

Sec 17-33S-19W TRILOBITE TESTING L.L.C.

ERATOR : Graves Drlg.Co.Inc.

DATE 01-02-99

LL NAME: Lindsay #1

KB 1952.00 ft

TICKET NO: 11577 DST #1

CATION : 17-33s-9w Comanche co KS

GR 1944.00 ft

FORMATION: Miss.

TERVAL : 5174.00 To 5221.00 ft

TD 5221.00 ft

TEST TYPE: CONVENTIONAL

ORDER DATA

ins	Field	1	2	3	4	TIME DATA-----
30	Rec.	10248	10248	2342		PF Fr. 2048 to 2118 hr
60	Range(Psi)	4400.0	4400.0	4995.0	0.0	0.0 IS Fr. 2118 to 2218 hr
30	Clock(hrs)	12 hr	12 hr	batt.		SF Fr. 2218 to 2248 hr
60	Depth(ft)	5218.0	5218.0	5184.0	0.0	0.0 FS Fr. 2248 to 2348 hr

	Field	1	2	3	4	
Init Hydro	2591.0	2585.0	2580.0	0.0	0.0	T STARTED 1829 hr
First Flow	57.0	53.0	25.0	0.0	0.0	T ON BOTM 2040 hr
Final Flow	57.0	53.0	25.0	0.0	0.0	T OPEN 2048 hr
In Shut-in	449.0	434.0	417.0	0.0	0.0	T PULLED 2348 hr
Init Flow	66.0	64.0	20.0	0.0	0.0	T OUT 0148 hr
Final Flow	66.0	64.0	37.0	0.0	0.0	
Fl Shut-in	406.0	412.0	389.0	0.0	0.0	TOOL DATA-----
Final Hydro	2569.0	2560.0	2551.0	0.0	0.0	Tool Wt. 2100.00 lbs
side/Outside	0	0	I	T		Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 66000.00 lbs
						Initial Str Wt 57000.00 lbs
						Unseated Str Wt 57000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 5179.00 ft

COVERY

t Fluid 35.00 ft of 0.00 ft in DC and 35.00 ft in DP
80.00 ft of Gas in pipe.
.00 ft of Drlg. mud.
00 ft of
00 ft of Rw n.c. ohms @ degrees F.
00 ft of EST.FT. of PAY----- 10

LINEITY 5000.00 P.P.M. A.P.I. Gravity 0.00

LOW DESCRIPTION

Initial Flow:
Strong blow - bottom of bucket in
15 seconds

Initial Shutin:

No blow

Final Flow:

Strong blow - bottom of bucket
immediatley

Final Shutin:

No blow

SAMPLES: None

AGENT TO: Caraway/Liberal

Test Successful: Y

MUD DATA-----

Mud Type	Chemical
Weight	9.20 lb/gal
Vis.	50.00 S/L
W.L.	8.60 in3
F.C.	0.20 in
Mud Drop N	
Amt. of fill	0.00 ft
Btm. H. Temp.	117.00 F
Hole Condition	Good
% Porosity	10.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00 N
Cushion Type	None
Reversed Out N	
Tool Chased N	
Tester	Gary Pevoteaux
Co. Rep.	John Hastings
Contr.	Duke Drlg.
Rig #	2
Unit #	
Pump T.	LCM 1#/bl

*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Lindsay #1

LOCATION : Sec.17 Twp.33s Rg.19w Ks

TICKET No. 11577 D.S.T. No. 1 DATE 01-02-99

TOTAL TOOL TO BOTTOM OF TOP PACKERS 27

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 47

TOTAL TOOL 74

DRILL COLLAR ANCHOR IN INTERVAL

C. ANCHOR STND.Stands Single Total

P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY 74

C. ABOVE TOOLS.Stands Single Total

P. ABOVE TOOLS.Stands83 Single 1 Total 5179

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5253

TOTAL DEPTH 5221

TOTAL DRILL PIPE ABOVE K.B. 32

MARKS:

Comments:

FLUID SAMPLER DATA (not run)

S-----
 L----- ML.
 D----- ML.
 TER----- ML.
 HER-----
 PRESSURE----- PSI
 ----- ohms @ deg. F.
 IONIDES----- ppm.
 GRAVITY-----n/a deg.API

	P.O. SUB	
	C.O. SUB @ top of tool	5147
	S.I. TOOL Sterling	5153
	Sampler (no)	
	HMV Sterling	5158
	JARS Bowen	5163
	SAFETY JOINT Bowen	5165
	PACKER Top	5169
	PACKER Btm.	5174
	DEPTH 5174	
	STUBB 1 ft.	5175
	ANCHOR	
	4' perms to	5179
	Alpine rec. @	5184
	T.C.	
	DEPTH	
	37' perms to	5216
	AK-1 rec. @	5218
	BULLNOSE 5 ft. perforated	5221
	T.D.	

TEST HISTORY

11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

Flag Points

t(Min.) P(PSig)

A:	0.00	2500.77
B:	0.00	24.50
C:	29.00	24.58
D:	60.50	416.78
E:	0.00	20.30
F:	30.75	36.75
G:	60.75	386.98
Q:	0.00	2550.56

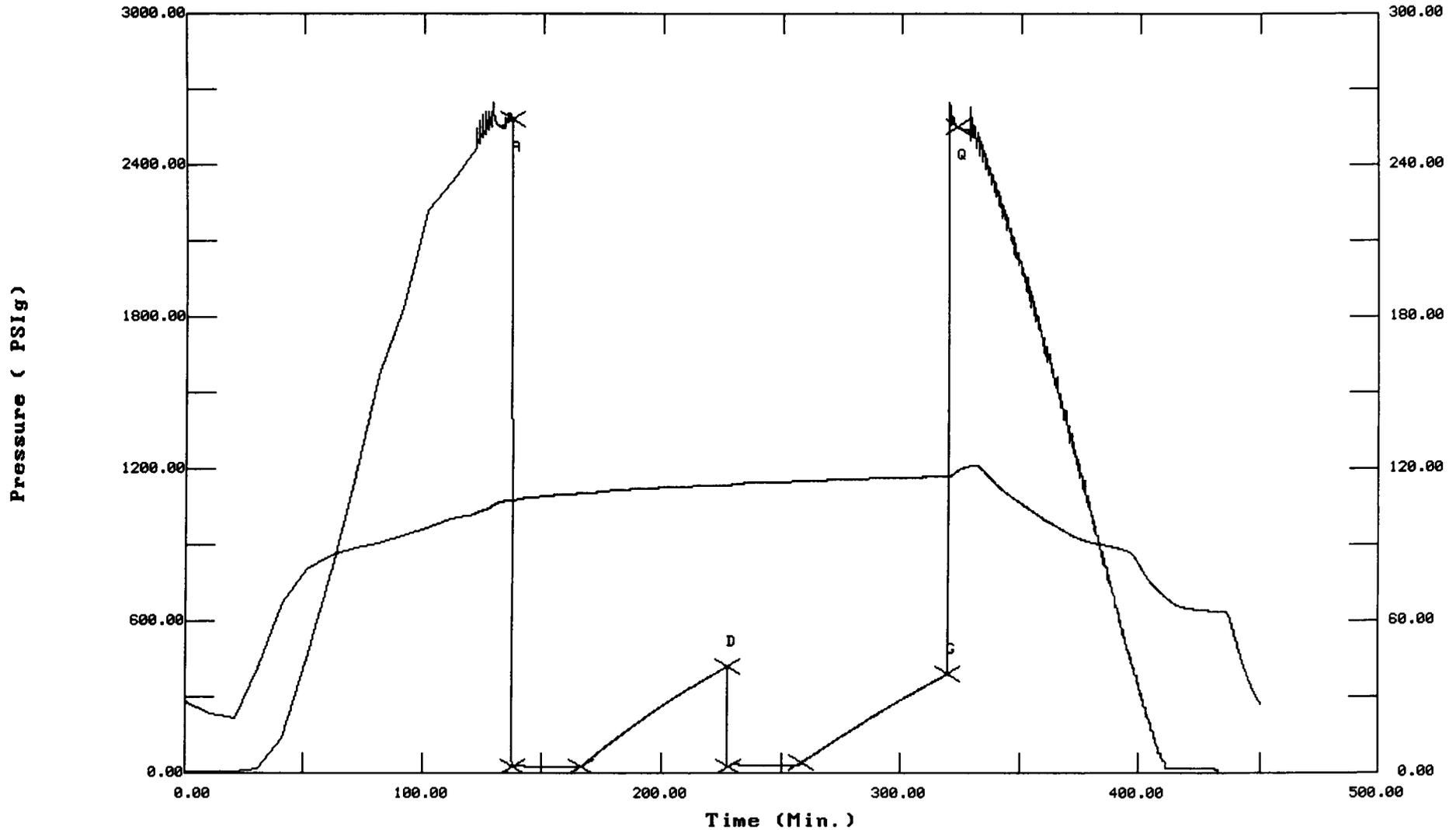
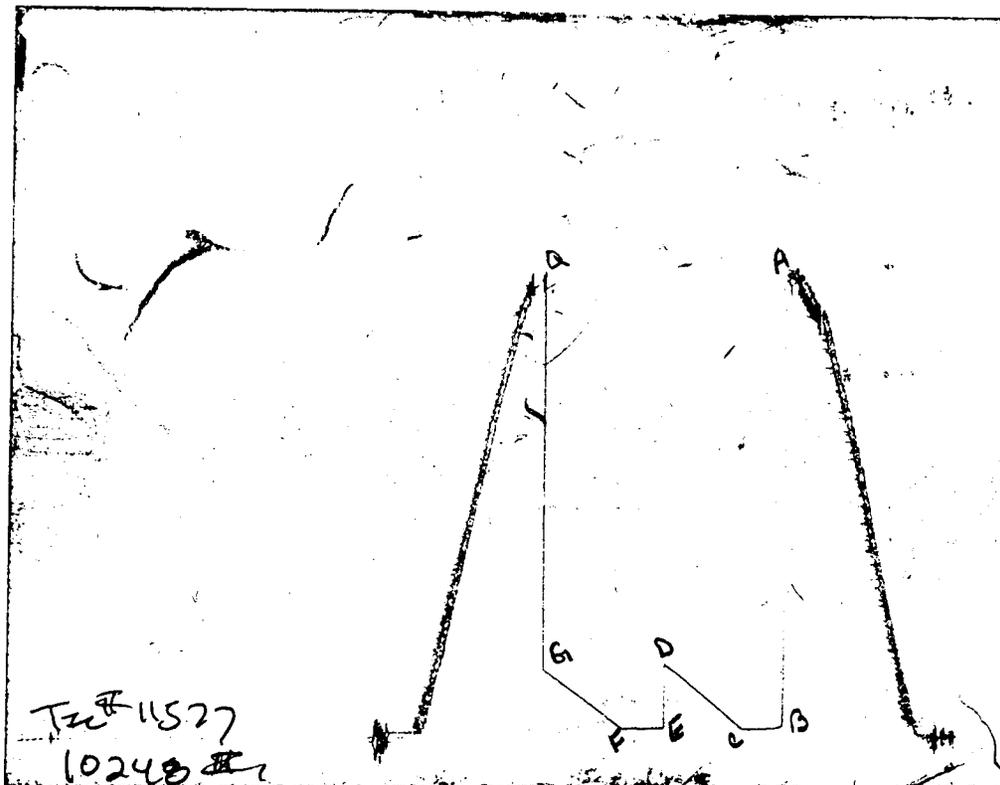


CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

EST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

ATE: 01/02/99 TIME: 18:30:05

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
**** Initial Hydro.	136.75	2580.8	0.0	107.40		
**** Start Flow 1	0.00	24.5	0.0	107.45		
	0.25	24.1	-0.4	107.45		
	0.50	23.8	-0.7	107.48		
	0.75	24.2	-0.3	107.53		
	1.00	24.2	-0.3	107.59		
	1.25	24.3	-0.2	107.65		
	1.50	24.5	0.0	107.71		
	1.75	24.5	0.0	107.78		
	2.00	24.7	0.2	107.85		
	2.25	24.8	0.3	107.91		
	2.50	24.8	0.3	107.98		
	2.75	24.7	0.2	108.03		
	3.00	24.7	0.2	108.08		
	3.25	24.7	0.2	108.13		
	3.50	24.7	0.2	108.17		
	3.75	24.7	0.2	108.20		
	4.00	24.7	0.2	108.24		
	4.25	24.8	0.3	108.27		
	4.50	24.8	0.3	108.30		
	4.75	24.8	0.3	108.33		
	5.00	24.8	0.3	108.36		
	5.25	24.6	0.1	108.38		
	5.50	24.6	0.1	108.40		
	5.75	24.6	0.1	108.43		
	6.00	24.5	0.0	108.45		
	6.25	24.4	-0.1	108.46		
	6.50	24.4	-0.1	108.47		
	6.75	24.5	0.0	108.49		
	7.00	24.5	0.0	108.51		
	7.25	24.5	0.0	108.53		
	7.50	24.3	-0.2	108.53		
	7.75	24.3	-0.2	108.56		
	8.00	24.2	-0.3	108.57		
	8.25	24.2	-0.3	108.59		
	8.50	24.2	-0.3	108.60		
	8.75	24.1	-0.4	108.62		
	9.00	24.1	-0.4	108.63		
	9.25	24.1	-0.4	108.65		
	9.50	24.1	-0.4	108.67		
	9.75	24.1	-0.4	108.69		
	10.00	24.1	-0.4	108.72		
	10.25	24.0	-0.5	108.75		
	10.50	24.0	-0.5	108.78		
	10.75	24.0	-0.5	108.81		
	11.00	24.0	-0.5	108.84		
	11.25	24.2	-0.3	108.88		
	11.50	24.2	-0.3	108.91		
	11.75	24.2	-0.3	108.94		
	12.00	24.2	-0.3	108.98		
	12.25	24.2	-0.3	109.00		

