



DRILL STEM TEST REPORT

Prepared For: **TDI inc**

1310 Bison Rd
Hays KS 67601

ATTN: Herb Deines

Kraus Unit #1

10-15s-19w Ellis,KS

Start Date: 2012.11.19 @ 09:27:05

End Date: 2012.11.19 @ 16:02:09

Job Ticket #: 50757 DST #: 1

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

Printed: 2012.11.26 @ 14:29:27

TDI inc
10-15s-19w Ellis,KS
Kraus Unit #1
DST # 1
LKC"A-C"
2012.11.19



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI inc
1310 Bison Rd
Hays KS 67601
ATTN: Herb Deines

10-15s-19w Ellis,KS
Kraus Unit #1
Job Ticket: 50757 **DST#: 1**
Test Start: 2012.11.19 @ 09:27:05

GENERAL INFORMATION:

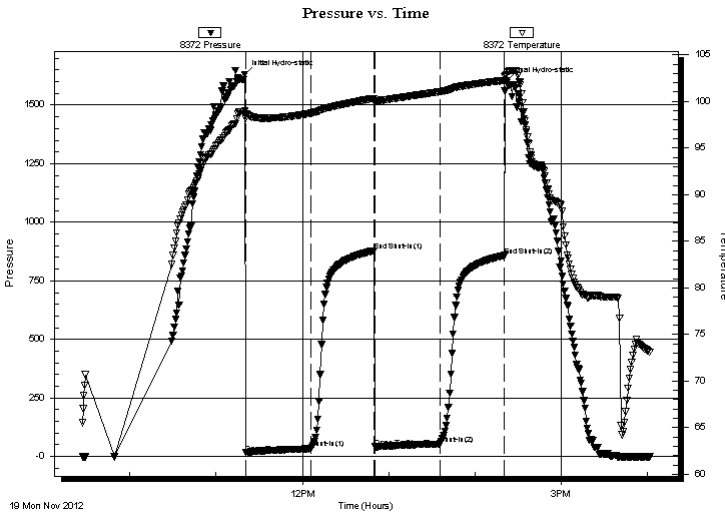
Formation: **LKC"A-C"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:20:30
Time Test Ended: 16:02:09
Interval: **3322.00 ft (KB) To 3375.00 ft (KB) (TVD)**
Total Depth: 3375.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Poor
Test Type: Conventional Bottom Hole (Initial)
Tester: Andy Carreira
Unit No: 39
Reference Elevations: 2046.00 ft (KB)
2036.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8372 Outside

Press @ Run Depth: 53.79 psig @ 3329.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2012.11.19 End Date: 2012.11.19 Last Calib.: 2012.11.19
Start Time: 09:27:05 End Time: 16:02:10 Time On Btm: 2012.11.19 @ 11:19:50
Time Off Btm: 2012.11.19 @ 14:21:50

TEST COMMENT: IF:(45min) 2" Blow in 12 min. 3" in 23 min. 4" in 42 min.
ISl:(45min) No Return
FF:(45min) 1" blow in 15 min. 2" blow in 26 min. built to 2.5"
FSl:(45min) No Return

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1630.55 | 98.96 | Initial Hydro-static |
| 1 | 15.38 | 98.16 | Open To Flow (1) |
| 47 | 33.89 | 98.73 | Shut-In(1) |
| 91 | 878.66 | 100.32 | End Shut-In(1) |
| 91 | 40.80 | 99.89 | Open To Flow (2) |
| 136 | 53.79 | 101.03 | Shut-In(2) |
| 181 | 858.23 | 102.25 | End Shut-In(2) |
| 182 | 1600.31 | 102.87 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------------|--------------|
| 60.00 | OSWM o=tr w=40% m=60% | 0.84 |
| 25.00 | OSM o=tr m=100% | 0.35 |
| | | |
| | | |
| | | |

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
ATTN: Herb Deines

10-15s-19w Ellis,KS
Kraus Unit #1
Job Ticket: 50757 **DST#: 1**
Test Start: 2012.11.19 @ 09:27:05

Tool Information

| | | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe: | Length: 3320.00 ft | Diameter: 3.80 inches | Volume: 46.57 bbl | Tool Weight: | 2000.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 2.70 inches | Volume: 0.00 bbl | Weight set on Packer: | 24000.00 lb |
| Drill Collar: | Length: 0.00 ft | Diameter: 2.25 inches | Volume: 0.00 bbl | Weight to Pull Loose: | 34000.00 lb |
| | | | <u>Total Volume: 46.57 bbl</u> | Tool Chased | 0.00 ft |
| Drill Pipe Above KB: | 18.00 ft | | | String Weight: Initial | 28000.00 lb |
| Depth to Top Packer: | 3322.00 ft | | | Final | 28000.00 lb |
| Depth to Bottom Packer: | ft | | | | |
| Interval between Packers: | 53.00 ft | | | | |
| Tool Length: | 73.00 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 | | | 3303.00 | |
| Shut In Tool | 5.00 | | | 3308.00 | |
| Hydraulic tool | 5.00 | | | 3313.00 | |
| Packer | 5.00 | | | 3318.00 | 20.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3322.00 | |
| Stubb | 1.00 | | | 3323.00 | |
| Perforations | 5.00 | | | 3328.00 | |
| Change Over Sub | 1.00 | | | 3329.00 | |
| Recorder | 0.00 | 8017 | Inside | 3329.00 | |
| Recorder | 0.00 | 8372 | Outside | 3329.00 | |
| Drill Pipe | 32.00 | | | 3361.00 | |
| Change Over Sub | 1.00 | | | 3362.00 | |
| Perforations | 10.00 | | | 3372.00 | |
| Bullnose | 3.00 | | | 3375.00 | 53.00 Bottom Packers & Anchor |

Total Tool Length: 73.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI inc **10-15s-19w Ellis,KS**
 1310 Bison Rd **Kraus Unit #1**
 Hays KS 67601 Job Ticket: 50757 **DST#: 1**
 ATTN: Herb Deines Test Start: 2012.11.19 @ 09:27:05

