

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1240624  
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: \_\_\_\_\_

1240624

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

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <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> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Black Diamond Oil, Inc.
Well Name	Hughes 1
Doc ID	1240624

Tops

Name	Top	Datum
Anhydrite	2244	343
Howard	3415	-828
Topeka	3518	-931
Heenber	3733	-1146
Toronto	3760	-1173
LKC	3774	-1187
BKC	3998	-1411
Pleasanton	4006	-1419
Marmaton	4050	-1453
Altamont	4125	-1538
Pawnee	4165	-1578
Ft. Scott	4227	-1640
Mississippian	4336	-1749





## DRILL STEM TEST REPORT

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

PO Box 641  
Hays KS 67601

ATTN: Jeff Lawler

### **Hughes #1**

#### **21-8s-27w Sheridan,KS**

Start Date: 2015.01.08 @ 15:20:00

End Date: 2015.01.08 @ 22:54:30

Job Ticket #: 53836                      DST #: 1

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

Printed: 2015.01.12 @ 09:05:49



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Black Diamond Oil, Inc.

**21-8s-27w Sheridan,KS**

PO Box 641  
Hays KS 67601

**Hughes #1**

Job Ticket: 53836

**DST#: 1**

ATTN: Jeff Lawler

Test Start: 2015.01.08 @ 15:20:00

## GENERAL INFORMATION:

Formation: **Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:39:15

Time Test Ended: 22:54:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

**Interval: 4210.00 ft (KB) To 4255.00 ft (KB) (TVD)**

Reference Elevations: 2587.00 ft (KB)

Total Depth: 4255.00 ft (KB) (TVD)

2582.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8957**

**Inside**

Press@RunDepth: 24.36 psig @ 4211.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.08

End Date:

2015.01.08

Last Calib.:

2015.01.08

Start Time: 15:20:05

End Time:

22:54:29

Time On Btm:

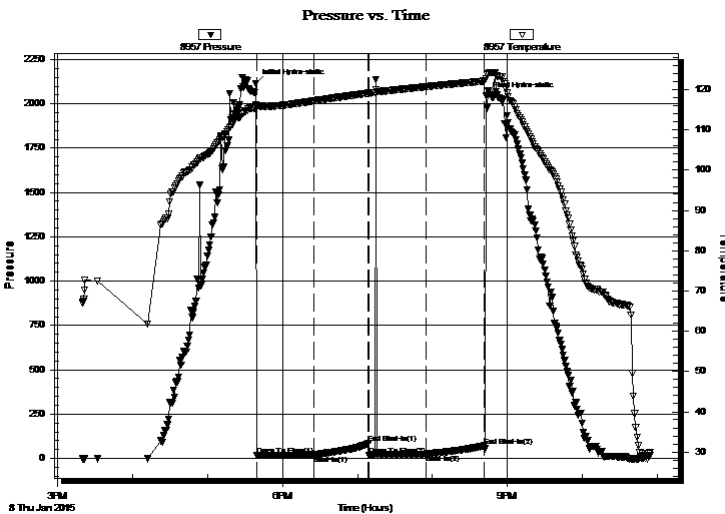
2015.01.08 @ 17:38:45

Time Off Btm:

2015.01.08 @ 20:43:00

TEST COMMENT: IF-1/4" blow died in 25 min  
IS- No blow  
FF- No blow Flush tool No blow  
FS- No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2114.52	116.20	Initial Hydro-static
1	16.35	115.70	Open To Flow (1)
46	19.89	117.18	Shut-In(1)
90	83.65	119.11	End Shut-In(1)
91	19.34	119.12	Open To Flow (2)
136	24.36	120.73	Shut-In(2)
183	71.00	122.12	End Shut-In(2)
185	2042.93	122.83	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
20.00	VSOCM 2%O 98%M	0.10

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Black Diamond Oil, Inc.

**21-8s-27w Sheridan,KS**

PO Box 641  
Hays KS 67601

**Hughes #1**

Job Ticket: 53836

**DST#: 1**

ATTN: Jeff Lawler

Test Start: 2015.01.08 @ 15:20:00

## Tool Information

Drill Pipe:	Length: 4089.00 ft	Diameter: 3.80 inches	Volume: 57.36 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 55000.00 lb
		Total Volume: - bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	4210.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	65.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4195.00	
Hydraulic tool	5.00			4200.00	
Packer	5.00			4205.00	20.00 Bottom Of Top Packer
Packer	5.00			4210.00	
Packer - Shale	0.00			4210.00	
Stubb	1.00			4211.00	
Recorder	0.00	8957	Inside	4211.00	
Recorder	0.00	8736	Outside	4211.00	
Perforations	7.00			4218.00	
Change Over Sub	1.00			4219.00	
Drill Pipe	32.00			4251.00	
Change Over Sub	1.00			4252.00	
Bullnose	3.00			4255.00	45.00 Bottom Packers & Anchor

**Total Tool Length: 65.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Black Diamond Oil, Inc.

**21-8s-27w Sheridan,KS**

PO Box 641  
Hays KS 67601

**Hughes #1**

Job Ticket: 53836

**DST#: 1**

ATTN: Jeff Lawler

Test Start: 2015.01.08 @ 15:20:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbf

Water Loss: 9.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
20.00	VSOCM 2%O 98%M	0.098

Total Length: 20.00 ft      Total Volume: 0.098 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

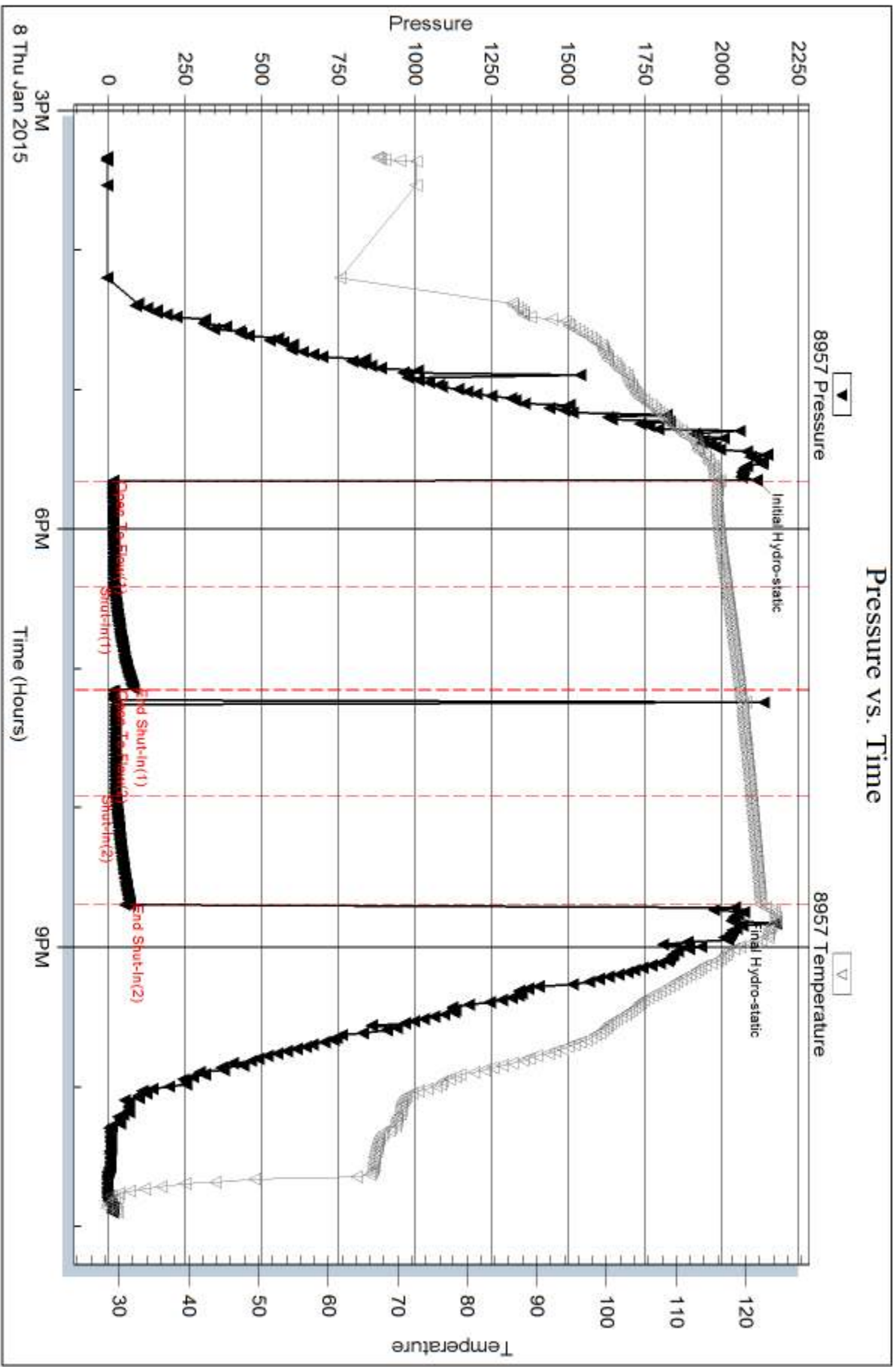
Serial #: 8957

Inside

Black Diamond Oil, Inc.

Hughes #1

DST Test Number: 1

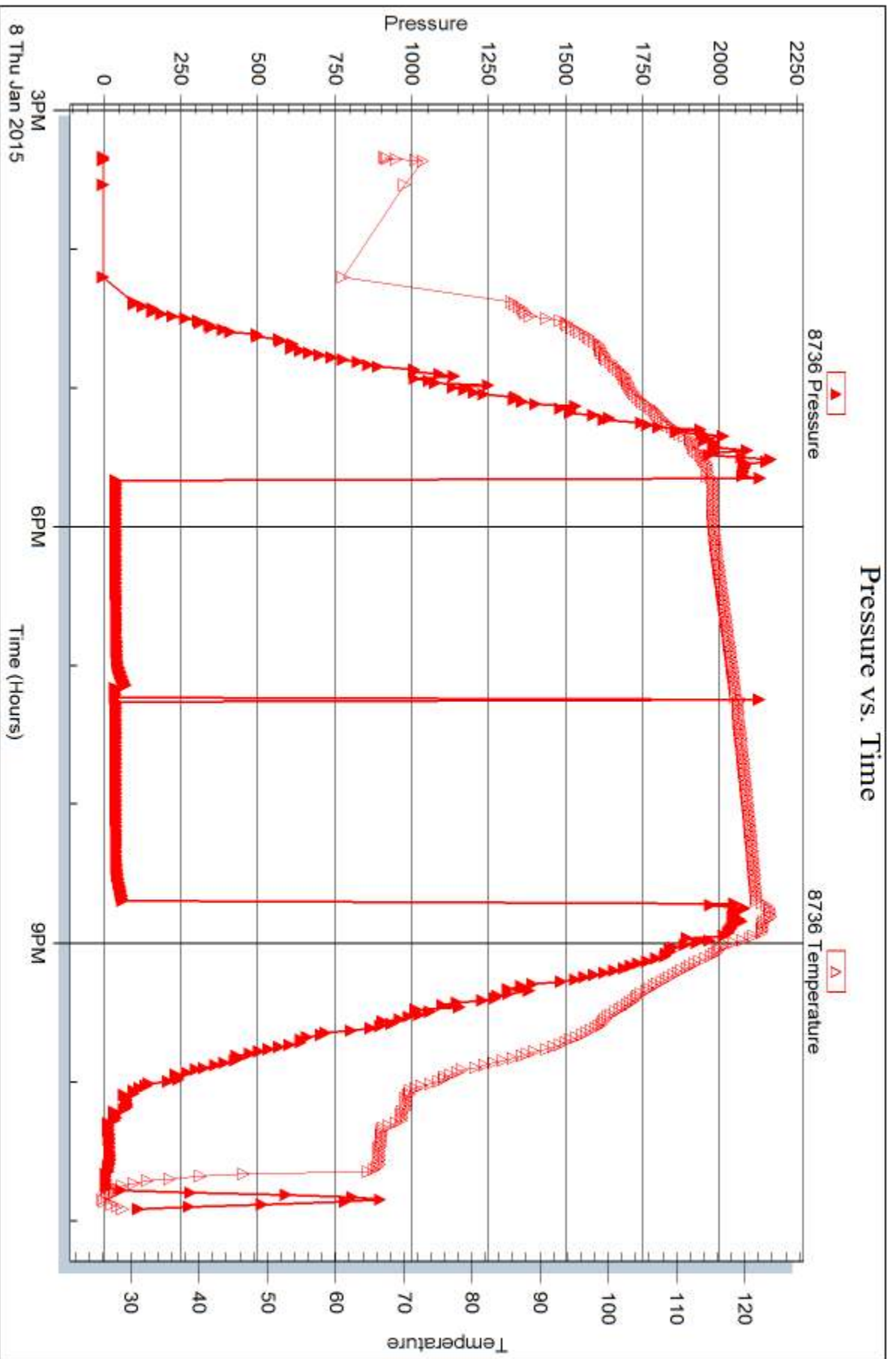


Serial #: 8736

Outside Black Diamond Oil, Inc.

