

TRILOBITE TESTING L.L.C.

OPERATOR : Sagebrush Petl.LLC  
 WELL NAME: Luders B #8  
 LOCATION : 7-27s-12w Pratt co. KS  
 INTERVAL : 2729.00 To 2797.00 ft

DATE 07-19-98  
 KB 1867.00 ft TICKET NO: 11810 DST #1  
 GR 1858.00 ft FORMATION: Langdon  
 TD 2797.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

| Mins              | Field  | 1      | 2      | 3   | 4   | TIME DATA-----         |
|-------------------|--------|--------|--------|-----|-----|------------------------|
| PF 10 Rec.        | 10248  | 10248  | 2342   |     |     | PF Fr. 1800 to 1810 hr |
| SI 60 Range(Psi ) | 4400.0 | 4400.0 | 4995.0 | 0.0 | 0.0 | IS Fr. 1810 to 1910 hr |
| SF 60 Clock(hrs)  | 12 hr  | 12 hr  | batt.  |     |     | SF Fr. 1910 to 2010 hr |
| FS 120 Depth(ft ) | 2794.0 | 2794.0 | 2739.0 | 0.0 | 0.0 | FS Fr. 2010 to 2210 hr |

|                | Field  | 1      | 2      | 3   | 4   |                               |
|----------------|--------|--------|--------|-----|-----|-------------------------------|
| A. Init Hydro  | 1307.0 | 1311.0 | 1288.0 | 0.0 | 0.0 | T STARTED 1558 hr             |
| B. First Flow  | 82.0   | 68.0   | 23.0   | 0.0 | 0.0 | T ON BOTM 1758 hr             |
| B1. Final Flow | 77.0   | 60.0   | 28.0   | 0.0 | 0.0 | T OPEN 1800 hr                |
| C. In Shut-in  | 672.0  | 676.0  | 660.0  | 0.0 | 0.0 | T PULLED 2212 hr              |
| D. Init Flow   | 69.0   | 60.0   | 24.0   | 0.0 | 0.0 | T OUT 2355 hr                 |
| E. Final Flow  | 78.0   | 60.0   | 38.0   | 0.0 | 0.0 |                               |
| F. Fl Shut-in  | 672.0  | 666.0  | 657.0  | 0.0 | 0.0 | TOOL DATA-----                |
| G. Final Hydro | 1296.0 | 1282.0 | 1258.0 | 0.0 | 0.0 | Tool Wt. 2100.00 lbs          |
| Inside/Outside | O      | O      | I      | T   |     | Wt Set On Packer 20000.00 lbs |
|                |        |        |        |     |     | Wt Pulled Loose 70000.00 lbs  |
|                |        |        |        |     |     | Initial Str Wt 42000.00 lbs   |
|                |        |        |        |     |     | Unseated Str Wt 42000.00 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 2718.00 ft        |

RECOVERY

Tot Fluid 35.00 ft of 0.00 ft in DC and 35.00 ft in DP  
 0.00 ft of Gas in all fluid free pipe.  
 35.00 ft of Drilling mud  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of Rw n.c. ohms @ degrees F.  
 0.00 ft of EST FT. of PAY-----8  
 SALINITY 60000.00 P.P.M. A.P.I. Gravity 0.00

BLOW DESCRIPTION

Initial Flow:  
 Strong blow bottom of bucket in  
 2 mins.  
 Initial Shut-in:  
 Weak blow.  
 Final Flow:  
 Strong blow gas to surface in 2 mins.  
 (see gas volume report)  
 Final Shut-in:  
 Weak to fair blow

SAMPLES: Gas sample  
 SENT TO:Caraway/Liberal

Test Successful: Y

MUD DATA-----  
 Mud Type Starch  
 Weight 8.90 lb/cf  
 Vis. 40.00 S/L  
 W.L. 8.80 in3  
 F.C. 0.20 in  
 Mud Drop N  
 Amt. of fill 0.00 ft  
 Btm. H. Temp. 99.00 F  
 Hole Condition good  
 % Porosity 14.00  
 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. Arden Ratzlaff  
 Contr. Duke Drlg.  
 Rig # 4  
 Unit #  
 Pump T. LCM 1#/bl

# GAS RECOVERY

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COMPANY: Sagebrush Pet1.LLC

DATE: 07-19-98

WELL NAME: Luders B #8

KB Elev: 1867.00 ft TICKET #11810 DST #1

WELL LOCATION: 7-27s-12w Pratt co. KS

GR Elev: 1858.00 ft FORMATION: Langdon

INTERVAL Fr.: 2729.00 To 2797.00 T.D.: 2797.00 ft TEST TYPE: CONVENTIONAL

GAS RECOVERY MEASURED WITH Adjusting Choke

\*\*\*\*\* GAS RATES FOR FLOW #2

| Time<br>(min) | Orifice<br>(in) | Pressure<br>(Psi) | H2O<br>(in) | Rate<br>(cf/d) |
|---------------|-----------------|-------------------|-------------|----------------|
| 5             | 0.50            | 0                 | 30          | 34300.0        |
| 10            | 0.50            | 0                 | 34          | 36500.0        |
| 20            | 0.50            | 0                 | 52          | 45200.0        |
| 30            | 0.50            | 0                 | 70          | 52400.0        |
| 40            | 0.50            | 0                 | 84          | 57400.0        |
| 50            | 0.50            | 4                 | 0           | 64000.0        |
| 60            | 0.50            | 4                 | 0           | 68800.0        |

\*\*\* TOOL DIAGRAM \*\*\* CONVENTIONAL

WELL NAME: Luders B #8

LOCATION : 7-27s-12w Pratt co. KS

TICKET No. 11810 D.S.T. No. 1 DATE 07-19-98

TOTAL TOOL TO BOTTOM OF TOP PACKERS ..... 22

INTERVAL TOOL .....

BOTTOM PACKERS AND ANCHOR ..... 37

TOTAL TOOL ..... 59

DRILL COLLAR ANCHOR IN INTERVAL .....

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single 1 Total 31

TOTAL ASSEMBLY ..... 90

D.C. ABOVE TOOLS.Stands Single Total

D.P. ABOVE TOOLS.Stands43 Single 1 Total 2718

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 2808

TOTAL DEPTH ..... 2797

TOTAL DRILL PIPE ABOVE K.B. .... 11

REMARKS:

|                           |      |
|---------------------------|------|
| P.O. SUB                  |      |
| C.O. SUB @ top of tool    | 2707 |
| S.I. TOOL Sterling        | 2713 |
| HMV Sterling              | 2718 |
| JARS no                   |      |
| SAFETY JOINT Bowen        | 2720 |
| PACKER Top                | 2724 |
| PACKER Btm.               | 2729 |
| DEPTH 2729                |      |
| STUBB 1 ft.               | 2730 |
| ANCHOR                    |      |
| 4' perfs to               | 2734 |
| Alpine rec. @             | 2739 |
| 1 jt. pipe to             | 2765 |
| T.C.                      |      |
| DEPTH                     |      |
| 27 ft. perfs to           | 2792 |
| AK-1 rec. @               | 2794 |
| BULLNOSE 5 ft. perforated | 2797 |
| T.D.                      |      |

## NATURAL GAS ANALYSIS REPORT

Sampled by:  
Trilobite Testing, L. L. C.  
Hays, Kansas  
Scott City, Kansas  
Phone: 800-728-5369  
Fax: 913-625-5620

Analyzed by:  
Caraway Analytical, Inc  
P. O. Box 2137  
Liberal, Kansas 67905  
Phone: 316-624-5389  
Fax: 316-626-7108

|              |                             |              |          |
|--------------|-----------------------------|--------------|----------|
| Lab Number:  | 982848                      | Analyzed:    | 07/22/98 |
| Sample From: | Luders B-8 DST 1            | Pressure:    |          |
| Producer:    | Sagebrush Petroleum, L.L.C. | Temperature: |          |
| Date:        |                             | Location:    | 7-27-12  |
| Time:        |                             | County:      | Pratt    |
| Sampler:     |                             | State:       | Kansas   |
| Source:      |                             | Formation:   | Langdon  |

|                | Mole %     | GPM   |
|----------------|------------|-------|
| Helium         | He: 0.517  | 0.000 |
| Hydrogen       | H2: 0.002  | 0.000 |
| Oxygen         | O2: 0.000  | 0.000 |
| Nitrogen       | N2: 20.961 | 0.000 |
| Carbon Dioxide | CO2: 0.354 | 0.000 |
| Methane        | C1: 70.440 | 0.000 |
| Ethane         | C2: 3.415  | 0.913 |
| Propane        | C3: 2.311  | 0.637 |
| Iso Butane     | iC4: 0.471 | 0.154 |
| Normal Butane  | nC4: 0.835 | 0.263 |
| Iso Pentane    | iC5: 0.183 | 0.067 |
| Normal Pentane | nC5: 0.221 | 0.080 |
| Hexanes Plus   | C6+: 0.290 | 0.127 |

TOTAL: 100.000 2.241  
Z Fact: 0.9980  
SP.GR.: 0.7170  
BTU (SAT): 891.7 @ 14.73 psia  
BTU (DRY): 907.5 @ 14.73 psia  
OCTANE RATING: 98.9

COMMENTS:

0.000

Operator.....: Sagebrush Petroleum LLC  
Well Name.....: Luders B #8  
DST Number.....: 1

Location.: 7-27s-12w Pratt co. KS    Recorder No...: 2342  
Test Type: conventional                Recorder Depth: 2739  
Formation: Langdon                    Test Interval.: 2729-2797

RESERVOIR CALCULATIONS: Gas calculations based on shut-in #2

RESERVOIR PARAMETERS USED:

|                               |                                                 |
|-------------------------------|-------------------------------------------------|
| Net Pay.....:                 | 6.00 ft                                         |
| Porosity.....:                | 15.00 %                                         |
| Bottom Hole Temp.....:        | 99.00 F                                         |
| Specific Gravity.....:        | 0.709                                           |
| Z factor.....:                | .9981                                           |
| Compressibility.....:         | 0.026429 /psi                                   |
| Viscosity.....:               | 0.0121 cp                                       |
| Total Flowing Time.....:      | 70.00 min.                                      |
| Flow Rate.....:               | 68.80 mcf/d                                     |
| Final Flowing Pressure.....:  | 38.00 psi                                       |
| Horner Slope.....:            | 0.0076 *10 <sup>6</sup> psi <sup>2</sup> /cycle |
| Extrapolated Pressure.....:   | 658.60 psi                                      |
| Assumed Drainage Radius.....: | 1500.00 ft                                      |
| Well Bore Radius.....:        | 3.94 in                                         |

RESULTS:

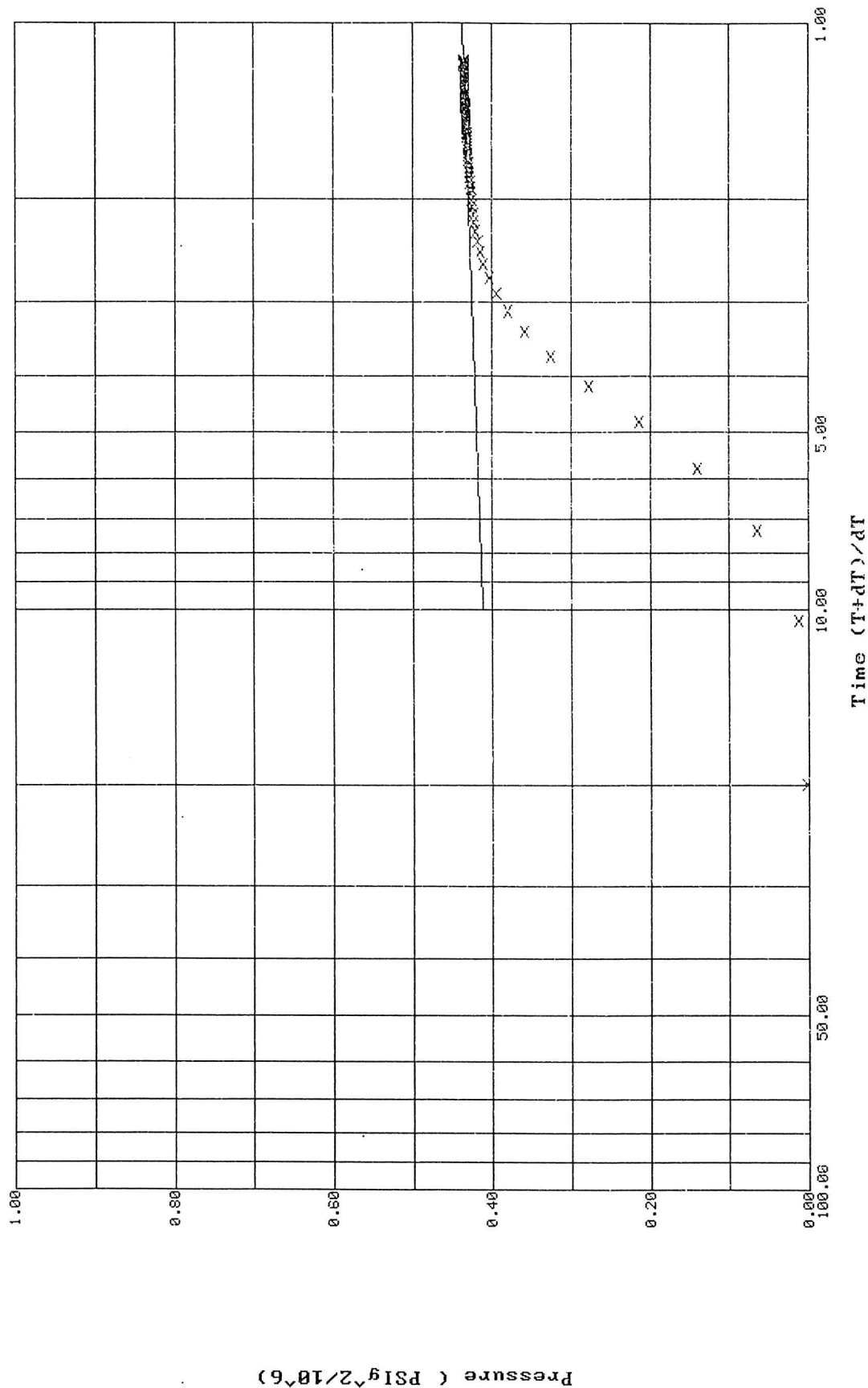
|                                  |                    |
|----------------------------------|--------------------|
| Effective Permeability.....:     | 16.662211 md       |
| Flow Capacity.....:              | 99.9733 md.ft      |
| Transmissibility.....:           | 8262.2534 md.ft/cp |
| Skin Factor.....:                | 64.1040            |
| Pressure Drop Across Skin.....:  | 613.7765 psi       |
| Radius of Investigation.....:    | 18.4611 ft         |
| Damage Ratio.....:               | 19.1700            |
| Absolute Open Flow.....:         | 69.0150 mcf/d      |
| Absolute Open Flow W/O Damage..: | 1323.0177 mcf/d    |
| Estimated Stabilized AOF.....:   | 374.9071 mcf/d     |

# P<sup>2</sup> Horner Plot: shut-in #1

11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC

Slope: 0.0241  $\text{PSig}^2/10^6/\text{cycle}$

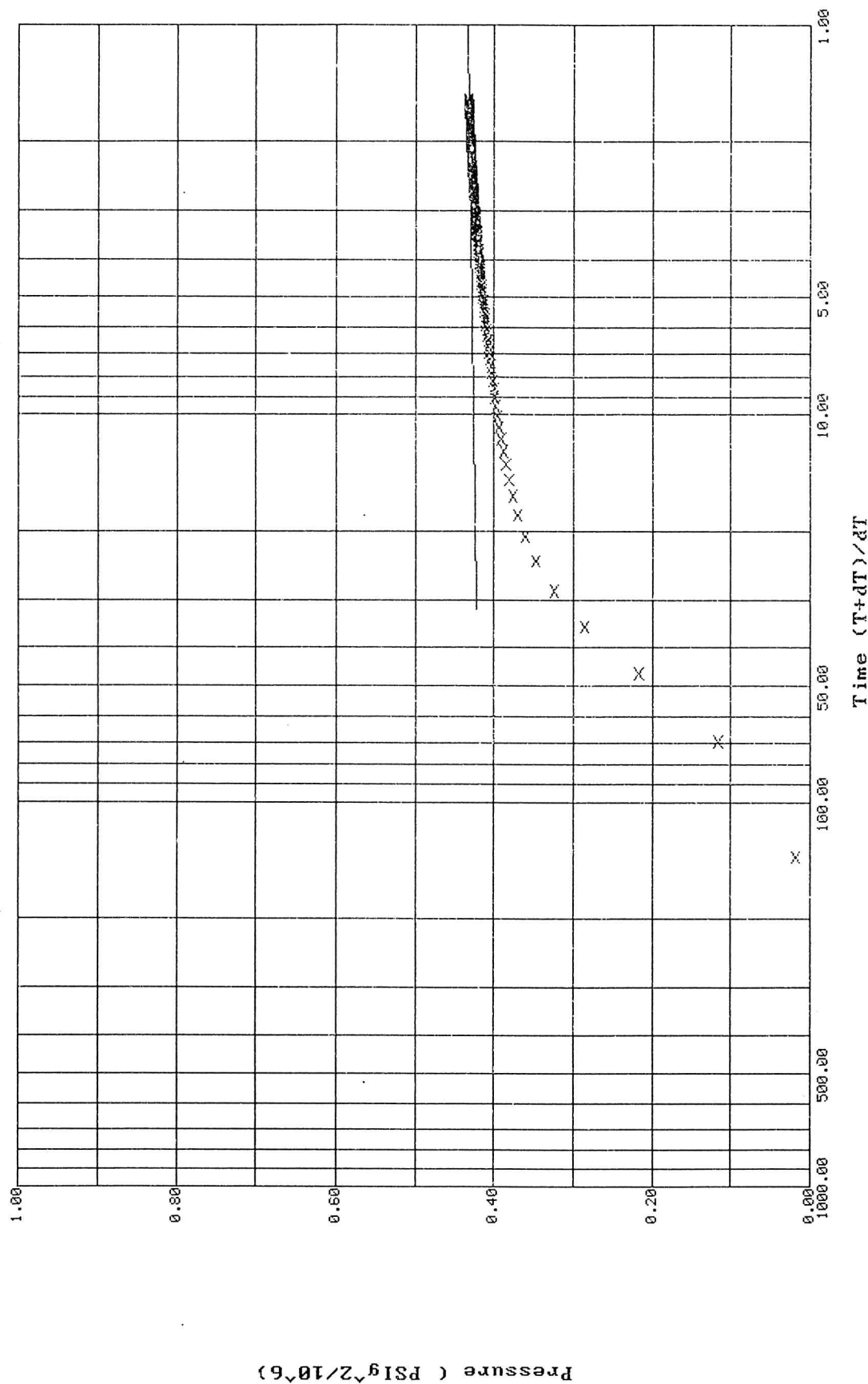
Ext. Pressure: 661.2246  $\text{PSig}$



# P<sup>2</sup> Horner Plot: shut-in #2 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC

Slope: 0.0076 PSig<sup>2</sup>/10<sup>6</sup>/cycle

Ext. Pressure: 658.6028 PSig



# 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC TEST HISTORY

Flag Points

t(Min.) P(PSIG)

A: 0.00 1288.28  
 B: 0.00 22.99  
 C: 9.50 27.86  
 D: 60.50 659.96  
 E: 0.00 23.83  
 F: 59.00 37.93  
 G: 122.00 657.44  
 Q: 0.00 1258.32

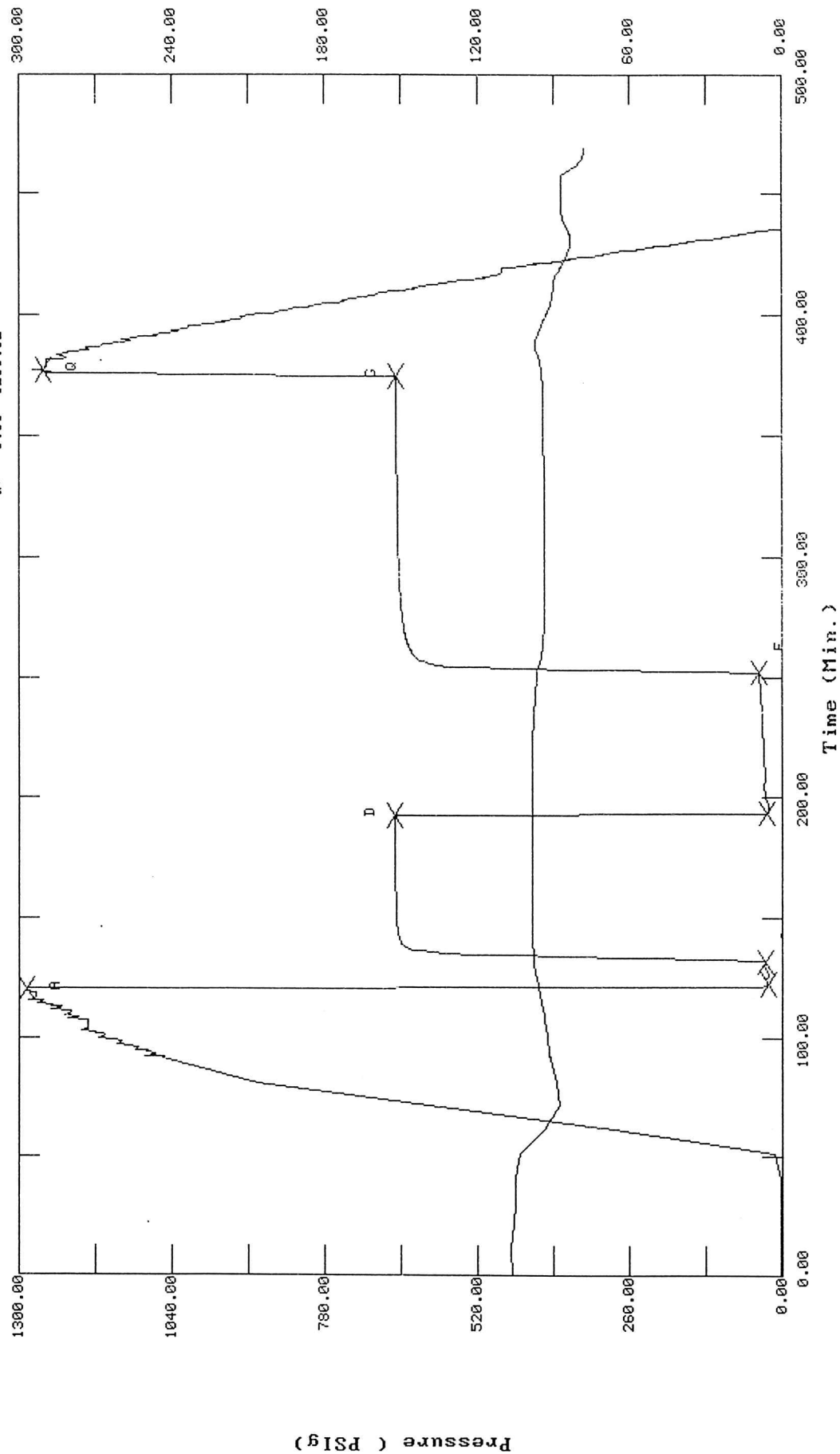
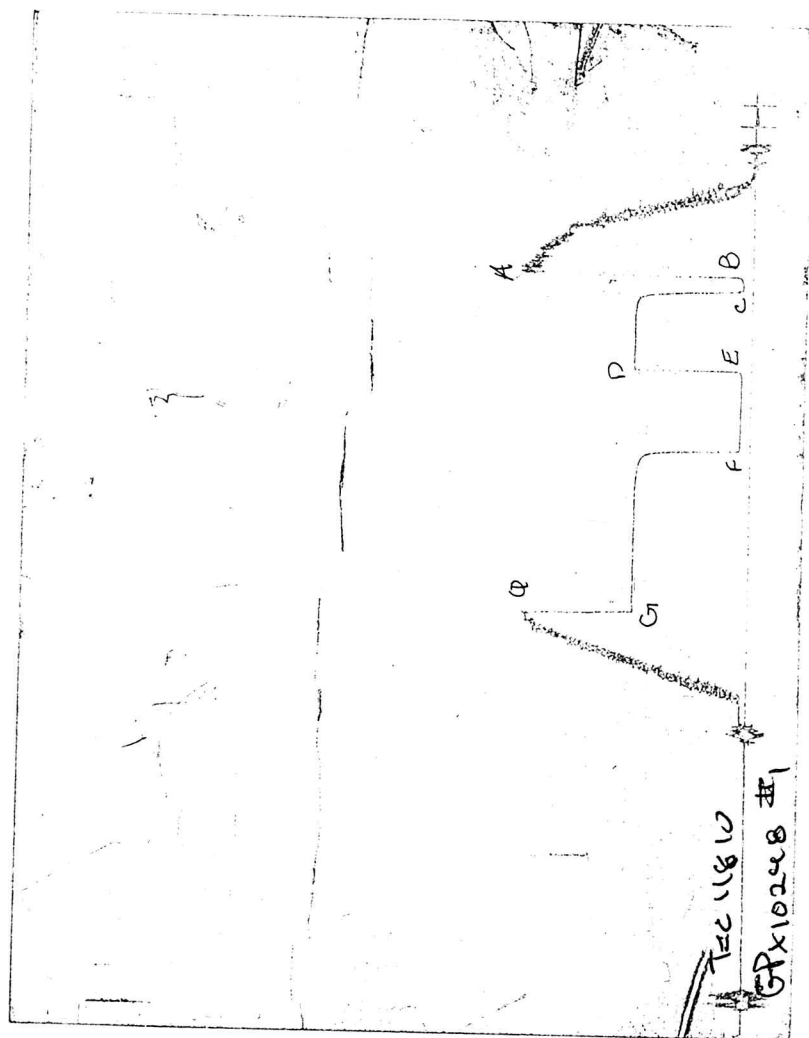