Mud and Cushion Information

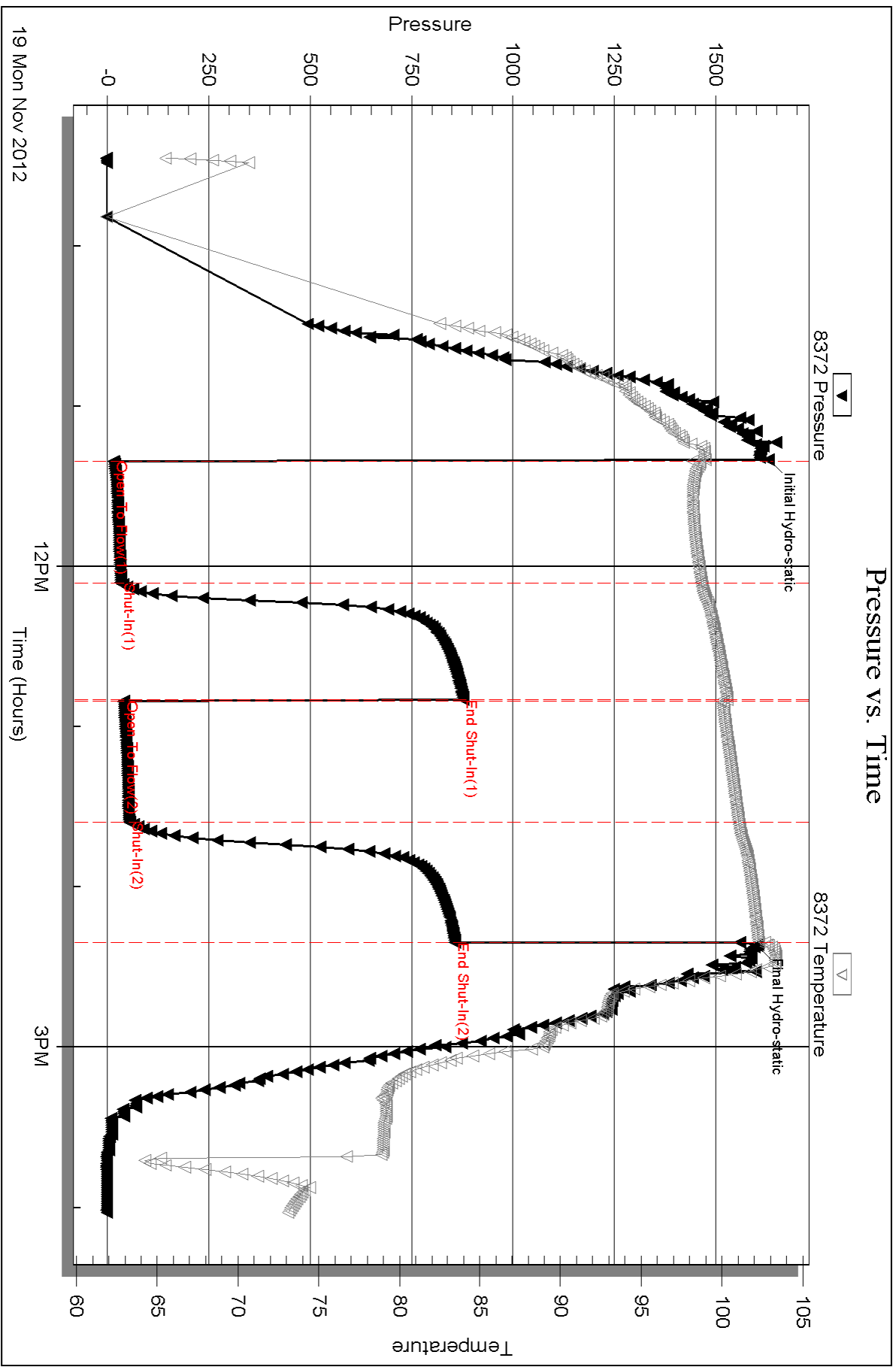
| | | | |
|----------------------------------|----------------------------|-----------------|-----------|
| Mud Type: Gel Chem | Cushion Type: | Oil API: | deg API |
| Mud Weight: 9.00 lb/gal | Cushion Length: ft | Water Salinity: | 19000 ppm |
| Viscosity: 57.00 sec/qt | Cushion Volume: bbl | | |
| Water Loss: 8.76 in ³ | Gas Cushion Type: | | |
| Resistivity: ohm.m | Gas Cushion Pressure: psig | | |
| Salinity: 6800.00 ppm | | | |
| Filter Cake: inches | | | |

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|------------------------|---------------|
| 60.00 | OSWM o=tr w =40% m=60% | 0.842 |
| 25.00 | OSM o=tr m=100% | 0.351 |

Total Length: 85.00 ft Total Volume: 1.193 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:



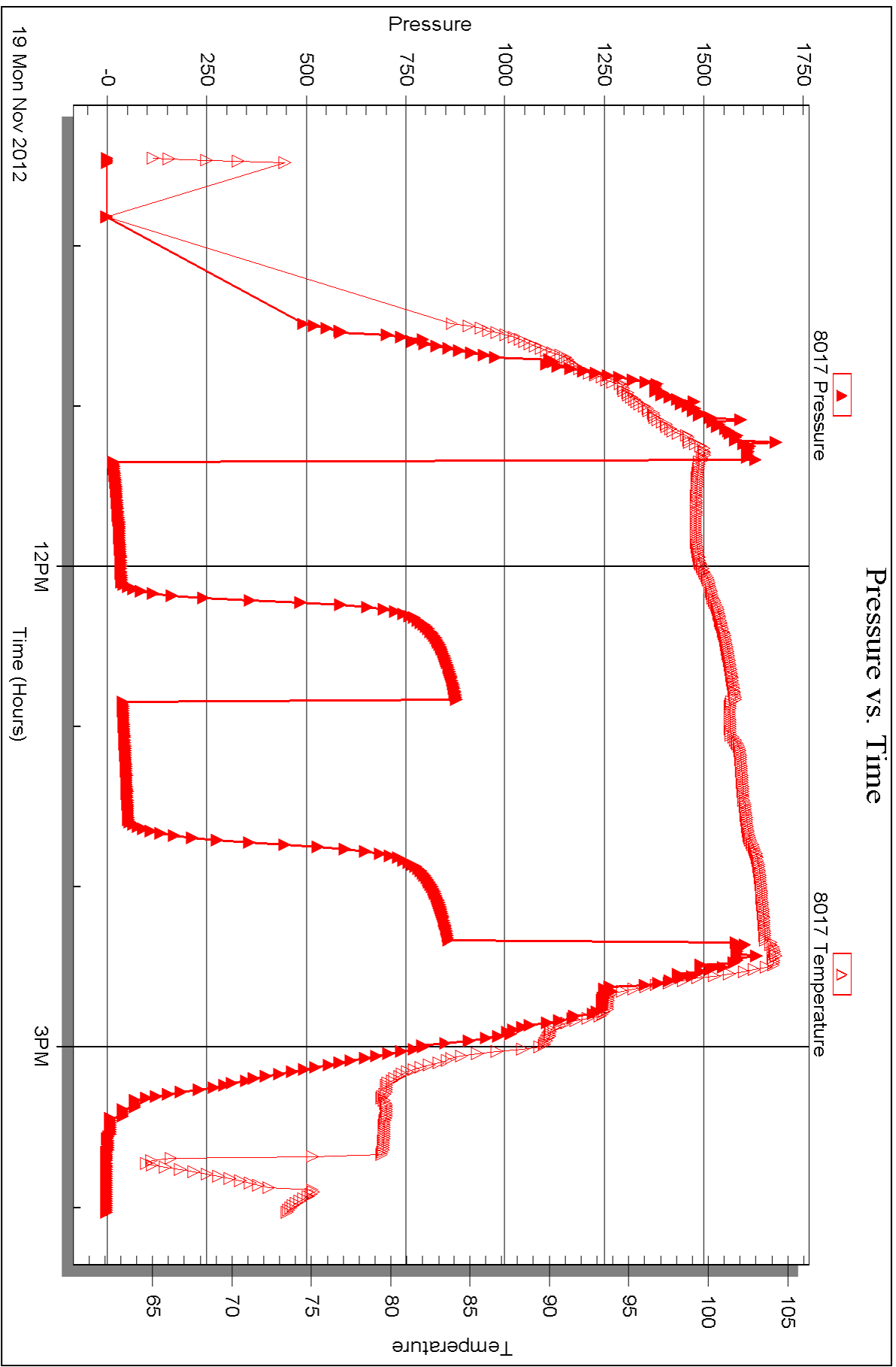
Serial #: 8017

Inside

TD/Inc

Kraus Unit #1

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 50757

Printed: 2012.11.26 @ 14:29:32



DRILL STEM TEST REPORT

Prepared For: **TDI inc**

1310 Bison Rd
Hays KS 67601

ATTN: Herb Deines

Kraus Unit #1

10-15s-19w Ellis,KS

Start Date: 2012.11.20 @ 04:33:05

End Date: 2012.11.20 @ 11:01:20

Job Ticket #: 50758 DST #: 2

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

Printed: 2012.11.26 @ 14:31:26

TDI inc
10-15s-19w Ellis,KS
Kraus Unit #1
DST # 2
LKC "H,I,J"
2012.11.20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI inc
 1310 Bison Rd
 Hays KS 67601
 ATTN: Herb Deines

10-15s-19w Ellis,KS
Kraus Unit #1
 Job Ticket: 50758 **DST#: 2**
 Test Start: 2012.11.20 @ 04:33:05

GENERAL INFORMATION:

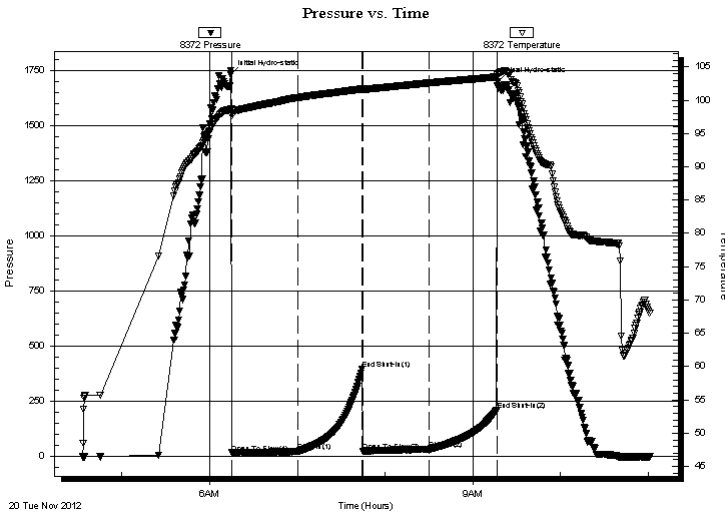
Formation: **LKC "H,I,J"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 06:15:20 Tester: Andy Carreira
 Time Test Ended: 11:01:20 Unit No: 39
 Interval: **3445.00 ft (KB) To 3535.00 ft (KB) (TVD)** Reference Elevations: 2046.00 ft (KB)
 Total Depth: 3535.00 ft (KB) (TVD) 2036.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Poor KB to GR/CF: 10.00 ft

Serial #: 8372 Outside

Press @ Run Depth: 31.68 psig @ 3452.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.11.20 End Date: 2012.11.20 Last Calib.: 2012.11.20
 Start Time: 04:33:05 End Time: 11:01:20 Time On Btm: 2012.11.20 @ 06:14:30
 Time Off Btm: 2012.11.20 @ 09:16:59

TEST COMMENT: IF:(45min) 1" in 6 min. 2" in 15 min. 4" in 43 min.
 IS:(45min) No Return
 FF:(45min) 2" in 4 min. 4" in 18 min. 6" in 39 min.
 FS:(45min) No Return

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1731.69 | 98.67 | Initial Hydro-static |
| 1 | 16.02 | 97.70 | Open To Flow (1) |
| 46 | 22.78 | 100.38 | Shut-In(1) |
| 90 | 394.65 | 101.67 | End Shut-In(1) |
| 91 | 22.91 | 101.59 | Open To Flow (2) |
| 136 | 31.68 | 102.58 | Shut-In(2) |
| 182 | 208.81 | 103.48 | End Shut-In(2) |
| 183 | 1699.32 | 103.81 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|------------------------|--------------|
| 45.00 | OCGM g=10% o=10% m=80% | 0.63 |
| 0.00 | GIP= 75 ft | 0.00 |
| | | |
| | | |
| | | |

* Recovery from multiple tests

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
ATTN: Herb Deines

10-15s-19w Ellis,KS
Kraus Unit #1
Job Ticket: 50758 **DST#: 2**
Test Start: 2012.11.20 @ 04:33:05

Tool Information

| | | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe: | Length: 3453.00 ft | Diameter: 3.80 inches | Volume: 48.44 bbl | Tool Weight: | 2000.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 2.70 inches | Volume: 0.00 bbl | Weight set on Packer: | 24000.00 lb |
| Drill Collar: | Length: 0.00 ft | Diameter: 2.25 inches | Volume: 0.00 bbl | Weight to Pull Loose: | 42000.00 lb |
| | | | <u>Total Volume: 48.44 bbl</u> | Tool Chased | 0.00 ft |
| Drill Pipe Above KB: | 28.00 ft | | | String Weight: Initial | 30000.00 lb |
| Depth to Top Packer: | 3445.00 ft | | | Final | 30000.00 lb |
| Depth to Bottom Packer: | ft | | | | |
| Interval between Packers: | 90.00 ft | | | | |
| Tool Length: | 110.00 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 | | | 3426.00 | |
| Shut In Tool | 5.00 | | | 3431.00 | |
| Hydraulic tool | 5.00 | | | 3436.00 | |
| Packer | 5.00 | | | 3441.00 | 20.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3445.00 | |
| Stubb | 1.00 | | | 3446.00 | |
| Perforations | 5.00 | | | 3451.00 | |
| Change Over Sub | 1.00 | | | 3452.00 | |
| Recorder | 0.00 | 8017 | Inside | 3452.00 | |
| Recorder | 0.00 | 8372 | Outside | 3452.00 | |
| Drill Pipe | 64.00 | | | 3516.00 | |
| Change Over Sub | 1.00 | | | 3517.00 | |
| Perforations | 15.00 | | | 3532.00 | |
| Bullnose | 3.00 | | | 3535.00 | 90.00 Bottom Packers & Anchor |

Total Tool Length: 110.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI inc **10-15s-19w Ellis,KS**
 1310 Bison Rd **Kraus Unit #1**
 Hays KS 67601 Job Ticket: 50758 **DST#: 2**
 ATTN: Herb Deines Test Start: 2012.11.20 @ 04:33:05

