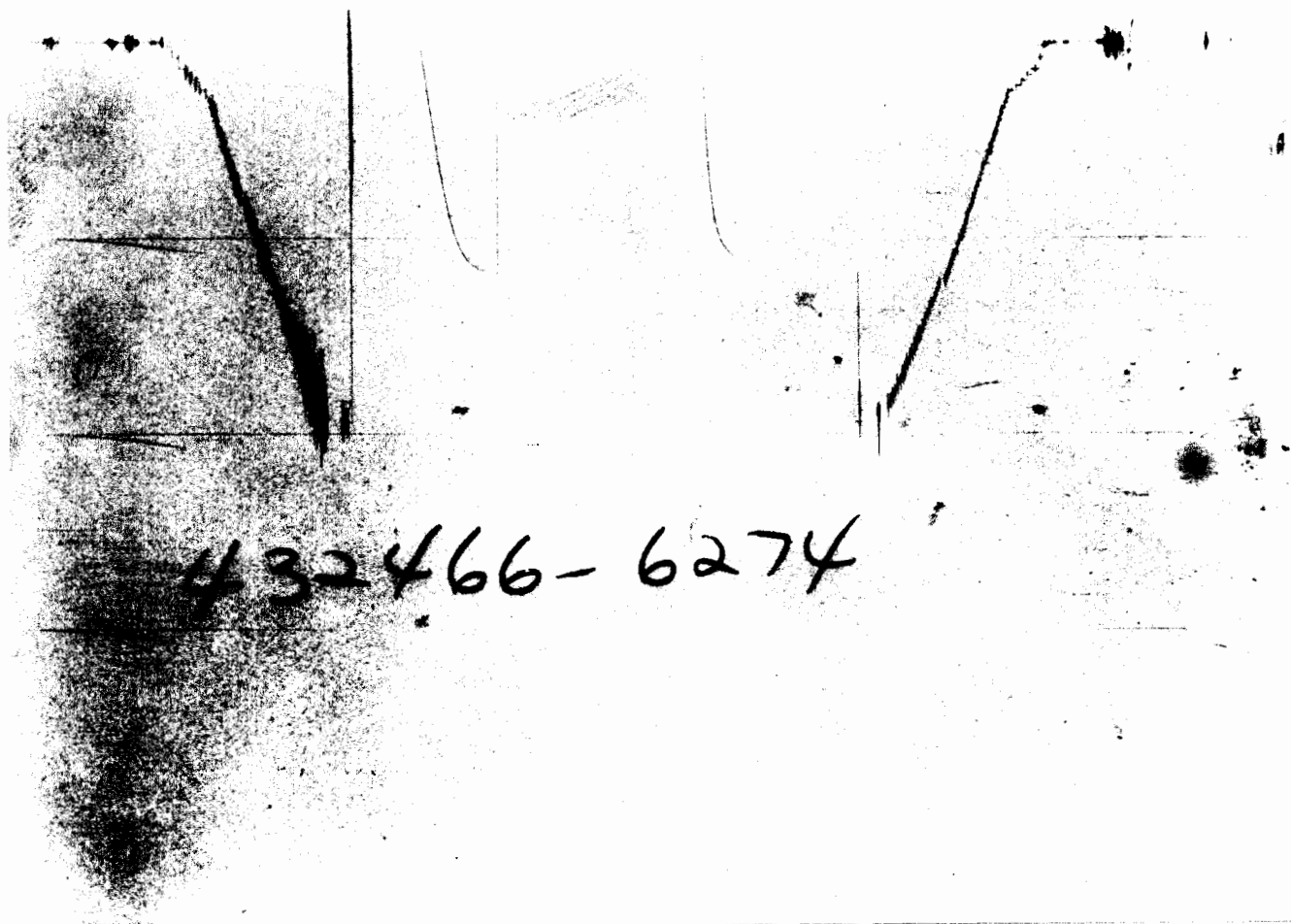
	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	6"	2.25"	1'	
Reversing Sub				
Water Cushion Valve	4.5"	3.826"	3615'	
Drill Pipe	6"	2.25"	482'	
Drill Collars	4"	3.826"	4'	
Handling Sub & Choke Assembly	5"	.85"	5'	4104'
Dual CIP Valve				
Dual CIP Sampler	5"	.75"	5'	4109'
Hydro-Spring Tester				
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4'	4111'
Hydraulic Jar	5"	1.75'	5'	
VR Safety Joint	5"	1.00"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6.75"	1.53 "	6'	4126'
Distributor				
Packer Assembly	6.75"	1.53 "	6'	4132'
Flush Joint Anchor	5"	2.37"	11'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor	5"	2.44"	1' HT-500	
Blanked-Off B.T. Running Case	5"	2.44"	4'	4147'
Total Depth				4150'

PRESSURE



432466-6274

TIME



432466-6274

Each Horizontal Line Equal to 1000 p.s.i.

TEMPERATURE RECORDER CHART

~~432466~~
432466

112

10° each circle

		MCF/D
OF_4	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_f	= Final Flow Pressure	Psig.
P_{ot}	= Potentiometric Surface (Fresh Water *)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q_1	= Theoretical Production w/Damage Removed	bbls/day
Q_g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given,
Fresh Water Corrected to 100° F.

MARCH

Lease Name

1

Well No.

2

Test No.

