

Confidentiality Requested:

☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1203510

Form ACO-1

August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- ☐ New Well ☐ Re-Entry ☐ Workover
- ☐ Oil ☐ WSW ☐ SWD ☐ SIOW
- ☐ Gas ☐ D&A ☐ ENHR ☐ SIGW
- ☐ OG ☐ GSW ☐ Temp. Abd.
- ☐ CM (Coal Bed Methane)
- ☐ Cathodic ☐ Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- ☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
- ☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer
- ☐ Commingled Permit #: _____
- ☐ Dual Completion Permit #: _____
- ☐ SWD Permit #: _____
- ☐ ENHR Permit #: _____
- ☐ GSW Permit #: _____

Spud Date or
Recompletion Date

Date Reached TD

Completion Date or
Recompletion Date

API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ ☐ East ☐ West

_____ Feet from ☐ North / ☐ South Line of Section

_____ Feet from ☐ East / ☐ West Line of Section

Footages Calculated from Nearest Outside Section Corner:

☐ NE ☐ NW ☐ SE ☐ SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? ☐ Yes ☐ No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite: _____

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ ☐ East ☐ West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

☐ Confidentiality Requested

Date: _____

☐ Confidential Release Date: _____

☐ Wireline Log Received

☐ Geologist Report Received

☐ UIC Distribution

ALT ☐ I ☐ II ☐ III Approved by: _____ Date: _____

1203510

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ ☐ East ☐ West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken ☐ Yes ☐ No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey ☐ Yes ☐ No Cores Taken ☐ Yes ☐ No Electric Log Run ☐ Yes ☐ No List All E. Logs Run: _____	☐ Log Formation (Top), Depth and Datum ☐ Sample Name Top Datum
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CASING RECORD ☐ New ☐ Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
____ Perforate				
____ Protect Casing				
____ Plug Back TD				
____ Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☐ No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run: ☐ Yes ☐ No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other <i>(Explain)</i> _____
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Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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DISPOSITION OF GAS: ☐ Vented ☐ Sold ☐ Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: ☐ Open Hole ☐ Perf. ☐ Dually Comp. ☐ Commingled <i>(Submit ACO-5)</i> ☐ Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Hertel Oil Company LLC
Well Name	Doerr H 2
Doc ID	1203510

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface Pipe	12.25	8.625	23	1253	Common	470	2%Gel & 3% CC

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 7743

Date <u>3-8-14</u>	Sec. <u>34</u>	Twp. <u>15</u>	Range <u>19</u>	County <u>Ellis</u>	State <u>KS</u>	On Location	Finish <u>12:30 A.M.</u>
Location <u>Schoonchen SW 200RD 1/2 km N into</u>							
Lease <u>Doerr H</u>		Well No. <u>2</u>		Owner			
Contractor <u>Discovery #3</u>				To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Type Job <u>Surface</u>				Charge To <u>Hertel Oil</u>			
Hole Size <u>12 1/4</u>		T.D. <u>1253</u>		Street			
Csg. <u>8 5/8</u>		Depth <u>1252</u>		City			
Tbg. Size		Depth		State			
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.			
Cement Left in Csg. <u>19.47</u>		Shoe Joint <u>19.47</u>		Cement Amount Ordered <u>450 com 3/CC2/6EL</u>			
Meas Line		Displace <u>78 1/2 BBL</u>					
EQUIPMENT				Common <u>450</u>			
Pumptrk <u>18</u>	No. <u>1</u>	Cement Helper <u>Coody</u>		Poz. Mix			
Bulktrk	No. <u>1</u>	Driver <u>Heath</u>		Gel. <u>9</u>			
Bulktrk	No. <u>1</u>	Driver <u>Heath</u>		Calcium <u>16</u>			
JOB SERVICES & REMARKS				Hulls			
Remarks:				Salt			
Rat Hole				Flowseal			
Mouse Hole				Kol-Seal			
Centralizers				Mud CLR 48			
Baskets				CFL-117 or CD110 CAF 38			
D/V or Port Collar				Sand			
<u>8 5/8 Ben bottom Est Circulation</u>				Handling <u>475</u>			
<u>Mixed 4205K + Displaced Plug</u>				Mileage			
<u>Cement Circulated</u>				FLOAT EQUIPMENT			
<u>Plug Land 10 800#</u>				Guide Shoe <u>8 5/8 Rubber Plug</u>			
<u>Shut in 500#</u>				Centralizer <u>3</u> <u>Back He Plate</u>			
				Baskets			
				AFU Inserts			
				Float Shoe			
				Latch Down			
				Pumptrk Charge <u>Long Surface</u>			
				Mileage <u>18</u>			
				Tax			
				Discount			
				Total Charge			
Signature <u>Heath Doerr</u>							



DRILL STEM TEST REPORT

Prepared For: **Hertel Oil Company LLC**

704 E.12th St
Hays KS 67601-3441

ATTN: Mike Hertel , Marc D

Doerr #H-2

34-15s 19w Ellis,KS

Start Date: 2014.03.10 @ 21:30:29

End Date: 2014.03.11 @ 03:32:23

Job Ticket #: 54080 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.03.17 @ 10:36:06



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hertel Oil Company LLC

704 E.12th St
Hays KS 67601-3441

ATTN: Mike Hertel , Marc D

34-15s 19w Ellis,KS

Doerr #H-2

Job Ticket: 54080

DST#: 1

Test Start: 2014.03.10 @ 21:30:29

GENERAL INFORMATION:

Formation: **LKC "E"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:48:24

Time Test Ended: 03:32:23

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 70

Interval: 3379.00 ft (KB) To 3406.00 ft (KB) (TVD)

Total Depth: 3406.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2050.00 ft (KB)

2042.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8369 Inside

Press@RunDepth: 63.66 psig @ 3383.00 ft (KB)

Start Date: 2014.03.10

End Date:

2014.03.11

Start Time: 21:30:29

End Time:

03:32:23

Capacity: 8000.00 psig

Last Calib.: 2014.03.11

Time On Btm: 2014.03.10 @ 23:46:09

Time Off Btm: 2014.03.11 @ 01:53:23

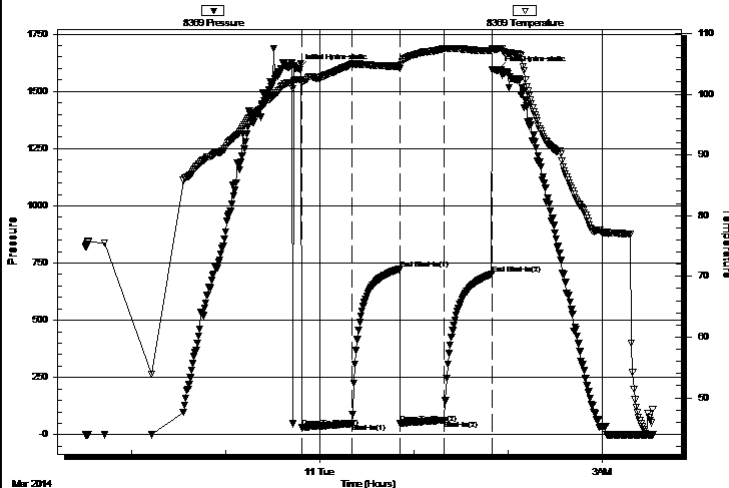
TEST COMMENT: 30-IFP-w k bl 1/2" to 1 1/4" bl , slid tool approx .8' to bottom

30-ISIP-no bl

30-FFP-w k bl , 1/4" bl

30-FSIP-no bl

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1600.19	102.45	Initial Hydro-static
3	32.38	101.83	Open To Flow (1)
34	48.33	104.92	Shut-In(1)
65	723.39	104.62	End Shut-In(1)
65	49.85	104.26	Open To Flow (2)
93	63.66	107.52	Shut-In(2)
124	701.19	107.12	End Shut-In(2)
128	1593.04	107.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	Water	0.57
40.00	MW 25%M75%W w/show of oil	0.56

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hertel Oil Company LLC

704 E.12th St
Hays KS 67601-3441

ATTN: Mike Hertel , Marc D

34-15s 19w Ellis,KS

Doerr #H-2

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Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2050.00 ft (KB)

2042.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8700 Outside

Press@RunDepth: psig @ 3383.00 ft (KB)

Start Date: 2014.03.10

End Date:

2014.03.11

Start Time: 21:30:17

End Time:

03:30:56

Capacity: 8000.00 psig

Last Calib.: 2014.03.11

Time On Btm:

Time Off Btm:

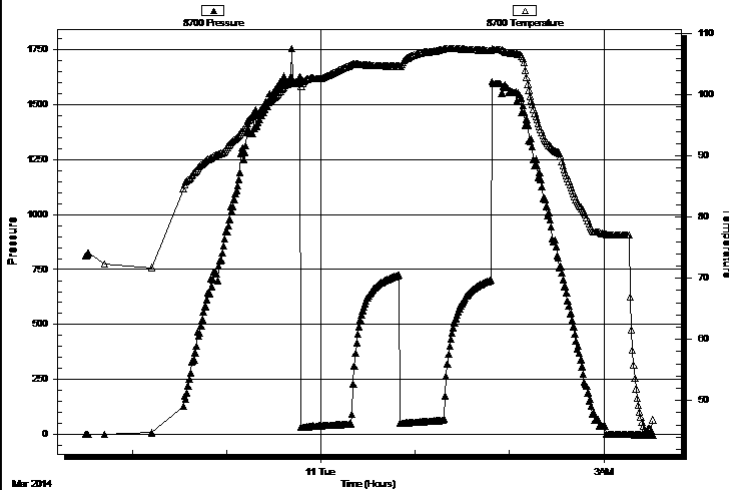
TEST COMMENT: 30-IFP-w k bl 1/2" to 1 1/4" bl , slid tool approx .8' to bottom