CHART PAGE



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

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/19/98

TIME: 15:58:56

|                      | Time   | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|----------------------|--------|------------------|-----------------|----------------|-----------|----------|
| ***** Initial Hydro. | 120.50 | 1288.3           | 0.0             | 95.71          | .         |          |
| ***** Start Flow 1   | 0.00   | 23.0             | 0.0             | 95.98          |           |          |
|                      | 0.50   | 22.7             | -0.3            | 96.04          |           |          |
|                      | 1.00   | 24.1             | 1.1             | 96.11          |           |          |
|                      | 1.50   | 24.2             | 1.3             | 96.21          |           |          |
|                      | 2.00   | 27.9             | 4.9             | 96.33          |           |          |
|                      | 2.50   | 27.9             | 4.9             | 96.48          |           |          |
|                      | 3.00   | 26.5             | 3.5             | 96.62          |           |          |
|                      | 3.50   | 22.8             | -0.2            | 96.77          |           |          |
|                      | 4.00   | 22.3             | -0.7            | 96.89          |           |          |
|                      | 4.50   | 22.8             | -0.2            | 97.01          |           |          |
|                      | 5.00   | 24.1             | 1.1             | 97.12          |           |          |
|                      | 5.50   | 25.5             | 2.5             | 97.22          |           |          |
|                      | 6.00   | 26.3             | 3.3             | 97.30          |           |          |
|                      | 6.50   | 27.5             | 4.5             | 97.37          |           |          |
|                      | 7.00   | 27.6             | 4.6             | 97.44          |           |          |
|                      | 7.50   | 26.8             | 3.9             | 97.49          |           |          |
|                      | 8.00   | 28.9             | 6.0             | 97.54          |           |          |
|                      | 8.50   | 27.5             | 4.5             | 97.60          |           |          |
|                      | 9.00   | 27.7             | 4.7             | 97.65          |           |          |
| ***** End Flow 1     | 9.50   | 27.9             | 4.9             | 97.66          |           |          |
| ***** Start Shutin 1 | 0.00   | 27.9             | 0.0             | 97.66          | 0.0000    | 0.001    |
|                      | 0.50   | 44.6             | 16.8            | 97.66          | 20.0000   | 0.002    |
|                      | 1.00   | 109.4            | 81.6            | 97.68          | 10.5000   | 0.012    |
|                      | 1.50   | 255.6            | 227.7           | 97.73          | 7.3333    | 0.065    |
|                      | 2.00   | 373.8            | 346.0           | 97.77          | 5.7500    | 0.140    |
|                      | 2.50   | 463.3            | 435.4           | 97.81          | 4.8000    | 0.215    |
|                      | 3.00   | 527.3            | 499.5           | 97.85          | 4.1667    | 0.278    |
|                      | 3.50   | 570.8            | 542.9           | 97.88          | 3.7143    | 0.326    |
|                      | 4.00   | 599.1            | 571.2           | 97.91          | 3.3750    | 0.359    |
|                      | 4.50   | 617.1            | 589.3           | 97.94          | 3.1111    | 0.381    |
|                      | 5.00   | 628.5            | 600.7           | 97.96          | 2.9000    | 0.395    |
|                      | 5.50   | 635.9            | 608.1           | 97.99          | 2.7273    | 0.404    |
|                      | 6.00   | 640.9            | 613.0           | 98.01          | 2.5833    | 0.411    |
|                      | 6.50   | 644.3            | 616.4           | 98.03          | 2.4615    | 0.415    |
|                      | 7.00   | 646.7            | 618.9           | 98.05          | 2.3571    | 0.418    |
|                      | 7.50   | 648.6            | 620.7           | 98.06          | 2.2667    | 0.421    |
|                      | 8.00   | 649.9            | 622.1           | 98.09          | 2.1875    | 0.422    |
|                      | 8.50   | 651.0            | 623.2           | 98.09          | 2.1176    | 0.424    |
|                      | 9.00   | 651.9            | 624.0           | 98.11          | 2.0556    | 0.425    |
|                      | 9.50   | 652.5            | 624.7           | 98.12          | 2.0000    | 0.426    |
|                      | 10.00  | 653.1            | 625.3           | 98.13          | 1.9500    | 0.427    |
|                      | 10.50  | 653.7            | 625.8           | 98.14          | 1.9048    | 0.427    |
|                      | 11.00  | 654.1            | 626.3           | 98.16          | 1.8636    | 0.428    |
|                      | 11.50  | 654.5            | 626.7           | 98.16          | 1.8261    | 0.428    |
|                      | 12.00  | 655.0            | 627.1           | 98.18          | 1.7917    | 0.429    |
|                      | 12.50  | 655.2            | 627.4           | 98.19          | 1.7600    | 0.429    |
|                      | 13.00  | 655.5            | 627.6           | 98.19          | 1.7308    | 0.430    |
|                      | 13.50  | 655.8            | 627.9           | 98.19          | 1.7037    | 0.430    |
|                      | 14.00  | 656.0            | 628.1           | 98.20          | 1.6786    | 0.430    |
|                      | 14.50  | 656.2            | 628.4           | 98.21          | 1.6552    | 0.431    |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING  
TEST: 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC  
DATE: 07/19/98 TIME: 15:58:56

| Time  | Pressure<br>PSIg | delta P<br>PSIg | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 15.00 | 656.4            | 628.5           | 98.22          | 1.6333    | 0.431    |
| 15.50 | 656.6            | 628.7           | 98.23          | 1.6129    | 0.431    |
| 16.00 | 656.7            | 628.9           | 98.22          | 1.5938    | 0.431    |
| 16.50 | 656.9            | 629.0           | 98.23          | 1.5758    | 0.432    |
| 17.00 | 657.0            | 629.1           | 98.24          | 1.5588    | 0.432    |
| 17.50 | 657.1            | 629.3           | 98.25          | 1.5429    | 0.432    |
| 18.00 | 657.2            | 629.4           | 98.26          | 1.5278    | 0.432    |
| 18.50 | 657.4            | 629.5           | 98.26          | 1.5135    | 0.432    |
| 19.00 | 657.6            | 629.7           | 98.27          | 1.5000    | 0.432    |
| 19.50 | 657.6            | 629.8           | 98.27          | 1.4872    | 0.433    |
| 20.00 | 657.7            | 629.9           | 98.26          | 1.4750    | 0.433    |
| 20.50 | 657.8            | 630.0           | 98.28          | 1.4634    | 0.433    |
| 21.00 | 658.0            | 630.1           | 98.28          | 1.4524    | 0.433    |
| 21.50 | 658.1            | 630.2           | 98.29          | 1.4419    | 0.433    |
| 22.00 | 658.3            | 630.4           | 98.29          | 1.4318    | 0.433    |
| 22.50 | 658.3            | 630.4           | 98.31          | 1.4222    | 0.433    |
| 23.00 | 658.3            | 630.4           | 98.31          | 1.4130    | 0.433    |
| 23.50 | 658.4            | 630.5           | 98.31          | 1.4043    | 0.433    |
| 24.00 | 658.4            | 630.5           | 98.32          | 1.3958    | 0.433    |
| 24.50 | 658.5            | 630.6           | 98.32          | 1.3878    | 0.434    |
| 25.00 | 658.6            | 630.8           | 98.32          | 1.3800    | 0.434    |
| 25.50 | 658.6            | 630.8           | 98.33          | 1.3725    | 0.434    |
| 26.00 | 658.7            | 630.8           | 98.34          | 1.3654    | 0.434    |
| 26.50 | 658.7            | 630.8           | 98.33          | 1.3585    | 0.434    |
| 27.00 | 658.8            | 630.9           | 98.34          | 1.3519    | 0.434    |
| 27.50 | 658.8            | 630.9           | 98.34          | 1.3455    | 0.434    |
| 28.00 | 658.9            | 631.0           | 98.35          | 1.3393    | 0.434    |
| 28.50 | 658.9            | 631.0           | 98.35          | 1.3333    | 0.434    |
| 29.00 | 658.9            | 631.0           | 98.35          | 1.3276    | 0.434    |
| 29.50 | 659.0            | 631.1           | 98.36          | 1.3220    | 0.434    |
| 30.00 | 659.0            | 631.1           | 98.37          | 1.3167    | 0.434    |
| 30.50 | 659.0            | 631.2           | 98.38          | 1.3115    | 0.434    |
| 31.00 | 659.0            | 631.2           | 98.37          | 1.3065    | 0.434    |
| 31.50 | 659.1            | 631.3           | 98.38          | 1.3016    | 0.434    |
| 32.00 | 659.1            | 631.3           | 98.39          | 1.2969    | 0.434    |
| 32.50 | 659.2            | 631.3           | 98.38          | 1.2923    | 0.435    |
| 33.00 | 659.2            | 631.3           | 98.39          | 1.2879    | 0.435    |
| 33.50 | 659.2            | 631.3           | 98.39          | 1.2836    | 0.435    |
| 34.00 | 659.3            | 631.4           | 98.40          | 1.2794    | 0.435    |
| 34.50 | 659.3            | 631.4           | 98.40          | 1.2754    | 0.435    |
| 35.00 | 659.3            | 631.4           | 98.40          | 1.2714    | 0.435    |
| 35.50 | 659.4            | 631.5           | 98.41          | 1.2676    | 0.435    |
| 36.00 | 659.4            | 631.5           | 98.42          | 1.2639    | 0.435    |
| 36.50 | 659.4            | 631.5           | 98.42          | 1.2603    | 0.435    |
| 37.00 | 659.5            | 631.6           | 98.42          | 1.2568    | 0.435    |
| 37.50 | 659.5            | 631.6           | 98.42          | 1.2533    | 0.435    |
| 38.00 | 659.5            | 631.6           | 98.44          | 1.2500    | 0.435    |
| 38.50 | 659.5            | 631.6           | 98.43          | 1.2468    | 0.435    |
| 39.00 | 659.5            | 631.6           | 98.43          | 1.2436    | 0.435    |
| 39.50 | 659.5            | 631.7           | 98.44          | 1.2405    | 0.435    |
| 40.00 | 659.5            | 631.7           | 98.44          | 1.2375    | 0.435    |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/19/98

TIME: 15:58:56

| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 40.50 | 659.6            | 631.8           | 98.43          | 1.2346    | 0.435    |
| 41.00 | 659.6            | 631.8           | 98.45          | 1.2317    | 0.435    |
| 41.50 | 659.6            | 631.8           | 98.45          | 1.2289    | 0.435    |
| 42.00 | 659.6            | 631.8           | 98.45          | 1.2262    | 0.435    |
| 42.50 | 659.6            | 631.8           | 98.46          | 1.2235    | 0.435    |
| 43.00 | 659.6            | 631.8           | 98.46          | 1.2209    | 0.435    |
| 43.50 | 659.7            | 631.9           | 98.46          | 1.2184    | 0.435    |
| 44.00 | 659.7            | 631.9           | 98.47          | 1.2159    | 0.435    |
| 44.50 | 659.7            | 631.9           | 98.47          | 1.2135    | 0.435    |
| 45.00 | 659.7            | 631.9           | 98.47          | 1.2111    | 0.435    |
| 45.50 | 659.7            | 631.9           | 98.49          | 1.2088    | 0.435    |
| 46.00 | 659.8            | 631.9           | 98.48          | 1.2065    | 0.435    |
| 46.50 | 659.8            | 631.9           | 98.49          | 1.2043    | 0.435    |
| 47.00 | 659.8            | 631.9           | 98.49          | 1.2021    | 0.435    |
| 47.50 | 659.8            | 631.9           | 98.49          | 1.2000    | 0.435    |
| 48.00 | 659.9            | 632.0           | 98.49          | 1.1979    | 0.435    |
| 48.50 | 659.9            | 632.0           | 98.50          | 1.1959    | 0.435    |
| 49.00 | 659.9            | 632.0           | 98.50          | 1.1939    | 0.435    |
| 49.50 | 659.9            | 632.0           | 98.50          | 1.1919    | 0.435    |
| 50.00 | 659.9            | 632.0           | 98.51          | 1.1900    | 0.435    |
| 50.50 | 659.9            | 632.0           | 98.52          | 1.1881    | 0.435    |
| 51.00 | 659.9            | 632.0           | 98.52          | 1.1863    | 0.435    |
| 51.50 | 659.9            | 632.0           | 98.52          | 1.1845    | 0.435    |
| 52.00 | 659.9            | 632.0           | 98.53          | 1.1827    | 0.435    |
| 52.50 | 660.0            | 632.1           | 98.52          | 1.1810    | 0.436    |
| 53.00 | 660.0            | 632.1           | 98.53          | 1.1792    | 0.436    |
| 53.50 | 660.0            | 632.1           | 98.53          | 1.1776    | 0.436    |
| 54.00 | 660.0            | 632.1           | 98.54          | 1.1759    | 0.436    |
| 54.50 | 660.0            | 632.1           | 98.54          | 1.1743    | 0.436    |
| 55.00 | 660.0            | 632.1           | 98.54          | 1.1727    | 0.436    |
| 55.50 | 659.9            | 632.0           | 98.55          | 1.1712    | 0.435    |
| 56.00 | 659.9            | 632.0           | 98.55          | 1.1696    | 0.435    |
| 56.50 | 660.0            | 632.2           | 98.56          | 1.1681    | 0.436    |
| 57.00 | 660.0            | 632.2           | 98.56          | 1.1667    | 0.436    |
| 57.50 | 660.0            | 632.2           | 98.56          | 1.1652    | 0.436    |
| 58.00 | 660.0            | 632.2           | 98.56          | 1.1638    | 0.436    |
| 58.50 | 660.0            | 632.2           | 98.57          | 1.1624    | 0.436    |
| 59.00 | 660.0            | 632.2           | 98.57          | 1.1610    | 0.436    |
| 59.50 | 660.0            | 632.1           | 98.58          | 1.1597    | 0.436    |
| 60.00 | 660.0            | 632.1           | 98.58          | 1.1583    | 0.436    |
| 60.50 | 660.0            | 632.1           | 98.58          | 1.1570    | 0.436    |

\*\*\*\*\* End Shut-in 1

\*\*\*\*\* Start Flow 2

|      |      |      |       |
|------|------|------|-------|
| 0.00 | 23.8 | 0.0  | 98.56 |
| 0.50 | 23.4 | -0.4 | 98.54 |
| 1.00 | 23.4 | -0.4 | 98.53 |
| 1.50 | 23.3 | -0.5 | 98.52 |
| 2.00 | 23.5 | -0.3 | 98.51 |
| 2.50 | 23.3 | -0.5 | 98.50 |
| 3.00 | 23.4 | -0.4 | 98.49 |
| 3.50 | 23.4 | -0.4 | 98.49 |
| 4.00 | 23.5 | -0.3 | 98.48 |
| 4.50 | 23.7 | -0.1 | 98.48 |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/19/98

TIME: 15:58:56

| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 5.00  | 23.9             | 0.1             | 98.48          |           |          |
| 5.50  | 25.4             | 1.6             | 98.48          |           |          |
| 6.00  | 27.7             | 3.9             | 98.48          |           |          |
| 6.50  | 28.7             | 4.9             | 98.47          |           |          |
| 7.00  | 28.1             | 4.3             | 98.47          |           |          |
| 7.50  | 27.4             | 3.6             | 98.47          |           |          |
| 8.00  | 27.8             | 3.9             | 98.47          |           |          |
| 8.50  | 28.0             | 4.2             | 98.46          |           |          |
| 9.00  | 28.3             | 4.4             | 98.47          |           |          |
| 9.50  | 28.8             | 5.0             | 98.47          |           |          |
| 10.00 | 29.1             | 5.3             | 98.47          |           |          |
| 10.50 | 29.3             | 5.5             | 98.48          |           |          |
| 11.00 | 29.9             | 6.0             | 98.48          |           |          |
| 11.50 | 30.3             | 6.5             | 98.47          |           |          |
| 12.00 | 30.4             | 6.5             | 98.47          |           |          |
| 12.50 | 30.6             | 6.8             | 98.47          |           |          |
| 13.00 | 28.1             | 4.3             | 98.46          |           |          |
| 13.50 | 28.1             | 4.3             | 98.45          |           |          |
| 14.00 | 28.2             | 4.4             | 98.45          |           |          |
| 14.50 | 27.9             | 4.1             | 98.45          |           |          |
| 15.00 | 27.9             | 4.1             | 98.45          |           |          |
| 15.50 | 27.9             | 4.1             | 98.45          |           |          |
| 16.00 | 28.2             | 4.4             | 98.45          |           |          |
| 16.50 | 28.0             | 4.2             | 98.45          |           |          |
| 17.00 | 28.2             | 4.4             | 98.46          |           |          |
| 17.50 | 28.5             | 4.7             | 98.45          |           |          |
| 18.00 | 28.4             | 4.6             | 98.46          |           |          |
| 18.50 | 28.9             | 5.0             | 98.46          |           |          |
| 19.00 | 28.8             | 5.0             | 98.45          |           |          |
| 19.50 | 28.8             | 5.0             | 98.45          |           |          |
| 20.00 | 29.0             | 5.2             | 98.45          |           |          |
| 20.50 | 29.3             | 5.5             | 98.44          |           |          |
| 21.00 | 29.3             | 5.5             | 98.44          |           |          |
| 21.50 | 29.2             | 5.4             | 98.43          |           |          |
| 22.00 | 29.5             | 5.7             | 98.42          |           |          |
| 22.50 | 29.5             | 5.7             | 98.42          |           |          |
| 23.00 | 29.7             | 5.9             | 98.41          |           |          |
| 23.50 | 29.8             | 6.0             | 98.40          |           |          |
| 24.00 | 29.9             | 6.0             | 98.39          |           |          |
| 24.50 | 30.0             | 6.2             | 98.37          |           |          |
| 25.00 | 30.1             | 6.3             | 98.37          |           |          |
| 25.50 | 30.2             | 6.4             | 98.35          |           |          |
| 26.00 | 30.5             | 6.7             | 98.35          |           |          |
| 26.50 | 30.5             | 6.7             | 98.32          |           |          |
| 27.00 | 30.8             | 7.0             | 98.31          |           |          |
| 27.50 | 30.8             | 7.0             | 98.30          |           |          |
| 28.00 | 31.0             | 7.2             | 98.28          |           |          |
| 28.50 | 31.0             | 7.1             | 98.26          |           |          |
| 29.00 | 31.2             | 7.4             | 98.25          |           |          |
| 29.50 | 31.2             | 7.4             | 98.23          |           |          |
| 30.00 | 31.3             | 7.5             | 98.21          |           |          |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/19/98

TIME: 15:58:56

| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 30.50 | 31.4             | 7.6             | 98.19          |           |          |
| 31.00 | 31.5             | 7.6             | 98.17          |           |          |
| 31.50 | 31.5             | 7.6             | 98.14          |           |          |
| 32.00 | 31.5             | 7.7             | 98.13          |           |          |
| 32.50 | 32.0             | 8.1             | 98.11          |           |          |
| 33.00 | 31.7             | 7.9             | 98.08          |           |          |
| 33.50 | 32.0             | 8.2             | 98.06          |           |          |
| 34.00 | 32.0             | 8.2             | 98.04          |           |          |
| 34.50 | 32.1             | 8.3             | 98.01          |           |          |
| 35.00 | 32.2             | 8.4             | 97.98          |           |          |
| 35.50 | 32.3             | 8.5             | 97.97          |           |          |
| 36.00 | 32.3             | 8.5             | 97.94          |           |          |
| 36.50 | 32.6             | 8.7             | 97.91          |           |          |
| 37.00 | 32.7             | 8.9             | 97.87          |           |          |
| 37.50 | 32.6             | 8.8             | 97.85          |           |          |
| 38.00 | 32.8             | 9.0             | 97.82          |           |          |
| 38.50 | 32.8             | 9.0             | 97.80          |           |          |
| 39.00 | 32.9             | 9.1             | 97.76          |           |          |
| 39.50 | 33.0             | 9.1             | 97.71          |           |          |
| 40.00 | 33.1             | 9.3             | 97.66          |           |          |
| 40.50 | 33.3             | 9.5             | 97.67          |           |          |
| 41.00 | 33.3             | 9.5             | 97.66          |           |          |
| 41.50 | 33.4             | 9.6             | 97.65          |           |          |
| 42.00 | 33.6             | 9.7             | 97.63          |           |          |
| 42.50 | 33.6             | 9.7             | 97.57          |           |          |
| 43.00 | 33.7             | 9.9             | 97.53          |           |          |
| 43.50 | 33.7             | 9.9             | 97.50          |           |          |
| 44.00 | 33.6             | 9.7             | 97.46          |           |          |
| 44.50 | 34.1             | 10.2            | 97.42          |           |          |
| 45.00 | 34.1             | 10.2            | 97.40          |           |          |
| 45.50 | 34.0             | 10.2            | 97.36          |           |          |
| 46.00 | 34.3             | 10.5            | 97.32          |           |          |
| 46.50 | 34.4             | 10.6            | 97.28          |           |          |
| 47.00 | 34.4             | 10.6            | 97.25          |           |          |
| 47.50 | 34.7             | 10.8            | 97.21          |           |          |
| 48.00 | 35.1             | 11.2            | 97.18          |           |          |
| 48.50 | 35.2             | 11.3            | 97.14          |           |          |
| 49.00 | 35.7             | 11.9            | 97.11          |           |          |
| 49.50 | 36.0             | 12.2            | 97.07          |           |          |
| 50.00 | 36.0             | 12.2            | 97.04          |           |          |
| 50.50 | 36.0             | 12.2            | 97.01          |           |          |
| 51.00 | 35.9             | 12.1            | 96.97          |           |          |
| 51.50 | 35.7             | 11.9            | 96.93          |           |          |
| 52.00 | 35.9             | 12.1            | 96.89          |           |          |
| 52.50 | 35.9             | 12.1            | 96.85          |           |          |
| 53.00 | 36.2             | 12.3            | 96.81          |           |          |
| 53.50 | 36.3             | 12.5            | 96.77          |           |          |
| 54.00 | 36.5             | 12.7            | 96.74          |           |          |
| 54.50 | 36.7             | 12.8            | 96.69          |           |          |
| 55.00 | 36.8             | 12.9            | 96.66          |           |          |
| 55.50 | 36.9             | 13.1            | 96.61          |           |          |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/19/98

