



## DRILL STEM TEST REPORT

Prepared For: **Dane G Hansen Trust**

PO Box 187  
Logan, KS 67646

ATTN: Jeff Lawler

### **Eichman #17**

#### **13-9s-21w Graham, KS**

Start Date: 2012.09.01 @ 04:38:59

End Date: 2012.09.01 @ 09:32:29

Job Ticket #: 49428                      DST #: 1

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

Printed: 2012.09.07 @ 15:55:27



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Dane G Hansen Trust

**13-9s-21w Graham, KS**

PO Box 187  
Logan, KS 67646

**Eichman #17**

Job Ticket: 49428

**DST#: 1**

ATTN: Jeff Lawler

Test Start: 2012.09.01 @ 04:38:59

## GENERAL INFORMATION:

Formation: **LKC "H-I"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 06:30:29  
 Tester: Brian Fairbank  
 Time Test Ended: 09:32:29  
 Unit No: 41  
**Interval: 3541.00 ft (KB) To 3573.00 ft (KB) (TVD)**  
 Reference Elevations: 2173.00 ft (KB)  
 Total Depth: 3573.00 ft (KB) (TVD)  
 2165.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Good  
 KB to GR/CF: 8.00 ft

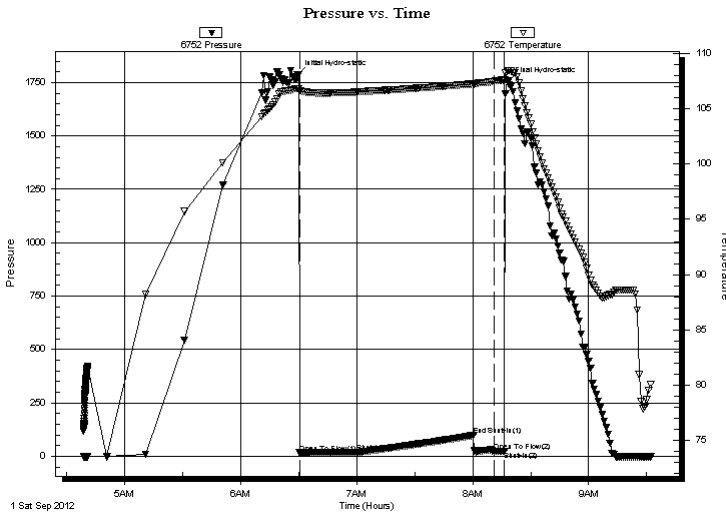
## Serial #: 6752

Inside

Press @ Run Depth: 18.80 psig @ 3545.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.09.01 End Date: 2012.09.01 Last Calib.: 2012.09.01  
 Start Time: 04:39:00 End Time: 09:32:29 Time On Btm: 2012.09.01 @ 06:29:29  
 Time Off Btm: 2012.09.01 @ 08:18:29

TEST COMMENT: IFP - sur blow - died 11 min  
 ISI - no blow back  
 FFP - no blow - flush - no blow  
 TIME - 30-60-10-flush-pull

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1787.55	106.83	Initial Hydro-static
1	16.12	106.62	Open To Flow (1)
31	18.80	106.50	Shut-In(1)
91	98.93	107.24	End Shut-In(1)
102	21.79	107.45	Open To Flow (2)
107	22.60	107.60	Shut-In(2)
109	1752.44	108.46	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	drl mud 100%	0.02

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dane G Hansen Trust

**13-9s-21w Graham, KS**

PO Box 187  
Logan, KS 67646

**Eichman #17**

Job Ticket: 49428

**DST#: 1**

ATTN: Jeff Lawler

Test Start: 2012.09.01 @ 04:38:59

## Tool Information

Drill Pipe:	Length: 3505.00 ft	Diameter: 3.80 inches	Volume: 49.17 bbl	Tool Weight: 2500.00 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 52000.00 lb
			<u>Total Volume: 49.32 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3541.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	32.00 ft			
Tool Length:	59.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3519.00	
Hydraulic tool	5.00			3524.00	
Jars	5.00			3529.00	
Safety Joint	2.00			3531.00	
Packer	5.00			3536.00	27.00 Bottom Of Top Packer
Packer	5.00			3541.00	
Stubb	1.00			3542.00	
Perforations	3.00			3545.00	
Recorder	0.00	6752	Inside	3545.00	
Recorder	0.00	6741	Outside	3545.00	
Perforations	25.00			3570.00	
Bullnose	3.00			3573.00	32.00 Bottom Packers & Anchor