4214-4226'

Tested Interval

ENERGY SOURCES INCORPORATED

Lease Owner/Company Name

Legal Location
Sec. - Twp. - Rng. 12-33-34Field
Area NORTH LIBERAL

County

SEWARD

State

KANSAS

FLUID SAMPLE DATA				Date 1-25-79		Ticket Number 432467	
Sampler Pressure _____ P.S.I.G. at Surface				Kind of Job OPEN HOLE		Halliburton District LIBERAL	
Recovery: Cu. Ft. Gas _____				Tester H. PERKINS		Witness DAN REYNOLDS	
cc. Oil _____				Drilling Contractor SAGE DRILLING COMPANY RIG # 1 DR			
cc. Water _____				EQUIPMENT & HOLE DATA			
cc. Mud _____				Formation Tested Toronto			
Tot. Liquid cc. _____				Elevation _____ Ft.			
Groivity _____ ° API @ _____ °F.				Net Productive Interval 11' Ft.			
Gas/Oil Ratio _____ cu. ft./bbl.				All Depths Measured From Kelly Bushing			
RESISTIVITY _____ CHLORIDE CONTENT _____				Total Depth 4226' Ft.			
Recovery Water @ _____ °F. _____ ppm				Main Hole/Casing Size 7 7/8"			
Recovery Mud 1.224 @ 70 °F. 4,000 ppm				Drill Collar Length 482' I.D. 2.25"			
Recovery Mud Filtrate @ _____ °F. _____ ppm				Drill Pipe Length 3691' I.D. 3.826"			
Mud Pit Sample 1,122 @ 70 °F. 4,000 ppm				Packer Depth(s) 4203-4214' Ft.			
Mud Pit Sample Filtrate @ _____ °F. _____ ppm				Depth Tester Valve 4186' Ft.			
Mud Weight 8.9 vis 45 sec				Cushion TYPE AMOUNT Depth Back Surface Bottom Pres. Valve Choke 1/4-1/2" Choke 3/4"			
Recovered 10 Feet of drilling mud				Mea. From Tester Valve			
Recovered Feet of Gas to surface in 8 minutes							
Recovered Feet of							
Recovered Feet of							
Recovered Feet of							
Remarks SEE PRODUCTION TEST DATA SHEET							
TEMPERATURE		Gauge No. 6274	Gauge No. 6273	Gauge No.	TIME		
Depth: 4188 Ft.		Depth: 4223 Ft.	Depth: _____ Ft.				
Est. _____ °F.		12 Hour Clock	12 Hour Clock	Hour Clock	Tool _____ A.M.		
Blanked Off NO		Blanked Off YES	Blanked Off	Opened 19:00 P.M.			
4221' Actual 97 °F.		Pressures	Pressures	Pressures	Opened _____ A.M.		
		Field Office	Field Office	Field Office	Bypass 22:01 P.M.		
		Field Office	Field Office	Field Office	Reported	Computed	
		Field Office	Field Office	Field Office	Minutes	Minutes	
First Period	Initial Hydrostatic	1949	1974	1956			
	Flow Initial	32	131	109			
	Flow Final	101	158	150	45	46	
Second Period	Closed in	308	315	311	45	44	
	Flow Initial	386	105	113			
	Flow Final	109	158	152	45	44	
Third Period	Closed in	307	315	307	46	47	
	Flow Initial						
	Flow Final						
Final Hydrostatic		1947	1974	1953			

5

Casing perms. _____ Bottom choke _____ Surf. temp. _____ °F Ticket No. **432467**
 Gas gravity _____ Oil gravity _____ GOR _____
 Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F
INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED.

Date Time	a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
16:00						On location
						Rig coming out of hole.
16:30						Picked up tool
17:00						Made up tools, went into hole.
18:57						Tool on bottom
19:00						Opened tool with a strong blow
19:08						Gas to surface
19:10		1/4"	40	75.8		
19:15		1/4"	64	109.2		
19:20		1/4"	90	145.3		
19:22						Closed in surface valve to change chokes
19:25		1/2"	66	419		
19:30		"	58	378		
19:35		"	53	352		
19:40		"	52	347		
19:45		"	52	347		Closed tool
20:30		"				Opened tool with a strong blow
20:35		"	30	231		
20:40		"	52	347		
20:45		"	60	388		
20:50		"	63	403		
20:55		"	64	409		
21:00		"	64	409		
21:05		"	62	398		
21:10		"	62	398		

432467

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED.

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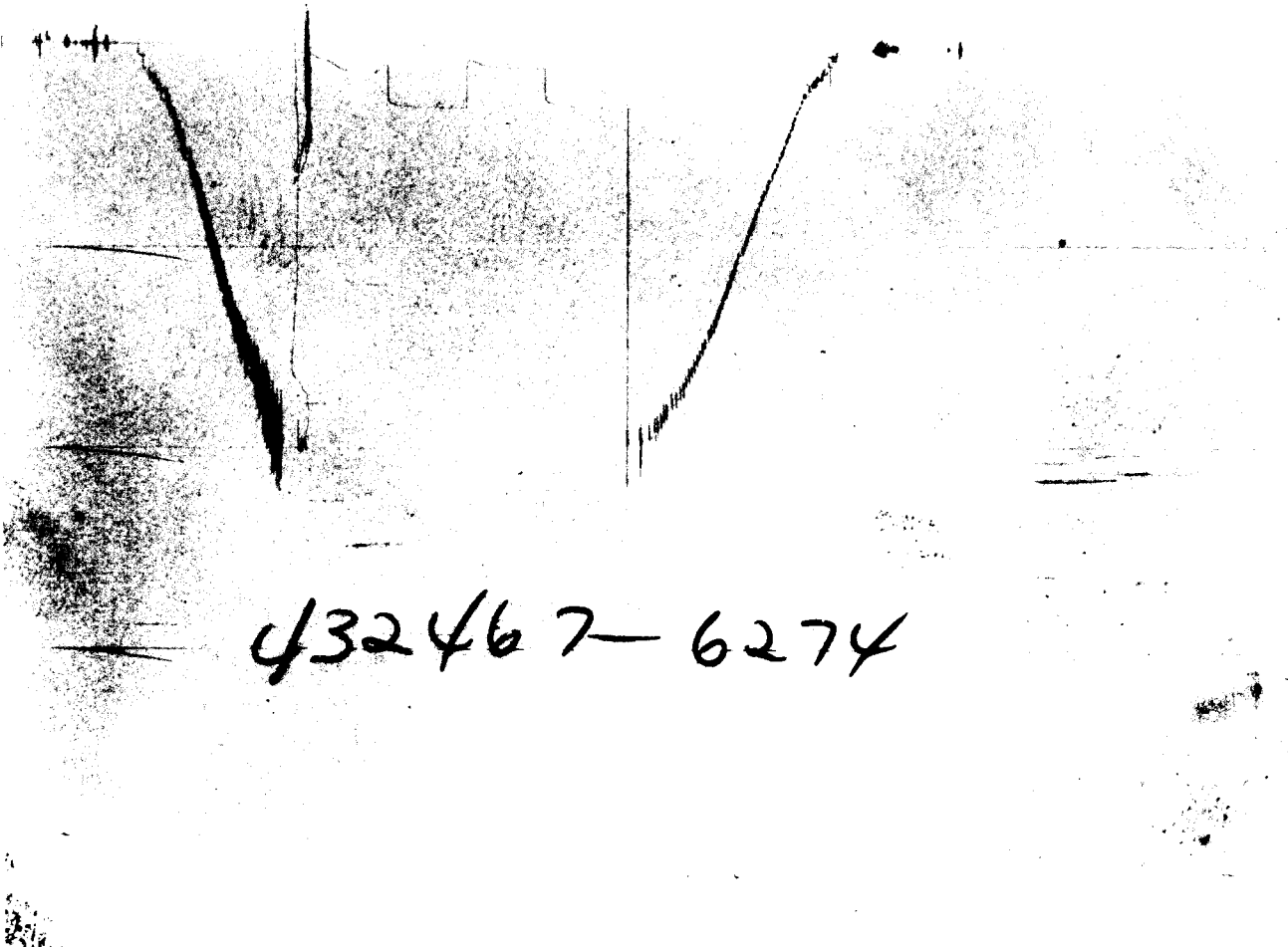
Gauge No.		6274		Depth		4188'		Clock No. 6524		12 hour		Ticket No. 432467	
First Flow Period		Closed In Pressure		Second Flow Period		Closed In Pressure		Third Flow Period		Closed In Pressure		Third Flow Period	
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000 32	.000		101	.000		86	.000		109			
1	.0404 59*	.0068		279	.0269		78	.0337		289			
2	.0944 87	.0137		288	.0807		103	.0540		293			
3	(.145 130C)	.0205		292	.1346		109	.0742		296			
4	.1483 128	.0274		295	.1884		109	.0944		297			
5	.2022 109	.0342		297	.2422		109	.1146		301			
6	.2561 103	.0410		299	.2960		109	.1349		303			
7	.3100 101	.0479		300				.1551		304			
8		.0547		301				.1753		305			
9		.0616		303				.1956		307			
10		.0684		304				.2158		307			
11		.1231		305				.2360		307			
12		.1779		307				.2563		307			
13		.2326		308				.2765		307			
14		.2873		308				.2967		307			
15		.3010		308				.3170		307			