Hughes #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 53836

Printed: 2015.01.12 @ 09:05:50



## DRILL STEM TEST REPORT

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

PO Box 641  
Hays KS 67601

ATTN: Jeff Lawler

### **Hughes #1**

#### **21-8s-27w Sheridan,KS**

Start Date: 2015.01.09 @ 18:50:00

End Date: 2015.01.10 @ 04:28:45

Job Ticket #: 53837                      DST #: 2

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

Printed: 2015.01.12 @ 09:05:11



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Black Diamond Oil, Inc.

**21-8s-27w Sheridan, KS**

PO Box 641  
Hays KS 67601

**Hughes #1**

Job Ticket: 53837

**DST#: 2**

ATTN: Jeff Lawler

Test Start: 2015.01.09 @ 18:50:00

## GENERAL INFORMATION:

Formation: **KC "E-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:22:30

Time Test Ended: 04:28:45

Test Type: Conventional Straddle (Reset)

Tester: Brett Dickinson

Unit No: 59

**Interval: 3827.00 ft (KB) To 3971.00 ft (KB) (TVD)**

Reference Elevations: 2587.00 ft (KB)

Total Depth: 4400.00 ft (KB) (TVD)

2582.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8957**

**Inside**

Press@RunDepth: 112.33 psig @ 3828.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.09

End Date: 2015.01.10

Last Calib.: 2015.01.10

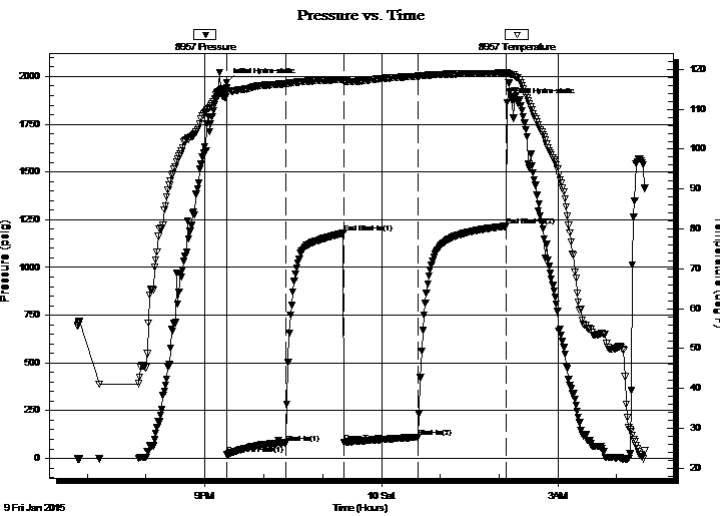
Start Time: 18:50:05

End Time: 04:28:45

Time On Btm: 2015.01.09 @ 21:22:00

Time Off Btm: 2015.01.10 @ 02:08:30

TEST COMMENT: IF-6" blow  
IS-No blow  
FF-5" blow  
FS-No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1967.97	115.33	Initial Hydro-static
1	19.29	114.46	Open To Flow (1)
61	81.69	116.40	Shut-In(1)
120	1181.22	117.47	End Shut-In(1)
120	84.96	116.85	Open To Flow (2)
196	112.33	118.31	Shut-In(2)
286	1216.38	119.09	End Shut-In(2)
287	1863.31	119.27	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
180.00	MCW 60%W 40%M	1.43
30.00	Mud	0.42

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Black Diamond Oil, Inc.

**21-8s-27w Sheridan,KS**

PO Box 641  
Hays KS 67601

**Hughes #1**

Job Ticket: 53837

**DST#: 2**

ATTN: Jeff Lawler

Test Start: 2015.01.09 @ 18:50:00

## Tool Information

Drill Pipe:	Length: 3700.00 ft	Diameter: 3.80 inches	Volume: 51.90 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	50000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3827.00 ft			Final	41000.00 lb
Depth to Bottom Packer:	3971.00 ft				
Interval between Packers:	144.00 ft				
Tool Length:	586.00 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			3812.00	
Hydraulic tool	5.00			3817.00	
Packer	5.00			3822.00	20.00 Bottom Of Top Packer
Packer	5.00			3827.00	
Packer - Shale	0.00			3827.00	
Stubb	1.00			3828.00	
Recorder	0.00	8957	Inside	3828.00	
Recorder	0.00	8736	Outside	3828.00	
Perforations	1.00			3829.00	
Change Over Sub	1.00			3830.00	
Drill Pipe	124.00			3954.00	
Change Over Sub	1.00			3955.00	
Perforations	12.00			3967.00	
Blank Spacing	4.00			3971.00	144.00 Tool Interval
Packer	5.00			3976.00	
Perforations	2.00			3978.00	
Recorder	0.00	8934	Below	3978.00	
Change Over Sub	1.00			3979.00	
Drill Pipe	410.00			4389.00	
Change Over Sub	1.00			4390.00	
Bullnose	3.00			4393.00	422.00 Bottom Packers & Anchor

**Total Tool Length: 586.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Black Diamond Oil, Inc.

**21-8s-27w Sheridan,KS**

PO Box 641  
Hays KS 67601

**Hughes #1**

Job Ticket: 53837

**DST#: 2**

ATTN: Jeff Lawler

Test Start: 2015.01.09 @ 18:50:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length: ft

Water Salinity: ppm

Viscosity: 53.00 sec/qt

Cushion Volume: bbl

Water Loss: 8.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 1000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	MCW 60%W 40%M	1.432
30.00	Mud	0.421

Total Length: 210.00 ft      Total Volume: 1.853 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8957

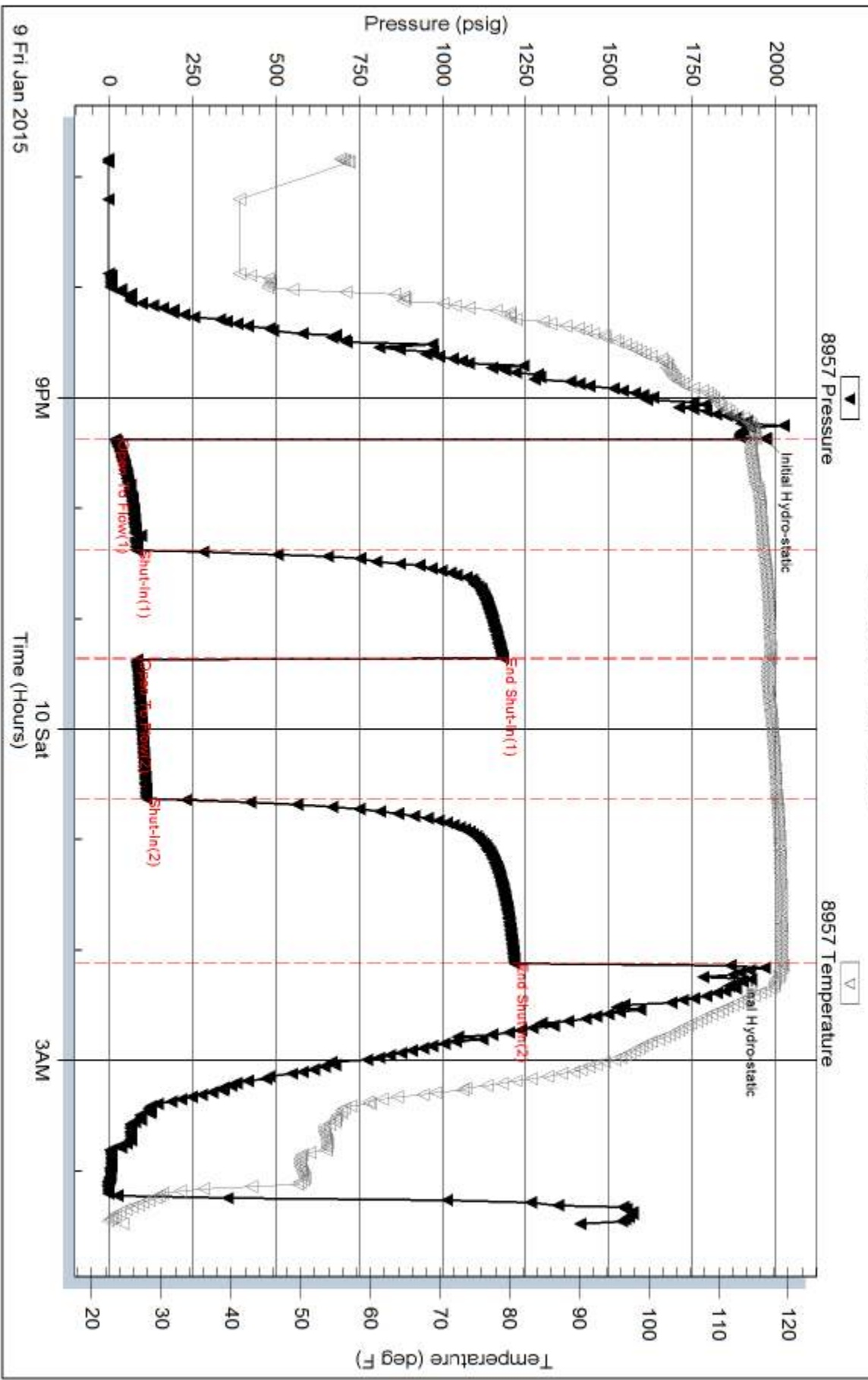
Inside

Black Diamond Oil, Inc.