Mud and Cushion Information

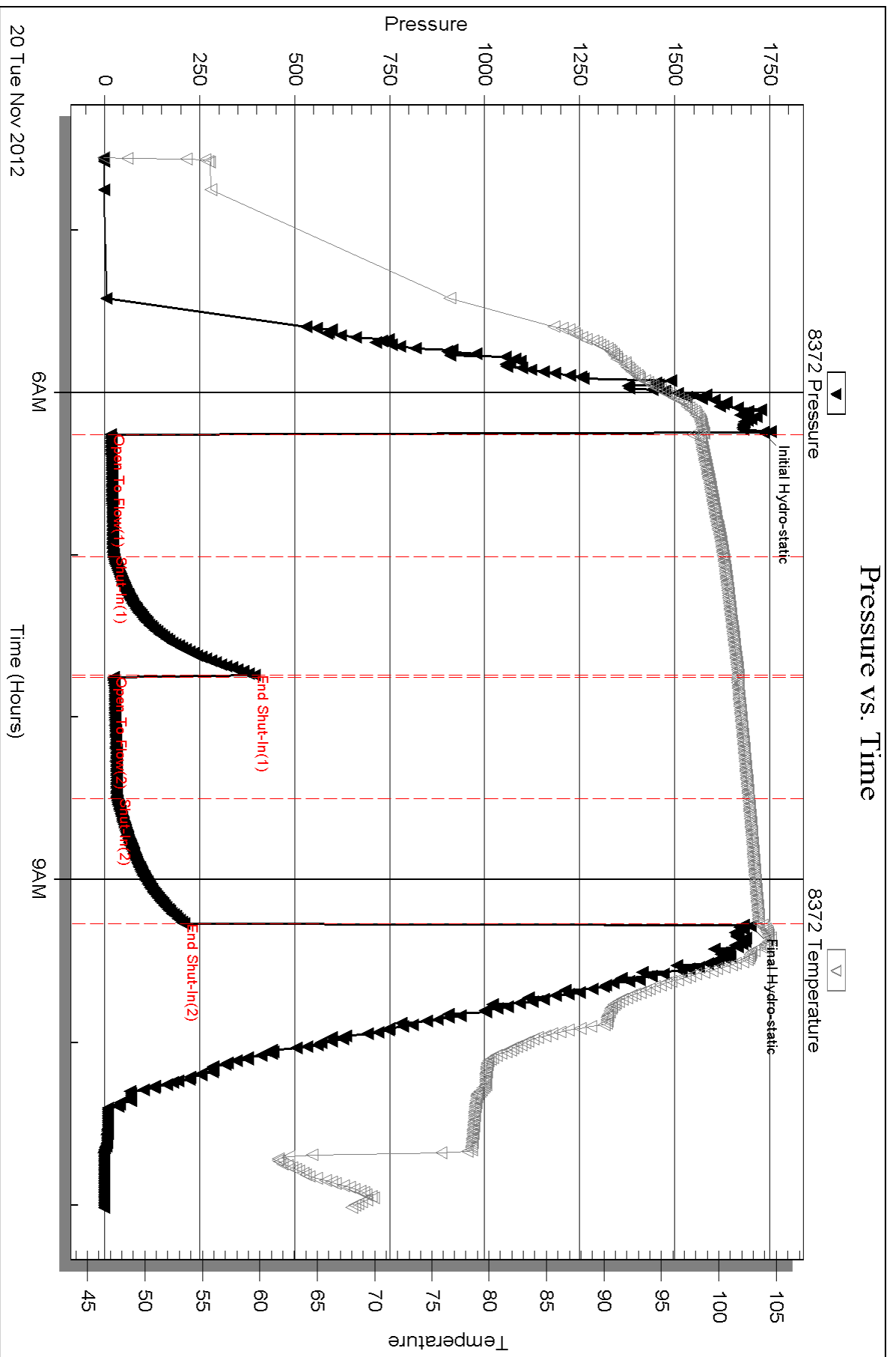
| | | | |
|----------------------------------|----------------------------|-----------------|---------|
| Mud Type: Gel Chem | Cushion Type: | Oil API: | deg API |
| Mud Weight: 9.00 lb/gal | Cushion Length: ft | Water Salinity: | ppm |
| Viscosity: 57.00 sec/qt | Cushion Volume: bbl | | |
| Water Loss: 8.75 in ³ | Gas Cushion Type: | | |
| Resistivity: ohm.m | Gas Cushion Pressure: psig | | |
| Salinity: 6800.00 ppm | | | |
| Filter Cake: inches | | | |

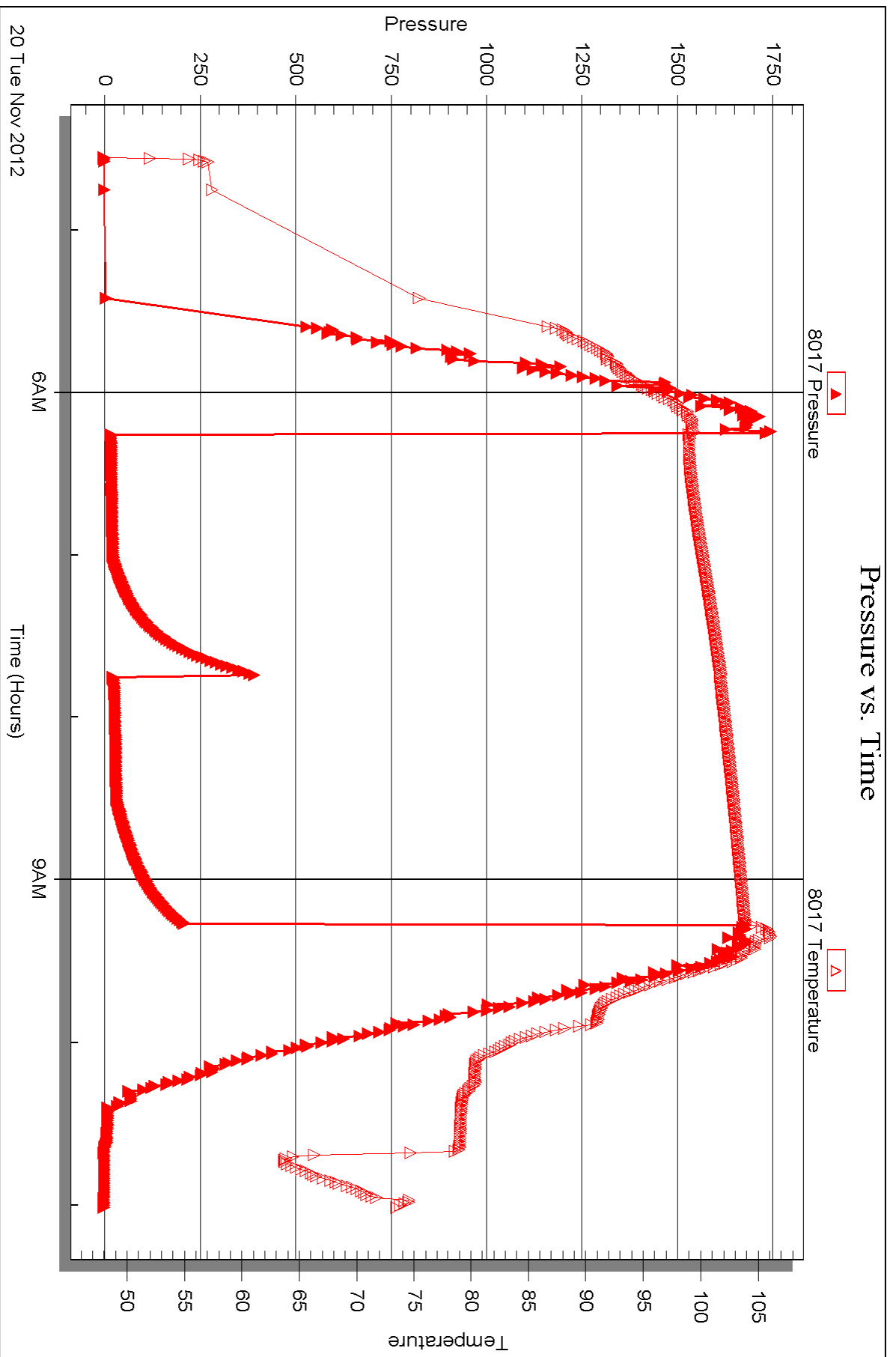
Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|------------------------|---------------|
| 45.00 | OCGM g=10% o=10% m=80% | 0.631 |
| 0.00 | GIP= 75 ft | 0.000 |