Gauge No.		6273		Depth		4223'		Clock No. 3462		12 hour			
First Flow Period		Closed In Pressure		Second Flow Period		Closed In Pressure		Third Flow Period		Closed In Pressure			
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000 109	.000		150	.000		113	.000		152			
1	.0404 118*	.0068		281	.0273		112***	.0338		291****			
2	.0944 136	.0137		290	.0818		131	.0541		297			
3	(.1440 157)C	.0205		295	.1364		144	.0744		301			
4	.1483 157	.0274		297	.1909		147	.0947		302			
5	.2022 151	.0342		301	.2455		150	.1150		303			
6	.2561 146	.0410		302	.3000		152	.1353		304			
7	.3100 150	.0479		303				.1556		306			
8		.0547		304				.1759		307			
9		.0616		306				.1962		307			
10		.0684		307				.2165		307			
11		.1231		308				.2368		307			
12		.1779		310				.2571		307			
13		.2326		311				.2774		307			
14		.2873		311				.2977		307			
15		.3010		311				.3180		307			
Reading Interval 8		**		8		3						Minutes	

REMARKS:		*-6 minutes		**-First 10 intervals equal to 1 minute each; next 4 intervals equal to 8 minutes each; last interval equal to 2 minutes.		***-4 minutes		****-5 minutes.	
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REMARKS: * -6 minutes ** -First 10 intervals equal to 1 minute each; next 4 intervals equal to 8 minutes each;
last interval equal to 2 minutes. *** -4 minutes **** -5 minutes.

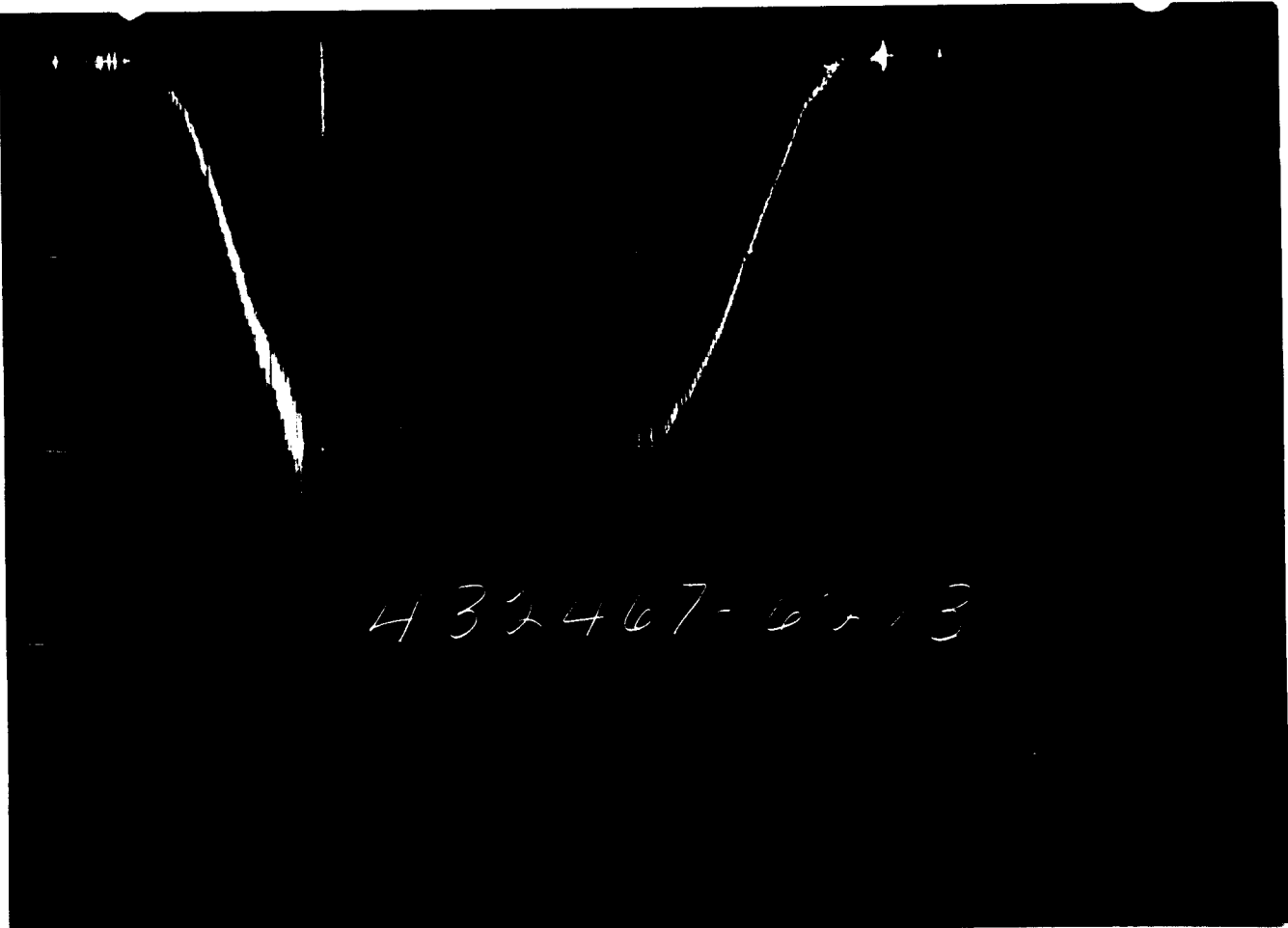
	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	6"	2.25 "	1'	
Reversing Sub				
Water Cushion Valve				
Drill Pipe	4.5"	3.826"	3691'	
Drill Collars	6"	2.25"	482'	
Handling Sub & Choke Assembly	4.5"	3.826"	4'	
Dual CIP Valve	5"	.85"	5'	4181'
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5'	4186'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4'	4188'
Hydraulic Jar	5"	1.75 "	5'	
VR Safety Joint	5"	1.00"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6.75"	1.53 "	6'	4203'
	5"	2.37"	5' Blank Anchor	
Distributor				
Packer Assembly	6.75"	1.53 "	6'	4214'
Flush Joint Anchor	5"	2.37"	5'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor	5"	2.44"	1' Ht-500	
Blanked-Off B.T. Running Case	5"	2.44 "	4'	4223'
Total Depth				4226'