**Total Tool Length: 59.00**



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Dane G Hansen Trust

**13-9s-21w Graham, KS**

PO Box 187  
Logan, KS 67646

**Eichman #17**

Job Ticket: 49428

**DST#: 1**

ATTN: Jeff Lawler

Test Start: 2012.09.01 @ 04:38:59

## 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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	drl mud 100%	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6752

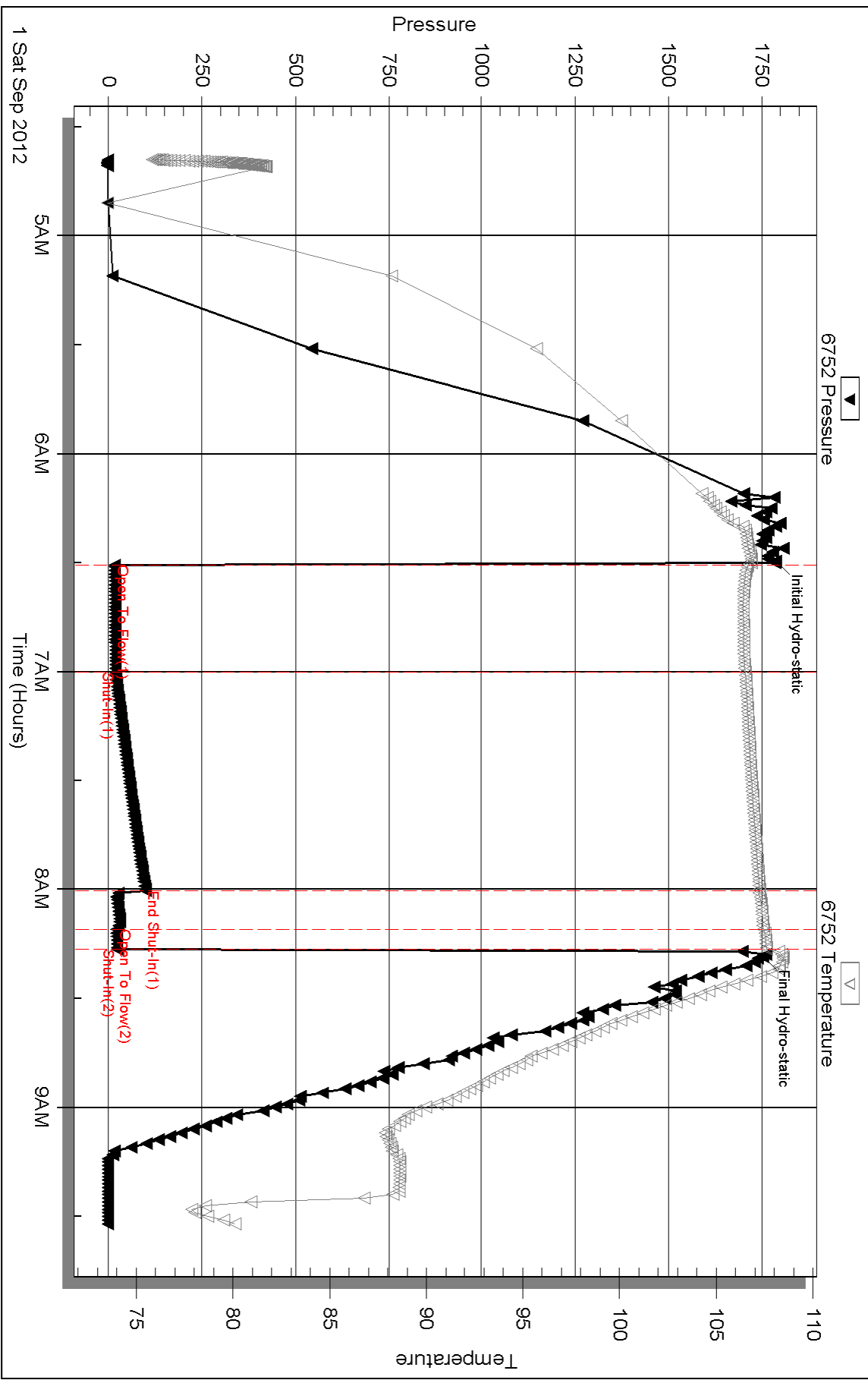
Inside

Dane G Hansen Trust