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99 TIME: 18:30:05

Time	Pressure PSI _g	delta P PSI _g	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
12.50	24.2	-0.3	109.03		
12.75	24.2	-0.3	109.06		
13.00	24.2	-0.3	109.09		
13.25	24.2	-0.3	109.11		
13.50	24.2	-0.3	109.13		
13.75	24.2	-0.3	109.16		
14.00	24.2	-0.3	109.18		
14.25	24.2	-0.3	109.20		
14.50	24.3	-0.2	109.23		
14.75	24.3	-0.2	109.25		
15.00	24.2	-0.3	109.27		
15.25	24.3	-0.2	109.29		
15.50	24.3	-0.2	109.31		
15.75	24.3	-0.2	109.33		
16.00	24.3	-0.2	109.35		
16.25	24.3	-0.2	109.37		
16.50	24.3	-0.2	109.39		
16.75	24.3	-0.2	109.41		
17.00	24.3	-0.2	109.43		
17.25	24.4	-0.1	109.44		
17.50	24.4	-0.1	109.46		
17.75	24.4	-0.1	109.48		
18.00	24.4	-0.1	109.49		
18.25	24.4	-0.1	109.51		
18.50	24.4	-0.1	109.53		
18.75	24.4	-0.1	109.54		
19.00	24.4	-0.1	109.57		
19.25	24.3	-0.2	109.58		
19.50	24.3	-0.2	109.60		
19.75	24.3	-0.2	109.61		
20.00	24.3	-0.2	109.63		
20.25	24.5	0.0	109.65		
20.50	24.5	0.0	109.66		
20.75	24.5	0.0	109.68		
21.00	24.5	0.0	109.70		
21.25	24.5	0.0	109.71		
21.50	24.5	0.0	109.72		
21.75	24.5	0.0	109.74		
22.00	24.5	0.0	109.75		
22.25	24.5	0.0	109.77		
22.50	24.5	0.0	109.78		
22.75	24.5	0.0	109.80		
23.00	24.5	0.0	109.81		
23.25	24.5	0.0	109.83		
23.50	24.4	-0.1	109.85		
23.75	24.4	-0.1	109.86		
24.00	24.4	-0.1	109.88		
24.25	24.4	-0.1	109.88		
24.50	24.4	-0.1	109.91		
24.75	24.6	0.1	109.92		
25.00	24.6	0.1	109.94		

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

WELL: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	25.25	24.6	0.1	109.95		
	25.50	24.6	0.1	109.97		
	25.75	24.6	0.1	109.98		
	26.00	24.6	0.1	109.99		
	26.25	24.6	0.1	110.01		
	26.50	24.6	0.1	110.02		
	26.75	24.6	0.1	110.05		
	27.00	24.6	0.1	110.06		
	27.25	24.6	0.1	110.07		
	27.50	24.6	0.1	110.09		
	27.75	24.6	0.1	110.10		
	28.00	24.6	0.1	110.12		
	28.25	24.6	0.1	110.13		
	28.50	24.6	0.1	110.16		
	28.75	24.6	0.1	110.17		
**** End Flow 1	29.00	24.6	0.1	110.18		
**** Start Shutin 1	0.00	24.6	0.0	110.18	0.0000	0.001
	0.25	26.3	1.8	110.20	117.0000	0.001
	0.50	28.5	3.9	110.21	59.0000	0.001
	0.75	30.7	6.1	110.23	39.6667	0.001
	1.00	32.8	8.2	110.24	30.0000	0.001
	1.25	34.9	10.3	110.27	24.2000	0.001
	1.50	36.9	12.3	110.28	20.3333	0.001
	1.75	38.9	14.4	110.30	17.5714	0.002
	2.00	40.9	16.3	110.32	15.5000	0.002
	2.25	43.0	18.4	110.33	13.8889	0.002
	2.50	44.9	20.3	110.35	12.6000	0.002
	2.75	46.8	22.2	110.37	11.5455	0.002
	3.00	48.8	24.2	110.39	10.6667	0.002
	3.25	50.8	26.2	110.41	9.9231	0.003
	3.50	52.7	28.1	110.43	9.2857	0.003
	3.75	54.6	30.0	110.45	8.7333	0.003
	4.00	56.6	32.0	110.47	8.2500	0.003
	4.25	58.6	34.0	110.49	7.8235	0.003
	4.50	60.5	35.9	110.51	7.4444	0.004
	4.75	62.3	37.8	110.54	7.1053	0.004
	5.00	64.3	39.7	110.56	6.8000	0.004
	5.25	66.2	41.6	110.58	6.5238	0.004
	5.50	68.1	43.6	110.61	6.2727	0.005
	5.75	70.0	45.4	110.63	6.0435	0.005
	6.00	71.9	47.3	110.66	5.8333	0.005
	6.25	73.8	49.2	110.70	5.6400	0.005
	6.50	75.7	51.1	110.72	5.4615	0.006
	6.75	77.5	53.0	110.75	5.2963	0.006
	7.00	79.5	54.9	110.78	5.1429	0.006
	7.25	81.4	56.8	110.80	5.0000	0.007
	7.50	83.2	58.7	110.83	4.8667	0.007
	7.75	85.2	60.6	110.86	4.7419	0.007
	8.00	87.0	62.4	110.90	4.6250	0.008
	8.25	88.9	64.3	110.91	4.5152	0.008
	8.50	90.8	66.2	110.95	4.4118	0.008

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:00:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
8.75	92.7	68.1	110.98	4.3143	0.009
9.00	94.5	69.9	111.01	4.2222	0.009
9.25	96.3	71.8	111.04	4.1351	0.009
9.50	98.2	73.6	111.07	4.0526	0.01
9.75	100.0	75.5	111.09	3.9744	0.010
10.00	101.9	77.3	111.12	3.9000	0.010
10.25	103.6	79.1	111.15	3.8293	0.011
10.50	105.5	80.9	111.18	3.7619	0.011
10.75	107.4	82.8	111.20	3.6977	0.012
11.00	109.2	84.6	111.22	3.6364	0.012
11.25	111.0	86.4	111.25	3.5778	0.012
11.50	112.8	88.2	111.28	3.5217	0.013
11.75	114.6	90.1	111.30	3.4681	0.013
12.00	116.5	91.9	111.31	3.4167	0.014
12.25	118.2	93.7	111.34	3.3673	0.014
12.50	120.1	95.5	111.36	3.3200	0.014
12.75	121.9	97.4	111.38	3.2745	0.015
13.00	123.8	99.2	111.40	3.2308	0.015
13.25	125.5	101.0	111.43	3.1887	0.016
13.50	127.4	102.8	111.44	3.1481	0.016
13.75	129.1	104.5	111.45	3.1091	0.017
14.00	130.9	106.3	111.47	3.0714	0.017
14.25	132.8	108.2	111.50	3.0351	0.018
14.50	134.5	109.9	111.52	3.0000	0.018
14.75	136.2	111.6	111.53	2.9661	0.019
15.00	138.1	113.5	111.55	2.9333	0.019
15.25	139.8	115.2	111.56	2.9016	0.020
15.50	141.5	116.9	111.59	2.8710	0.020
15.75	143.3	118.7	111.59	2.8413	0.021
16.00	145.1	120.5	111.61	2.8125	0.021
16.25	146.8	122.2	111.63	2.7846	0.022
16.50	148.6	124.0	111.65	2.7576	0.022
16.75	150.3	125.7	111.67	2.7313	0.023
17.00	152.1	127.5	111.68	2.7059	0.023
17.25	153.8	129.2	111.69	2.6812	0.024
17.50	155.6	131.0	111.70	2.6571	0.024
17.75	157.4	132.8	111.73	2.6338	0.025
18.00	159.0	134.5	111.74	2.6111	0.025
18.25	160.8	136.2	111.75	2.5890	0.026
18.50	162.5	137.9	111.77	2.5676	0.026
18.75	164.2	139.7	111.78	2.5467	0.027
19.00	166.0	141.4	111.79	2.5263	0.028
19.25	167.8	143.2	111.81	2.5065	0.028
19.50	169.4	144.9	111.82	2.4872	0.029
19.75	171.2	146.6	111.84	2.4684	0.029
20.00	172.9	148.3	111.85	2.4500	0.030
20.25	174.6	150.0	111.87	2.4321	0.030
20.50	176.3	151.7	111.88	2.4146	0.031
20.75	178.0	153.4	111.90	2.3976	0.032
21.00	179.7	155.1	111.91	2.3810	0.032
21.25	181.4	156.8	111.92	2.3647	0.033

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

EST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

ATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
21.50	183.1	158.5	111.94	2.3488	0.034
21.75	184.8	160.2	111.94	2.3333	0.034
22.00	186.5	161.9	111.97	2.3182	0.035
22.25	188.2	163.6	111.98	2.3034	0.035
22.50	189.8	165.3	111.99	2.2889	0.036
22.75	191.5	166.9	112.00	2.2747	0.037
23.00	193.1	168.5	112.02	2.2609	0.037
23.25	194.9	170.3	112.03	2.2473	0.038
23.50	196.6	172.0	112.06	2.2340	0.039
23.75	198.2	173.6	112.06	2.2211	0.039
24.00	200.0	175.4	112.06	2.2083	0.040
24.25	201.6	177.0	112.07	2.1959	0.041
24.50	203.3	178.7	112.07	2.1837	0.041
24.75	204.9	180.3	112.09	2.1717	0.042
25.00	206.5	182.0	112.09	2.1600	0.043
25.25	208.2	183.6	112.11	2.1485	0.043
25.50	209.8	185.2	112.12	2.1373	0.044
25.75	211.5	186.9	112.14	2.1262	0.045
26.00	213.1	188.5	112.15	2.1154	0.045
26.25	214.8	190.2	112.16	2.1048	0.046
26.50	216.4	191.8	112.18	2.0943	0.047
26.75	218.1	193.5	112.19	2.0841	0.048
27.00	219.7	195.1	112.20	2.0741	0.048
27.25	221.4	196.8	112.22	2.0642	0.049
27.50	223.1	198.5	112.22	2.0545	0.050
27.75	224.7	200.1	112.24	2.0450	0.050
28.00	226.3	201.7	112.25	2.0357	0.051
28.25	227.9	203.4	112.26	2.0265	0.052
28.50	229.5	205.0	112.27	2.0175	0.053
28.75	231.1	206.5	112.29	2.0087	0.053
29.00	232.7	208.1	112.29	2.0000	0.054
29.25	234.4	209.8	112.30	1.9915	0.055
29.50	235.9	211.3	112.31	1.9831	0.056
29.75	237.5	212.9	112.32	1.9748	0.056
30.00	239.1	214.5	112.35	1.9667	0.057
30.25	240.8	216.2	112.35	1.9587	0.058
30.50	242.4	217.8	112.36	1.9508	0.059
30.75	244.0	219.4	112.38	1.9431	0.060
31.00	245.6	221.0	112.39	1.9355	0.060
31.25	247.2	222.6	112.40	1.9280	0.061
31.50	248.8	224.2	112.40	1.9206	0.062
31.75	250.3	225.8	112.42	1.9134	0.063
32.00	251.9	227.4	112.44	1.9062	0.063
32.25	253.5	228.9	112.44	1.8992	0.064
32.50	255.1	230.5	112.45	1.8923	0.065
32.75	256.6	232.1	112.46	1.8855	0.066
33.00	258.3	233.7	112.47	1.8788	0.067
33.25	259.8	235.2	112.48	1.8722	0.068
33.50	261.3	236.8	112.50	1.8657	0.068
33.75	262.9	238.4	112.49	1.8593	0.069
34.00	264.5	239.9	112.52	1.8529	0.070

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PST σ	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
34.25	266.1	241.5	112.53	1.8467	0.071
34.50	267.7	243.1	112.54	1.8406	0.072
34.75	269.2	244.6	112.55	1.8345	0.072
35.00	270.8	246.2	112.56	1.8286	0.073
35.25	272.3	247.7	112.57	1.8227	0.074
35.50	273.8	249.3	112.59	1.8169	0.075
35.75	275.4	250.8	112.59	1.8112	0.076
36.00	277.0	252.4	112.60	1.8056	0.077
36.25	278.5	254.0	112.62	1.8000	0.078
36.50	280.1	255.5	112.63	1.7945	0.078
36.75	281.6	257.0	112.64	1.7891	0.079
37.00	283.2	258.6	112.66	1.7838	0.080
37.25	284.7	260.1	112.67	1.7785	0.081
37.50	286.2	261.6	112.68	1.7733	0.082
37.75	287.7	263.1	112.68	1.7682	0.083
38.00	289.3	264.7	112.69	1.7632	0.084
38.25	290.9	266.3	112.70	1.7582	0.085
38.50	292.3	267.7	112.72	1.7532	0.085
38.75	293.9	269.3	112.73	1.7484	0.086
39.00	295.3	270.8	112.74	1.7436	0.087
39.25	296.8	272.3	112.74	1.7389	0.088
39.50	298.4	273.8	112.76	1.7342	0.089
39.75	299.9	275.3	112.77	1.7296	0.090
40.00	301.5	276.9	112.78	1.7250	0.091
40.25	303.0	278.4	112.78	1.7205	0.092
40.50	304.5	279.9	112.80	1.7160	0.093
40.75	306.0	281.4	112.80	1.7117	0.094
41.00	307.6	283.0	112.82	1.7073	0.095
41.25	309.0	284.4	112.82	1.7030	0.095
41.50	310.5	285.9	112.83	1.6988	0.096
41.75	312.0	287.4	112.84	1.6946	0.097
42.00	313.5	288.9	112.86	1.6905	0.098
42.25	315.0	290.4	112.87	1.6864	0.099
42.50	316.4	291.8	112.87	1.6824	0.100
42.75	317.9	293.3	112.89	1.6784	0.101
43.00	319.4	294.8	112.91	1.6744	0.102
43.25	320.9	296.3	112.91	1.6705	0.103
43.50	322.4	297.8	112.91	1.6667	0.104
43.75	323.9	299.3	112.93	1.6629	0.105
44.00	325.3	300.7	112.94	1.6591	0.106
44.25	326.8	302.2	112.95	1.6554	0.107
44.50	328.3	303.7	112.96	1.6517	0.108
44.75	329.7	305.2	112.96	1.6480	0.109
45.00	331.3	306.7	112.98	1.6444	0.110
45.25	332.7	308.1	112.98	1.6409	0.111
45.50	334.2	309.6	112.99	1.6374	0.112
45.75	333.7	309.1	113.01	1.6339	0.111
46.00	335.1	310.5	113.02	1.6304	0.112
46.25	336.6	312.0	113.02	1.6270	0.113
46.50	338.1	313.5	113.04	1.6237	0.114
46.75	339.6	315.0	113.04	1.6203	0.115