Hughes #1

DST Test Number: 2

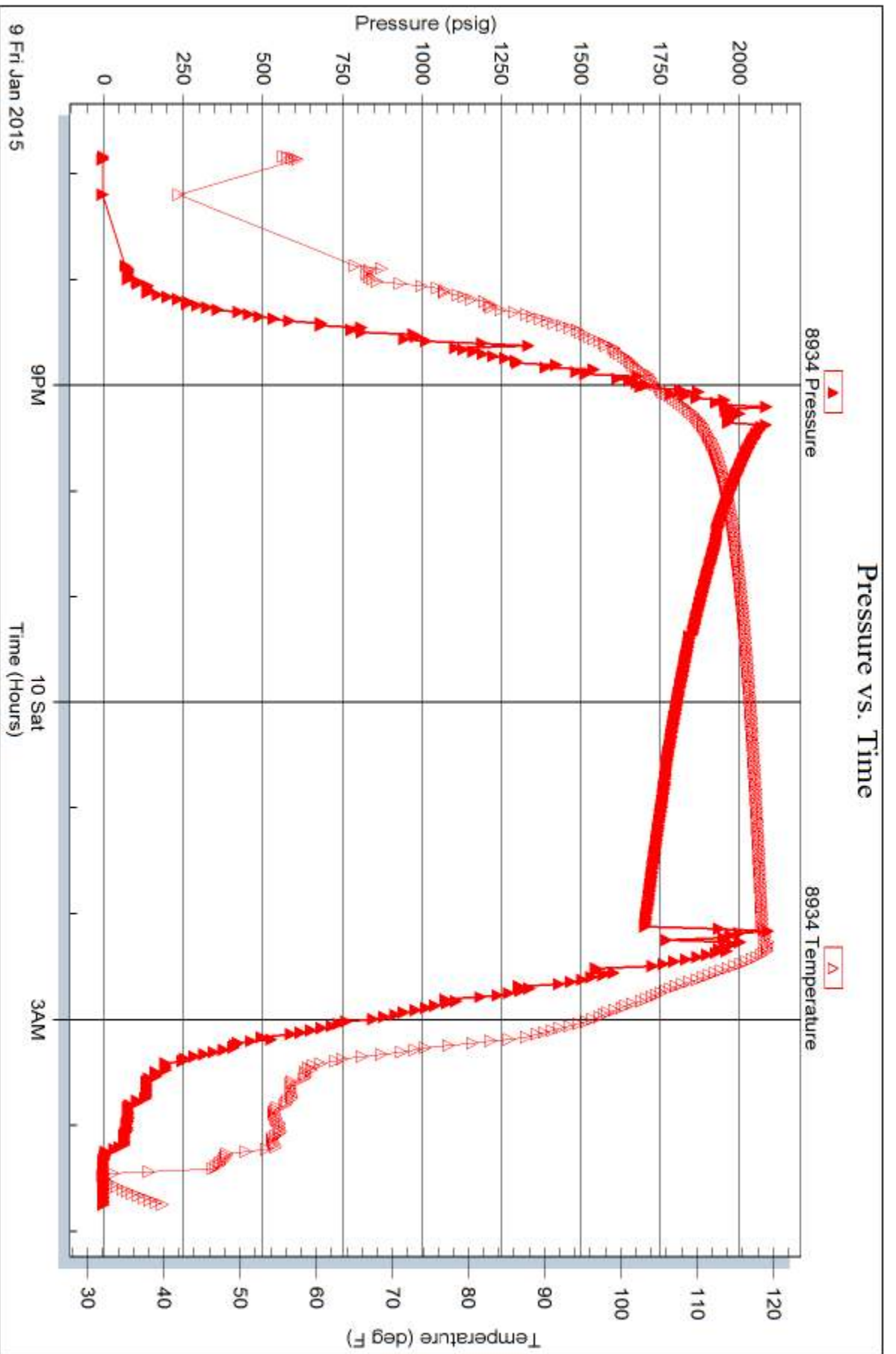
### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 53837

Printed: 2015.01.12 @ 09:05:12

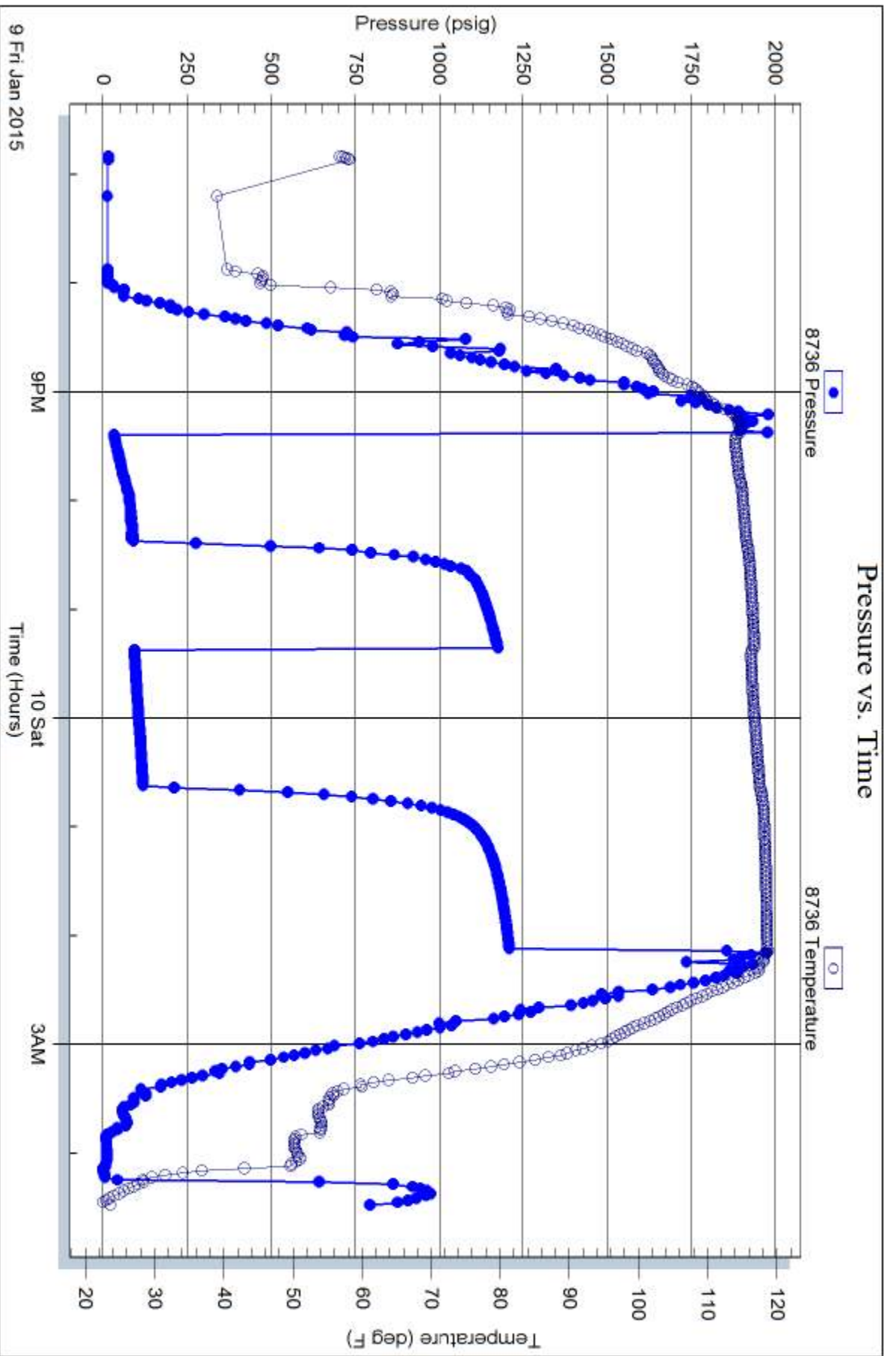


Serial #: 8736

Outside Black Diamond Oil, Inc.

Hughes #1

DST Test Number: 2

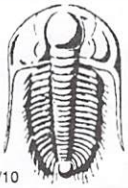


Trilobite Testing, Inc

Ref. No: 53837

Printed: 2015.01.12 @ 09:05:13





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 53836

4/10

Well Name & No. Hughes #1 Test No. 1 Date 1/8/15  
 Company Black Diamond Oil, Inc. Elevation 2587 KB 2582 GL  
 Address PO Box 641 Hays KS 67601  
 Co. Rep / Geo. Jeff Lawler Rig W.W. #6  
 Location: Sec. 21 Twp. 8s Rge. 27w Co. Sheridan State KS

Interval Tested 4210 - 4255 Zone Tested Ft. Scott  
 Anchor Length 45 Drill Pipe Run \_\_\_\_\_ Mud Wt. 9.6  
 Top Packer Depth 4205 Drill Collars Run 120 Vis 50  
 Bottom Packer Depth 4210 Wt. Pipe Run \_\_\_\_\_ WL 9.2  
 Total Depth 4255 Chlorides 1,000 ppm System LCM 2#

Blow Description IF - 1/4 in blow died in 25 min  
ISI - No blow  
FF - No blow flush tool No blow  
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>VSOCM</u>		<u>2</u>		<u>98</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 20 BHT 122 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ ° F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2,115  Test 1150 T-On Location 15:00  
 (B) First Initial Flow 16  Jars \_\_\_\_\_ T-Started 15:20  
 (C) First Final Flow 20  Safety Joint \_\_\_\_\_ T-Open 17:40  
 (D) Initial Shut-In 64  Circ Sub \_\_\_\_\_ T-Pulled 20:40  
 (E) Second Initial Flow 19  Hourly Standby \_\_\_\_\_ T-Out 22:55  
 (F) Second Final Flow 24  Mileage 164rt 86rt 86 Comments \_\_\_\_\_  
 (G) Final Shut-In 71  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2,043  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 45  Shale Packer 250 Sub Total 0  
 Initial Shut-In 45  Extra Packer \_\_\_\_\_ Total 1486  
 Final Flow 45  Extra Recorder \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 45  Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1486

Approved By \_\_\_\_\_ Our Representative Beth Dickinson

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. 53837

Well Name & No. Hughes #1 Test No. 2 Date 1/9/15  
 Company Black Diamond Oil, Inc. Elevation 2587 KB 2582 GL  
 Address PO Box 641 Hays KS 67601  
 Co. Rep / Geo. Jeff Lawler Rig WW #6  
 Location: Sec. 21 Twp. 8s Rge. 27w Co. Sheridan State KS

Interval Tested 3827 - 3971 Zone Tested KC "E-J"  
 Anchor Length 144 Drill Pipe Run \_\_\_\_\_ Mud Wt. ~~9.5~~  
 Top Packer Depth 3822, 3827 Drill Collars Run 120 Vis 53  
 Bottom Packer Depth 3971 Wt. Pipe Run — WL 8.8  
 Total Depth \_\_\_\_\_ Chlorides \_\_\_\_\_ ppm System LCM 2#

Blow Description IF - 6in blow  
ISI - No blow  
FF - 5in blow  
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Mud</u>				
<u>180</u>	<u>MCW</u>		<u>60</u>	<u>40</u>	
____	____				
____	____				
____	____				

Rec Total 210 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1,968  
 (B) First Initial Flow 19  
 (C) First Final Flow 82  
 (D) Initial Shut-In 1,181  
 (E) Second Initial Flow 85  
 (F) Second Final Flow 112  
 (G) Final Shut-In 1,216  
 (H) Final Hydrostatic 1,863

Test 1050  
 Jars \_\_\_\_\_  
 Safety Joint \_\_\_\_\_  
 Circ Sub \_\_\_\_\_  
 Hourly Standby \_\_\_\_\_  
 Mileage 164rt 86rt 86  
 Sampler \_\_\_\_\_  
 Straddle 600  
 Shale Packer 250  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1986