Eichman #17

DST Test Number: 1

### Pressure vs. Time

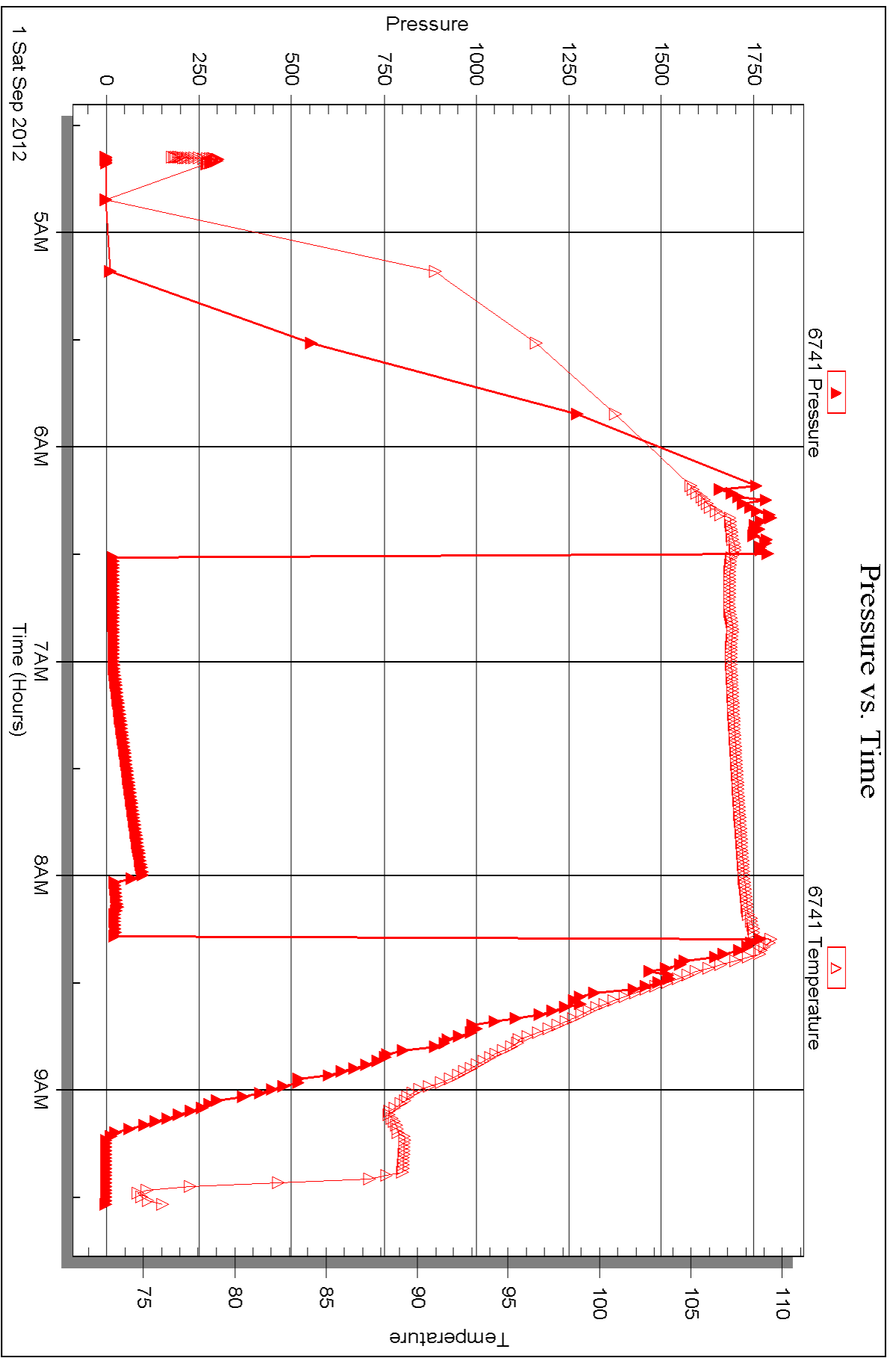


Serial #: 6741

Outside Dane G Hansen Trust

Eichman #17

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Dane G Hansen Trust**

PO Box 187  
Logan, KS 67646

ATTN: Jeff Lawler

### **Eichman #17**

#### **13-9s-21w Graham, KS**

Start Date: 2012.09.02 @ 00:11:03

End Date: 2012.09.02 @ 06:27:03

Job Ticket #: 49429                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.09.07 @ 15:54:39