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30-FFP-w k bl , 1/4" bl

30-FSIP-no bl

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

Length (ft)	Description	Volume (bbl)
60.00	Water	0.57
40.00	MW 25%M75%W w/show of oil	0.56

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hertel Oil Company LLC

34-15s 19w Ellis,KS

704 E.12th St
Hays KS 67601-3441

Doerr #H-2

Job Ticket: 54080

DST#: 1

ATTN: Mike Hertel , Marc D

Test Start: 2014.03.10 @ 21:30:29

Tool Information

Drill Pipe:	Length:	3361.00 ft	Diameter:	3.80 inches	Volume:	47.15 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:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:	70000.00 lb
					Total Volume:	47.30 bbl	Tool Chased	8.00 ft
Drill Pipe Above KB:		33.00 ft					String Weight: Initial	46000.00 lb
Depth to Top Packer:		3379.00 ft					Final	46000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		27.00 ft						
Tool Length:		48.00 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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Change Over Sub	1.00			3359.00	
Shut In Tool	5.00			3364.00	
Hydraulic tool	5.00			3369.00	
Packer	5.00			3374.00	21.00 Bottom Of Top Packer
Packer	5.00			3379.00	
Stubb	1.00			3380.00	
Perforations	3.00			3383.00	
Recorder	0.00	8369	Inside	3383.00	
Recorder	0.00	8700	Outside	3383.00	
Perforations	20.00			3403.00	
Bullnose	3.00			3406.00	27.00 Bottom Packers & Anchor

Total Tool Length: 48.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Hertel Oil Company LLC

34-15s 19w Ellis,KS

704 E.12th St
Hays KS 67601-3441

Doerr #H-2

Job Ticket: 54080

DST#: 1

ATTN: Mike Hertel , Marc D

Test Start: 2014.03.10 @ 21:30:29

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 48.00 sec/qt

Water Loss: 6.75 in³

Resistivity: ohm.m

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity: 80000 ppm

deg API

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	Water	0.568
40.00	MW 25%M75%W w/show of oil	0.561