T-On Location 17:40  
 T-Started 18:50  
 T-Open 21:22  
 T-Pulled 2:07  
 T-Out 4:30  
 Comments \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Sub Total 0  
 Total 1986  
 MP/DST Disc't \_\_\_\_\_

Initial Open 60  
 Initial Shut-In 60  
 Final Flow 75 90  
 Final Shut-In \_\_\_\_\_

Approved By \_\_\_\_\_

Our Representative Brett Dickinson

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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: HUGHES #1  
 Location: NE NW SW NW Sec. 21 - 8S - 27W  
 API: 15-179-21388-00-00  
 Pool:  
 State: KANSAS

Field: UNKNOWN  
 Country: USA

**Scale 1:240 Imperial**

Well Name: HUGHES #1  
 Surface Location: NE NW SW NW Sec. 21 - 8S - 27W  
 Bottom Location:  
 API: 15-179-21388-00-00  
 License Number: 7076  
 Spud Date: 1/2/2015 Time: 5:15 PM  
 Region: SHERIDAN COUNTY KANSAS  
 Drilling Completed: 1/9/2014 Time: 8:42 AM  
 Surface Coordinates: 3646' FSL & 605' FWL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2582.00ft  
 K.B. Elevation: 2587.00ft  
 Logged Interval: 3200.00ft To: 4390.00ft  
 Total Depth: 4390.00ft  
 Formation: UPPER AND LOWER PENNSYLVANIAN  
 Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -100.3466788  
 Latitude: 39.3456531  
 N/S Co-ord: 3646' FSL  
 E/W Co-ord: 605' FWL

**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: 1/2/2015 Time: 5:15 PM  
 TD Date: 1/9/2014 Time: 8:42 AM  
 Rig Release: 1/10/2015 Time: 3:15 PM

**ELEVATIONS**

K.B. Elevation: 2587.00ft Ground Elevation: 2582.00ft  
 K.B. to Ground: 5.00ft

**NOTES**


THE HUGHES #1 RUN STRUCTURALLY HIGH TO THE ERIC WADELL CO., LLS HUGHES #1 WHICH WAS THE ONLY OTHER WELL DRILLED IN THIS SECTION. THERE WAS POOR RESERVOIR DEVELOPMENT THROUGHOUT THE WELL WITH LACK OF POROSITY OR HYDROCARBONS. AFTER LOG ANALYSIS AND DUE TO LACK OF ECONOMICAL RECOVERY ON TWO DRILL STEM TESTS IT WAS DECIDED TO PLUG AND ABANDON THE HUGHES #1.



WELL COMPARISON SHEET

FORMATION	HUGHES #1				W2 NE NE SW 21-08-27				S2 N2 SE NW 20-8-27				N2 SW SE 16-8-27				P&A 8-58												
	LOGTOPS		SAMPLETOPS		COMP. CARD		LOG		SMPL.		LOG		SMPL.		COMP. CARD		LOG		SMPL.		COMP. CARD		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.	DEPTH	DATUM	CORR.	CORR.	
	2587		2582		2623		2667		2528		2534		2582		2534		2582		2534		2582		2534		2582		2534		
ANHYDRITE TOP	2244	343	2249	338	2313	310	+ 33	+ 28	2332	335	+ 8	+ 3	2182	346	- 3	- 8													
BASE	2278	309	2280	307	2348	275	+ 34	+ 32	2367	300	+ 9	+ 7	2218	310	- 1	- 3													
HOWARD	3415	-828	3393	-806	3460	-837	+ 9	+ 31																					
TOPEKA	3518	-931	3504	-917	3562	-939	+ 8	+ 22	3605	-938	+ 7	+ 21	3467	-939	+ 8	+ 22													
HEEBNER	3733	-1146	3729	-1142	3776	-1153	+ 7	+ 11	3816	-1149	+ 3	+ 7	3687	-1159	+ 13	+ 17	3657	-1123	- 23	- 19									
TORONTO	3760	-1173	3750	-1163	3800	-1177	+ 4	+ 14	3843	-1176	+ 3	+ 13	3712	-1184	+ 11	+ 21	3684	-1150	- 23	- 13									
LKC	3774	-1187	3768	-1181	3814	-1191	+ 4	+ 10	3857	-1190	+ 3	+ 9	3726	-1198	+ 11	+ 17	3696	-1162	- 25	- 19									
BKC	3998	-1411	4002	-1415	4046	-1423	+ 12	+ 8	4082	-1415	+ 4	+ 0	3950	-1422	+ 11	+ 7													
PLEASANTON	4006	-1419			4049	-1426	+ 7																						
MARMATON	4050	-1463	4056	-1469	4098	-1475	+ 12	+ 6																					
ALTAMONT	4125	-1538	4123	-1536	4170	-1547	+ 9	+ 11																					
PAWNEE	4165	-1578	4165	-1578	4210	-1587	+ 9	+ 9																					
FT. SCOTT	4227	-1640	4224	-1637	4274	-1651	+ 11	+ 14																					
CHEROKEESAND					4331	-1708																							
MISSISSIPPIAN	4336	-1749	4336	-1749	4377	-1754	+ 5	+ 5																					
TOTAL DEPTH	4390	-1803	4390	-1803	4397	-1774	- 29	- 29	4131	-1464	- 339	- 339	3962	-1434	- 369	- 369	3930	-1396	- 407	- 407									

DST #1 FT SCOTT 4210' - 4255'



### DRILL STEM TEST REPORT

Black Diamond Oil, Inc. 21-8-27, Sheridan, KS  
 PO Box 641 Hughes #1  
 Hays KS 67601 Job Ticket: 53836 DST#: 1  
 ATTN: Jeff Lawler Test Start: 2015.01.08 @ 15:20:00

**GENERAL INFORMATION:**

Formation: **Ft. Scott**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 17:39:15  
 Time Test Ended: 22:54:30

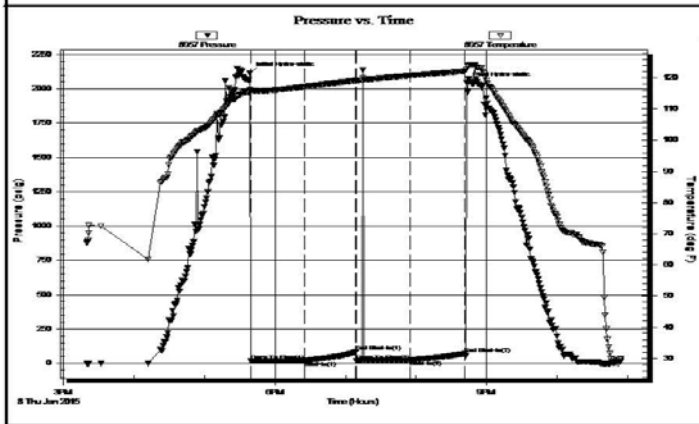
Interval: **4210.00 ft (KB) To 4255.00 ft (KB) (TVD)**  
 Total Depth: 4255.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2587.00 ft (KB)  
 2582.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8957 Inside**

Press@RunDepth: 24.36 psig @ 4211.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2015.01.08 End Date: 2015.01.08 Last Calib.: 2015.01.08  
 Start Time: 15:20:05 End Time: 22:54:29 Time On Btm: 2015.01.08 @ 17:38:45  
 Time Off Btm: 2015.01.08 @ 20:43:00

**TEST COMMENT:** IF-1/4in blow died in 25min  
 ISI-No blow  
 FF-No blow Flush tool No blow  
 FSI-No blow



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2114.52	116.20	Initial Hydro-static
1	16.35	115.70	Open To Flow (1)
46	19.89	117.18	Shut-In(1)
90	83.65	119.11	End Shut-In(1)
91	19.34	119.12	Open To Flow (2)
136	24.36	120.73	Shut-In(2)
183	71.00	122.12	End Shut-In(2)
185	2042.93	122.83	Final Hydro-static

Length (ft)	Description	Volume (bbl)
20.00	V/SOCM 2%O 98%M	0.10

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





Trilobite Testing, Inc

Ref. No: 53836

Printed: 2015.01.09 @ 05:56:43

**DST #2 (STRADDLE) LKC E - J 3827' - 3971**

 <b>TRILOBITE TESTING, INC.</b>	<b>DRILL STEM TEST REPORT</b>	
	Black Diamond Oil, Inc. PO Box 641 Hays KS 67601 ATTN: Jeff Lawler	<b>21-8-27, Sheridan, KS</b>  <b>Hughes #1</b> Job Ticket: 53837 <b>DST#: 2</b> Test Start: 2015.01.09 @ 18:50:00

**GENERAL INFORMATION:**

Formation: **KC "E-J"**  
 Deviated: No Whipstock:                      ft (KB)  
 Time Tool Opened: 21:22:30  
 Time Test Ended: 04:28:45

**Interval: 3827.00 ft (KB) To 3971.00 ft (KB) (TVD)**  
 Total Depth: 4400.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Straddle (Reset)  
 Tester: Brett Dickinson  
 Unit No: 59

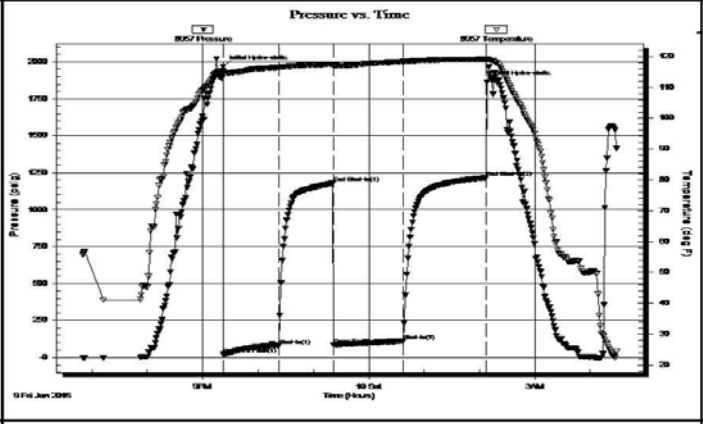
Reference Elevations: 2587.00 ft (KB)  
 2582.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8957      Inside**

Press@RunDepth: 112.33 psig @ 3828.00 ft (KB)  
 Start Date: 2015.01.09      End Date: 2015.01.10  
 Start Time: 18:50:05      End Time: 04:28:45

Capacity: 8000.00 psig  
 Last Calib.: 2015.01.10  
 Time On Btm: 2015.01.09 @ 21:22:00  
 Time Off Btm: 2015.01.10 @ 02:08:30

**TEST COMMENT:** IF-6in blow  
 ISI-No blow  
 FF-5in blow  
 FSI-No blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1967.97	115.33	Initial Hydro-static
1	19.29	114.46	Open To Flow (1)
61	81.69	116.40	Shut-In(1)
120	1181.22	117.47	End Shut-In(1)
120	84.96	116.85	Open To Flow (2)
196	112.33	118.31	Shut-In(2)
286	1216.38	119.09	End Shut-In(2)
287	1863.31	119.27	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
180.00	MCVW 60%W 40%M	1.43
30.00	Mud	0.42

