



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd  
Hays KS 67601-9696

ATTN: Tom Denning-Herb Dei

### **Munsch #7**

### **9-15s-18w Ellis,KS**

Start Date: 2013.09.30 @ 10:16:00

End Date: 2013.09.30 @ 16:53:09

Job Ticket #: 54820                      DST #: 1

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.10.03 @ 10:20:41

TDI Inc  
9-15s-18w Ellis,KS  
Munsch #7  
DST # 1  
LKC-A-C  
2013.09.30



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc  
 1310 Bison Rd  
 Hays KS 67601-9696  
 ATTN: Tom Denning-Herb Dei

**9-15s-18w Ellis,KS**  
**Munsch #7**  
 Job Ticket: 54820      **DST#: 1**  
 Test Start: 2013.09.30 @ 10:16:00

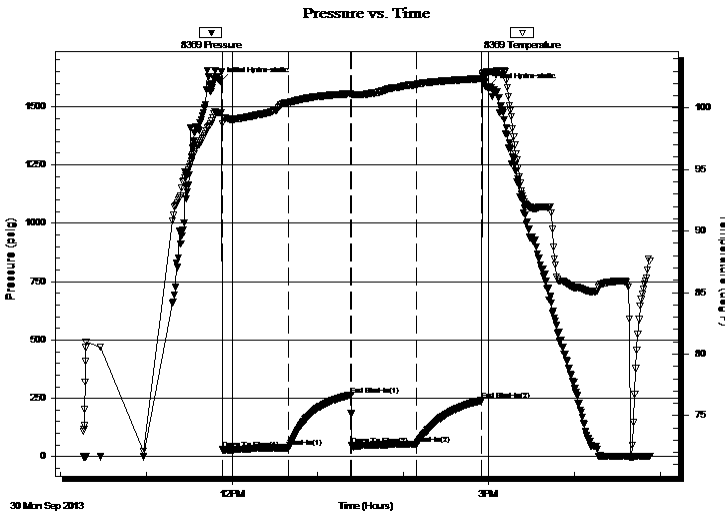
## GENERAL INFORMATION:

Formation: **LKC A-C**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 11:53:25  
 Time Test Ended: 16:53:09  
**Interval: 3302.00 ft (KB) To 3355.00 ft (KB) (TVD)**  
 Total Depth: 3355.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Ray Schwager  
 Unit No: 70  
 Reference Elevations: 2039.00 ft (KB)  
 2029.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8369 Inside**  
 Press @ Run Depth: 53.49 psig @ 3317.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.09.30 End Date: 2013.09.30 Last Calib.: 2013.09.30  
 Start Time: 10:16:00 End Time: 16:53:09 Time On Btm: 2013.09.30 @ 11:51:55  
 Time Off Btm: 2013.09.30 @ 14:59:24

**TEST COMMENT:** 45-IFP-w k to strg in 20 min  
 45-ISIP-no bl  
 45-FFP-strg bl in 1 min  
 45FSIP-no bl

## PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1607.53         | 99.61        | Initial Hydro-static |
| 2           | 32.21           | 98.73        | Open To Flow (1)     |
| 48          | 39.30           | 100.45       | Shut-In(1)           |
| 92          | 264.54          | 101.16       | End Shut-In(1)       |
| 92          | 47.85           | 101.10       | Open To Flow (2)     |
| 137         | 53.49           | 101.90       | Shut-In(2)           |
| 183         | 241.01          | 102.39       | End Shut-In(2)       |
| 188         | 1583.26         | 102.93       | Final Hydro-static   |

## Recovery

| Length (ft) | Description                | Volume (bbl) |
|-------------|----------------------------|--------------|
| 0.00        | 850'GIP                    | 0.00         |
| 75.00       | SGCM 5%G95%M w/show of oil | 1.05         |
|             |                            |              |
|             |                            |              |
|             |                            |              |

## Gas Rates

| Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|----------------|-----------------|------------------|
|                |                 |                  |





