



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1235108
OIL & GAS CONSERVATION DIVISION

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
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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: _____

1235108

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 <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> 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
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> 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

Date of First, Resumed Production, SWD or ENHR. _____ Producing Method:
 Flowing Pumping Gas Lift Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Commingled <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: _____ _____
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QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

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

No. 895

Cell 785-324-1041

Date	12-2-14	Sec.	24	Twp.	3	Range	21	County	Norton	State	Ks	On Location		Finish	6:00 PM
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Location Logan, Ks - SW to E 2 Rd, 4 1/2 N to T Rd, 1 E to E 13 Rd

Lease	Logan NW	Well No.	1	Owner	3N to Q Rd, 1 E to E 1/4 Rd, 1/4 N, N+W to Rig
Contractor	W-W #6	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.			

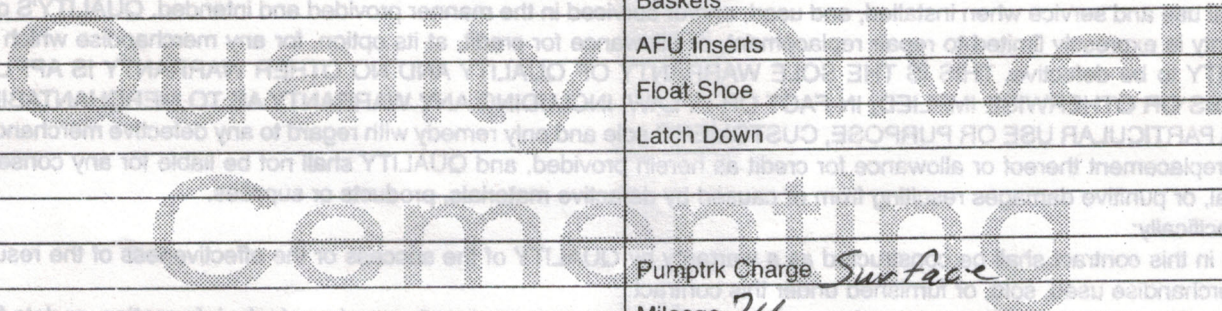
Type Job	Surface	Charge To	Black Diamond
Hole Size	12 1/4"	T.D.	220'
Csg.	8 5/8"	Depth	220'
Tbg. Size		Depth	
Tool		Depth	
Cement Left in Csg.	15'	Shoe Joint	15'
Meas Line		Displace	13 Bcs

EQUIPMENT			
Pumptrk	17	No.	Common 130
Bulktrk	14	No.	Poz. Mix
Bulktrk	p.u.	No.	Gel. 3
			Calcium 5

JOB SERVICES & REMARKS			
Remarks:	Cement did	Circulate	
Rat Hole			Flowseal
Mouse Hole			Kol-Seal
Centralizers			Mud CLR 48
Baskets			CFL-117 or CD110 CAF 38
D/V or Port Collar			Sand
			Handling 158
			Mileage

FLOAT EQUIPMENT			
			Guide Shoe
			Centralizer
			Baskets
			AFU Inserts
			Float Shoe
			Latch Down

Pumptrk Charge	Surface	Tax	
Mileage	74	Discount	
Signature	Mal Bgg	Total Charge	
	THANK YOU		



QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

No. 1061

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

Date	12-9-2014	Sec.	24	Twp.	3	Range	21	County	NORTON	State	Kansas	On Location		Finish	1:00 AM
Lease								Logan NW UNIT		Well No. #1		Owner			
Contractor								W-W DRUG, Right @ "MARK"		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								Rotary Plug		Charge To					
Hole Size								7 7/8		T.D.		3770'			
Csg.								8 5/8 Surface		Depth		220'			
Tbg. Size										Depth					
Tool										Depth					
Cement Left in Csg.								Shoe Joint		Cement Amount Ordered					
Meas Line								Displace		290 SX-40 4g Tagel 1/4 #					
EQUIPMENT										Common					
Pumptrk								18		No. Cementer		GERMA G.			
Bulktrk								13		No. Helper		CODY B.			
Bulktrk										No. Driver		LENNIE M.			
Bulktrk										No. Driver					
Bulktrk										No. Driver					
JOB SERVICES & REMARKS										Hulls					
Remarks:										Salt					
Rat Hole										Flowseal 74R					
Mouse Hole										Kol-Seal					
Centralizers										Mud CLR 48					
Baskets										CFL-117 or CD110 CAF 38					
D/V or Port Collar										Sand					
										Handling 301					
										Mileage					
										FLOAT EQUIPMENT					
50 SX @ 3727										Guide Shoe					
50 SX @ 1820										Centralizer					
100 SX @ 1200										Baskets					
50 SX @ 270										AFU Inserts					
10 SX @ 40' d Plug										Float Shoe					
30 SX @ Rat Hole										Latch Down					
										8 5/8 WOODEN WIPER PLUG					
										Pumptrk Charge plug					
										Mileage 74					
										Tax					
										Discount					
										Total Charge					
X Signature								Maul Bygge							

THANKS!



DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.06 @ 08:42:00

End Date: 2014.12.06 @ 16:02:00

Job Ticket #: 61042 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.11 @ 16:31:51



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61042

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.06 @ 08:42:00

GENERAL INFORMATION:

Formation: **LKC "C-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:33:30

Time Test Ended: 16:02:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3480.00 ft (KB) To 3526.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3480.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647

Inside

Press@RunDepth: 122.48 psig @ 3481.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.06

End Date:

2014.12.06

Last Calib.:

2014.12.06

Start Time: 08:42:01

End Time:

16:02:00

Time On Btm:

2014.12.06 @ 10:30:30

Time Off Btm:

2014.12.06 @ 14:19:30

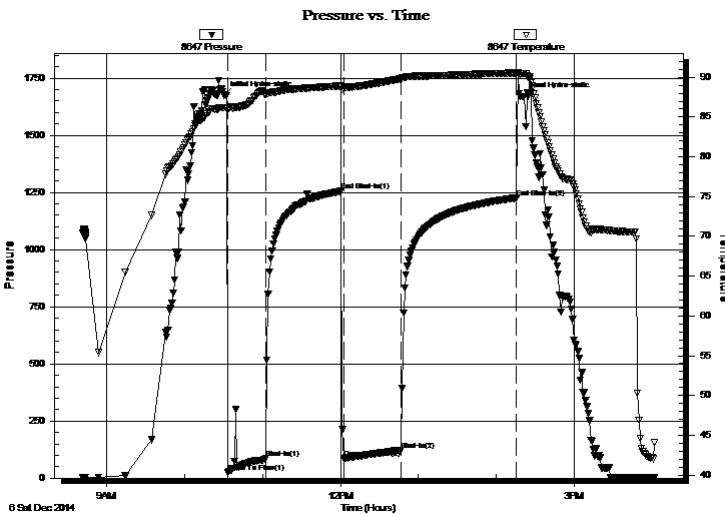
TEST COMMENT: 30 - IF - Opened w/ surface blow , built to 7 1/2"

60 - ISI - No Return

45 - FF - Blow built to 9 1/2"

90 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1675.28	86.17	Initial Hydro-static
3	26.78	85.98	Open To Flow (1)
32	87.81	87.80	Shut-In(1)
90	1255.80	88.90	End Shut-In(1)
92	85.43	88.75	Open To Flow (2)
136	122.48	89.80	Shut-In(2)
225	1226.40	90.54	End Shut-In(2)
229	1669.84	90.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
182.00	MW 80%w, 20%m	1.45
50.00	100%m	0.70

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

ATTN: Jeff Lawler

Job Ticket: 61042

DST#: 1

Test Start: 2014.12.06 @ 08:42:00

GENERAL INFORMATION:

Formation: **LKC "C-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:33:30

Time Test Ended: 16:02:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3480.00 ft (KB) To 3526.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3480.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 3481.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.06

End Date:

2014.12.06

Last Calib.:

2014.12.06

Start Time: 08:42:01

End Time:

16:04:00

Time On Btm:

Time Off Btm:

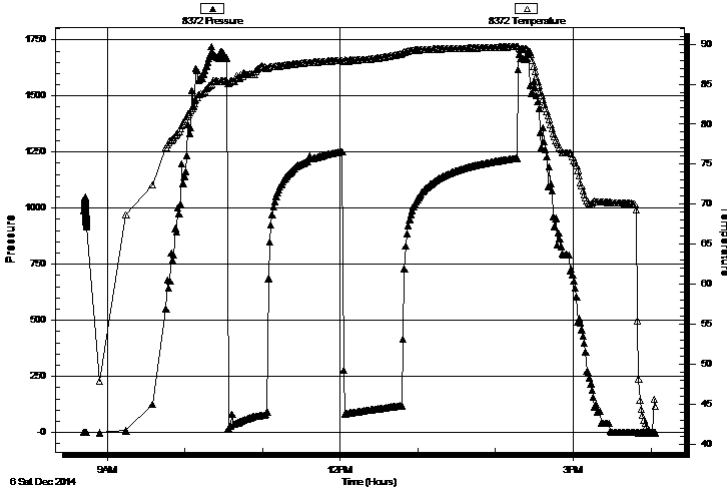
TEST COMMENT: 30 - IF - Opened w/ surface blow , built to 7 1/2"

60 - ISI - No Return

45 - FF - Blow built to 9 1/2"

90 - FSI - No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
182.00	MW 80%w, 20%m	1.45
50.00	100%m	0.70

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61042

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.06 @ 08:42:00

Tool Information

Drill Pipe:	Length: 3371.00 ft	Diameter: 3.80 inches	Volume: 47.29 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	45000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
			- bbl	String Weight: Initial	36000.00 lb
Drill Pipe Above KB:	32.00 ft			Final	38000.00 lb
Depth to Top Packer:	3480.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	46.00 ft				
Tool Length:	66.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3465.00	
Hydraulic tool	5.00			3470.00	
Packer	5.00			3475.00	20.00 Bottom Of Top Packer
Packer	5.00			3480.00	
Stubb	1.00			3481.00	
Recorder	0.00	8647	Inside	3481.00	
Recorder	0.00	8372	Outside	3481.00	
Perforations	9.00			3490.00	
Change Over Sub	1.00			3491.00	
Drill Pipe	31.00			3522.00	
Change Over Sub	1.00			3523.00	
Bullnose	3.00			3526.00	46.00 Bottom Packers & Anchor

Total Tool Length: 66.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61042

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.06 @ 08:42:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 64.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.97 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
182.00	MW 80%w , 20%m	1.451
50.00	100%m	0.701

Total Length: 232.00 ft Total Volume: 2.152 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .299 @ 42.3F Chlorides 42000ppm

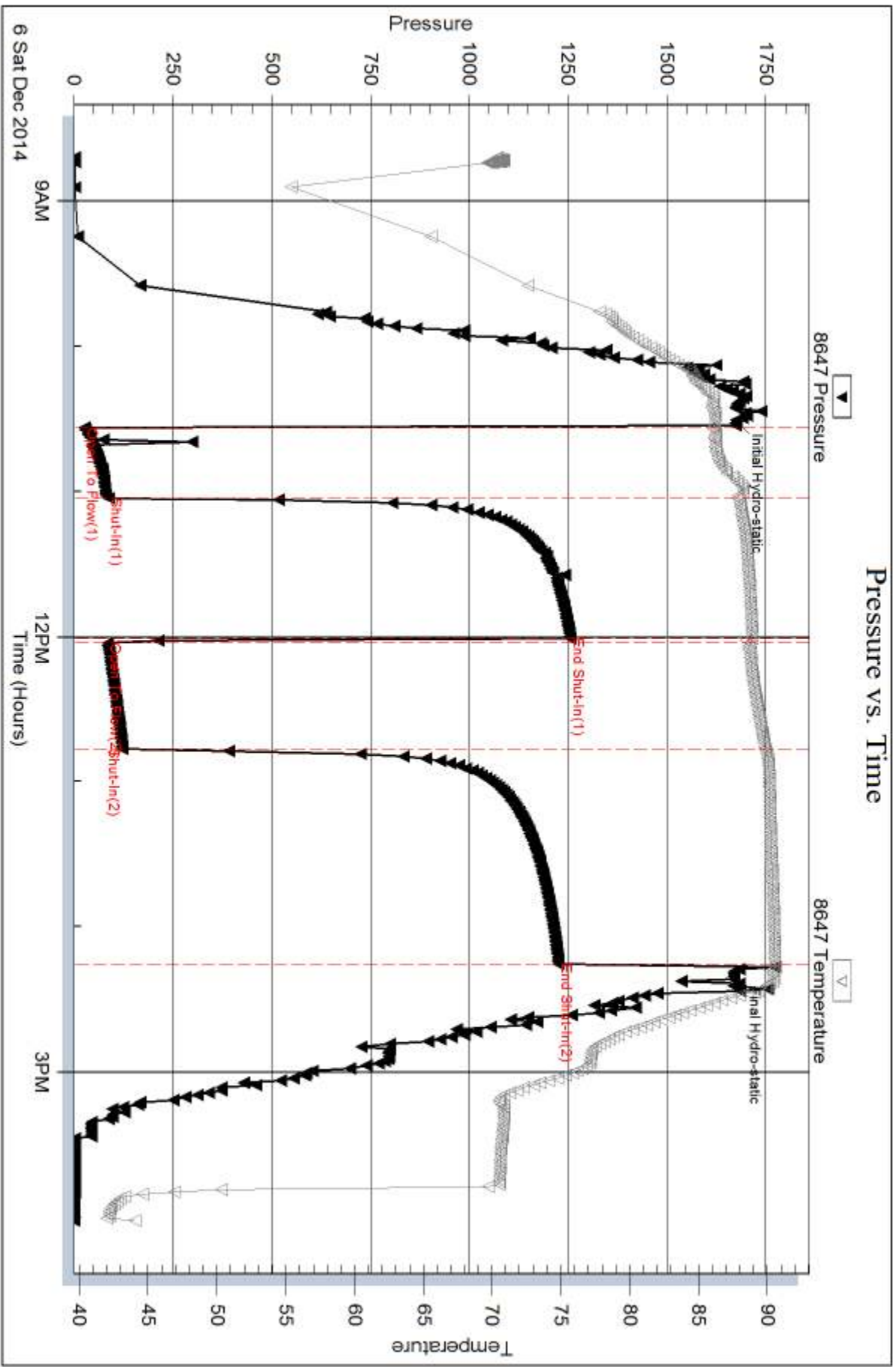
Serial #: 8647

Inside

Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 1

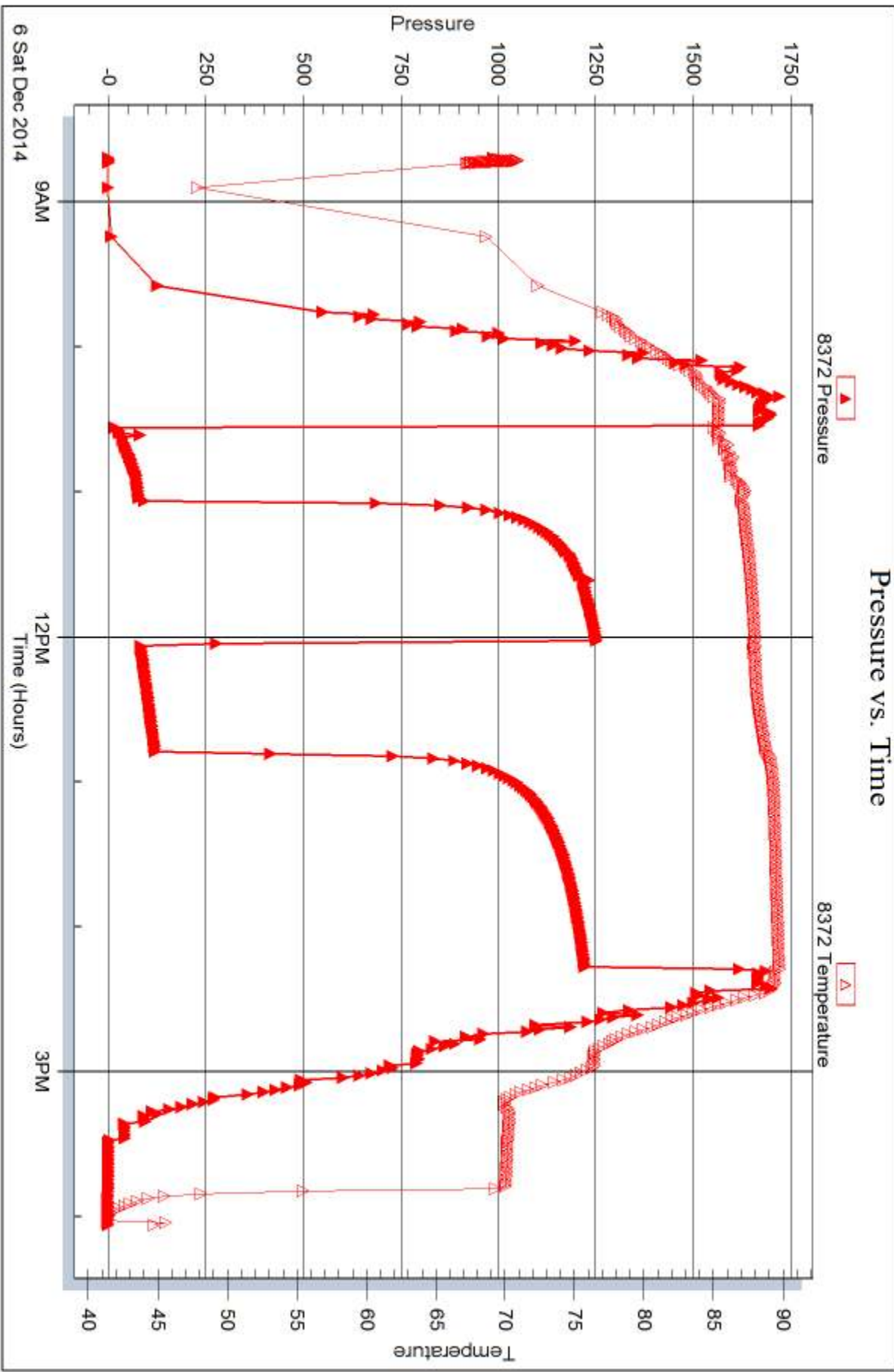


Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 61042

Printed: 2014.12.11 @ 16:31:52



DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.07 @ 09:22:00

End Date: 2014.12.07 @ 15:39:00

Job Ticket #: 61043 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.11 @ 16:31:28



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61043

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.07 @ 09:22:00

GENERAL INFORMATION:

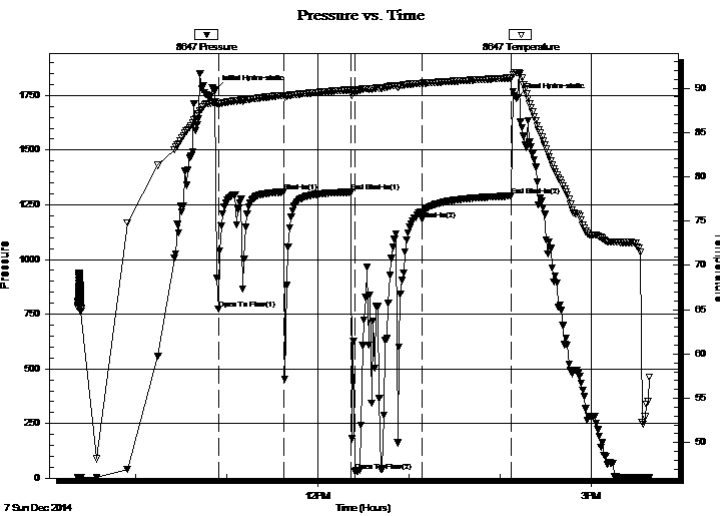
Formation: **LKC "J-K"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:54:30
 Time Test Ended: 15:39:00
 Interval: **3622.00 ft (KB) To 3662.00 ft (KB) (TVD)**
 Total Depth: 3662.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Quintana
 Unit No: 57
 Reference Elevations: 2201.00 ft (KB)
 2196.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8647

Inside

Press@RunDepth: 1183.01 psig @ 3623.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.07 End Date: 2014.12.07 Last Calib.: 2014.12.07
 Start Time: 09:22:01 End Time: 15:39:00 Time On Btm: 2014.12.07 @ 10:52:30
 Time Off Btm: 2014.12.07 @ 14:11:30

TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 1/2" then died back to surface
 45 - ISI - No Return
 45 - FF - No Blow
 60 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1775.88	88.41	Initial Hydro-static
2	773.13	88.20	Open To Flow (1)
45	1308.37	89.19	Shut-In(1)
89	1307.53	89.82	End Shut-In(1)
92	32.28	89.56	Open To Flow (2)
136	1183.01	90.53	Shut-In(2)
195	1290.12	91.16	End Shut-In(2)
199	1738.71	91.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61043