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

EST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

ATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
47.00	341.0	316.4	113.05	1.6170	0.116
47.25	342.4	317.8	113.06	1.6138	0.117
47.50	343.9	319.3	113.07	1.6105	0.118
47.75	345.3	320.7	113.08	1.6073	0.119
48.00	346.8	322.2	113.10	1.6042	0.120
48.25	348.2	323.6	113.10	1.6010	0.121
48.50	349.6	325.1	113.11	1.5979	0.122
48.75	351.1	326.5	113.12	1.5949	0.123
49.00	352.6	328.0	113.14	1.5918	0.124
49.25	353.9	329.3	113.14	1.5888	0.125
49.50	355.3	330.8	113.15	1.5859	0.126
49.75	356.9	332.3	113.16	1.5829	0.127
50.00	358.3	333.7	113.17	1.5800	0.128
50.25	359.7	335.1	113.18	1.5771	0.129
50.50	361.1	336.6	113.19	1.5743	0.130
50.75	362.6	338.0	113.20	1.5714	0.131
51.00	364.0	339.4	113.20	1.5686	0.132
51.25	365.4	340.8	113.22	1.5659	0.134
51.50	366.8	342.3	113.23	1.5631	0.135
51.75	368.2	343.6	113.24	1.5604	0.136
52.00	369.7	345.1	113.25	1.5577	0.137
52.25	371.0	346.5	113.26	1.5550	0.138
52.50	372.5	347.9	113.26	1.5524	0.139
52.75	373.9	349.3	113.27	1.5498	0.140
53.00	375.3	350.7	113.28	1.5472	0.141
53.25	376.7	352.2	113.29	1.5446	0.142
53.50	378.1	353.5	113.30	1.5421	0.143
53.75	379.5	354.9	113.31	1.5395	0.144
54.00	380.9	356.4	113.32	1.5370	0.145
54.25	382.3	357.7	113.33	1.5346	0.146
54.50	383.8	359.2	113.34	1.5321	0.147
54.75	385.2	360.6	113.34	1.5297	0.148
55.00	386.5	361.9	113.35	1.5273	0.149
55.25	388.0	363.4	113.37	1.5249	0.151
55.50	389.4	364.8	113.38	1.5225	0.152
55.75	390.8	366.2	113.38	1.5202	0.153
56.00	392.1	367.5	113.40	1.5179	0.154
56.25	393.4	368.9	113.41	1.5156	0.155
56.50	394.9	370.3	113.41	1.5133	0.156
56.75	396.2	371.6	113.42	1.5110	0.157
57.00	397.6	373.1	113.44	1.5088	0.158
57.25	399.0	374.4	113.44	1.5066	0.159
57.50	400.4	375.8	113.45	1.5043	0.160
57.75	401.8	377.3	113.46	1.5022	0.161
58.00	403.2	378.6	113.47	1.5000	0.163
58.25	404.5	379.9	113.47	1.4979	0.164
58.50	405.9	381.3	113.49	1.4957	0.165
58.75	407.3	382.7	113.49	1.4936	0.166
59.00	408.6	384.1	113.50	1.4915	0.167
59.25	410.1	385.5	113.52	1.4895	0.168
59.50	411.4	386.8	113.52	1.4874	0.169

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	59.75	412.7	388.2	113.53	1.4854	0.170
	60.00	414.1	389.5	113.54	1.4833	0.171
	60.25	415.5	390.9	113.55	1.4813	0.173
***** End Shut-in 1	60.50	416.8	392.2	113.55	1.4793	0.174
***** Start Flow 2	0.00	20.3	0.0	113.57		
	0.25	21.5	1.2	113.57		
	0.50	24.2	3.9	113.58		
	0.75	26.8	6.5	113.59		
	1.00	29.0	8.7	113.63		
	1.25	31.0	10.7	113.65		
	1.50	32.0	11.7	113.69		
	1.75	32.7	12.4	113.74		
	2.00	32.9	12.6	113.78		
	2.25	32.8	12.5	113.82		
	2.50	32.6	12.3	113.86		
	2.75	32.3	12.0	113.89		
	3.00	32.1	11.7	113.93		
	3.25	31.7	11.4	113.97		
	3.50	31.5	11.2	114.00		
	3.75	31.4	11.1	114.04		
	4.00	31.1	10.8	114.06		
	4.25	30.9	10.6	114.09		
	4.50	30.8	10.5	114.11		
	4.75	30.6	10.3	114.14		
	5.00	30.5	10.2	114.16		
	5.25	30.4	10.1	114.17		
	5.50	30.2	9.9	114.20		
	5.75	30.1	9.8	114.22		
	6.00	30.1	9.8	114.24		
	6.25	30.0	9.7	114.25		
	6.50	29.9	9.6	114.26		
	6.75	29.9	9.6	114.27		
	7.00	29.8	9.5	114.28		
	7.25	29.7	9.4	114.30		
	7.50	29.6	9.3	114.30		
	7.75	29.5	9.2	114.31		
	8.00	29.5	9.2	114.33		
	8.25	29.4	9.1	114.33		
	8.50	29.4	9.1	114.34		
	8.75	29.4	9.1	114.35		
	9.00	29.3	9.0	114.35		
	9.25	29.3	9.0	114.36		
	9.50	29.2	8.9	114.37		
	9.75	29.1	8.8	114.38		
	10.00	29.1	8.8	114.39		
	10.25	29.0	8.7	114.39		
	10.50	28.9	8.6	114.39		
	10.75	28.9	8.6	114.40		
	11.00	28.8	8.5	114.41		
	11.25	28.7	8.4	114.41		
	11.50	28.7	8.4	114.42		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

WELL: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99 TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
11.75	28.6	8.3	114.42		
12.00	28.4	8.1	114.43		
12.25	28.4	8.1	114.43		
12.50	28.3	8.0	114.44		
12.75	28.3	8.0	114.44		
13.00	28.2	7.9	114.45		
13.25	28.1	7.8	114.46		
13.50	28.1	7.8	114.46		
13.75	28.1	7.8	114.47		
14.00	28.0	7.7	114.47		
14.25	28.0	7.7	114.48		
14.50	27.9	7.6	114.48		
14.75	27.9	7.6	114.49		
15.00	27.9	7.6	114.50		
15.25	27.9	7.6	114.50		
15.50	27.9	7.6	114.51		
15.75	27.9	7.6	114.51		
16.00	27.8	7.5	114.52		
16.25	27.8	7.5	114.53		
16.50	27.8	7.5	114.53		
16.75	27.8	7.5	114.54		
17.00	27.8	7.5	114.55		
17.25	27.7	7.4	114.56		
17.50	27.7	7.4	114.56		
17.75	27.7	7.4	114.57		
18.00	27.6	7.3	114.57		
18.25	27.6	7.3	114.58		
18.50	27.6	7.3	114.59		
18.75	27.6	7.3	114.59		
19.00	27.5	7.2	114.60		
19.25	27.5	7.2	114.61		
19.50	27.5	7.2	114.62		
19.75	27.5	7.2	114.62		
20.00	27.5	7.2	114.63		
20.25	27.5	7.2	114.64		
20.50	27.5	7.2	114.64		
20.75	27.5	7.2	114.65		
21.00	27.4	7.1	114.66		
21.25	27.4	7.1	114.66		
21.50	27.4	7.1	114.68		
21.75	27.5	7.2	114.68		
22.00	27.5	7.2	114.69		
22.25	27.5	7.2	114.70		
22.50	27.4	7.0	114.70		
22.75	27.4	7.0	114.71		
23.00	27.4	7.0	114.72		
23.25	27.4	7.0	114.72		
23.50	27.4	7.0	114.74		
23.75	27.4	7.0	114.74		
24.00	27.4	7.0	114.75		
24.25	27.4	7.0	114.76		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	24.50	27.4	7.0	114.77		
	24.75	27.4	7.0	114.77		
	25.00	27.4	7.0	114.78		
	25.25	27.4	7.0	114.79		
	25.50	27.4	7.0	114.80		
	25.75	27.3	7.0	114.80		
	26.00	27.3	7.0	114.82		
	26.25	27.3	7.0	114.83		
	26.50	27.3	7.0	114.84		
	26.75	27.3	7.0	114.84		
	27.00	27.3	7.0	114.85		
	27.25	27.2	6.9	114.85		
	27.50	27.2	6.9	114.86		
	27.75	27.2	6.9	114.88		
	28.00	27.2	6.9	114.88		
	28.25	27.2	6.9	114.89		
	28.50	27.2	6.9	114.90		
	28.75	27.3	7.0	114.90		
	29.00	27.3	7.0	114.92		
	29.25	27.3	7.0	114.92		
	29.50	28.0	7.7	114.94		
	29.75	29.8	9.5	114.95		
	30.00	31.6	11.3	114.95		
	30.25	33.4	13.1	114.96		
	30.50	35.1	14.8	114.97		
***** End Flow 2	30.75	36.8	16.4	114.98		
***** Start Shutin 2	0.00	36.8	0.0	114.98	0.0000	0.001
	0.25	38.4	1.7	114.99	240.0000	0.001
	0.50	40.1	3.4	114.99	120.5000	0.002
	0.75	41.7	5.0	115.01	80.6667	0.002
	1.00	43.4	6.6	115.02	60.7500	0.002
	1.25	45.0	8.2	115.03	48.8000	0.002
	1.50	46.6	9.8	115.04	40.8333	0.002
	1.75	48.2	11.4	115.05	35.1429	0.002
	2.00	49.8	13.1	115.07	30.8750	0.002
	2.25	51.4	14.7	115.08	27.5556	0.003
	2.50	53.1	16.4	115.09	24.9000	0.003
	2.75	54.7	18.0	115.10	22.7273	0.003
	3.00	56.4	19.6	115.11	20.9167	0.003
	3.25	57.9	21.1	115.12	19.3846	0.003
	3.50	59.5	22.7	115.14	18.0714	0.004
	3.75	61.1	24.3	115.15	16.9333	0.004
	4.00	62.7	25.9	115.16	15.9375	0.004
	4.25	64.4	27.6	115.17	15.0588	0.004
	4.50	65.9	29.1	115.19	14.2778	0.004
	4.75	67.5	30.7	115.19	13.5789	0.005
	5.00	69.1	32.3	115.20	12.9500	0.005
	5.25	70.7	33.9	115.21	12.3810	0.005
	5.50	72.3	35.5	115.23	11.8636	0.005
	5.75	73.8	37.1	115.23	11.3913	0.005
	6.00	75.4	38.7	115.25	10.9583	0.006

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

EST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99 TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
6.25	77.0	40.2	115.26	10.5600	0.006
6.50	78.6	41.9	115.28	10.1923	0.006
6.75	80.1	43.4	115.28	9.8519	0.006
7.00	81.7	45.0	115.30	9.5357	0.007
7.25	83.3	46.6	115.31	9.2414	0.007
7.50	84.8	48.1	115.31	8.9667	0.007
7.75	86.5	49.8	115.32	8.7097	0.007
8.00	88.0	51.3	115.33	8.4688	0.008
8.25	89.6	52.9	115.34	8.2424	0.008
8.50	91.2	54.5	115.36	8.0294	0.008
8.75	92.7	56.0	115.36	7.8286	0.009
9.00	94.4	57.7	115.38	7.6389	0.009
9.25	95.9	59.2	115.38	7.4595	0.009
9.50	97.5	60.8	115.40	7.2895	0.01
9.75	99.1	62.4	115.40	7.1282	0.01
10.00	100.6	63.9	115.41	6.9750	0.010
10.25	102.2	65.5	115.46	6.8293	0.010
10.50	103.8	67.1	115.44	6.6905	0.011
10.75	105.4	68.7	115.45	6.5581	0.011
11.00	106.9	70.2	115.46	6.4318	0.011
11.25	108.5	71.8	115.47	6.3111	0.012
11.50	110.0	73.3	115.48	6.1957	0.012
11.75	111.6	74.9	115.49	6.0851	0.012
12.00	113.1	76.4	115.50	5.9792	0.013
12.25	114.8	78.1	115.50	5.8776	0.013
12.50	116.3	79.6	115.52	5.7800	0.014
12.75	117.8	81.1	115.52	5.6863	0.014
13.00	119.4	82.7	115.54	5.5962	0.014
13.25	120.9	84.2	115.54	5.5094	0.015
13.50	122.4	85.7	115.56	5.4259	0.015
13.75	124.0	87.3	115.56	5.3455	0.015
14.00	125.5	88.8	115.58	5.2679	0.016
14.25	127.1	90.4	115.59	5.1930	0.016
14.50	128.7	91.9	115.59	5.1207	0.017
14.75	130.2	93.5	115.59	5.0508	0.017
15.00	131.8	95.0	115.61	4.9833	0.017
15.25	133.3	96.5	115.63	4.9180	0.018
15.50	134.9	98.1	115.63	4.8548	0.018
15.75	136.4	99.6	115.63	4.7937	0.019
16.00	137.9	101.1	115.65	4.7344	0.019
16.25	139.4	102.6	115.66	4.6769	0.019
16.50	140.9	104.2	115.67	4.6212	0.020
16.75	142.6	105.8	115.68	4.5672	0.020
17.00	144.0	107.3	115.68	4.5147	0.021
17.25	145.5	108.8	115.69	4.4638	0.021
17.50	147.1	110.4	115.70	4.4143	0.022
17.75	148.6	111.9	115.71	4.3662	0.022
18.00	150.1	113.4	115.72	4.3194	0.023
18.25	151.6	114.9	115.73	4.2740	0.023
18.50	153.2	116.4	115.73	4.2297	0.023
18.75	154.7	117.9	115.75	4.1867	0.024