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696

**9-15s-18w Ellis,KS**

**Munsch #7**

Job Ticket: 54820

**DST#: 1**

ATTN: Tom Denning-Herb Dei

Test Start: 2013.09.30 @ 10:16:00

## Tool Information

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3313.00 ft | Diameter: 3.80 inches | Volume: 46.47 bbl              | Tool Weight: 2200.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight to Pull Loose: 50000.00 lb  |
|                           |                    |                       | <u>Total Volume: 46.47 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 32.00 ft           |                       |                                | String Weight: Initial 36000.00 lb |
| Depth to Top Packer:      | 3302.00 ft         |                       |                                | Final 37000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 53.00 ft           |                       |                                |                                    |
| Tool Length:              | 74.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

|                 |       |      |         |         |                               |
|-----------------|-------|------|---------|---------|-------------------------------|
| Change Over Sub | 1.00  |      |         | 3282.00 |                               |
| Shut In Tool    | 5.00  |      |         | 3287.00 |                               |
| Hydraulic tool  | 5.00  |      |         | 3292.00 |                               |
| Packer          | 5.00  |      |         | 3297.00 | 21.00 Bottom Of Top Packer    |
| Packer          | 5.00  |      |         | 3302.00 |                               |
| Stubb           | 1.00  |      |         | 3303.00 |                               |
| Perforations    | 14.00 |      |         | 3317.00 |                               |
| Recorder        | 0.00  | 8369 | Inside  | 3317.00 |                               |
| Recorder        | 0.00  | 8700 | Outside | 3317.00 |                               |
| Blank Spacing   | 33.00 |      |         | 3350.00 |                               |
| Bullnose        | 5.00  |      |         | 3355.00 | 53.00 Bottom Packers & Anchor |

**Total Tool Length: 74.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

TDI Inc **9-15s-18w Ellis,KS**  
 1310 Bison Rd **Munsch #7**  
 Hays KS 67601-9696 Job Ticket: 54820 **DST#: 1**  
 ATTN: Tom Denning-Herb Dei Test Start: 2013.09.30 @ 10:16:00

### Mud and Cushion Information

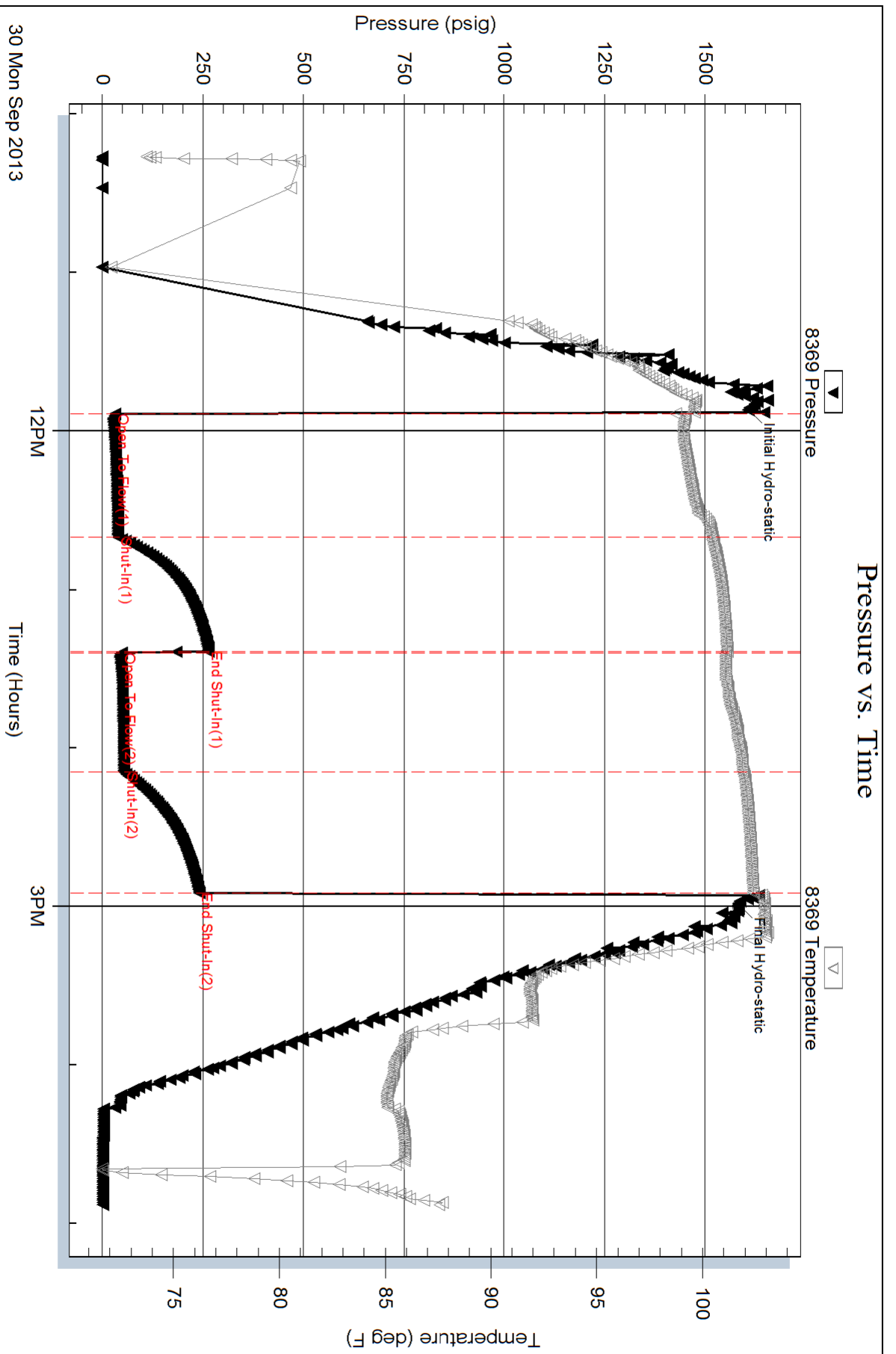
|                                  |                            |                 |         |
|----------------------------------|----------------------------|-----------------|---------|
| Mud Type: Gel Chem               | Cushion Type:              | Oil API:        | deg API |
| Mud Weight: 9.00 lb/gal          | Cushion Length: ft         | Water Salinity: | ppm     |
| Viscosity: 53.00 sec/qt          | Cushion Volume: bbl        |                 |         |
| Water Loss: 7.19 in <sup>3</sup> | Gas Cushion Type:          |                 |         |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                 |         |
| Salinity: 4300.00 ppm            |                            |                 |         |
| Filter Cake: 1.00 inches         |                            |                 |         |