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.07 @ 09:22:00

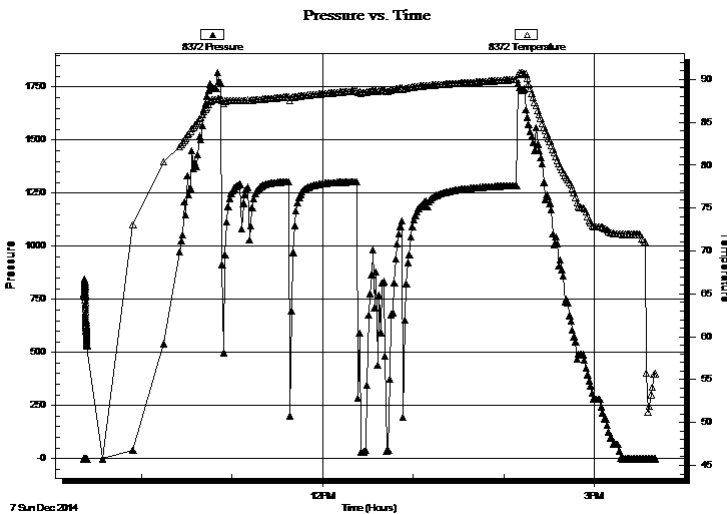
GENERAL INFORMATION:

Formation: **LKC "J-K"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:54:30
 Time Test Ended: 15:39:00
 Interval: **3622.00 ft (KB) To 3662.00 ft (KB) (TVD)**
 Total Depth: 3662.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Reference Elevations: 2201.00 ft (KB)
 2196.00 ft (CF)
 KB to GR/CF: 5.00 ft
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Quintana
 Unit No: 57

Serial #: 8372 Outside

Press@RunDepth: psig @ 3623.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.07 End Date: 2014.12.07 Last Calib.: 2014.12.07
 Start Time: 09:22:01 End Time: 15:40:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 1/2" then died back to surface
 45 - ISI - No Return
 45 - FF - No Blow
 60 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61043

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.07 @ 09:22:00

Tool Information

Drill Pipe:	Length: 3497.00 ft	Diameter: 3.80 inches	Volume: 49.05 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
			- bbl	String Weight: Initial	35000.00 lb
Drill Pipe Above KB:	16.00 ft			Final	35000.00 lb
Depth to Top Packer:	3622.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	40.00 ft				
Tool Length:	60.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3607.00	
Hydraulic tool	5.00			3612.00	
Packer	5.00			3617.00	20.00 Bottom Of Top Packer
Packer	5.00			3622.00	
Stubb	1.00			3623.00	
Recorder	0.00	8647	Inside	3623.00	
Recorder	0.00	8372	Outside	3623.00	
Perforations	2.00			3625.00	
Change Over Sub	1.00			3626.00	
Drill Pipe	32.00			3658.00	
Change Over Sub	1.00			3659.00	
Bullnose	3.00			3662.00	40.00 Bottom Packers & Anchor

Total Tool Length: 60.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61043

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.07 @ 09:22:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	100% mud	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8647

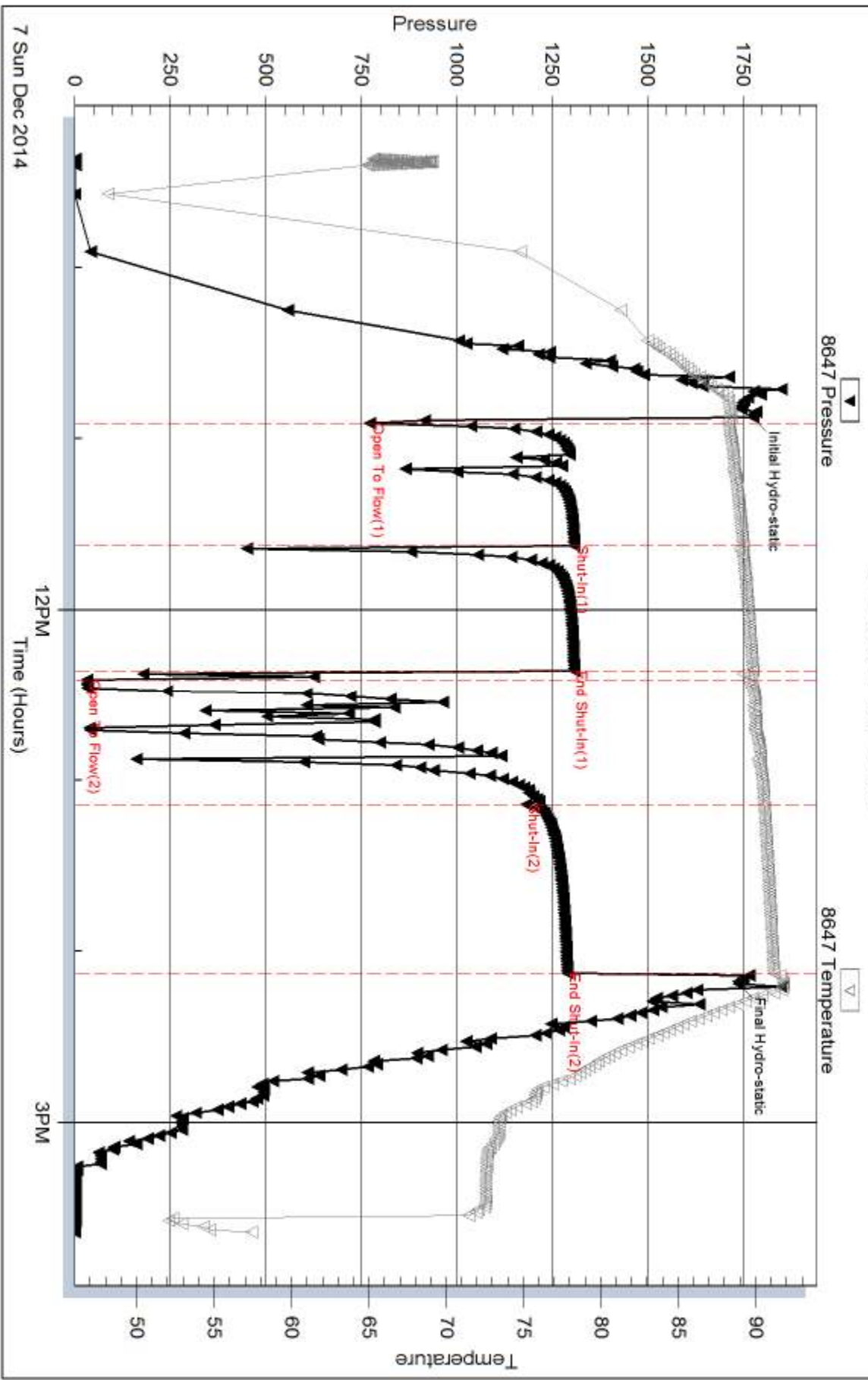
Inside

Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 2

Pressure vs. Time

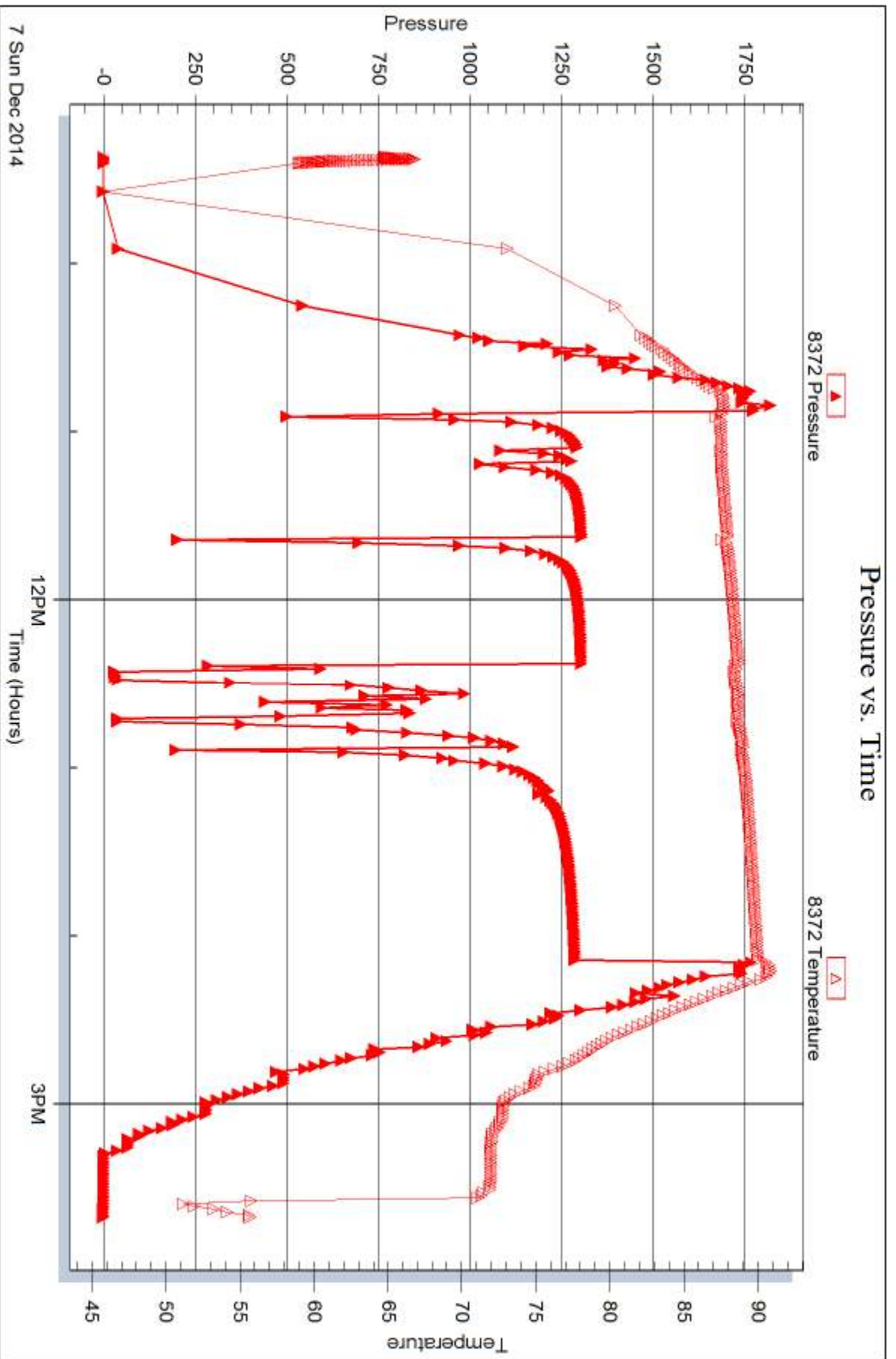


Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 61043

Printed: 2014.12.11 @ 16:31:29



DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.08 @ 08:32:00

End Date: 2014.12.08 @ 15:06:00

Job Ticket #: 61044 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.11 @ 16:30:59



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61044

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 08:32:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:46:30

Time Test Ended: 15:06:00

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3610.00 ft (KB) To 3655.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647

Inside

Press@RunDepth: 1301.86 psig @ 3611.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08

End Date:

2014.12.08

Last Calib.:

2014.12.08

Start Time: 08:32:01

End Time:

15:06:00

Time On Btm:

2014.12.08 @ 10:40:30

Time Off Btm:

2014.12.08 @ 13:48:30

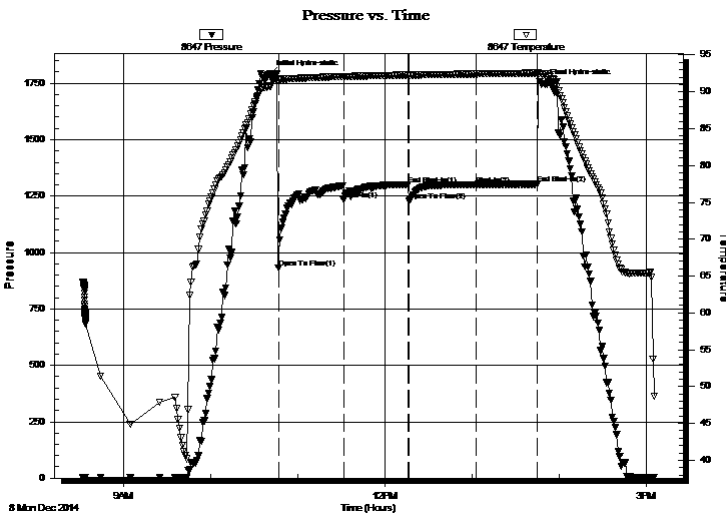
TEST COMMENT: 45 - IF - Opened w/ surface blow , w ent straight to 2", died back to 1 1/2"

45 - ISI - No Return

45 - FF - No Blow

45 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1790.55	90.76	Initial Hydro-static
6	930.16	91.69	Open To Flow (1)
51	1234.09	92.07	Shut-In(1)
95	1299.16	92.29	End Shut-In(1)
96	1228.33	92.25	Open To Flow (2)
142	1301.86	92.43	Shut-In(2)
184	1302.99	92.55	End Shut-In(2)
188	1747.59	92.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61044

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 08:32:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:46:30

Time Test Ended: 15:06:00

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3610.00 ft (KB) To 3655.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 3611.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08 End Date: 2014.12.08

Last Calib.: 2014.12.08

Start Time: 08:32:01 End Time: 15:07:30

Time On Btm:

Time Off Btm:

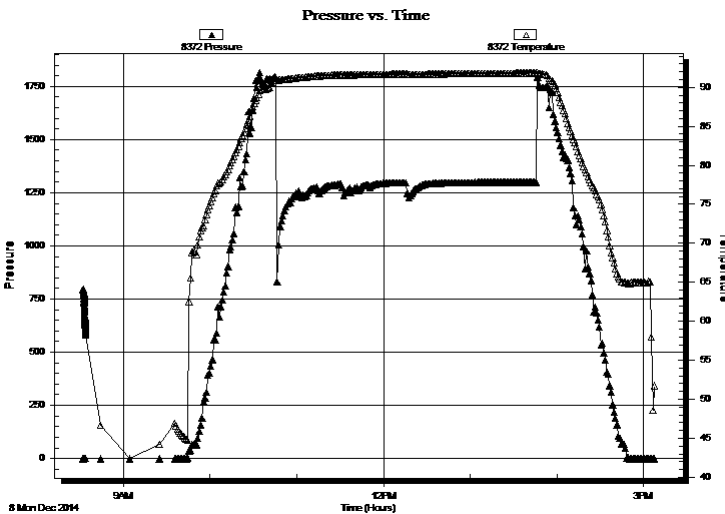
TEST COMMENT: 45- IF - Opened w/ surface blow , w ent straight to 2", died back to 1 1/2"

45 - ISI - No Return

45 - FF - No Blow

45 - FSI - No Return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61044

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 08:32:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:46:30

Time Test Ended: 15:06:00

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3610.00 ft (KB) To 3655.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8321 Below (Straddle)

Press@RunDepth: psig @ 3631.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08

End Date: 2014.12.08

Last Calib.: 2014.12.08

Start Time: 08:32:01

End Time: 15:47:30

Time On Btm:

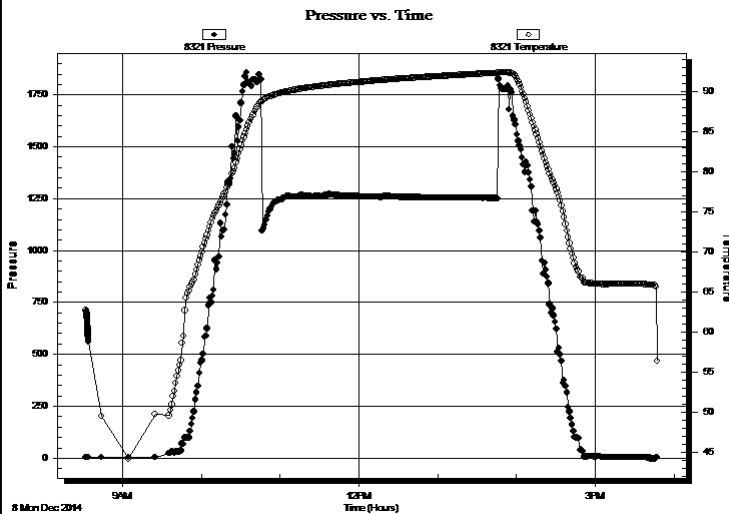
Time Off Btm:

TEST COMMENT: 45 - IF - Opened w/ surface blow , w ent straight to 2", died back to 1 1/2"

45 - ISI - No Return

45 - FF - No Blow

45 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61044

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 08:32:00

Tool Information

Drill Pipe:	Length: 3497.00 ft	Diameter: 3.80 inches	Volume: 49.05 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3610.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	3738.00 ft			
Interval between Packers:	128.00 ft			
Tool Length:	148.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3595.00	
Hydraulic tool	5.00			3600.00	
Packer	5.00			3605.00	20.00 Bottom Of Top Packer
Packer	5.00			3610.00	
Stubb	1.00			3611.00	
Recorder	0.00	8647	Inside	3611.00	
Recorder	0.00	8372	Outside	3611.00	
Perforations	12.00			3623.00	
Blank Off Sub	1.00			3624.00	
Packer - Shale	5.00			3629.00	
Stubb	1.00			3630.00	
Change Over Sub	1.00			3631.00	
Recorder	0.00	8321	Below	3631.00	
Drill Pipe	94.00			3725.00	
Change Over Sub	1.00			3726.00	
Perforations	9.00			3735.00	
Bullnose	3.00			3738.00	128.00 Bottom Packers & Anchor
Total Tool Length:	148.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61044

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 08:32:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	100% mud	0.344

Total Length: 70.00 ft Total Volume: 0.344 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8647