432467-6274

PRESSURE

TIME



432467-6274

Each Horizontal Line Equal to 1000 p.s.i.

TEMPERATURE RECORDER CHART

432467

←97

10° each circle

		MCF/D
	Potential with/Damage Removed Max.	MCF/D
OF_4	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_f	= Final Flow Pressure	Psig.
P_{ot}	= Potentiometric Surface (Fresh Water *)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q_1	= Theoretical Production w/Damage Removed	bbls/day
Q_g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given,
Fresh Water Corrected to 100° F.

FLUID SAMPLE DATA				Date 1-27-79		Ticket Number 503354	
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ °F. Gas/Oil Ratio _____ cu. ft./bbl. RESISTIVITY CHLORIDE CONTENT Recovery Water @ _____ °F. _____ ppm Recovery Mud .998 @ 70 °F. 3000 ppm Recovery Mud Filtrate @ _____ °F. _____ ppm Mud Pit Sample .730 @ 70 °F. 5800 ppm Mud Pit Sample Filtrate @ _____ °F. _____ ppm Mud Weight _____ vis _____ cp				Kind of Job OPEN HOLE TEST Tester R. WARE- ABLA Drilling Contractor SAGE DRILLING COMPANY Witness D. REYNOLDS TJB S		Halliburton District LIBERAL Equipment & Hole Data Formation Tested _____ Elevation 2888' KB Ft. Net Productive Interval 14' Ft. All Depths Measured From Kelly Bushing Total Depth 4367' Ft. Main Hole/Casing Size 7 7/8" - 8 5/8" Drill Collar Length 214' I.D. 2.25" Drill Pipe Length 4100' I.D. 3.826" Packer Depth(s) 4347' - 4353' Ft. Depth Tester Valve 4330' Ft.	
TYPE AMOUNT Cushion _____ Ft. Depth Back Pres. Valve _____ Surface Choke 1/4" Bottom Choke 3/4"				Field Area NORTHWEST LIBERAL Mea. From Tester Valve _____ County SEWARD State KANSAS			
Recovered 10 Feet of gassy mud. Recovered _____ Feet of Recovered _____ Feet of Recovered _____ Feet of Recovered _____ Feet of Recovered _____ Feet of Remarks SEE PRODUCTION TEST DATA SHEET . . . CHARTS INDICATE POSSIBLE PLUGGING OF ANCHOR PERFORATIONS DURING FLOW PERIODS. . . _____ _____ _____							
TEMPERATURE		Gauge No. 7503 Depth: 4334 Ft.	Gauge No. 7502 Depth: 4363 Ft.	Gauge No. _____ Depth: _____ Ft.	TIME		
Est. _____ °F.		12 Hour Clock	12 Hour Clock	Hour Clock	Tool _____ A.M. Opened 0300 P.M. Opened _____ A.M. Bypass 0730 P.M.		
Actual 4362 110 °F.		Blanked Off NO	Blanked Off YES	Blanked Off _____			
		Pressures		Pressures		Pressures	
	Field	Office	Field	Office	Field	Office	Reported Minutes
First Period	Initial Hydrostatic	2013	2029	2021			Minutes
	Flow Initial	13	126	144			45
	Flow Final	34	113	112			43
Second Period	Closed in	841	839	844			45
	Flow Initial	19	32	39			120
	Flow Final	71	162	178			121
Third Period	Closed in	804	807	807			60
	Flow Initial						
	Flow Final						
Final Hydrostatic		2006	2029	2023			

MARCH

2

3

4353' - 4367'

ENERGY SOURCES INCORPORATED

Legal Location
Sec. - Twp. - Rng. 12 - 33 - 34W

Field Area NORTHWEST LIBERAL

County SEWARD

State KANSAS

Lease Owner/Company Name

5

Casing perms. _____ Bottom choke _____ Surf. temp. _____ °F Ticket No. 503354
 Gas gravity _____ Oil gravity _____ GOR _____
 Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F
 INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED _____

