



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1145139  
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: \_\_\_\_\_



1145139

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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
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:				

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> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	K & B Norton Oil & Investments, LLC
Well Name	Edwards 1
Doc ID	1145139

All Electric Logs Run

Microresistivity Log
Dual Compensated Porosity Log
Dual Induction Log
Borehole Compensated Sonic Log

Form	ACO1 - Well Completion
Operator	K & B Norton Oil & Investments, LLC
Well Name	Edwards 1
Doc ID	1145139

Tops

Name	Top	Datum
Anhydrite	-2448	+ 690
Heebner	-3886	- 748
Toronto	-3904	- 766
Lansing	-3934	- 796
Base Kansas City	-4276	-1138
Pawnee	-4407	-1267
Ft. Scott	-4464	--1326
Cherokee	-4492	-1354
Johnson	-4550	-1412
RTD	-4730	-1592

PO Box 93999  
Southlake, TX 76092

Invoice Number: 136158  
Invoice Date: May 6, 2013  
Page: 1

Voice: (817) 546-7282  
Fax: (817) 246-3361

<b>Bill To:</b>
K & B Norton Oil & Inv. LLC 1209 W. Park Grove Dr. Manhattan, KS 66503-2469

Now Includes:



Customer ID	Field Ticket #	Payment Terms	
Norton	60251	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	May 6, 2013	6/5/13

Quantity	Item	Description	Unit Price	Amount
		Edwards #1		
185.00	MAT	Class A Common	17.90	3,311.50
4.00	MAT	Gel	23.40	93.60
7.00	MAT	Chloride	64.00	448.00
200.05	SER	Cubic Feet	2.48	496.12
410.85	SER	Ton Mileage	2.60	1,068.21
1.00	SER	Surface	1,512.25	1,512.25
45.00	SER	Pump Truck Mileage	7.70	346.50
1.00	SER	Manifold Swedge -- No Charge		
45.00	SER	Light Vehicle Mileage	4.40	198.00
1.00	CEMENTER	LaRene Wentz		
1.00	OPER ASSIST	Paul Beaver		
1.00	OPER ASSIST	David Scariano		

Subtotal	7,474.18
Sales Tax	300.54
Total Invoice Amount	7,774.72
Payment/Credit Applied	
<b>TOTAL</b>	<b>7,774.72</b>

ALL PRICES ARE NET, PAYABLE  
30 DAYS FOLLOWING DATE OF  
INVOICE. 1 1/2% CHARGED  
THEREAFTER. IF ACCOUNT IS  
CURRENT, TAKE DISCOUNT OF

\$ 1,494.83

ONLY IF PAID ON OR BEFORE  
May 31, 2013



PO Box 93999  
Southlake, TX 76092

Invoice Number: 136303

Invoice Date: May 17, 2013

Page: 1

Voice: (817) 546-7282

Fax: (817) 246-3361

**Bill To:**

K & B Norton Oil & Inv. LLC  
1209 W. Park Grove Dr.  
Manhattan, KS 66503-2469

Now Includes:



Customer ID	Field Ticket #	Payment Terms	
Norton	60175	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-03	Oakley	May 17, 2013	6/16/13

Quantity	Item	Description	Unit Price	Amount
		Edwards #1		
123.00	MAT	Class A Common	17.90	2,201.70
82.00	MAT	Pozmix	9.35	766.70
7.00	MAT	GEI	23.40	163.80
52.00	MAT	Flo Seal	2.97	154.44
220.22	SER	Cubic Feet	2.48	546.15
446.13	SER	Ton Mileage	2.60	1,159.94
1.00	SER	Rotary Plug	2,483.58	2,483.58
45.00	SER	Pump Truck Mileage	7.70	346.50
45.00	SER	Light Vehicle Mileage	4.40	198.00
1.00	EQP	8.5/8 Wooden Plug	107.64	107.64
1.00	CEMENTER	Alan Ryan		
1.00	EQUIP OPER	Wayne McGhghy		
1.00	OPER ASSIST	Chris Helpingstine		

ALL PRICES ARE NET, PAYABLE  
30 DAYS FOLLOWING DATE OF  
INVOICE. 1 1/2% CHARGED  
THEREAFTER. IF ACCOUNT IS  
CURRENT, TAKE DISCOUNT OF

\$ 1,625.68

ONLY IF PAID ON OR BEFORE

Jun 11, 2013

Subtotal	8,128.45
Sales Tax	634.02
Total Invoice Amount	8,762.47
Payment/Credit Applied	
<b>TOTAL</b>	<b>8,762.47</b>

# ALLIED OIL & GAS SERVICES, LLC

060175

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Dakota, KS

DATE <u>5/17/13</u>	SEC. <u>5</u>	TWP. <u>15</u>	RANGE <u>35</u>	CALLED OUT	ON LOCATION	JOB START <u>5:00</u>	JOB FINISH <u>6:00</u>
LEASE <u>Edwards</u>	WELL # <u>1</u>	LOCATION <u>Russell Sprng Ex 27095</u>			COUNTY <u>Wagon</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one) <u>NEW</u>		3W Swint					

CONTRACTOR L.D. Drilling

TYPE OF JOB PTA Rotary

HOLE SIZE 7 7/8 T.D.

CASING SIZE 8 5/8 DEPTH

TUBING SIZE DEPTH

DRILL PIPE 4 1/2 DEPTH 2460'

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG.

PERFS.

DISPLACEMENT

OWNER Same

CEMENT AMOUNT ORDERED 205 60/40 40mg e  
14 PCD

EQUIPMENT

PUMP TRUCK CEMENTER Alan Ryan

# 422 HELPER Wayne McSherry

BULK TRUCK DRIVER Chris Helpingline

# DRIVER

COMMON	<u>123</u>	@ <u>17 30</u>	<u>2101 20</u>
POZMIX	<u>82</u>	@ <u>9 15</u>	<u>766 70</u>
GEL	<u>7</u>	@ <u>23 40</u>	<u>163 80</u>
CHLORIDE		@	
ASC		@	
<u>Fiosul</u>	<u>52</u>	@ <u>2 77</u>	<u>154 40</u>
HANDLING	<u>220 22</u>	@ <u>2 48</u>	<u>546 15</u>
MILEAGE	<u>260 x/mile 9.914 702</u>		<u>1159 24 69</u>
TOTAL			<u>4992</u>

REMARKS:

Mix 25% @ 2460'

Mix 100% @ 1300'

Mix 40% @ 360'

Mix 10% @ 40'

Mix 70% R.H.

CHARGE TO: KB Norton

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

SERVICE

DEPTH OF JOB	<u>2460'</u>
PUMP TRUCK CHARGE	<u>2483 59</u>
EXTRA FOOTAGE	@
MILEAGE	<u>65 mile @ 7 20 346 50</u>
MANIFOLD	@
<u>6 1/2" 45 miles</u>	@ <u>4 40 198 00</u>
TOTAL <u>3028 09</u>	

To: Allied Oil & Gas Services, LLC.  
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME \_\_\_\_\_

SIGNATURE Rhhl Welan

PLUG & FLOAT EQUIPMENT

<u>8 5/8 wooden plug</u>	@	<u>107 64</u>
	@	
	@	
	@	
TOTAL <u>107 64</u>		

SALES TAX (If Any) \_\_\_\_\_

TOTAL CHARGES 8,128.42

DISCOUNT 1,605.60 IF PAID IN 30 DAYS

6,502.73 Net





## DRILL STEM TEST REPORT

Prepared For: **K&B Norton Inv. LLC.**

1209 W Park Grove Dr.  
Manhattan KS 66503

ATTN: Steve Murphy

### **Edwards #1**

### **5-15s-35w Logan,KS**

Start Date: 2013.05.11 @ 19:46:32

End Date: 2013.05.12 @ 03:14:47

Job Ticket #: 53208                      DST #: 1

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

Printed: 2013.05.28 @ 11:38:09



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

K&B Norton Inv. LLC.  
 1209 W Park Grove Dr.  
 Manhattan KS 66503  
 ATTN: Steve Murphy