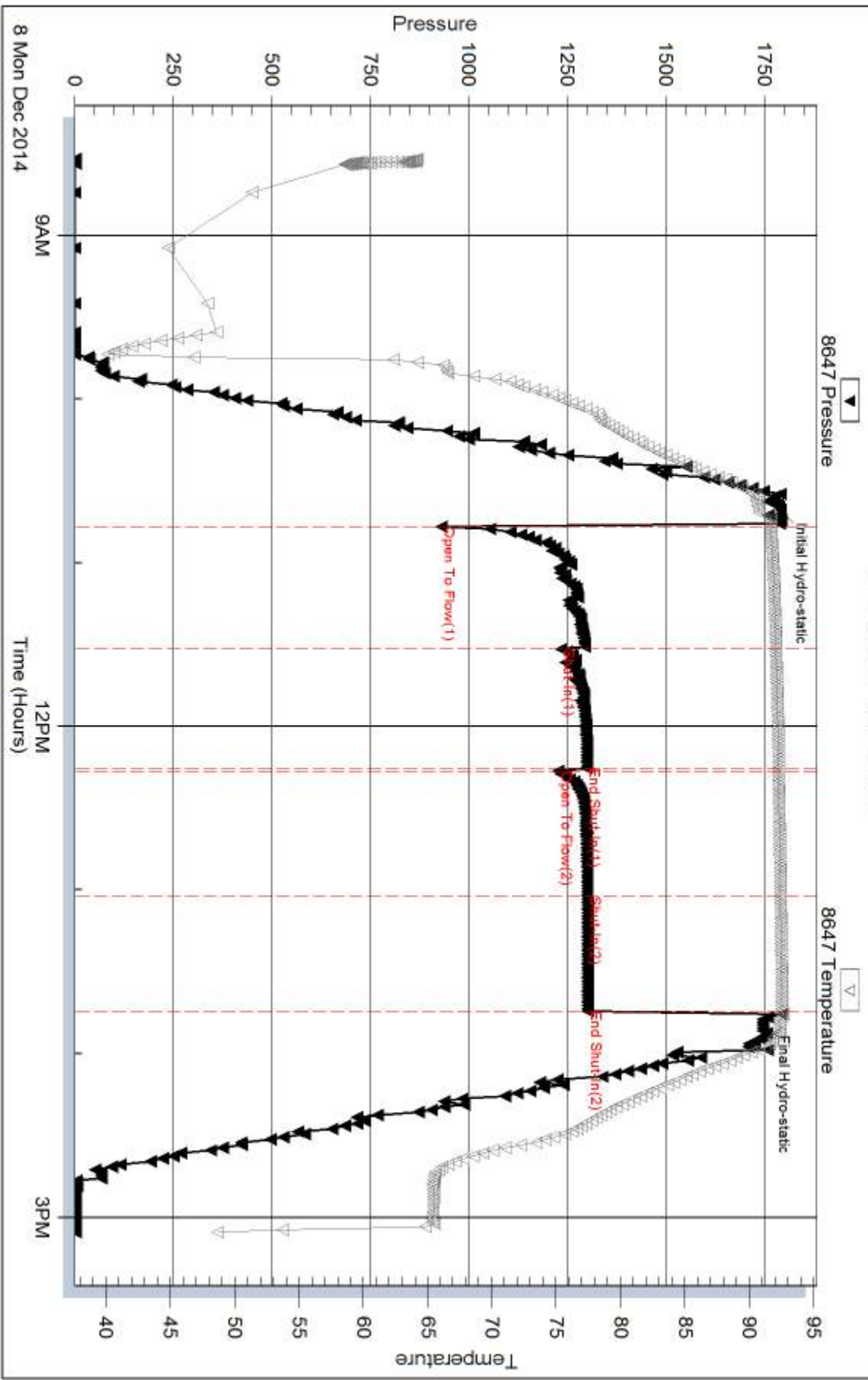
Inside

Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 3

Pressure vs. Time

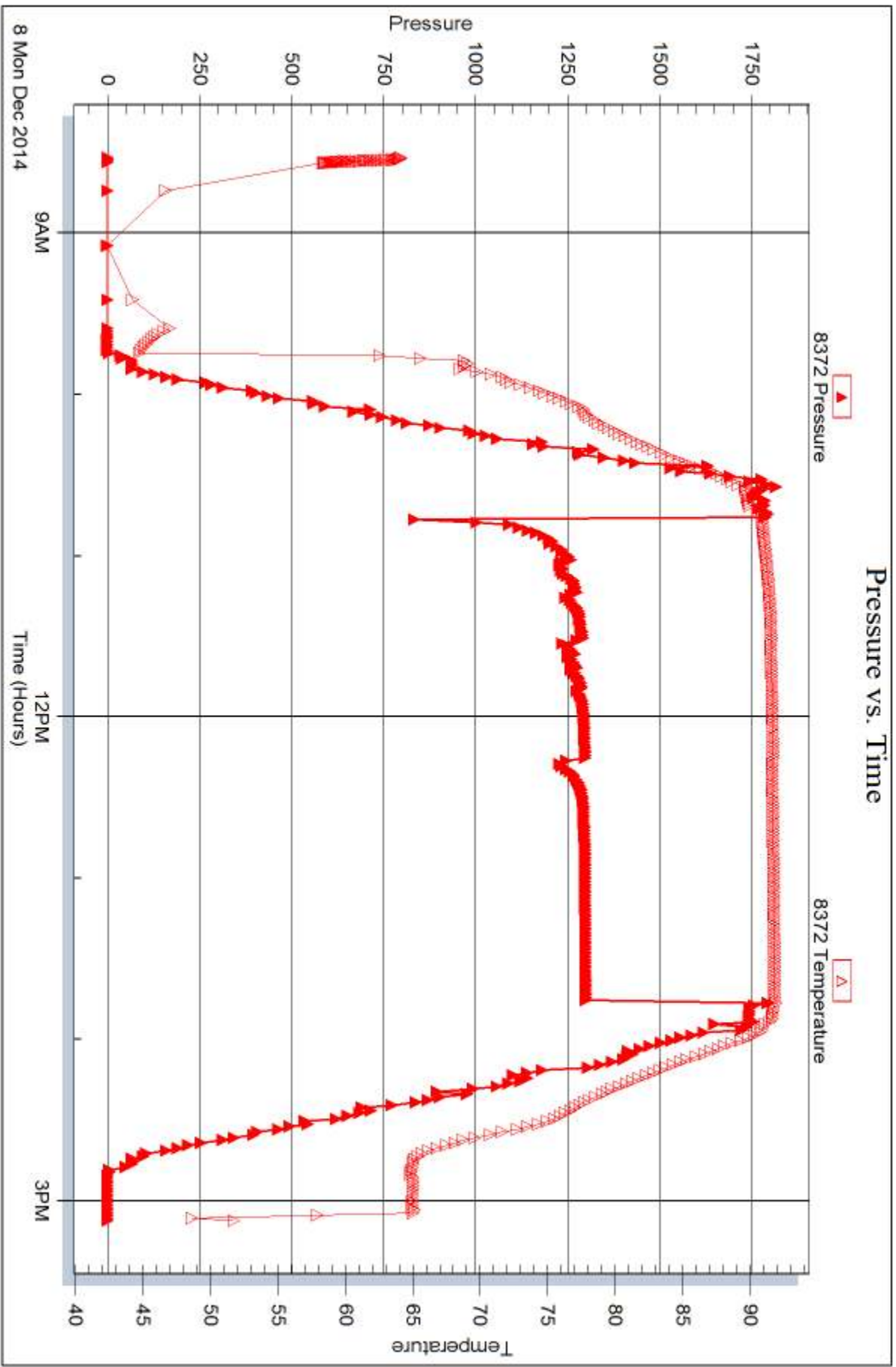


Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

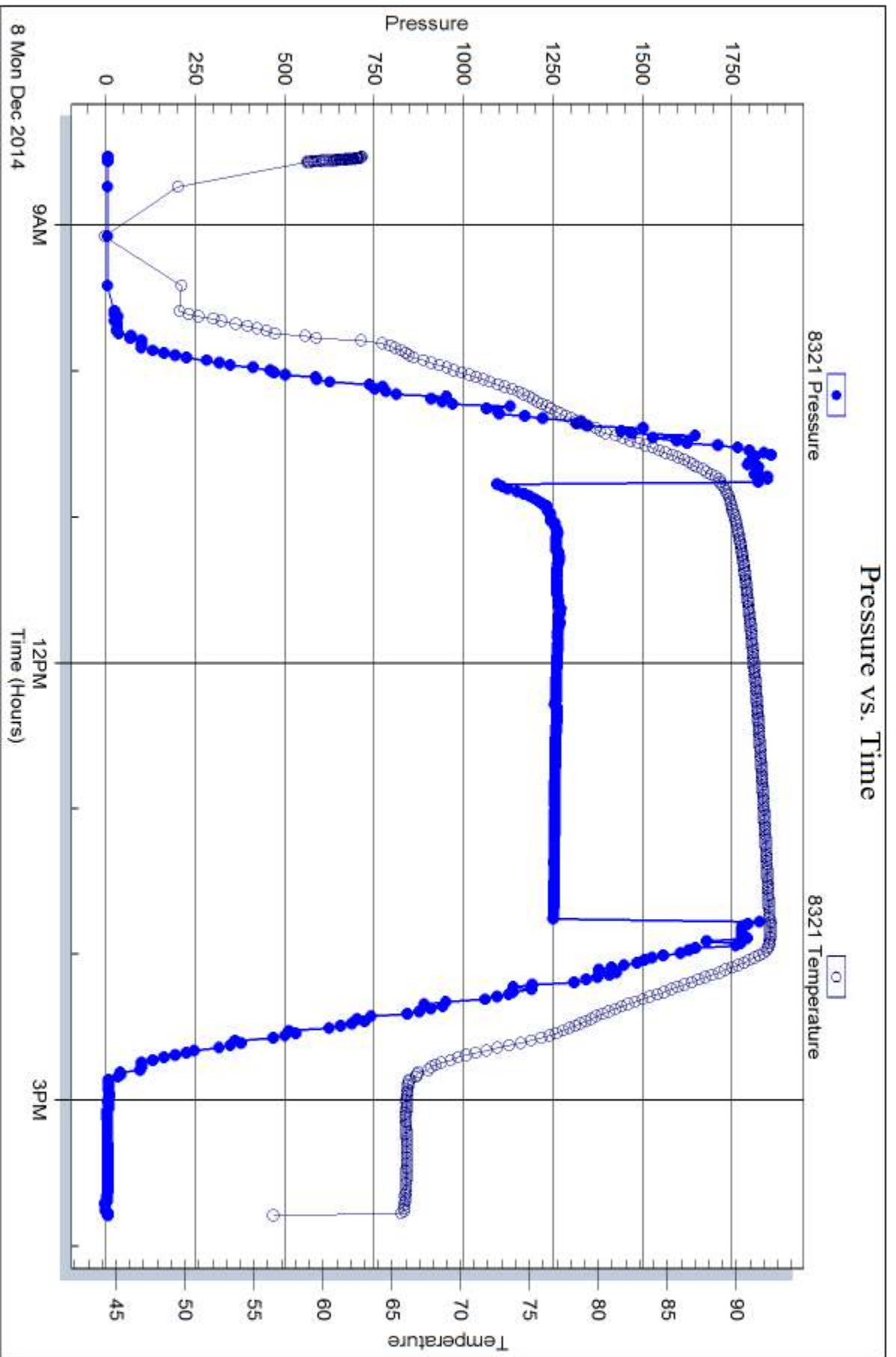
DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 61044

Printed: 2014.12.11 @ 16:31:01





DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.08 @ 16:59:00

End Date: 2014.12.08 @ 23:12:30

Job Ticket #: 61045 DST #: 4

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.11 @ 16:30:29



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61045

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 16:59:00

GENERAL INFORMATION:

Formation: **Toronto & "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:56:30

Time Test Ended: 23:12:30

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3420.00 ft (KB) To 3480.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647

Inside

Press@RunDepth: 1271.39 psig @ 3421.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08

End Date:

2014.12.08

Last Calib.:

2014.12.08

Start Time: 16:59:01

End Time:

23:12:30

Time On Btm:

2014.12.08 @ 18:50:30

Time Off Btm:

2014.12.08 @ 21:33:30

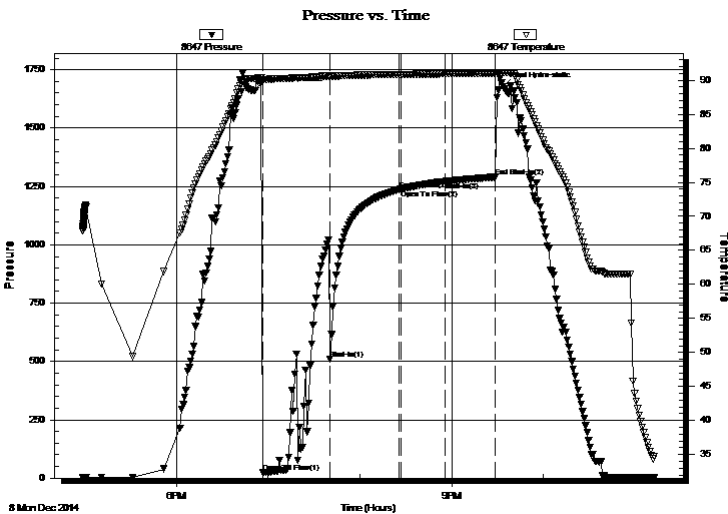
TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 1"

45 - ISI - No Return

30 - FF - No Blow

30 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1661.89	90.25	Initial Hydro-static
6	23.50	90.06	Open To Flow (1)
50	508.89	90.52	Shut-In(1)
95	1235.58	90.85	End Shut-In(1)
96	1237.50	90.85	Open To Flow (2)
125	1271.39	90.94	Shut-In(2)
158	1289.96	91.02	End Shut-In(2)
163	1679.74	91.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61045

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 16:59:00

GENERAL INFORMATION:

Formation: **Toronto & "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:56:30

Time Test Ended: 23:12:30

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: **3420.00 ft (KB) To 3480.00 ft (KB) (TVD)**

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 3421.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08

End Date: 2014.12.08

Last Calib.: 2014.12.08

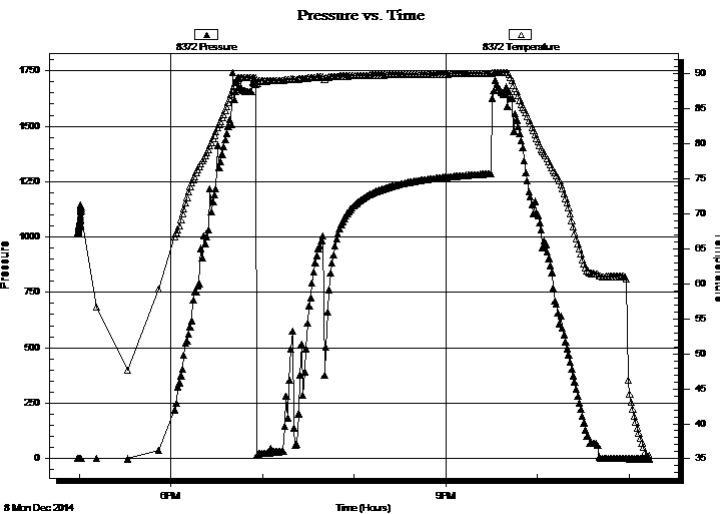
Start Time: 16:59:01

End Time: 23:13:30

Time On Btm:

Time Off Btm:

TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 1"
45 - ISI - No Return
30 - FF - No Blow
30 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61045

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 16:59:00

GENERAL INFORMATION:

Formation: **Toronto & "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:56:30

Time Test Ended: 23:12:30

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: **3420.00 ft (KB) To 3480.00 ft (KB) (TVD)**

Total Depth: 3769.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2201.00 ft (KB)

2196.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: **8321 Below (Straddle)**

Press@RunDepth: psig @ 3488.00 ft (KB)

Start Date: 2014.12.08

End Date:

2014.12.08

Start Time: 16:59:01

End Time:

23:12:30

Capacity: 8000.00 psig

Last Calib.:

2014.12.08

Time On Btm:

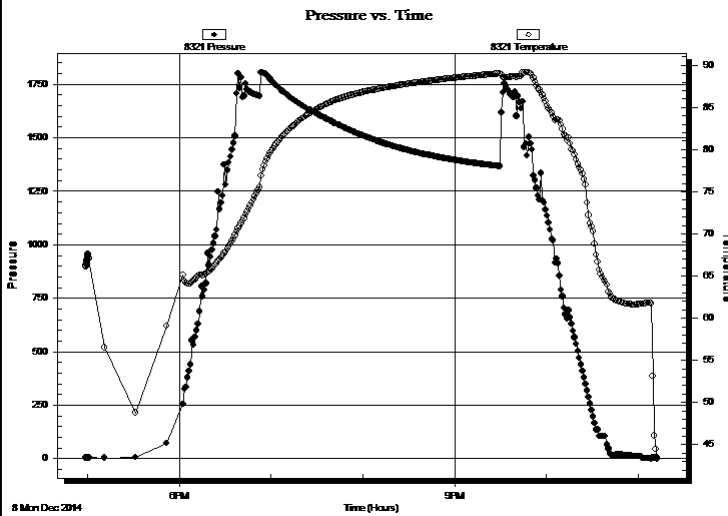
Time Off Btm:

TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 1"

45 - ISI - No Return

30 - FF - No Blow

30 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61045

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 16:59:00

Tool Information

Drill Pipe:	Length: 3312.00 ft	Diameter: 3.80 inches	Volume: 46.46 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3420.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	3777.00 ft			
Interval between Packers:	357.00 ft			
Tool Length:	377.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			3405.00	
Hydraulic tool	5.00			3410.00	
Packer	5.00			3415.00	20.00 Bottom Of Top Packer
Packer	5.00			3420.00	
Stubb	1.00			3421.00	
Recorder	0.00	8647	Inside	3421.00	
Recorder	0.00	8372	Outside	3421.00	
Perforations	5.00			3426.00	
Change Over Sub	1.00			3427.00	
Drill Pipe	32.00			3459.00	
Change Over Sub	1.00			3460.00	
Perforations	20.00			3480.00	
Blank Off Sub	1.00			3481.00	
Packer - Shale	5.00			3486.00	
Stubb	1.00			3487.00	
Change Over Sub	1.00			3488.00	
Recorder	0.00	8321	Below	3488.00	
Drill Pipe	286.00			3774.00	
Bullnose	3.00			3777.00	357.00 Bottom Packers & Anchor

Total Tool Length: 377.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61045

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 16:59:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length: ft

Water Salinity: ppm

Viscosity: 51.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure: psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	100% mud	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