Total Length: 45.00 ft Total Volume: 0.631 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **TDI inc**

1310 Bison Rd
Hays KS 67601

ATTN: Herb Deines

Kraus Unit #1

10-15s-19w Ellis,KS

Start Date: 2012.11.21 @ 07:16:05

End Date: 2012.11.21 @ 11:09:20

Job Ticket #: 50759 DST #: 3

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

Printed: 2012.11.26 @ 14:24:14

TDI inc
10-15s-19w Ellis,KS
Kraus Unit #1
DST # 3
Conglomerate
2012.11.21



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI inc
 1310 Bison Rd
 Hays KS 67601
 ATTN: Herb Deines

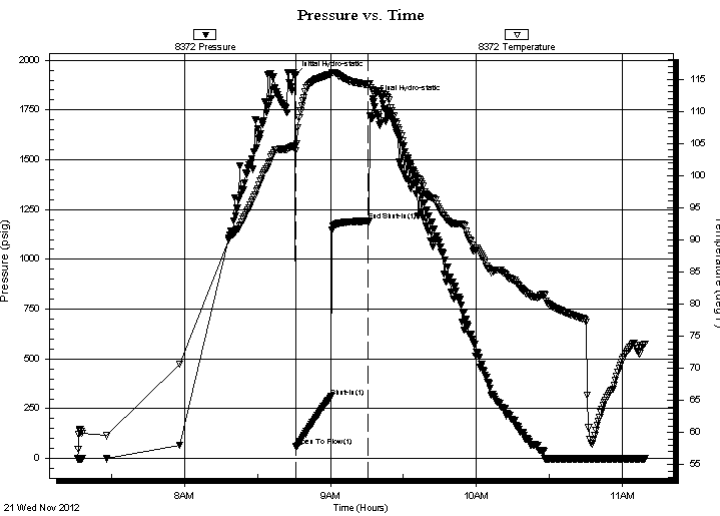
10-15s-19w Ellis,KS
Kraus Unit #1
 Job Ticket: 50759 **DST#: 3**
 Test Start: 2012.11.21 @ 07:16:05

GENERAL INFORMATION:

Formation: **Conglomerate**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 08:45:50
 Time Test Ended: 11:09:20
Interval: 3635.00 ft (KB) To 3680.00 ft (KB) (TVD)
 Total Depth: 3752.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor
 Test Type: Conventional Straddle (Reset)
 Tester: Andy Carreira
 Unit No: 39
 Reference Elevations: 2046.00 ft (KB)
 2036.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8372 Outside
 Press @ RunDepth: 310.22 psig @ 3638.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.11.21 End Date: 2012.11.21 Last Calib.: 2012.11.21
 Start Time: 07:16:05 End Time: 11:09:20 Time On Btm: 2012.11.21 @ 08:45:30
 Time Off Btm: 2012.11.21 @ 09:17:30

TEST COMMENT: IF:(15min) BOB in 2 min.
 IS:(15min) Return surface blow .
 Pulled tool



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1922.99 | 104.67 | Initial Hydro-static |
| 1 | 60.79 | 103.85 | Open To Flow (1) |
| 15 | 310.22 | 115.75 | Shut-In(1) |
| 30 | 1192.00 | 114.13 | End Shut-In(1) |
| 32 | 1803.76 | 113.13 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------------------|--------------|
| 610.00 | MW w / oil spks in tool | 8.56 |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

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
ATTN: Herb Deines

10-15s-19w Ellis,KS
Kraus Unit #1
Job Ticket: 50759 **DST#: 3**
Test Start: 2012.11.21 @ 07:16:05

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3615.00 ft | Diameter: 3.80 inches | Volume: 50.71 bbl | Tool Weight: 2000.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 2.70 inches | Volume: 0.00 bbl | Weight set on Packer: 26000.00 lb |
| Drill Collar: | Length: 0.00 ft | Diameter: 2.25 inches | Volume: 0.00 bbl | Weight to Pull Loose: 40000.00 lb |
| | | | <u>Total Volume: 50.71 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 8.00 ft | | | String Weight: Initial 32000.00 lb |
| Depth to Top Packer: | 3635.00 ft | | | Final 36000.00 lb |
| Depth to Bottom Packer: | 3680.00 ft | | | |
| Interval between Packers: | 45.00 ft | | | |
| Tool Length: | 149.00 ft | | | |
| Number of Packers: | 3 | Diameter: 6.75 inches | | |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 3608.00 | |
| Shut In Tool | 5.00 | | | 3613.00 | |
| Hydraulic tool | 5.00 | | | 3618.00 | |
| Jars | 5.00 | | | 3623.00 | |
| Safety Joint | 3.00 | | | 3626.00 | |
| Packer | 5.00 | | | 3631.00 | 28.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 3635.00 | |
| Stubb | 1.00 | | | 3636.00 | |
| Perforations | 1.00 | | | 3637.00 | |
| Change Over Sub | 1.00 | | | 3638.00 | |
| Recorder | 0.00 | 8017 | Inside | 3638.00 | |
| Recorder | 0.00 | 8372 | Outside | 3638.00 | |
| Drill Pipe | 32.00 | | | 3670.00 | |
| Change Over Sub | 1.00 | | | 3671.00 | |
| Perforations | 4.00 | | | 3675.00 | |
| Blank Off Sub | 1.00 | | | 3676.00 | |
| Blank Spacing | 4.00 | | | 3680.00 | 45.00 Tool Interval |
| Packer | 4.00 | | | 3684.00 | |
| Stubb | 1.00 | | | 3685.00 | |
| Perforations | 2.00 | | | 3687.00 | |
| Change Over Sub | 1.00 | | | 3688.00 | |
| Recorder | 0.00 | 8647 | Below | 3688.00 | |
| Drill Pipe | 64.00 | | | 3752.00 | |
| Change Over Sub | 1.00 | | | 3753.00 | |
| Bullnose | 3.00 | | | 3756.00 | 76.00 Bottom Packers & Anchor |