**5-15s-35w Logan, KS**

**Edwards #1**

Job Ticket: 53208

**DST#: 1**

Test Start: 2013.05.11 @ 19:46:32

## GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:58:47

Time Test Ended: 03:14:47

Test Type: Conventional Bottom Hole (Initial)

Tester: Tate Lang

Unit No: 55

**Interval: 3814.00 ft (KB) To 3884.00 ft (KB) (TVD)**

Reference Elevations: 3138.00 ft (KB)

Total Depth: 3884.00 ft (KB) (TVD)

3133.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 6667**

**Inside**

Press @ Run Depth: 128.20 psig @ 3815.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.11

End Date:

2013.05.12

Last Calib.:

2013.05.12

Start Time: 19:46:47

End Time:

03:14:47

Time On Btm:

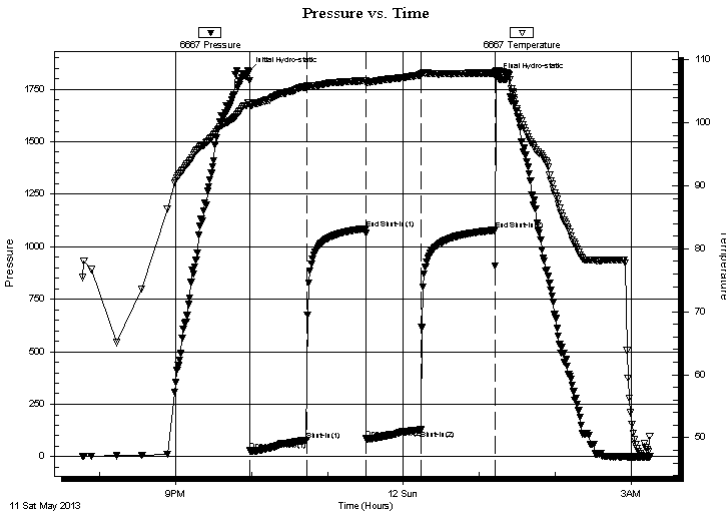
2013.05.11 @ 21:58:02

Time Off Btm:

2013.05.12 @ 01:12:47

**TEST COMMENT:** Strong surface blow built to 9"  
 Dead no blow back  
 Strong surface blow built to 9"  
 Dead no blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1832.28	103.18	Initial Hydro-static
1	28.76	102.80	Open To Flow (1)
46	78.96	105.69	Shut-In(1)
92	1086.31	106.70	End Shut-In(1)
93	86.22	106.42	Open To Flow (2)
136	128.20	107.63	Shut-In(2)
194	1078.95	107.90	End Shut-In(2)
195	1805.20	108.04	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
62.00	10%W 90%M	0.87
188.00	40%M 60%W Free oil on top	2.64

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

K&B Norton Inv. LLC.

**5-15s-35w Logan, KS**

1209 W Park Grove Dr.  
Manhattan KS 66503

**Edwards #1**

Job Ticket: 53208

**DST#: 1**

ATTN: Steve Murphy

Test Start: 2013.05.11 @ 19:46:32

## Tool Information

Drill Pipe:	Length: 3809.00 ft	Diameter: 3.80 inches	Volume: 53.43 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 53.43 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3814.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	70.00 ft			
Tool Length:	90.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3795.00	
Shut In Tool	5.00			3800.00	
Hydraulic tool	5.00			3805.00	
Packer	5.00			3810.00	20.00 Bottom Of Top Packer
Packer	4.00			3814.00	
Stubb	1.00			3815.00	
Recorder	0.00	6667	Inside	3815.00	
Recorder	0.00	8368	Outside	3815.00	
Perforations	31.00			3846.00	
Change Over Sub	1.00			3847.00	
Drill Pipe	31.00			3878.00	
Change Over Sub	1.00			3879.00	
Bullnose	5.00			3884.00	70.00 Bottom Packers & Anchor

**Total Tool Length: 90.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

K&B Norton Inv. LLC.

**5-15s-35w Logan,KS**

1209 W Park Grove Dr.  
Manhattan KS 66503

**Edwards #1**

Job Ticket: 53208

**DST#: 1**

ATTN: Steve Murphy

Test Start: 2013.05.11 @ 19:46:32

### 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:

33000 ppm

Viscosity: 42.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.35 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4800.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
62.00	10%W 90%M	0.870
188.00	40%M 60%W Free oil on top	2.637

Total Length: 250.00 ft      Total Volume: 3.507 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

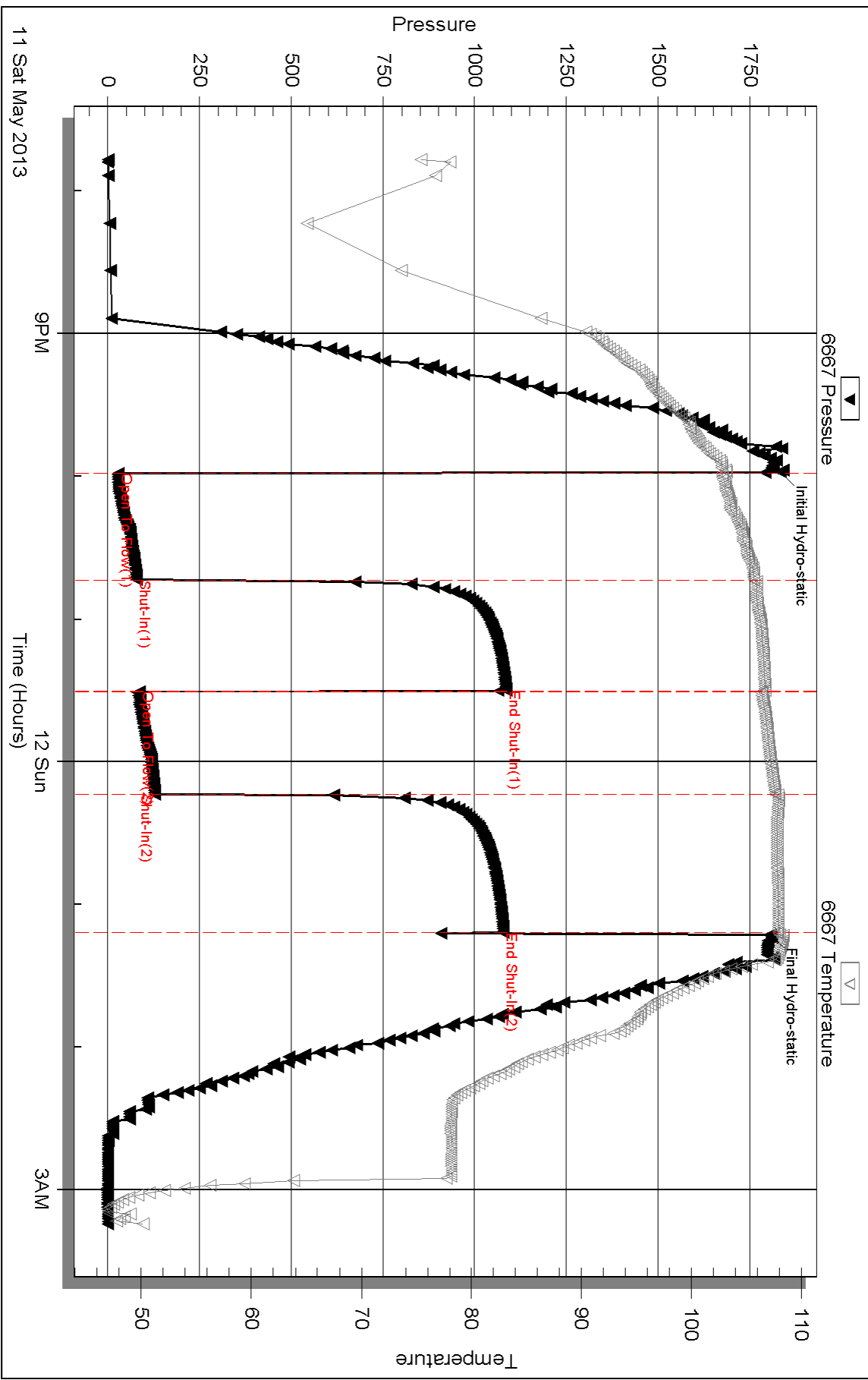
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: AIP RW .978 @ 40F = 33000