Date Time	a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
2250						On location. Pulling collars.
2330						Picked up tool.
2415						Ran tool in hole.
0245						Tool on bottom.
0300						Tool opened with a very weak but
						increasing blow.
0305						Blow off bottom of bucket.
0330						Opened blow line valve.
0334						Gas to surface.
0335						Closed valve on blow line.
0345						Tool closed.
0430						Tool opened with a strong blow.
0431						Gas to surface.
0435		1/8	1	2.76		
0440		"	1/2			
0445		"	1/2			
0450		"	1/2			
0535		"	4	23.3		
0545		"	42	24.2		
0550		"	43	24.5		
0555		"	44	25.0		
0600		"	44	25.0		
0605		"	45	25.4		
0610		"	45	25.4		
0615		"	46	25.8		

Casing perms. _____ Bottom choke _____ Surf. temp _____ °F Ticket No. 503354
Gas gravity _____ Oil gravity _____ GOR _____ PAGE 2
Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED.

[illegible]

Gauge No. 7503				Depth 4334				Clock No. 17058				12 hour		Ticket No. 503354									
First Flow Period				First Closed In Pressure				Second Flow Period				Second Closed In Pressure				Third Flow Period				Third Closed In Pressure			
				$\text{Log } \frac{t + \theta}{\theta}$								$\text{Log } \frac{t + \theta}{\theta}$								$\text{Log } \frac{t + \theta}{\theta}$			
Time Defl. .000"				PSIG Temp. Corr.				Time Defl. .000"				PSIG Temp. Corr.				Time Defl. .000"				PSIG Temp. Corr.			
0	.0000	13		.0000	34			.0000	19			.0000	71										
1	.0547*	14		.0201	668			.1427**	34			.0408***	667										
2	.1026	19		.0403	758			.2785	47			.0681	712										
3	.1504	34		.0604	788			.4144	56			.0953	734										
4	.1983	32		.0805	803			.5502	64			.1225	750										
5	.2461	21		.1007	813			.6861	69			.1497	761										
6	.2940	34		.1208	821			.8220	71			.1769	768										
7				.1409	825							.2042	772										
8				.1610	829							.2314	780										
9				.1812	832							.2586	785										
10				.2013	833							.2858	790										
11				.2214	837							.3130	793										
12				.2416	838							.3403	796										
13				.2617	840							.3675	800										
14				.2818	840							.3947	803										
15				.3020	841							.4220	804										

Gauge No. 7502				Depth 4363				Clock No. 8090				12 hour			
First Flow Period				First Closed In Pressure				Second Flow Period				Second Closed In Pressure			
				$\text{Log } \frac{t + \theta}{\theta}$								$\text{Log } \frac{t + \theta}{\theta}$			
Time Defl. .000"				PSIG Temp. Corr.				Time Defl. .000"				PSIG Temp. Corr.			
0	.0000	144		.0000	112			.0000	39			.0000	178		
1	.0538*	204		.0201	661			.1418**	141			.0405***	669		
2	.1008	248		.0401	754			.2768	115			.0676	712		
3	.1478	238		.0602	785			.4119	136			.0946	736		
4	.1949	228		.0802	801			.5469	163			.1216	752		
5	.2419	307		.1003	812			.6820	167			.1487	762		
6	.2890	112		.1204	818			.8170	178			.1757	770		
7				.1404	823							.2027	777		
8				.1605	828							.2298	783		
9				.1805	831							.2568	788		
10				.2006	833							.2838	791		
11				.2207	836							.3108	796		
12				.2407	839							.3379	797		
13				.2608	841							.3649	801		
14				.2808	842							.3919	804		
15				.3010	844							.4190	807		

Gauge No. 7502				Depth 4363				Clock No. 8090				12 hour			
First Flow Period				First Closed In Pressure				Second Flow Period				Second Closed In Pressure			
				$\text{Log } \frac{t + \theta}{\theta}$								$\text{Log } \frac{t + \theta}{\theta}$			
Time Defl. .000"				PSIG Temp. Corr.				Time Defl. .000"				PSIG Temp. Corr.			
0	.0000	144		.0000	112			.0000	39			.0000	178		
1	.0538*	204		.0201	661			.1418**	141			.0405***	669		
2	.1008	248		.0401	754			.2768	115			.0676	712		
3	.1478	238		.0602	785			.4119	136			.0946	736		
4	.1949	228		.0802	801			.5469	163			.1216	752		
5	.2419	307		.1003	812			.6820	167			.1487	762		
6	.2890	112		.1204	818			.8170	178			.1757	770		
7				.1404	823							.2027	777		
8				.1605	828							.2298	783		
9				.1805	831							.2568	788		
10				.2006	833							.2838	791		
11				.2207	836							.3108	796		
12				.2407	839							.3379	797		
13				.2608	841							.3649	801		
14				.2808	842							.3919	804		
15				.3010	844							.4190	807		