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
19.00	156.2	119.4	115.76	4.1447	0.024
19.25	157.8	121.0	115.76	4.1039	0.025
19.50	159.3	122.5	115.77	4.0641	0.025
19.75	160.8	124.0	115.78	4.0253	0.026
20.00	162.2	125.5	115.79	3.9875	0.026
20.25	163.7	127.0	115.80	3.9506	0.027
20.50	165.2	128.5	115.80	3.9146	0.027
20.75	166.8	130.0	115.81	3.8795	0.028
21.00	168.2	131.4	115.82	3.8452	0.028
21.25	169.8	133.0	115.83	3.8118	0.029
21.50	171.2	134.5	115.84	3.7791	0.029
21.75	172.7	136.0	115.84	3.7471	0.030
22.00	174.2	137.5	115.85	3.7159	0.030
22.25	175.7	139.0	115.86	3.6854	0.031
22.50	177.3	140.6	115.86	3.6556	0.031
22.75	178.8	142.0	115.88	3.6264	0.032
23.00	180.4	143.6	115.88	3.5978	0.033
23.25	181.8	145.0	115.90	3.5699	0.033
23.50	183.3	146.5	115.90	3.5426	0.034
23.75	184.8	148.0	115.91	3.5158	0.034
24.00	186.3	149.6	115.91	3.4896	0.035
24.25	187.7	150.9	115.93	3.4639	0.035
24.50	189.2	152.4	115.93	3.4388	0.036
24.75	190.7	153.9	115.94	3.4141	0.036
25.00	192.1	155.4	115.94	3.3900	0.037
25.25	193.6	156.9	115.95	3.3663	0.037
25.50	195.0	158.3	115.96	3.3431	0.038
25.75	196.6	159.8	115.97	3.3204	0.039
26.00	198.0	161.2	115.98	3.2981	0.039
26.25	199.5	162.7	115.98	3.2762	0.040
26.50	200.9	164.2	115.99	3.2547	0.040
26.75	202.4	165.7	115.99	3.2336	0.041
27.00	203.9	167.2	116.00	3.2130	0.042
27.25	205.4	168.6	116.01	3.1927	0.042
27.50	206.9	170.1	116.02	3.1727	0.043
27.75	208.3	171.5	116.02	3.1532	0.043
28.00	209.7	173.0	116.04	3.1339	0.044
28.25	211.2	174.4	116.04	3.1150	0.045
28.50	212.7	175.9	116.05	3.0965	0.045
28.75	214.1	177.3	116.06	3.0783	0.046
29.00	215.5	178.8	116.06	3.0603	0.046
29.25	217.0	180.3	116.07	3.0427	0.047
29.50	218.4	181.6	116.08	3.0254	0.048
29.75	219.9	183.1	116.09	3.0084	0.048
30.00	221.4	184.6	116.10	2.9917	0.049
30.25	222.7	186.0	116.10	2.9752	0.050
30.50	224.2	187.4	116.11	2.9590	0.050
30.75	225.6	188.8	116.11	2.9431	0.051
31.00	226.9	190.2	116.12	2.9274	0.051
31.25	228.4	191.7	116.13	2.9120	0.052
31.50	229.9	193.1	116.14	2.8968	0.053

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

EST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
31.75	231.4	194.6	116.14	2.8819	0.054
32.00	232.7	196.0	116.16	2.8672	0.054
32.25	234.2	197.4	116.16	2.8527	0.055
32.50	235.6	198.8	116.17	2.8385	0.055
32.75	237.0	200.3	116.17	2.8244	0.056
33.00	238.5	201.8	116.17	2.8106	0.057
33.25	239.9	203.1	116.18	2.7970	0.058
33.50	241.2	204.4	116.19	2.7836	0.058
33.75	242.7	206.0	116.20	2.7704	0.059
34.00	244.1	207.4	116.20	2.7574	0.060
34.25	245.6	208.8	116.21	2.7445	0.060
34.50	247.0	210.2	116.22	2.7319	0.061
34.75	248.4	211.7	116.23	2.7194	0.062
35.00	249.8	213.0	116.23	2.7071	0.062
35.25	251.2	214.4	116.24	2.6950	0.063
35.50	252.6	215.9	116.24	2.6831	0.064
35.75	254.0	217.2	116.25	2.6713	0.064
36.00	255.5	218.7	116.26	2.6597	0.065
36.25	256.8	220.1	116.26	2.6483	0.066
36.50	258.2	221.5	116.28	2.6370	0.067
36.75	259.7	222.9	116.28	2.6259	0.067
37.00	260.9	224.2	116.29	2.6149	0.068
37.25	262.3	225.6	116.29	2.6040	0.069
37.50	263.7	226.9	116.30	2.5933	0.070
37.75	265.2	228.5	116.31	2.5828	0.070
38.00	266.5	229.8	116.32	2.5724	0.071
38.25	268.0	231.2	116.32	2.5621	0.072
38.50	269.4	232.6	116.33	2.5519	0.073
38.75	270.7	234.0	116.33	2.5419	0.073
39.00	272.2	235.4	116.35	2.5321	0.074
39.25	273.5	236.8	116.34	2.5223	0.075
39.50	274.9	238.1	116.35	2.5127	0.076
39.75	276.3	239.5	116.36	2.5031	0.076
40.00	277.7	241.0	116.37	2.4937	0.077
40.25	279.0	242.2	116.37	2.4845	0.078
40.50	280.3	243.6	116.38	2.4753	0.079
40.75	281.7	245.0	116.38	2.4663	0.079
41.00	283.2	246.4	116.39	2.4573	0.080
41.25	284.4	247.7	116.40	2.4485	0.081
41.50	285.8	249.1	116.41	2.4398	0.082
41.75	287.2	250.4	116.41	2.4311	0.082
42.00	288.5	251.8	116.42	2.4226	0.083
42.25	289.9	253.1	116.42	2.4142	0.084
42.50	291.3	254.6	116.43	2.4059	0.085
42.75	292.6	255.9	116.43	2.3977	0.086
43.00	294.1	257.3	116.45	2.3895	0.086
43.25	295.4	258.7	116.45	2.3815	0.087
43.50	296.8	260.1	116.46	2.3736	0.088
43.75	298.1	261.4	116.47	2.3657	0.089
44.00	299.4	262.7	116.47	2.3580	0.090
44.25	300.9	264.1	116.48	2.3503	0.091

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99 TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
44.50	302.1	265.4	116.49	2.3427	0.091
44.75	303.6	266.8	116.49	2.3352	0.092
45.00	304.9	268.1	116.49	2.3278	0.093
45.25	306.2	269.5	116.50	2.3204	0.094
45.50	307.6	270.8	116.51	2.3132	0.095
45.75	308.8	272.1	116.51	2.3060	0.095
46.00	310.3	273.5	116.53	2.2989	0.096
46.25	311.5	274.8	116.53	2.2919	0.097
46.50	313.0	276.2	116.54	2.2849	0.098
46.75	314.2	277.5	116.54	2.2781	0.099
47.00	315.6	278.8	116.55	2.2713	0.10
47.25	316.9	280.2	116.55	2.2646	0.100
47.50	318.2	281.5	116.56	2.2579	0.101
47.75	319.6	282.8	116.56	2.2513	0.102
48.00	320.9	284.2	116.57	2.2448	0.103
48.25	322.3	285.5	116.57	2.2383	0.104
48.50	323.6	286.9	116.59	2.2320	0.105
48.75	324.9	288.1	116.59	2.2256	0.106
49.00	326.2	289.5	116.60	2.2194	0.106
49.25	327.6	290.8	116.60	2.2132	0.107
49.50	328.9	292.2	116.60	2.2071	0.108
49.75	330.2	293.5	116.61	2.2010	0.109
50.00	331.6	294.8	116.63	2.1950	0.110
50.25	332.8	296.1	116.62	2.1891	0.111
50.50	334.2	297.4	116.63	2.1832	0.112
50.75	335.5	298.8	116.64	2.1773	0.113
51.00	336.9	300.1	116.65	2.1716	0.113
51.25	338.1	301.4	116.59	2.1659	0.114
51.50	339.4	302.6	116.66	2.1602	0.115
51.75	340.7	304.0	116.66	2.1546	0.116
52.00	342.1	305.3	116.67	2.1490	0.117
52.25	343.4	306.7	116.67	2.1435	0.118
52.50	344.7	307.9	116.67	2.1381	0.119
52.75	345.9	309.2	116.68	2.1327	0.120
53.00	347.3	310.5	116.69	2.1274	0.121
53.25	348.6	311.9	116.70	2.1221	0.122
53.50	349.9	313.1	116.71	2.1168	0.122
53.75	351.1	314.4	116.71	2.1116	0.123
54.00	352.5	315.7	116.72	2.1065	0.124
54.25	353.8	317.1	116.73	2.1014	0.125
54.50	355.1	318.3	116.73	2.0963	0.126
54.75	356.3	319.6	116.74	2.0913	0.127
55.00	357.7	320.9	116.74	2.0864	0.128
55.25	359.0	322.2	116.75	2.0814	0.129
55.50	360.2	323.5	116.75	2.0766	0.130
55.75	361.6	324.8	116.76	2.0717	0.131
56.00	362.7	326.0	116.77	2.0670	0.132
56.25	364.1	327.3	116.77	2.0622	0.133
56.50	365.3	328.6	116.77	2.0575	0.133
56.75	366.6	329.8	116.78	2.0529	0.134
57.00	367.9	331.2	116.79	2.0482	0.135

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

EST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

ATE: 01/02/99 TIME: 18:30:05

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	57.25	369.2	332.4	116.79	2.0437	0.136
	57.50	370.4	333.7	116.80	2.0391	0.137
	57.75	371.7	335.0	116.81	2.0346	0.138
	58.00	373.1	336.3	116.81	2.0302	0.139
	58.25	374.3	337.6	116.82	2.0258	0.140
	58.50	375.6	338.8	116.83	2.0214	0.141
	58.75	376.8	340.1	116.83	2.0170	0.142
	59.00	378.2	341.4	116.84	2.0127	0.143
	59.25	379.4	342.7	116.84	2.0084	0.144
	59.50	380.7	343.9	116.86	2.0042	0.145
	59.75	381.9	345.2	116.86	2.0000	0.146
	60.00	383.2	346.5	116.86	1.9958	0.147
	60.25	384.5	347.7	116.87	1.9917	0.148
	60.50	385.7	349.0	116.87	1.9876	0.149
**** End Shut-in 2	60.75	387.0	350.2	116.89	1.9835	0.150
**** Final Hydro.	323.00	2550.6	0.0	118.77		

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 11577

Well Name & No. LINDSAY #1 Test No. 1 Date 1-2-99
 Company GRAVES DRUG Co. Inc. Zone Tested MISS
 Address P.O. Box #250, WICHITA KS. 67208 Elevation 1952 KB 1944 GL
 Co. Rep/Geo. JOHN HASTINGS Cont. DUKE DRUG #2 Est. Ft. of Pay 10 Por. 10 %
 Location: Sec. 17 Twp. 33S Rge. 19W Co. COMANCHE State KS.
 No. of Copies 5 Distribution Sheet (Y, N) N Turnkey (Y, N) - Evaluation (Y, N) -

Interval Tested 5174 - 5221' Initial Str Wt./Lbs. 57,000 Unseated Str Wt./Lbs. 57,000
 Anchor Length 47' Wt. Set Lbs. 29,000 Wt. Pulled Loose/Lbs. 66,000
 Top Packer Depth 5169' Tool Weight 2100#
 Bottom Packer Depth 5174' Hole Size — 7 7/8" Rubber Size — 6 3/4"
 Total Depth 5221' Wt. Pipe Run NONE Drill Collar Run NONE
 Mud Wt. 9.2 LCM 1# Vis. 50 WL B.L.C.C. Drill Pipe Size 4 1/2" X 4# Ft. Run 5179'
 Blow Description IF: Strong below. Btm. of bucket in 15 sec.
ISI: No below.
FF: Strong below. Btm. of bucket immediately.
FSI: No below.

Recovery — Total Feet 35 Final GIP 1080 Ft. in DC --- Ft. in DP 35'
 Rec. 35 Feet Of Dreg. Mud. %gas %oil %water %mud
 Rec. _____ Feet Of _____ %gas %oil %water %mud
 Rec. _____ Feet Of _____ %gas %oil %water %mud
 Rec. _____ Feet Of _____ %gas %oil %water %mud
 Rec. _____ Feet Of _____ %gas %oil %water %mud
 BHT 117 °F Gravity N/A °API @ --- °F Corrected Gravity N/A °API
 RW N/A @ --- °F Chlorides 5,000 ppm Recovery Chlorides 5,000 ppm System

	AK-1	Alpine	PSI	Recorder No.	T-On Location
(A) Initial Hydrostatic Mud	<u>2591</u>	<u>2580</u>		<u>2342</u>	<u>1710</u>
(B) First Initial Flow Pressure	<u>57</u>	<u>25</u>	PSI	(depth) <u>5184'</u>	T-Started <u>1829</u>
(C) First Final Flow Pressure	<u>57</u>	<u>25</u>	PSI	Recorder No. <u>16248</u>	T-Open <u>2048</u>
(D) Initial Shut-In Pressure	<u>449</u>	<u>417</u>	PSI	(depth) <u>5218</u>	T-Pulled <u>2348</u>
(E) Second Initial Flow Pressure	<u>66</u>	<u>20</u>	PSI	Recorder No. <u>---</u>	T-Out <u>0148</u>
(F) Second Final Flow Pressure	<u>66</u>	<u>37</u>	PSI	(depth) <u>---</u>	T-Off Location <u>0300</u>
(G) Final Shut-in Pressure	<u>406</u>	<u>381</u>	PSI	Initial Opening <u>30</u>	Test <input checked="" type="checkbox"/> <u>800</u>
(Q) Final Hydrostatic Mud	<u>2569</u>	<u>2551</u>	PSI	Initial Shut-in <u>60</u>	Jars <input checked="" type="checkbox"/> <u>200</u>
				Final Flow <u>30</u>	Safety Joint <input checked="" type="checkbox"/> <u>50</u>
				Final Shut-in <u>60</u>	Straddle _____
					Circ. Sub _____
					Sampler _____
					Extra Packer _____
					Elec. Rec. <input checked="" type="checkbox"/> <u>150</u>
					Mileage _____
					Other _____
					TOTAL PRICE \$ <input checked="" type="checkbox"/> <u>1200</u>

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By [Signature]
 Our Representative [Signature]

TRILOBITE TESTING L.L.C.