### Pressure vs. Time

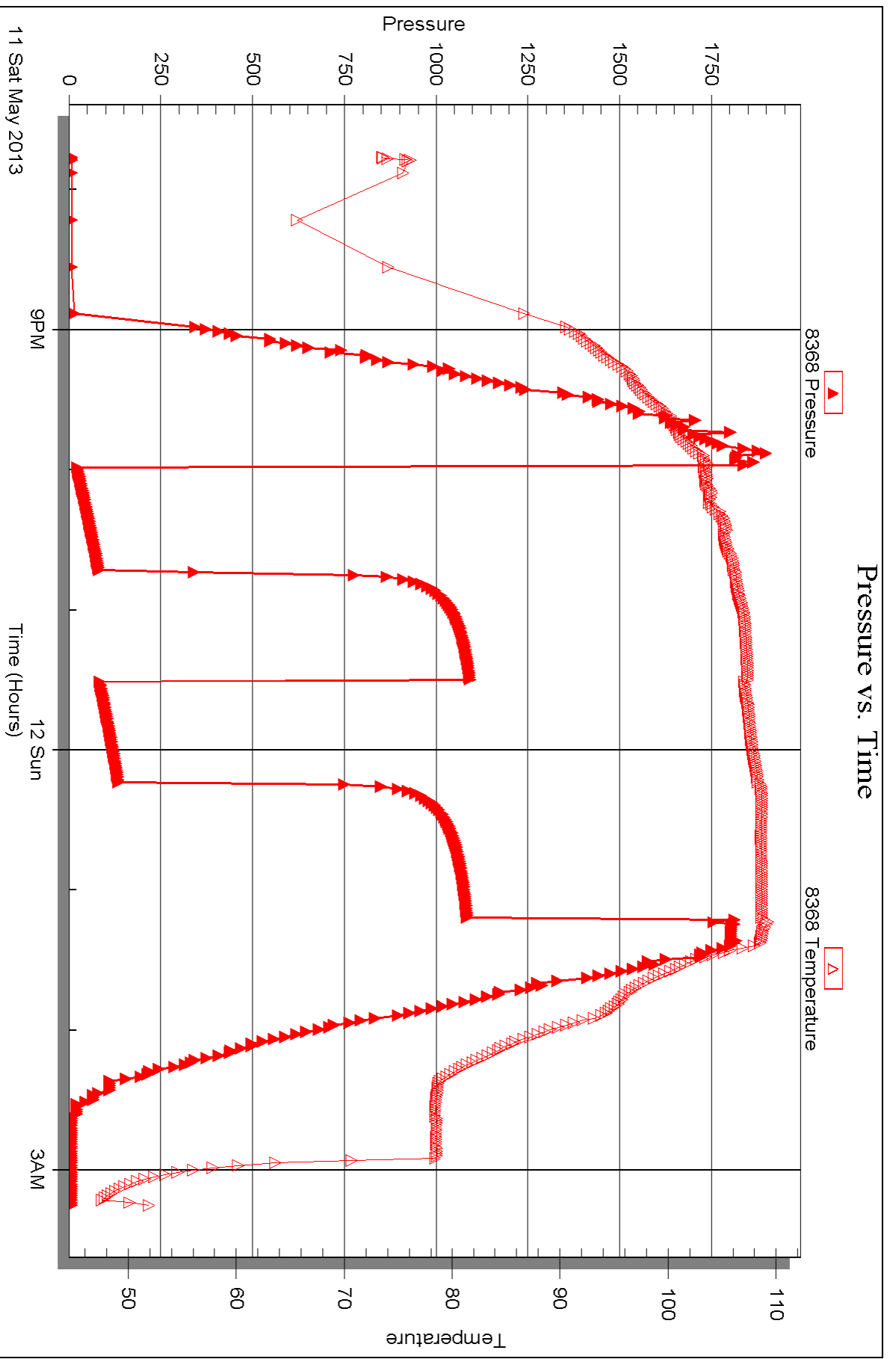


Serial #: 8368

Outside K&B Norton Inv. LLC.

Edwards #1

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **K&B Norton Inv. LLC.**

1209 W Park Grove Dr.  
Manhattan KS 66503

ATTN: Steve Murphy

### **Edwards #1**

### **5-15s-35w Logan,KS**

Start Date: 2013.05.12 @ 10:23:00

End Date: 2013.05.12 @ 16:51:15

Job Ticket #: 53209                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.05.28 @ 11:37:25





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

K&B Norton Inv. LLC.  
 1209 W Park Grove Dr.  
 Manhattan KS 66503  
 ATTN: Steve Murphy

**5-15s-35w Logan, KS**

**Edwards #1**

Job Ticket: 53209

**DST#: 2**

Test Start: 2013.05.12 @ 10:23:00

## GENERAL INFORMATION:

Formation: **Toronto**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 12:21:00  
 Time Test Ended: 16:51:15  
 Interval: **3884.00 ft (KB) To 3924.00 ft (KB) (TVD)**  
 Total Depth: 3924.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Tate Lang  
 Unit No: 55  
 Reference Elevations: 3138.00 ft (KB)  
 3133.00 ft (CF)  
 KB to GR/CF: 5.00 ft

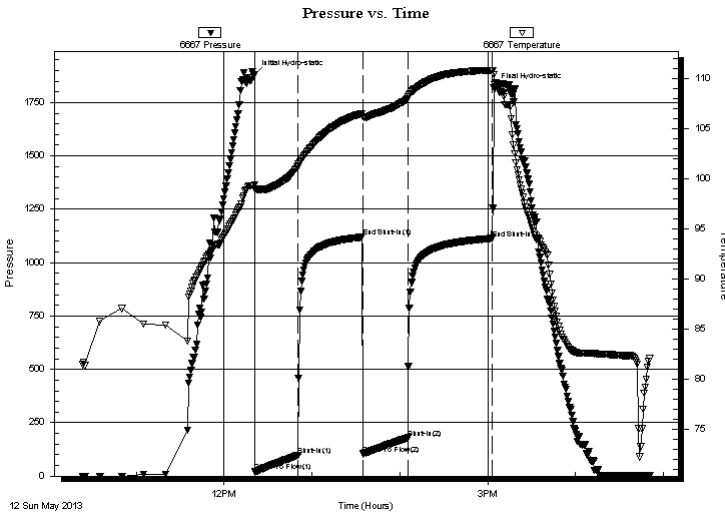
## Serial #: 6667

Inside

Press @ Run Depth: 179.04 psig @ 3886.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.12 End Date: 2013.05.12 Last Calib.: 2013.05.12  
 Start Time: 10:23:15 End Time: 16:51:15 Time On Btm: 2013.05.12 @ 12:20:45  
 Time Off Btm: 2013.05.12 @ 15:04:15