Dane G Hansen Trust

13-9s-21w Graham, KS

Eichman #17

DST # 2

Simpson Sand - Arbuc

2012.09.02





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Dane G Hansen Trust  
PO Box 187  
Logan, KS 67646  
ATTN: Jeff Lawler

**13-9s-21w Graham, KS**

**Eichman #17**

Job Ticket: 49429

**DST#: 2**

Test Start: 2012.09.02 @ 00:11:03

## GENERAL INFORMATION:

Formation: **Simpson Sand - Arbuc**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:44:33

Time Test Ended: 06:27:03

Test Type: Conventional Bottom Hole (Reset)

Tester: Brian Fairbank

Unit No: 41

**Interval: 3666.00 ft (KB) To 3708.00 ft (KB) (TVD)**

Reference Elevations: 2173.00 ft (KB)

Total Depth: 3708.00 ft (KB) (TVD)

2165.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

**Serial #: 6752**

**Inside**

Press @ Run Depth: 274.25 psig @ 3669.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.09.02

End Date:

2012.09.02

Last Calib.:

2012.09.02

Start Time: 00:11:04

End Time:

06:27:03

Time On Btm:

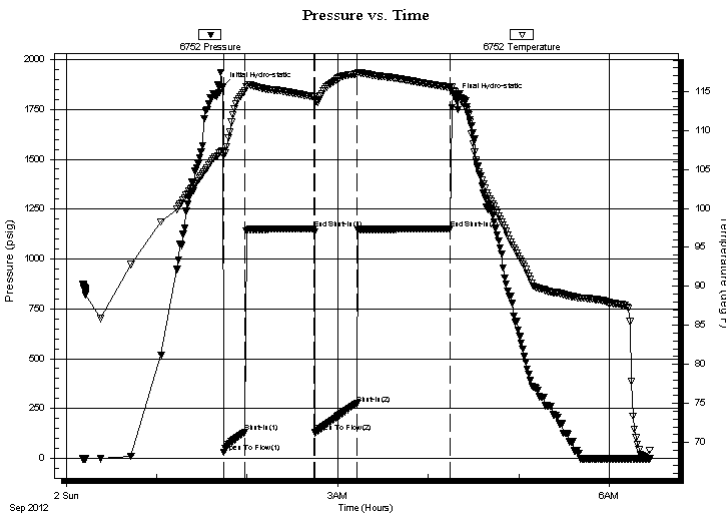
2012.09.02 @ 01:43:33

Time Off Btm:

2012.09.02 @ 04:17:33

**TEST COMMENT:** IFP - BOB 4 min  
ISI - 2 1/4" blow back  
FFP - BOB 5 1/2 min  
FSI - 1/2" blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1862.04	107.39	Initial Hydro-static
1	29.42	106.70	Open To Flow (1)
15	132.46	115.04	Shut-In(1)
61	1149.79	114.28	End Shut-In(1)
62	128.54	113.93	Open To Flow (2)
89	274.25	117.19	Shut-In(2)
151	1149.82	115.51	End Shut-In(2)
154	1811.66	114.87	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	GMCO 10%G, 60%O, 30%M	0.57
630.00	G FREE OIL 10%G, 85%O, 5%M	8.84
0.00	185' GIP	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**

Dane G Hansen Trust

**13-9s-21w Graham, KS**

PO Box 187  
Logan, KS 67646

**Eichman #17**

Job Ticket: 49429

**DST#: 2**

ATTN: Jeff Lawler

Test Start: 2012.09.02 @ 00:11:03

## Tool Information

Drill Pipe:	Length: 3621.00 ft	Diameter: 3.80 inches	Volume: 50.79 bbl	Tool Weight: 2500.00 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 52000.00 lb
			<u>Total Volume: 50.94 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3666.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	62.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3651.00	
Hydraulic tool	5.00			3656.00	
Packer	5.00			3661.00	20.00 Bottom Of Top Packer
Packer	5.00			3666.00	
Stubb	1.00			3667.00	
Perforations	1.00			3668.00	
Change Over Sub	1.00			3669.00	
Recorder	0.00	6752	Inside	3669.00	
Recorder	0.00	6741	Outside	3669.00	
Blank Spacing	31.00			3700.00	
Change Over Sub	1.00			3701.00	
Perforations	4.00			3705.00	
Bullnose	3.00			3708.00	42.00 Bottom Packers & Anchor