ERATOR : Graves Drlg.Co.Inc. DATE 01-03-99
 JL NAME: Lindsay #1 KB 1952.00 ft TICKET NO: 11578 DST #2
 ATION : 17-33s-19w Comanche co KS GR 1944.00 ft FORMATION: Miss.
 ERVAL : 5319.00 To 5345.00 ft TD 5345.00 ft TEST TYPE: CONVENTIONAL

ORDER DATA

ns	Field	1	2	3	4	TIME DATA-----
30 Rec.	10248	10248	2342			PF Fr. 2040 to 2110 hr
60 Range(Psi)	4400.0	4400.0	4995.0	0.0	0.0	IS Fr. 2110 to 2210 hr
60 Clock(hrs)	12 hr	12 hr	batt.			SF Fr. 2210 to 2310 hr
90 Depth(ft)	5342.0	5342.0	5325.0	0.0	0.0	FS Fr. 2310 to 0040 hr

	Field	1	2	3	4	
Init Hydro	2647.0	2621.0	2615.0	0.0	0.0	T STARTED 1814 hr
First Flow	9.0	17.0	31.0	0.0	0.0	T ON BOTM 2030 hr
Final Flow	16.0	28.0	45.0	0.0	0.0	T OPEN 2040 hr
In Shut-in	1740.0	1733.0	1758.0	0.0	0.0	T PULLED 0042 hr
Init Flow	25.0	50.0	48.0	0.0	0.0	T OUT 0250 hr
Final Flow	57.0	83.0	88.0	0.0	0.0	
Fl Shut-in	1712.0	1430.0	1750.0	0.0	0.0	TOOL DATA-----
Final Hydro	2602.0	2594.0	2595.0	0.0	0.0	Tool Wt. 2100.00 lbs
Side/Outside	0	0	I	T		Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 66000.00 lbs
						Initial Str Wt 58000.00 lbs
						Unseated Str Wt 58000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 5305.00 ft

OVERY

Fluid 182.00 ft of 0.00 ft in DC and 182.00 ft in DP
 0.00 ft of Gas in pipe.
 0 ft of Clean oil.
 .00 ft of Gas Oil Cut Mud
 0 ft of 20%gas 20%oil 60%water 54%mud
 00 ft of Oil & mud cut gassy water
 0 ft of 13%oil 20%mud 22%gas 45%water
 0 ft of Rw 1.31 ohms @ 31 degrees F.
 0 ft of EST.FT. of PAY----- 8
 INITY 14600.00 P.P.M. A.P.I. Gravity 39.00

MUD DATA-----

Mud Type	Chemical
Weight	9.10 lb/c
Vis.	48.00 S/L
W.L.	8.00 in3
F.C.	0.20 in
Mud Drop N	
Amt. of fill	0.00 ft
Btm. H. Temp.	127.00 F
Hole Condition	Good
% Porosity	10.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00 N
Cushion Type	None
Reversed Out N	
Tool Chased N	
Tester	Gary Pevoteaux
Co. Rep.	John Hastings
Contr.	Duke Drlg.
Rig #	2
Unit #	
Pump T.	LCM 6#/bl

W DESCRIPTION

tial Flow:
 Fair to strong blow - bottom of
 bucket in 12 minutes

tial Shutin:

No blow

al Flow:

Strong blow - bottom of bucket
 immediatley

al Shutin:

Weak blow (1/2 - 3/4")

PLES: None

T TO:Caraway/Liberal

Test Successful: Y

*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Lindsay #1
 LOCATION : 17-33s-19w Comanche co KS
 TICKET No. 11578 D.S.T. No. 2 DATE 01-03-99
 TOTAL TOOL TO BOTTOM OF TOP PACKERS 27
 INTERVAL TOOL
 BOTTOM PACKERS AND ANCHOR 26
 TOTAL TOOL 53
 DRILL COLLAR ANCHOR IN INTERVAL
 D.C. ANCHOR STND.Stands Single Total
 D.P. ANCHOR STND.Stands Single Total
 TOTAL ASSEMBLY 53
 D.C. ABOVE TOOLS.Stands Single Total
 D.P. ABOVE TOOLS.Stands 85 Single 1 Total 5305
 TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5358
 TOTAL DEPTH 5345
 TOTAL DRILL PIPE ABOVE K.B. 13

REMARKS:
 Comments:

FLUID SAMPLER DATA (not run)

AS-----
 IL----- ML.
 JD----- ML.
 WATER----- ML.
 THER-----
 PRESSURE----- PSI
 V ----- ohms @ deg. F.
 CHLORIDES----- ppm.
 GRAVITY-----n/a deg.API

P.O. SUB		
C.O. SUB @ top of tool		5292
S.I. TOOL Sterling		5298
Sampler (no)		
HMV Sterling		5303
JARS Bowen		5308
SAFETY JOINT Bowen		5310
PACKER Top		5314
PACKER Btm.		5319
DEPTH 5319		
STUBB 1 ft.		5320
ANCHOR		
perfs		
Alpine rec. @		5325
T.C.		
DEPTH		
20' perfs to		5340
AK-1 rec. @		5342
BULLNOSE 5 ft. perforated		5345
T.D.		

TEST HISTORY

11578 DST#2 LINDSAY #1 GRAVES DRLG.CO.INC.

Flag Points
t(Min.) P(PSig)

A:	0.00	2615.01
B:	0.00	30.63
C:	28.25	45.31
D:	60.00	1758.28
E:	0.00	47.58
F:	59.50	87.86
G:	93.25	1738.05
Q:	0.00	2595.04

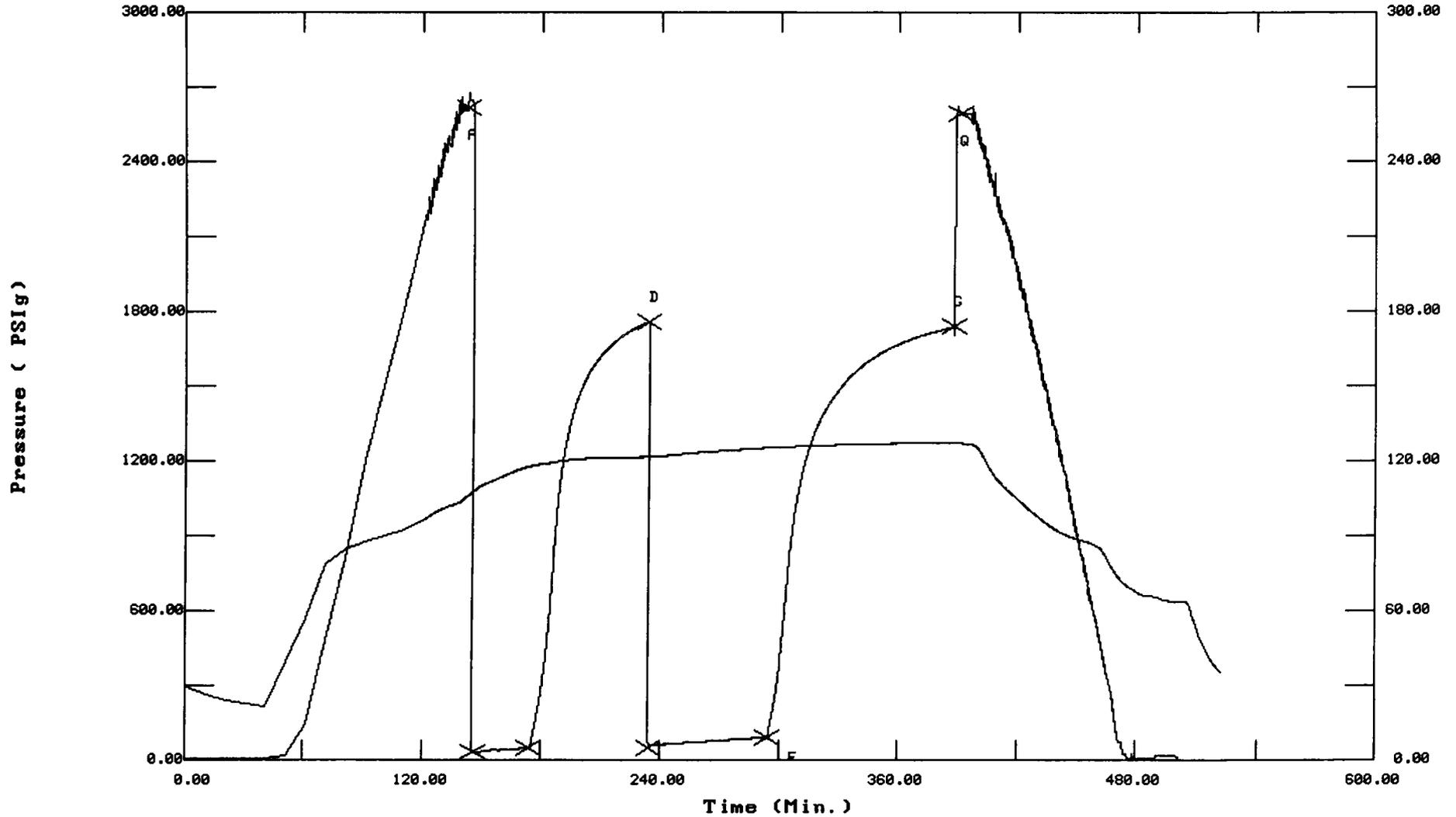
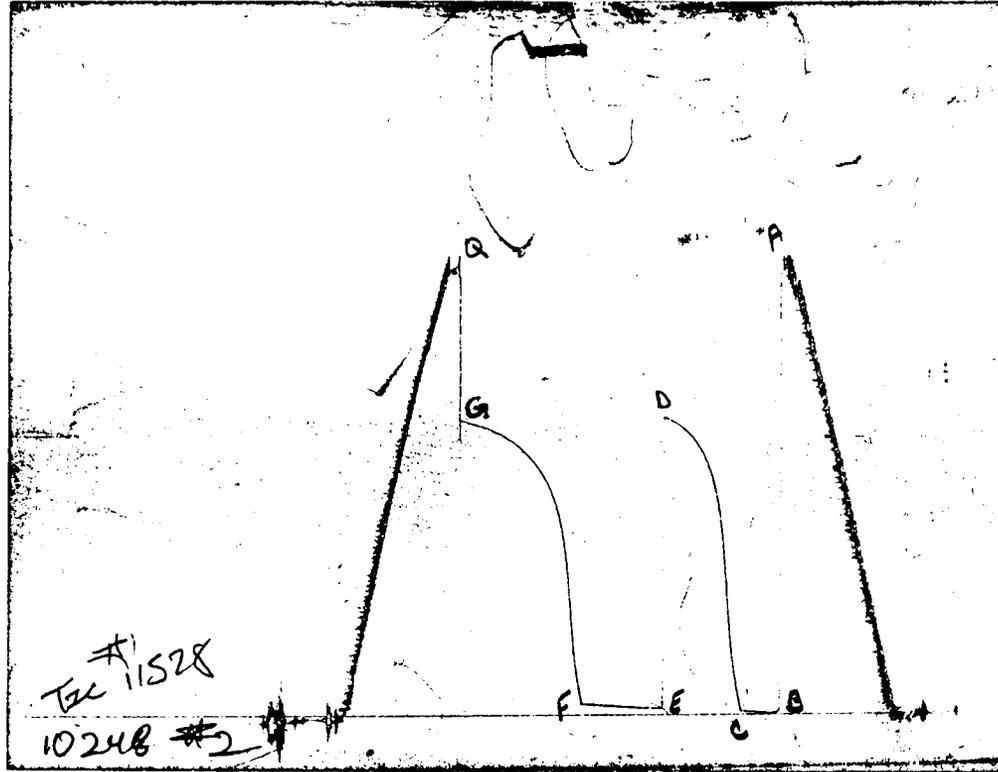


CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

EST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99 TIME: 18:30:05

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
*** Initial Hydro.	136.75	2580.8	0.0	107.40		
*** Start Flow 1	0.00	24.5	0.0	107.45		
	0.25	24.1	-0.4	107.45		
	0.50	23.8	-0.7	107.48		
	0.75	24.2	-0.3	107.53		
	1.00	24.2	-0.3	107.59		
	1.25	24.3	-0.2	107.65		
	1.50	24.5	0.0	107.71		
	1.75	24.5	0.0	107.78		
	2.00	24.7	0.2	107.85		
	2.25	24.8	0.3	107.91		
	2.50	24.8	0.3	107.98		
	2.75	24.7	0.2	108.03		
	3.00	24.7	0.2	108.08		
	3.25	24.7	0.2	108.13		
	3.50	24.7	0.2	108.17		
	3.75	24.7	0.2	108.20		
	4.00	24.7	0.2	108.24		
	4.25	24.8	0.3	108.27		
	4.50	24.8	0.3	108.30		
	4.75	24.8	0.3	108.33		
	5.00	24.8	0.3	108.36		
	5.25	24.6	0.1	108.38		
	5.50	24.6	0.1	108.40		
	5.75	24.6	0.1	108.43		
	6.00	24.5	0.0	108.45		
	6.25	24.4	-0.1	108.46		
	6.50	24.4	-0.1	108.47		
	6.75	24.5	0.0	108.49		
	7.00	24.5	0.0	108.51		
	7.25	24.5	0.0	108.53		
	7.50	24.3	-0.2	108.53		
	7.75	24.3	-0.2	108.56		
	8.00	24.2	-0.3	108.57		
	8.25	24.2	-0.3	108.59		
	8.50	24.2	-0.3	108.60		
	8.75	24.1	-0.4	108.62		
	9.00	24.1	-0.4	108.63		
	9.25	24.1	-0.4	108.65		
	9.50	24.1	-0.4	108.67		
	9.75	24.1	-0.4	108.69		
	10.00	24.1	-0.4	108.72		
	10.25	24.0	-0.5	108.75		
	10.50	24.0	-0.5	108.78		
	10.75	24.0	-0.5	108.81		
	11.00	24.0	-0.5	108.84		
	11.25	24.2	-0.3	108.88		
	11.50	24.2	-0.3	108.91		
	11.75	24.2	-0.3	108.94		
	12.00	24.2	-0.3	108.98		
	12.25	24.2	-0.3	109.00		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
12.50	24.2	-0.3	109.03		
12.75	24.2	-0.3	109.06		
13.00	24.2	-0.3	109.09		
13.25	24.2	-0.3	109.11		
13.50	24.2	-0.3	109.13		
13.75	24.2	-0.3	109.16		
14.00	24.2	-0.3	109.18		
14.25	24.2	-0.3	109.20		
14.50	24.3	-0.2	109.23		
14.75	24.3	-0.2	109.25		
15.00	24.2	-0.3	109.27		
15.25	24.3	-0.2	109.29		
15.50	24.3	-0.2	109.31		
15.75	24.3	-0.2	109.33		
16.00	24.3	-0.2	109.35		
16.25	24.3	-0.2	109.37		
16.50	24.3	-0.2	109.39		
16.75	24.3	-0.2	109.41		
17.00	24.3	-0.2	109.43		
17.25	24.4	-0.1	109.44		
17.50	24.4	-0.1	109.46		
17.75	24.4	-0.1	109.48		
18.00	24.4	-0.1	109.49		
18.25	24.4	-0.1	109.51		
18.50	24.4	-0.1	109.53		
18.75	24.4	-0.1	109.54		
19.00	24.4	-0.1	109.57		
19.25	24.3	-0.2	109.58		
19.50	24.3	-0.2	109.60		
19.75	24.3	-0.2	109.61		
20.00	24.3	-0.2	109.63		
20.25	24.5	0.0	109.65		
20.50	24.5	0.0	109.66		
20.75	24.5	0.0	109.68		
21.00	24.5	0.0	109.70		
21.25	24.5	0.0	109.71		
21.50	24.5	0.0	109.72		
21.75	24.5	0.0	109.74		
22.00	24.5	0.0	109.75		
22.25	24.5	0.0	109.77		
22.50	24.5	0.0	109.78		
22.75	24.5	0.0	109.80		
23.00	24.5	0.0	109.81		
23.25	24.5	0.0	109.83		
23.50	24.4	-0.1	109.85		
23.75	24.4	-0.1	109.86		
24.00	24.4	-0.1	109.88		
24.25	24.4	-0.1	109.88		
24.50	24.4	-0.1	109.91		
24.75	24.6	0.1	109.92		
25.00	24.6	0.1	109.94		