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

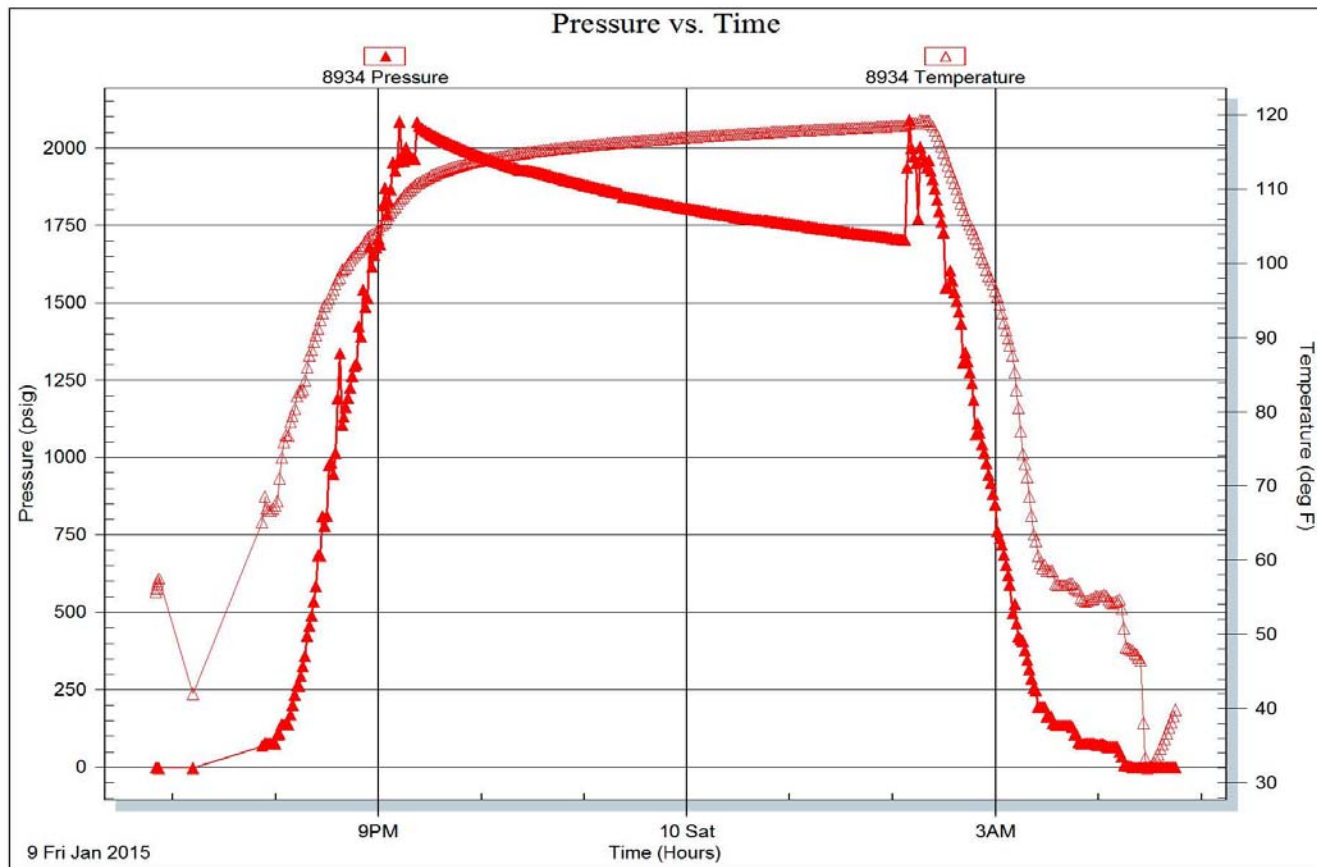
\* Recovery from multiple tests

Trilobite Testing, Inc

Ref. No: 53837

Printed: 2015.01.10 @ 07:02:51

**DST #2 BOTTOM PACKER CHART**



Trilobite Testing, Inc

Ref. No: 53837

Printed: 2015.01.10 @ 07:02:52

#### ROCK TYPES

Cht	Dolsec	Carbon Sh	Shcol	Slst
Cht vari	Lmst fw7>	Shblk	Arg/Shale	
Dolprim	shale, gry	shale, red	Ss	