TEST COMMENT: B.O.B. in 17 mins  
 Dead no blow back  
 B.O.B. in 19 mins  
 Dead no blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1879.83	99.39	Initial Hydro-static
1	20.69	98.94	Open To Flow (1)
30	97.58	101.24	Shut-In(1)
74	1119.85	106.52	End Shut-In(1)
75	104.49	106.22	Open To Flow (2)
105	179.04	107.97	Shut-In(2)
163	1113.65	110.80	End Shut-In(2)
164	1820.46	110.37	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	10%M 90%W	2.61
124.00	40%W 60%M	1.74
50.00	10%W 90%M w ith oil spots	0.70

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

K&B Norton Inv. LLC.  
1209 W Park Grove Dr.  
Manhattan KS 66503  
ATTN: Steve Murphy

**5-15s-35w Logan,KS**  
**Edwards #1**  
Job Ticket: 53209      **DST#: 2**  
Test Start: 2013.05.12 @ 10:23:00

**GENERAL INFORMATION:**

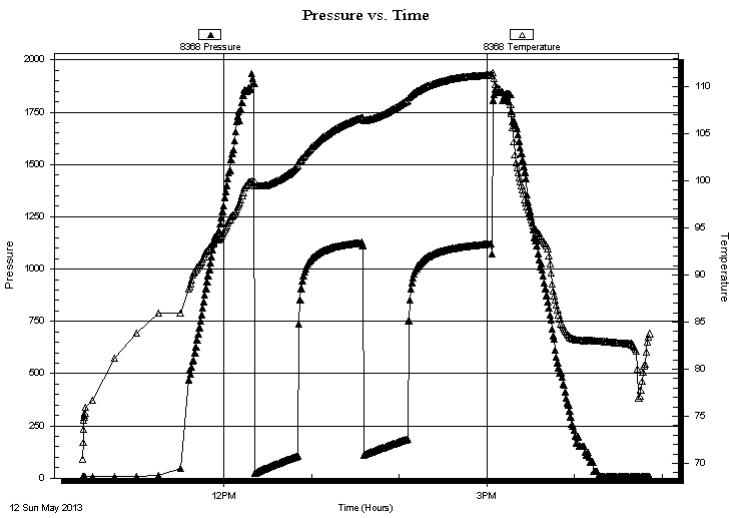
Formation: **Toronto**  
Deviated: No    Whipstock:                      ft (KB)  
Time Tool Opened: 12:21:00  
Time Test Ended: 16:51:15  
**Interval: 3884.00 ft (KB) To 3924.00 ft (KB) (TVD)**  
Total Depth: 3924.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches    Hole Condition: Good  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Tate Lang  
Unit No: 55  
Reference Elevations: 3138.00 ft (KB)  
3133.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 8368      Outside**  
Press @ RunDepth:                      psig @    3886.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2013.05.12      End Date: 2013.05.12      Last Calib.: 1899.12.30  
Start Time: 10:23:08      End Time: 16:51:17      Time On Btm:  
Time Off Btm:

**TEST COMMENT:** B.O.B. in 17 mins  
Dead no blow back  
B.O.B. in 19 mins  
Dead no blow back

**PRESSURE SUMMARY**

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



**Recovery**

Length (ft)	Description	Volume (bbl)
186.00	10%M 90%W	2.61
124.00	40%W 60%M	1.74
50.00	10%W 90%M w ith oil spots	0.70

\* Recovery from multiple tests

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

K&B Norton Inv. LLC.

**5-15s-35w Logan, KS**

1209 W Park Grove Dr.  
Manhattan KS 66503

**Edwards #1**

Job Ticket: 53209

**DST#: 2**

ATTN: Steve Murphy

Test Start: 2013.05.12 @ 10:23:00

## Tool Information

Drill Pipe:	Length: 3870.00 ft	Diameter: 3.80 inches	Volume: 54.29 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 54.29 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 53000.00 lb
Depth to Top Packer:	3884.00 ft			Final 56000.00 lb
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
Change Over Sub	1.00			3865.00	
Shut In Tool	5.00			3870.00	
Hydraulic tool	5.00			3875.00	
Packer	5.00			3880.00	20.00 Bottom Of Top Packer
Packer	4.00			3884.00	
Stubb	1.00			3885.00	
Perforations	1.00			3886.00	
Recorder	0.00	6667	Inside	3886.00	
Recorder	0.00	8368	Outside	3886.00	
Change Over Sub	1.00			3887.00	
Drill Pipe	31.00			3918.00	
Change Over Sub	1.00			3919.00	
Bullnose	5.00			3924.00	40.00 Bottom Packers & Anchor

**Total Tool Length: 60.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

K&B Norton Inv. LLC.

**5-15s-35w Logan,KS**

1209 W Park Grove Dr.  
Manhattan KS 66503

**Edwards #1**

Job Ticket: 53209

**DST#: 2**

ATTN: Steve Murphy

Test Start: 2013.05.12 @ 10:23:00

## 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: 42.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.93 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
186.00	10%M 90%W	2.609
124.00	40%W 60%M	1.739
50.00	10%W 90%M w ith oil spots	0.701

Total Length: 360.00 ft

Total Volume: 5.049 bbl

Num Fluid Samples: 0

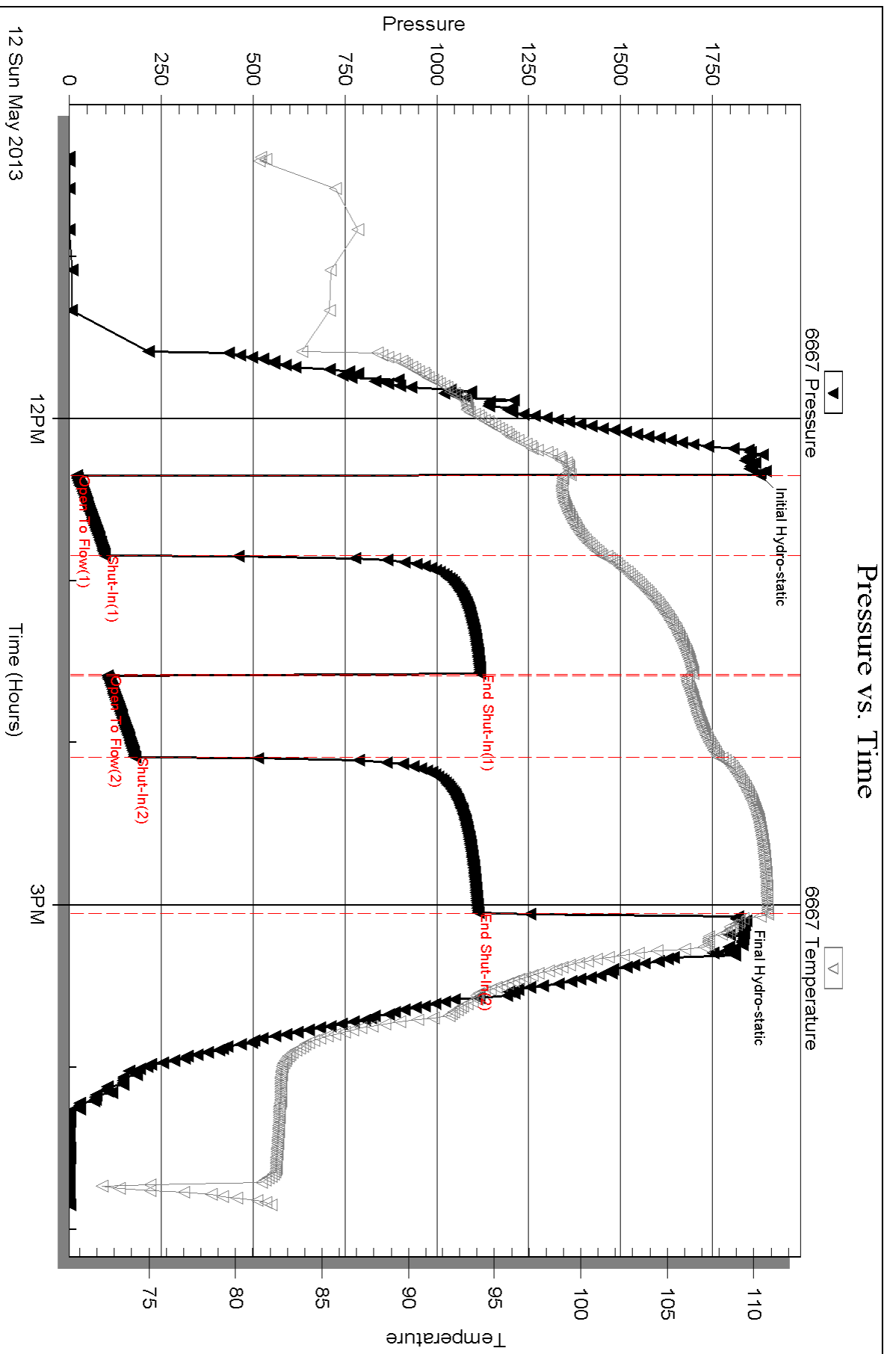
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