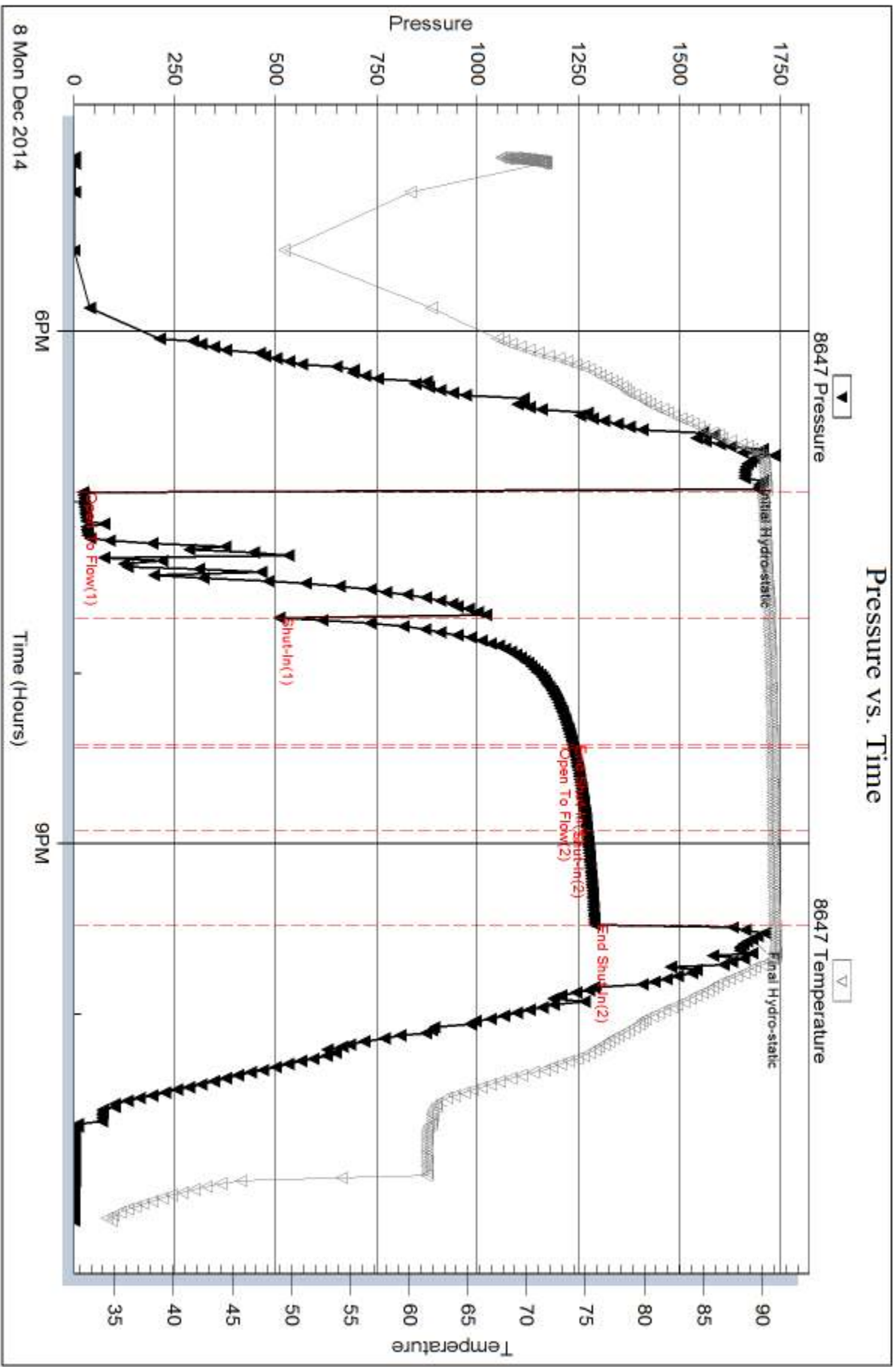
Serial #: 8647

Inside

Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 61045

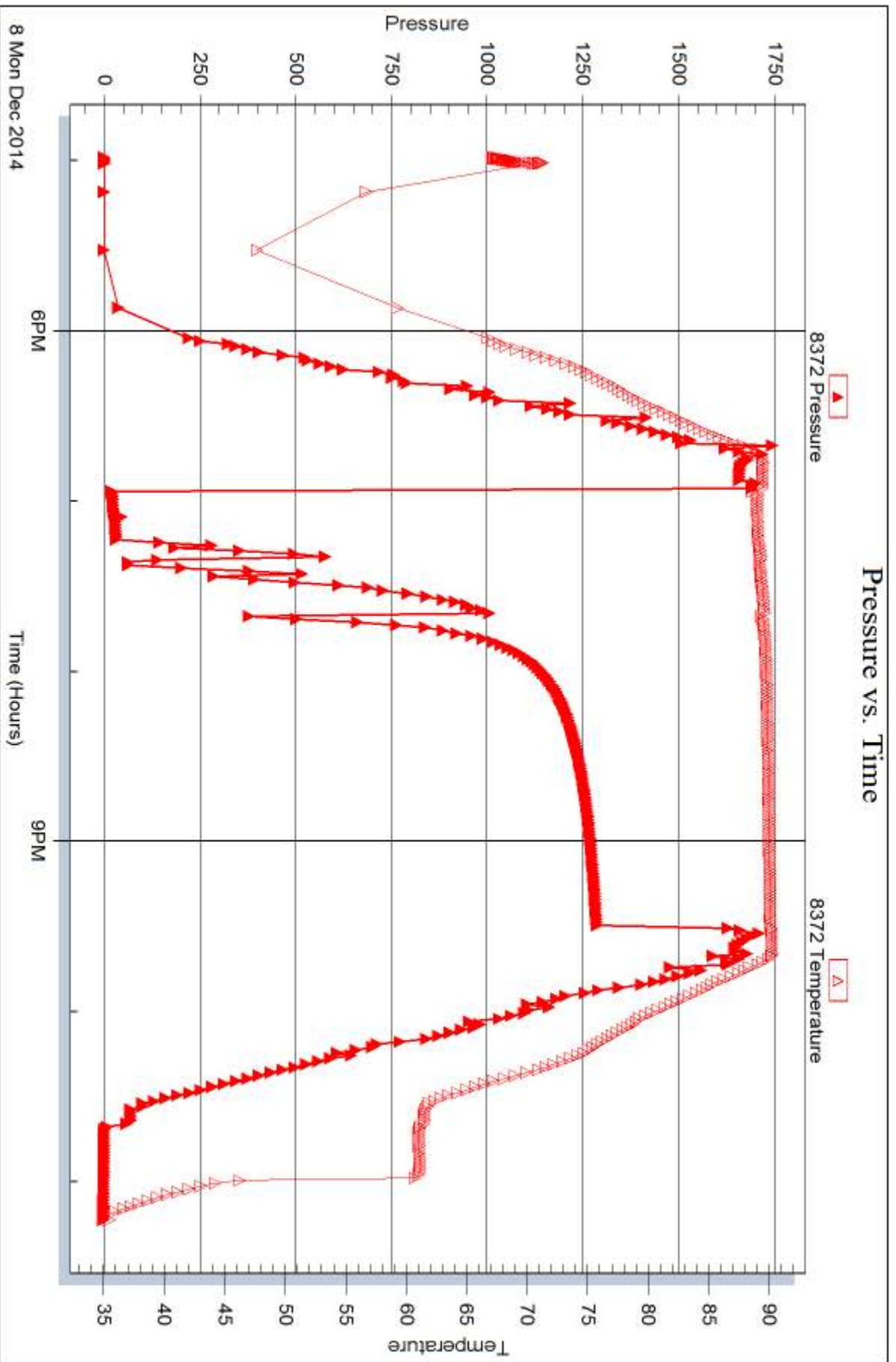
Printed: 2014, 12, 11 @ 16:30:30

Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 61045

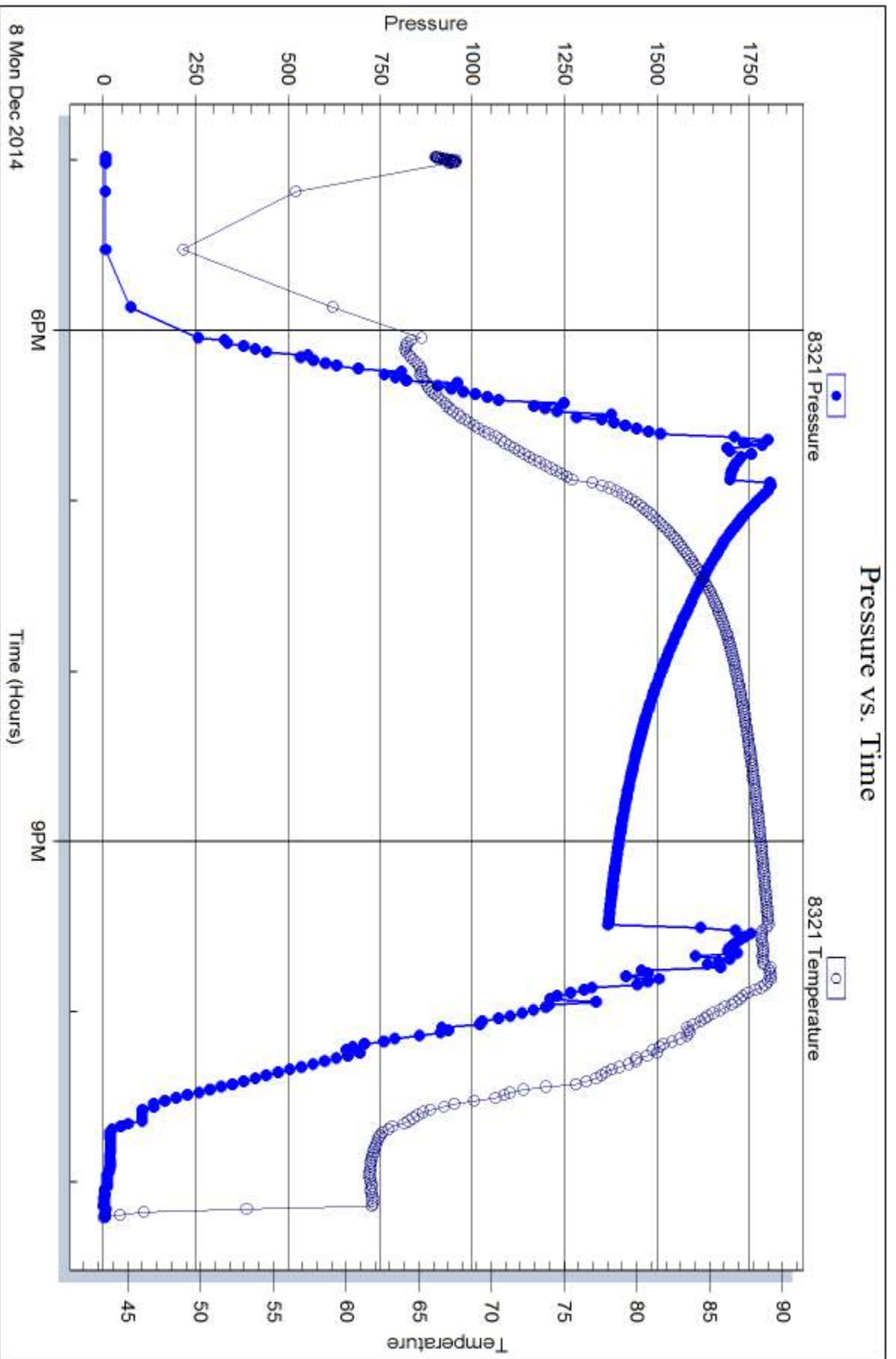
Printed: 2014.12.11 @ 16:30:31

Serial #: 8321

Below (Stratfield) Diamond Oil Inc.

Logan NW #1

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.09 @ 00:00:00

End Date:

Job Ticket #: 61046

DST #: 5

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.11 @ 16:29:47



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61046

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 00:00:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended:

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3627.00 ft (KB) To 3657.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647 Inside

Press@RunDepth: psig @ 3628.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.09

End Date: 2014.12.09

Last Calib.: 2014.12.09

Start Time: 04:37:01

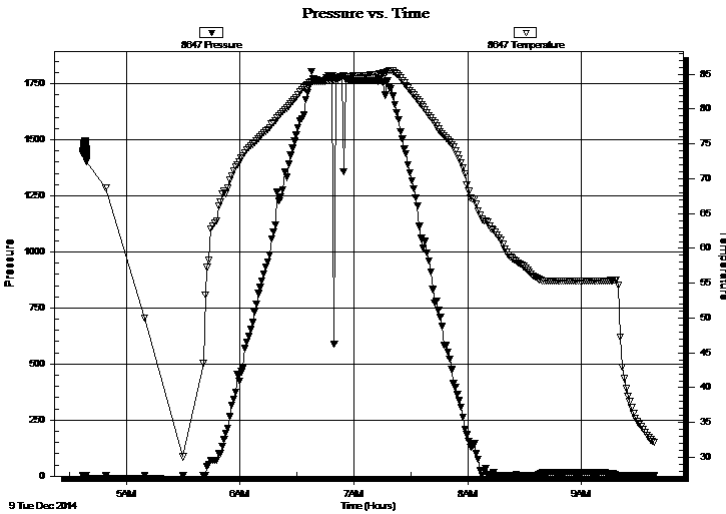
End Time: 09:38:30

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF -
30 - ISI - MISRUN
30 - FF - PACKER FAILURE
30 - FSI -

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
308.00	100%Mud	3.22

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61046

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 00:00:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended:

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3627.00 ft (KB) To 3657.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 3628.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.09

End Date:

2014.12.09

Last Calib.:

2014.12.09

Start Time: 04:37:01

End Time:

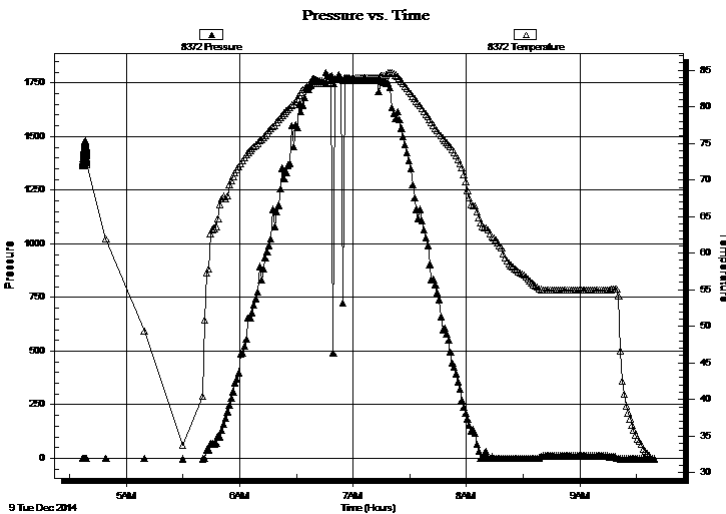
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Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF -
30 - ISI - MISRUN
30 - FF - PACKER FAILURE
30 - FSI -

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
308.00	100%Mud	3.22

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61046

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 00:00:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended:

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: **3627.00 ft (KB) To 3657.00 ft (KB) (TVD)**

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8321 Below (Straddle)

Press@RunDepth: psig @ 3665.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.09 End Date: 2014.12.09

Last Calib.: 2014.12.09

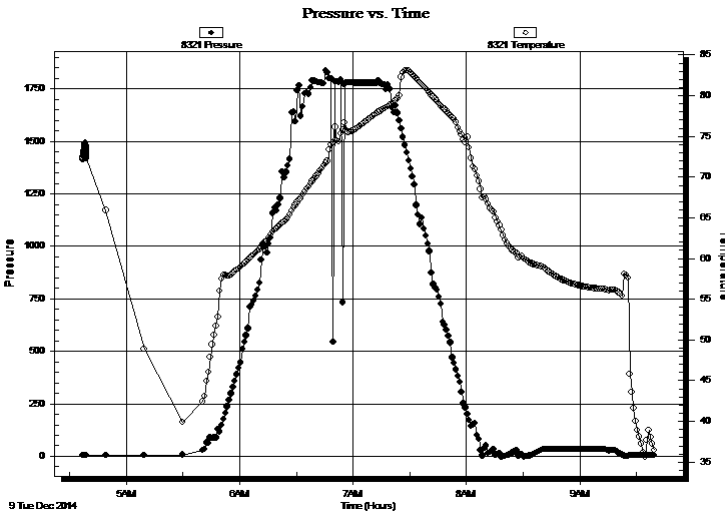
Start Time: 04:37:01 End Time: 09:40:00

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF -
30 - ISI - MISRUN
30 - FF - PACKER FAILURE
30 - FSI -

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
308.00	100%Mud	3.22

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61046

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 00:00:00

Tool Information

Drill Pipe:	Length: 3502.00 ft	Diameter: 3.80 inches	Volume: 49.12 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3627.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	3772.00 ft			
Interval between Packers:	145.00 ft			
Tool Length:	165.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3612.00	
Hydraulic tool	5.00			3617.00	
Packer	5.00			3622.00	20.00 Bottom Of Top Packer
Packer	5.00			3627.00	
Stubb	1.00			3628.00	
Recorder	0.00	8647	Inside	3628.00	
Recorder	0.00	8372	Outside	3628.00	
Perforations	30.00			3658.00	
Blank Off Sub	1.00			3659.00	
Packer - Shale	5.00			3664.00	
Stubb	1.00			3665.00	
Recorder	0.00	8321	Below	3665.00	
Change Over Sub	1.00			3666.00	
Blank Spacing	94.00			3760.00	
Change Over Sub	1.00			3761.00	
Perforations	8.00			3769.00	
Bullnose	3.00			3772.00	145.00 Bottom Packers & Anchor
Total Tool Length:	165.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61046

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 00:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
308.00	100%Mud	3.218

Total Length: 308.00 ft Total Volume: 3.218 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