Total Length: 100.00 ft

Total Volume: 1.129 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .11@60F

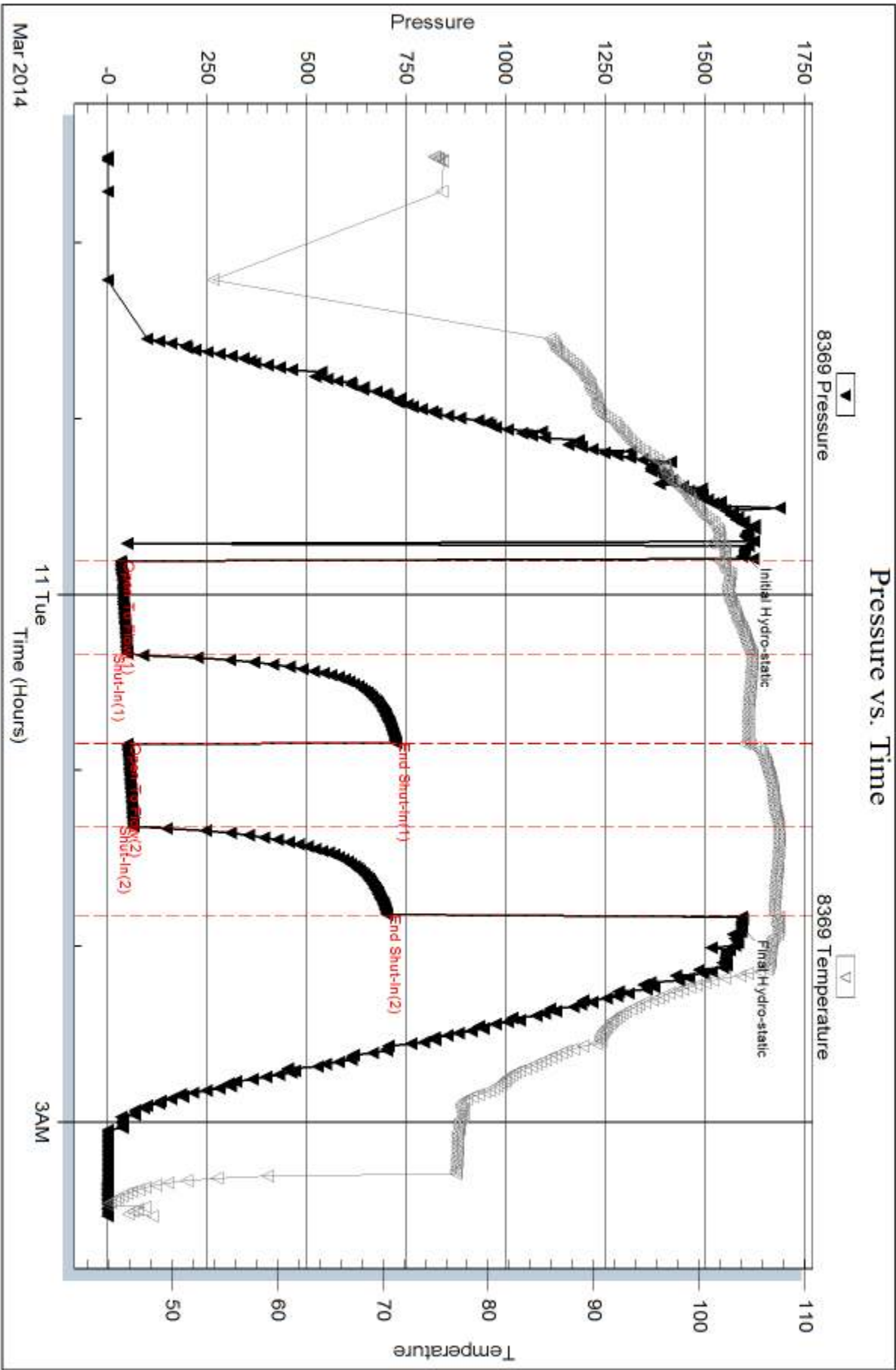
Serial #: 8369

Inside

Hertel Oil Company LLC

Doerr #4-2

DST Test Number: 1

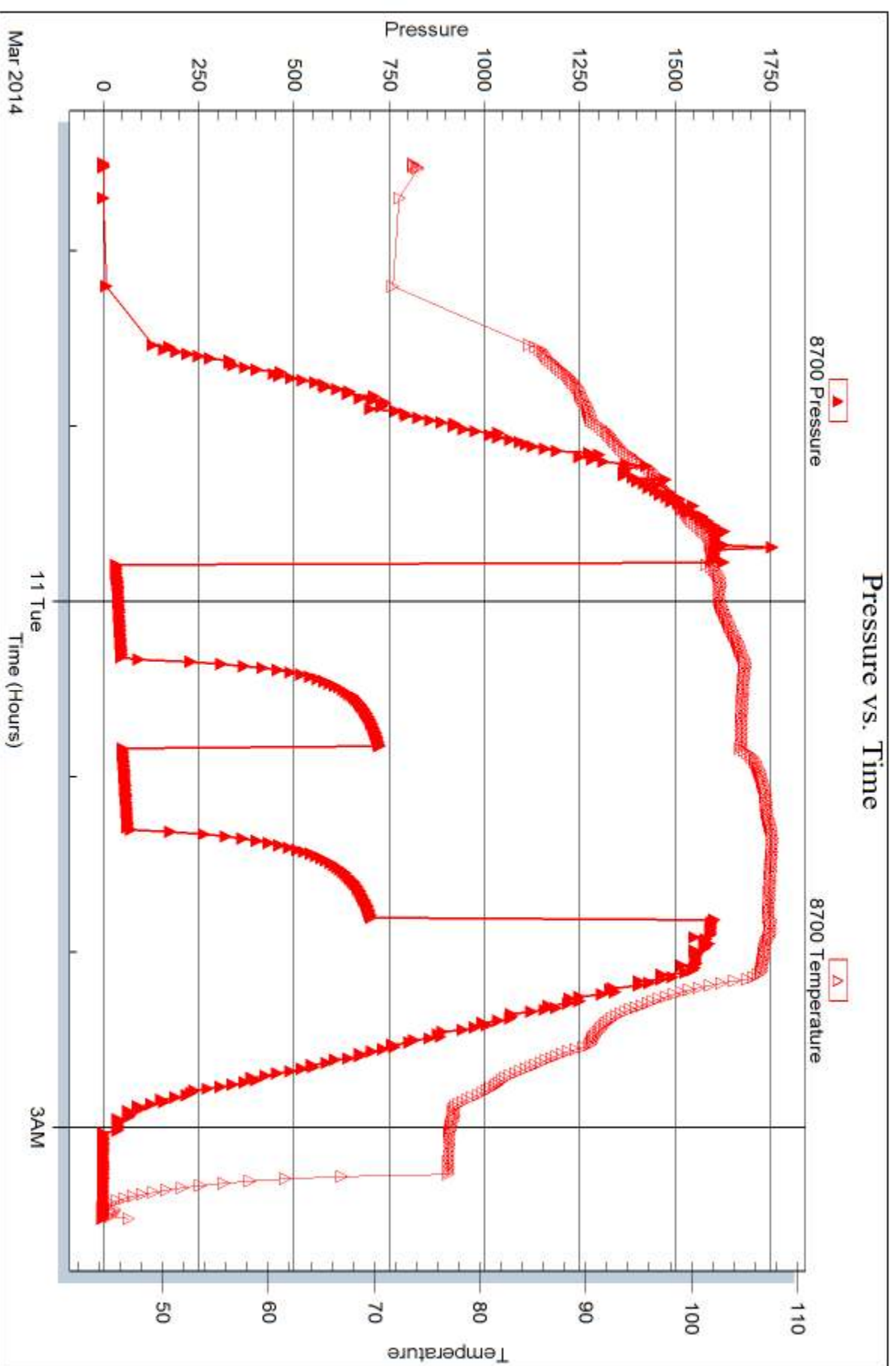


Serial #: 8700

Outside Hertel Oil Company LLC

Doerr #H-2

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 54080

Printed: 2014.03.17 @ 10:36:08



DRILL STEM TEST REPORT

Prepared For: **Hertel Oil Company LLC**

704 E. 12th St
Hays KS 67601-3441

ATTN: Mike Hertel , Marc D

Doerr #H-2

34-15s 19w Ellis,KS

Start Date: 2014.03.11 @ 16:35:35

End Date: 2014.03.11 @ 22:25:44

Job Ticket #: 54081 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.03.17 @ 10:35:45



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hertel Oil Company LLC

704 E.12th St
Hays KS 67601-3441

ATTN: Mike Hertel , Marc D

34-15s 19w Ellis,KS

Doerr #H-2

Job Ticket: 54081

DST#: 2

Test Start: 2014.03.11 @ 16:35:35

GENERAL INFORMATION:

Formation: **LKC H-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:44:00

Time Test Ended: 22:25:44

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 3454.00 ft (KB) To 3530.00 ft (KB) (TVD)

Total Depth: 3530.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2050.00 ft (KB)

2042.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8369 Inside

Press@RunDepth: 52.11 psig @ 3462.00 ft (KB)

Start Date: 2014.03.11

End Date:

2014.03.11

Start Time: 16:35:35

End Time:

22:25:44

Capacity: 8000.00 psig

Last Calib.: 2014.03.11

Time On Btm: 2014.03.11 @ 18:41:45

Time Off Btm: 2014.03.11 @ 20:48:00

TEST COMMENT: 30-IFP-w k surface bl, died in 8 min

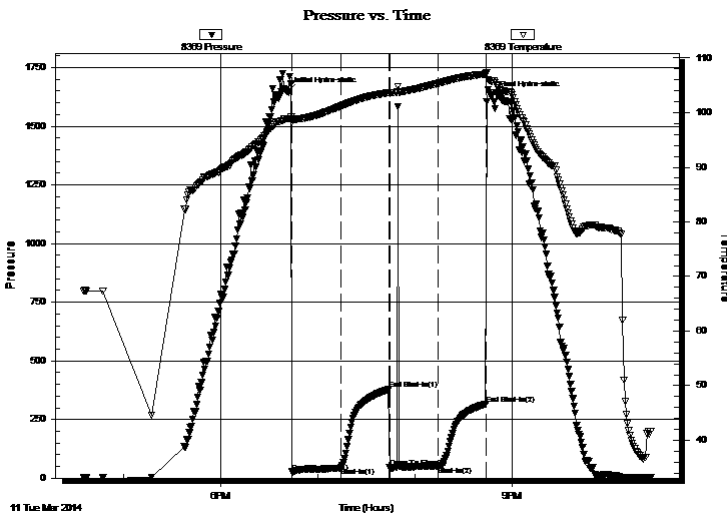
30-ISIP-no bl

30-FFP-no bl , flushed tool

30-FSIP-no bl

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1646.40	98.87	Initial Hydro-static
3	26.60	98.25	Open To Flow (1)
33	44.11	101.21	Shut-In(1)
63	378.46	103.67	End Shut-In(1)
63	44.24	103.60	Open To Flow (2)
93	52.11	105.37	Shut-In(2)
123	315.92	107.06	End Shut-In(2)
127	1631.28	105.81	Final Hydro-static



Recovery

Length (ft)	Description	Volume (bbl)
65.00	MW 10%M90%W	0.64

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hertel Oil Company LLC

704 E.12th St
Hays KS 67601-3441

ATTN: Mike Hertel , Marc D

34-15s 19w Ellis,KS

Doerr #H-2

Job Ticket: 54081

DST#: 2

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GENERAL INFORMATION:

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Total Depth: 3530.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2050.00 ft (KB)

2042.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8700 Outside

Press@RunDepth: psig @ 3462.00 ft (KB)

Start Date: 2014.03.11

End Date:

2014.03.11

Start Time: 16:35:58

End Time:

22:24:52

Capacity: 8000.00 psig

Last Calib.:

2014.03.11

Time On Btm:

Time Off Btm:

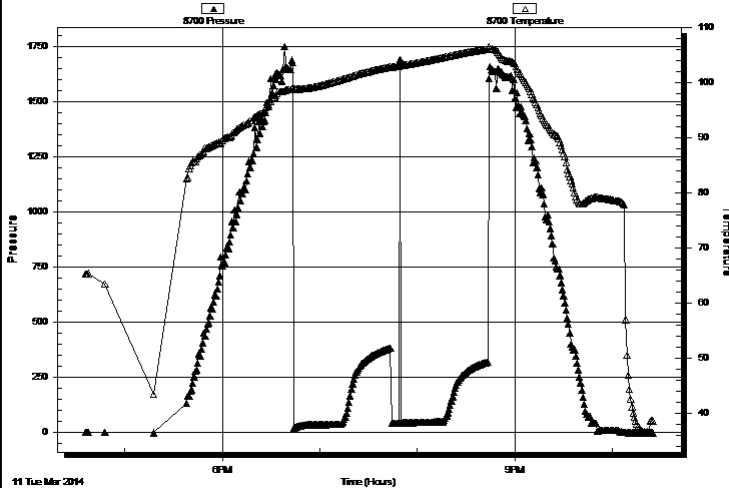
TEST COMMENT: 30-IFP-w k surface bl, died in 8 min

30-ISIP-no bl

30-FFP-no bl , flushed tool

30-FSIP-no bl

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

Length (ft)	Description	Volume (bbl)
65.00	MW 10%M90%W	0.64

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hertel Oil Company LLC

34-15s 19w Ellis,KS

704 E.12th St
Hays KS 67601-3441

Doerr #H-2

Job Ticket: 54081

DST#: 2

ATTN: Mike Hertel , Marc D

Test Start: 2014.03.11 @ 16:35:35

Tool Information

Drill Pipe:	Length:	3423.00 ft	Diameter:	3.80 inches	Volume:	48.02 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:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:	55000.00 lb
					Total Volume:	48.17 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		20.00 ft					String Weight: Initial	49000.00 lb
Depth to Top Packer:		3454.00 ft					Final	49000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		76.00 ft						
Tool Length:		97.00 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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Change Over Sub	1.00			3434.00	
Shut In Tool	5.00			3439.00	
Hydraulic tool	5.00			3444.00	
Packer	5.00			3449.00	21.00 Bottom Of Top Packer
Packer	5.00			3454.00	
Stubb	1.00			3455.00	
Perforations	7.00			3462.00	
Recorder	0.00	8369	Inside	3462.00	
Recorder	0.00	8700	Outside	3462.00	
Blank Spacing	65.00			3527.00	
Bullnose	3.00			3530.00	76.00 Bottom Packers & Anchor

Total Tool Length: 97.00



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Hertel Oil Company LLC

34-15s 19w Ellis,KS

704 E.12th St
Hays KS 67601-3441

Doerr #H-2

Job Ticket: 54081

DST#: 2

ATTN: Mike Hertel , Marc D

Test Start: 2014.03.11 @ 16:35:35

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 60.00 sec/qt

Water Loss: 6.75 in³

Resistivity: ohm.m

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

deg API

Water Salinity: 58000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	MW 10% M90% W	0.638

Total Length: 65.00 ft Total Volume: 0.638 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .18@ 50F