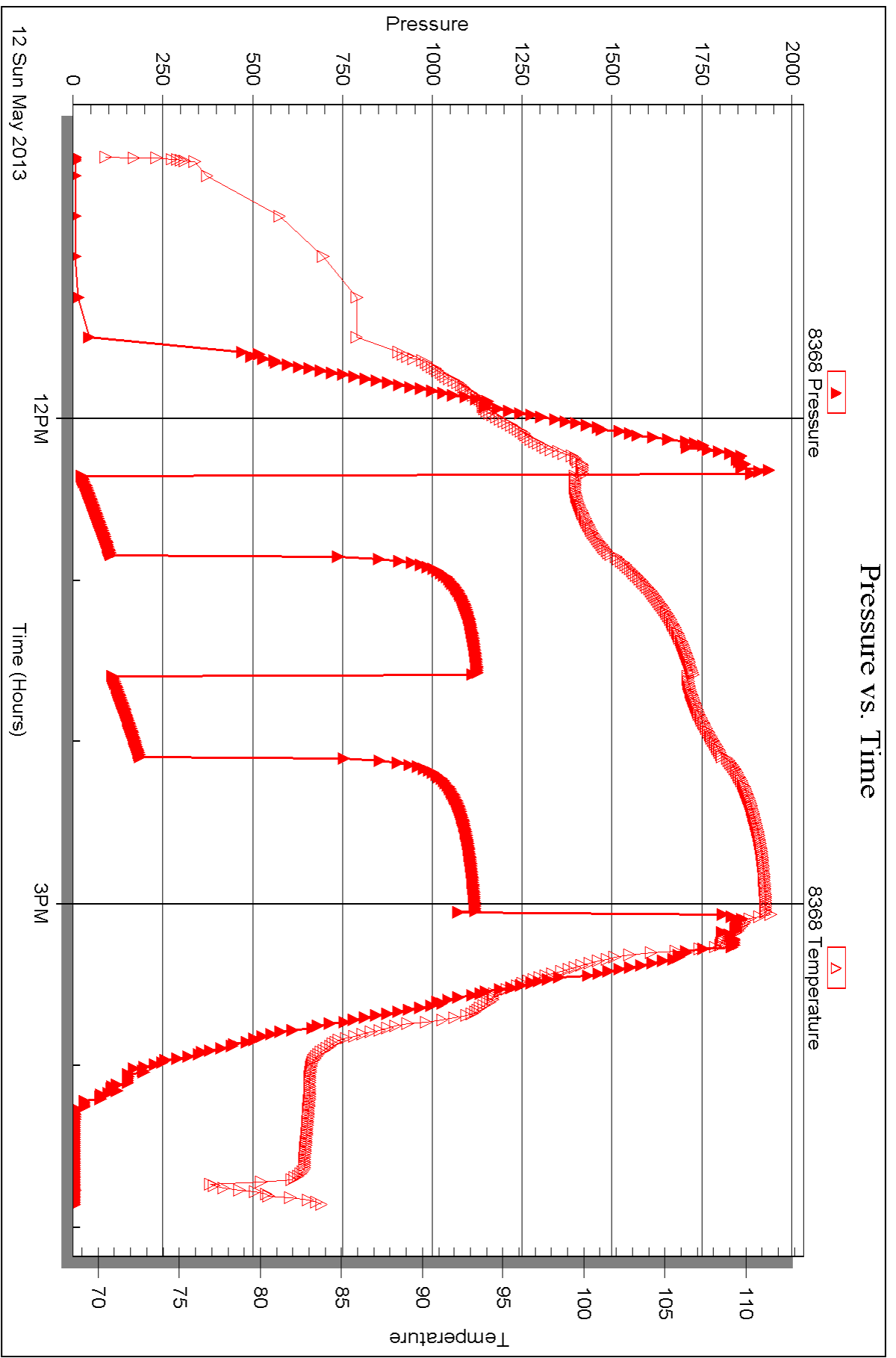


Serial #: 8368

Outside K&B Norton Inv. LLC

Edwards #1

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 53209

Printed: 2013.05.28 @ 11:37:28



## DRILL STEM TEST REPORT

Prepared For: **K&B Norton Inv. LLC.**

1209 W Park Grove Dr.  
Manhattan KS 66503

ATTN: Steve Murphy

### **Edwards #1**

### **5-15s-35w Logan,KS**

Start Date: 2013.05.13 @ 02:23:13

End Date: 2013.05.13 @ 09:47:22

Job Ticket #: 49202                      DST #: 3

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

Printed: 2013.05.28 @ 11:35:16



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

K&B Norton Inv. LLC.  
 1209 W Park Grove Dr.  
 Manhattan KS 66503  
 ATTN: Steve Murphy

**5-15s-35w Logan, KS**

**Edwards #1**

Job Ticket: 49202

**DST#: 3**

Test Start: 2013.05.13 @ 02:23:13

## GENERAL INFORMATION:

Formation: **B-D**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 04:34:38  
 Time Test Ended: 09:47:22  
 Interval: **3970.00 ft (KB) To 4004.00 ft (KB) (TVD)**  
 Total Depth: 4004.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Shane McBride  
 Unit No: 55  
 Reference Elevations: 3138.00 ft (KB)  
 3133.00 ft (CF)  
 KB to GR/CF: 5.00 ft