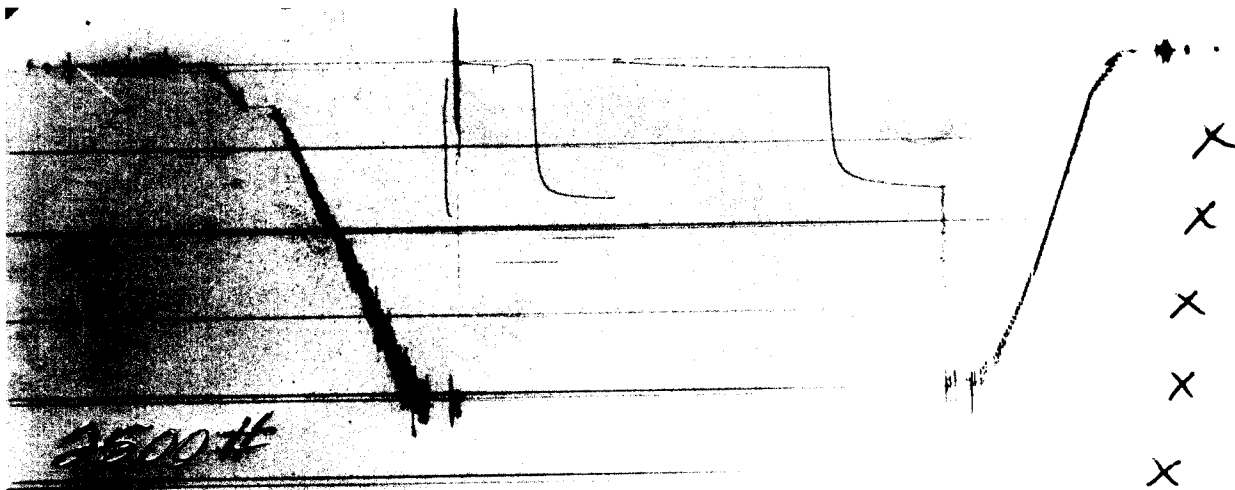
Gauge No. 7502				Depth 4363				Clock No. 8090				12 hour			
First Flow Period				First Closed In Pressure				Second Flow Period				Second Closed In Pressure			
				$\text{Log } \frac{t + \theta}{\theta}$								$\text{Log } \frac{t + \theta}{\theta}$			
Time Defl. .000"				PSIG Temp. Corr.				Time Defl. .000"				PSIG Temp. Corr.			
0	.0000	144		.0000	112			.0000	39			.0000	178		
1	.0538*	204		.0201	661			.1418**	141			.0405***	669		
2	.1008	248		.0401	754			.2768	115			.0676	712		
3	.1478	238		.0602	785			.4119	136			.0946	736		
4	.1949	228		.0802	801			.5469	163			.1216	752		
5	.2419	307		.1003	812			.6820	167			.1487	762		
6	.2890	112		.1204	818			.8170	178			.1757	770		
7				.1404	823							.2027	777		
8				.1605	828							.2298	783		
9				.1805	831							.2568	788		
10				.2006	833							.2838	791		
11				.2207	836							.3108	796		
12				.2407	839							.3379	797		
13				.2608	841							.3649	801		
14				.2808	842							.3919	804		
15				.3010	844							.4190	807		

Gauge No. 7502				Depth 4363				Clock No. 8090				12 hour			
First Flow Period				First Closed In Pressure				Second Flow Period				Second Closed In Pressure			
				$\text{Log } \frac{t + \theta}{\theta}$								$\text{Log } \frac{t + \theta}{\theta}$			
Time Defl. .000"				PSIG Temp. Corr.				Time Defl. .000"				PSIG Temp. Corr.			
0	.0000	144		.0000	112			.0000	39			.0000	178		
1	.0538*	204		.0201	661			.1418**	141			.0405***	669		
2	.1008	248		.0401	754			.2768	115			.0676	712		
3	.1478	238		.0602	785			.4119	136			.0946	736		
4	.1949	228		.0802	801			.5469	163			.1216	752		
5	.2419	307		.1003	812			.6820	167			.1487	762		
6	.2890	112		.1204	818			.8170	178			.1757	770		
7				.1404	823							.2027	777		
8				.1605	828							.2298	783		
9				.1805	831							.2568	788		
10				.2006	833							.2838	791		
11				.2207	836							.3108	796		
12				.2407	839							.3379	797		
13				.2608	841							.3649	801		
14				.2808	842							.3919	804		
15				.3010	844							.4190	807		

Gauge No. 7502				Depth 4363				Clock No. 8090				12 hour			
First Flow Period				First Closed In Pressure				Second Flow Period				Second Closed In Pressure			
				$\text{Log } \frac{t + \theta}{\theta}$								$\text{Log } \frac{t + \theta}{\theta}$			
Time Defl. .000"				PSIG Temp. Corr.				Time Defl. .000"				PSIG Temp. Corr.			
0	.0000	144		.0000	112			.0000	39			.0000	178		
1	.0538*	204		.0201	661			.1418**	141			.0405***	669		
2	.1008	248		.0401	754			.2768	115			.0676	712		
3	.1478	238		.0602	785			.4119	136			.0946	736		
4	.1949	228		.0802	801			.5469	163			.1216	752		
5	.2419	307		.1003	812			.6820	167			.1487	762		
6	.2890	112		.1204	818			.8170	178			.1757	770		
7				.1404	823							.2027	777		
8				.1605	828							.2298	783		
9				.1805	831							.2568	788		
10				.2006	833							.2838	791		
11				.2207	836							.3108	796		
12				.2407	839							.3379	797		
13				.2608	841							.3649	801		
14				.2808	842							.3919	804		
15				.3010	844							.4190	807		

Gauge No. 7502				Depth 4363				Clock No. 8090				12 hour			
First Flow Period				First Closed In Pressure				Second Flow Period				Second Closed In Pressure			
				$\text{Log } \frac{t + \theta}{\theta}$								$\text{Log } \frac{t + \theta}{\theta}$			
Time Defl. .000"				PSIG Temp. Corr.				Time Defl. .000"				PSIG Temp. Corr.			
0	.0000	144		.0000	112			.0000	39			.0000	178		
1	.0538*	204		.0201	661			.1418**	141			.0405***	669		
2	.1008	248		.0401	754			.2768	115			.0676	712		
3	.1478	238		.0602	785			.4119	136</						