TIME: 15:58:56

|                      | Time  | Pressure<br>PSIg | delta P<br>PSIg | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|----------------------|-------|------------------|-----------------|----------------|-----------|----------|
|                      | 56.00 | 37.0             | 13.2            | 96.58          |           |          |
|                      | 56.50 | 37.0             | 13.2            | 96.54          |           |          |
|                      | 57.00 | 37.3             | 13.4            | 96.50          |           |          |
|                      | 57.50 | 37.3             | 13.5            | 96.47          |           |          |
|                      | 58.00 | 37.7             | 13.8            | 96.43          |           |          |
|                      | 58.50 | 37.6             | 13.8            | 96.39          |           |          |
| ***** End Flow 2     | 59.00 | 37.9             | 14.1            | 96.36          |           |          |
| ***** Start Shutin 2 | 0.00  | 37.9             | 0.0             | 96.36          | 0.0000    | 0.001    |
|                      | 0.50  | 138.6            | 100.7           | 96.32          | 138.0000  | 0.019    |
|                      | 1.00  | 340.9            | 303.0           | 96.29          | 69.5000   | 0.116    |
|                      | 1.50  | 465.8            | 427.9           | 96.21          | 46.6667   | 0.217    |
|                      | 2.00  | 533.9            | 495.9           | 96.09          | 35.2500   | 0.285    |
|                      | 2.50  | 569.9            | 531.9           | 95.92          | 28.4000   | 0.325    |
|                      | 3.00  | 589.4            | 551.5           | 95.74          | 23.8333   | 0.347    |
|                      | 3.50  | 601.0            | 563.1           | 95.56          | 20.5714   | 0.361    |
|                      | 4.00  | 608.6            | 570.7           | 95.39          | 18.1250   | 0.370    |
|                      | 4.50  | 613.8            | 575.9           | 95.22          | 16.2222   | 0.377    |
|                      | 5.00  | 617.5            | 579.6           | 95.07          | 14.7000   | 0.381    |
|                      | 5.50  | 620.6            | 582.7           | 94.95          | 13.4545   | 0.385    |
|                      | 6.00  | 623.2            | 585.3           | 94.84          | 12.4167   | 0.388    |
|                      | 6.50  | 625.4            | 587.5           | 94.73          | 11.5385   | 0.391    |
|                      | 7.00  | 627.3            | 589.3           | 94.62          | 10.7857   | 0.393    |
|                      | 7.50  | 628.9            | 591.0           | 94.54          | 10.1333   | 0.396    |
|                      | 8.00  | 630.5            | 592.5           | 94.46          | 9.5625    | 0.397    |
|                      | 8.50  | 631.8            | 593.9           | 94.39          | 9.0588    | 0.399    |
|                      | 9.00  | 632.9            | 595.0           | 94.33          | 8.6111    | 0.401    |
|                      | 9.50  | 634.0            | 596.1           | 94.27          | 8.2105    | 0.402    |
|                      | 10.00 | 635.0            | 597.1           | 94.17          | 7.8500    | 0.403    |
|                      | 10.50 | 635.9            | 598.0           | 94.16          | 7.5238    | 0.404    |
|                      | 11.00 | 636.8            | 598.8           | 94.12          | 7.2273    | 0.405    |
|                      | 11.50 | 637.6            | 599.7           | 94.08          | 6.9565    | 0.407    |
|                      | 12.00 | 638.3            | 600.4           | 94.03          | 6.7083    | 0.407    |
|                      | 12.50 | 639.0            | 601.1           | 93.99          | 6.4800    | 0.408    |
|                      | 13.00 | 639.7            | 601.8           | 93.96          | 6.2692    | 0.409    |
|                      | 13.50 | 640.4            | 602.4           | 93.92          | 6.0741    | 0.410    |
|                      | 14.00 | 640.9            | 603.0           | 93.89          | 5.8929    | 0.411    |
|                      | 14.50 | 641.5            | 603.5           | 93.86          | 5.7241    | 0.411    |
|                      | 15.00 | 642.0            | 604.0           | 93.83          | 5.5667    | 0.412    |
|                      | 15.50 | 642.5            | 604.5           | 93.79          | 5.4194    | 0.413    |
|                      | 16.00 | 642.9            | 605.0           | 93.77          | 5.2812    | 0.413    |
|                      | 16.50 | 643.4            | 605.5           | 93.74          | 5.1515    | 0.414    |
|                      | 17.00 | 643.9            | 606.0           | 93.72          | 5.0294    | 0.415    |
|                      | 17.50 | 644.2            | 606.3           | 93.68          | 4.9143    | 0.415    |
|                      | 18.00 | 644.6            | 606.7           | 93.67          | 4.8056    | 0.416    |
|                      | 18.50 | 645.0            | 607.0           | 93.64          | 4.7027    | 0.416    |
|                      | 19.00 | 645.3            | 607.4           | 93.62          | 4.6053    | 0.416    |
|                      | 19.50 | 645.6            | 607.7           | 93.60          | 4.5128    | 0.417    |
|                      | 20.00 | 645.9            | 608.0           | 93.58          | 4.4250    | 0.417    |
|                      | 20.50 | 646.2            | 608.3           | 93.57          | 4.3415    | 0.418    |
|                      | 21.00 | 646.5            | 608.6           | 93.56          | 4.2619    | 0.418    |
|                      | 21.50 | 646.7            | 608.8           | 93.53          | 4.1860    | 0.418    |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/19/98

TIME: 15:58:56

| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P <sup>2</sup> /10 <sup>6</sup> |
|-------|------------------|-----------------|----------------|-----------|---------------------------------|
| 22.00 | 647.1            | 609.1           | 93.51          | 4.1136    | 0.419                           |
| 22.50 | 647.3            | 609.4           | 93.50          | 4.0444    | 0.419                           |
| 23.00 | 647.7            | 609.7           | 93.48          | 3.9783    | 0.419                           |
| 23.50 | 647.8            | 609.9           | 93.47          | 3.9149    | 0.420                           |
| 24.00 | 648.0            | 610.1           | 93.46          | 3.8542    | 0.420                           |
| 24.50 | 648.2            | 610.3           | 93.44          | 3.7959    | 0.420                           |
| 25.00 | 648.5            | 610.6           | 93.43          | 3.7400    | 0.421                           |
| 25.50 | 648.7            | 610.7           | 93.42          | 3.6863    | 0.421                           |
| 26.00 | 648.9            | 611.0           | 93.40          | 3.6346    | 0.421                           |
| 26.50 | 649.1            | 611.2           | 93.39          | 3.5849    | 0.421                           |
| 27.00 | 649.3            | 611.4           | 93.38          | 3.5370    | 0.422                           |
| 27.50 | 649.5            | 611.6           | 93.38          | 3.4909    | 0.422                           |
| 28.00 | 649.7            | 611.7           | 93.36          | 3.4464    | 0.422                           |
| 28.50 | 649.8            | 611.8           | 93.35          | 3.4035    | 0.422                           |
| 29.00 | 649.9            | 612.0           | 93.35          | 3.3621    | 0.422                           |
| 29.50 | 650.1            | 612.2           | 93.34          | 3.3220    | 0.423                           |
| 30.00 | 650.3            | 612.3           | 93.34          | 3.2833    | 0.423                           |
| 30.50 | 650.5            | 612.6           | 93.32          | 3.2459    | 0.423                           |
| 31.00 | 650.6            | 612.7           | 93.31          | 3.2097    | 0.423                           |
| 31.50 | 650.8            | 612.8           | 93.30          | 3.1746    | 0.423                           |
| 32.00 | 650.9            | 613.0           | 93.30          | 3.1406    | 0.424                           |
| 32.50 | 651.0            | 613.1           | 93.30          | 3.1077    | 0.424                           |
| 33.00 | 651.1            | 613.2           | 93.28          | 3.0758    | 0.424                           |
| 33.50 | 651.3            | 613.3           | 93.28          | 3.0448    | 0.424                           |
| 34.00 | 651.5            | 613.6           | 93.27          | 3.0147    | 0.424                           |
| 34.50 | 651.6            | 613.6           | 93.27          | 2.9855    | 0.425                           |
| 35.00 | 651.6            | 613.6           | 93.27          | 2.9571    | 0.425                           |
| 35.50 | 651.7            | 613.8           | 93.27          | 2.9296    | 0.425                           |
| 36.00 | 651.8            | 613.8           | 93.26          | 2.9028    | 0.425                           |
| 36.50 | 652.0            | 614.1           | 93.26          | 2.8767    | 0.425                           |
| 37.00 | 652.1            | 614.1           | 93.25          | 2.8514    | 0.425                           |
| 37.50 | 652.1            | 614.1           | 93.24          | 2.8267    | 0.425                           |
| 38.00 | 652.2            | 614.3           | 93.25          | 2.8026    | 0.425                           |
| 38.50 | 652.3            | 614.4           | 93.24          | 2.7792    | 0.425                           |
| 39.00 | 652.4            | 614.5           | 93.24          | 2.7564    | 0.426                           |
| 39.50 | 652.5            | 614.6           | 93.24          | 2.7342    | 0.426                           |
| 40.00 | 652.7            | 614.7           | 93.24          | 2.7125    | 0.426                           |
| 40.50 | 652.7            | 614.8           | 93.24          | 2.6914    | 0.426                           |
| 41.00 | 652.7            | 614.8           | 93.24          | 2.6707    | 0.426                           |
| 41.50 | 652.9            | 615.0           | 93.24          | 2.6506    | 0.426                           |
| 42.00 | 653.0            | 615.1           | 93.24          | 2.6310    | 0.426                           |
| 42.50 | 653.0            | 615.1           | 93.23          | 2.6118    | 0.426                           |
| 43.00 | 653.1            | 615.2           | 93.23          | 2.5930    | 0.427                           |
| 43.50 | 653.2            | 615.3           | 93.24          | 2.5747    | 0.427                           |
| 44.00 | 653.3            | 615.4           | 93.23          | 2.5568    | 0.427                           |
| 44.50 | 653.4            | 615.4           | 93.24          | 2.5393    | 0.427                           |
| 45.00 | 653.5            | 615.6           | 93.23          | 2.5222    | 0.427                           |
| 45.50 | 653.5            | 615.6           | 93.24          | 2.5055    | 0.427                           |
| 46.00 | 653.6            | 615.7           | 93.24          | 2.4891    | 0.427                           |
| 46.50 | 653.7            | 615.7           | 93.24          | 2.4731    | 0.427                           |
| 47.00 | 653.7            | 615.7           | 93.25          | 2.4574    | 0.427                           |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/19/98

TIME: 15:58:56

| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 47.50 | 653.7            | 615.8           | 93.25          | 2.4421    | 0.427    |
| 48.00 | 653.8            | 615.9           | 93.25          | 2.4271    | 0.427    |
| 48.50 | 653.9            | 616.0           | 93.25          | 2.4124    | 0.428    |
| 49.00 | 653.9            | 616.0           | 93.24          | 2.3980    | 0.428    |
| 49.50 | 654.1            | 616.2           | 93.24          | 2.3838    | 0.428    |
| 50.00 | 654.1            | 616.2           | 93.25          | 2.3700    | 0.428    |
| 50.50 | 654.1            | 616.2           | 93.26          | 2.3564    | 0.428    |
| 51.00 | 654.2            | 616.2           | 93.26          | 2.3431    | 0.428    |
| 51.50 | 654.2            | 616.3           | 93.26          | 2.3301    | 0.428    |
| 52.00 | 654.2            | 616.3           | 93.27          | 2.3173    | 0.428    |
| 52.50 | 654.4            | 616.5           | 93.27          | 2.3048    | 0.428    |
| 53.00 | 654.4            | 616.5           | 93.28          | 2.2925    | 0.428    |
| 53.50 | 654.4            | 616.5           | 93.28          | 2.2804    | 0.428    |
| 54.00 | 654.6            | 616.7           | 93.28          | 2.2685    | 0.428    |
| 54.50 | 654.6            | 616.7           | 93.28          | 2.2569    | 0.428    |
| 55.00 | 654.6            | 616.7           | 93.29          | 2.2455    | 0.428    |
| 55.50 | 654.7            | 616.7           | 93.30          | 2.2342    | 0.429    |
| 56.00 | 654.7            | 616.7           | 93.30          | 2.2232    | 0.429    |
| 56.50 | 654.8            | 616.8           | 93.30          | 2.2124    | 0.429    |
| 57.00 | 654.8            | 616.9           | 93.30          | 2.2018    | 0.429    |
| 57.50 | 654.8            | 616.9           | 93.31          | 2.1913    | 0.429    |
| 58.00 | 654.9            | 617.0           | 93.32          | 2.1810    | 0.429    |
| 58.50 | 654.9            | 617.0           | 93.32          | 2.1709    | 0.429    |
| 59.00 | 654.9            | 617.0           | 93.33          | 2.1610    | 0.429    |
| 59.50 | 655.0            | 617.1           | 93.33          | 2.1513    | 0.429    |
| 60.00 | 655.1            | 617.2           | 93.34          | 2.1417    | 0.429    |
| 60.50 | 655.1            | 617.2           | 93.34          | 2.1322    | 0.429    |
| 61.00 | 655.2            | 617.2           | 93.34          | 2.1230    | 0.429    |
| 61.50 | 655.2            | 617.2           | 93.35          | 2.1138    | 0.429    |
| 62.00 | 655.3            | 617.3           | 93.35          | 2.1048    | 0.429    |
| 62.50 | 655.3            | 617.3           | 93.36          | 2.0960    | 0.429    |
| 63.00 | 655.3            | 617.3           | 93.37          | 2.0873    | 0.429    |
| 63.50 | 655.3            | 617.3           | 93.38          | 2.0787    | 0.429    |
| 64.00 | 655.3            | 617.3           | 93.38          | 2.0703    | 0.429    |
| 64.50 | 655.4            | 617.5           | 93.39          | 2.0620    | 0.430    |
| 65.00 | 655.4            | 617.5           | 93.40          | 2.0538    | 0.430    |
| 65.50 | 655.5            | 617.6           | 93.40          | 2.0458    | 0.430    |
| 66.00 | 655.5            | 617.6           | 93.41          | 2.0379    | 0.430    |
| 66.50 | 655.5            | 617.6           | 93.41          | 2.0301    | 0.430    |
| 67.00 | 655.5            | 617.6           | 93.43          | 2.0224    | 0.430    |
| 67.50 | 655.6            | 617.7           | 93.43          | 2.0148    | 0.430    |
| 68.00 | 655.6            | 617.7           | 93.44          | 2.0074    | 0.430    |
| 68.50 | 655.6            | 617.7           | 93.44          | 2.0000    | 0.430    |
| 69.00 | 655.7            | 617.8           | 93.45          | 1.9928    | 0.430    |
| 69.50 | 655.7            | 617.8           | 93.45          | 1.9856    | 0.430    |
| 70.00 | 655.8            | 617.8           | 93.46          | 1.9786    | 0.430    |
| 70.50 | 655.8            | 617.8           | 93.47          | 1.9716    | 0.430    |
| 71.00 | 655.8            | 617.9           | 93.47          | 1.9648    | 0.430    |
| 71.50 | 655.8            | 617.9           | 93.48          | 1.9580    | 0.430    |
| 72.00 | 655.8            | 617.9           | 93.49          | 1.9514    | 0.430    |
| 72.50 | 655.8            | 617.9           | 93.50          | 1.9448    | 0.430    |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/19/98

TIME: 15:58:56

| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P <sup>2</sup> /10 <sup>6</sup> |
|-------|------------------|-----------------|----------------|-----------|---------------------------------|
| 73.00 | 655.9            | 618.0           | 93.51          | 1.9384    | 0.430                           |
| 73.50 | 655.9            | 618.0           | 93.52          | 1.9320    | 0.430                           |
| 74.00 | 655.9            | 618.0           | 93.53          | 1.9257    | 0.430                           |
| 74.50 | 655.9            | 618.0           | 93.53          | 1.9195    | 0.430                           |
| 75.00 | 656.0            | 618.1           | 93.54          | 1.9133    | 0.430                           |
| 75.50 | 656.0            | 618.1           | 93.55          | 1.9073    | 0.430                           |
| 76.00 | 656.0            | 618.1           | 93.55          | 1.9013    | 0.430                           |
| 76.50 | 656.0            | 618.1           | 93.56          | 1.8954    | 0.430                           |
| 77.00 | 656.1            | 618.2           | 93.56          | 1.8896    | 0.430                           |
| 77.50 | 656.1            | 618.2           | 93.58          | 1.8839    | 0.430                           |
| 78.00 | 656.2            | 618.3           | 93.58          | 1.8782    | 0.431                           |
| 78.50 | 656.2            | 618.3           | 93.59          | 1.8726    | 0.431                           |
| 79.00 | 656.2            | 618.3           | 93.60          | 1.8671    | 0.431                           |
| 79.50 | 656.2            | 618.3           | 93.61          | 1.8616    | 0.431                           |
| 80.00 | 656.2            | 618.3           | 93.62          | 1.8562    | 0.431                           |
| 80.50 | 656.2            | 618.3           | 93.63          | 1.8509    | 0.431                           |
| 81.00 | 656.3            | 618.3           | 93.63          | 1.8457    | 0.431                           |
| 81.50 | 656.3            | 618.4           | 93.64          | 1.8405    | 0.431                           |
| 82.00 | 656.3            | 618.4           | 93.65          | 1.8354    | 0.431                           |
| 82.50 | 656.3            | 618.4           | 93.65          | 1.8303    | 0.431                           |
| 83.00 | 656.4            | 618.5           | 93.67          | 1.8253    | 0.431                           |
| 83.50 | 656.4            | 618.5           | 93.68          | 1.8204    | 0.431                           |
| 84.00 | 656.4            | 618.5           | 93.68          | 1.8155    | 0.431                           |
| 84.50 | 656.3            | 618.4           | 93.69          | 1.8107    | 0.431                           |
| 85.00 | 656.3            | 618.4           | 93.70          | 1.8059    | 0.431                           |
| 85.50 | 656.5            | 618.6           | 93.71          | 1.8012    | 0.431                           |
| 86.00 | 656.5            | 618.6           | 93.71          | 1.7965    | 0.431                           |
| 86.50 | 656.5            | 618.6           | 93.72          | 1.7919    | 0.431                           |
| 87.00 | 656.5            | 618.6           | 93.74          | 1.7874    | 0.431                           |
| 87.50 | 656.6            | 618.7           | 93.75          | 1.7829    | 0.431                           |
| 88.00 | 656.6            | 618.7           | 93.75          | 1.7784    | 0.431                           |
| 88.50 | 656.7            | 618.8           | 93.76          | 1.7740    | 0.431                           |
| 89.00 | 656.7            | 618.8           | 93.77          | 1.7697    | 0.431                           |
| 89.50 | 656.7            | 618.8           | 93.78          | 1.7654    | 0.431                           |
| 90.00 | 656.6            | 618.7           | 93.79          | 1.7611    | 0.431                           |
| 90.50 | 656.8            | 618.8           | 93.80          | 1.7569    | 0.431                           |
| 91.00 | 656.8            | 618.8           | 93.81          | 1.7527    | 0.431                           |
| 91.50 | 656.8            | 618.8           | 93.82          | 1.7486    | 0.431                           |
| 92.00 | 656.8            | 618.8           | 93.83          | 1.7446    | 0.431                           |
| 92.50 | 656.8            | 618.8           | 93.84          | 1.7405    | 0.431                           |
| 93.00 | 656.8            | 618.8           | 93.85          | 1.7366    | 0.431                           |
| 93.50 | 656.8            | 618.8           | 93.86          | 1.7326    | 0.431                           |
| 94.00 | 656.8            | 618.8           | 93.87          | 1.7287    | 0.431                           |
| 94.50 | 656.8            | 618.8           | 93.88          | 1.7249    | 0.431                           |
| 95.00 | 656.9            | 618.9           | 93.89          | 1.7211    | 0.431                           |
| 95.50 | 656.9            | 618.9           | 93.91          | 1.7173    | 0.431                           |
| 96.00 | 656.9            | 618.9           | 93.91          | 1.7135    | 0.431                           |
| 96.50 | 656.9            | 618.9           | 93.92          | 1.7098    | 0.431                           |
| 97.00 | 656.9            | 618.9           | 93.92          | 1.7062    | 0.431                           |
| 97.50 | 656.9            | 618.9           | 93.93          | 1.7026    | 0.431                           |
| 98.00 | 656.9            | 619.0           | 93.94          | 1.6990    | 0.432                           |

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 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11810 DST#1 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/19/98

TIME: 15:58:56  
 -----

|                     | Time   | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|---------------------|--------|------------------|-----------------|----------------|-----------|----------|
|                     | 98.50  | 656.9            | 619.0           | 93.94          | 1.6954    | 0.432    |
|                     | 99.00  | 656.9            | 619.0           | 93.95          | 1.6919    | 0.432    |
|                     | 99.50  | 656.9            | 619.0           | 93.96          | 1.6884    | 0.432    |
|                     | 100.00 | 656.9            | 619.0           | 93.97          | 1.6850    | 0.432    |
|                     | 100.50 | 657.0            | 619.1           | 93.98          | 1.6816    | 0.432    |
|                     | 101.00 | 657.0            | 619.1           | 94.00          | 1.6782    | 0.432    |
|                     | 101.50 | 657.0            | 619.1           | 94.01          | 1.6749    | 0.432    |
|                     | 102.00 | 657.0            | 619.1           | 94.02          | 1.6716    | 0.432    |
|                     | 102.50 | 657.0            | 619.1           | 94.03          | 1.6683    | 0.432    |
|                     | 103.00 | 657.0            | 619.1           | 94.04          | 1.6650    | 0.432    |
|                     | 103.50 | 657.0            | 619.1           | 94.05          | 1.6618    | 0.432    |
|                     | 104.00 | 657.1            | 619.2           | 94.05          | 1.6587    | 0.432    |
|                     | 104.50 | 657.1            | 619.2           | 94.07          | 1.6555    | 0.432    |
|                     | 105.00 | 657.1            | 619.2           | 94.07          | 1.6524    | 0.432    |
|                     | 105.50 | 657.1            | 619.2           | 94.09          | 1.6493    | 0.432    |
|                     | 106.00 | 657.1            | 619.2           | 94.10          | 1.6462    | 0.432    |
|                     | 106.50 | 657.1            | 619.2           | 94.11          | 1.6432    | 0.432    |
|                     | 107.00 | 657.2            | 619.3           | 94.12          | 1.6402    | 0.432    |
|                     | 107.50 | 657.2            | 619.3           | 94.13          | 1.6372    | 0.432    |
|                     | 108.00 | 657.2            | 619.3           | 94.14          | 1.6343    | 0.432    |
|                     | 108.50 | 657.2            | 619.3           | 94.15          | 1.6313    | 0.432    |
|                     | 109.00 | 657.2            | 619.3           | 94.16          | 1.6284    | 0.432    |
|                     | 109.50 | 657.2            | 619.3           | 94.17          | 1.6256    | 0.432    |
|                     | 110.00 | 657.2            | 619.3           | 94.17          | 1.6227    | 0.432    |
|                     | 110.50 | 657.2            | 619.3           | 94.19          | 1.6199    | 0.432    |
|                     | 111.00 | 657.3            | 619.3           | 94.19          | 1.6171    | 0.432    |
|                     | 111.50 | 657.3            | 619.3           | 94.19          | 1.6143    | 0.432    |
|                     | 112.00 | 657.3            | 619.3           | 94.20          | 1.6116    | 0.432    |
|                     | 112.50 | 657.3            | 619.3           | 94.22          | 1.6089    | 0.432    |
|                     | 113.00 | 657.3            | 619.3           | 94.24          | 1.6062    | 0.432    |
|                     | 113.50 | 657.4            | 619.4           | 94.25          | 1.6035    | 0.432    |
|                     | 114.00 | 657.4            | 619.4           | 94.25          | 1.6009    | 0.432    |
|                     | 114.50 | 657.4            | 619.4           | 94.27          | 1.5983    | 0.432    |
|                     | 115.00 | 657.4            | 619.4           | 94.28          | 1.5957    | 0.432    |
|                     | 115.50 | 657.4            | 619.5           | 94.29          | 1.5931    | 0.432    |
|                     | 116.00 | 657.4            | 619.5           | 94.30          | 1.5905    | 0.432    |
|                     | 116.50 | 657.4            | 619.5           | 94.30          | 1.5880    | 0.432    |
|                     | 117.00 | 657.4            | 619.5           | 94.32          | 1.5855    | 0.432    |
|                     | 117.50 | 657.4            | 619.5           | 94.33          | 1.5830    | 0.432    |
|                     | 118.00 | 657.4            | 619.5           | 94.33          | 1.5805    | 0.432    |
|                     | 118.50 | 657.4            | 619.5           | 94.35          | 1.5781    | 0.432    |
|                     | 119.00 | 657.4            | 619.5           | 94.36          | 1.5756    | 0.432    |
|                     | 119.50 | 657.5            | 619.6           | 94.37          | 1.5732    | 0.432    |
|                     | 120.00 | 657.5            | 619.6           | 94.37          | 1.5708    | 0.432    |
|                     | 120.50 | 657.5            | 619.6           | 94.39          | 1.5685    | 0.432    |
|                     | 121.00 | 657.5            | 619.6           | 94.40          | 1.5661    | 0.432    |
|                     | 121.50 | 657.4            | 619.5           | 94.41          | 1.5638    | 0.432    |
| ***** End Shut-in 2 | 122.00 | 657.4            | 619.5           | 94.42          | 1.5615    | 0.432    |
| ***** Final Hydro.  | 377.50 | 1258.3           | 0.0             | 94.63          |           |          |



## GAS VOLUME REPORT

SAGEBRUSH PETL. LLC  
OPERATOR

LUDERS "B" #8

WELL NAME AND NO.