#### ACCESSORIES

##### MINERAL

• Sandy

##### FOSSIL

◊ Oolite  
 ⚡ Oomoldic

##### STRINGER

~~~~ Chert

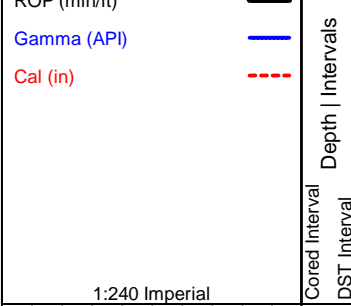
#### OTHER SYMBOLS

##### MISC

- Daily Report
- Digital Photo
- Document
- Folder
- Link
- Vertical Log File
- Horizontal Log File
- Core Log File
- Drill Cuttings Rpt

##### DST

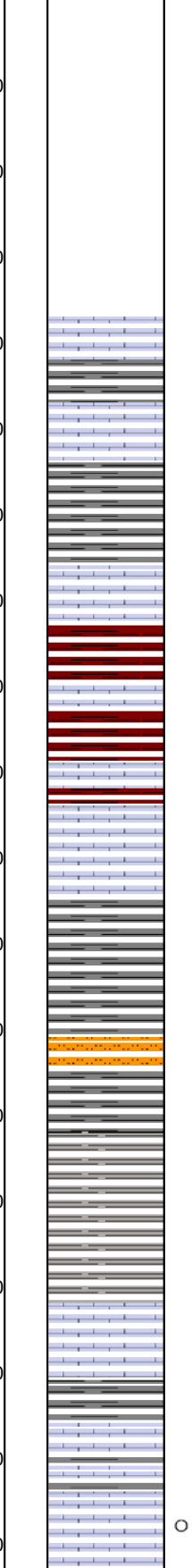
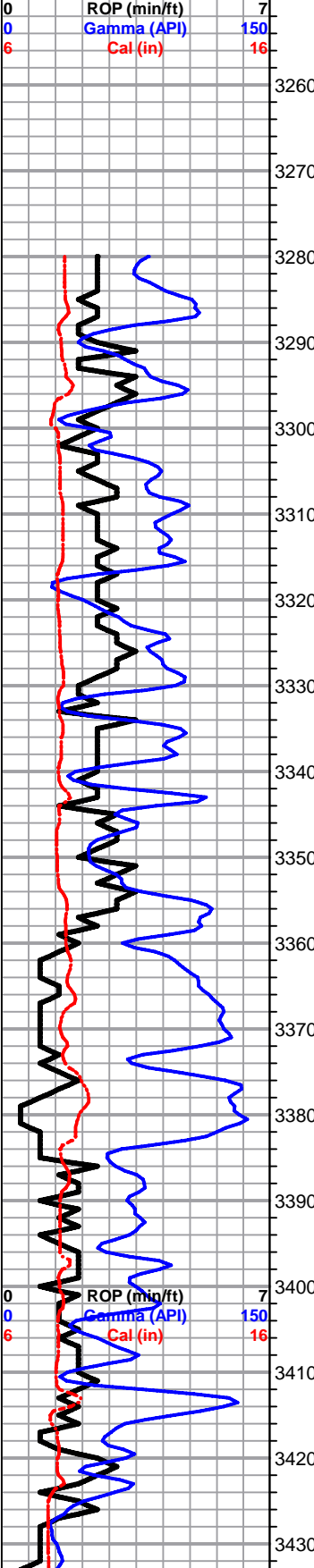
- DST Int
- DST alt



DST  
 Lithology  
 Oil Show

Geological Descriptions

1:240 Imperial



**1' DRILL TIME THROUGH ANHYDRITE FROM 2230' - 2330'**  
**1' DRILL TIME FROM 3280' - RTD**  
**10' WET/DRY SAMPLES FROM 3330' - RTD**

**GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 3280' - RTD**

**8 5/8" SURFACE PIPE SET @ 220' SURVEY 1/2 dgr.**

**DRILLER'S ANHYDRITE TOP 2249' (+338) E-LOG 2244' (+343)**  
**DRILLER'S ANHYDRITE BASE 2280' (+307) E-LOG 2278' (+309)**

Lm- Tan Gray, FXLN, dense fsl, poorly dev. sctrd reXLN & XLN porosity, barren

Sh- Gray Maroon Lm Green, silty & soft, some mud supported Vf Grn Ls w/ no vis. porosity

Lm- Gray Buff, Fn Grn, well cemented, dense, sl arenaceous Ls, consolidated & well sorted, grainy, poor vis. porosity, few pcs of semi-frosted Fn Grn consolidated & well sorted Ss w/ glauconite, all barren

Lm- Cream, VF-FXLN, dense, mostly well cemented, some high-energy bioclastics w/ fsl frag., sctrd XLN & secondary reXLN porosity, barren

Sh- Maroon Gray Lm Green, gritty & sl sandy, gummy argillaceous clumps, silty & calcareous

Lm- Gray Cream, VFXLN, dense, trashy, sl fsl, poor vis. porosity, some fn grn & loosely cemented, chalky in part

Lm- Mustard Yellow Buff, FXLN, chalky, unconsolidated & high-energy fsl, poor vis. porosity, some well cemented Vf Grn, dense w/o vis. porosity

Sh- Gray Maroon Brown Brick Red, silty & calcareous, gritty & earthy, semi sandy

Lm/Ss- Buff Gray, Fn Grn, soft sandy lime/limey Ss, loosely cemented & sl calcareous

Sh- Gray Maroon Brick Red, soft sandy wash, gummy argillaceous clumps, gritty & earthy

Sh- Black Drk Gray, much soft & silty, calcareous, few sl sandy

**HOWARD 3393' (-806) E-LOG 3415' (-828)** Lm- Gray Cream, mix of trashy high-energy fsl bioclastitic w/ sctrd XLN & reXLN porosity & sl chalky w/ fsl & sctrd XLN & fn ppt porosity, clean & barren

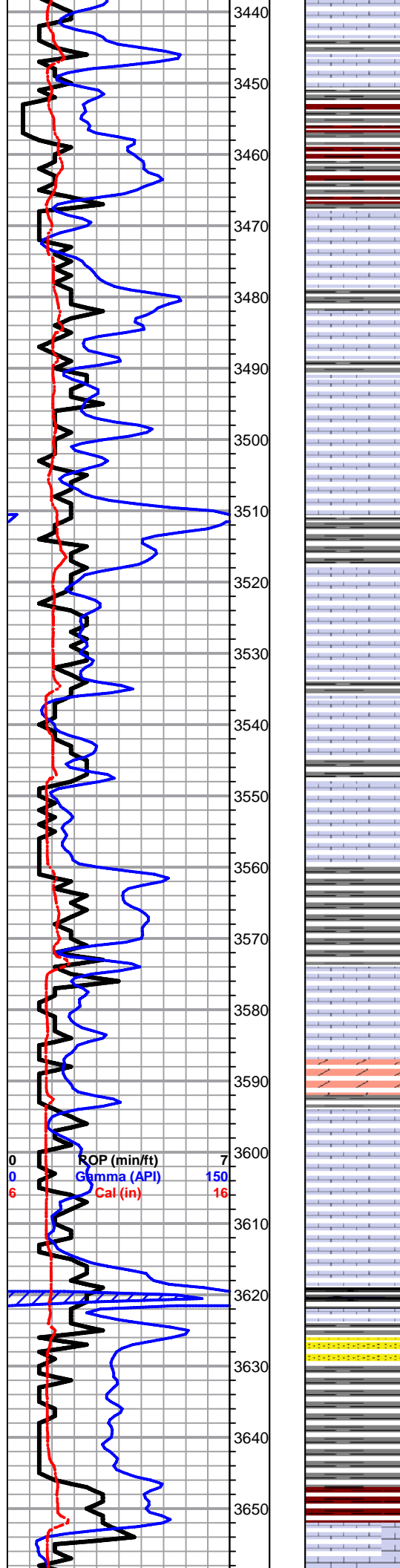
Lm- Cream Lt Pink Buff, VF-FXLN, dense, well cemented, mostly tight w/ poor vis. porosity, few pcs sl sandy, all clean & barren

Lm- A/A w/ soft white chalk & chalky Ls

Lm- Cream Off White, VF-FXLN, dense, well cemented, dense micro XLN porosity, sl dolomitic? w/ mild violent effervescence, grainy, vry clean 2 PCS W/ TR EDGE STN, NO ODR

1:240 Imperial

-3430.jpg



Lm- Cream Off White, FXLN, fsl w/ fusulinids, sctrd XLN porosity, clean & barren, few pcs sl trashy w/ fsl fragments & bioclastic

Lm- Cream Tan, VF-FXLN, fsl, some sl granular & sl oolitic, poor effective porosity, dense XLN porosity, few sl unconsolidated w/ fsl fragments, clean & barren

Sh- Gray Maroon, silty & calcareous, gritty & earthy, soft white chalk

Lm- Lt Gray, VFXLN, dense, sl fsl, some sctrd reXLN, tight w/ min. vis. porosity

Lm- Cream Off White, VF-FXLN, sl fsl, poorly dev., some loose & crumbly, vry clean & barren

**TOPEKA 3490' (-903) E-LOG 3518' (-931)** Lm- Cream Tan, VFXLN, dense, well cemented, tight w/ min. vis. porosity, few cream pcs. w/ dense XLN porosity, crumbly, clean & barren

Lm- Buff Cream, mix of VFXLN, dense & tight w/o vis. porosity & sl fsl, poorly dev. loosely cemented & crumbly w/ dense XLN porosity, clean & barren

Lm- Cream Off White, FXLN, sl fsl, well cemented, poorly dev. w/ sctrd to dense XLN porosity, some w/ lt spkng, clean & barren

Lm- Buff Mustard Yellow Lt Purple, mix of tight well cemented w/ min. vis. porosity, fsl high-energy bioclastic, sl unconsolidated, & VFXLN, dense w/o vis. porosity

Lm- Cream Off White, FXLN, well cemented, dense XLN porosity, clean & barren

Sh- Lt Gray Maroon, silty & soft, some sl sandy, gritty & earthy

Lm- Cream Off White, VF-FXLN, mix of tight w/ min. vis. porosity, sl fsl w/ dense XLN & sec. secondary reXLN porosity w/ min. effective porosity, all vry clean & barren, some soft white chalk

Lm- Cream Tan, FXLN, dense, mostly well cemented, some sl crumbly, oolitic, poorly dev., clear replacement cementation, sctrd XLN porosity, barren, much soft white chalk

Dol- Cream, VFXLN, dense, vry well cemented, dense micro XLN porosity, vry clean & barren

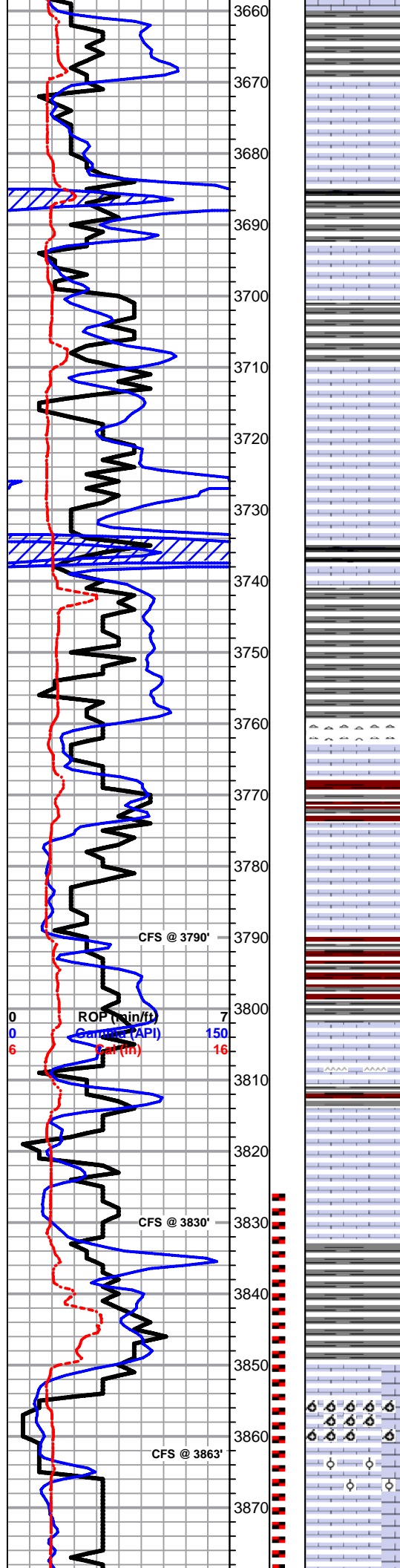
Lm- Cream Off White, FXLN, dense, well cemented, sctrd XLN porosity, vry clean & barren

Sh- Black Maroon, dense, fissle & carbonaceous, gritty & earthy

Ss- Dove & Lt Gray Maroon, Fn Grn, mod. cementation, consolidated & well sorted

Sh- Gray Maroon, silty & soft, gritty & earthy, some gummy clumps

Lm- Cream Off White, VFXLN, dense, well cemented, sl dolomitic Ls w/ dense micro XLN porosity, vry clean & barren



Lm- Cream Off White, FXLN, sl fsl, poorly dev., loosely cemented & crumbly, some chalky in part, much soft white chalk

Lm- Cream Off White, FXLN, fsl & sl oolitic, dense, some chalky in part, loosely cemented & crumbly, clean & barren

Sh- Black Gray Maroon, silty & carbonaceous, silty & calcareous, gritty & earthy

Lm- Cream Buff, VF-FXLN, dense, well cemented, mostly tight w/ poor vis. porosity

Lm- Buff Cream, FXLN, fsl, massive, well cemented w/ sctrd clear replacement cementation & reXLN, sctrd XLN & secondary reXLN porosity, barren & dense

Lm- Gray, VF-FXLN, dense tight mix of VFXLN w/o vis. porosity & trashy high-energy bioclastic w/ sctrd XLN porosity

**HEEBNER 3729' (-1142) E-LOG 3733' (-1146)** Sh- Black, dense fissile & carbonaceous

Sh- Gray Maroon Lm Green, gummy clumps & sandy lime, gritty & earthy, gummy lime

**TORONTO 3750' (-1163) E-LOG 3760' (-1173)** Lm/Chert- Cream Off White, FXLN, fsl, poorly dev. w/ sctrd XLN porosity, some soft chalky & crumbly, several pcs of fresh bedded dense fsl salmon & white chert

Sh- Gray Maroon, gritty & earthy, silty & calcareous

**LKC 3768' (-1181) E-LOG 3774' (-1187)** Lm- Cream Off White, FXLN, fsl & oolitic, poorly dev., well cemented w/ sctrd clear replacement cementation, sctrd XLN & secondary reXLN porosity, poor effective porosity, clean & barren

Lm- Cream Off White, VF-FXLN, sl fsl, dense, well cemented, mostly tight w/ sctrd XLN porosity, some soft white chalk, vry clean & barren

Sh- Maroon Gray Lm Green, silty & calcareous, gritty & earthy

Chert/Lm- Salmon White, fresh bedded sharp chert mixed w/ cream off white VFXLN w/ min. vis. porosity, some sl chalky in part, vry clean & barren

Lm- Cream Off White, VFXLN, dense, well cemented, mostly tight w/ sctrd XLN porosity, 2-4 PCS W/ BLK GILSONITE EDGE STN/INCLUSION

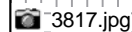
Lm- Buff Gray, VF-FXLN, dense, well cemented, sl fsl w/ fusulinids, mostly tight w/ poor vis. porosity, few w/ sctrd secondary reXLN porosity, barren

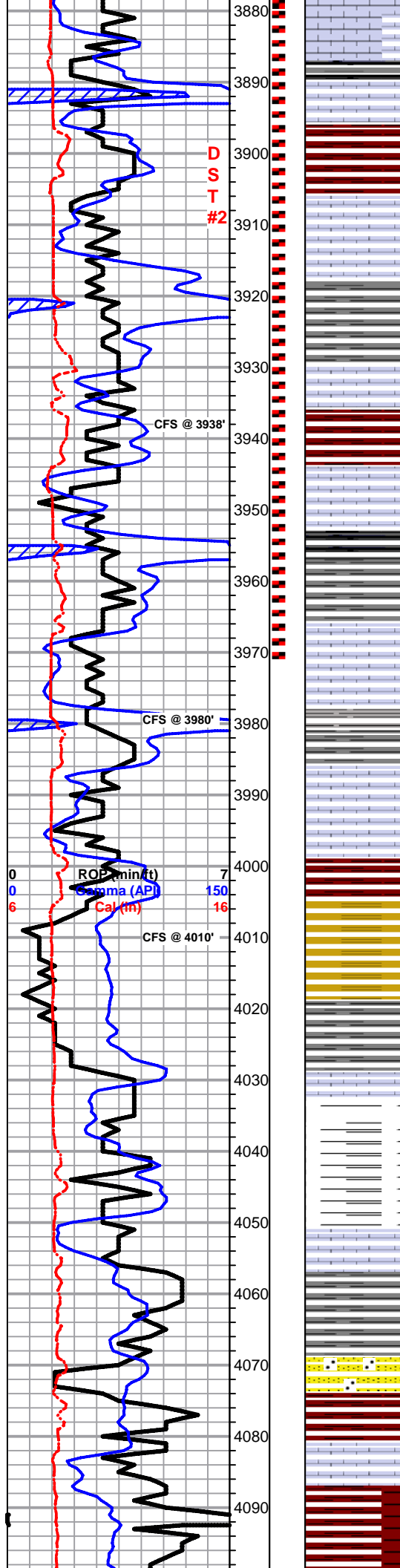
Lm- Cream, VFXLN, dense, tight, no vis. porosity, vry clean & barren

Lm- Cream, FXLN, oomoldic, sctrd vugs & poor to min. intervugular connectivity, barren, sctrd skeletal dissolution

Lm- Cream Off White, FXLN oomoldic w/ sctrd vugs & poor intervugular connectivity, less skeletal dissolution

Lm- Cream Off White, VF-FXLN, dense tight mix, some lithographic w/o vis. porosity, some w/ rare sctrd XLN porosity, some soft white chalk





Lm- A/A w/ some VFXLN cherty Ls w/ micro XLN porosity

Sh- Black Gray Maroon, fissile & carbonaceous, some black wash, silty & soft, gritty & earthy

Sh- Maroon, gritty & earthy

Lm- Cream Buff, VF-FXLN, dense, well cemented, mostly tight w/ sctrd micro XLN porosity, vry clean & barren

Lm- Cream Tan, VFXLN, dense & tight, min. vis. porosity, some sl chalky in part, vry clean & barren

Sh- Gray Maroon Brown Lm Green, silty, gritty & earthy, silty & calcareous

Lm- Cream Tan, VFXLN Vf Grn, dense tight mix, some sl chalky in part, all w/ min. vis. porosity, barren

Sh- Maroon Lm Green, gritty & earthy, dense & semi-waxy

Lm- Cream Off White, VFXLN, dense, well cemented dolomitic Ls w/ dense micro XLN porosity, some chalky Ls, all vry clean & barren

Lm- Cream Off White, VFXLN, dense, well cemented, mostly tight w/ micro XLN porosity mixed w/ fsl & sl oolitic, poorly dev. FXLN w/ sctrd XLN porosity, all clean & barren

Sh- Black Gray Maroon, silty & soft, carbonaceous, silty & calcareous, gritty & earthy

Lm- Tan Gray Buff, VF-FXLN, dense, mostly well cemented, few sl unconsolidated & trashy w/ secondary reXLN porosity, few pcs of chalky mud supported matrix w/ detrital salmon chert inclusions w/ some loose chert, all barren

Lm- Cream Off White, VFXLN, dense, tight w/ min. vis. porosity, some soft white chalk

**BKC 4002' (-1415) E-LOG 3998' (-1411)** Sh- Maroon Brown Gray, gritty & earthy, some gummy clumps, silty & sl sandy

Sh- Maroon Brown, sandy shale/shaley Ss

Sh- Gray Maroon Brick Red Lm Green, dense gritty slivers, gritty & earthy and gummy clumps

Lm- Gray, dense tight mix of VFXLN w/o vis. porosity & soft loosely cemented siltstone

Sh- Gray Maroon White, abundant argillaceous clumps

**MARMATON 4056' (-1469) E-LOG 4050' (-1463)** Lm- White Off White, VFXLN, dense tight mix, some sl fsl, all w/ min. vis to sctrd micro XLN porosity, barren

Sh- Maroon Gray Lt Purple, gritty & earthy, some gummy clumps, dense & gritty, some sandy lime

Sh- Maroon Gray Brown, gritty & earthy, abundant red wash, silty & gritty

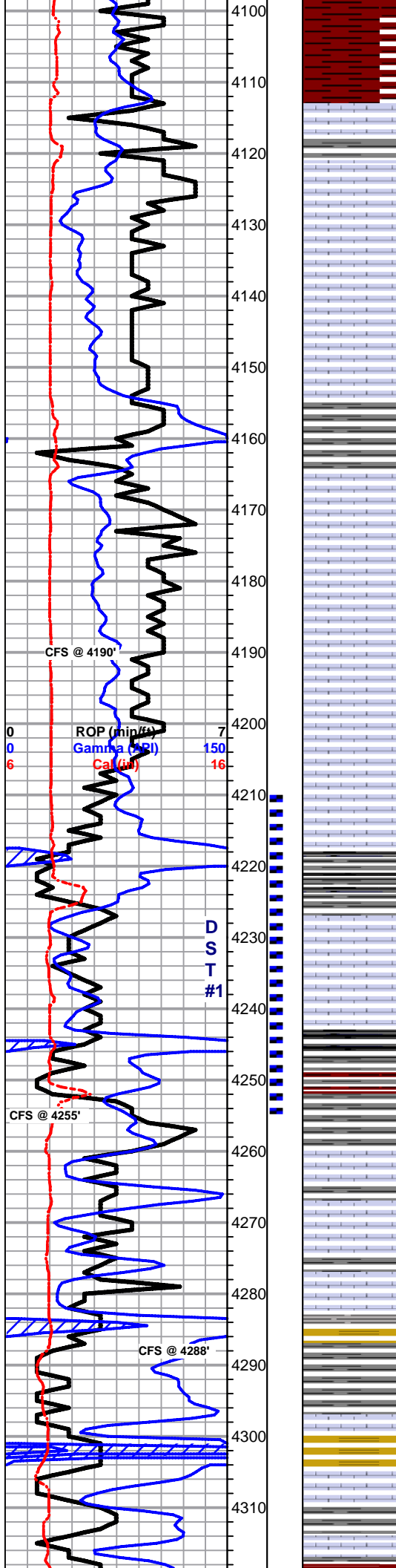
Sh- A/A w/ gritty & pebbly, waxy & dense & some sandy lime

DST #2  
STRADDLE  
LKC E - J  
3827' - 3971'  
60-60-60-60

180' MCW  
(60%W, 40%M)  
30' MUD

IFP: 19-81#  
FFP: 84-112#  
SIP# 1181-1216#





Lm- Buff, Fn Grn, well cemented consolidated & sorted arenaceous Ls w/ consistent intergranular porosity, barren

**ALTAMONT 4123' (-1536) E-LOG 4125' (-1538)** Lm- Buff Tan, VFXLN Vf Grn, dense tight mix of mud supported matrix, sl chalky & loosely cemented and well cemented, sl arenaceous Ls w/ poor vis. to dense micro XLN porosity, all barren

Lm- Cream Gray Purple, VFXLN Vf Grn, dense well cemented tight mix, some loosely cemented siltstone, all w/ poor vis. porosity

Lm- Gray Purple, A/A w/ incr. in loosely cemented siltstone

SHORT TRIP

Lm- Lt & Drk Gray, VFXLN Vr Grn, dense tight mix, brittle & lithographic w/o vis. porosity and loosely cemented siltstone

Sh- Gray Maroon Brick Red Lm Green, soft, dense & semi-waxy, some calcareous, mottled

**PAWNEE 4165' (-1578) E-LOG 4165' (-1578)** Lm- Cream Tan, VFXLN, dense, well cemented, tight w/ sctrd micro XLN & XLN porosity, barren

Lm- Gray, Fn Grn, mud supported matrix, loosely cemented, poor vis. porosity, barren

Lm- Gray, Fn Grn, loosely cemented mud supported matrix, poor vis. porosity, silty & soft, barren

Lm- A/A

Lm- Drk Gray, Vf-Fn Grn, silty & soft, some calcareous

STRAP +0.25'  
SURVEY 1 1/2 dgr

DST #1 FT SCOTT  
4210' - 4255'  
45-45-45-45