Total Tool Length: 149.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI inc **10-15s-19w Ellis,KS**
 1310 Bison Rd **Kraus Unit #1**
 Hays KS 67601 Job Ticket: 50759 **DST#: 3**
 ATTN: Herb Deines Test Start: 2012.11.21 @ 07:16:05

Mud and Cushion Information

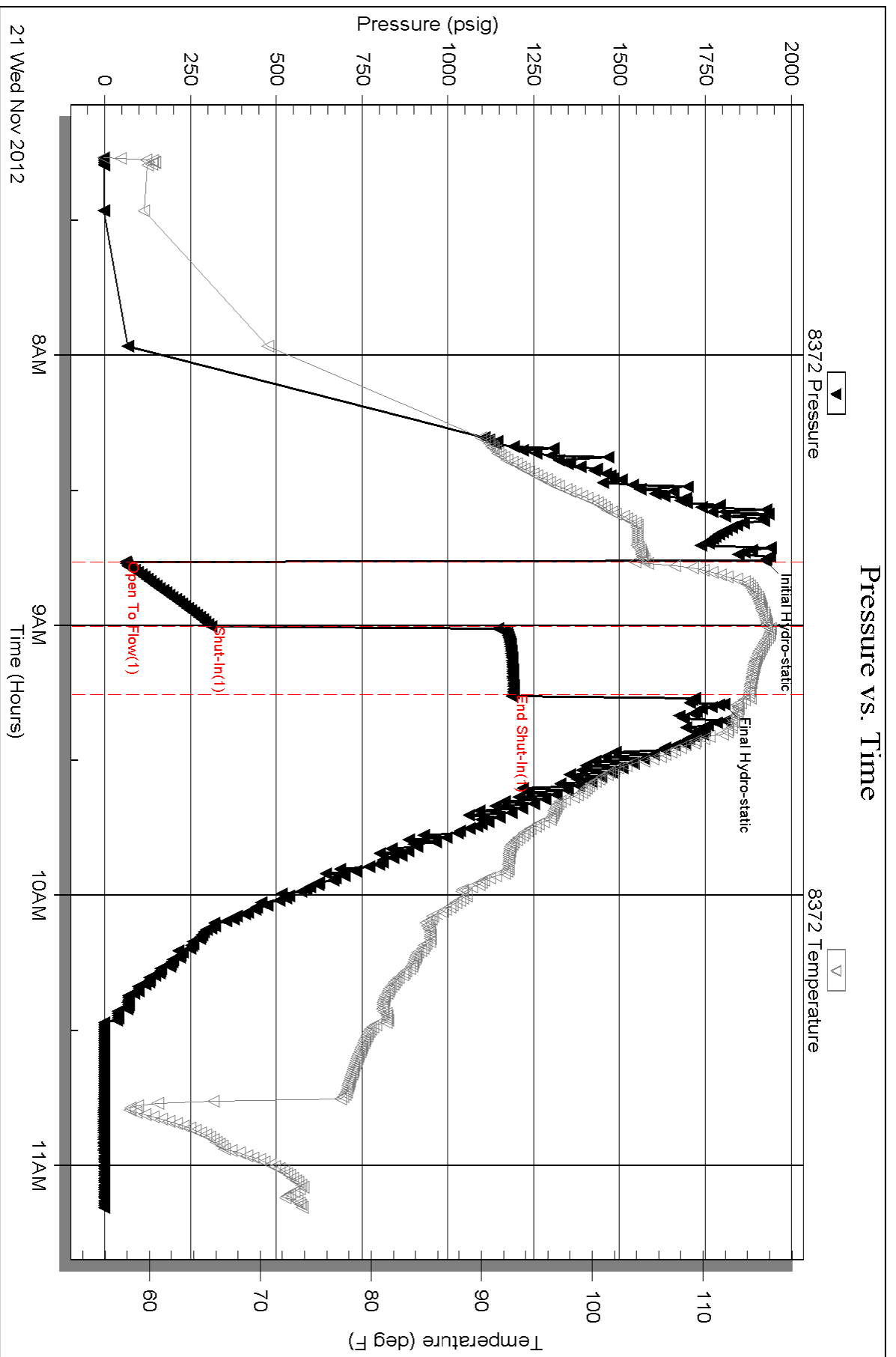
| | | | |
|----------------------------------|----------------------------|-----------------|-----------|
| Mud Type: Gel Chem | Cushion Type: | Oil API: | deg API |
| Mud Weight: 9.00 lb/gal | Cushion Length: ft | Water Salinity: | 33000 ppm |
| Viscosity: 56.00 sec/qt | Cushion Volume: bbl | | |
| Water Loss: 8.37 in ³ | Gas Cushion Type: | | |
| Resistivity: ohm.m | Gas Cushion Pressure: psig | | |
| Salinity: 6900.00 ppm | | | |
| Filter Cake: inches | | | |

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------------------|---------------|
| 610.00 | MW w / oil spks in tool | 8.557 |

Total Length: 610.00 ft Total Volume: 8.557 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:



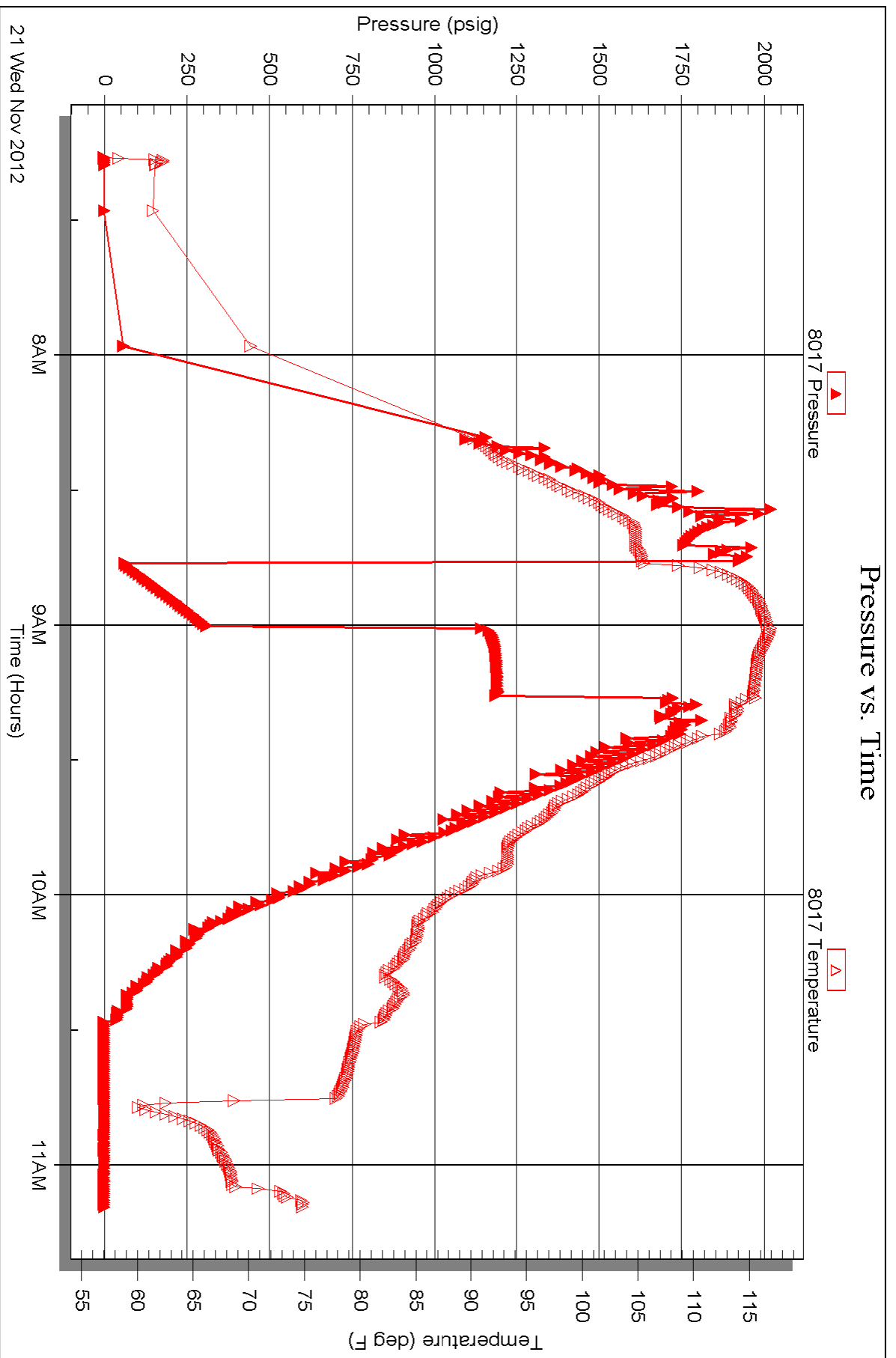
Serial #: 8017

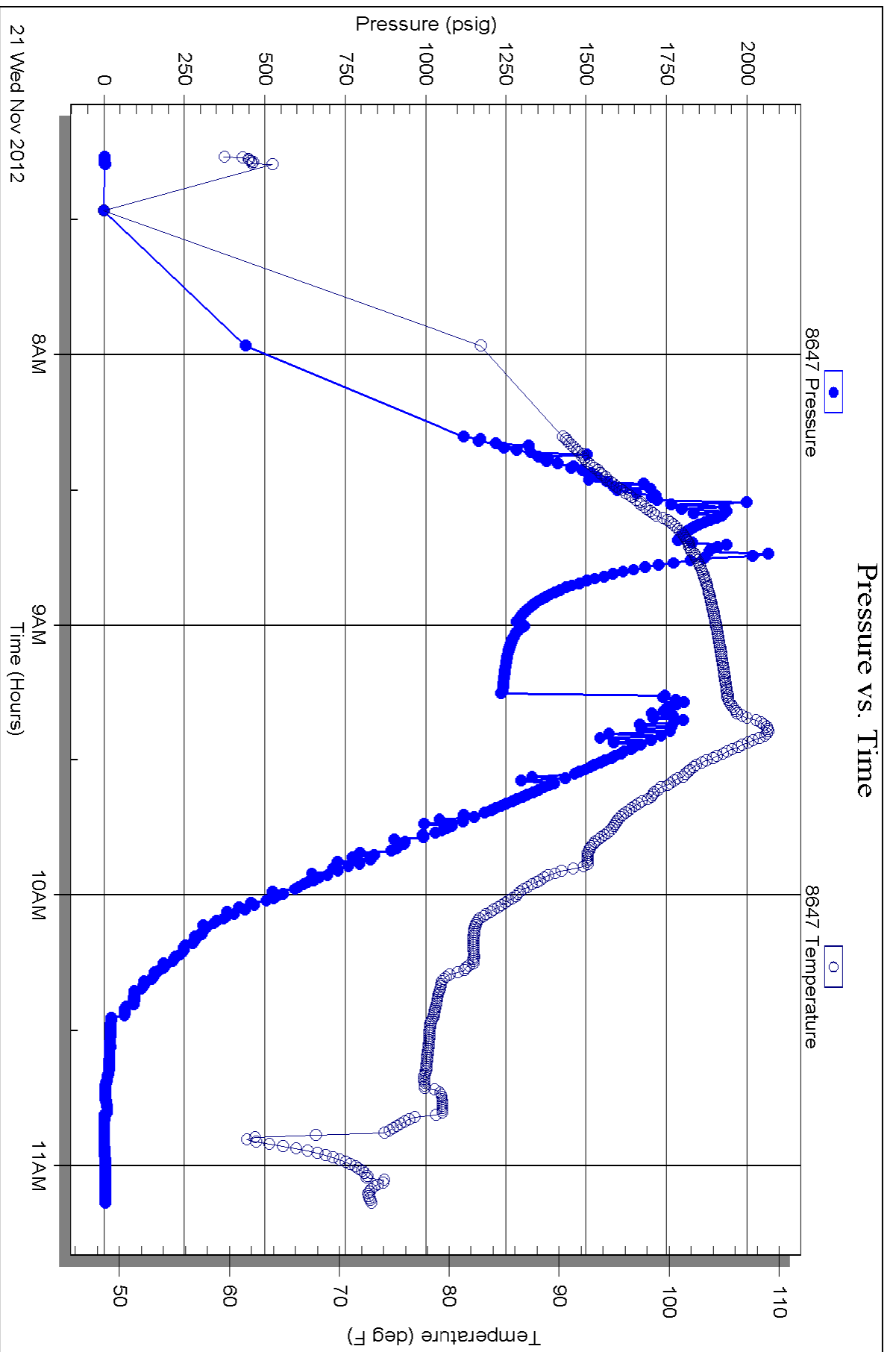
Inside

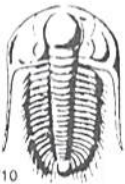
TD/Inc

Kraus Unit #1

DST Test Number: 3







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50757

4/10

Well Name & No. KRAUS UNIT #1 Test No. 1 Date 11-19-12
 Company TDI INC. Elevation 2046 KB 2036 GL
 Address 1310 BISON RD Hays, Ks 67601
 Co. Rep / Geo. Herb Deines Rig Southwind 1
 Location: Sec. 10 Twp. 15S Rge. 19W Co. Ellis State Ks