Serial #: 8369

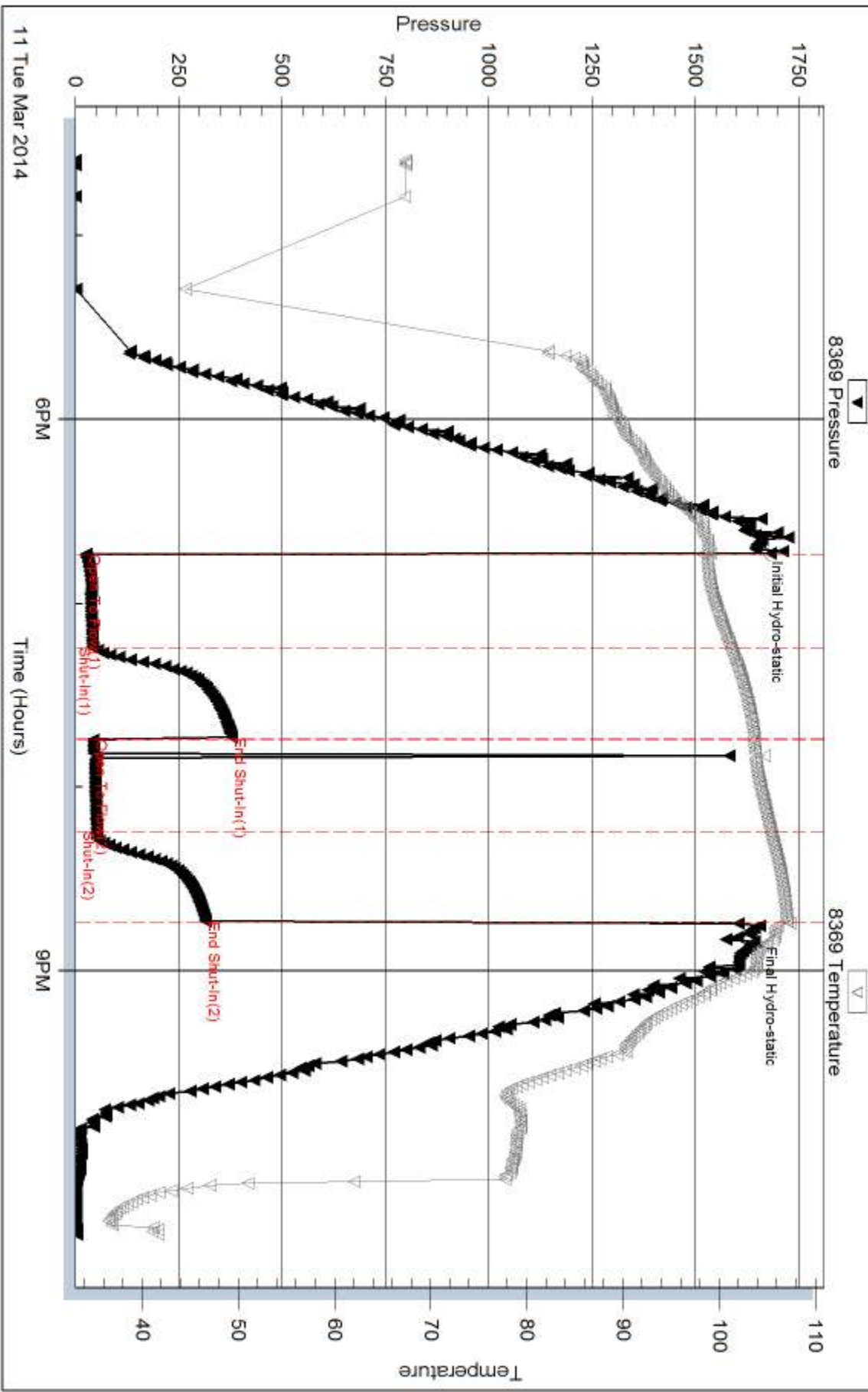
Inside

Hertel Oil Company LLC

Doerr #4-2

DST Test Number: 2

Pressure vs. Time

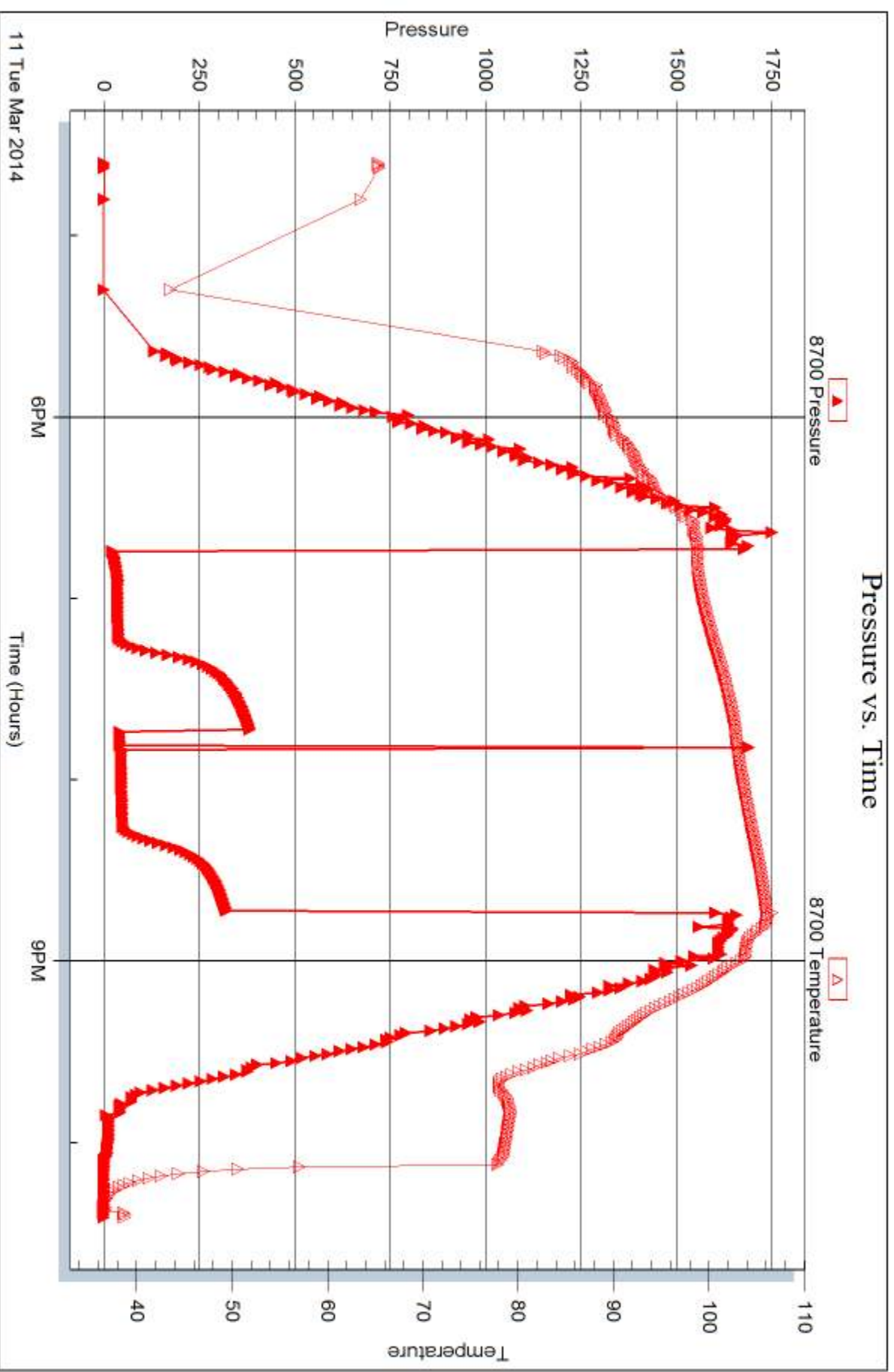


Serial #: 8700

Outside Hertel Oil Company LLC

Doerr #H-2

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Hertel Oil Company LLC**

704 E. 12th St
Hays KS 67601-3441

ATTN: Mike Hertel , Marc D

Doerr #H-2

34-15s 19w Ellis,KS

Start Date: 2014.03.12 @ 09:10:06

End Date: 2014.03.12 @ 15:24:45

Job Ticket #: 54082 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.03.17 @ 10:35:20



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hertel Oil Company LLC

704 E.12th St
Hays KS 67601-3441

ATTN: Mike Hertel , Marc D

34-15s 19w Ellis,KS

Doerr #H-2

Job Ticket: 54082

DST#: 3

Test Start: 2014.03.12 @ 09:10:06

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:52:16

Time Test Ended: 15:24:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 3626.00 ft (KB) To 3640.00 ft (KB) (TVD)

Total Depth: 3640.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2050.00 ft (KB)

2042.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8369 Inside

Press@RunDepth: 39.13 psig @ 3632.00 ft (KB)

Start Date: 2014.03.12

End Date:

2014.03.12

Start Time: 09:10:06

End Time:

15:24:45

Capacity: 8000.00 psig

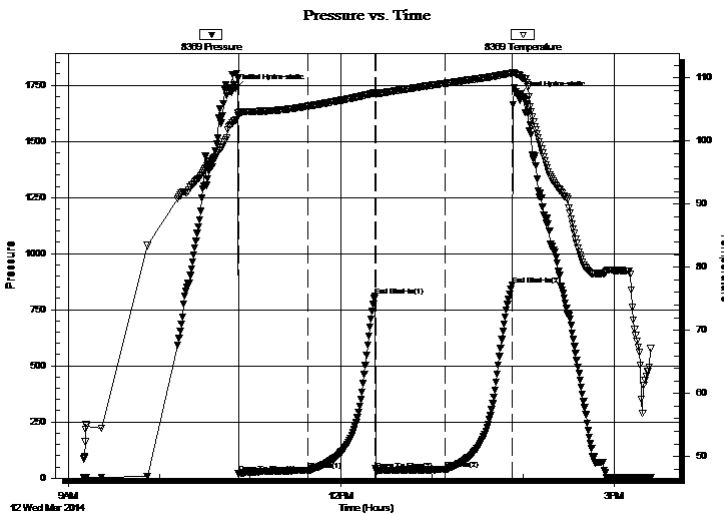
Last Calib.: 2014.03.12

Time On Btm: 2014.03.12 @ 10:50:31

Time Off Btm: 2014.03.12 @ 13:56:45

TEST COMMENT: 45-IFP-w k bl thru-out 1/4" to 1 1/4" bl
45-ISIP-no bl
45-FFP-w k bl thru-out 1/4" to 1 1/4" bl
45-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1733.71	103.33	Initial Hydro-static
2	19.91	104.07	Open To Flow (1)
48	33.95	105.51	Shut-In(1)
92	811.01	107.65	End Shut-In(1)
93	33.30	107.49	Open To Flow (2)
138	39.13	109.14	Shut-In(2)
183	859.79	110.77	End Shut-In(2)
187	1704.10	110.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	30'GIP	0.00
30.00	MGO 5%G40%M55%O	0.15
25.00	CO	0.35