3  
DST NO.

INITIAL OPEN

(= INAC OPEN)

Remarks:

# TRILOBITE TESTING L.L.C.

OPERATOR : Sagebrush Petl.LLC  
WELL NAME: Luders B #8  
LOCATION : 7-27s-12w Pratt co. KS  
INTERVAL : 3842.00 To 3862.00 ft

DATE 07-22-98  
KB 1867.00 ft TICKET NO: 11811 DST #2  
GR 1858.00 ft FORMATION: Lansing  
TD 3862.00 ft TEST TYPE: CONVENTIONAL

## RECORDER DATA

| Mins              | Field  | 1      | 2      | 3   | 4   | TIME DATA-----         |
|-------------------|--------|--------|--------|-----|-----|------------------------|
| PF 15 Rec.        | 10248  | 10248  | 2342   |     |     | PF Fr. 0821 to 0836 hr |
| SI 60 Range(Psi ) | 4400.0 | 4400.0 | 4995.0 | 0.0 | 0.0 | IS Fr. 0836 to 0936 hr |
| SF 30 Clock(hrs)  | 12 hr  | 12 hr  | batt.  |     |     | SF Fr. 0936 to 1006 hr |
| FS 60 Depth(ft )  | 3859.0 | 3859.0 | 3847.0 | 0.0 | 0.0 | FS Fr. 1006 to 1106 hr |

|                | Field  | 1      | 2      | 3   | 4   |                               |
|----------------|--------|--------|--------|-----|-----|-------------------------------|
| A. Init Hydro  | 1985.0 | 1968.0 | 1973.0 | 0.0 | 0.0 | T STARTED 0645 hr             |
| B. First Flow  | 32.0   | 40.0   | 15.0   | 0.0 | 0.0 | T ON BOTM 0818 hr             |
| B1. Final Flow | 34.0   | 49.0   | 18.0   | 0.0 | 0.0 | T OPEN 0821 hr                |
| C. In Shut-in  | 232.0  | 233.0  | 228.0  | 0.0 | 0.0 | T PULLED 1107 hr              |
| D. Init Flow   | 37.0   | 48.0   | 19.0   | 0.0 | 0.0 | T OUT 1255 hr                 |
| E. Final Flow  | 37.0   | 48.0   | 23.0   | 0.0 | 0.0 |                               |
| F. Fl Shut-in  | 119.0  | 116.0  | 112.0  | 0.0 | 0.0 | TOOL DATA-----                |
| G. Final Hydro | 1953.0 | 1911.0 | 1911.0 | 0.0 | 0.0 | Tool Wt. 2100.00 lbs          |
| Inside/Outside | O      | O      | I      | T   |     | Wt Set On Packer 20000.00 lbs |
|                |        |        |        |     |     | Wt Pulled Loose 57000.00 lbs  |
|                |        |        |        |     |     | Initial Str Wt 48000.00 lbs   |
|                |        |        |        |     |     | Unseated Str Wt 48000.00 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 3838.00 ft        |

## RECOVERY

Tot Fluid 20.00 ft of 0.00 ft in DC and 20.00 ft in DP  
90.00 ft of Gas in pipe.  
20.00 ft of Slight oil cut mud 1% oil 99% mud  
0.00 ft of  
0.00 ft of  
0.00 ft of  
0.00 ft of  
0.00 ft of  
0.00 ft of Rw n.c. ohms @ degrees F.  
0.00 ft of EST FT. of PAY-----6  
SALINITY 7000.00 P.P.M. A.P.I. Gravity 0.00

## BLOW DESCRIPTION

Initial Flow:  
Weak surging blow, slow increase to  
4"  
Initial Shut-in:  
No blow  
Final Flow:  
Weak blow, 1/2"  
Final Shut-in:  
No blow

SAMPLES: none  
SENT TO:Caraway/Liberal

Test Successful: Y

MUD DATA-----  
Mud Type Starch  
Weight 9.20 lb/cf  
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. 121.00 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. Arden Ratzlaff  
Contr. Duke Drlg.  
Rig # 4  
Unit #  
Pump T. LCM tr /bl

\*\*\* TOOL DIAGRAM \*\*\* CONVENTIONAL

WELL NAME: Luders B #8

LOCATION : Sec.07 Twp.27s Rg.12w Ks

TICKET No. 11811 D.S.T. No. 2 DATE 07-22-98

TOTAL TOOL TO BOTTOM OF TOP PACKERS ..... 22

INTERVAL TOOL .....

BOTTOM PACKERS AND ANCHOR ..... 20

TOTAL TOOL ..... 42

DRILL COLLAR ANCHOR IN INTERVAL .....

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY ..... 42

D.C. ABOVE TOOLS.Stands Single Total

D.P. ABOVE TOOLS.Stands61 Single 1 Total 3838

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 3880

TOTAL DEPTH ..... 3862

TOTAL DRILL PIPE ABOVE K.B. .... 18

REMARKS:

Comments:E-mail report to Randy Wolf & have him send it on to Dave Pauly's office,or directly to directly to D.Pauly if late nite. Fax report to Sagebrush office in Denver. Fax#303-866-0125

|                           |      |
|---------------------------|------|
| P.O. SUB                  |      |
| C.O. SUB @ top of tool    | 3820 |
| S.I. TOOL Sterling        | 3826 |
| HMV Sterling              | 3831 |
| JARS no                   |      |
| SAFETY JOINT Bowen        | 3833 |
| PACKER Top                | 3837 |
| PACKER Btm.               | 3842 |
| DEPTH 3842                |      |
| STUBB 1 ft.               | 3843 |
| ANCHOR                    |      |
| Alpine rec. @             | 3847 |
| T.C.                      |      |
| DEPTH                     |      |
| 14 ft. perfs to           | 3857 |
| AK-1 rec. @               | 3859 |
| BULLNOSE 5 ft. perforated | 3862 |
| T.D.                      |      |

# 11811 DST#2 LUDERS B#8 SAGEBRUSH PETL.LLC TEST HISTORY

Flag Points

t (Min.) P (PSig)

A: 0.00 1973.05  
 B: 0.00 14.93  
 C: 15.50 17.87  
 D: 58.50 227.94  
 E: 0.00 19.29  
 F: 30.00 23.24  
 G: 61.00 111.87  
 Q: 0.00 1910.52

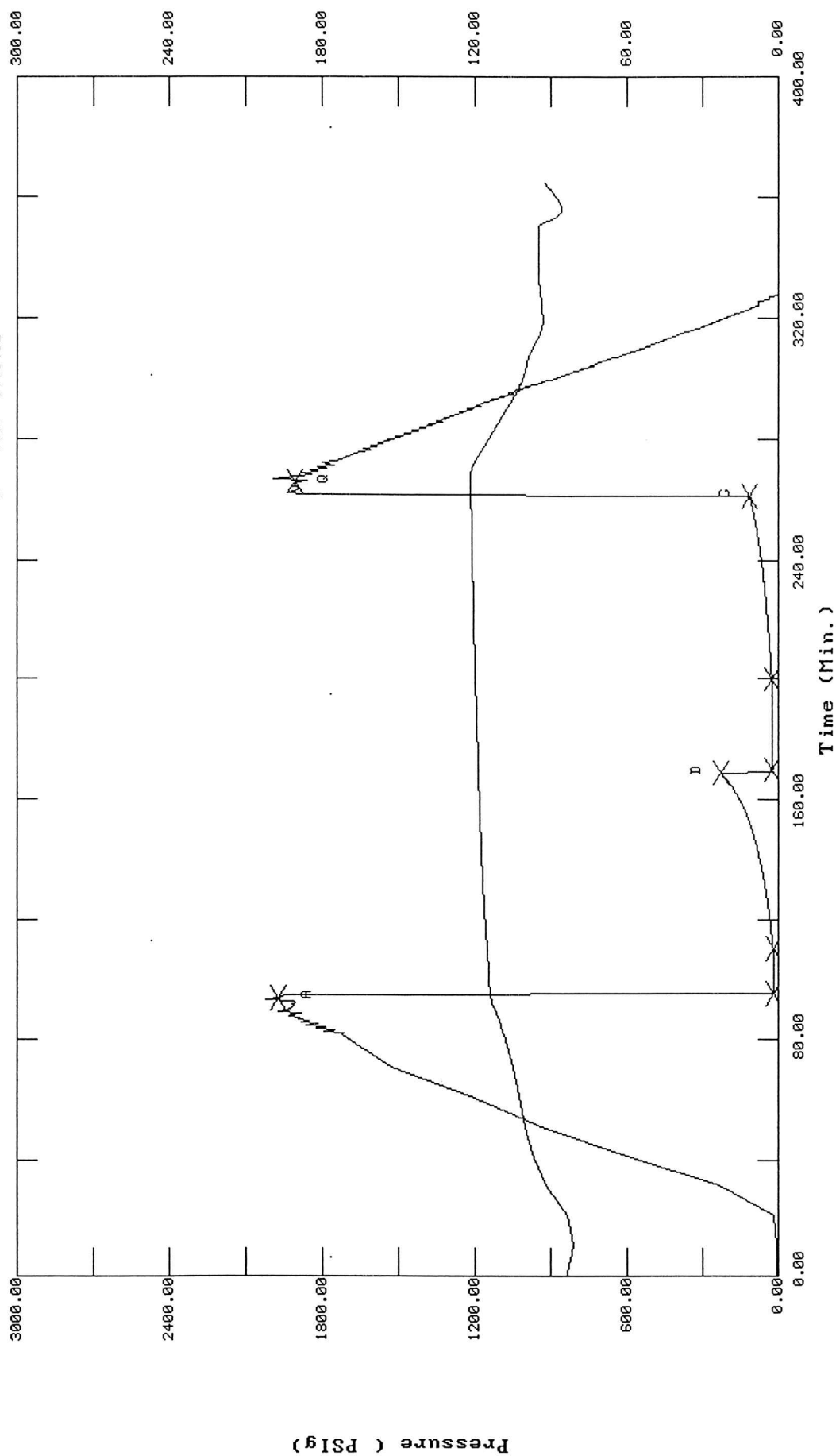
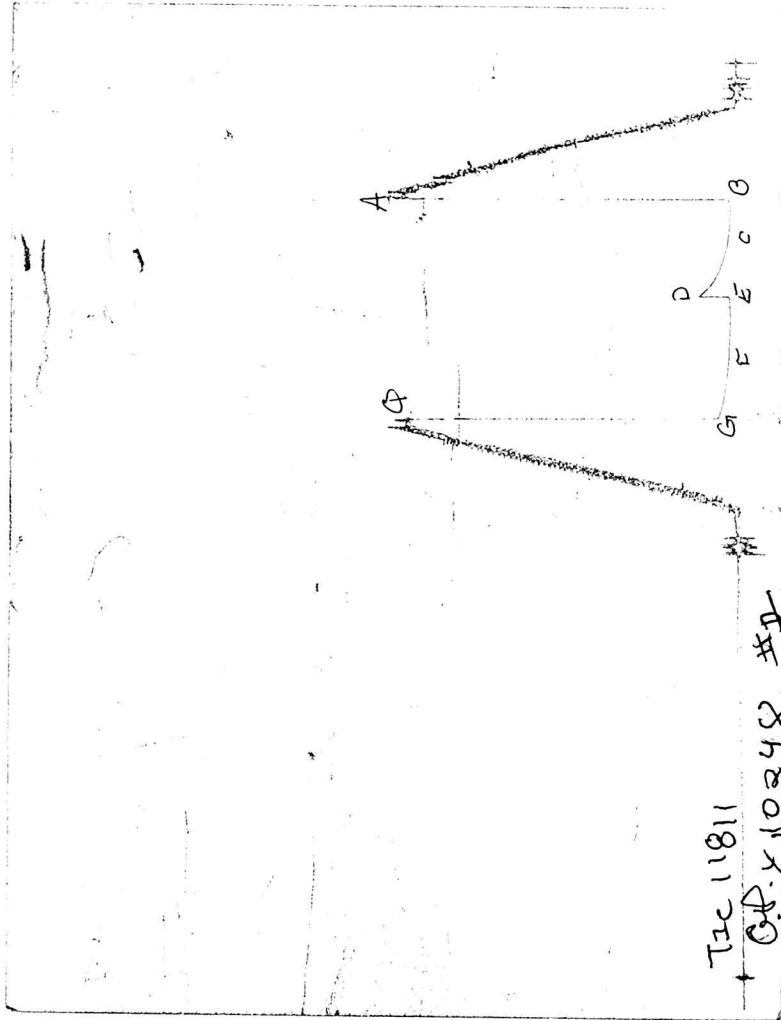


CHART PAGE



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

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 11810

|                 |                                             |                           |              |                 |                         |
|-----------------|---------------------------------------------|---------------------------|--------------|-----------------|-------------------------|
| Well Name & No. | LUDERS B #8                                 | Test No.                  | 1            | Date            | 7-19-98                 |
| Company         | SAGEBRUSH PETL LLC                          | Zone Tested               | LANGDON      |                 |                         |
| Address         | 1888 SHERMAN ST. STE. 500, DENVER CO. 80203 | Elevation                 | 1867         | KB              | 1858GL                  |
| Co. Rep / Geo.  | ARDEN PATZLAFF                              | Cont.                     | DUKE DRUG #4 | Est. Ft. of Pay | 18 Por. 14 %            |
| Location: Sec.  | T                                           | Twp.                      | 27S          | Rge.            | 12W Co. PRATT State KS. |
| No. of Copies   | 5                                           | Distribution Sheet (Y, N) | N            | Turnkey (Y, N)  | - Evaluation (Y, N) -   |

Interval Tested 2729 - 2797' Initial Str Wt./Lbs. 42,000 Unseated Str Wt./Lbs. 42,000  
Anchor Length 68' Wt. Set Lbs. 20,000 Wt. Pulled Loose/Lbs. 70,000  
Top Packer Depth 2724' Tool Weight 2100#  
Bottom Packer Depth 2729' Hole Size — 7 7/8" ✓ Rubber Size — 6 3/4" ✓  
Total Depth 2797' Wt. Pipe Run None Drill Collar Run None

Mud Wt. 8.9 LCM 1# Vis. 40 WL 8.8cc Drill Pipe Size 4 1/2" K.H. Ft. Run 2718'

Blow Description IF: Strong blow. Bit of bucket in 2 mins.

ISI: Weak blow

FF: Strong blow. BTS in 2 mins. (see gas volume report)

FSI: Weak to fair blow.

Recovery — Total Feet 35' GIP yes Ft. in DC — Ft. in DP 35'

Rec. 35 Feet Of Drilg. 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 99 °F Gravity N/A °API D@ — °F Corrected Gravity N/A °API

RW N.C. @ 2 °F Chlorides 60,000 ppm Recovery Chlorides 60,000 ppm System

|                             |             |      |             |        |        |                  |             |               |             |
|-----------------------------|-------------|------|-------------|--------|--------|------------------|-------------|---------------|-------------|
| (A) Initial Hydrostatic Mud | <u>1307</u> | AK-1 | <u>1288</u> | Alpine | Alpine | PSI Recorder No. | <u>2342</u> | T-On Location | <u>1435</u> |
|-----------------------------|-------------|------|-------------|--------|--------|------------------|-------------|---------------|-------------|

|                                 |           |  |           |     |         |              |           |             |
|---------------------------------|-----------|--|-----------|-----|---------|--------------|-----------|-------------|
| (B) First Initial Flow Pressure | <u>82</u> |  | <u>23</u> | PSI | (depth) | <u>2739'</u> | T-Started | <u>1558</u> |
|---------------------------------|-----------|--|-----------|-----|---------|--------------|-----------|-------------|

|                               |           |  |           |     |              |              |        |             |
|-------------------------------|-----------|--|-----------|-----|--------------|--------------|--------|-------------|
| (C) First Final Flow Pressure | <u>77</u> |  | <u>28</u> | PSI | Recorder No. | <u>10248</u> | T-Open | <u>1800</u> |
|-------------------------------|-----------|--|-----------|-----|--------------|--------------|--------|-------------|

|                              |            |  |            |     |         |              |          |             |
|------------------------------|------------|--|------------|-----|---------|--------------|----------|-------------|
| (D) Initial Shut-In Pressure | <u>672</u> |  | <u>660</u> | PSI | (depth) | <u>2794'</u> | T-Pulled | <u>2212</u> |
|------------------------------|------------|--|------------|-----|---------|--------------|----------|-------------|

|                                  |           |  |           |     |              |          |       |             |
|----------------------------------|-----------|--|-----------|-----|--------------|----------|-------|-------------|
| (E) Second Initial Flow Pressure | <u>69</u> |  | <u>24</u> | PSI | Recorder No. | <u>—</u> | T-Out | <u>2355</u> |
|----------------------------------|-----------|--|-----------|-----|--------------|----------|-------|-------------|

|                                |           |  |           |     |         |          |                |             |
|--------------------------------|-----------|--|-----------|-----|---------|----------|----------------|-------------|
| (F) Second Final Flow Pressure | <u>78</u> |  | <u>38</u> | PSI | (depth) | <u>—</u> | T-Off Location | <u>0030</u> |
|--------------------------------|-----------|--|-----------|-----|---------|----------|----------------|-------------|

|                            |            |  |            |     |                 |           |      |               |
|----------------------------|------------|--|------------|-----|-----------------|-----------|------|---------------|
| (G) Final Shut-in Pressure | <u>672</u> |  | <u>657</u> | PSI | Initial Opening | <u>10</u> | Test | <u>✓ 600°</u> |
|----------------------------|------------|--|------------|-----|-----------------|-----------|------|---------------|

|                           |             |  |             |     |                 |           |      |          |
|---------------------------|-------------|--|-------------|-----|-----------------|-----------|------|----------|
| (Q) Final Hydrostatic Mud | <u>1296</u> |  | <u>1258</u> | PSI | Initial Shut-in | <u>60</u> | Jars | <u>—</u> |
|---------------------------|-------------|--|-------------|-----|-----------------|-----------|------|----------|

Final Flow 60 Safety Joint ✓ 50°

Final Shut-in 120 Straddle —

4 Circ. Sub —

Sampler —

Extra Packer —

Elec. Rec. ✓ 150°

Mileage —

Other —

TOTAL PRICE ✓ 800°

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 Arden Patzloff

Our Representative —

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11811 DST#2 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/22/98

TIME: 06:46:06

|                      | Time  | Pressure<br>PSIg | delta P<br>PSIg | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|----------------------|-------|------------------|-----------------|----------------|-----------|----------|
| ***** Initial Hydro. | 93.50 | 1973.1           | 0.0             | 113.71         |           |          |
| ***** Start Flow 1   | 0.00  | 14.9             | 0.0             | 114.02         |           |          |
|                      | 0.50  | 14.4             | -0.5            | 114.07         |           |          |
|                      | 1.00  | 14.0             | -0.9            | 114.12         |           |          |
|                      | 1.50  | 15.5             | 0.6             | 114.16         |           |          |
|                      | 2.00  | 14.3             | -0.6            | 114.20         |           |          |
|                      | 2.50  | 15.8             | 0.8             | 114.23         |           |          |
|                      | 3.00  | 16.4             | 1.5             | 114.26         |           |          |
|                      | 3.50  | 14.7             | -0.3            | 114.29         |           |          |
|                      | 4.00  | 14.5             | -0.4            | 114.32         |           |          |
|                      | 4.50  | 16.9             | 2.0             | 114.35         |           |          |
|                      | 5.00  | 14.7             | -0.3            | 114.38         |           |          |
|                      | 5.50  | 16.1             | 1.2             | 114.41         |           |          |
|                      | 6.00  | 16.1             | 1.2             | 114.44         |           |          |
|                      | 6.50  | 17.8             | 2.9             | 114.47         |           |          |
|                      | 7.00  | 16.4             | 1.5             | 114.51         |           |          |
|                      | 7.50  | 16.4             | 1.4             | 114.53         |           |          |
|                      | 8.00  | 15.4             | 0.4             | 114.57         |           |          |
|                      | 8.50  | 16.5             | 1.6             | 114.60         |           |          |
|                      | 9.00  | 15.9             | 1.0             | 114.64         |           |          |
|                      | 9.50  | 16.3             | 1.3             | 114.67         |           |          |
|                      | 10.00 | 17.5             | 2.6             | 114.71         |           |          |
|                      | 10.50 | 16.8             | 1.8             | 114.75         |           |          |
|                      | 11.00 | 15.8             | 0.8             | 114.79         |           |          |
|                      | 11.50 | 16.9             | 2.0             | 114.82         |           |          |
|                      | 12.00 | 16.2             | 1.3             | 114.86         |           |          |
|                      | 12.50 | 17.3             | 2.3             | 114.90         |           |          |
|                      | 13.00 | 17.1             | 2.2             | 114.95         |           |          |
|                      | 13.50 | 16.1             | 1.2             | 114.99         |           |          |
|                      | 14.00 | 16.9             | 1.9             | 115.03         |           |          |
|                      | 14.50 | 17.8             | 2.9             | 115.08         |           |          |
|                      | 15.00 | 17.1             | 2.2             | 115.12         |           |          |
| ***** End Flow 1     | 15.50 | 17.9             | 2.9             | 115.16         |           |          |
| ***** Start Shutin 1 | 0.00  | 17.9             | 0.0             | 115.16         | 0.0000    | 0.000    |
|                      | 0.50  | 18.7             | 0.8             | 115.21         | 32.0000   | 0.000    |
|                      | 1.00  | 19.6             | 1.8             | 115.25         | 16.5000   | 0.000    |
|                      | 1.50  | 20.4             | 2.5             | 115.29         | 11.3333   | 0.000    |
|                      | 2.00  | 21.1             | 3.3             | 115.34         | 8.7500    | 0.000    |
|                      | 2.50  | 21.7             | 3.9             | 115.38         | 7.2000    | 0.000    |
|                      | 3.00  | 22.3             | 4.4             | 115.43         | 6.1667    | 0.000    |
|                      | 3.50  | 23.2             | 5.3             | 115.48         | 5.4286    | 0.001    |
|                      | 4.00  | 23.8             | 6.0             | 115.51         | 4.8750    | 0.001    |
|                      | 4.50  | 24.4             | 6.5             | 115.56         | 4.4444    | 0.001    |
|                      | 5.00  | 25.1             | 7.2             | 115.61         | 4.1000    | 0.001    |
|                      | 5.50  | 25.6             | 7.7             | 115.64         | 3.8182    | 0.001    |
|                      | 6.00  | 26.2             | 8.3             | 115.69         | 3.5833    | 0.001    |
|                      | 6.50  | 26.7             | 8.8             | 115.74         | 3.3846    | 0.001    |
|                      | 7.00  | 27.2             | 9.3             | 115.78         | 3.2143    | 0.001    |
|                      | 7.50  | 27.7             | 9.8             | 115.82         | 3.0667    | 0.001    |
|                      | 8.00  | 28.3             | 10.4            | 115.87         | 2.9375    | 0.001    |
|                      | 8.50  | 28.8             | 10.9            | 115.91         | 2.8235    | 0.001    |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11811 DST#2 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/22/98