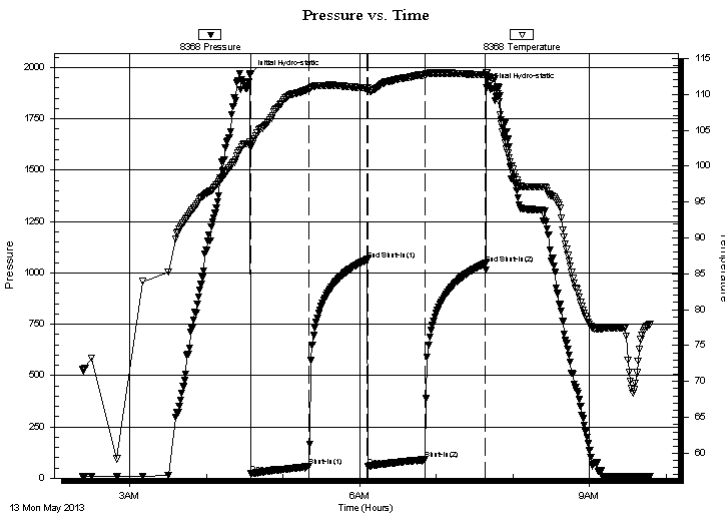
**Serial #: 8368**

**Outside**

Press @ Run Depth: 91.04 psig @ 3971.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.13 End Date: 2013.05.13 Last Calib.: 2013.05.13  
 Start Time: 02:23:13 End Time: 09:47:22 Time On Btm: 2013.05.13 @ 04:34:23  
 Time Off Btm: 2013.05.13 @ 07:39:23

**TEST COMMENT:** 7 1/4" blow  
 No return  
 5 1/2" blow  
 No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1966.52	103.37	Initial Hydro-static
1	21.32	102.52	Open To Flow (1)
46	56.91	110.71	Shut-In(1)
92	1064.81	110.86	End Shut-In(1)
92	58.34	110.38	Open To Flow (2)
137	91.04	112.65	Shut-In(2)
184	1045.79	112.70	End Shut-In(2)
185	1902.21	113.04	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	mc w 30% m 70% w w oil spots	1.68
30.00	w c m 35% w 65% m w w oil spots	0.42

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

K&B Norton Inv. LLC.  
1209 W Park Grove Dr.  
Manhattan KS 66503  
ATTN: Steve Murphy

**5-15s-35w Logan,KS**

**Edwards #1**

Job Ticket: 49202

**DST#: 3**

Test Start: 2013.05.13 @ 02:23:13

**GENERAL INFORMATION:**

Formation: **B-D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:34:38

Time Test Ended: 09:47:22

Test Type: Conventional Bottom Hole (Reset)

Tester: Shane McBride

Unit No: 55

**Interval: 3970.00 ft (KB) To 4004.00 ft (KB) (TVD)**

Reference Elevations: 3138.00 ft (KB)

Total Depth: 4004.00 ft (KB) (TVD)

3133.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6667 Inside**

Press @ Run Depth: psig @ 3971.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.13

End Date: 2013.05.13

Last Calib.: 2013.05.13

Start Time: 02:23:56

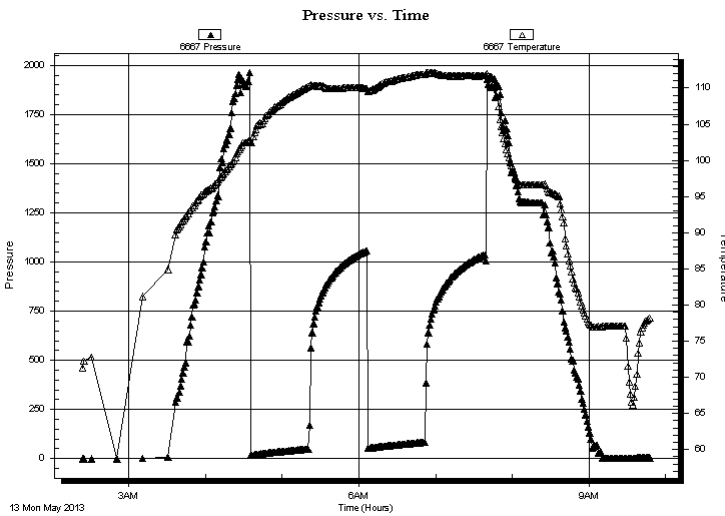
End Time: 09:47:56

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 7 1/4" blow  
No return  
5 1/2" blow  
No return

**PRESSURE SUMMARY**



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

**Recovery**

Length (ft)	Description	Volume (bbl)
120.00	mc w 30% m 70% w w oil spots	1.68
30.00	w c m 35% w 65% m w w oil spots	0.42

**Gas Rates**

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

K&B Norton Inv. LLC.

**5-15s-35w Logan, KS**

1209 W Park Grove Dr.  
Manhattan KS 66503

**Edwards #1**

Job Ticket: 49202

**DST#: 3**

ATTN: Steve Murphy

Test Start: 2013.05.13 @ 02:23:13

## Tool Information

Drill Pipe:	Length: 3969.00 ft	Diameter: 3.80 inches	Volume: 55.67 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	67000.00 lb
			<u>Total Volume: 55.67 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial	53000.00 lb
Depth to Top Packer:	3970.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	34.00 ft				
Tool Length:	54.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3951.00	
Shut In Tool	5.00			3956.00	
Hydraulic tool	5.00			3961.00	
Packer	5.00			3966.00	20.00 Bottom Of Top Packer
Packer	4.00			3970.00	
Stubb	1.00			3971.00	
Recorder	0.00	6667	Inside	3971.00	
Recorder	0.00	8368	Outside	3971.00	
Perforations	28.00			3999.00	
Bullnose	5.00			4004.00	34.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>54.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

K&B Norton Inv. LLC.

**5-15s-35w Logan,KS**

1209 W Park Grove Dr.  
Manhattan KS 66503

**Edwards #1**

Job Ticket: 49202

**DST#: 3**

ATTN: Steve Murphy

Test Start: 2013.05.13 @ 02:23:13

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

20000 ppm

Viscosity: 41.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.93 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	m c w 30%m 70%w w oil spots	1.683
30.00	w c m 35%w 65%m w oil spots	0.421

Total Length: 150.00 ft Total Volume: 2.104 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

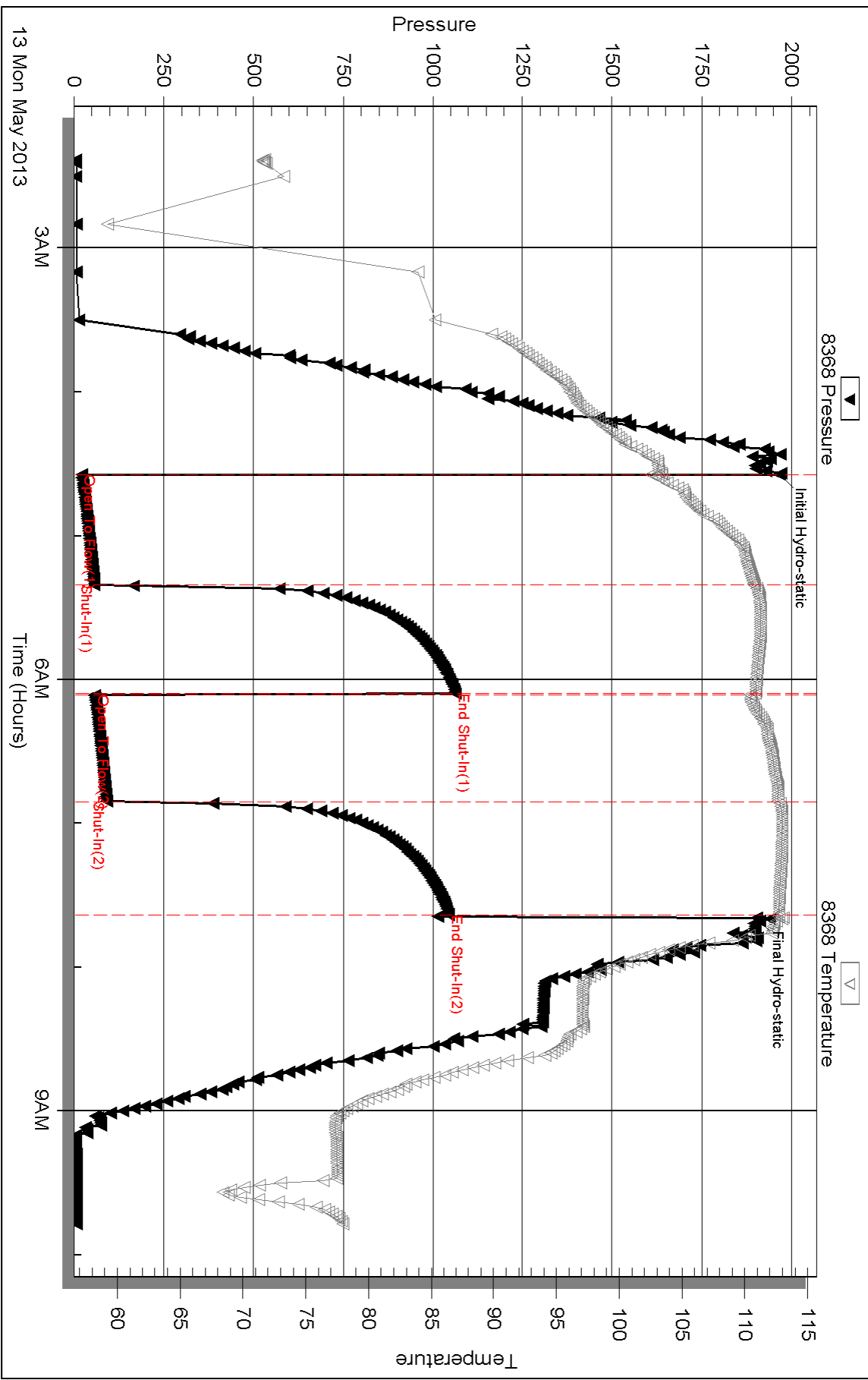
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw .322 @ 76\*f = 20,000 chlor