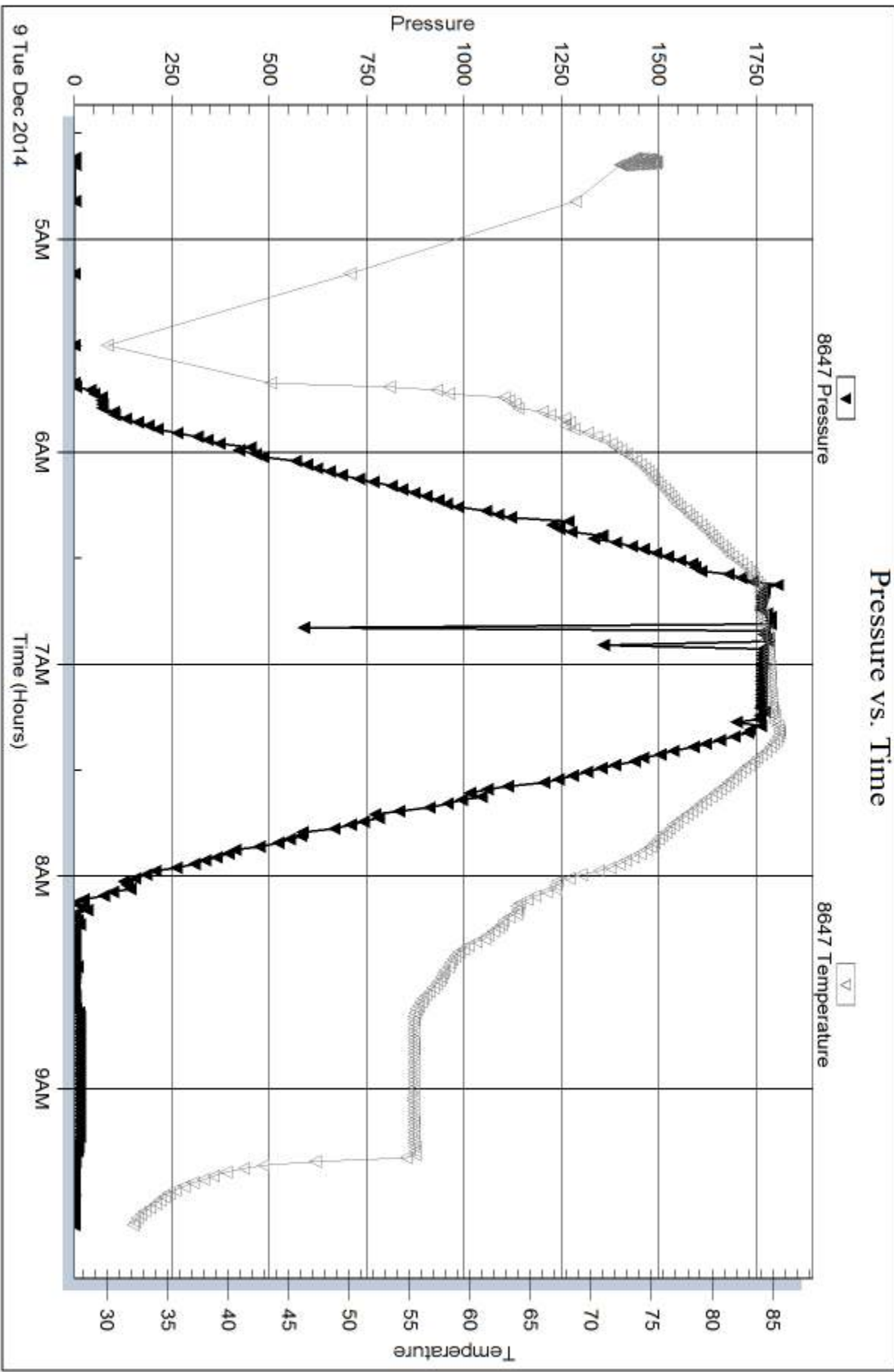
Serial #: 8647

Inside

Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 5

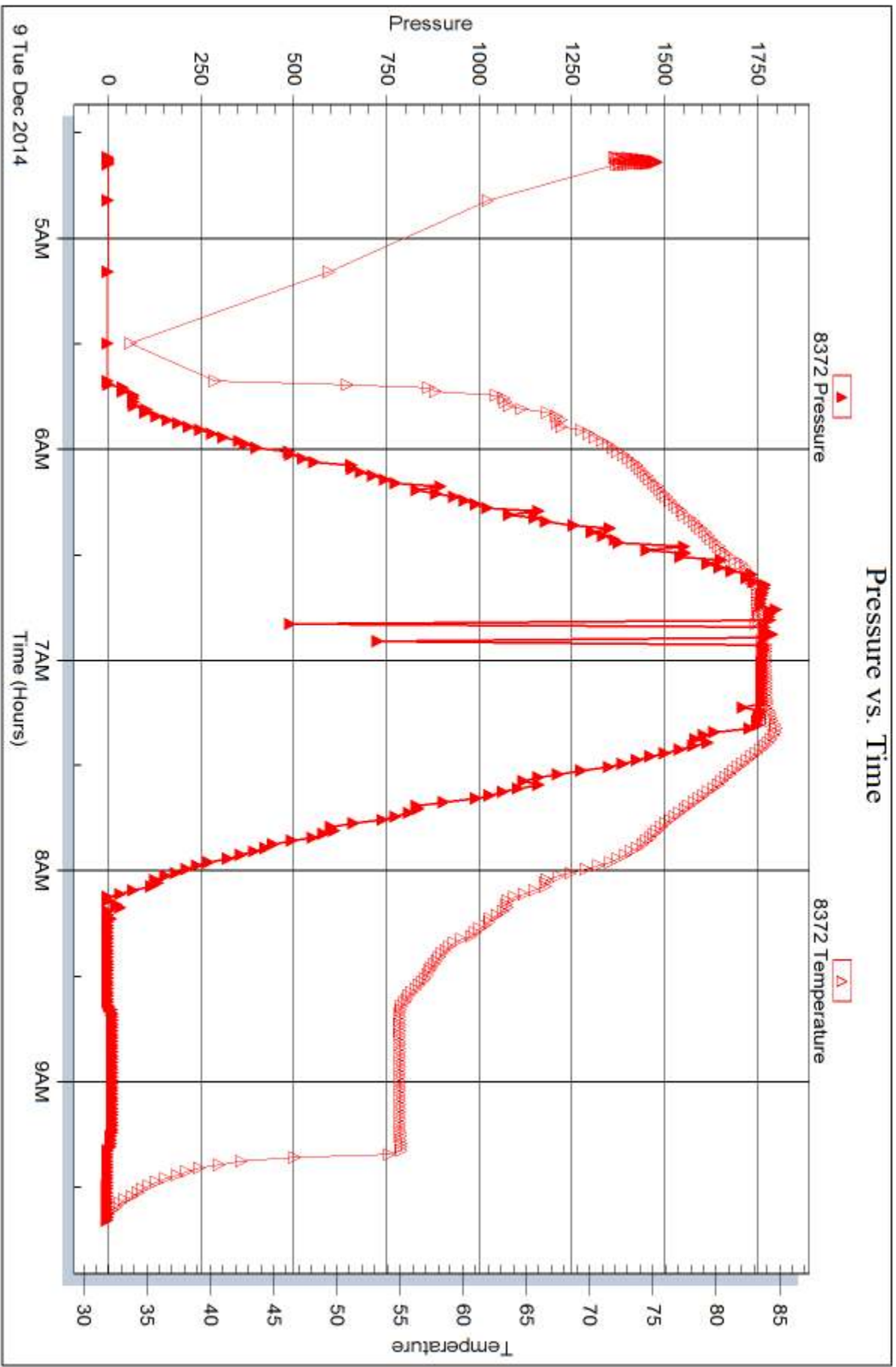


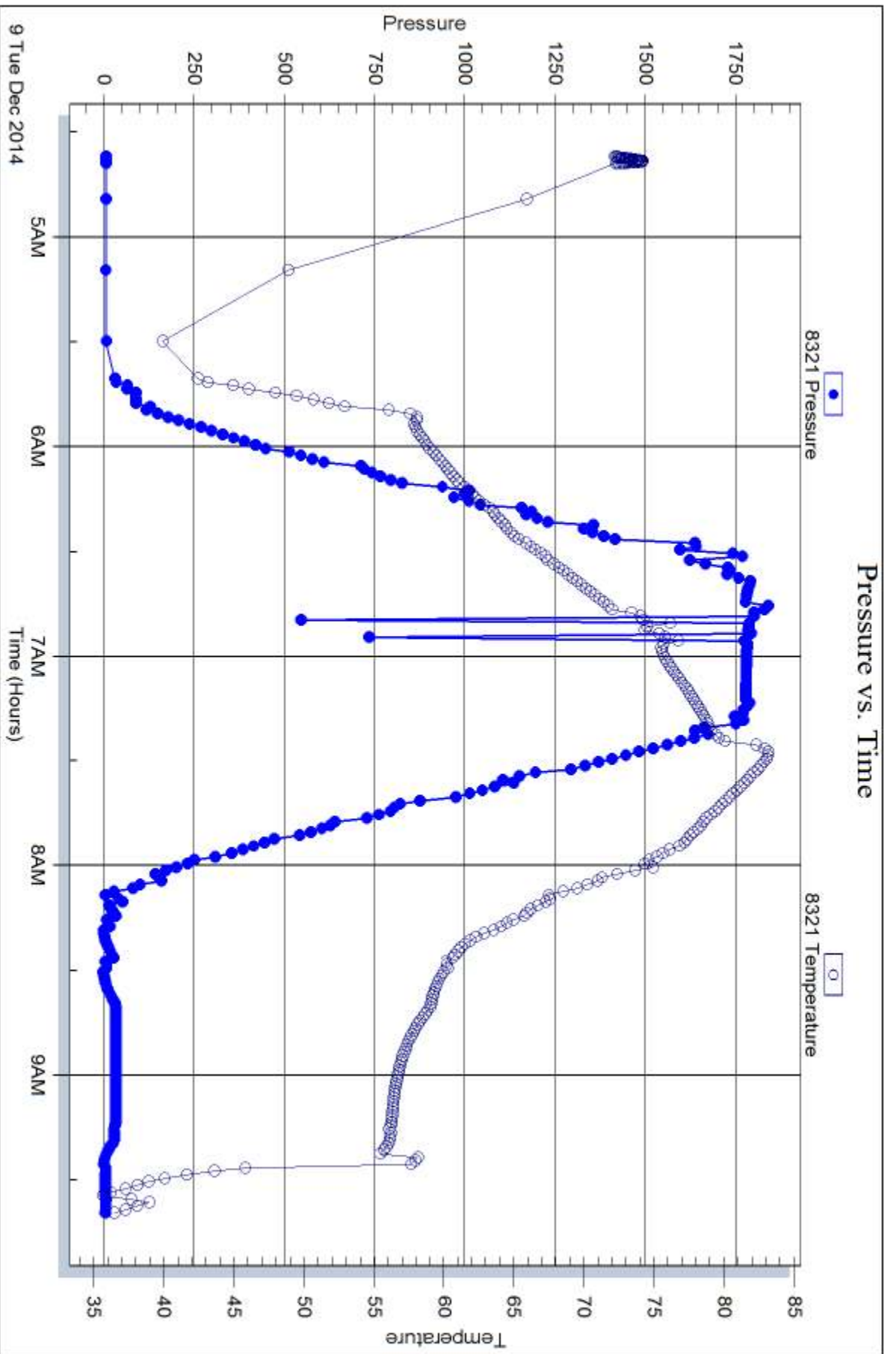
Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 5







DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.09 @ 10:24:00

End Date: 2014.12.09 @ 17:15:30

Job Ticket #: 61047 DST #: 6

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.11 @ 16:28:54



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61047

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 10:24:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:03:30

Time Test Ended: 17:15:30

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3622.00 ft (KB) To 3644.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647

Inside

Press@RunDepth: 84.17 psig @ 3633.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.09

End Date:

2014.12.09

Last Calib.:

2014.12.09

Start Time: 10:24:01

End Time:

17:15:30

Time On Btm:

2014.12.09 @ 12:02:30

Time Off Btm:

2014.12.09 @ 15:37:30

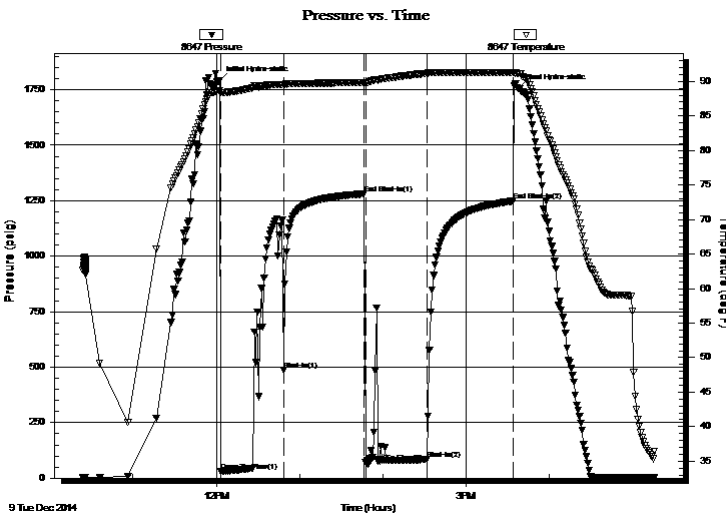
TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 3 1/2"

60 - ISI - No Return

45 - FF - Blow built to 2 1/4"

60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1791.72	88.65	Initial Hydro-static
1	30.40	88.37	Open To Flow (1)
46	485.04	89.48	Shut-In(1)
104	1280.86	89.85	End Shut-In(1)
105	71.53	89.72	Open To Flow (2)
149	84.17	91.15	Shut-In(2)
211	1247.93	91.27	End Shut-In(2)
215	1755.13	91.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61047

DST#: 6

ATTN: Jeff Lawler

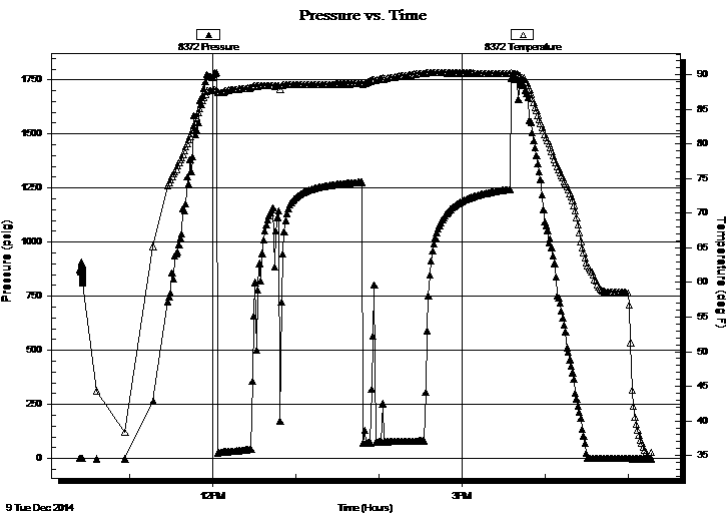
Test Start: 2014.12.09 @ 10:24:00

GENERAL INFORMATION:

Formation: LKC "J-K"		Test Type: Conventional Straddle (Initial)
Deviated: No Whipstock: ft (KB)		Tester: Brandon Quintana
Time Tool Opened: 12:03:30		Unit No: 57
Time Test Ended: 17:15:30		Reference Elevations: 2201.00 ft (KB)
Interval: 3622.00 ft (KB) To 3644.00 ft (KB) (TVD)		2196.00 ft (CF)
Total Depth: 3769.00 ft (KB) (TVD)		KB to GR/CF: 5.00 ft
Hole Diameter: 7.88 inches Hole Condition: Fair		

Serial #: 8372	Outside			Capacity: 8000.00 psig
Press@RunDepth: psig @ 3633.00 ft (KB)				Last Calib.: 2014.12.09
Start Date: 2014.12.09	End Date: 2014.12.09	Start Time: 10:24:01	End Time: 17:17:00	Time On Btm:
				Time Off Btm:

TEST COMMENT: 45 - IF - Opened w/ surface blow, built to 3 1/2"
60 - ISI - No Return
45 - FF - Blow built to 2 1/4"
60 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61047

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 10:24:00

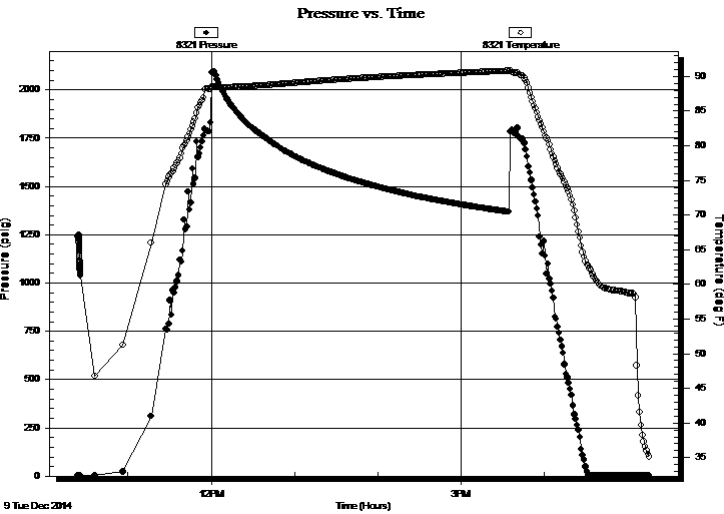
GENERAL INFORMATION:

Formation: **LKC "J-K"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Straddle (Initial)
 Time Tool Opened: 12:03:30 Tester: Brandon Quintana
 Time Test Ended: 17:15:30 Unit No: 57
 Interval: **3622.00 ft (KB) To 3644.00 ft (KB) (TVD)** Reference Elevations: 2201.00 ft (KB)
 Total Depth: 3769.00 ft (KB) (TVD) 2196.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8321 Below (Straddle)

Press@RunDepth: psig @ 3666.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.09 End Date: 2014.12.09 Last Calib.: 2014.12.09
 Start Time: 10:24:01 End Time: 17:15:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 3 1/2"
 60 - ISI - No Return
 45 - FF - Blow built to 2 1/4"
 60 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61047

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 10:24:00

Tool Information

Drill Pipe:	Length: 3498.00 ft	Diameter: 3.80 inches	Volume: 49.07 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3622.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	3771.00 ft			
Interval between Packers:	149.00 ft			
Tool Length:	169.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3607.00	
Hydraulic tool	5.00			3612.00	
Packer	5.00			3617.00	20.00 Bottom Of Top Packer
Packer	5.00			3622.00	
Stubb	1.00			3623.00	
Perforations	10.00			3633.00	
Recorder	0.00	8647	Inside	3633.00	
Recorder	0.00	8372	Outside	3633.00	
Perforations	12.00			3645.00	
Blank Off Sub	1.00			3646.00	
Packer - Shale	5.00			3651.00	
Stubb	1.00			3652.00	
Perforations	13.00			3665.00	
Change Over Sub	1.00			3666.00	
Recorder	0.00	8321	Below	3666.00	
Drill Pipe	94.00			3760.00	
Change Over Sub	1.00			3761.00	
Perforations	7.00			3768.00	
Bullnose	3.00			3771.00	149.00 Bottom Packers & Anchor

Total Tool Length: 169.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61047

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 10:24:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length: ft

Water Salinity: ppm

Viscosity: 51.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure: psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	100% mud	0.344

Total Length: 70.00 ft Total Volume: 0.344 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8647

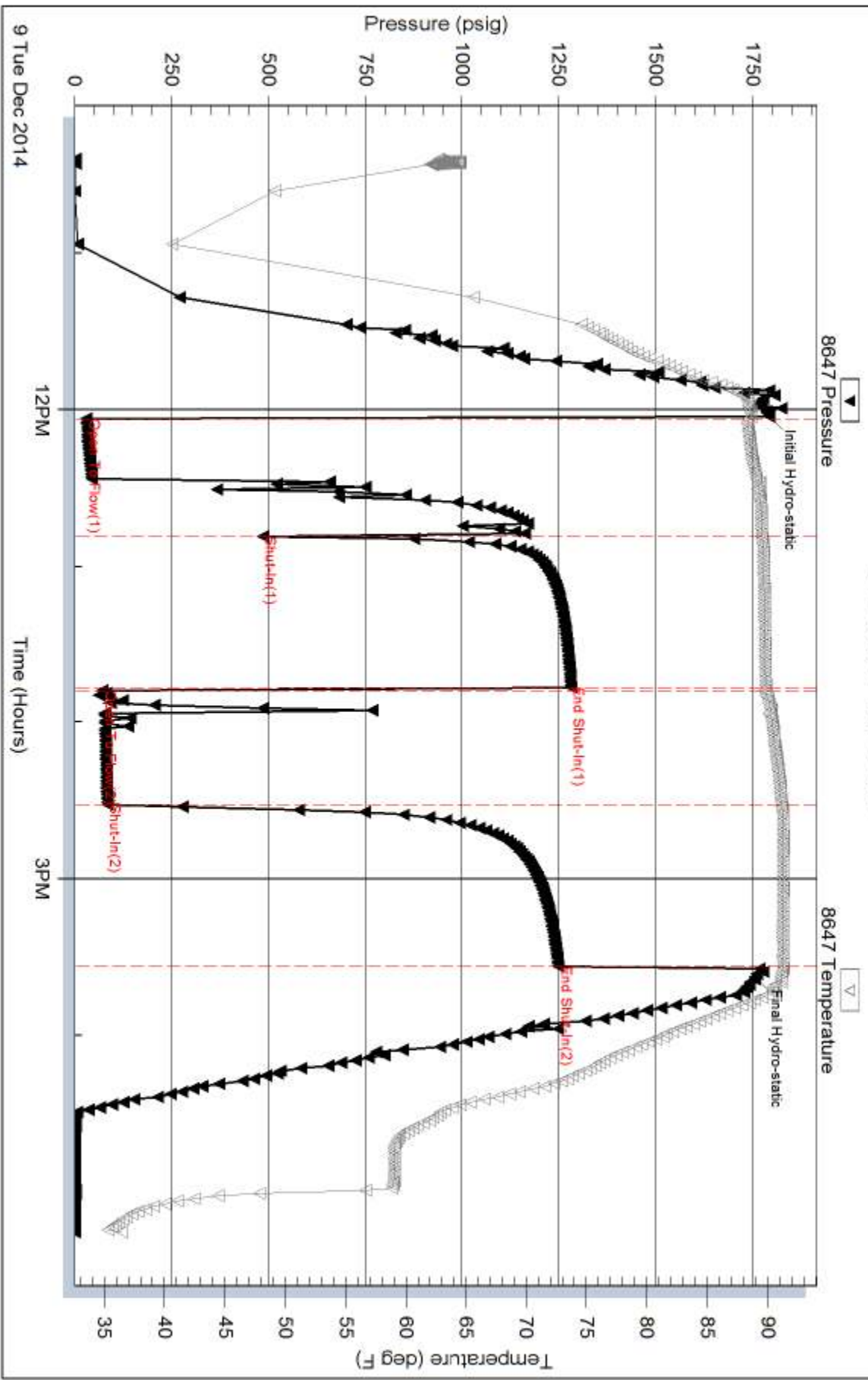
Inside

Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 6

Pressure vs. Time

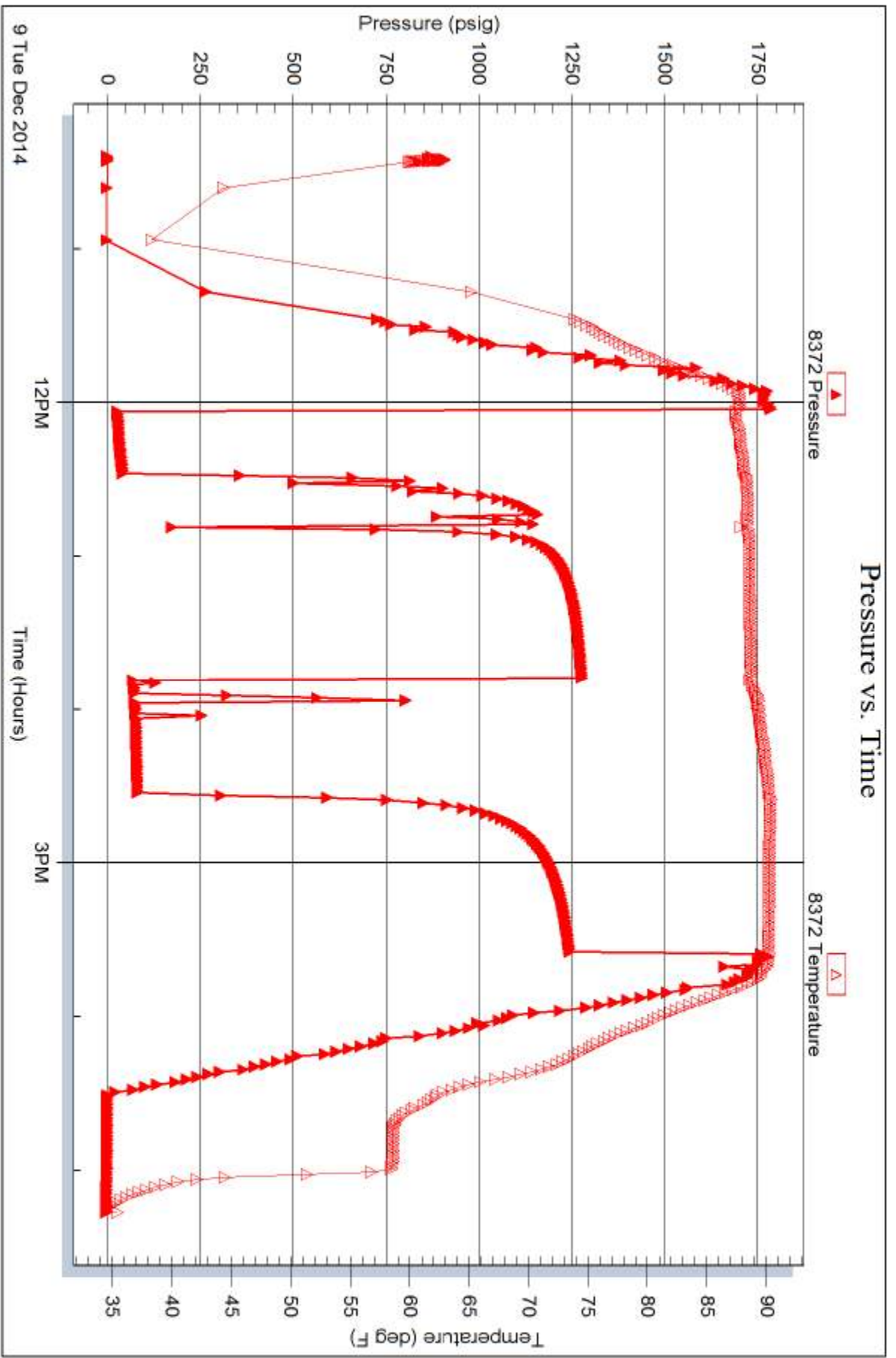


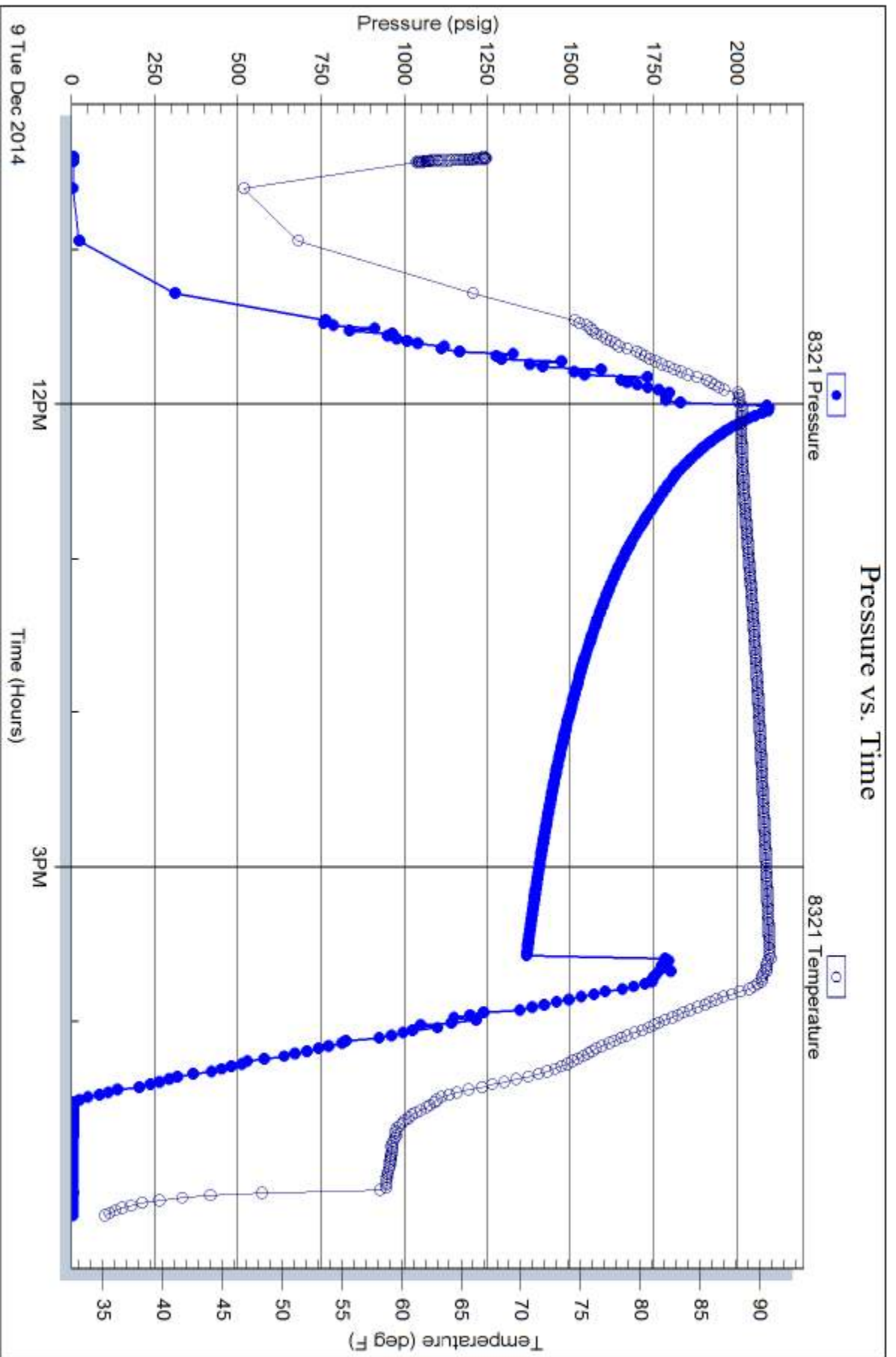
Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 6







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

61042

NO.