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hertel Oil Company LLC

704 E.12th St
Hays KS 67601-3441

ATTN: Mike Hertel, Marc D

34-15s 19w Ellis,KS

Doerr #H-2

Job Ticket: 54082

DST#: 3

Test Start: 2014.03.12 @ 09:10:06

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:52:16

Time Test Ended: 15:24:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 3626.00 ft (KB) To 3640.00 ft (KB) (TVD)

Total Depth: 3640.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2050.00 ft (KB)

2042.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8700 Outside

Press@RunDepth: psig @ 3632.00 ft (KB)

Start Date: 2014.03.12

End Date:

2014.03.12

Start Time: 09:11:01

End Time:

15:24:25

Capacity: 8000.00 psig

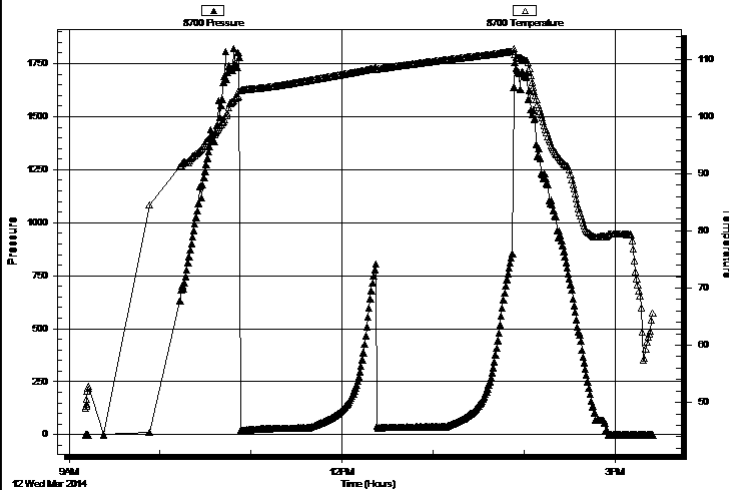
Last Calib.: 2014.03.12

Time On Btm:

Time Off Btm:

TEST COMMENT: 45-IFP-w k bl thru-out 1/4" to 1 1/4" bl
45-ISIP-no bl
45-FFP-w k bl thru-out 1/4" to 1 1/4" bl
45-FSIP-no bl

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

Length (ft)	Description	Volume (bbl)
0.00	30'GIP	0.00
30.00	MGO 5%G40%M55%O	0.15
25.00	CO	0.35

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hertel Oil Company LLC

34-15s 19w Ellis,KS

704 E.12th St
Hays KS 67601-3441

Doerr #H-2

Job Ticket: 54082

DST#: 3

ATTN: Mike Hertel , Marc D

Test Start: 2014.03.12 @ 09:10:06

Tool Information

Drill Pipe:	Length:	3583.00 ft	Diameter:	3.80 inches	Volume:	50.26 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:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:	65000.00 lb
					Total Volume:	50.41 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		8.00 ft					String Weight: Initial	49000.00 lb
Depth to Top Packer:		3626.00 ft					Final	50000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		14.00 ft						
Tool Length:		35.00 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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Change Over Sub	1.00			3606.00	
Shut In Tool	5.00			3611.00	
Hydraulic tool	5.00			3616.00	
Packer	5.00			3621.00	21.00 Bottom Of Top Packer
Packer	5.00			3626.00	
Stubb	1.00			3627.00	
Perforations	5.00			3632.00	
Recorder	0.00	8369	Inside	3632.00	
Recorder	0.00	8700	Outside	3632.00	
Perforations	5.00			3637.00	
Bullnose	3.00			3640.00	14.00 Bottom Packers & Anchor

Total Tool Length: 35.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Hertel Oil Company LLC

34-15s 19w Ellis,KS

704 E.12th St
Hays KS 67601-3441

Doerr #H-2

Job Ticket: 54082

DST#: 3

ATTN: Mike Hertel , Marc D

Test Start: 2014.03.12 @ 09:10:06

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 56.00 sec/qt

Water Loss: 6.38 in³

Resistivity: ohm.m

Salinity: 2700.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

36 deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	30'GIP	0.000
30.00	MGO 5%G40%M55%O	0.148
25.00	CO	0.351