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

No 11578

Test Ticket

Well Name & No. LINDSAY #1 Test No. 2 Date 1-3-99
 Company GRAVES DRUG CO INC. Zone Tested MISS.
 Address P.O. Box #250, WICHITA KS, 67208 Elevation 1952 KB 1944 GL
 Co. Rep / Geo. JOHN HASTINGS Cont. DUKER DRUG #5 Est. Ft. of Pay 8 Por. 10 %
 Location: Sec. 17 Twp. 33 S Rge. 19 W Co. COMANCHE State KS.
 No. of Copies 5 Distribution Sheet (Y, N) N Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested 5319 - 5345' Initial Str Wt./Lbs. 58,000 Unseated Str. Wt./Lbs. 58,000
 Anchor Length 26' Wt. Set Lbs. 29,000 Wt. Pulled Loose/Lbs. 64,000
 Top Packer Depth 5314' Tool Weight 2100 #
 Bottom Packer Depth 5319' Hole Size - 7 7/8" Rubber Size - 6 3/4"
 Total Depth 5345' Wt. Pipe Run None Drill Collar Run None
 Mud Wt. 9.1 LCM G# Vis. 48 WL 8 Dec. Drill Pipe Size 4 1/2" x 11 Ft. Run 5305'
 Blow Description IF: Fair to strong below. Blm. of bucket in 12 mins. ISI: No below.
FE: Strong below. Blm. of bucket immediately.
ESI: Weak below. (1/2 - 3/4")

Recovery - Total Feet	GIP	Ft. in DC	Ft. in DP
182'	2600'	~	182'
Rec. 1	Feet Of <u>Clean Oil</u>	%gas	%oil %water %mud
Rec. 121	Feet Of <u>GOM</u>	20%gas 20%oil	6%water 54% mud
Rec. 60	Feet Of <u>oemc (assy water)</u>	20%gas 13%oil	45%water 20% mud
Rec. _____	Feet Of <u>Clean oil (at top)</u>	%gas %oil	%water %mud
Rec. _____	Feet Of <u>of tool</u>	%gas %oil	%water %mud
BHT 127	°F Gravity <u>39 est.</u>	API D@ _____	°F Corrected Gravity <u>39 est.</u> API _____
RW 131 @ 31	°F Chlorides <u>14,600</u>	ppm Recovery	Chlorides <u>6,000</u> ppm System

	AK-1	Alpine	PSI	Recorder No.	T-On Location
(A) Initial Hydrostatic Mud	2047	2015	alp.	2342	17 45
(B) First Initial Flow Pressure	9	31	PSI	(depth) 5325'	T-Started 1814
(C) First Final Flow Pressure	16	45	PSI	Recorder No. 10248	T-Open 2040
(D) Initial Shut-In Pressure	1740	1758	PSI	(depth) 5342'	T-Pulled 0042
(E) Second Initial Flow Pressure	25	48	PSI	Recorder No. ~	T-Out 0250
(F) Second Final Flow Pressure	57	88	PSI	(depth) ~	T-Off Location 0425
(G) Final Shut-in Pressure	1712	1738	PSI	Initial Opening 30	Test <input checked="" type="checkbox"/> 800
(Q) Final Hydrostatic Mud	2002	2598	PSI	Initial Shut-in 60	Jars <input checked="" type="checkbox"/> 200
				Final Flow 60	Safety Joint <input checked="" type="checkbox"/> 50
				Final Shut-in 90	Straddle _____
				_____	Circ. Sub _____
				_____	Sampler _____
				_____	Extra Packer _____
				_____	Elec. Rec. <input checked="" type="checkbox"/> 150
				_____	Mileage _____
				_____	Other _____
				_____	TOTAL PRICE \$ <input checked="" type="checkbox"/> 1200 ⁰⁰

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST, TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By [Signature]
 Our Representative [Signature]

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	57.25	369.2	332.4	116.79	2.0437	0.136
	57.50	370.4	333.7	116.80	2.0391	0.137
	57.75	371.7	335.0	116.81	2.0346	0.138
	58.00	373.1	336.3	116.81	2.0302	0.139
	58.25	374.3	337.6	116.82	2.0258	0.140
	58.50	375.6	338.8	116.83	2.0214	0.141
	58.75	376.8	340.1	116.83	2.0170	0.142
	59.00	378.2	341.4	116.84	2.0127	0.143
	59.25	379.4	342.7	116.84	2.0084	0.144
	59.50	380.7	343.9	116.86	2.0042	0.145
	59.75	381.9	345.2	116.86	2.0000	0.146
	60.00	383.2	346.5	116.86	1.9958	0.147
	60.25	384.5	347.7	116.87	1.9917	0.148
	60.50	385.7	349.0	116.87	1.9876	0.149
***** End Shut-in 2	60.75	387.0	350.2	116.89	1.9835	0.150
***** Final Hydro.	323.00	2550.6	0.0	118.77		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSI _g	delta P PSI _g	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
44.50	302.1	265.4	116.49	2.3427	0.091
44.75	303.6	266.8	116.49	2.3352	0.092
45.00	304.9	268.1	116.49	2.3278	0.093
45.25	306.2	269.5	116.50	2.3204	0.094
45.50	307.6	270.8	116.51	2.3132	0.095
45.75	308.8	272.1	116.51	2.3060	0.095
46.00	310.3	273.5	116.53	2.2989	0.096
46.25	311.5	274.8	116.53	2.2919	0.097
46.50	313.0	276.2	116.54	2.2849	0.098
46.75	314.2	277.5	116.54	2.2781	0.099
47.00	315.6	278.8	116.55	2.2713	0.10
47.25	316.9	280.2	116.55	2.2646	0.100
47.50	318.2	281.5	116.56	2.2579	0.101
47.75	319.6	282.8	116.56	2.2513	0.102
48.00	320.9	284.2	116.57	2.2448	0.103
48.25	322.3	285.5	116.57	2.2383	0.104
48.50	323.6	286.9	116.59	2.2320	0.105
48.75	324.9	288.1	116.59	2.2256	0.106
49.00	326.2	289.5	116.60	2.2194	0.106
49.25	327.6	290.8	116.60	2.2132	0.107
49.50	328.9	292.2	116.60	2.2071	0.108
49.75	330.2	293.5	116.61	2.2010	0.109
50.00	331.6	294.8	116.63	2.1950	0.110
50.25	332.8	296.1	116.62	2.1891	0.111
50.50	334.2	297.4	116.63	2.1832	0.112
50.75	335.5	298.8	116.64	2.1773	0.113
51.00	336.9	300.1	116.65	2.1716	0.113
51.25	338.1	301.4	116.59	2.1659	0.114
51.50	339.4	302.6	116.66	2.1602	0.115
51.75	340.7	304.0	116.66	2.1546	0.116
52.00	342.1	305.3	116.67	2.1490	0.117
52.25	343.4	306.7	116.67	2.1435	0.118
52.50	344.7	307.9	116.67	2.1381	0.119
52.75	345.9	309.2	116.68	2.1327	0.120
53.00	347.3	310.5	116.69	2.1274	0.121
53.25	348.6	311.9	116.70	2.1221	0.122
53.50	349.9	313.1	116.71	2.1168	0.122
53.75	351.1	314.4	116.71	2.1116	0.123
54.00	352.5	315.7	116.72	2.1065	0.124
54.25	353.8	317.1	116.73	2.1014	0.125
54.50	355.1	318.3	116.73	2.0963	0.126
54.75	356.3	319.6	116.74	2.0913	0.127
55.00	357.7	320.9	116.74	2.0864	0.128
55.25	359.0	322.2	116.75	2.0814	0.129
55.50	360.2	323.5	116.75	2.0766	0.130
55.75	361.6	324.8	116.76	2.0717	0.131
56.00	362.7	326.0	116.77	2.0670	0.132
56.25	364.1	327.3	116.77	2.0622	0.133
56.50	365.3	328.6	116.77	2.0575	0.133
56.75	366.6	329.8	116.78	2.0529	0.134
57.00	367.9	331.2	116.79	2.0482	0.135

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99 TIME: 18:30:05

Time	Pressure PSI _g	delta P PSI _g	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
31.75	231.4	194.6	116.14	2.8819	0.054
32.00	232.7	196.0	116.16	2.8672	0.054
32.25	234.2	197.4	116.16	2.8527	0.055
32.50	235.6	198.8	116.17	2.8385	0.055
32.75	237.0	200.3	116.17	2.8244	0.056
33.00	238.5	201.8	116.17	2.8106	0.057
33.25	239.9	203.1	116.18	2.7970	0.058
33.50	241.2	204.4	116.19	2.7836	0.058
33.75	242.7	206.0	116.20	2.7704	0.059
34.00	244.1	207.4	116.20	2.7574	0.060
34.25	245.6	208.8	116.21	2.7445	0.060
34.50	247.0	210.2	116.22	2.7319	0.061
34.75	248.4	211.7	116.23	2.7194	0.062
35.00	249.8	213.0	116.23	2.7071	0.062
35.25	251.2	214.4	116.24	2.6950	0.063
35.50	252.6	215.9	116.24	2.6831	0.064
35.75	254.0	217.2	116.25	2.6713	0.064
36.00	255.5	218.7	116.26	2.6597	0.065
36.25	256.8	220.1	116.26	2.6483	0.066
36.50	258.2	221.5	116.28	2.6370	0.067
36.75	259.7	222.9	116.28	2.6259	0.067
37.00	260.9	224.2	116.29	2.6149	0.068
37.25	262.3	225.6	116.29	2.6040	0.069
37.50	263.7	226.9	116.30	2.5933	0.070
37.75	265.2	228.5	116.31	2.5828	0.070
38.00	266.5	229.8	116.32	2.5724	0.071
38.25	268.0	231.2	116.32	2.5621	0.072
38.50	269.4	232.6	116.33	2.5519	0.073
38.75	270.7	234.0	116.33	2.5419	0.073
39.00	272.2	235.4	116.35	2.5321	0.074
39.25	273.5	236.8	116.34	2.5223	0.075
39.50	274.9	238.1	116.35	2.5127	0.076
39.75	276.3	239.5	116.36	2.5031	0.076
40.00	277.7	241.0	116.37	2.4937	0.077
40.25	279.0	242.2	116.37	2.4845	0.078
40.50	280.3	243.6	116.38	2.4753	0.079
40.75	281.7	245.0	116.38	2.4663	0.079
41.00	283.2	246.4	116.39	2.4573	0.080
41.25	284.4	247.7	116.40	2.4485	0.081
41.50	285.8	249.1	116.41	2.4398	0.082
41.75	287.2	250.4	116.41	2.4311	0.082
42.00	288.5	251.8	116.42	2.4226	0.083
42.25	289.9	253.1	116.42	2.4142	0.084
42.50	291.3	254.6	116.43	2.4059	0.085
42.75	292.6	255.9	116.43	2.3977	0.086
43.00	294.1	257.3	116.45	2.3895	0.086
43.25	295.4	258.7	116.45	2.3815	0.087
43.50	296.8	260.1	116.46	2.3736	0.088
43.75	298.1	261.4	116.47	2.3657	0.089
44.00	299.4	262.7	116.47	2.3580	0.090
44.25	300.9	264.1	116.48	2.3503	0.091