20' VSLOCM  
(2% O, 98% M)

IFP: 16-20#  
FFP: 19-24#  
SIP: 64-71#

4232.jpg

Sh- Black Gray, fissile & carbonaceous, silty & calcareous

**FT SCOTT 4224' (-1637) E-LOG 4227' (-1640)** Lm- Cream Off White, mix of VF-FXLN, dense, well cemented, poorly dev. few sl fsl w/ sctrd to rare dense XLN porosity, barren & soft loosely cemented & crumbly Ls, chalky in part w/ poor vis. porosity

Lm- Cream Off White, VF-FXLN, mix, several w/ sctrd dev., sl granular & oolitic w/ sctrd reXLN, sctrd XLN & secondary reXLN porosity, SCTRD DRK STN, FEW W/ SL GSY FRO UPON CRUSH, FEW SL FLAKEY, WK-MOD ODR, mixed w/ poorly dev., mostly tight w/ poor vis. porosity

**CHEROKEE SHALE 4245' (-1658) E-LOG 4243' (-1656)** Sh- Black Gray Maroon, soft & silty, carbonaceous, silty & calcareous, gritty & sl sandy

Sh- Gray Maroon, gritty & earthy, pebbly, dense & waxy, some mottled, some shaley Ss & sandy lime

**\*POOR SAMPLE QUALITY, MUCH CARRYOVER\***

Lm- Off White Tan, VFXLN Vf Grn, dense tight mix, all vry clean & barren w/ poor vis. porosity, some chalky in part Ss- few loosely cemented Fn-Med Grn sl unconsolidated, immature & poorly sorted clear to frosted clusters, barren

Lm- A/A

Sh- Black Gray Maroon, dense, semi waxy, silty & calaceous

Sh- A/A, some sandy, some deep purple dense shale

Sh- Maroon Gray Purple, A/A, several pcs of sandy shale, few pcs of sl shaley Ss

Lm- Cream Tan, VF-FXLN, dense, well cemented, some sl chalky in part, dense micro XLN & XLN porosity, barren

Lm- Cream Purple, VFXLN, dense & soft, some chalky, all w/ poor vis. porosity, several pcs of purple conglomerate & cherty Ls, several pcs of white limey Ss, min. cementation, fn grn. consolidated & well sorted, barren

cementation, in grn, consolidated & well sorted, barren

Sh- Maroon Gray Lm Green Purple Mustard Yellow Black, dense & soft, some sl calcareous, dense & waxy, sl sandy, blocky & waxy

**MISSISSIPPIAN 4336' (-1749) E-LOG 4336' (-1749)** Lm/Chert/Dolomite-Cream Salmon Off White, mix of VFXLN, dense tight Ls, few pcs of salmon & tan fsl fresh bedded chert, & VFXLN dolomite w/ dense consistent micro XLN porosity, all clean

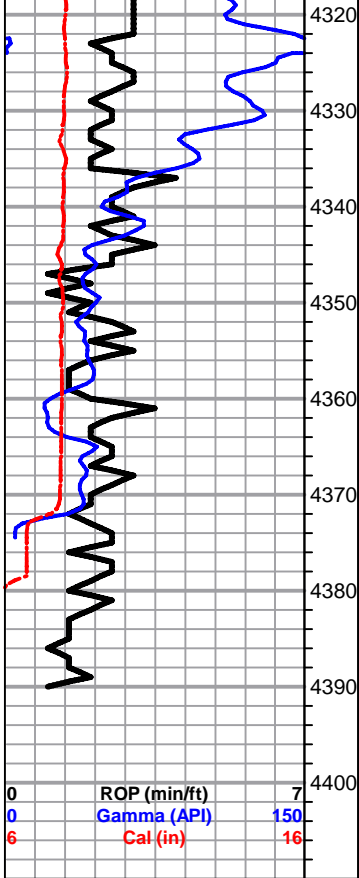
A/A w/ incr. in cream/tan fsl chert w/ sl unconsolidated, loosely cemented & crumbly white/pink Ls w/ dense XLN porosity, sandy soft lime & much soft white chalk & gummy argillaceous lt maroon shale clumps

Lm- large incr. of sl unconsolidated white/pink Ls w/ dense XLN porosity, several pcs of detrital fsl chert & cherty Ls

Lm- A/A w/ incr. of unconsolidated white/pink Ls & soft white chalk

**RTD 4390' (-1803) LTD 4390' (-1803@ 08:42 1/9/2015)**

CFS 60"  
SHORT TRIP  
CTCH 1.5 HR  
SURVEY 1 1/4 dgr  
TOH FOR LOG







0.2 mm

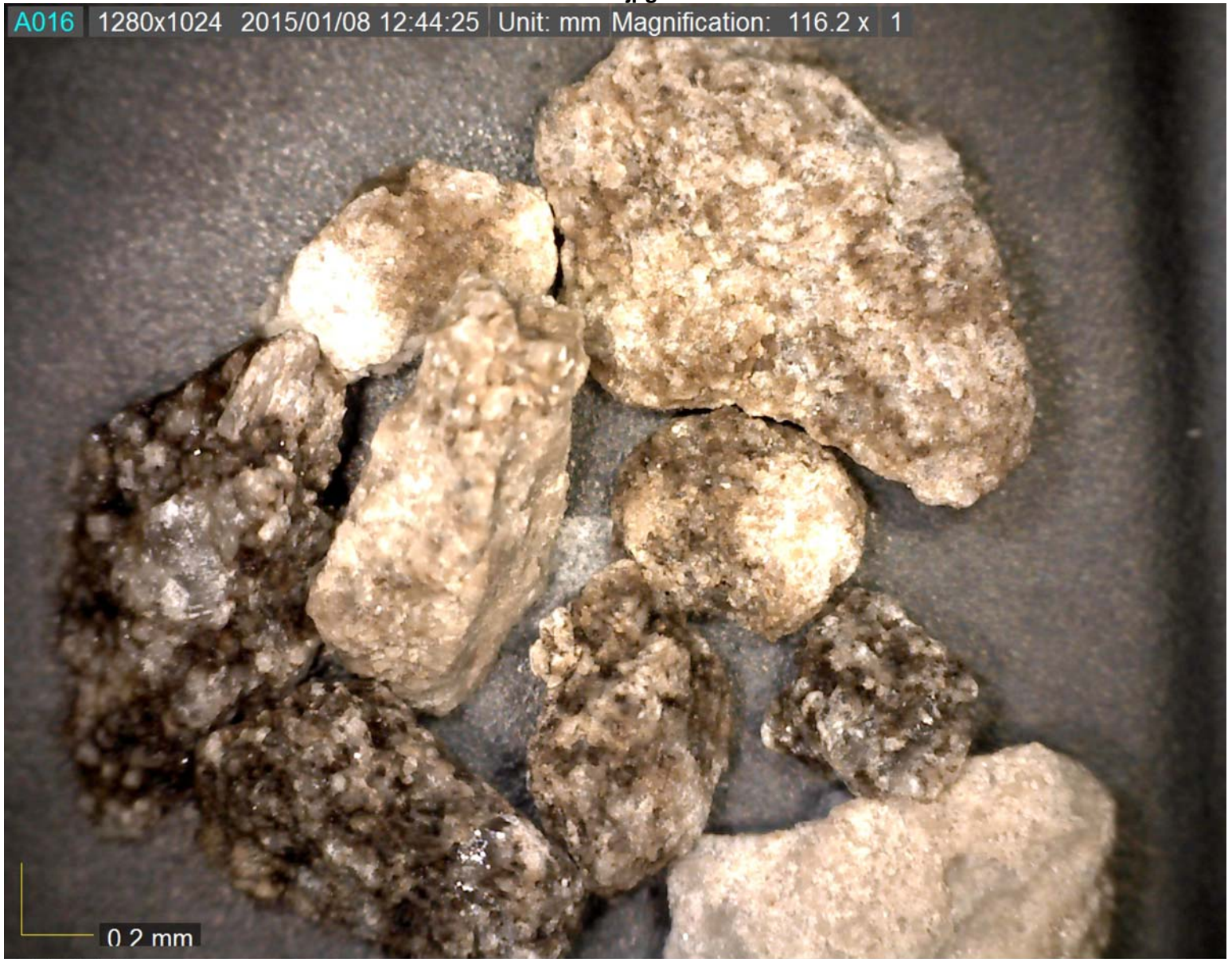
3430' x 30



0.2 mm

3817' X30





0.2 mm

4232' X 30

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 1070

| Date                                           | Sec. | Twp.                   | Range           | County                                                                                                                                                                         | State              | On Location | Finish  |
|------------------------------------------------|------|------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------|---------|
| 1-2-2015                                       | 21   | 8                      | 27              | Sheehey                                                                                                                                                                        | KANSAS             |             | 5:30 PM |
| Lease <b>HUGHES</b>                            |      |                        |                 | Well No. <b>1</b>                                                                                                                                                              |                    | Owner       |         |
| Contractor <b>W-W DRILLING Rq# 6 "MARK" B.</b> |      |                        |                 | To Quality Oilwell Cementing, Inc.<br>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 <b>Cement Surface</b>                 |      |                        |                 | Charge To <b>Black Diamond Oil Inc.</b>                                                                                                                                        |                    |             |         |
| Hole Size <b>12 1/4</b>                        |      | T.D. <b>220'</b>       |                 | Street                                                                                                                                                                         |                    |             |         |
| Csg. <b>8 5/8 New</b>                          |      | Depth <b>220'</b>      |                 | City                                                                                                                                                                           |                    |             |         |
| Tbg. Size <b>23# csg</b>                       |      | Depth <b>(SANDY)</b>   |                 | State                                                                                                                                                                          |                    |             |         |
| Tool                                           |      | Depth <b>(LOC.)</b>    |                 | The above was done to satisfaction and supervision of owner agent or contractor.                                                                                               |                    |             |         |
| Cement Left in Csg. <b>15'</b>                 |      | Shoe Joint             |                 | Cement Amount Ordered <b>180 SX 80% com. 1/4 Flts</b>                                                                                                                          |                    |             |         |
| Meas Line                                      |      | Displace <b>13/BBL</b> |                 | <b>38 CC 2 1/2 Gel</b>                                                                                                                                                         |                    |             |         |
| <b>EQUIPMENT</b>                               |      |                        |                 | Common <b>145</b>                                                                                                                                                              |                    |             |         |
| Pumptrk <b>10</b>                              | No.  | Cementer               | <b>Shawn G.</b> |                                                                                                                                                                                | Poz. Mix <b>35</b> |             |         |
|                                                |      | Helper                 | <b>Cody B.</b>  |                                                                                                                                                                                |                    |             |         |
| Bulktrk <b>15</b>                              | No.  | Driver                 | <b>Ryan M.</b>  |                                                                                                                                                                                | Gel. <b>3</b>      |             |         |
|                                                |      | Driver                 |                 |                                                                                                                                                                                | Calcium <b>7</b>   |             |         |
| <b>JOB SERVICES &amp; REMARKS</b>              |      |                        |                 | Hulls                                                                                                                                                                          |                    |             |         |
| Remarks:                                       |      |                        |                 | Salt                                                                                                                                                                           |                    |             |         |
| Rat Hole                                       |      |                        |                 | Flowseal <b>45#</b>                                                                                                                                                            |                    |             |         |
| Mouse Hole                                     |      |                        |                 | Kol-Seal                                                                                                                                                                       |                    |             |         |
| Centralizers                                   |      |                        |                 | Mud CLR 48                                                                                                                                                                     |                    |             |         |
| Baskets                                        |      |                        |                 | CFL-117 or CD110 CAF 38                                                                                                                                                        |                    |             |         |
| D/V or Port Collar                             |      |                        |                 | Sand                                                                                                                                                                           |                    |             |         |
|                                                |      |                        |                 | Handling <b>170</b>                                                                                                                                                            |                    |             |         |
|                                                |      |                        |                 | Mileage                                                                                                                                                                        |                    |             |         |