Total Length: 55.00 ft

Total Volume: 0.499 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8369

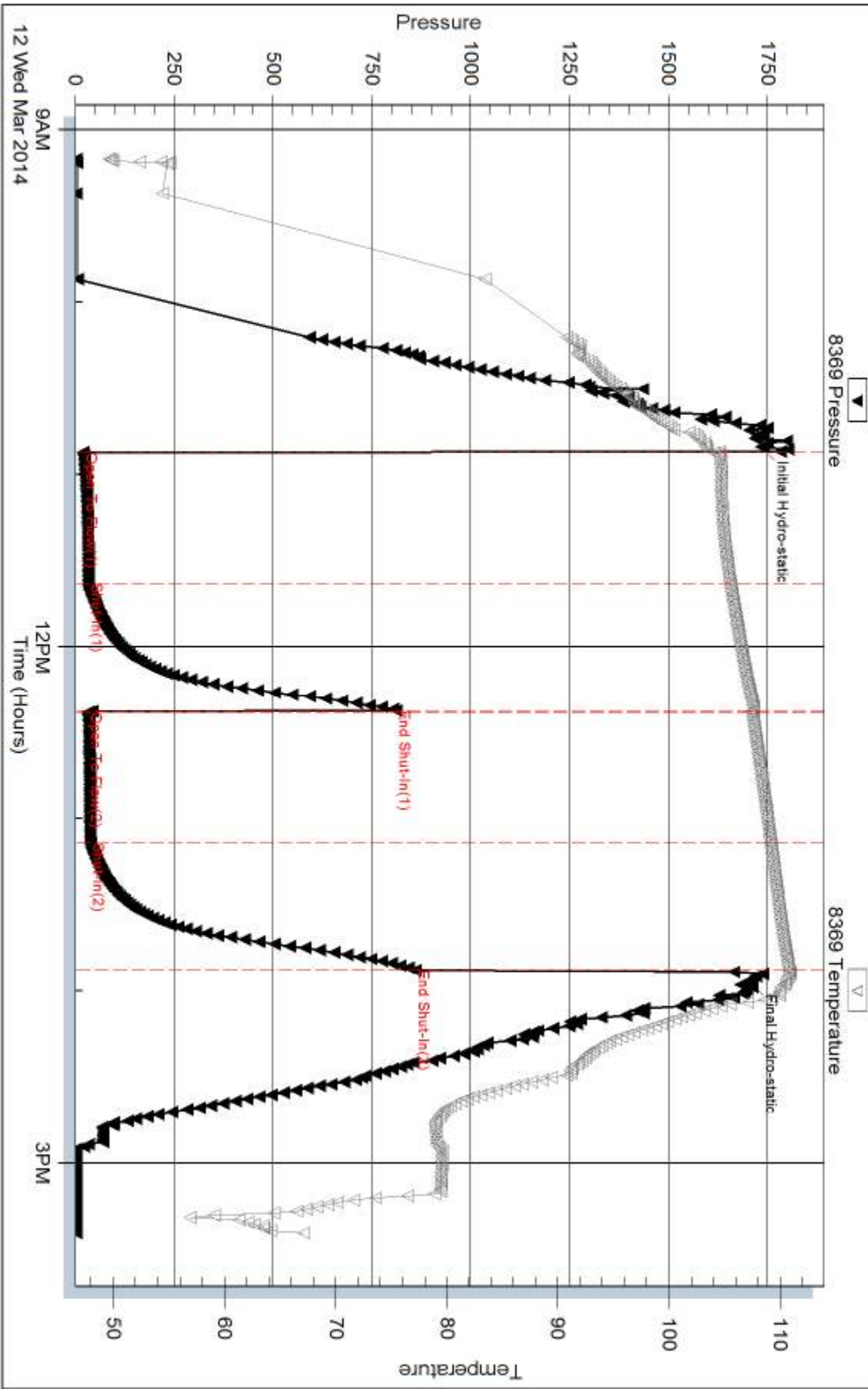
Inside

Hertel Oil Company LLC

Doerr #4-2

DST Test Number: 3

Pressure vs. Time

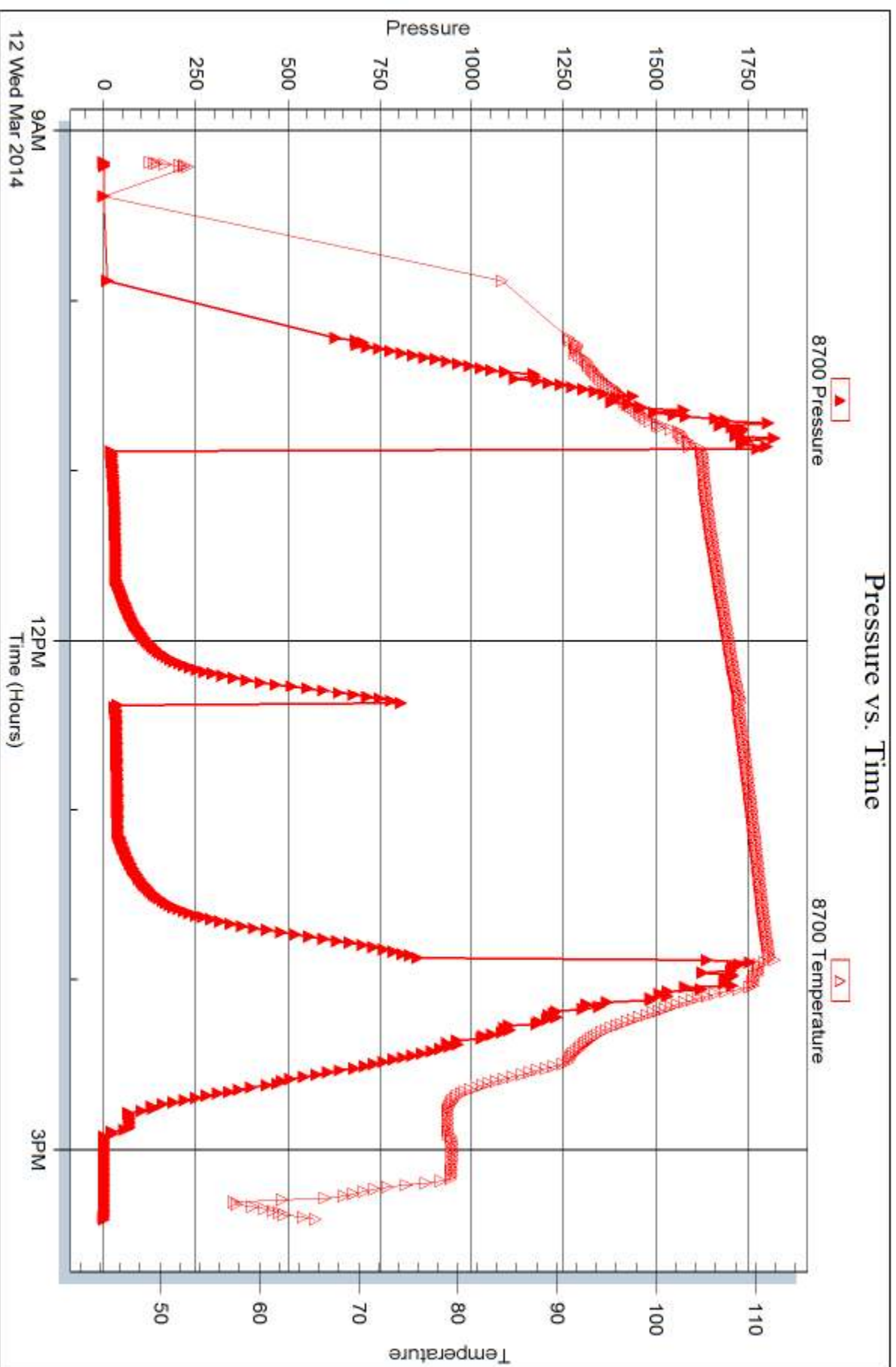


Serial #: 8700

Outside Hertel Oil Company LLC

Doerr #4-2

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Hertel Oil Company LLC**

704 E. 12th St
Hays KS 67601-3441

ATTN: Mike Hertel , Marc D

Doerr #H-2

34-15s 19w Ellis,KS

Start Date: 2014.03.12 @ 21:10:33

End Date: 2014.03.13 @ 02:57:57

Job Ticket #: 54083 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.03.17 @ 10:34:43



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hertel Oil Company LLC

704 E.12th St
Hays KS 67601-3441

ATTN: Mike Hertel, Marc D

34-15s 19w Ellis,KS

Doerr #H-2

Job Ticket: 54083

DST#: 4

Test Start: 2014.03.12 @ 21:10:33

GENERAL INFORMATION:

Formation: **Reagan Sd**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:21:43

Time Test Ended: 02:57:57

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 3624.00 ft (KB) To 3645.00 ft (KB) (TVD)

Total Depth: 3645.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2050.00 ft (KB)

2042.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8369 Inside

Press@RunDepth: 755.97 psig @ 3625.00 ft (KB)

Start Date: 2014.03.12

End Date:

2014.03.13

Start Time: 21:10:33

End Time:

02:57:57

Capacity: 8000.00 psig

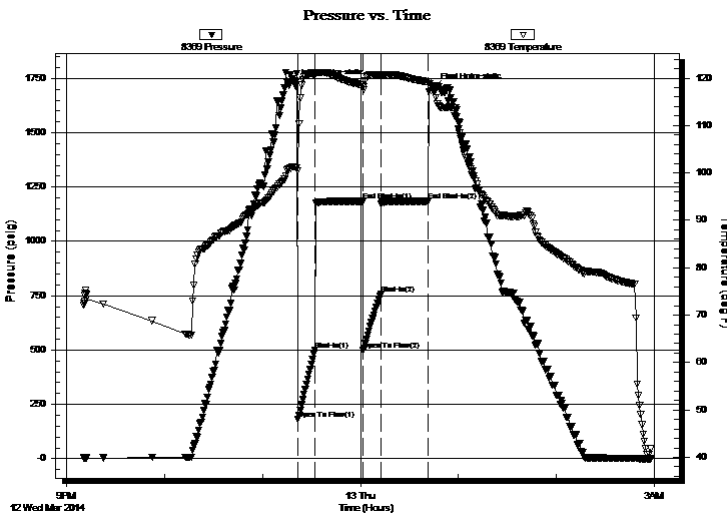
Last Calib.: 2014.03.13

Time On Btm: 2014.03.12 @ 23:19:58

Time Off Btm: 2014.03.13 @ 00:44:58

TEST COMMENT: 10-IFP-strg bl thru-out
30-ISIP-no bl
10-FFP-strg bl in 1 min
30-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1727.18	101.34	Initial Hydro-static
2	183.08	100.42	Open To Flow (1)
13	500.57	120.83	Shut-In(1)
42	1185.09	118.54	End Shut-In(1)
42	498.71	118.18	Open To Flow (2)
53	755.97	120.51	Shut-In(2)
82	1184.89	119.19	End Shut-In(2)
85	1709.05	117.28	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1550.00	Water	21.47

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Hertel Oil Company LLC

704 E.12th St
Hays KS 67601-3441

ATTN: Mike Hertel, Marc D

34-15s 19w Ellis,KS

Doerr #H-2

Job Ticket: 54083

DST#: 4

Test Start: 2014.03.12 @ 21:10:33

GENERAL INFORMATION:

Formation: **Reagan Sd**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:21:43

Time Test Ended: 02:57:57

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 3624.00 ft (KB) To 3645.00 ft (KB) (TVD)

Total Depth: 3645.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2050.00 ft (KB)

2042.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8700 Outside

Press@RunDepth: psig @ 3625.00 ft (KB)

Start Date: 2014.03.12

End Date:

2014.03.13

Start Time: 21:10:57

End Time:

02:57:06

Capacity: 8000.00 psig

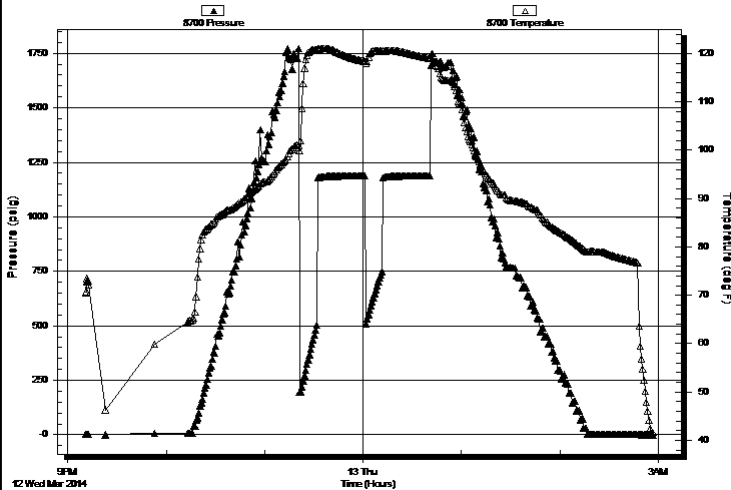
Last Calib.: 2014.03.13

Time On Btm:

Time Off Btm:

TEST COMMENT: 10-IFP-strg bl thru-out
30-ISIP-no bl
10-FFP-strg bl in 1 min
30-FSIP-no bl

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

Length (ft)	Description	Volume (bbl)
1550.00	Water	21.47

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hertel Oil Company LLC

34-15s 19w Ellis,KS

704 E.12th St
Hays KS 67601-3441

Doerr #H-2

Job Ticket: 54083

DST#: 4

ATTN: Mike Hertel , Marc D

Test Start: 2014.03.12 @ 21:10:33

Tool Information

Drill Pipe:	Length:	3583.00 ft	Diameter:	3.80 inches	Volume:	50.26 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:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:	60000.00 lb
					Total Volume:	50.41 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		10.00 ft					String Weight: Initial	49000.00 lb
Depth to Top Packer:		3624.00 ft					Final	55000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		21.00 ft						
Tool Length:		42.00 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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Change Over Sub	1.00			3604.00	
Shut In Tool	5.00			3609.00	
Hydraulic tool	5.00			3614.00	
Packer	5.00			3619.00	21.00 Bottom Of Top Packer
Packer	5.00			3624.00	
Stubb	1.00			3625.00	
Recorder	0.00	8369	Inside	3625.00	
Recorder	0.00	8700	Outside	3625.00	
Perforations	17.00			3642.00	
Bullnose	3.00			3645.00	21.00 Bottom Packers & Anchor
Total Tool Length:	42.00				