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRILLING CO. INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
19.00	156.2	119.4	115.76	4.1447	0.024
19.25	157.8	121.0	115.76	4.1039	0.025
19.50	159.3	122.5	115.77	4.0641	0.025
19.75	160.8	124.0	115.78	4.0253	0.026
20.00	162.2	125.5	115.79	3.9875	0.026
20.25	163.7	127.0	115.80	3.9506	0.027
20.50	165.2	128.5	115.80	3.9146	0.027
20.75	166.8	130.0	115.81	3.8795	0.028
21.00	168.2	131.4	115.82	3.8452	0.028
21.25	169.8	133.0	115.83	3.8118	0.029
21.50	171.2	134.5	115.84	3.7791	0.029
21.75	172.7	136.0	115.84	3.7471	0.030
22.00	174.2	137.5	115.85	3.7159	0.030
22.25	175.7	139.0	115.86	3.6854	0.031
22.50	177.3	140.6	115.86	3.6556	0.031
22.75	178.8	142.0	115.88	3.6264	0.032
23.00	180.4	143.6	115.88	3.5978	0.033
23.25	181.8	145.0	115.90	3.5699	0.033
23.50	183.3	146.5	115.90	3.5426	0.034
23.75	184.8	148.0	115.91	3.5158	0.034
24.00	186.3	149.6	115.91	3.4896	0.035
24.25	187.7	150.9	115.93	3.4639	0.035
24.50	189.2	152.4	115.93	3.4388	0.036
24.75	190.7	153.9	115.94	3.4141	0.036
25.00	192.1	155.4	115.94	3.3900	0.037
25.25	193.6	156.9	115.95	3.3663	0.037
25.50	195.0	158.3	115.96	3.3431	0.038
25.75	196.6	159.8	115.97	3.3204	0.039
26.00	198.0	161.2	115.98	3.2981	0.039
26.25	199.5	162.7	115.98	3.2762	0.040
26.50	200.9	164.2	115.99	3.2547	0.040
26.75	202.4	165.7	115.99	3.2336	0.041
27.00	203.9	167.2	116.00	3.2130	0.042
27.25	205.4	168.6	116.01	3.1927	0.042
27.50	206.9	170.1	116.02	3.1727	0.043
27.75	208.3	171.5	116.02	3.1532	0.043
28.00	209.7	173.0	116.04	3.1339	0.044
28.25	211.2	174.4	116.04	3.1150	0.045
28.50	212.7	175.9	116.05	3.0965	0.045
28.75	214.1	177.3	116.06	3.0783	0.046
29.00	215.5	178.8	116.06	3.0603	0.046
29.25	217.0	180.3	116.07	3.0427	0.047
29.50	218.4	181.6	116.08	3.0254	0.048
29.75	219.9	183.1	116.09	3.0084	0.048
30.00	221.4	184.6	116.10	2.9917	0.049
30.25	222.7	186.0	116.10	2.9752	0.050
30.50	224.2	187.4	116.11	2.9590	0.050
30.75	225.6	188.8	116.11	2.9431	0.051
31.00	226.9	190.2	116.12	2.9274	0.051
31.25	228.4	191.7	116.13	2.9120	0.052
31.50	229.9	193.1	116.14	2.8968	0.053

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
6.25	77.0	40.2	115.26	10.5600	0.006
6.50	78.6	41.9	115.28	10.1923	0.006
6.75	80.1	43.4	115.28	9.8519	0.006
7.00	81.7	45.0	115.30	9.5357	0.007
7.25	83.3	46.6	115.31	9.2414	0.007
7.50	84.8	48.1	115.31	8.9667	0.007
7.75	86.5	49.8	115.32	8.7097	0.007
8.00	88.0	51.3	115.33	8.4688	0.008
8.25	89.6	52.9	115.34	8.2424	0.008
8.50	91.2	54.5	115.36	8.0294	0.008
8.75	92.7	56.0	115.36	7.8286	0.009
9.00	94.4	57.7	115.38	7.6389	0.009
9.25	95.9	59.2	115.38	7.4595	0.009
9.50	97.5	60.8	115.40	7.2895	0.01
9.75	99.1	62.4	115.40	7.1282	0.01
10.00	100.6	63.9	115.41	6.9750	0.010
10.25	102.2	65.5	115.46	6.8293	0.010
10.50	103.8	67.1	115.44	6.6905	0.011
10.75	105.4	68.7	115.45	6.5581	0.011
11.00	106.9	70.2	115.46	6.4318	0.011
11.25	108.5	71.8	115.47	6.3111	0.012
11.50	110.0	73.3	115.48	6.1957	0.012
11.75	111.6	74.9	115.49	6.0851	0.012
12.00	113.1	76.4	115.50	5.9792	0.013
12.25	114.8	78.1	115.50	5.8776	0.013
12.50	116.3	79.6	115.52	5.7800	0.014
12.75	117.8	81.1	115.52	5.6863	0.014
13.00	119.4	82.7	115.54	5.5962	0.014
13.25	120.9	84.2	115.54	5.5094	0.015
13.50	122.4	85.7	115.56	5.4259	0.015
13.75	124.0	87.3	115.56	5.3455	0.015
14.00	125.5	88.8	115.58	5.2679	0.016
14.25	127.1	90.4	115.59	5.1930	0.016
14.50	128.7	91.9	115.59	5.1207	0.017
14.75	130.2	93.5	115.59	5.0508	0.017
15.00	131.8	95.0	115.61	4.9833	0.017
15.25	133.3	96.5	115.63	4.9180	0.018
15.50	134.9	98.1	115.63	4.8548	0.018
15.75	136.4	99.6	115.63	4.7937	0.019
16.00	137.9	101.1	115.65	4.7344	0.019
16.25	139.4	102.6	115.66	4.6769	0.019
16.50	140.9	104.2	115.67	4.6212	0.020
16.75	142.6	105.8	115.68	4.5672	0.020
17.00	144.0	107.3	115.68	4.5147	0.021
17.25	145.5	108.8	115.69	4.4638	0.021
17.50	147.1	110.4	115.70	4.4143	0.022
17.75	148.6	111.9	115.71	4.3662	0.022
18.00	150.1	113.4	115.72	4.3194	0.023
18.25	151.6	114.9	115.73	4.2740	0.023
18.50	153.2	116.4	115.73	4.2297	0.023
18.75	154.7	117.9	115.75	4.1867	0.024

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99 TIME: 18:30:05

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	24.50	27.4	7.0	114.77		
	24.75	27.4	7.0	114.77		
	25.00	27.4	7.0	114.78		
	25.25	27.4	7.0	114.79		
	25.50	27.4	7.0	114.80		
	25.75	27.3	7.0	114.80		
	26.00	27.3	7.0	114.82		
	26.25	27.3	7.0	114.83		
	26.50	27.3	7.0	114.84		
	26.75	27.3	7.0	114.84		
	27.00	27.3	7.0	114.85		
	27.25	27.2	6.9	114.85		
	27.50	27.2	6.9	114.86		
	27.75	27.2	6.9	114.88		
	28.00	27.2	6.9	114.88		
	28.25	27.2	6.9	114.89		
	28.50	27.2	6.9	114.90		
	28.75	27.3	7.0	114.90		
	29.00	27.3	7.0	114.92		
	29.25	27.3	7.0	114.92		
	29.50	28.0	7.7	114.94		
	29.75	29.8	9.5	114.95		
	30.00	31.6	11.3	114.95		
	30.25	33.4	13.1	114.96		
	30.50	35.1	14.8	114.97		
***** End Flow 2	30.75	36.8	16.4	114.98		
***** Start Shutin 2	0.00	36.8	0.0	114.98	0.0000	0.001
	0.25	38.4	1.7	114.99	240.0000	0.001
	0.50	40.1	3.4	114.99	120.5000	0.002
	0.75	41.7	5.0	115.01	80.6667	0.002
	1.00	43.4	6.6	115.02	60.7500	0.002
	1.25	45.0	8.2	115.03	48.8000	0.002
	1.50	46.6	9.8	115.04	40.8333	0.002
	1.75	48.2	11.4	115.05	35.1429	0.002
	2.00	49.8	13.1	115.07	30.8750	0.002
	2.25	51.4	14.7	115.08	27.5556	0.003
	2.50	53.1	16.4	115.09	24.9000	0.003
	2.75	54.7	18.0	115.10	22.7273	0.003
	3.00	56.4	19.6	115.11	20.9167	0.003
	3.25	57.9	21.1	115.12	19.3846	0.003
	3.50	59.5	22.7	115.14	18.0714	0.004
	3.75	61.1	24.3	115.15	16.9333	0.004
	4.00	62.7	25.9	115.16	15.9375	0.004
	4.25	64.4	27.6	115.17	15.0588	0.004
	4.50	65.9	29.1	115.19	14.2778	0.004
	4.75	67.5	30.7	115.19	13.5789	0.005
	5.00	69.1	32.3	115.20	12.9500	0.005
	5.25	70.7	33.9	115.21	12.3810	0.005
	5.50	72.3	35.5	115.23	11.8636	0.005
	5.75	73.8	37.1	115.23	11.3913	0.005
	6.00	75.4	38.7	115.25	10.9583	0.006

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
11.75	28.6	8.3	114.42		
12.00	28.4	8.1	114.43		
12.25	28.4	8.1	114.43		
12.50	28.3	8.0	114.44		
12.75	28.3	8.0	114.44		
13.00	28.2	7.9	114.45		
13.25	28.1	7.8	114.46		
13.50	28.1	7.8	114.46		
13.75	28.1	7.8	114.47		
14.00	28.0	7.7	114.47		
14.25	28.0	7.7	114.48		
14.50	27.9	7.6	114.48		
14.75	27.9	7.6	114.49		
15.00	27.9	7.6	114.50		
15.25	27.9	7.6	114.50		
15.50	27.9	7.6	114.51		
15.75	27.9	7.6	114.51		
16.00	27.8	7.5	114.52		
16.25	27.8	7.5	114.53		
16.50	27.8	7.5	114.53		
16.75	27.8	7.5	114.54		
17.00	27.8	7.5	114.55		
17.25	27.7	7.4	114.56		
17.50	27.7	7.4	114.56		
17.75	27.7	7.4	114.57		
18.00	27.6	7.3	114.57		
18.25	27.6	7.3	114.58		
18.50	27.6	7.3	114.59		
18.75	27.6	7.3	114.59		
19.00	27.5	7.2	114.60		
19.25	27.5	7.2	114.61		
19.50	27.5	7.2	114.62		
19.75	27.5	7.2	114.62		
20.00	27.5	7.2	114.63		
20.25	27.5	7.2	114.64		
20.50	27.5	7.2	114.64		
20.75	27.5	7.2	114.65		
21.00	27.4	7.1	114.66		
21.25	27.4	7.1	114.66		
21.50	27.4	7.1	114.68		
21.75	27.5	7.2	114.68		
22.00	27.5	7.2	114.69		
22.25	27.5	7.2	114.70		
22.50	27.4	7.0	114.70		
22.75	27.4	7.0	114.71		
23.00	27.4	7.0	114.72		
23.25	27.4	7.0	114.72		
23.50	27.4	7.0	114.74		
23.75	27.4	7.0	114.74		
24.00	27.4	7.0	114.75		
24.25	27.4	7.0	114.76		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSI _g	delta P PSI _g	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	59.75	412.7	388.2	113.53	1.4854	0.170
	60.00	414.1	389.5	113.54	1.4833	0.171
	60.25	415.5	390.9	113.55	1.4813	0.173
***** End Shut-in 1	60.50	416.8	392.2	113.55	1.4793	0.174
***** Start Flow 2	0.00	20.3	0.0	113.57		
	0.25	21.5	1.2	113.57		
	0.50	24.2	3.9	113.58		
	0.75	26.8	6.5	113.59		
	1.00	29.0	8.7	113.63		
	1.25	31.0	10.7	113.65		
	1.50	32.0	11.7	113.69		
	1.75	32.7	12.4	113.74		
	2.00	32.9	12.6	113.78		
	2.25	32.8	12.5	113.82		
	2.50	32.6	12.3	113.86		
	2.75	32.3	12.0	113.89		
	3.00	32.1	11.7	113.93		
	3.25	31.7	11.4	113.97		
	3.50	31.5	11.2	114.00		
	3.75	31.4	11.1	114.04		
	4.00	31.1	10.8	114.06		
	4.25	30.9	10.6	114.09		
	4.50	30.8	10.5	114.11		
	4.75	30.6	10.3	114.14		
	5.00	30.5	10.2	114.16		
	5.25	30.4	10.1	114.17		
	5.50	30.2	9.9	114.20		
	5.75	30.1	9.8	114.22		
	6.00	30.1	9.8	114.24		
	6.25	30.0	9.7	114.25		
	6.50	29.9	9.6	114.26		
	6.75	29.9	9.6	114.27		
	7.00	29.8	9.5	114.28		
	7.25	29.7	9.4	114.30		
	7.50	29.6	9.3	114.30		
	7.75	29.5	9.2	114.31		
	8.00	29.5	9.2	114.33		
	8.25	29.4	9.1	114.33		
	8.50	29.4	9.1	114.34		
	8.75	29.4	9.1	114.35		
	9.00	29.3	9.0	114.35		
	9.25	29.3	9.0	114.36		
	9.50	29.2	8.9	114.37		
	9.75	29.1	8.8	114.38		
	10.00	29.1	8.8	114.39		
	10.25	29.0	8.7	114.39		
	10.50	28.9	8.6	114.39		
	10.75	28.9	8.6	114.40		
	11.00	28.8	8.5	114.41		
	11.25	28.7	8.4	114.41		
	11.50	28.7	8.4	114.42		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
47.00	341.0	316.4	113.05	1.6170	0.116
47.25	342.4	317.8	113.06	1.6138	0.117
47.50	343.9	319.3	113.07	1.6105	0.118
47.75	345.3	320.7	113.08	1.6073	0.119
48.00	346.8	322.2	113.10	1.6042	0.120
48.25	348.2	323.6	113.10	1.6010	0.121
48.50	349.6	325.1	113.11	1.5979	0.122
48.75	351.1	326.5	113.12	1.5949	0.123
49.00	352.6	328.0	113.14	1.5918	0.124
49.25	353.9	329.3	113.14	1.5888	0.125
49.50	355.3	330.8	113.15	1.5859	0.126
49.75	356.9	332.3	113.16	1.5829	0.127
50.00	358.3	333.7	113.17	1.5800	0.128
50.25	359.7	335.1	113.18	1.5771	0.129
50.50	361.1	336.6	113.19	1.5743	0.130
50.75	362.6	338.0	113.20	1.5714	0.131
51.00	364.0	339.4	113.20	1.5686	0.132
51.25	365.4	340.8	113.22	1.5659	0.134
51.50	366.8	342.3	113.23	1.5631	0.135
51.75	368.2	343.6	113.24	1.5604	0.136
52.00	369.7	345.1	113.25	1.5577	0.137
52.25	371.0	346.5	113.26	1.5550	0.138
52.50	372.5	347.9	113.26	1.5524	0.139
52.75	373.9	349.3	113.27	1.5498	0.140
53.00	375.3	350.7	113.28	1.5472	0.141
53.25	376.7	352.2	113.29	1.5446	0.142
53.50	378.1	353.5	113.30	1.5421	0.143
53.75	379.5	354.9	113.31	1.5395	0.144
54.00	380.9	356.4	113.32	1.5370	0.145
54.25	382.3	357.7	113.33	1.5346	0.146
54.50	383.8	359.2	113.34	1.5321	0.147
54.75	385.2	360.6	113.34	1.5297	0.148
55.00	386.5	361.9	113.35	1.5273	0.149
55.25	388.0	363.4	113.37	1.5249	0.151
55.50	389.4	364.8	113.38	1.5225	0.152
55.75	390.8	366.2	113.38	1.5202	0.153
56.00	392.1	367.5	113.40	1.5179	0.154
56.25	393.4	368.9	113.41	1.5156	0.155
56.50	394.9	370.3	113.41	1.5133	0.156
56.75	396.2	371.6	113.42	1.5110	0.157
57.00	397.6	373.1	113.44	1.5088	0.158
57.25	399.0	374.4	113.44	1.5066	0.159
57.50	400.4	375.8	113.45	1.5043	0.160
57.75	401.8	377.3	113.46	1.5022	0.161
58.00	403.2	378.6	113.47	1.5000	0.163
58.25	404.5	379.9	113.47	1.4979	0.164
58.50	405.9	381.3	113.49	1.4957	0.165
58.75	407.3	382.7	113.49	1.4936	0.166
59.00	408.6	384.1	113.50	1.4915	0.167
59.25	410.1	385.5	113.52	1.4895	0.168
59.50	411.4	386.8	113.52	1.4874	0.169