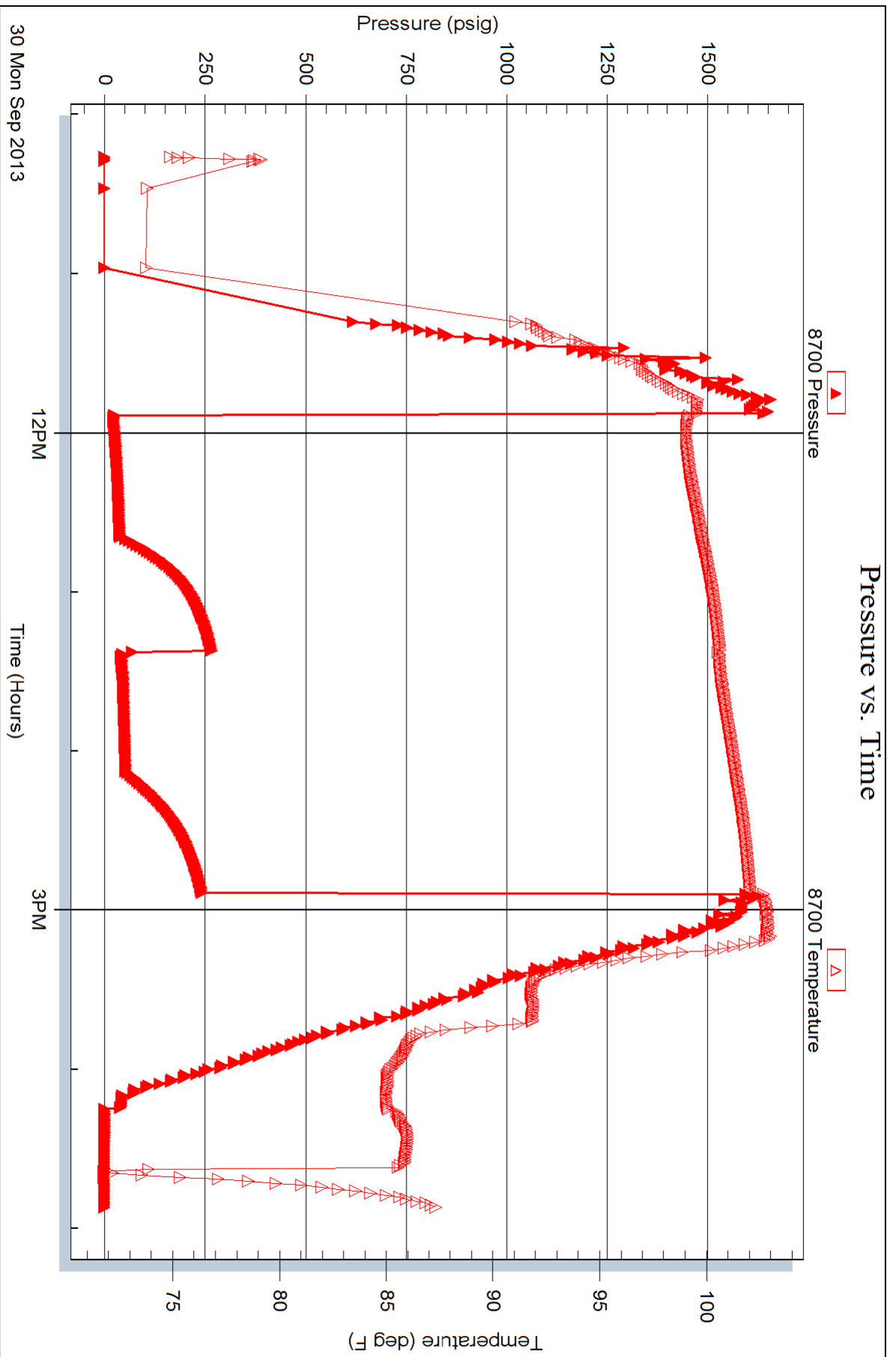
### Recovery Information

Recovery Table

| Length<br>ft | Description                | Volume<br>bbl |
|--------------|----------------------------|---------------|
| 0.00         | 850'GIP                    | 0.000         |
| 75.00        | SGCM 5%G95%M w/show of oil | 1.052         |

Total Length: 75.00 ft      Total Volume: 1.052 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 54820

Well Name & No. Munsch #7 Test No. 1 Date 9-30-13  
 Company TOTI, Inc. Elevation 2039 KB 2 029 GL  
 Address 1310 Bison Rd, Hays, Ks 67601-9696  
 Co. Rep / Geo. Herb Deines Rig Southwind rig 1  
 Location: Sec. 9 Twp. 15<sup>s</sup> Rge. 18<sup>w</sup> Co. ELLIS State Ks

Interval Tested 3302-3355 Zone Tested LKC A-C  
 Anchor Length 53 Drill Pipe Run 3313 Mud Wt. 9.2  
 Top Packer Depth 3297 Drill Collars Run - Vis 56  
 Bottom Packer Depth 3302 Wt. Pipe Run - WL 7.2  
 Total Depth 3355 Chlorides 4300 ppm System LCM 1#

Blow Description IFP - Weak to Strong in 20 min  
TSIP - NO Blow  
FFP - Strong Blow in 1 min  
FSTP - NO Blow

| Rec        | Feet of              | %gas     | %oil | %water | %mud      |
|------------|----------------------|----------|------|--------|-----------|
| <u>850</u> | <u>GIP</u>           |          |      |        |           |