TIME: 06:46:06

| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 9.00  | 29.4             | 11.5            | 115.95         | 2.7222    | 0.001    |
| 9.50  | 30.2             | 12.3            | 116.00         | 2.6316    | 0.001    |
| 10.00 | 31.0             | 13.2            | 116.03         | 2.5500    | 0.001    |
| 10.50 | 31.8             | 13.9            | 116.08         | 2.4762    | 0.001    |
| 11.00 | 32.6             | 14.8            | 116.11         | 2.4091    | 0.001    |
| 11.50 | 33.6             | 15.7            | 116.16         | 2.3478    | 0.001    |
| 12.00 | 34.4             | 16.5            | 116.19         | 2.2917    | 0.001    |
| 12.50 | 35.2             | 17.4            | 116.24         | 2.2400    | 0.001    |
| 13.00 | 36.1             | 18.2            | 116.27         | 2.1923    | 0.001    |
| 13.50 | 36.9             | 19.1            | 116.32         | 2.1481    | 0.001    |
| 14.00 | 37.8             | 19.9            | 116.34         | 2.1071    | 0.001    |
| 14.50 | 38.7             | 20.8            | 116.38         | 2.0690    | 0.001    |
| 15.00 | 39.6             | 21.7            | 116.42         | 2.0333    | 0.002    |
| 15.50 | 40.4             | 22.6            | 116.45         | 2.0000    | 0.002    |
| 16.00 | 41.4             | 23.5            | 116.49         | 1.9688    | 0.002    |
| 16.50 | 42.3             | 24.4            | 116.52         | 1.9394    | 0.002    |
| 17.00 | 43.1             | 25.3            | 116.56         | 1.9118    | 0.002    |
| 17.50 | 44.1             | 26.2            | 116.59         | 1.8857    | 0.002    |
| 18.00 | 45.0             | 27.1            | 116.63         | 1.8611    | 0.002    |
| 18.50 | 45.9             | 28.0            | 116.66         | 1.8378    | 0.002    |
| 19.00 | 46.8             | 29.0            | 116.69         | 1.8158    | 0.002    |
| 19.50 | 47.8             | 30.0            | 116.72         | 1.7949    | 0.002    |
| 20.00 | 48.8             | 30.9            | 116.77         | 1.7750    | 0.002    |
| 20.50 | 49.7             | 31.8            | 116.79         | 1.7561    | 0.002    |
| 21.00 | 50.6             | 32.7            | 116.83         | 1.7381    | 0.003    |
| 21.50 | 51.6             | 33.7            | 116.86         | 1.7209    | 0.003    |
| 22.00 | 52.7             | 34.8            | 116.89         | 1.7045    | 0.003    |
| 22.50 | 53.7             | 35.8            | 116.91         | 1.6889    | 0.003    |
| 23.00 | 54.9             | 37.0            | 116.94         | 1.6739    | 0.003    |
| 23.50 | 55.9             | 38.0            | 116.96         | 1.6596    | 0.003    |
| 24.00 | 57.1             | 39.2            | 117.01         | 1.6458    | 0.003    |
| 24.50 | 58.2             | 40.3            | 117.03         | 1.6327    | 0.003    |
| 25.00 | 59.3             | 41.5            | 117.07         | 1.6200    | 0.004    |
| 25.50 | 60.4             | 42.6            | 117.09         | 1.6078    | 0.004    |
| 26.00 | 61.6             | 43.7            | 117.12         | 1.5962    | 0.004    |
| 26.50 | 62.8             | 44.9            | 117.15         | 1.5849    | 0.004    |
| 27.00 | 63.9             | 46.1            | 117.18         | 1.5741    | 0.004    |
| 27.50 | 65.1             | 47.3            | 117.21         | 1.5636    | 0.004    |
| 28.00 | 66.4             | 48.5            | 117.25         | 1.5536    | 0.004    |
| 28.50 | 67.6             | 49.8            | 117.27         | 1.5439    | 0.005    |
| 29.00 | 68.9             | 51.0            | 117.30         | 1.5345    | 0.005    |
| 29.50 | 70.2             | 52.4            | 117.33         | 1.5254    | 0.005    |
| 30.00 | 71.4             | 53.5            | 117.35         | 1.5167    | 0.005    |
| 30.50 | 72.8             | 54.9            | 117.38         | 1.5082    | 0.005    |
| 31.00 | 74.1             | 56.2            | 117.41         | 1.5000    | 0.005    |
| 31.50 | 75.5             | 57.7            | 117.44         | 1.4921    | 0.006    |
| 32.00 | 77.0             | 59.1            | 117.47         | 1.4844    | 0.006    |
| 32.50 | 78.4             | 60.5            | 117.48         | 1.4769    | 0.006    |
| 33.00 | 79.9             | 62.0            | 117.52         | 1.4697    | 0.006    |
| 33.50 | 81.2             | 63.4            | 117.54         | 1.4627    | 0.007    |
| 34.00 | 82.8             | 65.0            | 117.57         | 1.4559    | 0.007    |

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ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING  
TEST: 11811 DST#2 LUDERS B#8 SAGEBRUSH PETL.LLC  
DATE: 07/22/98 TIME: 06:46:06  
-----

| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 34.50 | 84.4             | 66.6            | 117.60         | 1.4493    | 0.007    |
| 35.00 | 85.9             | 68.1            | 117.61         | 1.4429    | 0.007    |
| 35.50 | 87.6             | 69.7            | 117.65         | 1.4366    | 0.008    |
| 36.00 | 89.2             | 71.3            | 117.67         | 1.4306    | 0.008    |
| 36.50 | 90.9             | 73.0            | 117.70         | 1.4247    | 0.008    |
| 37.00 | 92.6             | 74.7            | 117.72         | 1.4189    | 0.009    |
| 37.50 | 94.3             | 76.5            | 117.75         | 1.4133    | 0.009    |
| 38.00 | 96.1             | 78.2            | 117.78         | 1.4079    | 0.009    |
| 38.50 | 97.9             | 80.1            | 117.80         | 1.4026    | 0.01     |
| 39.00 | 99.9             | 82.0            | 117.83         | 1.3974    | 0.01     |
| 39.50 | 101.8            | 83.9            | 117.85         | 1.3924    | 0.010    |
| 40.00 | 103.6            | 85.8            | 117.87         | 1.3875    | 0.011    |
| 40.50 | 105.7            | 87.8            | 117.90         | 1.3827    | 0.011    |
| 41.00 | 107.7            | 89.8            | 117.93         | 1.3780    | 0.012    |
| 41.50 | 109.8            | 91.9            | 117.95         | 1.3735    | 0.012    |
| 42.00 | 112.0            | 94.1            | 117.97         | 1.3690    | 0.013    |
| 42.50 | 114.2            | 96.3            | 117.99         | 1.3647    | 0.013    |
| 43.00 | 116.5            | 98.6            | 118.02         | 1.3605    | 0.014    |
| 43.50 | 118.7            | 100.9           | 118.04         | 1.3563    | 0.014    |
| 44.00 | 121.0            | 103.1           | 118.06         | 1.3523    | 0.015    |
| 44.50 | 123.5            | 105.7           | 118.08         | 1.3483    | 0.015    |
| 45.00 | 126.0            | 108.1           | 118.10         | 1.3444    | 0.016    |
| 45.50 | 128.5            | 110.6           | 118.13         | 1.3407    | 0.017    |
| 46.00 | 131.1            | 113.2           | 118.15         | 1.3370    | 0.017    |
| 46.50 | 133.8            | 115.9           | 118.17         | 1.3333    | 0.018    |
| 47.00 | 136.7            | 118.8           | 118.20         | 1.3298    | 0.019    |
| 47.50 | 139.6            | 121.7           | 118.22         | 1.3263    | 0.019    |
| 48.00 | 142.5            | 124.6           | 118.24         | 1.3229    | 0.020    |
| 48.50 | 145.5            | 127.7           | 118.26         | 1.3196    | 0.021    |
| 49.00 | 148.6            | 130.8           | 118.29         | 1.3163    | 0.022    |
| 49.50 | 151.6            | 133.7           | 118.31         | 1.3131    | 0.023    |
| 50.00 | 154.8            | 137.0           | 118.33         | 1.3100    | 0.024    |
| 50.50 | 158.2            | 140.3           | 118.35         | 1.3069    | 0.025    |
| 51.00 | 161.6            | 143.8           | 118.37         | 1.3039    | 0.026    |
| 51.50 | 165.3            | 147.5           | 118.40         | 1.3010    | 0.027    |
| 52.00 | 169.0            | 151.2           | 118.41         | 1.2981    | 0.029    |
| 52.50 | 172.7            | 154.8           | 118.43         | 1.2952    | 0.030    |
| 53.00 | 176.6            | 158.7           | 118.45         | 1.2925    | 0.031    |
| 53.50 | 180.5            | 162.7           | 118.47         | 1.2897    | 0.033    |
| 54.00 | 184.7            | 166.8           | 118.50         | 1.2870    | 0.034    |
| 54.50 | 189.2            | 171.3           | 118.51         | 1.2844    | 0.036    |
| 55.00 | 193.5            | 175.7           | 118.53         | 1.2818    | 0.037    |
| 55.50 | 198.1            | 180.3           | 118.56         | 1.2793    | 0.039    |
| 56.00 | 202.7            | 184.8           | 118.58         | 1.2768    | 0.041    |
| 56.50 | 207.5            | 189.6           | 118.60         | 1.2743    | 0.043    |
| 57.00 | 212.5            | 194.6           | 118.62         | 1.2719    | 0.045    |
| 57.50 | 217.5            | 199.7           | 118.64         | 1.2696    | 0.047    |
| 58.00 | 222.7            | 204.8           | 118.66         | 1.2672    | 0.050    |
| 58.50 | 227.9            | 210.1           | 118.68         | 1.2650    | 0.052    |
| 0.00  | 19.3             | 0.0             | 118.71         |           |          |
| 0.50  | 18.6             | -0.7            | 118.72         |           |          |

\*\*\*\*\* End Shut-in 1

\*\*\*\*\* Start Flow 2

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11811 DST#2 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/22/98

TIME: 06:46:06

| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 1.00  | 20.2             | 0.9             | 118.74         |           |          |
| 1.50  | 20.1             | 0.8             | 118.74         |           |          |
| 2.00  | 20.5             | 1.2             | 118.76         |           |          |
| 2.50  | 20.6             | 1.3             | 118.77         |           |          |
| 3.00  | 20.3             | 1.0             | 118.79         |           |          |
| 3.50  | 21.1             | 1.8             | 118.81         |           |          |
| 4.00  | 20.5             | 1.2             | 118.82         |           |          |
| 4.50  | 19.7             | 0.4             | 118.84         |           |          |
| 5.00  | 20.6             | 1.3             | 118.85         |           |          |
| 5.50  | 20.2             | 0.9             | 118.87         |           |          |
| 6.00  | 20.5             | 1.2             | 118.90         |           |          |
| 6.50  | 20.1             | 0.8             | 118.91         |           |          |
| 7.00  | 20.8             | 1.5             | 118.93         |           |          |
| 7.50  | 20.6             | 1.3             | 118.94         |           |          |
| 8.00  | 21.2             | 1.9             | 118.97         |           |          |
| 8.50  | 21.1             | 1.8             | 118.99         |           |          |
| 9.00  | 20.7             | 1.4             | 119.01         |           |          |
| 9.50  | 21.3             | 2.0             | 119.03         |           |          |
| 10.00 | 21.5             | 2.2             | 119.05         |           |          |
| 10.50 | 21.7             | 2.4             | 119.07         |           |          |
| 11.00 | 21.3             | 2.0             | 119.09         |           |          |
| 11.50 | 21.4             | 2.1             | 119.12         |           |          |
| 12.00 | 21.9             | 2.6             | 119.13         |           |          |
| 12.50 | 22.0             | 2.7             | 119.15         |           |          |
| 13.00 | 22.1             | 2.9             | 119.18         |           |          |
| 13.50 | 21.3             | 2.0             | 119.19         |           |          |
| 14.00 | 21.8             | 2.5             | 119.22         |           |          |
| 14.50 | 22.3             | 3.0             | 119.24         |           |          |
| 15.00 | 22.1             | 2.9             | 119.26         |           |          |
| 15.50 | 21.8             | 2.5             | 119.28         |           |          |
| 16.00 | 22.1             | 2.9             | 119.30         |           |          |
| 16.50 | 22.4             | 3.1             | 119.31         |           |          |
| 17.00 | 22.4             | 3.1             | 119.33         |           |          |
| 17.50 | 22.5             | 3.2             | 119.36         |           |          |
| 18.00 | 22.2             | 2.9             | 119.38         |           |          |
| 18.50 | 22.2             | 2.9             | 119.40         |           |          |
| 19.00 | 22.6             | 3.3             | 119.41         |           |          |
| 19.50 | 22.7             | 3.4             | 119.45         |           |          |
| 20.00 | 23.0             | 3.7             | 119.45         |           |          |
| 20.50 | 23.0             | 3.7             | 119.47         |           |          |
| 21.00 | 21.9             | 2.6             | 119.49         |           |          |
| 21.50 | 22.0             | 2.7             | 119.51         |           |          |
| 22.00 | 22.7             | 3.4             | 119.53         |           |          |
| 22.50 | 22.7             | 3.4             | 119.55         |           |          |
| 23.00 | 22.7             | 3.4             | 119.57         |           |          |
| 23.50 | 22.9             | 3.6             | 119.59         |           |          |
| 24.00 | 23.1             | 3.8             | 119.60         |           |          |
| 24.50 | 22.7             | 3.4             | 119.63         |           |          |
| 25.00 | 22.1             | 2.8             | 119.65         |           |          |
| 25.50 | 22.7             | 3.4             | 119.66         |           |          |
| 26.00 | 23.0             | 3.7             | 119.69         |           |          |

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 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING  
 TEST: 11811 DST#2 LUDERS B#8 SAGEBRUSH PETL.LLC  
 DATE: 07/22/98 TIME: 06:46:06  
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|                      | Time  | Pressure<br>PSIg | delta P<br>PSIg | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|----------------------|-------|------------------|-----------------|----------------|-----------|----------|
|                      | 26.50 | 23.0             | 3.7             | 119.70         |           |          |
|                      | 27.00 | 23.3             | 4.0             | 119.72         |           |          |
|                      | 27.50 | 23.4             | 4.1             | 119.73         |           |          |
|                      | 28.00 | 23.1             | 3.8             | 119.75         |           |          |
|                      | 28.50 | 22.0             | 2.7             | 119.78         |           |          |
|                      | 29.00 | 22.6             | 3.3             | 119.79         |           |          |
|                      | 29.50 | 23.0             | 3.7             | 119.81         |           |          |
| ***** End Flow 2     | 30.00 | 23.2             | 3.9             | 119.83         |           |          |
| ***** Start Shutin 2 | 0.00  | 23.2             | 0.0             | 119.83         | 0.0000    | 0.001    |
|                      | 0.50  | 23.6             | 0.3             | 119.85         | 92.0000   | 0.001    |
|                      | 1.00  | 24.1             | 0.8             | 119.87         | 46.5000   | 0.001    |
|                      | 1.50  | 24.4             | 1.2             | 119.88         | 31.3333   | 0.001    |
|                      | 2.00  | 24.8             | 1.6             | 119.90         | 23.7500   | 0.001    |
|                      | 2.50  | 25.3             | 2.0             | 119.91         | 19.2000   | 0.001    |
|                      | 3.00  | 25.7             | 2.4             | 119.93         | 16.1667   | 0.001    |
|                      | 3.50  | 25.9             | 2.7             | 119.95         | 14.0000   | 0.001    |
|                      | 4.00  | 26.4             | 3.2             | 119.97         | 12.3750   | 0.001    |
|                      | 4.50  | 26.8             | 3.5             | 119.99         | 11.1111   | 0.001    |
|                      | 5.00  | 27.3             | 4.0             | 120.00         | 10.1000   | 0.001    |
|                      | 5.50  | 27.8             | 4.5             | 120.02         | 9.2727    | 0.001    |
|                      | 6.00  | 28.1             | 4.9             | 120.06         | 8.5833    | 0.001    |
|                      | 6.50  | 28.5             | 5.3             | 120.05         | 8.0000    | 0.001    |
|                      | 7.00  | 28.9             | 5.7             | 120.04         | 7.5000    | 0.001    |
|                      | 7.50  | 29.3             | 6.0             | 120.08         | 7.0667    | 0.001    |
|                      | 8.00  | 29.8             | 6.5             | 120.10         | 6.6875    | 0.001    |
|                      | 8.50  | 30.1             | 6.9             | 120.12         | 6.3529    | 0.001    |
|                      | 9.00  | 30.5             | 7.3             | 120.14         | 6.0556    | 0.001    |
|                      | 9.50  | 31.0             | 7.8             | 120.14         | 5.7895    | 0.001    |
|                      | 10.00 | 31.5             | 8.2             | 120.17         | 5.5500    | 0.001    |
|                      | 10.50 | 31.9             | 8.6             | 120.19         | 5.3333    | 0.001    |
|                      | 11.00 | 32.2             | 9.0             | 120.20         | 5.1364    | 0.001    |
|                      | 11.50 | 32.7             | 9.5             | 120.21         | 4.9565    | 0.001    |
|                      | 12.00 | 33.1             | 9.9             | 120.23         | 4.7917    | 0.001    |
|                      | 12.50 | 33.6             | 10.4            | 120.25         | 4.6400    | 0.001    |
|                      | 13.00 | 34.1             | 10.8            | 120.27         | 4.5000    | 0.001    |
|                      | 13.50 | 34.5             | 11.2            | 120.28         | 4.3704    | 0.001    |
|                      | 14.00 | 35.0             | 11.7            | 120.29         | 4.2500    | 0.001    |
|                      | 14.50 | 35.4             | 12.2            | 120.31         | 4.1379    | 0.001    |
|                      | 15.00 | 35.8             | 12.6            | 120.32         | 4.0333    | 0.001    |
|                      | 15.50 | 36.3             | 13.1            | 120.33         | 3.9355    | 0.001    |
|                      | 16.00 | 36.8             | 13.6            | 120.36         | 3.8438    | 0.001    |
|                      | 16.50 | 37.3             | 14.1            | 120.36         | 3.7576    | 0.001    |
|                      | 17.00 | 37.8             | 14.6            | 120.38         | 3.6765    | 0.001    |
|                      | 17.50 | 38.3             | 15.0            | 120.40         | 3.6000    | 0.001    |
|                      | 18.00 | 38.8             | 15.5            | 120.41         | 3.5278    | 0.002    |
|                      | 18.50 | 39.4             | 16.1            | 120.43         | 3.4595    | 0.002    |
|                      | 19.00 | 39.8             | 16.5            | 120.44         | 3.3947    | 0.002    |
|                      | 19.50 | 40.3             | 17.0            | 120.46         | 3.3333    | 0.002    |
|                      | 20.00 | 40.8             | 17.5            | 120.48         | 3.2750    | 0.002    |
|                      | 20.50 | 41.3             | 18.0            | 120.49         | 3.2195    | 0.002    |
|                      | 21.00 | 41.7             | 18.5            | 120.49         | 3.1667    | 0.002    |

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ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING  
TEST: 11811 DST#2 LUDERS B#8 SAGEBRUSH PETL.LLC  
DATE: 07/22/98 TIME: 06:46:06  
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| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 21.50 | 42.2             | 19.0            | 120.52         | 3.1163    | 0.002    |
| 22.00 | 42.8             | 19.6            | 120.53         | 3.0682    | 0.002    |
| 22.50 | 43.3             | 20.1            | 120.54         | 3.0222    | 0.002    |
| 23.00 | 43.8             | 20.6            | 120.56         | 2.9783    | 0.002    |
| 23.50 | 44.3             | 21.1            | 120.57         | 2.9362    | 0.002    |
| 24.00 | 44.9             | 21.7            | 120.58         | 2.8958    | 0.002    |
| 24.50 | 45.4             | 22.2            | 120.59         | 2.8571    | 0.002    |
| 25.00 | 45.8             | 22.6            | 120.61         | 2.8200    | 0.002    |
| 25.50 | 46.5             | 23.2            | 120.63         | 2.7843    | 0.002    |
| 26.00 | 46.9             | 23.7            | 120.64         | 2.7500    | 0.002    |
| 26.50 | 47.6             | 24.3            | 120.65         | 2.7170    | 0.002    |
| 27.00 | 48.1             | 24.8            | 120.66         | 2.6852    | 0.002    |
| 27.50 | 48.6             | 25.3            | 120.68         | 2.6545    | 0.002    |
| 28.00 | 49.2             | 25.9            | 120.69         | 2.6250    | 0.002    |
| 28.50 | 49.8             | 26.5            | 120.71         | 2.5965    | 0.002    |
| 29.00 | 50.3             | 27.1            | 120.72         | 2.5690    | 0.003    |
| 29.50 | 50.9             | 27.6            | 120.74         | 2.5424    | 0.003    |
| 30.00 | 51.4             | 28.2            | 120.74         | 2.5167    | 0.003    |
| 30.50 | 52.0             | 28.8            | 120.76         | 2.4918    | 0.003    |
| 31.00 | 52.5             | 29.3            | 120.78         | 2.4677    | 0.003    |
| 31.50 | 53.1             | 29.9            | 120.79         | 2.4444    | 0.003    |
| 32.00 | 53.8             | 30.5            | 120.80         | 2.4219    | 0.003    |
| 32.50 | 54.3             | 31.1            | 120.81         | 2.4000    | 0.003    |
| 33.00 | 54.9             | 31.6            | 120.82         | 2.3788    | 0.003    |
| 33.50 | 55.6             | 32.3            | 120.84         | 2.3582    | 0.003    |
| 34.00 | 56.1             | 32.9            | 120.85         | 2.3382    | 0.003    |
| 34.50 | 56.7             | 33.5            | 120.87         | 2.3188    | 0.003    |
| 35.00 | 57.4             | 34.2            | 120.87         | 2.3000    | 0.003    |
| 35.50 | 58.1             | 34.8            | 120.89         | 2.2817    | 0.003    |
| 36.00 | 58.7             | 35.4            | 120.91         | 2.2639    | 0.003    |
| 36.50 | 59.2             | 36.0            | 120.91         | 2.2466    | 0.004    |
| 37.00 | 60.0             | 36.8            | 120.93         | 2.2297    | 0.004    |
| 37.50 | 60.6             | 37.3            | 120.94         | 2.2133    | 0.004    |
| 38.00 | 61.3             | 38.1            | 120.95         | 2.1974    | 0.004    |
| 38.50 | 62.0             | 38.8            | 120.97         | 2.1818    | 0.004    |
| 39.00 | 62.9             | 39.6            | 120.99         | 2.1667    | 0.004    |
| 39.50 | 63.7             | 40.5            | 121.00         | 2.1519    | 0.004    |
| 40.00 | 64.4             | 41.2            | 121.01         | 2.1375    | 0.004    |
| 40.50 | 65.3             | 42.0            | 121.02         | 2.1235    | 0.004    |
| 41.00 | 66.1             | 42.9            | 121.03         | 2.1098    | 0.004    |
| 41.50 | 66.9             | 43.6            | 121.05         | 2.0964    | 0.004    |
| 42.00 | 67.8             | 44.6            | 121.06         | 2.0833    | 0.005    |
| 42.50 | 68.6             | 45.4            | 121.08         | 2.0706    | 0.005    |
| 43.00 | 69.6             | 46.3            | 121.08         | 2.0581    | 0.005    |
| 43.50 | 70.4             | 47.2            | 121.09         | 2.0460    | 0.005    |
| 44.00 | 71.3             | 48.1            | 121.10         | 2.0341    | 0.005    |
| 44.50 | 72.2             | 48.9            | 121.12         | 2.0225    | 0.005    |
| 45.00 | 73.1             | 49.9            | 121.13         | 2.0111    | 0.005    |
| 45.50 | 74.0             | 50.8            | 121.14         | 2.0000    | 0.005    |
| 46.00 | 74.9             | 51.7            | 121.15         | 1.9891    | 0.006    |
| 46.50 | 75.9             | 52.6            | 121.16         | 1.9785    | 0.006    |

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 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11811 DST#2 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/22/98 TIME: 06:46:06  
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|                     | Time   | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|---------------------|--------|------------------|-----------------|----------------|-----------|----------|
|                     | 47.00  | 76.9             | 53.6            | 121.18         | 1.9681    | 0.006    |
|                     | 47.50  | 77.8             | 54.6            | 121.19         | 1.9579    | 0.006    |
|                     | 48.00  | 78.8             | 55.6            | 121.20         | 1.9479    | 0.006    |
|                     | 48.50  | 79.8             | 56.6            | 121.21         | 1.9381    | 0.006    |
|                     | 49.00  | 80.8             | 57.6            | 121.23         | 1.9286    | 0.007    |
|                     | 49.50  | 81.9             | 58.7            | 121.24         | 1.9192    | 0.007    |
|                     | 50.00  | 82.9             | 59.7            | 121.26         | 1.9100    | 0.007    |
|                     | 50.50  | 84.1             | 60.8            | 121.26         | 1.9010    | 0.007    |
|                     | 51.00  | 85.1             | 61.9            | 121.28         | 1.8922    | 0.007    |
|                     | 51.50  | 86.3             | 63.0            | 121.29         | 1.8835    | 0.007    |
|                     | 52.00  | 87.4             | 64.1            | 121.30         | 1.8750    | 0.008    |
|                     | 52.50  | 88.6             | 65.4            | 121.29         | 1.8667    | 0.008    |
|                     | 53.00  | 89.6             | 66.4            | 121.32         | 1.8585    | 0.008    |
|                     | 53.50  | 90.8             | 67.6            | 121.34         | 1.8505    | 0.008    |
|                     | 54.00  | 92.1             | 68.9            | 121.35         | 1.8426    | 0.008    |
|                     | 54.50  | 93.4             | 70.2            | 121.36         | 1.8349    | 0.009    |
|                     | 55.00  | 94.6             | 71.3            | 121.37         | 1.8273    | 0.009    |
|                     | 55.50  | 96.0             | 72.8            | 121.38         | 1.8198    | 0.009    |
|                     | 56.00  | 97.3             | 74.0            | 121.40         | 1.8125    | 0.009    |
|                     | 56.50  | 98.5             | 75.3            | 121.41         | 1.8053    | 0.01     |
|                     | 57.00  | 99.9             | 76.7            | 121.42         | 1.7982    | 0.01     |
|                     | 57.50  | 101.4            | 78.1            | 121.43         | 1.7913    | 0.010    |
|                     | 58.00  | 102.8            | 79.6            | 121.44         | 1.7845    | 0.011    |
|                     | 58.50  | 104.1            | 80.9            | 121.46         | 1.7778    | 0.011    |
|                     | 59.00  | 105.7            | 82.5            | 121.46         | 1.7712    | 0.011    |
|                     | 59.50  | 107.3            | 84.0            | 121.48         | 1.7647    | 0.012    |
|                     | 60.00  | 108.8            | 85.5            | 121.49         | 1.7583    | 0.012    |
|                     | 60.50  | 110.3            | 87.0            | 121.50         | 1.7521    | 0.012    |
| ***** End Shut-in 2 | 61.00  | 111.9            | 88.6            | 121.51         | 1.7459    | 0.013    |
| ***** Final Hydro.  | 266.00 | 1910.5           | 0.0             | 121.79         |           |          |

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 11811

Well Name & No. LUDEBS B #8 Test No. 2 Date 7-22-98  
Company SNODGRUSH PETL. LLC Zone Tested LANSING  
Address DENVER Co. 80203 Elevation 1867 KB 1888 GL  
Co. Rep / Geo. ARDEN RATZLAFF Cont. DONE DRUG. #4 Est. Ft. of Pay 6 Por. 10 %  
Location: Sec. 7 Twp. 27 S Rge. 12 W Co. FRATT State KS  
No. of Copies 5 Distribution Sheet (Y, N) N Turnkey (Y, N) — Evaluation (Y, N) —

Interval Tested 3842 - 3862' Initial Str Wt./Lbs. 48,000 Unseated Str Wt./Lbs. 48,000  
Anchor Length 20' Wt. Set Lbs. 20,000 Wt. Pulled Loose/Lbs. 57,000  
Top Packer Depth 3837' Tool Weight 2100 #  
Bottom Packer Depth 3842' Hole Size — 7 7/8" ✓ Rubber Size — 6 3/4" ✓  
Total Depth 3862' Wt. Pipe Run None Drill Collar Run None  
Mud Wt. 9.2 LCM TR Vis. 48 WL 8.0 Drill Pipe Size 4 1/2" x H Ft. Run 3838'  
Blow Description IF: Wt. surging below. slow increase to 4".