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Hertel Oil Company LLC

34-15s 19w Ellis,KS

704 E.12th St
Hays KS 67601-3441

Doerr #H-2

Job Ticket: 54083

DST#: 4

ATTN: Mike Hertel , Marc D

Test Start: 2014.03.12 @ 21:10:33

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 54.00 sec/qt

Water Loss: 6.39 in³

Resistivity: ohm.m

Salinity: 2700.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity: 32000 ppm

deg API

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1550.00	Water	21.469

Total Length: 1550.00 ft Total Volume: 21.469 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .24@60F

Serial #: 8369

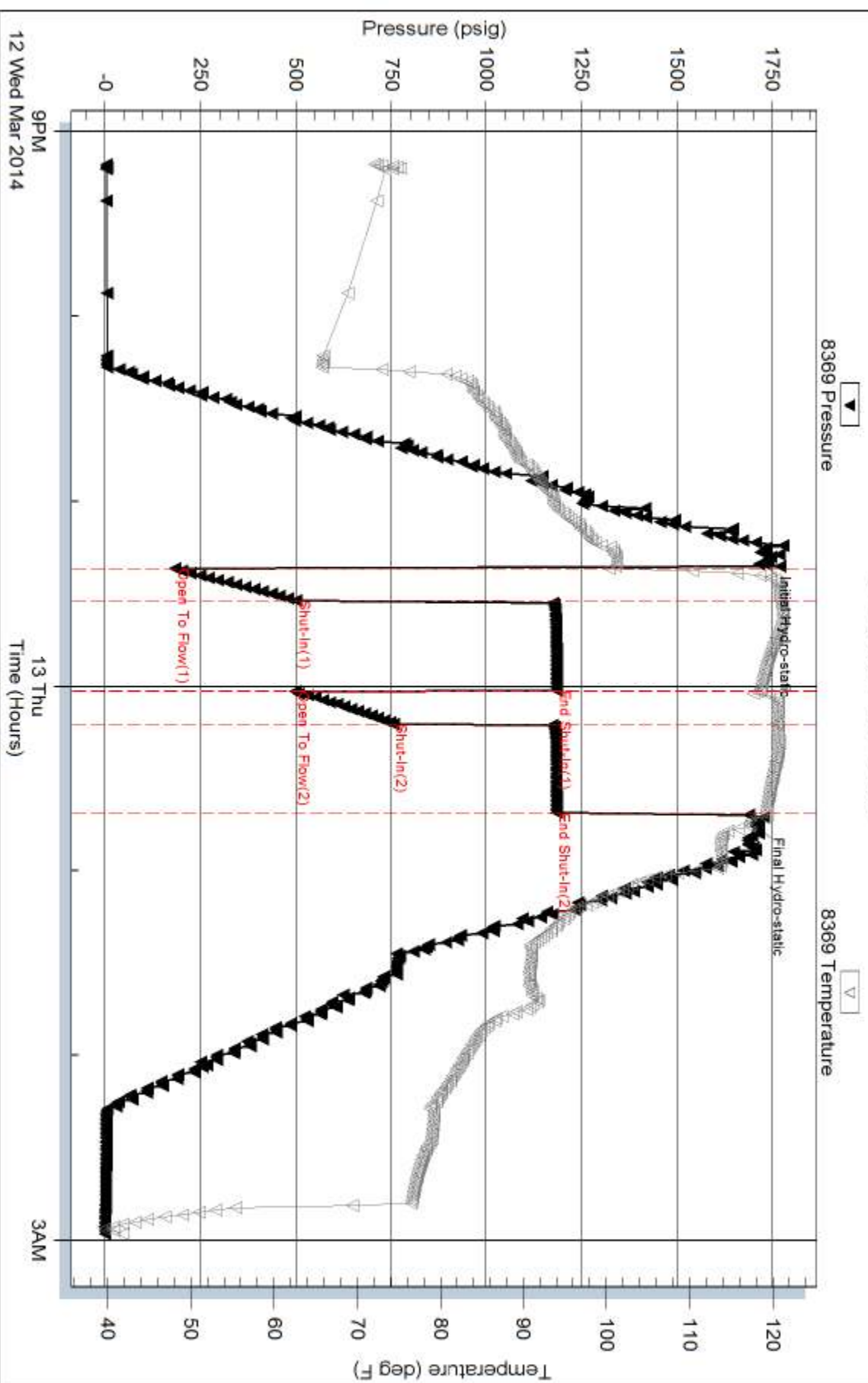
Inside

Hertel Oil Company LLC

Doerr #4-2

DST Test Number: 4

Pressure vs. Time

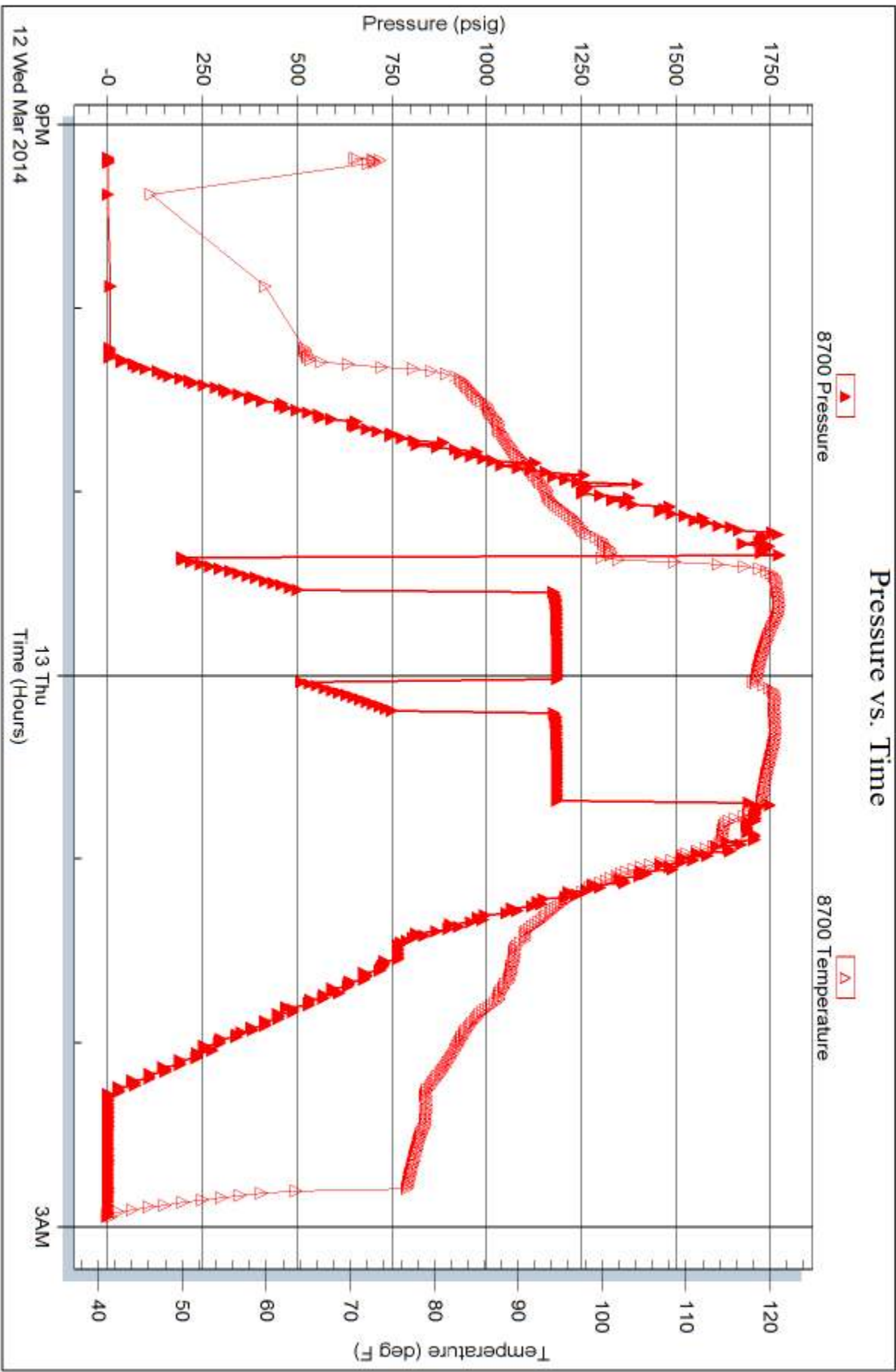


Serial #: 8700

Outside Hertel Oil Company LLC

Doerr #H-2

DST Test Number: 4





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 54080

Well Name & No. Doerr #H-2 Test No. 1 Date 3-10-14
 Company Hertal Oil Company LLC Elevation 2050 KB 2042 GL
 Address 704 E. 12th ST. Hays, KS 67601-3441
 Co. Rep / Geo. Ron Nelson Rig Discovery rig 3
 Location: Sec. 34 Twp. 15^s Rge. 19^w Co. Ellis State K