**Total Tool Length: 62.00**



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Dane G Hansen Trust

**13-9s-21w Graham, KS**

PO Box 187  
Logan, KS 67646

**Eichman #17**

Job Ticket: 49429

**DST#: 2**

ATTN: Jeff Lawler

Test Start: 2012.09.02 @ 00:11:03

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

23 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GMCO 10%G, 60%O, 30%M	0.568
630.00	G FREE OIL 10%G, 85%O, 5%M	8.837
0.00	185' GIP	0.000

Total Length: 690.00 ft      Total Volume: 9.405 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

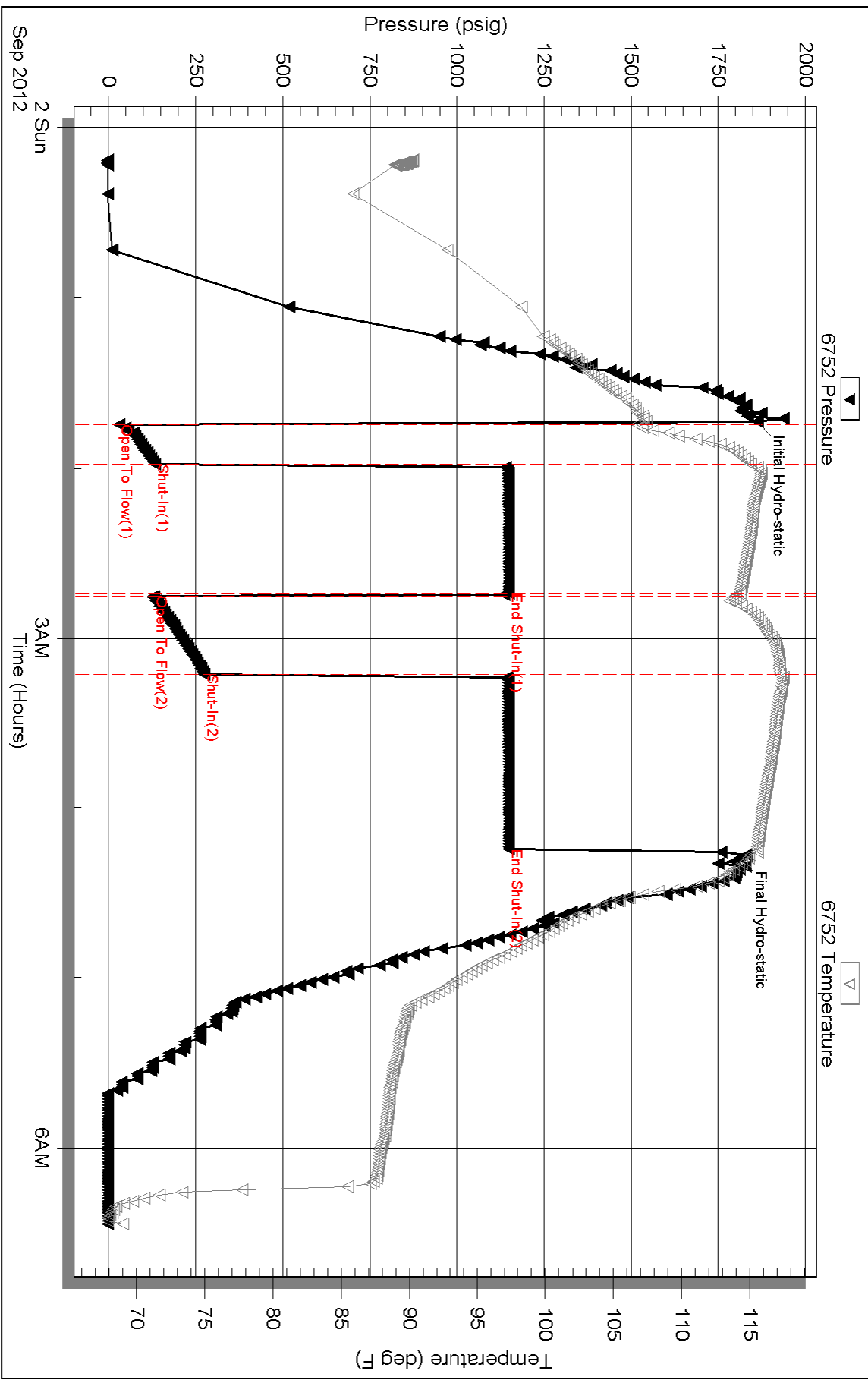
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time