FF: Wt. below. (1/2")

Recovery — Total Feet 20 GIP 90 Ft. in DC — Ft. in DP 20  
Rec. 20 Feet Of SO CM %gas 1 %oil — %water 99 %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 121 °F Gravity N/A °API D@ — °F Corrected Gravity N/A °API —  
RW N.C. @ — °F Chlorides 7,000 ppm Recovery Chlorides 7,000 ppm System

|                                  | AK-1 | Alpine | Alpine              |       |                           |
|----------------------------------|------|--------|---------------------|-------|---------------------------|
| (A) Initial Hydrostatic Mud      | 1985 | 1973   | PSI Recorder No.    | 2342  | T-On Location 0600        |
| (B) First Initial Flow Pressure  | 32   | 15     | PSI (depth)         | 3847' | T-Started 0645            |
| (C) First Final Flow Pressure    | 34   | 18     | PSI Recorder No.    | 10248 | T-Open 0821               |
| (D) Initial Shut-In Pressure     | 232  | 228    | PSI (depth)         | 3859' | T-Pulled 1107             |
| (E) Second Initial Flow Pressure | 37   | 19     | PSI Recorder No.    | —     | T-Out 1255                |
| (F) Second Final Flow Pressure   | 37   | 23     | PSI (depth)         | —     | T-Off Location 1315       |
| (G) Final Shut-in Pressure       | 119  | 112    | PSI Initial Opening | 15    | Test <u>✓</u> 100°        |
| (Q) Final Hydrostatic Mud        | 1953 | 1911   | PSI Initial Shut-in | 40    | Jars <u>—</u>             |
|                                  |      |        | Final Flow          | 30    | Safety Joint <u>✓</u> 50° |
|                                  |      |        | Final Shut-in       | 40    | Straddle <u>—</u>         |
|                                  |      |        |                     | 5     | Circ. Sub <u>—</u>        |
|                                  |      |        |                     | 7     | Sampler <u>—</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 Arden Ratzlaff

Our Representative Gary W. Wolecamp

Extra Packer —  
Elec. Rec. ✓ 150°  
Mileage —  
Other —  
TOTAL PRICE \$ ✓ 800°

# TRILOBITE TESTING L.L.C.

OPERATOR : Sagebrush Petl.LLC

DATE 07-23-98

WELL NAME: Luders B #8

KB 1867.00 ft

TICKET NO: 11812

DST #3

LOCATION : 7-27s-12w Pratt co. KS

GR 1858.00 ft

FORMATION: Viola

INTERVAL : 4165.00 To 4210.00 ft

TD 4210.00 ft

TEST TYPE: CONVENTIONAL

## RECORDER DATA

| Mins              | Field  | 1      | 2      | 3   | 4   | TIME DATA-----         |
|-------------------|--------|--------|--------|-----|-----|------------------------|
| PF 15 Rec.        | 10248  | 10248  | 2342   |     |     | PF Fr. 1726 to 1741 hr |
| SI 60 Range(Psi ) | 4400.0 | 4400.0 | 4995.0 | 0.0 | 0.0 | IS Fr. 1741 to 1841 hr |
| SF 45 Clock(hrs)  | 12 hr  | 12 hr  | batt.  |     |     | SF Fr. 1841 to 1926 hr |
| FS 90 Depth(ft )  | 4207.0 | 4207.0 | 4174.0 | 0.0 | 0.0 | FS Fr. 1926 to 2056 hr |

|                | Field  | 1      | 2      | 3   | 4   |                               |
|----------------|--------|--------|--------|-----|-----|-------------------------------|
| A. Init Hydro  | 2184.0 | 2213.0 | 2100.0 | 0.0 | 0.0 | T STARTED 1522 hr             |
| B. First Flow  | 39.0   | 35.0   | 24.0   | 0.0 | 0.0 | T ON BOTM 1720 hr             |
| B1. Final Flow | 41.0   | 35.0   | 23.0   | 0.0 | 0.0 | T OPEN 1726 hr                |
| C. In Shut-in  | 665.0  | 646.0  | 648.0  | 0.0 | 0.0 | T PULLED 2057 hr              |
| D. Init Flow   | 41.0   | 35.0   | 27.0   | 0.0 | 0.0 | T OUT 2340 hr                 |
| E. Final Flow  | 44.0   | 35.0   | 33.0   | 0.0 | 0.0 |                               |
| F. Fl Shut-in  | 528.0  | 506.0  | 508.0  | 0.0 | 0.0 | TOOL DATA-----                |
| G. Final Hydro | 2129.0 | 2142.0 | 2156.0 | 0.0 | 0.0 | Tool Wt. 2100.00 lbs          |
| Inside/Outside | O      | O      | I      | T   |     | Wt Set On Packer 20000.00 lbs |
|                |        |        |        |     |     | Wt Pulled Loose 62000.00 lbs  |
|                |        |        |        |     |     | Initial Str Wt 49000.00 lbs   |
|                |        |        |        |     |     | Unseated Str Wt 49000.00 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 4147.00 ft        |

## RECOVERY

Tot Fluid 35.00 ft of 0.00 ft in DC and 35.00 ft in DP  
 960.00 ft of Gas in pipe.  
 35.00 ft of Gassy Mud.  
 0.00 ft of Good 1/2" layer of clean oil @ top of tool.  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of Rw n.c. ohms @ degrees F.  
 0.00 ft of EST FT. of PAY-----8  
 SALINITY 7000.00 P.P.M. A.P.I. Gravity 0.00

## BLOW DESCRIPTION

Initial Flow:  
 Strong blow, bottom of bucket in  
 3 1/2 mins.  
 Initial Shut-in:  
 Weak blow. (1/2")  
 Final Flow:  
 Strong blow, bottom of bucket in  
 5 seconds  
 seconds.  
 Final Shut-in:  
 Weak blow, 1/4" or less

SAMPLES: none

SENT TO:Caraway/Liberal

Test Successful: Y

## MUD DATA-----

|                |                |
|----------------|----------------|
| Mud Type       | Starch         |
| Weight         | 9.30 lb/cf     |
| Vis.           | 50.00 S/L      |
| W.L.           | 8.80 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     | 12.00          |
| 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.       | Arden Ratzlaff |
| Contr.         | Duke Drlg.     |
| Rig #          | 4              |
| Unit #         |                |
| Pump T.        | LCM 4 #/bl     |

\*\*\* TOOL DIAGRAM \*\*\* CONVENTIONAL

WELL NAME: Luders B #8

LOCATION : Sec.07 Twp.27s Rg.12w Ks

TICKET No. 11812 D.S.T. No. 3 DATE 07-23-98

TOTAL TOOL TO BOTTOM OF TOP PACKERS ..... 22

INTERVAL TOOL .....

BOTTOM PACKERS AND ANCHOR ..... 15

TOTAL TOOL ..... 37

DRILL COLLAR ANCHOR IN INTERVAL .....

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single 1 Total 30

TOTAL ASSEMBLY ..... 67

D.C. ABOVE TOOLS.Stands Single Total

D.P. ABOVE TOOLS.Stands66 Single 1 Total 4147

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4214

TOTAL DEPTH ..... 4210

TOTAL DRILL PIPE ABOVE K.B. .... 4

REMARKS:

|                           |      |
|---------------------------|------|
| P.O. SUB                  |      |
| C.O. SUB @ top of tool    | 4143 |
| S.I. TOOL Sterling        | 4149 |
| HMV Sterling              | 4154 |
| JARS no                   |      |
| SAFETY JOINT Bowen        | 4156 |
| PACKER Top                | 4160 |
| PACKER Btm.               | 4165 |
| DEPTH 4165                |      |
| STUBB 1 ft.               | 4166 |
| ANCHOR                    |      |
| 4'perfs & sub to          | 4170 |
| Alpine rec. @             | 4174 |
| T.C.                      |      |
| DEPTH                     |      |
| 1 jt. pipe to             | 4200 |
| 5 ft. perfs to            | 4205 |
| AK-1 rec. @               | 4207 |
| BULLNOSE 5 ft. perforated | 4210 |
| T.D.                      |      |

# 11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC TEST HISTORY

Flag Points

t(Min.) P(PSig)

A: 0.00 2180.52  
 B: 0.00 23.99  
 C: 13.00 23.49  
 D: 60.00 647.66  
 E: 0.00 27.86  
 F: 45.00 32.56  
 G: 93.00 508.26  
 Q: 0.00 2156.43

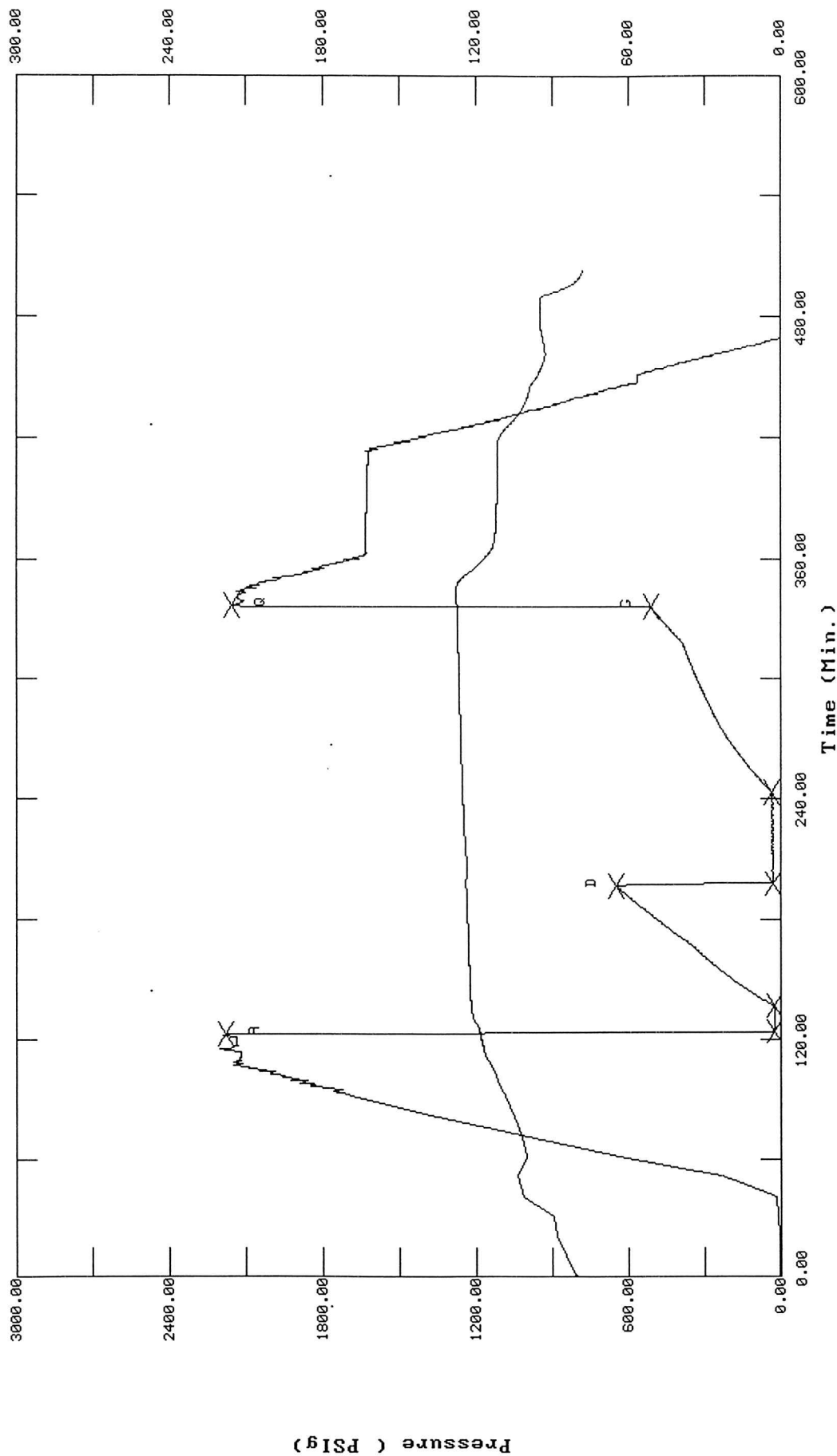
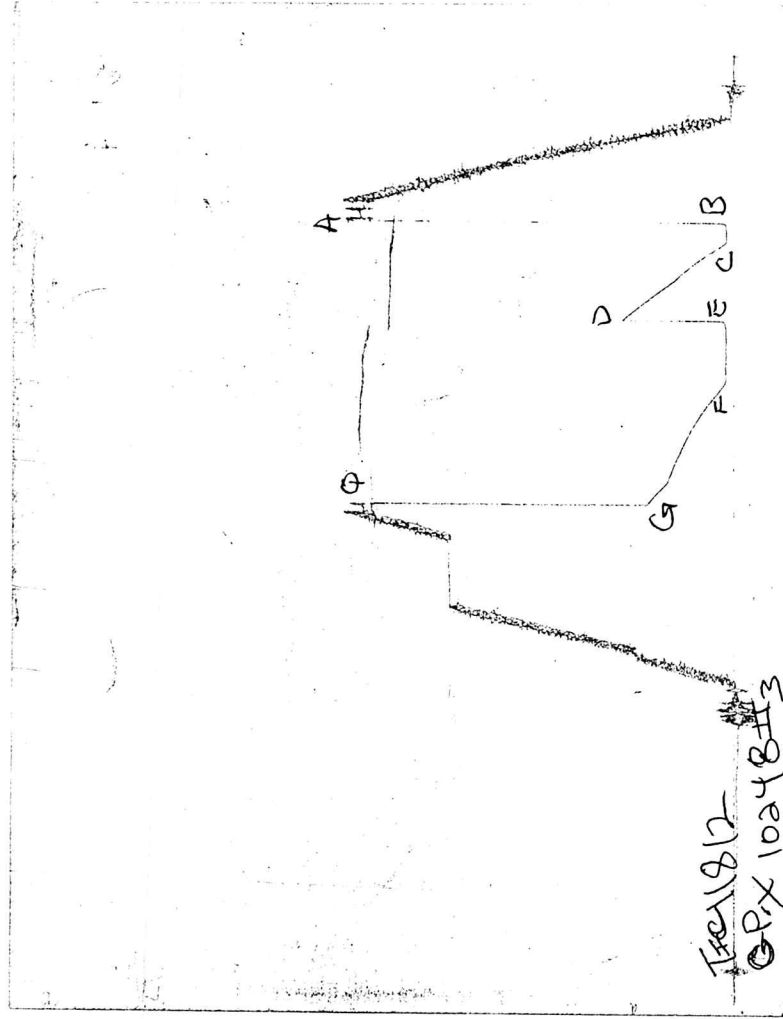


CHART PAGE



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

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/23/98

TIME: 15:22:53

|                      | Time   | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|----------------------|--------|------------------|-----------------|----------------|-----------|----------|
| ***** Initial Hydro. | 123.00 | 2180.5           | 0.0             | 118.29         |           |          |
| ***** Start Flow 1   | 0.00   | 24.0             | 0.0             | 118.47         |           |          |
|                      | 0.50   | 18.7             | -5.3            | 118.56         |           |          |
|                      | 1.00   | 19.2             | -4.8            | 118.66         |           |          |
|                      | 1.50   | 19.9             | -4.1            | 118.77         |           |          |
|                      | 2.00   | 19.7             | -4.3            | 118.91         |           |          |
|                      | 2.50   | 20.6             | -3.4            | 119.12         |           |          |
|                      | 3.00   | 21.1             | -2.9            | 119.36         |           |          |
|                      | 3.50   | 21.1             | -2.9            | 119.61         |           |          |
|                      | 4.00   | 21.4             | -2.6            | 119.87         |           |          |
|                      | 4.50   | 21.4             | -2.6            | 120.11         |           |          |
|                      | 5.00   | 21.8             | -2.2            | 120.32         |           |          |
|                      | 5.50   | 21.9             | -2.1            | 120.52         |           |          |
|                      | 6.00   | 22.1             | -1.9            | 120.70         |           |          |
|                      | 6.50   | 22.4             | -1.6            | 120.86         |           |          |
|                      | 7.00   | 22.3             | -1.7            | 121.00         |           |          |
|                      | 7.50   | 22.7             | -1.3            | 121.11         |           |          |
|                      | 8.00   | 22.7             | -1.3            | 121.23         |           |          |
|                      | 8.50   | 23.1             | -0.9            | 121.32         |           |          |
|                      | 9.00   | 22.9             | -1.1            | 121.41         |           |          |
|                      | 9.50   | 22.9             | -1.1            | 121.48         |           |          |
|                      | 10.00  | 23.0             | -1.0            | 121.55         |           |          |
|                      | 10.50  | 23.2             | -0.8            | 121.61         |           |          |
|                      | 11.00  | 23.2             | -0.8            | 121.66         |           |          |
|                      | 11.50  | 23.5             | -0.5            | 121.72         |           |          |
|                      | 12.00  | 23.6             | -0.4            | 121.76         |           |          |
|                      | 12.50  | 23.3             | -0.7            | 121.80         |           |          |
| ***** End Flow 1     | 13.00  | 23.5             | -0.5            | 121.84         |           |          |
| ***** Start Shutin 1 | 0.00   | 23.5             | 0.0             | 121.84         | 0.0000    | 0.001    |
|                      | 0.50   | 32.0             | 8.5             | 121.87         | 27.0000   | 0.001    |
|                      | 1.00   | 39.7             | 16.2            | 121.91         | 14.0000   | 0.002    |
|                      | 1.50   | 47.0             | 23.5            | 121.94         | 9.6667    | 0.002    |
|                      | 2.00   | 54.0             | 30.5            | 121.97         | 7.5000    | 0.003    |
|                      | 2.50   | 60.8             | 37.3            | 122.00         | 6.2000    | 0.004    |
|                      | 3.00   | 67.6             | 44.1            | 122.03         | 5.3333    | 0.005    |
|                      | 3.50   | 74.2             | 50.7            | 122.05         | 4.7143    | 0.006    |
|                      | 4.00   | 80.8             | 57.3            | 122.08         | 4.2500    | 0.007    |
|                      | 4.50   | 87.2             | 63.7            | 122.10         | 3.8889    | 0.008    |
|                      | 5.00   | 93.5             | 70.0            | 122.13         | 3.6000    | 0.009    |
|                      | 5.50   | 99.8             | 76.3            | 122.15         | 3.3636    | 0.01     |
|                      | 6.00   | 106.0            | 82.5            | 122.17         | 3.1667    | 0.011    |
|                      | 6.50   | 112.1            | 88.6            | 122.19         | 3.0000    | 0.013    |
|                      | 7.00   | 118.2            | 94.8            | 122.21         | 2.8571    | 0.014    |
|                      | 7.50   | 124.1            | 100.6           | 122.23         | 2.7333    | 0.015    |
|                      | 8.00   | 130.2            | 106.7           | 122.25         | 2.6250    | 0.017    |
|                      | 8.50   | 136.0            | 112.5           | 122.27         | 2.5294    | 0.019    |
|                      | 9.00   | 142.1            | 118.6           | 122.29         | 2.4444    | 0.020    |
|                      | 9.50   | 148.0            | 124.5           | 122.30         | 2.3684    | 0.022    |
|                      | 10.00  | 153.7            | 130.2           | 122.32         | 2.3000    | 0.024    |
|                      | 10.50  | 159.5            | 136.0           | 122.35         | 2.2381    | 0.025    |
|                      | 11.00  | 164.9            | 141.4           | 122.36         | 2.1818    | 0.027    |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/23/98