Interval Tested 3379-3406 Zone Tested LKC "E"
 Anchor Length 27 Drill Pipe Run 3361 Mud Wt. 8.8
 Top Packer Depth 3374 Drill Collars Run 30 Vis 48
 Bottom Packer Depth 3379 Wt. Pipe Run — WL 6.8
 Total Depth 3406 Chlorides 1800 ppm System LCM 2#

Blow Description IFP - Weak Blow 1/2" To 1 1/4" Blow
ISIP - NO Blow
FFP - Weak Blow 1/4" Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>MW w/show floor</u>		<u>75</u>	<u>25</u>	
<u>60</u>	<u>WATER</u>				

Rec Total 100 BHT 107 Gravity — API RW .11 @ 60 °F Chlorides 80000 ppm
 (A) Initial Hydrostatic 1600 ☒ Test 1150 T-On Location 1930
 (B) First Initial Flow 32 ☐ Jars T-Started 2130
 (C) First Final Flow 48 ☐ Safety Joint T-Open 2345
 (D) Initial Shut-In 723 ☐ Circ Sub T-Pulled 0145
 (E) Second Initial Flow 49 ☐ Hourly Standby T-Out 0332
 (F) Second Final Flow 63 ☒ Mileage 40 RT 62 Comments Slid Tool Approx 8' To
 (G) Final Shut-In 701 ☐ Sampler Bottom
 (H) Final Hydrostatic 1593 ☐ Straddle ☐ Ruined Shale Packer
☐ Shale Packer ☐ Ruined Packer
☐ Extra Packer ☐ Extra Copies

Initial Open 30 Sub Total 0
 Initial Shut-In 30 Total 1212
 Final Flow 30 MP/DST Disc't —
 Final Shut-In 30 Sub Total 1212

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.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 54081

Well Name & No. DOERR #H-2 Test No. 2 Date 3-11-14
 Company HERTAL OIL COMPANY LLC Elevation 2050 KB 2042 GL
 Address 704 E. 12th ST. Hays, KS 67601-3441
 Co. Rep / Geo. MARC DOWNING Rig Discovery rig 3
 Location: Sec. 34 Twp. 15th Rge. 19th Co. ELLIS State KS

Interval Tested 3454-3530 Zone Tested LKC H-J
 Anchor Length 27 Drill Pipe Run 3423 Mud Wt. 9
 Top Packer Depth 3449 Drill Collars Run 30 Vis 60
 Bottom Packer Depth 3454 Wt. Pipe Run — WL 6.8
 Total Depth 3530 Chlorides 2500 ppm System LCM 2#

Blow Description IFP - WEAK SURFACE BLOW, died in 8 min
ISIP - NO BLOW
FFP - NO BLOW, flushed Tool
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>65</u>	<u>MW</u>		<u>90</u>	<u>10</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 65 BHT 107 Gravity — API RW .#8 @ 50 °F Chlorides 58000 ppm
 (A) Initial Hydrostatic 1646 ☒ Test 1150 T-On Location 1600
 (B) First Initial Flow 26 ☐ Jars — T-Started 1635
 (C) First Final Flow 44 ☐ Safety Joint — T-Open 1845
 (D) Initial Shut-In 378 ☐ Circ Sub — T-Pulled 2045
 (E) Second Initial Flow 44 ☐ Hourly Standby — T-Out 2225
 (F) Second Final Flow 52 ☒ Mileage 40 RT 62 Comments —
 (G) Final Shut-In 315 ☐ Sampler —
 (H) Final Hydrostatic 1631 ☐ Straddle —
☐ Shale Packer —
☐ Extra Packer —
☐ Extra Recorder —
☐ Day Standby —
☐ Accessibility —

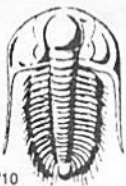
Initial Open 30
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 30

Sub Total 1212

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.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 54082

Well Name & No. Doerr H-2 Test No. 3 Date 3-12-14
 Company Hertal Oil Company LLC Elevation 2050 KB 2042 GL
 Address 704 E. 12th St. Hays, KS 67601-3441
 Co. Rep / Geo. MARC Downing Rig Discovery rig 3
 Location: Sec. 34 Twp. 15th Rge. 19th Co. ELLIS State Ks

Interval Tested 3626-3640 Zone Tested Arbuckle
 Anchor Length 14 Drill Pipe Run 3583 Mud Wt. 8.9
 Top Packer Depth 3621 Drill Collars Run 30 Vis 56
 Bottom Packer Depth 3626 Wt. Pipe Run - WL 6.4
 Total Depth 3640 Chlorides 2700 ppm System LCM 2nd

Blow Description IFP- Weak Blow Thru-out, 1/4" To 1 1/4" Blow
ISIP- NO Blow
FFP- Weak Blow Thru-out, 1/4" To 1 1/4" Blow
FSIP- NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>GIP</u>				
<u>25</u>	<u>CO</u>				
<u>30</u>	<u>MGO</u>	<u>5</u>	<u>55</u>		<u>40</u>

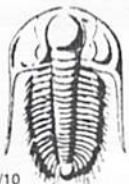
Rec Total 55 BHT 110 Gravity 36 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>1733</u>	☒ Test <u>1150</u>	T-On Location <u>0850</u>
(B) First Initial Flow <u>19</u>	☐ Jars	T-Started <u>0910</u>
(C) First Final Flow <u>33</u>	☐ Safety Joint	T-Open <u>1050</u>
(D) Initial Shut-In <u>811</u>	☐ Circ Sub	T-Pulled <u>1350</u>
(E) Second Initial Flow <u>33</u>	☐ Hourly Standby	T-Out <u>1524</u>
(F) Second Final Flow <u>39</u>	☒ Mileage <u>40 RT</u> 62	Comments
(G) Final Shut-In <u>859</u>	☐ Sampler	
(H) Final Hydrostatic <u>1704</u>	☐ Straddle	
	☐ Shale Packer	☐ Ruined Shale Packer
	☐ Extra Packer	☐ Ruined Packer
	☐ Extra Recorder	☐ Extra Copies

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45

Sub Total 1212

Approved By _____ Our Representative Ray Schunger *Thank you*



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 54083

Well Name & No. DOCAR H-2 Test No. 4 Date 3-13-14
 Company HERTAL OIL COMPANY LLC Elevation 2050 KB 2042 GL
 Address 704 E. 12th ST. Hays, KS 67601-3441
 Co. Rep / Geo. MARC DOWNING Rig DISCOVERY rig 3
 Location: Sec. 34 Twp. 15^s Rge. 19^w Co. ELLIS State K

Interval Tested 3624-3645 Zone Tested REAGAN SD
 Anchor Length 21 Drill Pipe Run 3583 Mud Wt. 9
 Top Packer Depth 3619 Drill Collars Run 30 Vis 54
 Bottom Packer Depth 3624 Wt. Pipe Run - WL 6.4
 Total Depth 3645 Chlorides 2700 ppm System LCM 2#

Blow Description IFP - STRONG Blow thru-out
ISIP - NO Blow
FFP - STRONG Blow in 1 min
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1550</u>	<u>WATER</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 1550 BHT 119 Gravity - API RW .24 @ 60 ° F Chlorides 32000 ppm
 (A) Initial Hydrostatic 1727 ☒ Test 1150 T-On Location 2040
 (B) First Initial Flow 183 ☐ Jars - T-Started 2110
 (C) First Final Flow 500 ☐ Safety Joint - T-Open 2320
 (D) Initial Shut-In 1185 ☐ Circ Sub - T-Pulled 0040
 (E) Second Initial Flow 498 ☐ Hourly Standby - T-Out 0257
 (F) Second Final Flow 755 ☒ Mileage 40 RT 62 Comments -
 (G) Final Shut-In 1184 ☐ Sampler -
 (H) Final Hydrostatic 1709 ☐ Straddle - ☐ Ruined Shale Packer -
☐ Shale Packer - ☐ Ruined Packer -
☐ Extra Packer - ☐ Extra Copies -
☐ Extra Recorder - Sub Total 0
☐ Day Standby - Total 1212
☐ Accessibility - MP/DST Disc't -

Initial Open 10
 Initial Shut-In 30
 Final Flow 10
 Final Shut-In 30

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.

Marc A. Downing		Geologic Report			
Consulting Petroleum Geologist		Drilling Time and Sample Log			
Operator Hertel Oil Company LLC			Elevation		
Lease Doerr		No. H-2		KB 2050	
				DF 2048	
				GL 2042	
API # 15-051-26672-0000			Casing Record		
Field Zimm			Surface 8 5/8" @ 1253'		
Location 1240' FSL & 1885' FWL			Production None		
Sec. 34		Twp. 15s	Rge. 19w	Electrical Surveys	
County Ellis		State Kansas		None	
Formation		Sample tops		Log Tops	Datum
Top Anhydrite		1243			+807
Base Anhydrite		1288			+762
Topeka		3017			-967
Heebner		3286			-1236
Toronto		3308			-1258
LKC		3332			-1282
BKC		3577			-1527
Marmaton		3610			-1560
Arbuckle		3637			-1587
Reagan Sand		3643			-1593
Total Depth		3645			-1595
Reference Well For Structural Comparison Jet Drilling Co.					
Doerr #1		SE-NE-SW			
Sec. 34-15s-19w					

LEGEND			
	Anhydrite		Salt
	Sandstone		Shale
	Carb sh		Limestone
	Oil Lime		Chert
	Dolomite		

DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	OIL SHOWS	REMARKS
2900				
3000				

DRILLING TIME IN MINUTES PER FOOT

Rate of Penetration Decreases

[illegible]