| <u>75</u>  | <u>SGCM</u>          | <u>5</u> |      |        | <u>95</u> |
|            | <u>w/show of oil</u> |          |      |        |           |
|            |                      |          |      |        |           |
|            |                      |          |      |        |           |

Rec Total 75 BHT 102 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 1607  Test 1150 T-On Location 0900  
 (B) First Initial Flow 32  Jars \_\_\_\_\_ T-Started 1015  
 (C) First Final Flow 39  Safety Joint \_\_\_\_\_ T-Open 1155  
 (D) Initial Shut-In 264  Circ Sub \_\_\_\_\_ T-Pulled 1455  
 (E) Second Initial Flow 47  Hourly Standby \_\_\_\_\_ T-Out 1653  
 (F) Second Final Flow 53  Mileage 22 RT 68.20 Comments \_\_\_\_\_  
 (G) Final Shut-In 241  Sampler \_\_\_\_\_ Loaded Tool, 1 am 10-2-13  
 (H) Final Hydrostatic 1583  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_

Initial Open 45  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In 45  Extra Recorder \_\_\_\_\_ Sub Total 800  
 Final Flow 45  Day Standby 1d 8h Total 2018.20  
 Final Shut-In 45  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1218.20

Approved By \_\_\_\_\_ Our Representative Ray Schwager *Thank you*

Trilobite Testing Inc. shall not be liable for damaged 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.