TIME: 15:22:53

| Time  | Pressure<br>PSIg | delta P<br>PSIg | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 11.50 | 170.5            | 147.0           | 122.37         | 2.1304    | 0.029    |
| 12.00 | 176.1            | 152.6           | 122.40         | 2.0833    | 0.031    |
| 12.50 | 181.4            | 157.9           | 122.41         | 2.0400    | 0.033    |
| 13.00 | 186.9            | 163.4           | 122.42         | 2.0000    | 0.035    |
| 13.50 | 192.2            | 168.7           | 122.44         | 1.9630    | 0.037    |
| 14.00 | 197.5            | 174.0           | 122.46         | 1.9286    | 0.039    |
| 14.50 | 202.7            | 179.2           | 122.47         | 1.8966    | 0.041    |
| 15.00 | 207.9            | 184.4           | 122.49         | 1.8667    | 0.043    |
| 15.50 | 212.8            | 189.3           | 122.50         | 1.8387    | 0.045    |
| 16.00 | 217.9            | 194.4           | 122.52         | 1.8125    | 0.047    |
| 16.50 | 222.8            | 199.3           | 122.53         | 1.7879    | 0.050    |
| 17.00 | 227.8            | 204.3           | 122.54         | 1.7647    | 0.052    |
| 17.50 | 232.7            | 209.2           | 122.57         | 1.7429    | 0.054    |
| 18.00 | 237.6            | 214.1           | 122.57         | 1.7222    | 0.056    |
| 18.50 | 242.3            | 218.8           | 122.59         | 1.7027    | 0.059    |
| 19.00 | 246.8            | 223.3           | 122.60         | 1.6842    | 0.061    |
| 19.50 | 251.5            | 228.0           | 122.62         | 1.6667    | 0.063    |
| 20.00 | 256.2            | 232.7           | 122.62         | 1.6500    | 0.066    |
| 20.50 | 260.9            | 237.4           | 122.63         | 1.6341    | 0.068    |
| 21.00 | 265.5            | 242.0           | 122.66         | 1.6190    | 0.071    |
| 21.50 | 270.4            | 246.9           | 122.67         | 1.6047    | 0.073    |
| 22.00 | 275.4            | 252.0           | 122.68         | 1.5909    | 0.076    |
| 22.50 | 280.1            | 256.6           | 122.69         | 1.5778    | 0.078    |
| 23.00 | 284.8            | 261.4           | 122.71         | 1.5652    | 0.081    |
| 23.50 | 289.6            | 266.1           | 122.74         | 1.5532    | 0.084    |
| 24.00 | 294.5            | 271.0           | 122.74         | 1.5417    | 0.087    |
| 24.50 | 299.4            | 275.9           | 122.76         | 1.5306    | 0.090    |
| 25.00 | 303.6            | 280.1           | 122.77         | 1.5200    | 0.092    |
| 25.50 | 307.8            | 284.3           | 122.78         | 1.5098    | 0.095    |
| 26.00 | 312.0            | 288.5           | 122.79         | 1.5000    | 0.097    |
| 26.50 | 316.2            | 292.7           | 122.80         | 1.4906    | 0.100    |
| 27.00 | 320.3            | 296.9           | 122.75         | 1.4815    | 0.103    |
| 27.50 | 324.5            | 301.0           | 122.84         | 1.4727    | 0.105    |
| 28.00 | 328.7            | 305.2           | 122.85         | 1.4643    | 0.108    |
| 28.50 | 332.8            | 309.3           | 122.86         | 1.4561    | 0.111    |
| 29.00 | 336.8            | 313.3           | 122.86         | 1.4483    | 0.113    |
| 29.50 | 340.7            | 317.2           | 122.89         | 1.4407    | 0.116    |
| 30.00 | 344.7            | 321.2           | 122.90         | 1.4333    | 0.119    |
| 30.50 | 349.6            | 326.1           | 122.92         | 1.4262    | 0.122    |
| 31.00 | 355.4            | 331.9           | 122.93         | 1.4194    | 0.126    |
| 31.50 | 361.2            | 337.7           | 122.95         | 1.4127    | 0.130    |
| 32.00 | 367.0            | 343.5           | 122.97         | 1.4062    | 0.135    |
| 32.50 | 372.5            | 349.1           | 122.97         | 1.4000    | 0.139    |
| 33.00 | 378.3            | 354.8           | 122.99         | 1.3939    | 0.143    |
| 33.50 | 384.0            | 360.5           | 123.01         | 1.3881    | 0.147    |
| 34.00 | 389.4            | 365.9           | 123.02         | 1.3824    | 0.152    |
| 34.50 | 394.9            | 371.4           | 123.02         | 1.3768    | 0.156    |
| 35.00 | 400.3            | 376.8           | 123.04         | 1.3714    | 0.160    |
| 35.50 | 405.8            | 382.3           | 123.05         | 1.3662    | 0.165    |
| 36.00 | 411.2            | 387.7           | 123.06         | 1.3611    | 0.169    |
| 36.50 | 416.5            | 393.0           | 123.09         | 1.3562    | 0.173    |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/23/98

TIME: 15:22:53

|                     | Time  | Pressure<br>PSIg | delta P<br>PSIg | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|---------------------|-------|------------------|-----------------|----------------|-----------|----------|
|                     | 37.00 | 422.1            | 398.6           | 123.10         | 1.3514    | 0.178    |
|                     | 37.50 | 427.5            | 404.0           | 123.11         | 1.3467    | 0.183    |
|                     | 38.00 | 432.7            | 409.2           | 123.13         | 1.3421    | 0.187    |
|                     | 38.50 | 438.1            | 414.6           | 123.15         | 1.3377    | 0.192    |
|                     | 39.00 | 443.3            | 419.8           | 123.16         | 1.3333    | 0.197    |
|                     | 39.50 | 448.5            | 425.0           | 123.17         | 1.3291    | 0.201    |
|                     | 40.00 | 453.5            | 430.0           | 123.19         | 1.3250    | 0.206    |
|                     | 40.50 | 458.7            | 435.2           | 123.19         | 1.3210    | 0.210    |
|                     | 41.00 | 463.7            | 440.2           | 123.21         | 1.3171    | 0.215    |
|                     | 41.50 | 469.0            | 445.5           | 123.24         | 1.3133    | 0.220    |
|                     | 42.00 | 473.9            | 450.4           | 123.25         | 1.3095    | 0.225    |
|                     | 42.50 | 479.1            | 455.6           | 123.26         | 1.3059    | 0.229    |
|                     | 43.00 | 484.3            | 460.8           | 123.28         | 1.3023    | 0.235    |
|                     | 43.50 | 489.4            | 465.9           | 123.29         | 1.2989    | 0.239    |
|                     | 44.00 | 494.5            | 471.0           | 123.30         | 1.2955    | 0.245    |
|                     | 44.50 | 499.5            | 476.0           | 123.33         | 1.2921    | 0.250    |
|                     | 45.00 | 504.6            | 481.2           | 123.35         | 1.2889    | 0.255    |
|                     | 45.50 | 509.7            | 486.2           | 123.35         | 1.2857    | 0.260    |
|                     | 46.00 | 514.7            | 491.2           | 123.37         | 1.2826    | 0.265    |
|                     | 46.50 | 519.8            | 496.3           | 123.39         | 1.2796    | 0.270    |
|                     | 47.00 | 524.8            | 501.3           | 123.41         | 1.2766    | 0.275    |
|                     | 47.50 | 529.8            | 506.3           | 123.43         | 1.2737    | 0.281    |
|                     | 48.00 | 534.8            | 511.3           | 123.45         | 1.2708    | 0.286    |
|                     | 48.50 | 539.7            | 516.2           | 123.46         | 1.2680    | 0.291    |
|                     | 49.00 | 544.5            | 521.0           | 123.49         | 1.2653    | 0.296    |
|                     | 49.50 | 549.6            | 526.1           | 123.51         | 1.2626    | 0.302    |
|                     | 50.00 | 554.7            | 531.2           | 123.53         | 1.2600    | 0.308    |
|                     | 50.50 | 559.5            | 536.0           | 123.53         | 1.2574    | 0.313    |
|                     | 51.00 | 564.5            | 541.0           | 123.56         | 1.2549    | 0.319    |
|                     | 51.50 | 569.4            | 545.9           | 123.58         | 1.2524    | 0.324    |
|                     | 52.00 | 574.1            | 550.7           | 123.59         | 1.2500    | 0.330    |
|                     | 52.50 | 578.9            | 555.4           | 123.62         | 1.2476    | 0.335    |
|                     | 53.00 | 583.7            | 560.2           | 123.64         | 1.2453    | 0.341    |
|                     | 53.50 | 588.4            | 564.9           | 123.66         | 1.2430    | 0.346    |
|                     | 54.00 | 593.2            | 569.7           | 123.66         | 1.2407    | 0.352    |
|                     | 54.50 | 598.0            | 574.5           | 123.69         | 1.2385    | 0.358    |
|                     | 55.00 | 602.7            | 579.2           | 123.71         | 1.2364    | 0.363    |
|                     | 55.50 | 607.2            | 583.7           | 123.71         | 1.2342    | 0.369    |
|                     | 56.00 | 611.8            | 588.3           | 123.75         | 1.2321    | 0.374    |
|                     | 56.50 | 616.4            | 592.9           | 123.76         | 1.2301    | 0.380    |
|                     | 57.00 | 621.0            | 597.5           | 123.76         | 1.2281    | 0.386    |
|                     | 57.50 | 625.6            | 602.1           | 123.78         | 1.2261    | 0.391    |
|                     | 58.00 | 630.0            | 606.5           | 123.80         | 1.2241    | 0.397    |
|                     | 58.50 | 634.6            | 611.1           | 123.82         | 1.2222    | 0.403    |
|                     | 59.00 | 638.9            | 615.4           | 123.83         | 1.2203    | 0.408    |
|                     | 59.50 | 643.3            | 619.8           | 123.84         | 1.2185    | 0.414    |
| ***** End Shut-in 1 | 60.00 | 647.7            | 624.2           | 123.86         | 1.2167    | 0.419    |
| ***** Start Flow 2  | 0.00  | 27.9             | 0.0             | 123.87         |           |          |
|                     | 0.50  | 25.3             | -2.5            | 123.86         |           |          |
|                     | 1.00  | 25.8             | -2.1            | 123.85         |           |          |
|                     | 1.50  | 26.7             | -1.2            | 123.84         |           |          |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/23/98

TIME: 15:22:53

| Time  | Pressure<br>PSIg | delta P<br>PSIg | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 2.00  | 27.5             | -0.3            | 123.83         |           |          |
| 2.50  | 28.3             | 0.4             | 123.82         |           |          |
| 3.00  | 27.1             | -0.8            | 123.80         |           |          |
| 3.50  | 28.5             | 0.7             | 123.78         |           |          |
| 4.00  | 27.7             | -0.2            | 123.77         |           |          |
| 4.50  | 28.7             | 0.8             | 123.75         |           |          |
| 5.00  | 29.3             | 1.4             | 123.74         |           |          |
| 5.50  | 28.8             | 0.9             | 123.73         |           |          |
| 6.00  | 29.5             | 1.7             | 123.71         |           |          |
| 6.50  | 30.7             | 2.9             | 123.71         |           |          |
| 7.00  | 29.9             | 2.0             | 123.70         |           |          |
| 7.50  | 30.5             | 2.7             | 123.70         |           |          |
| 8.00  | 28.3             | 0.4             | 123.70         |           |          |
| 8.50  | 29.6             | 1.8             | 123.71         |           |          |
| 9.00  | 28.6             | 0.8             | 123.71         |           |          |
| 9.50  | 28.3             | 0.4             | 123.72         |           |          |
| 10.00 | 30.5             | 2.6             | 123.73         |           |          |
| 10.50 | 30.2             | 2.3             | 123.75         |           |          |
| 11.00 | 28.4             | 0.6             | 123.76         |           |          |
| 11.50 | 29.7             | 1.8             | 123.76         |           |          |
| 12.00 | 28.4             | 0.5             | 123.78         |           |          |
| 12.50 | 28.4             | 0.6             | 123.79         |           |          |
| 13.00 | 30.6             | 2.8             | 123.80         |           |          |
| 13.50 | 29.5             | 1.6             | 123.81         |           |          |
| 14.00 | 28.9             | 1.1             | 123.83         |           |          |
| 14.50 | 29.2             | 1.3             | 123.86         |           |          |
| 15.00 | 30.9             | 3.0             | 123.89         |           |          |
| 15.50 | 29.0             | 1.2             | 123.92         |           |          |
| 16.00 | 29.8             | 1.9             | 123.96         |           |          |
| 16.50 | 31.0             | 3.2             | 123.99         |           |          |
| 17.00 | 32.8             | 5.0             | 124.03         |           |          |
| 17.50 | 31.2             | 3.4             | 124.06         |           |          |
| 18.00 | 29.5             | 1.7             | 124.09         |           |          |
| 18.50 | 31.6             | 3.8             | 124.13         |           |          |
| 19.00 | 30.1             | 2.3             | 124.16         |           |          |
| 19.50 | 29.1             | 1.3             | 124.19         |           |          |
| 20.00 | 32.3             | 4.4             | 124.22         |           |          |
| 20.50 | 31.2             | 3.4             | 124.25         |           |          |
| 21.00 | 30.0             | 2.2             | 124.28         |           |          |
| 21.50 | 29.3             | 1.4             | 124.31         |           |          |
| 22.00 | 32.4             | 4.5             | 124.34         |           |          |
| 22.50 | 29.4             | 1.5             | 124.37         |           |          |
| 23.00 | 30.1             | 2.3             | 124.39         |           |          |
| 23.50 | 32.1             | 4.2             | 124.41         |           |          |
| 24.00 | 30.1             | 2.3             | 124.43         |           |          |
| 24.50 | 29.9             | 2.0             | 124.46         |           |          |
| 25.00 | 31.0             | 3.2             | 124.49         |           |          |
| 25.50 | 31.1             | 3.3             | 124.51         |           |          |
| 26.00 | 30.6             | 2.8             | 124.53         |           |          |
| 26.50 | 32.6             | 4.8             | 124.55         |           |          |
| 27.00 | 29.5             | 1.7             | 124.58         |           |          |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/23/98 TIME: 15:22:53

|                      | Time  | Pressure<br>PSIg | delta P<br>PSIg | Temp.<br>DEG F | (T+dT)/dT | P <sup>2</sup> /10 <sup>6</sup> |
|----------------------|-------|------------------|-----------------|----------------|-----------|---------------------------------|
|                      | 27.50 | 31.4             | 3.5             | 124.60         |           |                                 |
|                      | 28.00 | 30.5             | 2.6             | 124.62         |           |                                 |
|                      | 28.50 | 31.6             | 3.8             | 124.65         |           |                                 |
|                      | 29.00 | 29.7             | 1.8             | 124.66         |           |                                 |
|                      | 29.50 | 32.7             | 4.9             | 124.68         |           |                                 |
|                      | 30.00 | 29.7             | 1.8             | 124.71         |           |                                 |
|                      | 30.50 | 30.5             | 2.6             | 124.73         |           |                                 |
|                      | 31.00 | 31.1             | 3.3             | 124.75         |           |                                 |
|                      | 31.50 | 29.7             | 1.8             | 124.77         |           |                                 |
|                      | 32.00 | 31.1             | 3.3             | 124.78         |           |                                 |
|                      | 32.50 | 32.9             | 5.0             | 124.80         |           |                                 |
|                      | 33.00 | 32.0             | 4.1             | 124.82         |           |                                 |
|                      | 33.50 | 31.6             | 3.8             | 124.83         |           |                                 |
|                      | 34.00 | 30.3             | 2.4             | 124.85         |           |                                 |
|                      | 34.50 | 30.9             | 3.0             | 124.87         |           |                                 |
|                      | 35.00 | 31.2             | 3.4             | 124.89         |           |                                 |
|                      | 35.50 | 34.3             | 6.5             | 124.90         |           |                                 |
|                      | 36.00 | 33.1             | 5.3             | 124.93         |           |                                 |
|                      | 36.50 | 30.0             | 2.1             | 124.94         |           |                                 |
|                      | 37.00 | 30.6             | 2.8             | 124.95         |           |                                 |
|                      | 37.50 | 31.8             | 3.9             | 124.98         |           |                                 |
|                      | 38.00 | 30.6             | 2.8             | 124.99         |           |                                 |
|                      | 38.50 | 31.6             | 3.8             | 125.00         |           |                                 |
|                      | 39.00 | 30.5             | 2.7             | 125.02         |           |                                 |
|                      | 39.50 | 34.2             | 6.3             | 125.03         |           |                                 |
|                      | 40.00 | 30.5             | 2.6             | 125.05         |           |                                 |
|                      | 40.50 | 30.8             | 2.9             | 125.07         |           |                                 |
|                      | 41.00 | 31.0             | 3.1             | 125.08         |           |                                 |
|                      | 41.50 | 32.9             | 5.0             | 125.10         |           |                                 |
|                      | 42.00 | 30.7             | 2.9             | 125.11         |           |                                 |
|                      | 42.50 | 32.1             | 4.2             | 125.13         |           |                                 |
|                      | 43.00 | 31.0             | 3.2             | 125.14         |           |                                 |
|                      | 43.50 | 32.1             | 4.2             | 125.15         |           |                                 |
|                      | 44.00 | 31.5             | 3.7             | 125.17         |           |                                 |
|                      | 44.50 | 33.5             | 5.6             | 125.19         |           |                                 |
| ***** End Flow 2     | 45.00 | 32.6             | 4.7             | 125.21         |           |                                 |
| ***** Start Shutin 2 | 0.00  | 32.6             | 0.0             | 125.21         | 0.0000    | 0.001                           |
|                      | 0.50  | 36.6             | 4.0             | 125.22         | 117.0000  | 0.001                           |
|                      | 1.00  | 40.9             | 8.3             | 125.23         | 59.0000   | 0.002                           |
|                      | 1.50  | 44.8             | 12.3            | 125.25         | 39.6667   | 0.002                           |
|                      | 2.00  | 48.6             | 16.0            | 125.27         | 30.0000   | 0.002                           |
|                      | 2.50  | 52.6             | 20.1            | 125.28         | 24.2000   | 0.003                           |
|                      | 3.00  | 56.4             | 23.8            | 125.30         | 20.3333   | 0.003                           |
|                      | 3.50  | 59.8             | 27.3            | 125.32         | 17.5714   | 0.004                           |
|                      | 4.00  | 63.4             | 30.9            | 125.32         | 15.5000   | 0.004                           |
|                      | 4.50  | 67.2             | 34.7            | 125.34         | 13.8889   | 0.005                           |
|                      | 5.00  | 70.7             | 38.2            | 125.36         | 12.6000   | 0.005                           |
|                      | 5.50  | 74.0             | 41.5            | 125.37         | 11.5455   | 0.005                           |
|                      | 6.00  | 77.6             | 45.1            | 125.39         | 10.6667   | 0.006                           |
|                      | 6.50  | 81.1             | 48.6            | 125.41         | 9.9231    | 0.007                           |
|                      | 7.00  | 84.6             | 52.0            | 125.41         | 9.2857    | 0.007                           |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/23/98

TIME: 15:22:53

| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P^2/10^6 |
|-------|------------------|-----------------|----------------|-----------|----------|
| 7.50  | 88.1             | 55.6            | 125.43         | 8.7333    | 0.008    |
| 8.00  | 91.6             | 59.0            | 125.45         | 8.2500    | 0.008    |
| 8.50  | 95.0             | 62.4            | 125.46         | 7.8235    | 0.009    |
| 9.00  | 98.4             | 65.9            | 125.48         | 7.4444    | 0.01     |
| 9.50  | 101.8            | 69.2            | 125.49         | 7.1053    | 0.010    |
| 10.00 | 105.2            | 72.6            | 125.51         | 6.8000    | 0.011    |
| 10.50 | 108.5            | 76.0            | 125.52         | 6.5238    | 0.012    |
| 11.00 | 111.9            | 79.3            | 125.54         | 6.2727    | 0.013    |
| 11.50 | 115.1            | 82.6            | 125.55         | 6.0435    | 0.013    |
| 12.00 | 118.5            | 85.9            | 125.57         | 5.8333    | 0.014    |
| 12.50 | 121.9            | 89.4            | 125.57         | 5.6400    | 0.015    |
| 13.00 | 125.2            | 92.7            | 125.59         | 5.4615    | 0.016    |
| 13.50 | 128.5            | 95.9            | 125.60         | 5.2963    | 0.017    |
| 14.00 | 131.7            | 99.1            | 125.62         | 5.1429    | 0.017    |
| 14.50 | 134.9            | 102.3           | 125.64         | 5.0000    | 0.018    |
| 15.00 | 138.1            | 105.5           | 125.65         | 4.8667    | 0.019    |
| 15.50 | 141.2            | 108.7           | 125.66         | 4.7419    | 0.020    |
| 16.00 | 144.3            | 111.8           | 125.67         | 4.6250    | 0.021    |
| 16.50 | 147.5            | 114.9           | 125.65         | 4.5152    | 0.022    |
| 17.00 | 150.6            | 118.0           | 125.70         | 4.4118    | 0.023    |
| 17.50 | 153.7            | 121.1           | 125.72         | 4.3143    | 0.024    |
| 18.00 | 156.7            | 124.1           | 125.73         | 4.2222    | 0.025    |
| 18.50 | 159.5            | 127.0           | 125.74         | 4.1351    | 0.025    |
| 19.00 | 162.5            | 129.9           | 125.75         | 4.0526    | 0.026    |
| 19.50 | 165.3            | 132.8           | 125.78         | 3.9744    | 0.027    |
| 20.00 | 168.4            | 135.8           | 125.78         | 3.9000    | 0.028    |
| 20.50 | 171.2            | 138.6           | 125.79         | 3.8293    | 0.029    |
| 21.00 | 174.1            | 141.5           | 125.81         | 3.7619    | 0.030    |
| 21.50 | 176.8            | 144.3           | 125.81         | 3.6977    | 0.031    |
| 22.00 | 179.6            | 147.0           | 125.83         | 3.6364    | 0.032    |
| 22.50 | 182.5            | 149.9           | 125.83         | 3.5778    | 0.033    |
| 23.00 | 185.1            | 152.6           | 125.85         | 3.5217    | 0.034    |
| 23.50 | 187.8            | 155.3           | 125.86         | 3.4681    | 0.035    |
| 24.00 | 190.5            | 158.0           | 125.88         | 3.4167    | 0.036    |
| 24.50 | 193.3            | 160.7           | 125.89         | 3.3673    | 0.037    |
| 25.00 | 195.9            | 163.3           | 125.90         | 3.3200    | 0.038    |
| 25.50 | 198.5            | 165.9           | 125.91         | 3.2745    | 0.039    |
| 26.00 | 201.0            | 168.4           | 125.92         | 3.2308    | 0.040    |
| 26.50 | 203.7            | 171.1           | 125.93         | 3.1887    | 0.041    |
| 27.00 | 206.2            | 173.6           | 125.95         | 3.1481    | 0.043    |
| 27.50 | 208.8            | 176.2           | 125.96         | 3.1091    | 0.044    |
| 28.00 | 211.3            | 178.8           | 125.97         | 3.0714    | 0.045    |
| 28.50 | 213.9            | 181.4           | 125.98         | 3.0351    | 0.046    |
| 29.00 | 216.4            | 183.9           | 126.00         | 3.0000    | 0.047    |
| 29.50 | 218.9            | 186.3           | 126.01         | 2.9661    | 0.048    |
| 30.00 | 221.5            | 188.9           | 126.02         | 2.9333    | 0.049    |
| 30.50 | 224.0            | 191.4           | 126.00         | 2.9016    | 0.050    |
| 31.00 | 226.3            | 193.8           | 126.04         | 2.8710    | 0.051    |
| 31.50 | 228.8            | 196.2           | 126.05         | 2.8413    | 0.052    |
| 32.00 | 231.3            | 198.7           | 126.06         | 2.8125    | 0.053    |
| 32.50 | 233.5            | 200.9           | 126.07         | 2.7846    | 0.055    |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/23/98