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
34.25	266.1	241.5	112.53	1.8467	0.071
34.50	267.7	243.1	112.54	1.8406	0.072
34.75	269.2	244.6	112.55	1.8345	0.072
35.00	270.8	246.2	112.56	1.8286	0.073
35.25	272.3	247.7	112.57	1.8227	0.074
35.50	273.8	249.3	112.59	1.8169	0.075
35.75	275.4	250.8	112.59	1.8112	0.076
36.00	277.0	252.4	112.60	1.8056	0.077
36.25	278.5	254.0	112.62	1.8000	0.078
36.50	280.1	255.5	112.63	1.7945	0.078
36.75	281.6	257.0	112.64	1.7891	0.079
37.00	283.2	258.6	112.66	1.7838	0.080
37.25	284.7	260.1	112.67	1.7785	0.081
37.50	286.2	261.6	112.68	1.7733	0.082
37.75	287.7	263.1	112.68	1.7682	0.083
38.00	289.3	264.7	112.69	1.7632	0.084
38.25	290.9	266.3	112.70	1.7582	0.085
38.50	292.3	267.7	112.72	1.7532	0.085
38.75	293.9	269.3	112.73	1.7484	0.086
39.00	295.3	270.8	112.74	1.7436	0.087
39.25	296.8	272.3	112.74	1.7389	0.088
39.50	298.4	273.8	112.76	1.7342	0.089
39.75	299.9	275.3	112.77	1.7296	0.090
40.00	301.5	276.9	112.78	1.7250	0.091
40.25	303.0	278.4	112.78	1.7205	0.092
40.50	304.5	279.9	112.80	1.7160	0.093
40.75	306.0	281.4	112.80	1.7117	0.094
41.00	307.6	283.0	112.82	1.7073	0.095
41.25	309.0	284.4	112.82	1.7030	0.095
41.50	310.5	285.9	112.83	1.6988	0.096
41.75	312.0	287.4	112.84	1.6946	0.097
42.00	313.5	288.9	112.86	1.6905	0.098
42.25	315.0	290.4	112.87	1.6864	0.099
42.50	316.4	291.8	112.87	1.6824	0.100
42.75	317.9	293.3	112.89	1.6784	0.101
43.00	319.4	294.8	112.91	1.6744	0.102
43.25	320.9	296.3	112.91	1.6705	0.103
43.50	322.4	297.8	112.91	1.6667	0.104
43.75	323.9	299.3	112.93	1.6629	0.105
44.00	325.3	300.7	112.94	1.6591	0.106
44.25	326.8	302.2	112.95	1.6554	0.107
44.50	328.3	303.7	112.96	1.6517	0.108
44.75	329.7	305.2	112.96	1.6480	0.109
45.00	331.3	306.7	112.98	1.6444	0.110
45.25	332.7	308.1	112.98	1.6409	0.111
45.50	334.2	309.6	112.99	1.6374	0.112
45.75	333.7	309.1	113.01	1.6339	0.111
46.00	335.1	310.5	113.02	1.6304	0.112
46.25	336.6	312.0	113.02	1.6270	0.113
46.50	338.1	313.5	113.04	1.6237	0.114
46.75	339.6	315.0	113.04	1.6203	0.115

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
21.50	183.1	158.5	111.94	2.3488	0.034
21.75	184.8	160.2	111.94	2.3333	0.034
22.00	186.5	161.9	111.97	2.3182	0.035
22.25	188.2	163.6	111.98	2.3034	0.035
22.50	189.8	165.3	111.99	2.2889	0.036
22.75	191.5	166.9	112.00	2.2747	0.037
23.00	193.1	168.5	112.02	2.2609	0.037
23.25	194.9	170.3	112.03	2.2473	0.038
23.50	196.6	172.0	112.06	2.2340	0.039
23.75	198.2	173.6	112.06	2.2211	0.039
24.00	200.0	175.4	112.06	2.2083	0.040
24.25	201.6	177.0	112.07	2.1959	0.041
24.50	203.3	178.7	112.07	2.1837	0.041
24.75	204.9	180.3	112.09	2.1717	0.042
25.00	206.5	182.0	112.09	2.1600	0.043
25.25	208.2	183.6	112.11	2.1485	0.043
25.50	209.8	185.2	112.12	2.1373	0.044
25.75	211.5	186.9	112.14	2.1262	0.045
26.00	213.1	188.5	112.15	2.1154	0.045
26.25	214.8	190.2	112.16	2.1048	0.046
26.50	216.4	191.8	112.18	2.0943	0.047
26.75	218.1	193.5	112.19	2.0841	0.048
27.00	219.7	195.1	112.20	2.0741	0.048
27.25	221.4	196.8	112.22	2.0642	0.049
27.50	223.1	198.5	112.22	2.0545	0.050
27.75	224.7	200.1	112.24	2.0450	0.050
28.00	226.3	201.7	112.25	2.0357	0.051
28.25	227.9	203.4	112.26	2.0265	0.052
28.50	229.5	205.0	112.27	2.0175	0.053
28.75	231.1	206.5	112.29	2.0087	0.053
29.00	232.7	208.1	112.29	2.0000	0.054
29.25	234.4	209.8	112.30	1.9915	0.055
29.50	235.9	211.3	112.31	1.9831	0.056
29.75	237.5	212.9	112.32	1.9748	0.056
30.00	239.1	214.5	112.35	1.9667	0.057
30.25	240.8	216.2	112.35	1.9587	0.058
30.50	242.4	217.8	112.36	1.9508	0.059
30.75	244.0	219.4	112.38	1.9431	0.060
31.00	245.6	221.0	112.39	1.9355	0.060
31.25	247.2	222.6	112.40	1.9280	0.061
31.50	248.8	224.2	112.40	1.9206	0.062
31.75	250.3	225.8	112.42	1.9134	0.063
32.00	251.9	227.4	112.44	1.9062	0.063
32.25	253.5	228.9	112.44	1.8992	0.064
32.50	255.1	230.5	112.45	1.8923	0.065
32.75	256.6	232.1	112.46	1.8855	0.066
33.00	258.3	233.7	112.47	1.8788	0.067
33.25	259.8	235.2	112.48	1.8722	0.068
33.50	261.3	236.8	112.50	1.8657	0.068
33.75	262.9	238.4	112.49	1.8593	0.069
34.00	264.5	239.9	112.52	1.8529	0.070

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
8.75	92.7	68.1	110.98	4.3143	0.009
9.00	94.5	69.9	111.01	4.2222	0.009
9.25	96.3	71.8	111.04	4.1351	0.009
9.50	98.2	73.6	111.07	4.0526	0.01
9.75	100.0	75.5	111.09	3.9744	0.010
10.00	101.9	77.3	111.12	3.9000	0.010
10.25	103.6	79.1	111.15	3.8293	0.011
10.50	105.5	80.9	111.18	3.7619	0.011
10.75	107.4	82.8	111.20	3.6977	0.012
11.00	109.2	84.6	111.22	3.6364	0.012
11.25	111.0	86.4	111.25	3.5778	0.012
11.50	112.8	88.2	111.28	3.5217	0.013
11.75	114.6	90.1	111.30	3.4681	0.013
12.00	116.5	91.9	111.31	3.4167	0.014
12.25	118.2	93.7	111.34	3.3673	0.014
12.50	120.1	95.5	111.36	3.3200	0.014
12.75	121.9	97.4	111.38	3.2745	0.015
13.00	123.8	99.2	111.40	3.2308	0.015
13.25	125.5	101.0	111.43	3.1887	0.016
13.50	127.4	102.8	111.44	3.1481	0.016
13.75	129.1	104.5	111.45	3.1091	0.017
14.00	130.9	106.3	111.47	3.0714	0.017
14.25	132.8	108.2	111.50	3.0351	0.018
14.50	134.5	109.9	111.52	3.0000	0.018
14.75	136.2	111.6	111.53	2.9661	0.019
15.00	138.1	113.5	111.55	2.9333	0.019
15.25	139.8	115.2	111.56	2.9016	0.020
15.50	141.5	116.9	111.59	2.8710	0.020
15.75	143.3	118.7	111.59	2.8413	0.021
16.00	145.1	120.5	111.61	2.8125	0.021
16.25	146.8	122.2	111.63	2.7846	0.022
16.50	148.6	124.0	111.65	2.7576	0.022
16.75	150.3	125.7	111.67	2.7313	0.023
17.00	152.1	127.5	111.68	2.7059	0.023
17.25	153.8	129.2	111.69	2.6812	0.024
17.50	155.6	131.0	111.70	2.6571	0.024
17.75	157.4	132.8	111.73	2.6338	0.025
18.00	159.0	134.5	111.74	2.6111	0.025
18.25	160.8	136.2	111.75	2.5890	0.026
18.50	162.5	137.9	111.77	2.5676	0.026
18.75	164.2	139.7	111.78	2.5467	0.027
19.00	166.0	141.4	111.79	2.5263	0.028
19.25	167.8	143.2	111.81	2.5065	0.028
19.50	169.4	144.9	111.82	2.4872	0.029
19.75	171.2	146.6	111.84	2.4684	0.029
20.00	172.9	148.3	111.85	2.4500	0.030
20.25	174.6	150.0	111.87	2.4321	0.030
20.50	176.3	151.7	111.88	2.4146	0.031
20.75	178.0	153.4	111.90	2.3976	0.032
21.00	179.7	155.1	111.91	2.3810	0.032
21.25	181.4	156.8	111.92	2.3647	0.033

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	25.25	24.6	0.1	109.95		
	25.50	24.6	0.1	109.97		
	25.75	24.6	0.1	109.98		
	26.00	24.6	0.1	109.99		
	26.25	24.6	0.1	110.01		
	26.50	24.6	0.1	110.02		
	26.75	24.6	0.1	110.05		
	27.00	24.6	0.1	110.06		
	27.25	24.6	0.1	110.07		
	27.50	24.6	0.1	110.09		
	27.75	24.6	0.1	110.10		
	28.00	24.6	0.1	110.12		
	28.25	24.6	0.1	110.13		
	28.50	24.6	0.1	110.16		
	28.75	24.6	0.1	110.17		
**** End Flow 1	29.00	24.6	0.1	110.18		
**** Start Shutin 1	0.00	24.6	0.0	110.18	0.0000	0.001
	0.25	26.3	1.8	110.20	117.0000	0.001
	0.50	28.5	3.9	110.21	59.0000	0.001
	0.75	30.7	6.1	110.23	39.6667	0.001
	1.00	32.8	8.2	110.24	30.0000	0.001
	1.25	34.9	10.3	110.27	24.2000	0.001
	1.50	36.9	12.3	110.28	20.3333	0.001
	1.75	38.9	14.4	110.30	17.5714	0.002
	2.00	40.9	16.3	110.32	15.5000	0.002
	2.25	43.0	18.4	110.33	13.8889	0.002
	2.50	44.9	20.3	110.35	12.6000	0.002
	2.75	46.8	22.2	110.37	11.5455	0.002
	3.00	48.8	24.2	110.39	10.6667	0.002
	3.25	50.8	26.2	110.41	9.9231	0.003
	3.50	52.7	28.1	110.43	9.2857	0.003
	3.75	54.6	30.0	110.45	8.7333	0.003
	4.00	56.6	32.0	110.47	8.2500	0.003
	4.25	58.6	34.0	110.49	7.8235	0.003
	4.50	60.5	35.9	110.51	7.4444	0.004
	4.75	62.3	37.8	110.54	7.1053	0.004
	5.00	64.3	39.7	110.56	6.8000	0.004
	5.25	66.2	41.6	110.58	6.5238	0.004
	5.50	68.1	43.6	110.61	6.2727	0.005
	5.75	70.0	45.4	110.63	6.0435	0.005
	6.00	71.9	47.3	110.66	5.8333	0.005
	6.25	73.8	49.2	110.70	5.6400	0.005
	6.50	75.7	51.1	110.72	5.4615	0.006
	6.75	77.5	53.0	110.75	5.2963	0.006
	7.00	79.5	54.9	110.78	5.1429	0.006
	7.25	81.4	56.8	110.80	5.0000	0.007
	7.50	83.2	58.7	110.83	4.8667	0.007
	7.75	85.2	60.6	110.86	4.7419	0.007
	8.00	87.0	62.4	110.90	4.6250	0.008
	8.25	88.9	64.3	110.91	4.5152	0.008
	8.50	90.8	66.2	110.95	4.4118	0.008