Well Name & No. Logan NW #1 Test No. 1 Date 12-6-14
 Company Black Diamond Oil Inc. Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, Ks 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #6
 Location: Sec. 24 Twp. 35 Rge. 21W Co. Norton State KS

Interval Tested 3480-3526 Zone Tested LKC "C-D"
 Anchor Length 46 Drill Pipe Run ~~3371~~ 3371 Mud Wt. 8.9
 Top Packer Depth 3475 Drill Collars Run 121 Vis 64
 Bottom Packer Depth 3480 Wt. Pipe Run — WL 6
 Total Depth 3526 Chlorides 500 ppm System LCM 2
 Blow Description IF- Opened w/ surface blow. built to 7 1/2"
ISI- No Return
FF- Blow built to 9 1/2"
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
182 50	Mud				100%
182	MW			80%	20%

Rec Total 232 BHT 90 Gravity — API RW .299 @ 42.3 °F Chlorides 42,000 ppm

(A) Initial Hydrostatic 1675 Test 1150 T-On Location 7:06 AM
 (B) First Initial Flow 26 Jars — T-Started 8:42 AM
 (C) First Final Flow 87 Safety Joint — T-Open 10:34 AM
 (D) Initial Shut-In 1255 Circ Sub — T-Pulled 2:19 PM
 (E) Second Initial Flow 850 Hourly Standby — T-Out 4:07 PM
 (F) Second Final Flow 122 Mileage 104 R.T. 161.20 Comments —
 (G) Final Shut-In 1226 Sampler —
 (H) Final Hydrostatic 1669 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Extra Recorder — Sub Total 0
 Day Standby — Total 1311.20
 Accessibility — MP/DST Disc't —
 Sub Total 1311.20

Approved By Bud Oit Our Representative Bud Oit
 Trilobite Testing Inc. shall not be liable for damaged or 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. 61043

Well Name & No. Logan NW #1 Test No. 2 Date 12-7-14
 Company Black Diamond Oil Inc. Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #6
 Location: Sec. 24 Twp. 35 Rge. 21W Co. Norton State KS

Interval Tested 3622-3662 Zone Tested LKC "J-K"
 Anchor Length 40 Drill Pipe Run 3497 Mud Wt. 9.2
 Top Packer Depth 3617 Drill Collars Run 121 Vis 51
 Bottom Packer Depth 3622 Wt. Pipe Run — WL 6.8
 Total Depth 3662 Chlorides 500 ppm System LCM 1 1/2

Blow Description IF - Opened w/ surface blow, built to 1/2", then died back to surface
ISI - No Return
FF - No Blow
FSI - No Return

MISRUN

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>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 10 BHT 91 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1775 Test 950 T-On Location 8:54 AM
 (B) First Initial Flow 773 Jars _____ T-Started 9:22 AM
 (C) First Final Flow 1308 Safety Joint _____ T-Open 10:55 AM
 (D) Initial Shut-In 1307 Circ Sub _____ T-Pulled 2:10 PM
 (E) Second Initial Flow 32 Hourly Standby _____ T-Out 3:42 PM
 (F) Second Final Flow 1183 Mileage 104 R.T. 161.20 Comments _____
 (G) Final Shut-In 1290 Sampler _____
 (H) Final Hydrostatic 1738 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60

Sub Total 0
 Total 1111.20
 MP/DST Disc't _____

Approved By _____ Our Representative Bud Oit

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. 61044

Well Name & No. Logan NW #1 Test No. 3 Date 12-8-14
 Company Black Diamond Oil Inc. Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #6
 Location: Sec. 24 Twp. 35 Rge. 21W Co. Norton State KS

Interval Tested 3610-3655 Zone Tested LKC "J-K"
 Anchor Length 45' Drill Pipe Run 3497 Mud Wt. 9.3
 Top Packer Depth 3605 Drill Collars Run 121 Vis 51
 Bottom Packer Depth 3610 Wt. Pipe Run — WL 7.6
 Total Depth 3769 Chlorides 500 ppm System LCM 2

Blow Description IF - Opened w/ surface blow, went straight to 2", died back to 1 1/2"
ISI - No Return
FF - No Blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</u>	<u>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 Total 70 BHT 92 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1790 Test 950 T-On Location 8:10 AM
 (B) First Initial Flow 930 Jars _____ T-Started 8:32 AM
 (C) First Final Flow 1234 Safety Joint _____ T-Open 10:48 AM
 (D) Initial Shut-In 1299 Circ Sub _____ T-Pulled 1:48 AM
 (E) Second Initial Flow 1228 Hourly Standby _____ T-Out 3:08 PM
 (F) Second Final Flow 1301 Mileage 104 R.T. 161.20 Comments _____
 (G) Final Shut-In 1302 Sampler _____
 (H) Final Hydrostatic 1747 Straddle X1 600

Initial Open 45 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 45 Extra Packer _____ Ruined Packer _____
 Final Flow 45 Extra Recorder _____ Extra Copies _____
 Final Shut-In 45 Day Standby _____ Sub Total 0
 Total 1711.20
 Sub Total 1711.20 Accessibility _____ MP/DST Disc't _____

Approved By _____ Our Representative Bud Q. L.

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. **61045**

Well Name & No. Logan NW #1 Test No. 4 Date 12-8-14
 Company Black Diamond Oil Inc. Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #6
 Location: Sec. 24 Twp. 3S Rge. 21W Co. Norton State KS

Interval Tested 3420-3480 Zone Tested Toronto + LKC "A"
 Anchor Length 60' Drill Pipe Run 3312 Mud Wt. 9.3
 Top Packer Depth 3415 Drill Collars Run 121 Vis 51
 Bottom Packer Depth 3420 Wt. Pipe Run — WL 7.6
 Total Depth 3769 Chlorides 500 ppm System LCM 2

Blow Description IF: Spined w/ surface blow, built to 1"
ISI: No Return
FF: No Blow
FSS: No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>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 Total 10 BHT 91 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1661 Test 950 T-On Location 8:10 AM
 (B) First Initial Flow 23 Jars _____ T-Started 4:59 PM
 (C) First Final Flow 508 Safety Joint _____ T-Open 6:58 PM
 (D) Initial Shut-In 1235 Circ Sub _____ T-Pulled 9:28 PM
 (E) Second Initial Flow 1237 Hourly Standby _____ T-Out 11:14 PM
 (F) Second Final Flow 1271 Mileage 104 R.T Comments _____
 (G) Final Shut-In 1289 Sampler _____
 (H) Final Hydrostatic 1679 Straddle x1 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 45 Extra Packer _____ Extra Copies _____
 Initial Shut-In 45 Extra Recorder _____ Sub Total 0
 Final Flow 30 Day Standby _____ Total 1550
 Final Shut-In 30 Accessibility _____ MP/DST Disc't _____
 Sub Total 1550

Approved By _____ Our Representative Burd Pitt

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61046

Well Name & No. Logan NW #1 Test No. 5 Date 12-9-14
 Company Black Diamond Oil Inc Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #6
 Location: Sec. 24 Twp. 35 Rge. 21W Co. Norton State KS

Interval Tested 3627-3657 Zone Tested LKC "J-K"
 Anchor Length 30' Drill Pipe Run _____ Mud Wt. 9.3
 Top Packer Depth 3622 Drill Collars Run 121 Vis 51
 Bottom Packer Depth 3627 Wt. Pipe Run — WL 7.6
 Total Depth 3769 Chlorides 500 ppm System LCM 2

Blow Description IF-
ISI-
FF-
FSI-
MIS RUN Packer Failure

Rec	Feet of	%gas	%oil	%water	%mud

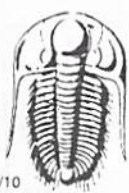
Rec Total _____ BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic _____ Test 950 T-On Location 4:25 AM
 (B) First Initial Flow _____ Jars _____ T-Started 4:37 AM
 (C) First Final Flow _____ Safety Joint _____ T-Open _____
 (D) Initial Shut-In _____ Circ Sub _____ T-Pulled _____ 9:04 AM
 (E) Second Initial Flow _____ Hourly Standby _____ T-Out _____
 (F) Second Final Flow _____ Mileage 104 R.T. 161.20 Comments _____
 (G) Final Shut-In _____ Sampler _____
 (H) Final Hydrostatic _____ Straddle X1 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1711.20
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1711.20

Initial Open _____
 Initial Shut-In _____
 Final Flow _____
 Final Shut-In _____

Approved By _____ Our Representative Bud Oit

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61047

Well Name & No. Logan NW #1 Test No. 6 Date 12-9-14
 Company Black Diamond Oil Inc. Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, KS 67601
 Co. Rep / Geo. Jeff Lawler Rig ww #6
 Location: Sec. 24 Twp. 3S Rge. 21W Co. Norton State KS

Interval Tested 3622-3644 Zone Tested LKC "J-K"
 Anchor Length 22' Drill Pipe Run 3498 Mud Wt. 9.3
 Top Packer Depth 3617 Drill Collars Run 121 Vis 51
 Bottom Packer Depth 3622 Wt. Pipe Run — WL 7.6
 Total Depth 3769 Chlorides 500 ppm System LCM 2

Blow Description IF- Opened w/ surface blow, built to 3 1/2"
ISI- No Return
FF- Blow built to 2 1/4"
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</u>	<u>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 70 BHT 91 Gravity 1150 API RW — @ — °F Chlorides — ppm
 (A) Initial Hydrostatic 1791 Test 1150
 (B) First Initial Flow 30 Jars —
 (C) First Final Flow 485 Safety Joint —
 (D) Initial Shut-In 1280 Circ Sub —
 (E) Second Initial Flow 71 Hourly Standby —
 (F) Second Final Flow 89 Mileage 104 RT.
 (G) Final Shut-In 1247 Sampler —
 (H) Final Hydrostatic 1755 Straddle x1 600
 Shale Packer —
 Extra Packer —
 Extra Recorder —
 Day Standby —
 Accessibility —
 Sub Total 1750

T-On Location 4:25 AM
 T-Started 10:24 AM
 T-Open 12:05 PM
 T-Pulled 3:35 PM
 T-Out 5:19 PM
 Comments —
 Ruined Shale Packer —
 Ruined Packer —
 Extra Copies —
 Sub Total 0
 Total 1750
 MP/DST Disc't —

Initial Open 45
 Initial Shut-In 60
 Final Flow 45
 Final Shut-In 60

Approved By — Our Representative Burd Ot
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OPERATOR

Company: BLACK DIAMOND OIL, INC.
 Address: P.O. BOX 641
 HAYS, KS 67601

Contact Geologist: KENNETH VEHIGE
 Contact Phone Nbr: (785) 625-5891
 Well Name: LOGAN NW #1
 Location: E2 NE NW SE Sec. 24 - 3S - 21W
 API: 15-137-20725-00-00
 Pool:
 State: KANSAS
 Field: UNNAMED
 Country: USA

Scale 1:240 Imperial

Well Name: LOGAN NW #1
 Surface Location: E2 NE NW SE Sec. 24 - 3S - 21W
 Bottom Location:
 API: 15-137-20725-00-00
 License Number: 7076
 Spud Date: 12/2/2014 Time: 5:15 PM
 Region: NORTON COUNTY KANSAS
 Drilling Completed: 12/7/2014 Time: 10:22 PM
 Surface Coordinates: 2310' FSL & 1600' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 2196.00ft
 K.B. Elevation: 2201.00ft
 Logged Interval: 3100.00ft To: 3770.00ft
 Total Depth: 3770.00ft
 Formation: LANSING - KANSAS CITY
 Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -99.6329161
 Latitude: 39.7765756
 N/S Co-ord: 2310' FSL
 E/W Co-ord: 1600' FEL

LOGGED BY

Company: BIG CREEK CONSULTING, INC.
 Address: 1909 MAPLE
 ELLIS, KS 67637
 Phone Nbr: (785) 259-3737
 Logged By: Geologist Name: JEFF LAWLER

CONTRACTOR

Contractor: WW DRILLING, LLC
 Rig #: 6
 Rig Type: MUD ROTARY
 Spud Date: 12/2/2014 Time: 5:15 PM
 TD Date: 12/7/2014 Time: 10:22 PM
 Rig Release: 12/10/2014 Time: 3:00 AM

ELEVATIONS

K.B. Elevation: 2201.00ft Ground Elevation: 2196.00ft
 K.B. to Ground: 5.00ft

NOTES

THE LOGAN NW #1 WAS A RELATIVE WILDCAT WELL WITH THE NEAREST WELLS DRILLED APPROXIMATELY 2 MILES IN ALL DIRECTIONS. THE LOGAN NW #1 RAN HIGH TO SURROUNDING WELLS AND CARRIED SHOWS AND POROSITY DEVELOPMENT THROUGHOUT. SIX DRILL STEM TESTS WERE TAKEN. DRILL STEM TESTS TWO THROUGH SIX HAD SEVERE TO PARTIAL PLUGGING THROUGHOUT THE FLOW PERIODS THAT IS VISABLE ON THE DST CHART INCLUDED IN THE REPORT. AFTER DRILL STEM TEST FIVE A DIFFERENT HYDRAULIC TOOL WAS SWITCHED OUT. THERE WAS PARTIAL PLUGGING ON DRILL STEM TEST SIX BUT WAS CONCLUDED AS A VALID TEST. WITH THE LACK OF ECONOMICAL RECOVERY ON ALL OF THE DRILL

CONCLUDED AS A VALID TEST. DUE TO THE LACK OF FLOW ON ALL OF THE LOGAN NW #1 STEM TESTS IT WAS DECIDED TO PLUG AND ABANDON THE LOGAN NW #1.

RESPECTFULLY SUBMITTED,
JEFF LAWLER

WELL COMPARISON SHEET

FORMATION	LOGAN NW #1								BLACK DIAMOND OIL, INC.				NORTHERN ORDANCE				JONES, SHELburne, & FARMER							
	ARLENE MULDER #1-26				SCHEMPER #1				PERRY #1				SMITH #1											
	NW SW SE NW 26-3-21				NESW NE SW 20-2-20				SW SW 20-320				SW SW NE 15-3-21											
	KB	2201	GL	2196	KB	2275			KB	2165			KB	2195			KB	2313						
	LOG TOPS	SAMPLE TOPS	LOG	LOG	SMPL.	LOG	LOG	SMPL.	LOG	LOG	SMPL.	LOG	LOG	SMPL.	LOG	LOG	SMPL.	LOG	LOG	SMPL.				
DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	
ANHYDRITE TOP	1854	347	1857	344	1953	322	+ 25	+ 22	1811	354	- 7	- 10	1843	352	- 5	- 8	2011	302	+ 45	+ 42				
BASE	1879	322	1882	319	1978	297	+ 25	+ 22	1836	329	- 7	- 10												
TOPEKA	3220	-1019	3219	-1018	3301	-1026	+ 7	+ 8	3187	-1022	+ 3	+ 4	3224	-1029	+ 10	+ 11								
HEEBNER SHALE	3423	-1222	3426	-1225	3499	-1224	+ 2	- 1	3394	-1229	+ 7	+ 4	3422	-1227	+ 5	+ 2	3545	-1232	+ 10	+ 7				
TORONTO	3450	-1249	3453	-1252	3525	-1250	+ 1	- 2	3422	-1257	+ 8	+ 5	3446	-1251	+ 2	- 1	3569	-1256	+ 7	+ 4				
LKC	3468	-1267	3470	-1269	3545	-1270	+ 3	+ 1	3440	-1275	+ 8	+ 6	3465	-1270	+ 3	+ 1	3586	-1273	+ 6	+ 4				
BKC	3658	-1457	3670	-1469	3738	-1463	+ 6	- 6	3632	-1467	+ 10	- 2					3736	-1423	- 34	- 46				
ARBUCKLE			3746	-1545	3813	-1538		- 7	3707	-1542		- 3	3739	-1544		- 1	3856	-1543		- 2				
TOTAL DEPTH	3769	-1568	3770	-1569	3925	-1650	+ 82	+ 81	3747	-1582	+ 14	+ 13	3790	-1595	+ 27	+ 26	3868	-1555	- 13	- 14				

DST #1 LKC C - D 3480' - 3526'

DRILL STEM TEST REPORT

Black Diamond Oil Inc. **24/3s/21w**

P.O. Box 641 **Logan NW #1**
Hays, Ks 67601 Job Ticket: 61042 **DST#: 1**

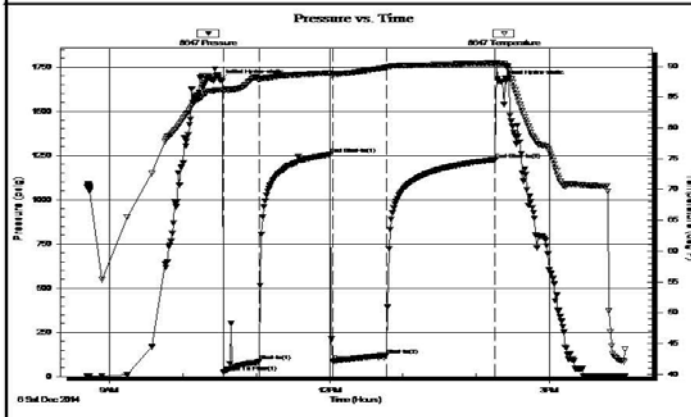
ATTN: Jeff Lawler Test Start: 2014.12.06 @ 08:42:00

GENERAL INFORMATION:

Formation: **LKC "C-D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:33:30
 Time Test Ended: 16:02:00
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Quintana
 Unit No: 57
 Interval: **3480.00 ft (KB) To 3526.00 ft (KB) (TVD)**
 Total Depth: 3480.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Reference Elevations: 2201.00 ft (KB)
 2196.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8647 **Inside**
 Press@RunDepth: 122.48 psig @ 3481.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.06 End Date: 2014.12.06 Last Calib.: 2014.12.06
 Start Time: 08:42:01 End Time: 16:02:00 Time On Btm: 2014.12.06 @ 10:30:30
 Time Off Btm: 2014.12.06 @ 14:19:30