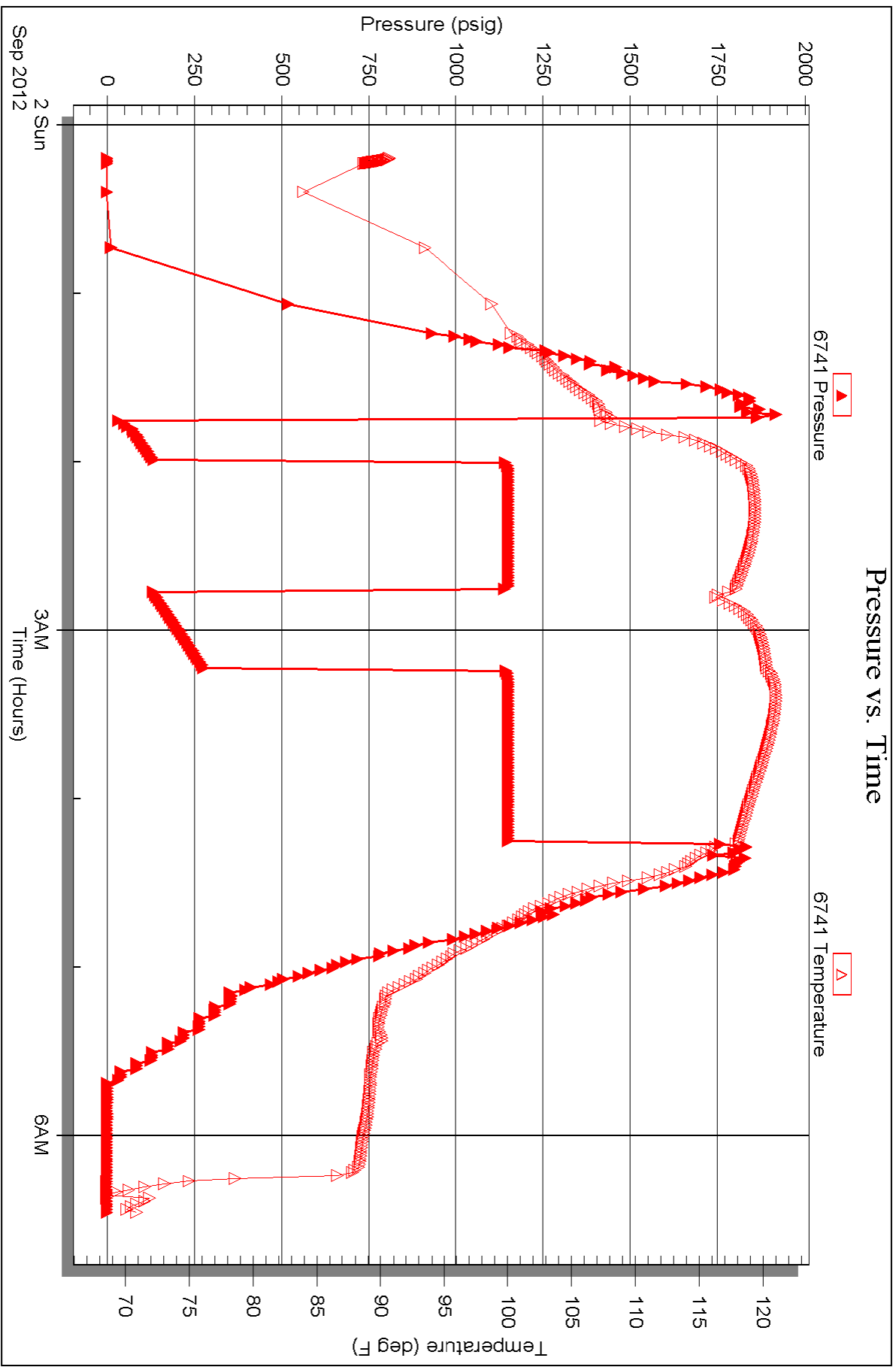


Serial #: 6741

Outside Dane G Hansen Trust

Eichman #17

DST Test Number: 2





# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 49428

4/10

Well Name & No. Eichman #17 Test No. 1 Date 9-1-12  
 Company Hansen, Dane G- Trust Elevation 2170 KB 2162 GL  
 Address PO Box 187 Logan, ks 67646  
 Co. Rep / Geo. Jeff Lawler Rig Discovery 1  
 Location: Sec. 13 Twp. 9 Rge. 21 Co. Graham State ks

Interval Tested 35462-3573 Zone Tested LKC "H-I"  
 Anchor Length 32 Drill Pipe Run 3505 Mud Wt. 8.7  
 Top Packer Depth 3457 Drill Collars Run 30 Vis 60  
 Bottom Packer Depth 3462 Wt. Pipe Run — WL 7.6  
 Total Depth 3573 Chlorides 2000 ppm System LCM  
 Blow Description IFP - sur blow - died 11 min  
ISI - no blow back  
FFP - no blow - flush - no blow  
FSI -

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>drl mud</u>			<u>100</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 5 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>1788</u>	<input checked="" type="checkbox"/> Test 1150	T-On Location <u>0155</u>
(B) First Initial Flow <u>16</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>0438</u>
(C) First Final Flow <u>19</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>0630</u>
(D) Initial Shut-In <u>99</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0710</u>
(E) Second Initial Flow <u>22</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0932</u>
(F) Second Final Flow <u>23</u>	<input checked="" type="checkbox"/> Mileage <u>105 RT</u> 162.75	Comments <u>5' fill on bottom</u>
(G) Final Shut-In <u>—</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1752</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>10-Flush-pull</u>	<input type="checkbox"/> Day Standby	Total <u>1637.75</u>