# Pressure vs. Time



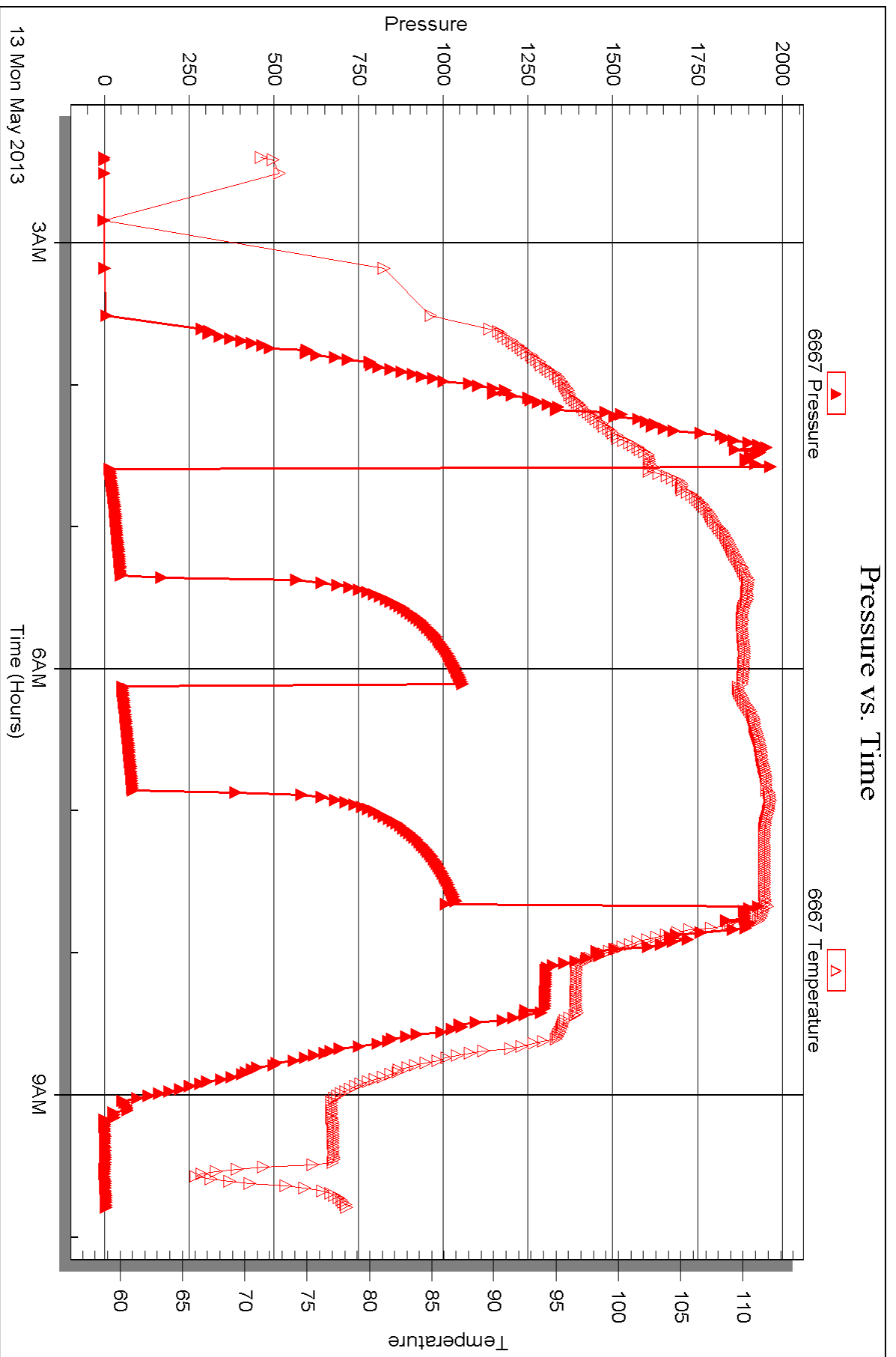
Serial #: 6667

Inside

K&B Norton Inv. LLC.

Edwards #1

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 49202

Printed: 2013.05.28 @ 11:35:20



## DRILL STEM TEST REPORT

Prepared For: **K&B Norton Inv. LLC.**

1209 W Park Grove Dr.  
Manhattan KS 66503

ATTN: Steve Murphy

### **Edwards #1**

### **5-15s-35w Logan,KS**

Start Date: 2013.05.14 @ 03:00:09

End Date: 2013.05.14 @ 10:49:18

Job Ticket #: 49203                      DST #: 4

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

Printed: 2013.05.28 @ 11:32:38

K&B Norton Inv. LLC.  
5-15s-35w Logan,KS  
Edwards #1  
DST # 4  
KC  
2013.05.14



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

K&B Norton Inv. LLC.  
1209 W Park Grove Dr.  
Manhattan KS 66503  
ATTN: Steve Murphy

**5-15s-35w Logan, KS**

**Edwards #1**

Job Ticket: 49203

**DST#: 4**

Test Start: 2013.05.14 @ 03:00:09

## GENERAL INFORMATION:

Formation: **KC**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 06:04:34  
 Time Test Ended: 10:49:18  
 Interval: **4156.00 ft (KB) To 4190.00 ft (KB) (TVD)**  
 Total Depth: 4190.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Shane McBride  
 Unit No: 55  
 Reference Elevations: 3138.00 ft (KB)  
 3133.00 ft (CF)  
 KB to GR/CF: 5.00 ft