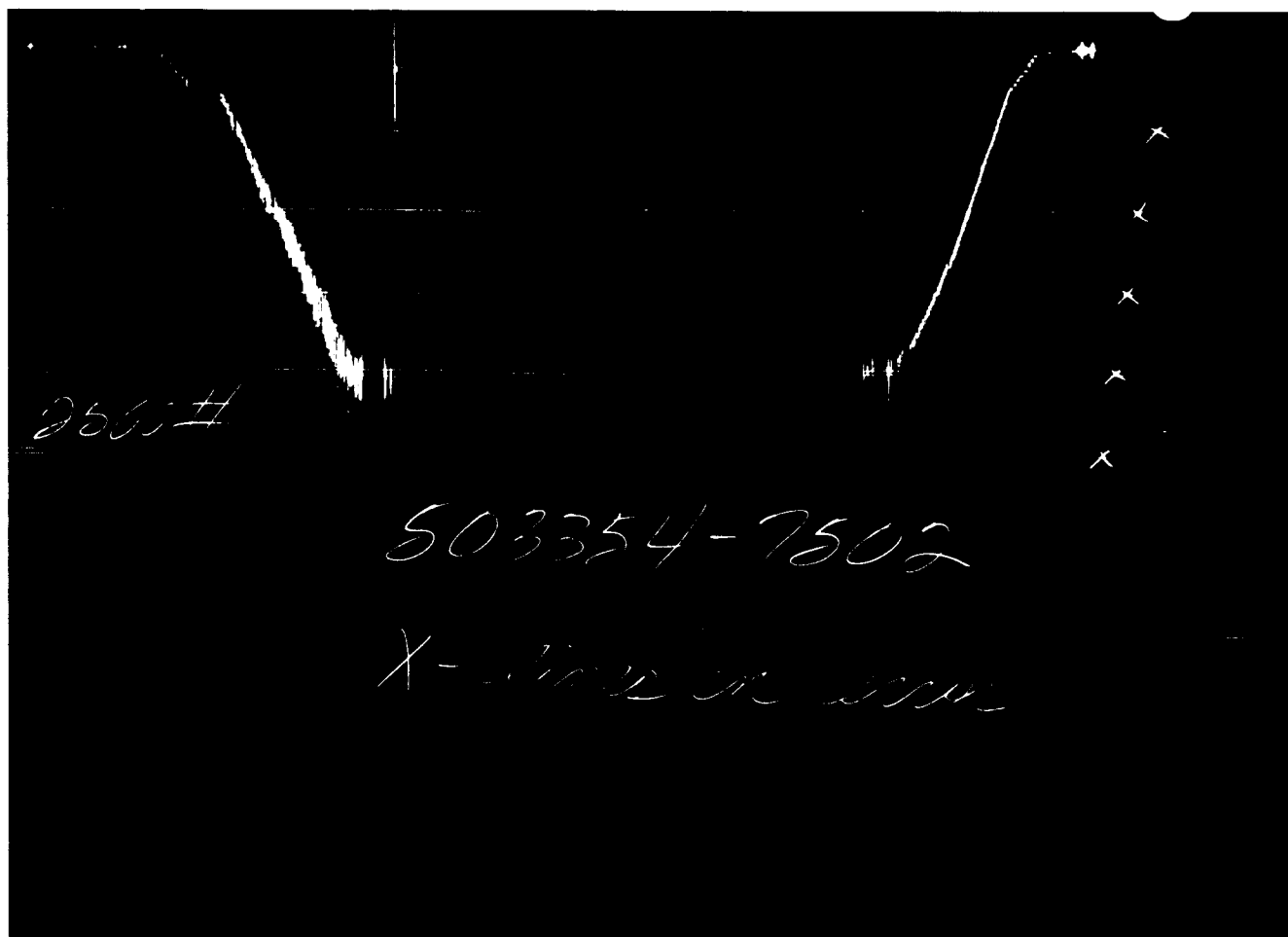
	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	6"	2.25"	1'	4260'
Reversing Sub				
Water Cushion Valve				
Drill Pipe	4 1/2"	3.826"	4100'	
Drill Collars	6.25"	2.25"	214'	
Handling Sub & Choke Assembly	4 1/2"	3.826"	5'	
Dual CIP Valve	5"	.75"	5'	4325'
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5'	4330'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4'	4334'
Hydraulic Jar	5"	1.75"	5'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6 3/4"	1.53"	6'	4347'
Distributor				
Packer Assembly	6 3/4"	1.53"	6'	4353'
Flush Joint Anchor	5"	2.37"	7'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor				
HT-500	5"		1'	
Blanked-Off B.T. Running Case	5"	2.44"	4'	4363'
Total Depth				4367'



503354-7503

PRESSURE

TIME



Each Horizontal Line Equal to 1000 p.s.i.

TEMPERATURE RECORDER CHART

#503354

←110

10° each circle

OF_3	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF_4	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_f	= Final Flow Pressure	Psig.
P_{ot}	= Potentiometric Surface (Fresh Water *)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q_1	= Theoretical Production w/Damage Removed	bbls/day
Q_g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given,
Fresh Water Corrected to 100° F.

[illegible]

Casing perf. _____ Bottom choke _____ Surf. temp _____ °F Ticket No. **503232**
 Gas gravity _____ Oil gravity _____ GOR _____
 Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F
INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED _____

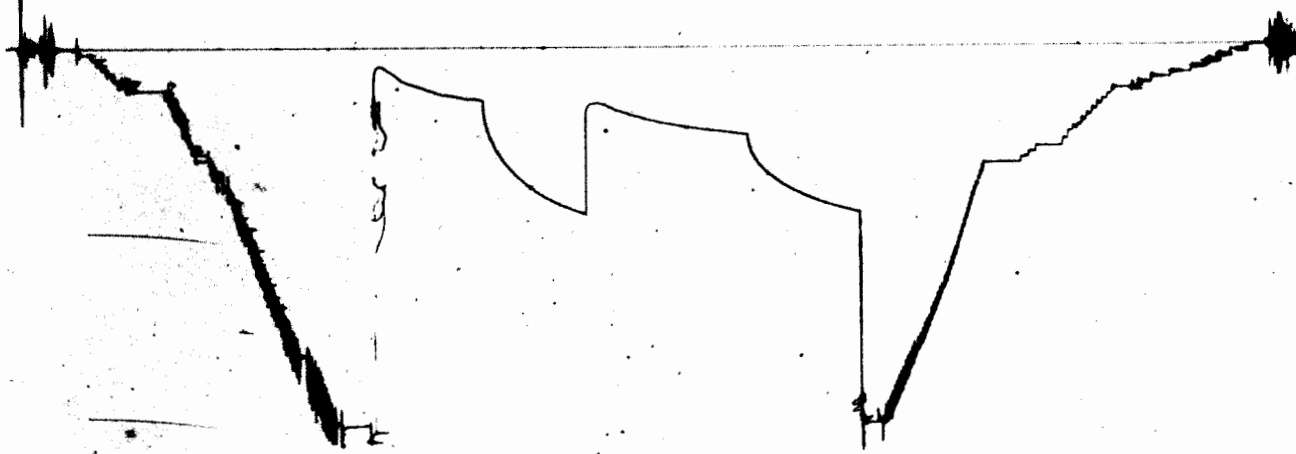
Date 1-28-79 Time a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
0110					Called out.
0240					On location. Logging hole.
0430					Picked up tool.
0540					Tool picked up - went in hole.
0832					Tool on bottom.
0836					Opened tool with a good blow of air -
					increasing to a strong blow off bottom
					of bucket in 1 minute.
0913					Gas to the surface - 1/4" choke.
0920		37	71.8		
0925		35	69.0		
0930		30	61.9		
0935		25	54.7		
0936					Closed tool.
1036					Reopened tool - gas to the surface
					instantly on 1/8" choke.
1043		1	2.76		
1050		1.5	3.39		
1055		2.5	4.42		
1100		5	6.39		
1105		6.5	7.37		
1110		7.5	8.01		
1115		9	8.89		
1120		10	9.45		
1125		10	9.45		