Final Shut-In <u>—</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1637.75</u>	

Approved By \_\_\_\_\_ Our Representative Brian Farbank  
 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.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 49429

4/10

Well Name & No. Eichman #17 Test No. 2 Date 9-1-12  
 Company Hansen, Done G Elevation 2170 KB 2162 GL  
 Address \_\_\_\_\_  
 Co. Rep / Geo. Jeff Lawler Rig Discovery 1  
 Location: Sec. 13 Twp. 9 Rge. 21 Co. Graham State K

Interval Tested 3666-3708 Zone Tested Simpson Sand - AnSack66  
 Anchor Length 42 Drill Pipe Run 3621 Mud Wt. 8.9  
 Top Packer Depth 3661 Drill Collars Run 30 Vis 60  
 Bottom Packer Depth 3666 Wt. Pipe Run — WL 8.0  
 Total Depth 3708 Chlorides 2000 ppm System LCM \_\_\_\_\_  
 Blow Description IFP- BOB 4 min  
ISI- 2 1/4" blow back  
FFP- BOB 5 1/2 min  
FSI- 1/2" blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>185</u>	<u>GIP</u>				
<u>630</u>	<u>G Free oil</u>	<u>10</u>	<u>85</u>		<u>5</u>
<u>60</u>	<u>G MCO</u>	<u>10</u>	<u>60</u>		<u>30</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 690 BHT 116 Gravity 23 API RW @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1862  Test 1150 T-On Location 2350  
 (B) First Initial Flow 29  Jars \_\_\_\_\_ T-Started 0011  
 (C) First Final Flow 132  Safety Joint \_\_\_\_\_ T-Open 0145  
 (D) Initial Shut-In 1150  Circ Sub \_\_\_\_\_ T-Pulled 0415  
 (E) Second Initial Flow 129  Hourly Standby \_\_\_\_\_ T-Out 0627  
 (F) Second Final Flow 274  Mileage 162.75 Comments \_\_\_\_\_  
 (G) Final Shut-In 1150  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1812  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1312.75  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1312.75

Approved By \_\_\_\_\_ Our Representative Brian Fairbank

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.