TEST COMMENT: 30 - IF - Opened w/ surface blow, built to 7 1/2"
 60 - ISI - No Return
 45 - FF - Blow built to 9 1/2"
 90 - FSI - No Return



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1675.28	86.17	Initial Hydro-static
3	26.78	85.98	Open To Flow (1)
32	87.81	87.80	Shut-In(1)
90	1255.80	88.90	End Shut-In(1)
92	85.43	88.75	Open To Flow (2)
136	122.48	89.80	Shut-In(2)
225	1226.40	90.54	End Shut-In(2)
229	1669.84	90.42	Final Hydro-static

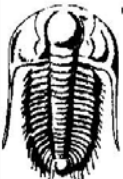
Recovery

Length (ft)	Description	Volume (bbl)
182.00	MWV 80%w, 20% m	1.45
50.00	100% m	0.70

Gas Rates

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

DST #2 LKC J - K 3622' - 3662'

 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	Black Diamond Oil Inc. P.O. Box 641 Hays, Ks 67601 ATTN: Jeff Lawler	24/3s/21w Logan NW #1 Job Ticket: 61043 DST#: 2 Test Start: 2014.12.07 @ 09:22:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:54:30
 Time Test Ended: 15:39:00

Interval: 3622.00 ft (KB) To 3662.00 ft (KB) (TVD)

Total Depth: 3662.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches-Hole Condition: Fair

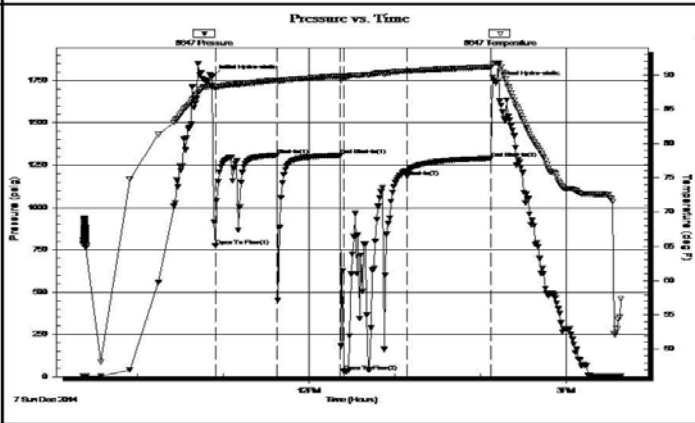
Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Quintana
 Unit No: 57

Reference Elevations: 2201.00 ft (KB)
 2196.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8647 Inside

Press@RunDepth: 1183.01 psig @ 3623.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2014.12.07	End Date: 2014.12.07
Start Time: 09:22:01	End Time: 15:39:00
	Time On Btm: 2014.12.07 @ 10:52:30
	Time Off Btm: 2014.12.07 @ 14:11:30

TEST COMMENT: 45 - IF - Opened w/ surface blow, built to 1/2" then died back to surface
 45 - ISI - No Return
 45 - FF - No Blow
 60 - FSI - No Return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1775.88	88.41	Initial Hydro-static
2	773.13	88.20	Open To Flow (1)
45	1308.37	89.19	Shut-In(1)
89	1307.53	89.82	End Shut-In(1)
92	32.28	89.56	Open To Flow (2)
136	1183.01	90.53	Shut-In(2)
195	1290.12	91.16	End Shut-In(2)
199	1738.71	91.78	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

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

DST #3 (STRADDLE) LKC J - K 3610' - 3655'



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24/3s/21w

P.O. Box 641
Hays, Ks 67601

Logan NW #1

Job Ticket: 61044

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 08:32:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:46:30

Time Test Ended: 15:06:00

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: **3610.00 ft (KB) To 3655.00 ft (KB) (TVD)**

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647

Press@RunDepth: 1301.86 psig @ ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08

End Date: 2014.12.08

Last Calib.: 1899.12.30

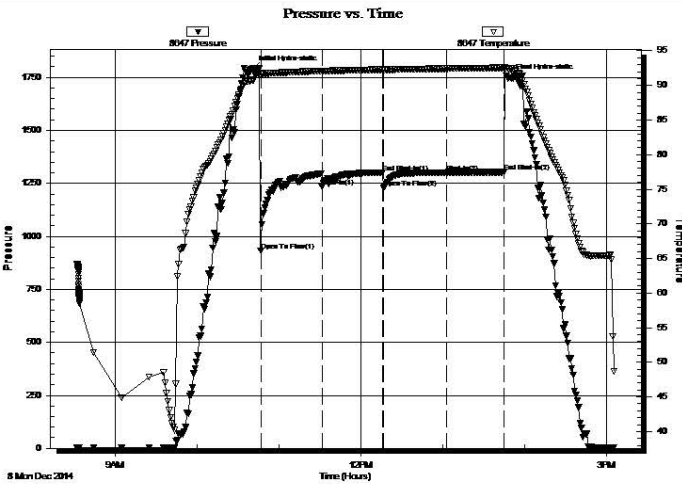
Start Time: 08:32:01

End Time: 15:06:00

Time On Btm: 2014.12.08 @ 10:40:30

Time Off Btm: 2014.12.08 @ 13:48:30

TEST COMMENT: 30 - IF - Opened w / surface blow , w ent straight to 2", died back to 1 1/2"
30 - ISI - No Return
30 - FF - No Blow
30 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1790.55	90.76	Initial Hydro-static
6	930.16	91.69	Open To Flow (1)
51	1234.09	92.07	Shut-In(1)
95	1299.16	92.29	End Shut-In(1)
96	1228.33	92.25	Open To Flow (2)
142	1301.86	92.43	Shut-In(2)
184	1302.99	92.55	End Shut-In(2)
188	1747.59	92.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 61044

Printed: 2014.12.08 @ 15:25:49

DST #4 (STRADDLE) TORONTO - LKC A 3420' - 3480' (BOTTOM PACKER CHART AT END OF REPORT)



TRILOBITE TESTING, INC.

DRILL TEST TEST REPORT

Black Diamond Oil Inc.

24/3s/21w

P.O. Box 641
Hays, Ks 67601

Logan NW #1

Job Ticket: 61045

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 16:59:00

GENERAL INFORMATION:

Formation: **Toronto & "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:56:30

Time Test Ended: 23:12:30

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: **3420.00 ft (KB) To 3480.00 ft (KB) (TVD)**

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647

Press@RunDepth: 1271.39 psig @ ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08

End Date: 2014.12.08

Last Calib.: 2014.12.08

Start Time: 16:59:01

End Time: 23:12:30

Time On Btm: 2014.12.08 @ 18:50:30

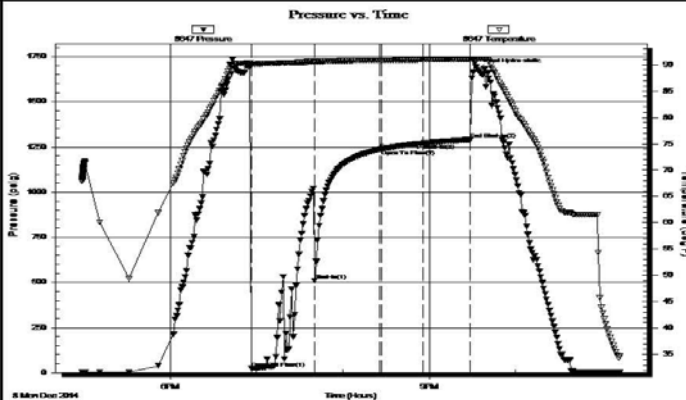
Time Off Btm: 2014.12.08 @ 21:33:30

TEST COMMENT: 45 - IF - Opened w / surface blow , built to 1"

45 - ISI - No Return

30 - FF - No Blow

30 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1661.89	90.25	Initial Hydro-static
6	23.50	90.06	Open To Flow (1)
50	508.89	90.52	Shut-In(1)
95	1235.58	90.85	End Shut-In(1)
96	1237.50	90.85	Open To Flow (2)
125	1271.39	90.94	Shut-In(2)
158	1289.96	91.02	End Shut-In(2)
163	1679.74	91.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 61045

Printed: 2014.12.08 @ 23:30:31

ROCK TYPES

Cht	Lmst fw7>	Shblk	Stst
Congl	shale, gry	shale, red	
Dolprim	Carbon Sh	Arg/Shale	

