



## DRILL STEM TEST REPORT

Prepared For: **Werth Exploration Trust LLC**

1308 Schwaller Avenue  
Hays, Kansas 67601+2242

ATTN:

**Worcester M#2**

**21/7S/22W/Graham**

Start Date: 2013.05.21 @ 18:00:00

End Date: 2013.05.22 @ 00:56:30

Job Ticket #: 17495                      DST #: 1

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2013.05.22 @ 01:14:17



# DRILL STEM TEST REPORT

Werth Exploration Trust LLC

**21/7S/22W/Graham**

1308 Schwaller Avenue  
Hays, Kansas 67601+2242

**Worcester M#2**

Job Ticket: 17495

**DST#: 1**

ATTN:

Test Start: 2013.05.21 @ 18:00:00

## GENERAL INFORMATION:

Formation: **Lansing/Kansas City**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:54:30

Time Test Ended: 00:56:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 3325 Hays/118

**Interval: 3546.00 ft (KB) To 3573.00 ft (KB) (TVD)**

Reference Elevations: 2264.00 ft (KB)

Total Depth: 3573.00 ft (KB) (TVD)

2259.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6749 Inside**

Press @ Run Depth: 434.58 psia @ 3569.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.05.21

End Date:

2013.05.22

Last Calib.:

2013.05.22

Start Time: 18:00:00

End Time:

00:56:30

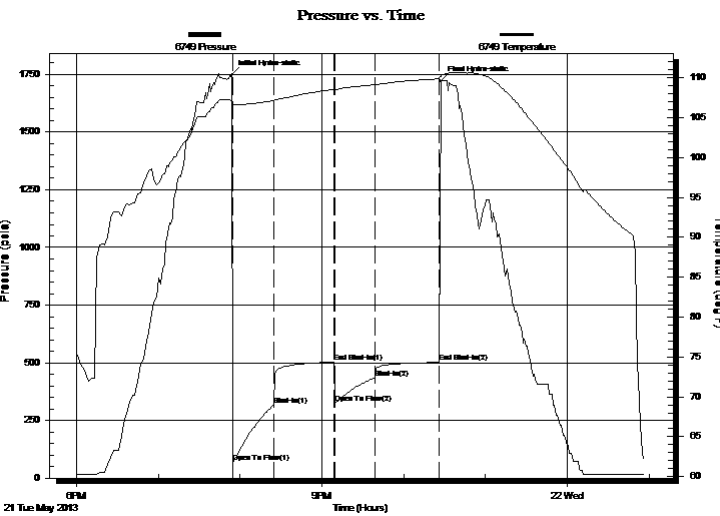
Time On Btm:

2013.05.21 @ 19:54:00

Time Off Btm:

2013.05.21 @ 22:27:00

**TEST COMMENT:** 1ST Open 30 Minutes/Good blow/Blow built to bottom of bucket in 3 minutes 30 seconds  
 1ST Shut In 45 Minutes/No blow back  
 2ND Open 30 Minutes/Fair blow/Blow built to bottom of bucket in 8 minutes  
 2ND Shut In 45 Minutes/No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1749.42	107.17	Initial Hydro-static
1	66.94	106.75	Open To Flow (1)
31	316.64	107.16	Shut-In(1)
75	503.68	108.57	End Shut-In(1)
76	324.09	108.53	Open To Flow (2)
105	434.58	109.16	Shut-In(2)
152	502.16	109.88	End Shut-In(2)
153	1723.27	110.20	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
868.00	Muddy Water with show of oil	12.18
0.00	Mud 10% Water 90%	0.00
0.00	Recovery Chlorides 60,000 ppm	0.00
0.00	Recov. Resist. .16 @ 65 deg	0.00

## Gas Rates

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



# DRILL STEM TEST REPORT

Werth Exploration Trust LLC  
 1308 Schwaller Avenue  
 Hays, Kansas 67601+2242  
 ATTN:

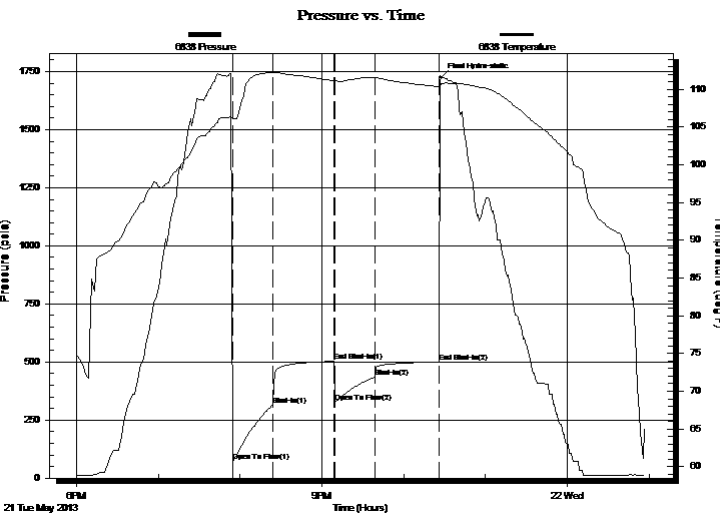
**21/7S/22W/Graham**  
**Worcester M#2**  
 Job Ticket: 17495      **DST#: 1**  
 Test Start: 2013.05.21 @ 18:00:00

## GENERAL INFORMATION:

Formation: **Lansing/Kansas City**  
 Deviated: No Whipstock:      ft (KB)  
 Time Tool Opened: 19:54:30  
 Time Test Ended: 00:56:30  
 Interval: **3546.00 ft (KB) To 3573.00 ft (KB) (TVD)**  
 Total Depth: 3573.00 ft (KB) (TVD)  
 Hole Diameter: 7.80 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Ken Swinney  
 Unit No: 3325 Hays/118  
 Reference Elevations: 2264.00 ft (KB)  
 2259.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 6838      Outside**  
 Press @ Run Depth: 500.67 psia @ 3570.00 ft (KB)      Capacity: 5000.00 psia  
 Start Date: 2013.05.21      End Date: 2013.05.22      Last Calib.: 2013.05.22  
 Start Time: 18:00:00      End Time: 00:56:30      Time On Btm:  
 Time Off Btm: 2013.05.21 @ 22:27:00

**TEST COMMENT:** 1ST Open 30 Minutes/Good blow /Blow built to bottom of bucket in 3 minutes 30 seconds  
 1ST Shut In 45 Minutes/No blow back  
 2ND Open 30 Minutes/Fair blow /Blow built to bottom of bucket in 8 minutes  
 2ND Shut In 45 Minutes/No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	70.40	106.12	Open To Flow (1)
30	315.53	112.20	Shut-In(1)
75	503.62	111.13	End Shut-In(1)
75	325.32	111.20	Open To Flow (2)
105	435.30	111.51	Shut-In(2)
152	500.67	110.34	End Shut-In(2)
153	1724.69	110.66	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
868.00	Muddy Water with show of oil	12.18
0.00	Mud 10% Water 90%	0.00
0.00	Recovery Chlorides 60,000 ppm	0.00
0.00	Recov. Resist. .16 @ 65 deg	0.00

## Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Werth Exploration Trust LLC

**21/7S/22W/Graham**

1308 Schwaller Avenue  
Hays, Kansas 67601+2242

**Worcester M#2**

Job Ticket: 17495

**DST#: 1**

ATTN:

Test Start: 2013.05.21 @ 18:00:00

## Tool Information

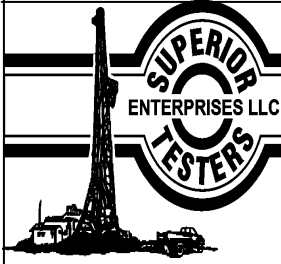
Drill Pipe:	Length: 3552.00 ft	Diameter: 3.80 inches	Volume: 49.83 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 49.83 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	3546.00 ft			Final 47000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	47.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			3531.00	
Hydraulic Tool	5.00			3536.00	
Packer	5.00			3541.00	20.00 Bottom Of Top Packer
Packer	5.00			3546.00	
Anchor	22.00			3568.00	
Recorder	1.00	6749	Inside	3569.00	
Recorder	1.00	6838	Outside	3570.00	
Bullnose	3.00			3573.00	27.00 Bottom Packers & Anchor

**Total Tool Length: 47.00**



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Werth Exploration Trust LLC

**21/7S/22W/Graham**

1308 Schwaller Avenue  
Hays, Kansas 67601+2242

**Worcester M#2**

Job Ticket: 17495

**DST#: 1**

ATTN:

Test Start: 2013.05.21 @ 18:00:00

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 55.00 sec/qt  
Water Loss: 7.09 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 400.00 ppm  
Filter Cake: 1.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psia