Interval Tested 3322-3375 Zone Tested LKC "A-C"
 Anchor Length 53 Drill Pipe Run 3320 Mud Wt. 9.2
 Top Packer Depth 3317 Drill Collars Run 0 Vis 57
 Bottom Packer Depth 3322 Wt. Pipe Run 0 WL 8.8
 Total Depth 3375 Chlorides 6800 ppm System LCM TR

Blow Description IF: 2" blow in 12min. 3" in 23min. 4" in 42min
FSI NO Return
FP: 1" blow in 15min. 2" in 26min built to 2 1/2"
FSI: NO Return

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|---------------|------|-----------|-----------|-----------|
| <u>25</u> | <u>05m</u> | | | | |
| <u>60</u> | <u>05 W M</u> | | <u>TR</u> | <u>40</u> | <u>60</u> |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

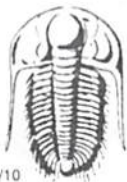
Rec Total 85 BHT Gravity API RW .386 @ 66 ° F Chlorides 19000 ppm

(A) Initial Hydrostatic 1630 Test 1150 T-On Location 07:53
 (B) First Initial Flow 15 Jars T-Started 09:27
 (C) First Final Flow 33 Safety Joint T-Open 11:20
 (D) Initial Shut-In 878 Circ Sub T-Pulled 14:20
 (E) Second Initial Flow 40 Hourly Standby T-Out 16:02
 (F) Second Final Flow 53 Mileage 49.60 Comments
 (G) Final Shut-In 858 Sampler
 (H) Final Hydrostatic 1600 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45
 Day Standby
 Accessibility
 Sub Total 1199.60

Approved By _____ Our Representative [Signature]

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.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

50758

NO.

4/10

Well Name & No. KRAUS Unit #1 Test No. 2 Date 11-20-12
 Company TDI inc. Elevation 2046 KB 2036 GL
 Address 1310 BISON RD HAYS KS. 67601
 Co. Rep / Geo. Herb DEINES Rig Southwind #1
 Location: Sec. 10 Twp. 15S Rge. 19W Co. Ellis State Ks

Interval Tested 3445-3535 Zone Tested LKC "HIS"
 Anchor Length 90 Drill Pipe Run 3453 Mud Wt. 9.2
 Top Packer Depth 3440 Drill Collars Run 0 Vis 57
 Bottom Packer Depth 3445 Wt. Pipe Run 0 WL 8.8
 Total Depth 3535 Chlorides 6800 ppm System LCM TR.

Blow Description BF: 1" IN 6min, 2" IN 15min, 4" IN 43min
ESI: NO RETURN
FF: 2" IN 4min, 4" IN 18min, 6" IN 39min
FSD: NO RETURN

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|-------------|-----------|-----------|--------|-----------|
| <u>45</u> | <u>OCGM</u> | <u>10</u> | <u>10</u> | | <u>80</u> |
| Rec | Feet of | %gas | %oil | %water | %mud |
| <u>75</u> | <u>GIP</u> | | | | |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

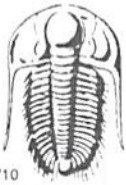
Rec Total 45 BHT 103' Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1731 Test 1150 T-On Location 04:12
 (B) First Initial Flow 16 Jars _____ T-Started 04:33
 (C) First Final Flow 22 Safety Joint _____ T-Open 06:15
 (D) Initial Shut-In 394 Circ Sub _____ T-Pulled 09:15
 (E) Second Initial Flow 22 Hourly Standby _____ T-Out 11:02
 (F) Second Final Flow 31 Mileage 32RT 49.60 Comments _____
 (G) Final Shut-In 208 Sampler _____
 (H) Final Hydrostatic 1699 Straddle _____ Ruined Shale Packer _____

Initial Open 45 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 45 Extra Packer _____ Extra Copies _____
 Final Flow 45 Extra Recorder _____ Sub Total 0
 Final Shut-In 45 Day Standby _____ Total 1199.60
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1199.60

Approved By _____ Our Representative [Signature]

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.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50759

4/10

Well Name & No. KRAUS UNIT #1 Test No. 3 Date 11-21-12
 Company TDI INC Elevation 2046 KB 2036 GL
 Address 1310 BISON RD Hays, Ks. 67601
 Co. Rep / Geo. HERB DEINES Rig Southwind #1
 Location: Sec. 10 Twp. 15S Rge. 19W Co. Ellis State Ks.

Interval Tested 3635-3680 Zone Tested CONG
 Anchor Length 45' Drill Pipe Run 3615' Mud Wt. 9.2
 Top Packer Depth 3635' Drill Collars Run 0 Vis 56
 Bottom Packer Depth 3680' Wt. Pipe Run 0 WL 8.4
 Total Depth 3752' Chlorides 6900 ppm System LCM 2

Blow Description IF: BOB, 2min
ISI: Return surface blow
FP: — Pulled Tool
FST: —

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|--------------------------------------|------|------|--------|------|
| <u>610</u> | <u>Feet of MW w/oil spks in Tool</u> | | | | |
| 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 |

Rec Total 610' BHT 114° Gravity _____ API RW, 30 @ 47 ° F Chlorides 33000 ppm

| | | |
|-------------------------------------|--|--|
| (A) Initial Hydrostatic <u>1922</u> | <input checked="" type="checkbox"/> Test ← 1150 | T-On Location <u>06:15</u> |
| (B) First Initial Flow <u>60</u> | <input checked="" type="checkbox"/> Jars ← 250 | T-Started <u>07:16</u> |
| (C) First Final Flow <u>310</u> | <input checked="" type="checkbox"/> Safety Joint ← 75 | T-Open <u>08:46</u> |
| (D) Initial Shut-In <u>1192</u> | <input type="checkbox"/> Circ Sub | T-Pulled <u>09:16</u> |
| (E) Second Initial Flow <u>—</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>11:10</u> |
| (F) Second Final Flow <u>—</u> | <input checked="" type="checkbox"/> Mileage ← <u>320</u> 49.60 | Comments _____ |
| (G) Final Shut-In <u>—</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>1803</u> | <input checked="" type="checkbox"/> Straddle ← 600 | <input type="checkbox"/> Ruined Shale Packer |
| Initial Open <u>15'</u> | <input type="checkbox"/> Shale Packer | <input type="checkbox"/> Ruined Packer |
| Initial Shut-In <u>15'</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Extra Copies |
| Final Flow <u>Pulled Tool</u> | <input type="checkbox"/> Extra Recorder | Sub Total <u>0</u> |
| Final Shut-In <u>—</u> | <input type="checkbox"/> Day Standby | Total <u>2124.60</u> |
| | <input type="checkbox"/> Accessibility | MP/DST Disc't _____ |
| | Sub Total <u>2124.60</u> | |

Approved By _____ Our Representative [Signature]

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.