503232

ppm Res. _____ @ _____ °F

[illegible]

	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	6"	2.50"	1'	
Reversing Sub				
Water Cushion Valve	4 1/2"	3.826"	??	
Drill Pipe	6 1/4"	2.25"	482'	
Drill Collars	4 1/2"	3.826"	4'	
Handling Sub & Choke Assembly	5"	.87"	5'	4349'
Dual CIP Valve				
Dual CIP Sampler	5"	.75"	5'	4354'
Hydro-Spring Tester	6"	2.50"	1'	
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4'	4371'
Hydraulic Jar	5"	1.75"	5'	
VR Safety Joint	5"	1.00"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6 3/4"	1.53"	6'	4386'
Distributor				
Packer Assembly	6 3/4"	1.53"	6'	4392'
Flush Joint Anchor	5"	2.37"	16'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor HT-500 Temp... ..	5"		1'	4411'
Blanked-Off B.T. Running Case	5"	2.44"	4'	4412'
Total Depth				4415'

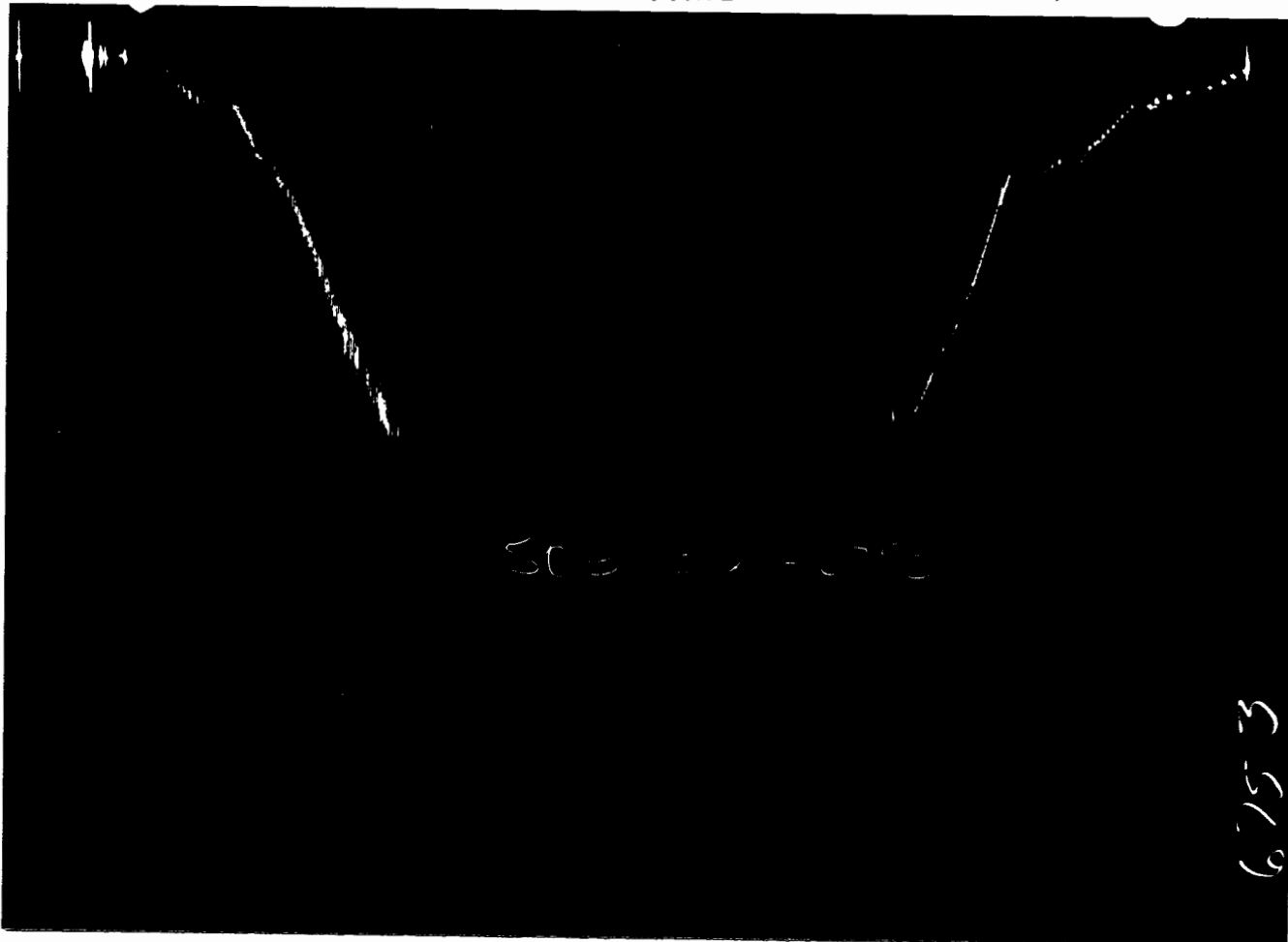


503 232-6754

13379

PRESSURE

TIME



503 232-6754

6753

Each Horizontal Line Equal to 1000 p.s.i.

TEMPERATURE RECORDER CHART

503232



←
122

10° each circle

OF_3	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF_4	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_f	= Final Flow Pressure	Psig.
P_{ot}	= Potentiometric Surface (Fresh Water *)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q_1	= Theoretical Production w/Damage Removed	bbls/day
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R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given,
Fresh Water Corrected to 100° F.