ACCESSORIES

STRINGER

~~~~ Chert






### OTHER SYMBOLS

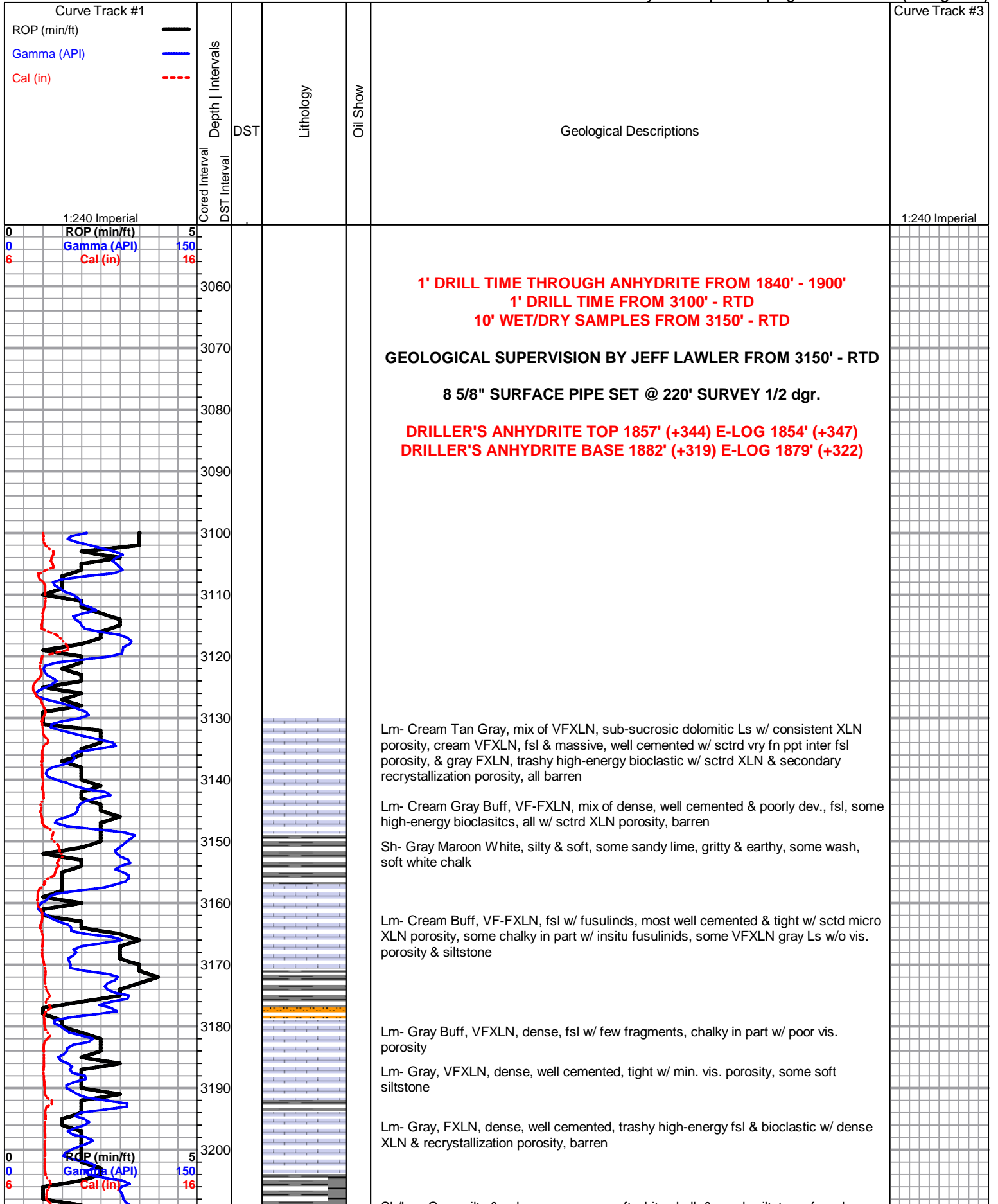
#### MISC

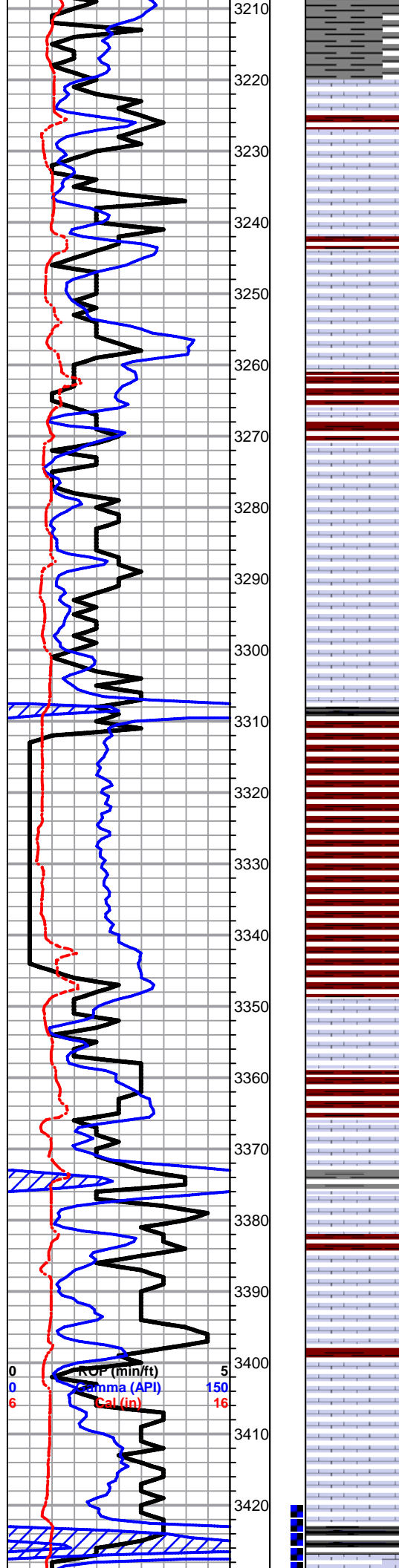
- Daily Report
- Digital Photo
- Document
- Folder

#### DST

- DST Int
- DST alt

-  Link
-  Vertical Log File
-  Horizontal Log File
-  Core Log File
-  Drill Cuttings Rpt





Sh/Lm- Gray, silty & calcareous, some soft white chalk & sandy siltstone, few clumps of gummy gray wash, chalky Lm Green siltstone

**TOPEKA 3219' (-1018) E-LOG 3220' (-1019)** Lm- Cream Tan Buff, FXLN, mix of massive, fsl, some fragments & bioclastic recrystallization, sctrd-dense XLN porosity, some trashy high-energy bioclastic w/ dense XLN & recrystallization porosity

Lm- Gray, VFXLN, dense, tight w/ min. vis. porosity, some lithographic

Lm- Tan Cream, F-Med XLN, fsl w/ fusulinids & fragments, dense recrystallization, clear replacement cementation, barren

Lm- Cream Buff, VF-FXLN, sl fsl, some chalky in part & sl mottled, poor vis. to sctrd micro XLN & XLN porosity, vry clean & barren

Sh- Maroon Gray, gritty & earthy, dense & silty, some unconsolidated & trashy Ss, well cemented & barren

Lm- Cream Off White, VF-FXLN, fusulinids & oolitic, poorly dev., well cemented & dense, some w/ clear replacement cementation, sctrd to dense XLN porosity, some chalky in part, w/ poor vis. porosity, barren, few pcs of fresh bedded oolitic & clean chert w/o vis. porosity

Lm- Cream, VFXLN mix or dense, sl chalky in part, well cemented w/o vis. porosity or matrix & sl fsl, poorly dev. & mostly tight w/ rare sctrd micro XLN porosity, all vry clean & barren

Lm- A/A w/ incr. in milky tan vitreous fresh bedded chert & soft white chalk

Lm- Cream Off White, VF-FXLN, dense, well cemented, fsl & oolitic, poorly dev. w/ sctrd clear replacement cementation, poor effective porosity, some massive, some loosely cemented, crumbly, & chalky

Sh- Black Maroon, fissile, slaty, carbonaceous, gritty & earthy

Sh- Maroon Gray White, gritty & earthy, semi-sandy gummy wash, silty & calcareous & soft white chalk/lime

Sh- A/A w/ incr. in sandy gummy wash, & maroon & buff Fn Grn consolidated & well sorted Ss, barren

Lm- Cream Off White, VFXLN, dense, well cemented, massive & grainy w/ dense micro XLN porosity, barren

Lm- Gray Buff Lt Maroon, Fn Grn, arenaceous Ls, some chalky in part, some calcaerous siltstone

Sh- Drk Gray, dense & silty, soft, few trashy & unconsolidated

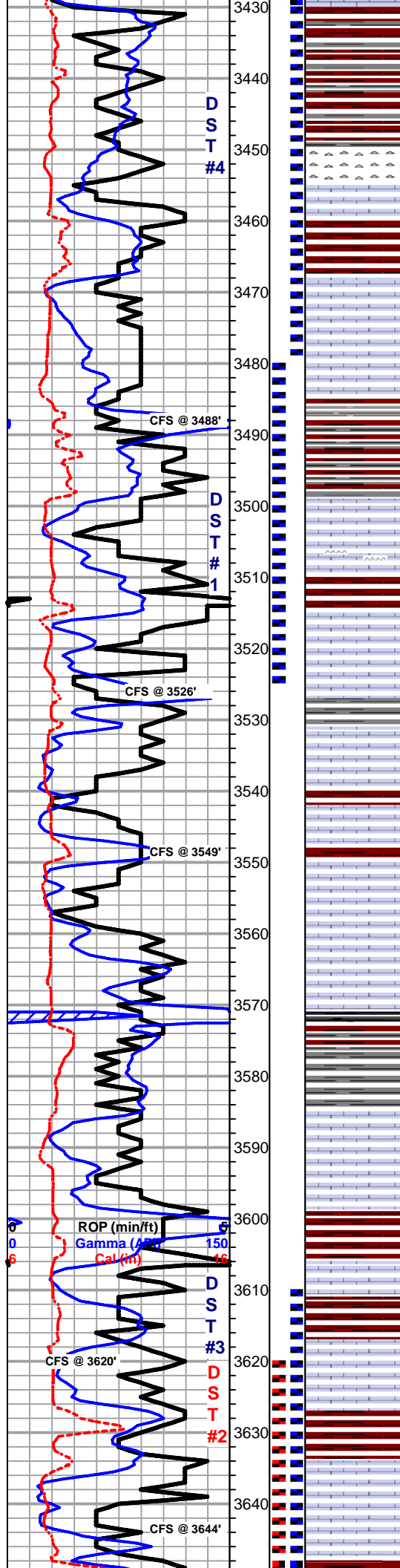
Lm- Cream Buff, VFXLN, dense, well cemented, tight w/ sctrd micro XLN & XLN porosity, several pcs of chalky sl fsl w/ fusulinid, loosely cemented & crumbly

Lm- Cream Off White, VF-FXLN, dense, sl oolitic w/ fusulinids, clear replacement cementation, dense XLN porosity & recrystallization, few pcs of fsl biomicrite w/o vis. porosity, some VFXLN, dense & tight w/o vis. porosity, all vry clean & barren

Lm- Cream Off White, Fn Grn, loosely cemented & semi-crumbly arenaceous Ls w/ poor vis. porosity, chalky

Lm- Buff, VFXLN Vf Grn, dense tight mix, some chalky & loosely cemented, all w/ min. vis. porosity

**HIEBNER 3426' (-1225) E-LOG 3423' (-1222)** Sh- Black Maroon Gray, fissile & carbonaceous, gritty & earthy, gummy wash



Sh- Maroon Gray, A/A w/ gummy maroon wash & sandy gray shale/lime

**TOPEKA 3453' (-1252) E-LOG 3450' (-1249)** Chert- Golden Brown Cream Salmon, vitreous fresh bedded chert, some sl fsl, w/o vis. porosity

Lm- Cream Off White, VF-FXLN, fsl mix, poorly dev. w/ sctrd-dense micro XLN porosity, well cemented & chalky loosely cemented crumbly w/ fusulinids & several loose fusulinids, barren

**LKC 3470' (-1269) E-LOG 3468' (-1267)** Lm- Cream Off White, fsl & sl oolitic, sl sctrd dev. & XLN porosity, few w/ rare vry fn ppt inter oolite porosity, WK SPOTTY STN, 1 PCS W/ SL TR FO UPON CRUSH, TR ODR, DULL HALO FLOR., NO STRM WET CUT, (4-6 pcs total)

Lm- Cream Off White, VF-FXLN, dense, mostly tight, sl fsl, poorly dev. w/ sctrd micro XLN & XLN porosity, some chalky in part, some lithographic w/o vis. porosity

Lm/Chert- Cream Off White, Vf-FXLN, dense, well cemented, consistent micro XLN & vry fn ppt porosity throughout, SCTRD DRK STN, TR FO, TR ODR, BRT YLW FLOR, much barren porosity Golden Brown & Tan fresh bedded chert

Lm/Chert- Cream Off White, VF-FXLN, sl fsl, some chalky in part, mostly tight w/ sctrd XLN porosity at best, barren, several pcs of golden brown, tan, & salmon, some gritty dolomitic chert

Lm- Cream Off White, A/A w/ poorly dev. FXLN oolitic Ls w/ rare sctrd vry fn ppt inter oolite & XLN porosity

Sh- Gray Lm Green Maroon, silty & soft, dense & silty, gritty & earthy

Lm/Chert- Cream Off White, VF-FXLN, oolitic w/ porosity varying w/ min. vis. & clear replacement cementation to sl dev. w/ sctrd XLN & some sctrd fn ppt inter oolite porosity, all well cemented & vry clean & barren, some soft white chalk, much Tan, Milky White, Cream & Salmon fresh bedded chert

Lm- Cream Off White, VFXLN Vf Grn, dense tight mix, sctrd micro XLN & XLN porosity, all vry clean & barren, much soft white chalk

Lm- Cream Mint Green, VFXLN Vf Grn, dense, well cemented mix, all mostly tight w/ poor vis. porosity, some sl oolitic w/ sctrd micro XLN porosity, & well cemented siltstone w/ no vis. porosity, all vry clean & barren, golden brown fresh bedded chert

Sh- Black Drk Gray Maroon Lm Green, fissile & carbonaceous, silty & dense, dense & gritty, soft & semi-calcareous

Sh- A/A w/ gummy wash

Lm- Gray Buff, VF-FXLN, dense, well cemented, mostly tight w/ porosity, some sl fsl

Lm- Tan, VF-FXLN, dense, well cemented, some sl oolitic w/ dense micro XLN & XLN porosity, poorly dev. w/ tight VFXLN w/ no vis. porosity, lithographic

Sh- Maroon Purple Gray, gritty & earthy, some maroon wash, silty & soft

Lm- Cream Off White, FXLN, sl dev. w/ sctrd to dense micro XLN & vry fn ppt porosity, some loosely cemented & crumbly, all clean & barren

Lm- Cream Buff, VF-FXLN, mix of oolitic FXLN w/ sctrd XLN & fn ppt inter oolite porosity, SCTRD DRK STN, TR FO, NO ODR (many pcs.), & dense, vry well cemented & tight VFXLN w/ min. vis. porosity, barren

Lm- Buff Mint Green, VF-FXLN, dense, most well cemented w/ rare ppt & sctrd XLN porosity, some carrying STN A/A, much soft white chalk

Lm- Cream Mustard Yellow, FXLN, oolitic mix, some poorly dev. w/ sctrd-dense XLN porosity, loosely-well cemented & musatrd ylw. oolitic biomicrite w/o vis. porosity & clear replacement cementation, all barren, much soft white chalk

DST #4 (STRADDLE) TORONTO - LKC A 3420' - 3480'

10' MUD

IFP: 23-508#  
FFP: 1237-1271#  
SIP: 1235-1289#

**\*\*SEVERE PLUGGING\*\***

BOTTOM PACKER CHART BELOW

3474.jpg

3474\_2.jpg

3495.jpg

SHORT TRIP SURVEY 1 1/4 dgr STRAP +1.00'

DST #1 LKC C - D 3480' - 3526' 30-60-45-90

50' MUD 182' MW (80%W, 20%M)

IFP: 26-87#  
FFP: 85-122#  
SIP: 1255-1226#

SHORT TRIP SURVEY 3/4 dgr.

DST #2 LKC J - K 3622' - 3662' 45-45-45-60

10' MUD

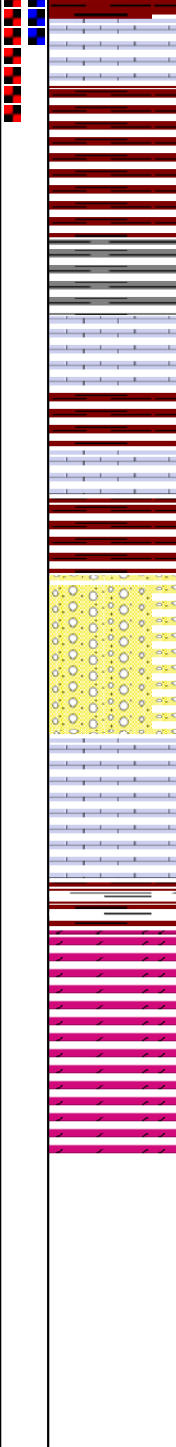
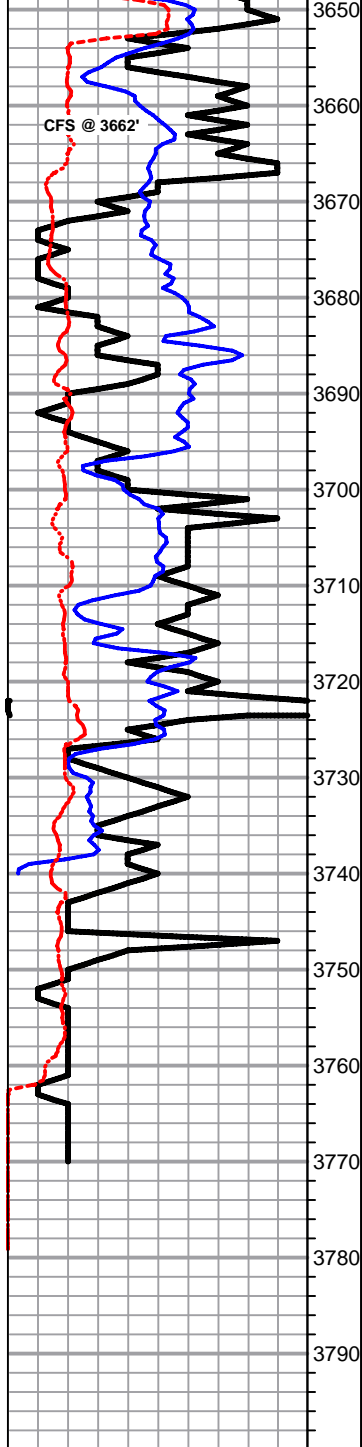
IFP: 773-1308#  
FFP: 32-1183#  
SIP: 1307-1290#

**\*\*NOTE: SEVERE PLUGGING DURING OPEN CYCLES\*\***

3632.jpg

DST #3 LKC J - K STRADDLE 3610' - 3655'

30-30-30-30



Lm- Cream Tan, VF-FXLN, sl fsl, poorly dev. w/ sctrd XLN porosity, some chalky in part, barren

**BKC 3670' (-1469) E-LOG 3658' (-1457)** Sh- Maroon Gray Lm Green, gritty & earthy, some sl sandy gummy wash, silty & unconsolidated, dense & sl calcareous

Lm- Buff Cream Tan, mix of sl unconsolidated & fsl, loosely cemented w/ dense XLN porosity & tight dense VFXLN w/o vis. porosity

Lm- Cream Off White, FXLN, fsl, poorly dev., mostly well cemented & tight w/ sctrd XLN porosity, barren

Conglomerate- Maroon/Pink Cream, unconsolidated & spkld, some loosely cemented & crumbly, FXLN, dense XLN porosity, some chalky mud supported matrix, all w/ poor vis. porosity

Conglomerate- A/A w/ massive fsl, mud supported matrix & FXLN, trashy & well cemented w/ fsl fragments, well cemented w/ sctrd XLN porosity, some maroon sandy lime

Lm- Cream Off White, VF-FXLN Vf Grn, dense, mix of vry well cemented & tight w/ micro XLN porosity & tight, vry dense XLN porosity throughout, & gummy white chalk, some sl sandy, all vry clean & barren

**ARBUCKLE 3746' (-1545)** Dolomite- Cream, FXLN, massive, vry well cemented, tight w/ micro XLN porosity, clean & barren

Dolomite- VFXLN, dense, vry well cemented, tight w/ min. vis. porosity, vry clean & barren, few pcs of chert & cherty dolomitic w/o vis. porosity, barren

**RTD 3770' (-1569) LTD 3769' (-1568) @ 22:22 12/7/2014**

- DST 4\_btmpkr.jpg
- DST 5.jpg
- DST 6.jpg
- DST 6\_BTMPKR.jpg

70' MUD  
IFP: 930-1234#  
FFP: 1228-1301#  
SIP: 1299-1301#

**\*\*SEVERE PLUGGING\*\***

**DST #5 LKC K (STRADDLE) 3627' - 3657'**

**(MISRUN)**

**308' MUD**

**DST #6 LKC K (STRADDLE) 3622' - 3644'**

**DIFFERENT HYDRAULIC SECTION OF TOOL STRING**

**45-60-45-60**

**70' MUD**

**IFP: 30-485#  
FFP: 71-84#  
SIP: 1280-1247#**

**SEE CHARTS BELOW**

**PARTIAL PLUGGING DURING 1st OPEN**

**10 STAND SHORT TRIP CTCH 1 1/2 HR. SURVEY 1 dgr. TOH FOR LOG**



0.2 mm

3474' x 35







0.2 mm

3495' x30



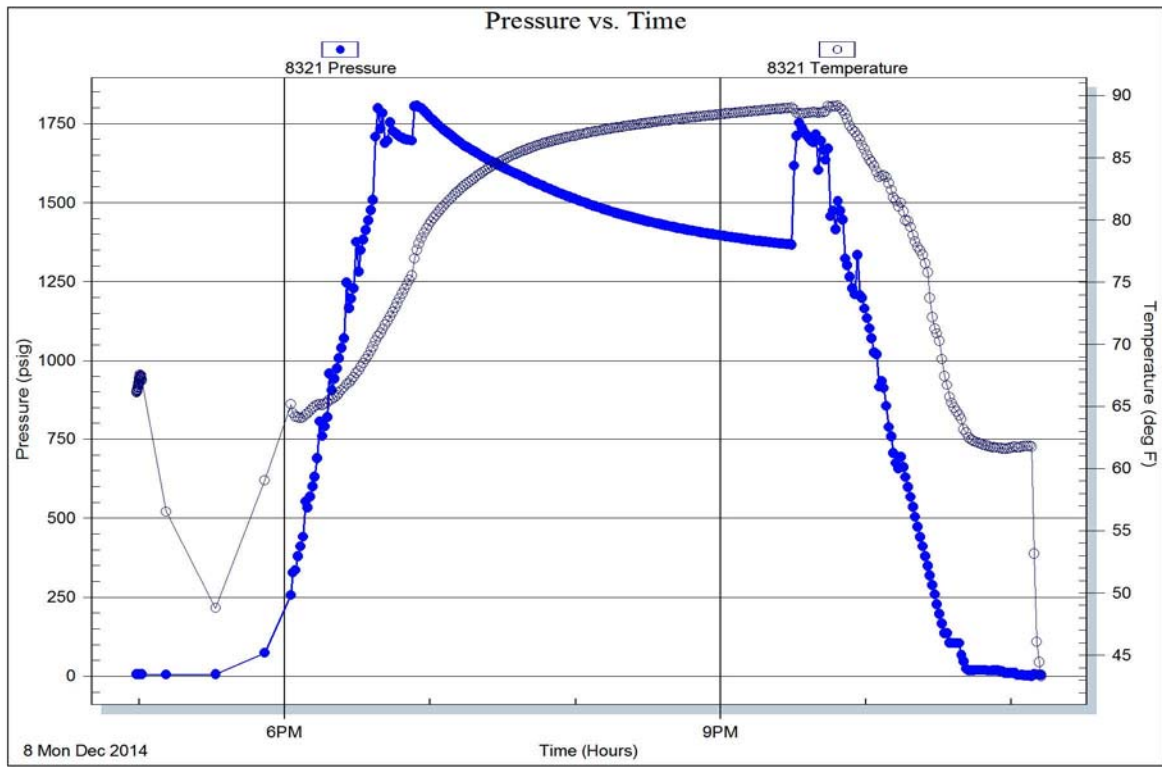
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Serial #: 8321

Black Diamond Oil Inc.

Logan NW #1


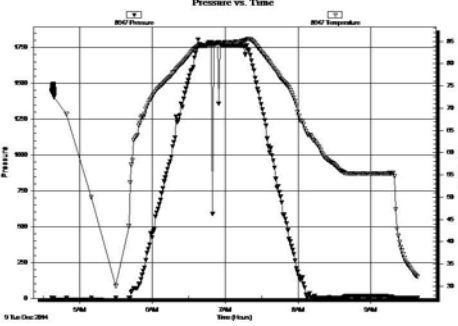
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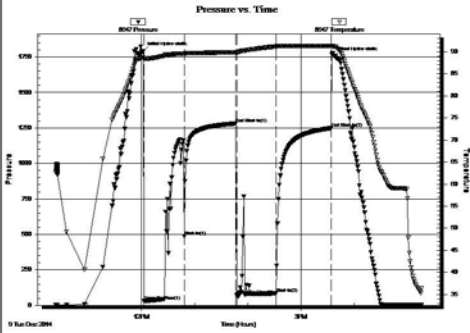


Trilobite Testing, Inc

Ref. No: 61045

Printed: 2014.12.08 @ 23:30:32

|                                                                                                                                                                                                                                                                                                            |                                                                               |                                                                                                  |                |                 |                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------|-----------------|------------------|
|  <b>TRILOBITE TESTING, INC.</b>                                                                                                                                                                                           | <b>DRILL STEM TEST REPORT</b>                                                 |                                                                                                  |                |                 |                  |
|                                                                                                                                                                                                                                                                                                            | Black Diamond Oil Inc.<br>P.O. Box 641<br>Hays, Ks 67601<br>ATTN: Jeff Lawler | <b>24/3s/21w</b><br><b>Logan NW #1</b><br>Job Ticket: 61046<br>Test Start: 2014.12.09 @ 00:00:00 | <b>DST#: 5</b> |                 |                  |
| <b>GENERAL INFORMATION:</b><br>Formation: <b>LKC "J-K"</b><br>Deviated: No Whipstock: ft (KB)<br>Time Tool Opened:<br>Time Test Ended:<br>Interval: <b>3627.00 ft (KB) To 3657.00 ft (KB) (TVD)</b><br>Total Depth: <b>3769.00 ft (KB) (TVD)</b><br>Hole Diameter: <b>7.88 inches</b> Hole Condition: Fair |                                                                               |                                                                                                  |                |                 |                  |
| Test Type: <b>Conventional Straddle (Initial)</b><br>Tester: <b>Brandon Quintana</b><br>Unit No: <b>57</b><br>Reference Elevations: <b>2201.00 ft (KB)</b><br><b>2196.00 ft (CF)</b><br>KB to GR/CF: <b>5.00 ft</b>                                                                                        |                                                                               |                                                                                                  |                |                 |                  |
| <b>Serial #: 8647</b><br>Press@RunDepth: psig @ ft (KB)<br>Start Date: 2014.12.09 End Date: 2014.12.09 Capacity: 8000.00 psig<br>Start Time: 04:37:01 End Time: 09:38:30 Last Calib.: 2014.12.09<br>Time On Btm:<br>Time Off Btm:                                                                          |                                                                               |                                                                                                  |                |                 |                  |
| <b>TEST COMMENT:</b> 30 - IF -<br>30 - ISI - MISRUN<br>30 - FF - PACKER FAILURE<br>30 - FSI -                                                                                                                                                                                                              |                                                                               |                                                                                                  |                |                 |                  |
|                                                                                                                                                                                                                          | <b>PRESSURE SUMMARY</b>                                                       |                                                                                                  |                |                 |                  |
|                                                                                                                                                                                                                                                                                                            | Time (Min.)                                                                   | Pressure (psig)                                                                                  | Temp (deg F)   | Annotation      |                  |
|                                                                                                                                                                                                                                                                                                            |                                                                               |                                                                                                  |                |                 |                  |
| <b>Recovery</b>                                                                                                                                                                                                                                                                                            |                                                                               | <b>Gas Rates</b>                                                                                 |                |                 |                  |
| Length (ft)                                                                                                                                                                                                                                                                                                | Description                                                                   | Volume (bbl)                                                                                     | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
| 308.00                                                                                                                                                                                                                                                                                                     | 100%Mud                                                                       | 3.22                                                                                             |                |                 |                  |
|                                                                                                                                                                                                                                                                                                            |                                                                               |                                                                                                  |                |                 |                  |
|                                                                                                                                                                                                                                                                                                            |                                                                               |                                                                                                  |                |                 |                  |
|                                                                                                                                                                                                                                                                                                            |                                                                               |                                                                                                  |                |                 |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                               |                                                                                                  |                |                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------|----------------------|
|  <b>TRILOBITE TESTING, INC.</b>                                                                                                                                                                                                                                                                                                                                                                                          | <b>DRILL STEM TEST REPORT</b>                                                 |                                                                                                  |                |                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Black Diamond Oil Inc.<br>P.O. Box 641<br>Hays, Ks 67601<br>ATTN: Jeff Lawler | <b>24/3s/21w</b><br><b>Logan NW #1</b><br>Job Ticket: 61047<br>Test Start: 2014.12.09 @ 10:24:00 | <b>DST#: 6</b> |                      |
| <b>GENERAL INFORMATION:</b><br>Formation: <b>LKC "J-K"</b><br>Deviated: No Whipstock: ft (KB)<br>Time Tool Opened: 12:03:30<br>Time Test Ended: 17:15:30<br>Interval: <b>3622.00 ft (KB) To 3644.00 ft (KB) (TVD)</b><br>Total Depth: <b>3769.00 ft (KB) (TVD)</b><br>Hole Diameter: <b>7.88 inches</b> Hole Condition: Fair<br>Test Type: Conventional Straddle (Initial)<br>Tester: Brandon Quintana<br>Unit No: 57<br>Reference Elevations: 2201.00 ft (KB)<br>2196.00 ft (CF)<br>KB to GR/CF: 5.00 ft |                                                                               |                                                                                                  |                |                      |
| <b>Serial #: 8647</b> Inside<br>Press@RunDepth: 84.17 psig @ 3633.00 ft (KB)<br>Start Date: 2014.12.09 End Date: 2014.12.09 Capacity: 8000.00 psig<br>Start Time: 10:24:01 End Time: 17:15:30 Last Calib.: 2014.12.09<br>Time On Btm: 2014.12.09 @ 12:02:30<br>Time Off Btm: 2014.12.09 @ 15:37:30                                                                                                                                                                                                        |                                                                               |                                                                                                  |                |                      |
| <b>TEST COMMENT:</b> 45 - IF - Opened w / surface blow , built to 3 1/2"<br>60 - ISI - No Return<br>45 - FF - Blow built to 2 1/4"<br>60 - FSI - No Return                                                                                                                                                                                                                                                                                                                                                |                                                                               |                                                                                                  |                |                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>PRESSURE SUMMARY</b>                                                       |                                                                                                  |                |                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Time (Min.)                                                                   | Pressure (psig)                                                                                  | Temp (deg F)   | Annotation           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0                                                                             | 1791.72                                                                                          | 88.65          | Initial Hydro-static |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1                                                                             | 30.40                                                                                            | 88.37          | Open To Flow (1)     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 46                                                                            | 485.04                                                                                           | 89.48          | Shut-In(1)           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 104                                                                           | 1280.86                                                                                          | 89.85          | End Shut-In(1)       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 105                                                                           | 71.53                                                                                            | 89.72          | Open To Flow (2)     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 149                                                                           | 84.17                                                                                            | 91.15          | Shut-In(2)           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 211                                                                           | 1247.93                                                                                          | 91.27          | End Shut-In(2)       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 215                                                                           | 1755.13                                                                                          | 91.14          | Final Hydro-static   |
| <b>Recovery</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                               | <b>Gas Rates</b>                                                                                 |                |                      |
| Length (ft)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Description                                                                   | Volume (bbl)                                                                                     |                |                      |
| 70.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100% mud                                                                      | 0.34                                                                                             | Choke (inches) | Pressure (psig)      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                               |                                                                                                  |                | Gas Rate (Mcf/d)     |

# DST 6\_BTMPKR.jpg