TIME: 15:22:53

| Time  | Pressure<br>PSig | delta P<br>PSig | Temp.<br>DEG F | (T+dT)/dT | P <sup>2</sup> /10 <sup>6</sup> |
|-------|------------------|-----------------|----------------|-----------|---------------------------------|
| 33.00 | 235.8            | 203.3           | 126.08         | 2.7576    | 0.056                           |
| 33.50 | 237.9            | 205.4           | 126.10         | 2.7313    | 0.057                           |
| 34.00 | 240.1            | 207.6           | 126.11         | 2.7059    | 0.058                           |
| 34.50 | 242.3            | 209.7           | 126.12         | 2.6812    | 0.059                           |
| 35.00 | 244.5            | 211.9           | 126.13         | 2.6571    | 0.060                           |
| 35.50 | 246.6            | 214.0           | 126.14         | 2.6338    | 0.061                           |
| 36.00 | 248.6            | 216.0           | 126.15         | 2.6111    | 0.062                           |
| 36.50 | 250.5            | 218.0           | 126.16         | 2.5890    | 0.063                           |
| 37.00 | 252.5            | 220.0           | 126.18         | 2.5676    | 0.064                           |
| 37.50 | 254.7            | 222.2           | 126.19         | 2.5467    | 0.065                           |
| 38.00 | 256.9            | 224.3           | 126.19         | 2.5263    | 0.066                           |
| 38.50 | 259.0            | 226.4           | 126.20         | 2.5065    | 0.067                           |
| 39.00 | 261.0            | 228.5           | 126.22         | 2.4872    | 0.068                           |
| 39.50 | 262.9            | 230.4           | 126.23         | 2.4684    | 0.069                           |
| 40.00 | 265.0            | 232.5           | 126.25         | 2.4500    | 0.070                           |
| 40.50 | 267.0            | 234.4           | 126.25         | 2.4321    | 0.071                           |
| 41.00 | 268.8            | 236.3           | 126.26         | 2.4146    | 0.072                           |
| 41.50 | 270.9            | 238.4           | 126.27         | 2.3976    | 0.073                           |
| 42.00 | 273.2            | 240.6           | 126.28         | 2.3810    | 0.075                           |
| 42.50 | 275.1            | 242.6           | 126.29         | 2.3647    | 0.076                           |
| 43.00 | 276.9            | 244.3           | 126.31         | 2.3488    | 0.077                           |
| 43.50 | 278.8            | 246.2           | 126.31         | 2.3333    | 0.078                           |
| 44.00 | 280.6            | 248.0           | 126.33         | 2.3182    | 0.079                           |
| 44.50 | 282.4            | 249.9           | 126.33         | 2.3034    | 0.080                           |
| 45.00 | 284.3            | 251.7           | 126.35         | 2.2889    | 0.081                           |
| 45.50 | 286.3            | 253.7           | 126.36         | 2.2747    | 0.082                           |
| 46.00 | 288.1            | 255.6           | 126.37         | 2.2609    | 0.083                           |
| 46.50 | 289.9            | 257.3           | 126.38         | 2.2473    | 0.084                           |
| 47.00 | 291.7            | 259.2           | 126.38         | 2.2340    | 0.085                           |
| 47.50 | 293.5            | 260.9           | 126.40         | 2.2211    | 0.086                           |
| 48.00 | 295.3            | 262.8           | 126.41         | 2.2083    | 0.087                           |
| 48.50 | 297.3            | 264.8           | 126.42         | 2.1959    | 0.088                           |
| 49.00 | 299.2            | 266.6           | 126.43         | 2.1837    | 0.090                           |
| 49.50 | 301.0            | 268.4           | 126.45         | 2.1717    | 0.091                           |
| 50.00 | 302.8            | 270.2           | 126.46         | 2.1600    | 0.092                           |
| 50.50 | 304.6            | 272.1           | 126.46         | 2.1485    | 0.093                           |
| 51.00 | 306.5            | 273.9           | 126.48         | 2.1373    | 0.094                           |
| 51.50 | 308.3            | 275.7           | 126.49         | 2.1262    | 0.095                           |
| 52.00 | 310.1            | 277.5           | 126.52         | 2.1154    | 0.096                           |
| 52.50 | 311.9            | 279.3           | 126.53         | 2.1048    | 0.097                           |
| 53.00 | 313.5            | 281.0           | 126.53         | 2.0943    | 0.098                           |
| 53.50 | 315.4            | 282.8           | 126.53         | 2.0841    | 0.099                           |
| 54.00 | 317.2            | 284.7           | 126.55         | 2.0741    | 0.101                           |
| 54.50 | 319.0            | 286.4           | 126.55         | 2.0642    | 0.102                           |
| 55.00 | 320.8            | 288.2           | 126.55         | 2.0545    | 0.103                           |
| 55.50 | 322.4            | 289.8           | 126.55         | 2.0450    | 0.104                           |
| 56.00 | 323.9            | 291.3           | 126.55         | 2.0357    | 0.105                           |
| 56.50 | 325.6            | 293.1           | 126.55         | 2.0265    | 0.106                           |
| 57.00 | 327.3            | 294.8           | 126.55         | 2.0175    | 0.107                           |
| 57.50 | 329.1            | 296.5           | 126.55         | 2.0087    | 0.108                           |
| 58.00 | 330.7            | 298.1           | 126.56         | 2.0000    | 0.109                           |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/23/98 TIME: 15:22:53

| Time  | Pressure<br>PSIg | delta P<br>PSIg | Temp.<br>DEG F | (T+dT)/dT | P <sup>2</sup> /10 <sup>6</sup> |
|-------|------------------|-----------------|----------------|-----------|---------------------------------|
| 58.50 | 332.4            | 299.9           | 126.59         | 1.9915    | 0.111                           |
| 59.00 | 334.2            | 301.6           | 126.60         | 1.9831    | 0.112                           |
| 59.50 | 335.7            | 303.1           | 126.61         | 1.9748    | 0.113                           |
| 60.00 | 337.4            | 304.8           | 126.63         | 1.9667    | 0.114                           |
| 60.50 | 339.1            | 306.5           | 126.64         | 1.9587    | 0.115                           |
| 61.00 | 340.7            | 308.2           | 126.65         | 1.9508    | 0.116                           |
| 61.50 | 342.3            | 309.8           | 126.66         | 1.9431    | 0.117                           |
| 62.00 | 344.1            | 311.5           | 126.67         | 1.9355    | 0.118                           |
| 62.50 | 345.6            | 313.1           | 126.68         | 1.9280    | 0.119                           |
| 63.00 | 347.3            | 314.7           | 126.69         | 1.9206    | 0.121                           |
| 63.50 | 348.9            | 316.3           | 126.70         | 1.9134    | 0.122                           |
| 64.00 | 350.5            | 317.9           | 126.71         | 1.9062    | 0.123                           |
| 64.50 | 352.1            | 319.5           | 126.72         | 1.8992    | 0.124                           |
| 65.00 | 353.7            | 321.1           | 126.73         | 1.8923    | 0.125                           |
| 65.50 | 355.3            | 322.8           | 126.74         | 1.8855    | 0.126                           |
| 66.00 | 357.0            | 324.5           | 126.75         | 1.8788    | 0.127                           |
| 66.50 | 358.6            | 326.1           | 126.76         | 1.8722    | 0.129                           |
| 67.00 | 360.4            | 327.8           | 126.76         | 1.8657    | 0.130                           |
| 67.50 | 362.1            | 329.5           | 126.78         | 1.8593    | 0.131                           |
| 68.00 | 363.5            | 330.9           | 126.79         | 1.8529    | 0.132                           |
| 68.50 | 365.1            | 332.5           | 126.79         | 1.8467    | 0.133                           |
| 69.00 | 366.6            | 334.0           | 126.80         | 1.8406    | 0.134                           |
| 69.50 | 368.1            | 335.5           | 126.81         | 1.8345    | 0.135                           |
| 70.00 | 369.5            | 337.0           | 126.82         | 1.8286    | 0.137                           |
| 70.50 | 370.8            | 338.2           | 126.83         | 1.8227    | 0.137                           |
| 71.00 | 372.5            | 339.9           | 126.84         | 1.8169    | 0.139                           |
| 71.50 | 374.1            | 341.6           | 126.86         | 1.8112    | 0.140                           |
| 72.00 | 375.7            | 343.1           | 126.86         | 1.8056    | 0.141                           |
| 72.50 | 377.0            | 344.4           | 126.87         | 1.8000    | 0.142                           |
| 73.00 | 377.9            | 345.4           | 126.88         | 1.7945    | 0.143                           |
| 73.50 | 379.2            | 346.6           | 126.88         | 1.7891    | 0.144                           |
| 74.00 | 380.7            | 348.1           | 126.91         | 1.7838    | 0.145                           |
| 74.50 | 382.0            | 349.5           | 126.91         | 1.7785    | 0.146                           |
| 75.00 | 383.6            | 351.1           | 126.91         | 1.7733    | 0.147                           |
| 75.50 | 385.2            | 352.7           | 126.93         | 1.7682    | 0.148                           |
| 76.00 | 388.2            | 355.7           | 126.93         | 1.7632    | 0.151                           |
| 76.50 | 392.6            | 360.1           | 126.95         | 1.7582    | 0.154                           |
| 77.00 | 396.7            | 364.2           | 126.95         | 1.7532    | 0.157                           |
| 77.50 | 400.8            | 368.3           | 126.96         | 1.7484    | 0.161                           |
| 78.00 | 404.9            | 372.3           | 126.97         | 1.7436    | 0.164                           |
| 78.50 | 408.8            | 376.2           | 126.98         | 1.7389    | 0.167                           |
| 79.00 | 412.7            | 380.2           | 127.00         | 1.7342    | 0.170                           |
| 79.50 | 416.6            | 384.1           | 127.00         | 1.7296    | 0.174                           |
| 80.00 | 420.5            | 387.9           | 127.01         | 1.7250    | 0.177                           |
| 80.50 | 424.2            | 391.7           | 127.02         | 1.7205    | 0.180                           |
| 81.00 | 427.9            | 395.4           | 127.03         | 1.7160    | 0.183                           |
| 81.50 | 431.7            | 399.2           | 127.05         | 1.7117    | 0.186                           |
| 82.00 | 435.4            | 402.9           | 127.05         | 1.7073    | 0.190                           |
| 82.50 | 439.1            | 406.5           | 127.07         | 1.7030    | 0.193                           |
| 83.00 | 442.8            | 410.2           | 127.07         | 1.6988    | 0.196                           |
| 83.50 | 446.4            | 413.8           | 127.09         | 1.6946    | 0.199                           |

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC

DATE: 07/23/98

TIME: 15:22:53

|                     | Time   | Pressure<br>PSIg | delta P<br>PSIg | Temp.<br>DEG F | (T+dT)/dT | P <sup>2</sup> /10 <sup>6</sup> |
|---------------------|--------|------------------|-----------------|----------------|-----------|---------------------------------|
|                     | 84.00  | 449.9            | 417.4           | 127.10         | 1.6905    | 0.202                           |
|                     | 84.50  | 453.5            | 420.9           | 127.10         | 1.6864    | 0.206                           |
|                     | 85.00  | 456.9            | 424.3           | 127.12         | 1.6824    | 0.209                           |
|                     | 85.50  | 460.5            | 427.9           | 127.11         | 1.6784    | 0.212                           |
|                     | 86.00  | 463.9            | 431.4           | 127.13         | 1.6744    | 0.215                           |
|                     | 86.50  | 467.3            | 434.7           | 127.14         | 1.6705    | 0.218                           |
|                     | 87.00  | 470.7            | 438.2           | 127.15         | 1.6667    | 0.222                           |
|                     | 87.50  | 474.1            | 441.5           | 127.16         | 1.6629    | 0.225                           |
|                     | 88.00  | 477.5            | 444.9           | 127.17         | 1.6591    | 0.228                           |
|                     | 88.50  | 480.8            | 448.3           | 127.19         | 1.6554    | 0.231                           |
|                     | 89.00  | 484.2            | 451.6           | 127.20         | 1.6517    | 0.234                           |
|                     | 89.50  | 487.7            | 455.1           | 127.21         | 1.6480    | 0.238                           |
|                     | 90.00  | 491.0            | 458.4           | 127.22         | 1.6444    | 0.241                           |
|                     | 90.50  | 494.2            | 461.7           | 127.23         | 1.6409    | 0.244                           |
|                     | 91.00  | 497.6            | 465.0           | 127.25         | 1.6374    | 0.248                           |
|                     | 91.50  | 500.9            | 468.3           | 127.26         | 1.6339    | 0.251                           |
|                     | 92.00  | 504.1            | 471.6           | 127.27         | 1.6304    | 0.254                           |
|                     | 92.50  | 507.4            | 474.9           | 127.28         | 1.6270    | 0.257                           |
| ***** End Shut-in 2 | 93.00  | 508.3            | 475.7           | 127.30         | 1.6237    | 0.258                           |
| ***** Final Hydro.  | 337.00 | 2156.4           | 0.0             | 127.40         |           |                                 |

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 11812

|                 |                                            |                           |               |                   |            |
|-----------------|--------------------------------------------|---------------------------|---------------|-------------------|------------|
| Well Name & No. | LUDERS B#8                                 | Test No.                  | 3             | Date              | 7-23-98    |
| Company         | SAGEBRUSH PETL. LLC                        | Zone Tested               | VIOLA         |                   |            |
| Address         | 1888 SHERMAN ST. STE. 500, DENVER CO 80203 |                           | Elevation     | 1867              | KB 1858 GL |
| Co. Rep / Geo.  | ARDEN RATZLAFF                             | Cont.                     | DUKE DRILL #4 | Est. Ft. of Pay   | 8          |
| Location: Sec.  | 7                                          | Twp.                      | 27S           | Rge.              | 12W        |
|                 |                                            |                           |               | Co.               | PRATT      |
|                 |                                            |                           |               | State             | KS.        |
| No. of Copies   | 5                                          | Distribution Sheet (Y, N) | N             | Turnkey (Y, N)    | -          |
|                 |                                            |                           |               | Evaluation (Y, N) | -          |

|                       |                                               |                      |                    |                       |                 |
|-----------------------|-----------------------------------------------|----------------------|--------------------|-----------------------|-----------------|
| Interval Tested       | 4165 - 4210'                                  | Initial Str Wt./Lbs. | 49,000             | Unseated Str Wt./Lbs. | 49,000          |
| Anchor Length         | 45'                                           | Wt. Set Lbs.         | 20,000             | Wt. Pulled Loose/Lbs. | 62,000          |
| Top Packer Depth      | 4160'                                         | Tool Weight          | 2,100#             |                       |                 |
| Bottom Packer Depth   | 4165'                                         | Hole Size — 7 7/8"   | ✓                  | Rubber Size — 6 3/4"  | ✓               |
| Total Depth           | 4210'                                         | Wt. Pipe Run         | NONE               | Drill Collar Run      | NONE            |
| Mud Wt.               | 9.3                                           | LCM                  | 4#                 | Vis.                  | 50              |
|                       |                                               | WL                   | 8.8 cc.            | Drill Pipe Size       | 4 1/2" x H.     |
|                       |                                               |                      |                    | Ft. Run               | 4147            |
| Blow Description      | IF: Strong below. Btm. of liquid in 3.5 mins. |                      |                    |                       |                 |
|                       | ISI: Weak below. 1 (1/2")                     |                      |                    |                       |                 |
|                       | FF: Strong below. Btm. of liquid in 5 secs.   |                      |                    |                       |                 |
|                       | FSI: Weak below (1/4" or less)                |                      |                    |                       |                 |
| Recovery — Total Feet | 35' Fluid                                     | GIP                  | 960                | Ft. in DC             | ~               |
|                       |                                               |                      |                    | Ft. in DP             | 35'             |
| Rec.                  | 35                                            | Feet Of              | Coarse Mud.        | %gas                  | %oil            |
|                       |                                               |                      |                    | %water                | %mud            |
| Rec.                  |                                               | Feet Of              |                    | %gas                  | %oil            |
|                       |                                               |                      |                    | %water                | %mud            |
| Rec.                  |                                               | Feet Of              | Good 1/2" layer of | %gas                  | %oil            |
|                       |                                               |                      |                    | %water                | %mud            |
| Rec.                  |                                               | Feet Of              | clean oil @ top of | %gas                  | %oil            |
|                       |                                               |                      |                    | %water                | %mud            |
| Rec.                  |                                               | Feet Of              | Tool!              | %gas                  | %oil            |
|                       |                                               |                      |                    | %water                | %mud            |
| BHT                   | 127                                           | °F Gravity           | N/A                | °API D@               | ~               |
|                       |                                               |                      |                    | °F Corrected Gravity  | N/A             |
|                       |                                               |                      |                    | °API                  |                 |
| RW                    | N.E.                                          | @                    | ~                  | °F Chlorides          | 7,000           |
|                       |                                               |                      |                    | ppm Recovery          | Chlorides 7,000 |
|                       |                                               |                      |                    | ppm System            |                 |

|                                  |      |        |     |                 |               |                |        |
|----------------------------------|------|--------|-----|-----------------|---------------|----------------|--------|
|                                  | AK-1 | Alpine |     |                 |               |                |        |
| (A) Initial Hydrostatic Mud      | 2184 | 2100   | PSI | Recorder No.    | 2342          |                |        |
|                                  |      |        |     |                 | T-On Location | 1455           |        |
| (B) First Initial Flow Pressure  | 39   | 24     | PSI | (depth)         | 4174'         | T-Started      | 1522   |
| (C) First Final Flow Pressure    | 41   | 23     | PSI | Recorder No.    | 10248         | T-Open         | 1726   |
| (D) Initial Shut-In Pressure     | 665  | 648    | PSI | (depth)         | 4207'         | T-Pulled       | 2057   |
| (E) Second Initial Flow Pressure | 41   | 22     | PSI | Recorder No.    | ~             | T-Out          | 2340   |
| (F) Second Final Flow Pressure   | 44   | 33     | PSI | (depth)         | ~             | T-Off Location | 0005   |
| (G) Final Shut-in Pressure       | 528  | 508    | PSI | Initial Opening | 15            | Test           | ✓ 700° |
| (Q) Final Hydrostatic Mud        | 2129 | 2156   | PSI | Initial Shut-in | 60            | Jars           |        |
|                                  |      |        |     | Final Flow      | 45            | Safety Joint   | ✓ 50°  |
|                                  |      |        |     | Final Shut-in   | 90            | Straddle       |        |
|                                  |      |        |     |                 | 4             | Circ. Sub      |        |
|                                  |      |        |     |                 |               | Sampler        |        |

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 Arden Ratzlaff

Our Representative Cory L. Lutz

Extra Packer \_\_\_\_\_  
Elec. Rec. ✓ 150°  
Mileage \_\_\_\_\_  
Other \_\_\_\_\_  
TOTAL PRICE \$ ✓ 900.00

Operator.....: Sagebrush Petr.  
Well Name.....: Luders B #8  
DST Number.....: 3

Location.: 7-27s-12w Pratt co. KS    Recorder No...: 2342  
Test Type: conv                      Recorder Depth: 4174  
Formation: Viola                      Test Interval.: 4165-4210

RESERVOIR CALCULATIONS: Fluid calculations based on shut-in #2

RESERVOIR PARAMETERS USED:

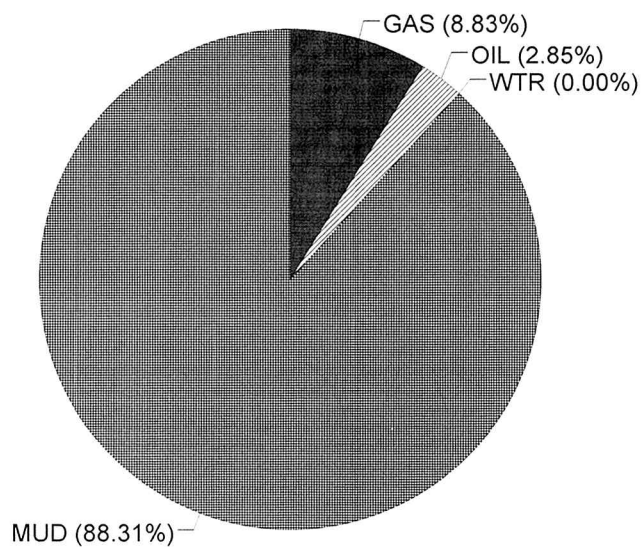
|                              |                        |
|------------------------------|------------------------|
| Net Pay.....                 | 36.00 ft               |
| Porosity.....                | 18.00 %                |
| Bottom Hole Temp.....        | 127.00 F               |
| Specific Gravity.....        | 0.030                  |
| API Gravity.....             | 36.00                  |
| Compressibility.....         | 0.025200 /psi          |
| Viscosity.....               | 2.3332 cp              |
| Total Recovery.....          | 35.00 ft               |
| Total Flowing Time.....      | 60.00 min.             |
| Flow Rate.....               | 0.002 bbls/d           |
| Final Flowing Pressure.....  | 33.00 psi              |
| Horner Slope.....            | 2787.3589 psi/cycle    |
| Extrapolated Pressure.....   | 1087.47 psi            |
| Formation Volume Factor..... | 1.08 Reservoir/Surface |
| Well Bore Radius.....        | 3.94 in                |

RESULTS:

|                                 |                    |
|---------------------------------|--------------------|
| Effective Permeability.....     | 0.000008 md        |
| Flow Capacity.....              | 0.0003 md.ft       |
| Transmissibility.....           | 0.0001 md.ft/cp    |
| Skin Factor.....                | 7.0548             |
| Radius of Investigation.....    | 0.00081 ft         |
| Damage Ratio.....               | -0.0658            |
| Productivity Index.....         | 0.0000 bbls/psi.d  |
| Productivity Index W/O Damage.. | -0.0000 bbls/psi.d |

|       |   |        |       |
|-------|---|--------|-------|
| DST # | 3 | TICKET | 11812 |
|-------|---|--------|-------|

|            |           |   |                |         |
|------------|-----------|---|----------------|---------|
|            |           |   | HRS OP BBL/DAY |         |
| BBL OIL=   | 0.004977  | * | 60             | 0.00199 |
| BBL WATER= | 0         | * |                | 0       |
| BBL MUD=   | 0.154035  |   |                |         |
| BBL GAS    | 0.0154035 |   |                |         |

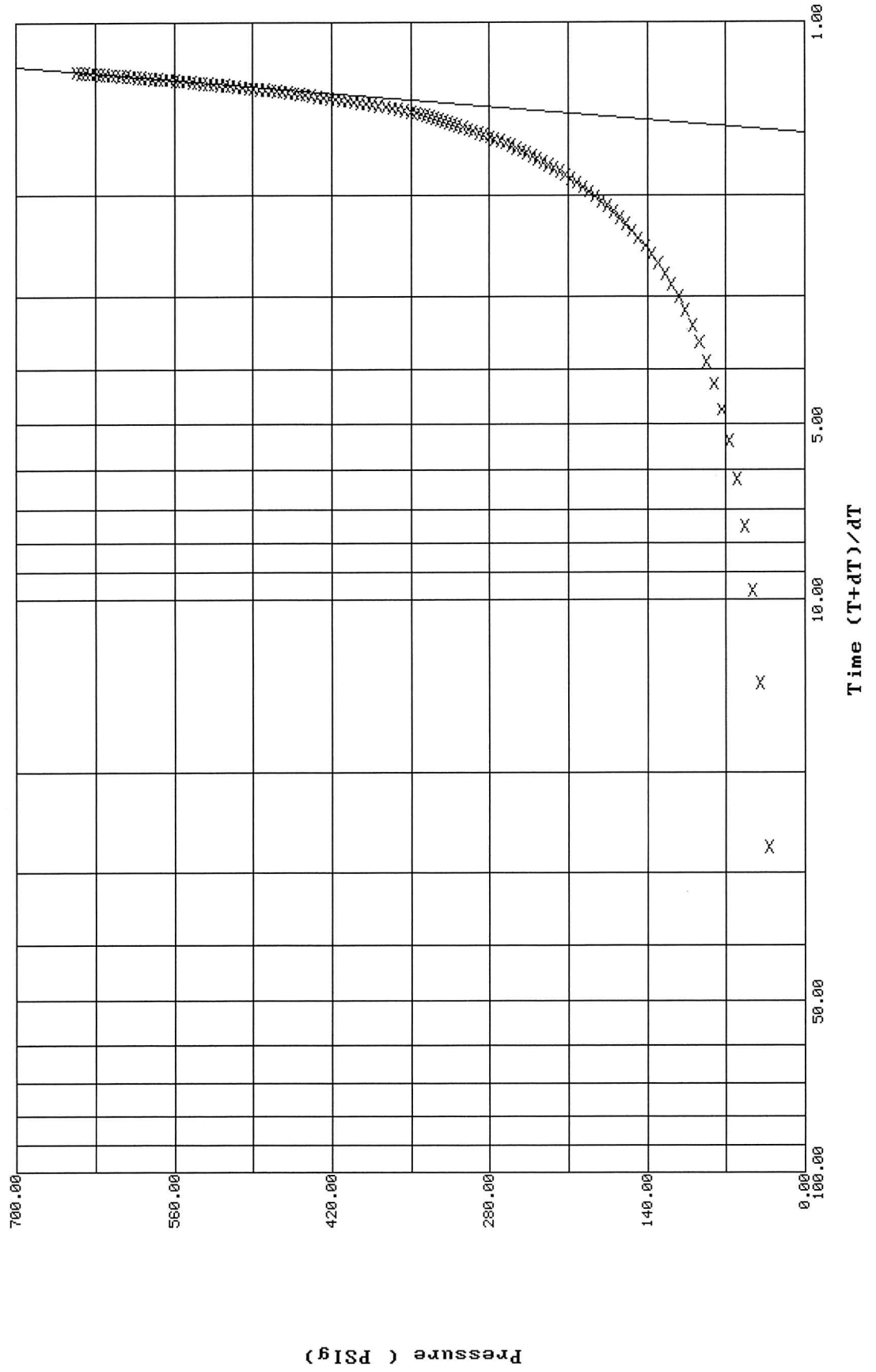


# Horner Plot: shut-in #1

11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC

Slope: 6166.5610 PSig/cycle

Ext. Pressure: 1171.6132 PSig



# Horner Plot: shut-in #2

11812 DST#3 LUDERS B#8 SAGEBRUSH PETL.LLC

Slope: 2787.3589 PSig/cycle

Ext. Pressure: 1087.4683 PSig