| <b>Get 8 5/8 surface @ 220'</b>                |      |                        |                 | <b>FLOAT EQUIPMENT</b>                                                                                                                                                         |                    |             |         |
| <b>Cement w/ 180 SX 80% com. 1/4 Flts</b>      |      |                        |                 | Guide Shoe                                                                                                                                                                     |                    |             |         |
| <b>Displace 13/BBL H<sub>2</sub>O</b>          |      |                        |                 | Centralizer                                                                                                                                                                    |                    |             |         |
| <b>SHUT IN @ 250#</b>                          |      |                        |                 | Baskets                                                                                                                                                                        |                    |             |         |
| <b>Cement D.D. CEMENT</b>                      |      |                        |                 | AFU Inserts                                                                                                                                                                    |                    |             |         |
|                                                |      |                        |                 | Float Shoe                                                                                                                                                                     |                    |             |         |
|                                                |      |                        |                 | Latch Down                                                                                                                                                                     |                    |             |         |
|                                                |      |                        |                 | Pumptrk Charge <b>Surface</b>                                                                                                                                                  |                    |             |         |
|                                                |      |                        |                 | Mileage <b>7</b>                                                                                                                                                               |                    |             |         |
|                                                |      |                        |                 | Tax                                                                                                                                                                            |                    |             |         |
|                                                |      |                        |                 | Discount                                                                                                                                                                       |                    |             |         |
|                                                |      |                        |                 | Total Charge                                                                                                                                                                   |                    |             |         |
| X Signature <b>Mark B...</b>                   |      |                        |                 |                                                                                                                                                                                |                    |             |         |

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

No. 996

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

|         |      |      |       |                                          |       |             |        |
|---------|------|------|-------|------------------------------------------|-------|-------------|--------|
| Date    | Sec. | Twp. | Range | County                                   | State | On Location | Finish |
| 1-10-15 | 21   | 8    | 27    | Sheridan                                 | KS    |             | 1:15pm |
|         |      |      |       | Location <i>HOPE 4E TO 5000 13 BINTO</i> |       |             |        |

|                     |             |                                                                                                                                                                              |  |
|---------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Lease               | Well No.    | Owner                                                                                                                                                                        |  |
| <i>Hughes</i>       | <i>1</i>    | To Quality Oilwell Cementing, Inc.<br>You are hereby requested to rent cementing equipment and furnish center and helper to assist owner or contractor to do work as listed. |  |
| Contractor          |             |                                                                                                                                                                              |  |
| <i>WJW #6</i>       |             |                                                                                                                                                                              |  |
| Type Job            |             |                                                                                                                                                                              |  |
| <i>Rotary Plug</i>  |             |                                                                                                                                                                              |  |
| Hole Size           | T.D.        | Charge To                                                                                                                                                                    |  |
| <i>7 7/8</i>        | <i>4393</i> | <i>Black Diamond</i>                                                                                                                                                         |  |
| Csg.                | Depth       | Street                                                                                                                                                                       |  |
| <i>4 1/2 X-H</i>    |             |                                                                                                                                                                              |  |
| Tbg. Size           | Depth       | City                                                                                                                                                                         |  |
|                     |             | State                                                                                                                                                                        |  |
| Tool                | Depth       | The above was done to satisfaction and supervision of owner agent or contractor.                                                                                             |  |
|                     |             |                                                                                                                                                                              |  |
| Cement Left in Csg. | Shoe Joint  | Cement Amount Ordered <i>240 60/40 4/1.62 1/4 #70</i>                                                                                                                        |  |

|                  |          |               |
|------------------|----------|---------------|
| Meas Line        | Displace | Common        |
|                  |          | <i>144</i>    |
| <b>EQUIPMENT</b> |          |               |
| Pumptrk          | No.      | Cementer      |
| <i>18</i>        |          | <i>raig</i>   |
|                  |          | Helper        |
|                  |          | Driver        |
| Bulktrk          | No.      | Driver        |
|                  |          | <i>Calenn</i> |
|                  |          | Driver        |
| Bulktrk          | No.      | Driver        |
| <i>9</i>         |          | <i>Chad</i>   |
|                  |          | Driver        |
|                  |          | Calcium       |

|                                   |             |                         |
|-----------------------------------|-------------|-------------------------|
| <b>JOB SERVICES &amp; REMARKS</b> |             | Hulls                   |
| Remarks:                          |             | Salt                    |
| Rat Hole                          | <i>305K</i> | Flowseal <i>60T</i>     |
| Mouse Hole                        |             | Kol-Seal                |
| Centralizers                      |             | Mud CLR 48              |
| Baskets                           |             | CFL-117 or CD110 CAF 38 |
| D/V or Port Collar                |             | Sand                    |
| <i>1st 2275 505K</i>              |             | Handling <i>249</i>     |
| <i>2nd 1360 1005K</i>             |             | Mileage                 |
| <i>3rd 270 505K</i>               |             |                         |
| <i>4th 40 105K</i>                |             |                         |

|                        |                            |
|------------------------|----------------------------|
| <b>FLOAT EQUIPMENT</b> |                            |
| Guide Shoe             |                            |
| Centralizer            |                            |
| Baskets                | <i>3 5/8 Dry Hole Plug</i> |
| AFU Inserts            |                            |
| Float Shoe             |                            |
| Latch Down             |                            |

|                |             |
|----------------|-------------|
| Pumptrk Charge | <i>plug</i> |
| Mileage        | <i>7</i>    |
| Tax            |             |
| Discount       |             |
| Total Charge   |             |

X  
Signature