Oil API: deg API  
Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
868.00	Muddy Water with show of oil	12.176
0.00	Mud 10% Water 90%	0.000
0.00	Recovery Chlorides 60,000 ppm	0.000
0.00	Recov. Resist. .16 @ 65 deg	0.000

Total Length: 868.00 ft      Total Volume: 12.176 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6749

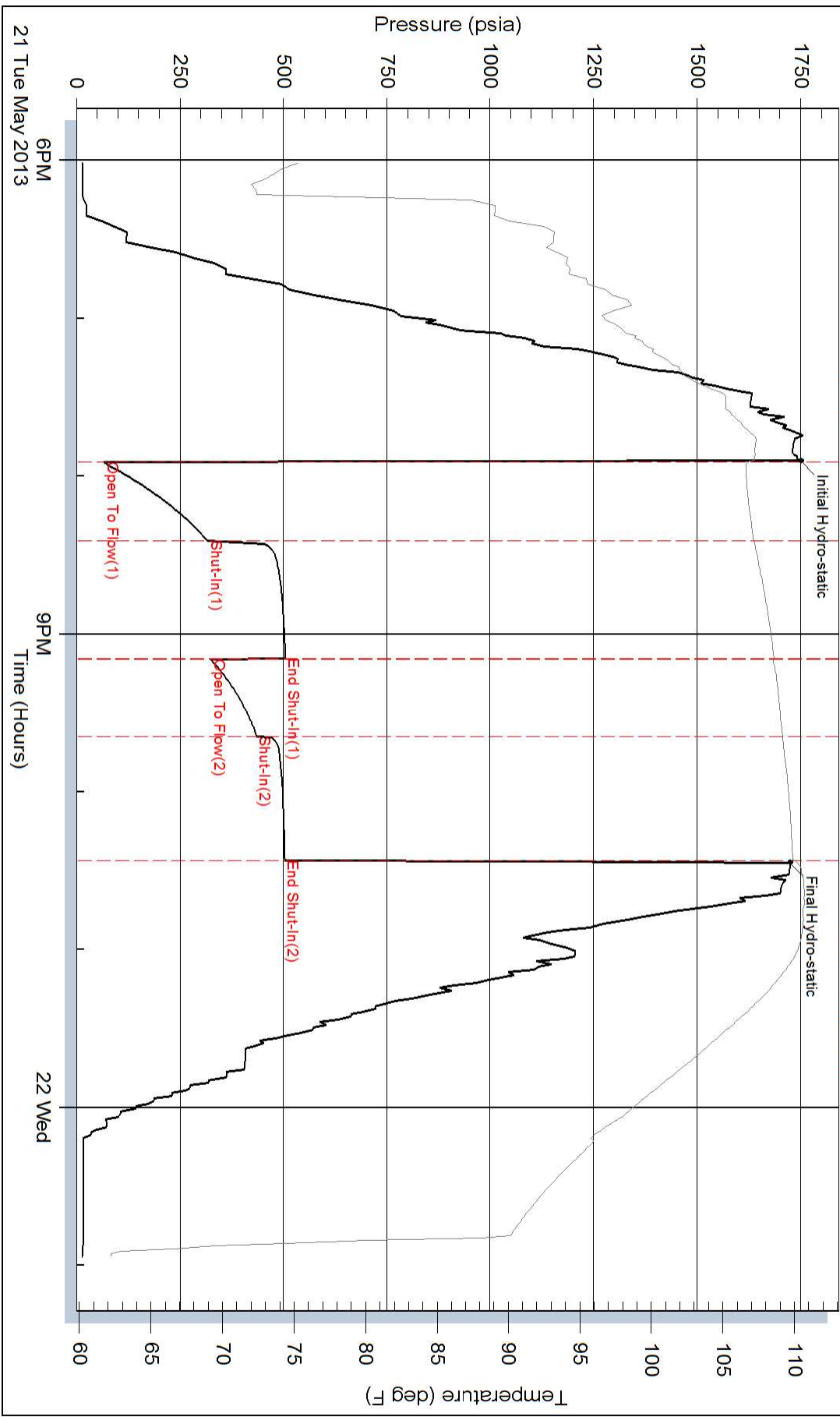
Inside

Werth Exploration Trust LLC

Worcester M#2

DST Test Number: 1

### Pressure vs. Time



Superior Testers Enterprises LLC

Ref. No: 17495

Printed: 2013.05.22 @ 01:14:18

### Pressure vs. Time