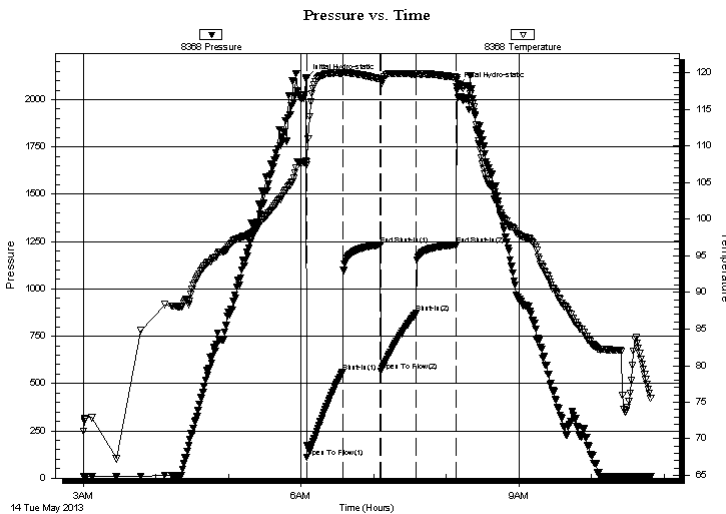
**Serial #: 8368**

**Outside**

Press @ RunDepth: 870.33 psig @ 4157.00 ft (KB)  
 Start Date: 2013.05.14 End Date: 2013.05.14  
 Start Time: 03:00:09 End Time: 10:49:18  
 Capacity: 8000.00 psig  
 Last Calib.: 2013.05.14  
 Time On Btm: 2013.05.14 @ 06:04:04  
 Time Off Btm: 2013.05.14 @ 08:08:34

**TEST COMMENT:** B.O.B. in 3 min.  
 No return  
 B.O.B. in 4 min.  
 No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2111.28	108.02	Initial Hydro-static
1	109.08	107.44	Open To Flow (1)
30	560.61	119.92	Shut-In(1)
62	1233.26	119.18	End Shut-In(1)
62	566.77	118.82	Open To Flow (2)
91	870.33	119.83	Shut-In(2)
124	1232.18	119.42	End Shut-In(2)
125	2070.00	119.39	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
180.00	w c m w/oil scum 50%w 50%m	2.52
360.00	s m c w w/oil scum 10%m 90%w	5.05
1350.00	water w/oil scum	18.94

## Gas Rates

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

\* Recovery from multiple tests







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

K&B Norton Inv. LLC.

**5-15s-35w Logan, KS**

1209 W Park Grove Dr.  
Manhattan KS 66503

**Edwards #1**

Job Ticket: 49203

**DST#: 4**

ATTN: Steve Murphy

Test Start: 2013.05.14 @ 03:00:09

## Tool Information

Drill Pipe:	Length: 4158.00 ft	Diameter: 3.80 inches	Volume: 58.33 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 58.33 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4156.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	34.00 ft			
Tool Length:	54.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4137.00	
Shut In Tool	5.00			4142.00	
Hydraulic tool	5.00			4147.00	
Packer	5.00			4152.00	20.00 Bottom Of Top Packer
Packer	4.00			4156.00	
Stubb	1.00			4157.00	
Recorder	0.00	6667	Inside	4157.00	
Recorder	0.00	8368	Outside	4157.00	
Perforations	28.00			4185.00	
Bullnose	5.00			4190.00	34.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>54.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

K&B Norton Inv. LLC.

**5-15s-35w Logan,KS**

1209 W Park Grove Dr.  
Manhattan KS 66503

**Edwards #1**

Job Ticket: 49203

**DST#: 4**

ATTN: Steve Murphy

Test Start: 2013.05.14 @ 03:00:09

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

25500 ppm

Viscosity: 41.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.95 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	w c m w/oil scum 50%w 50%m	2.525
360.00	s m c w w/oil scum 10%m 90%w	5.050
1350.00	water w/oil scum	18.937

Total Length: 1890.00 ft      Total Volume: 26.512 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

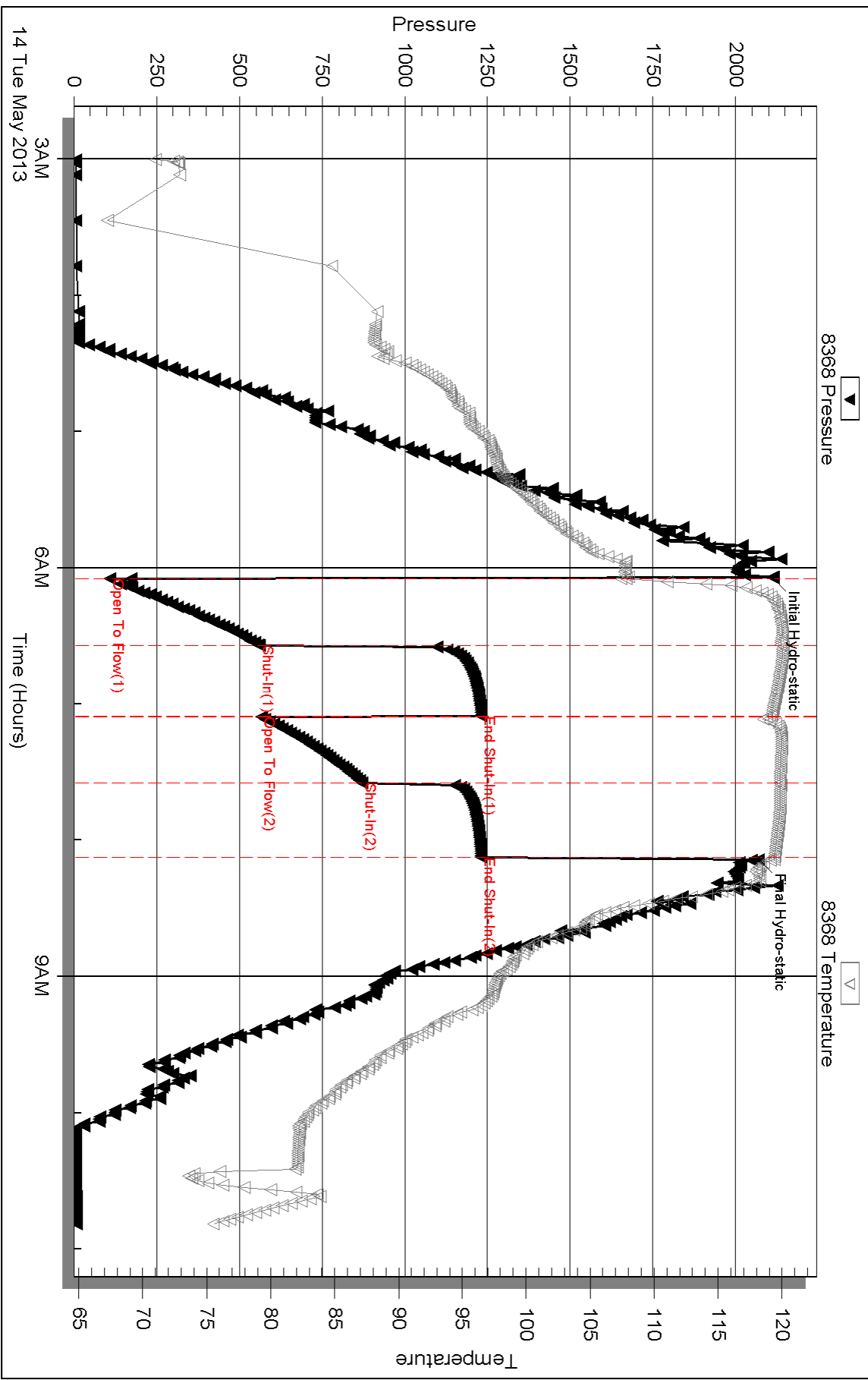
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw .199 @ 99\*f = 25,500 chlor

### Pressure vs. Time



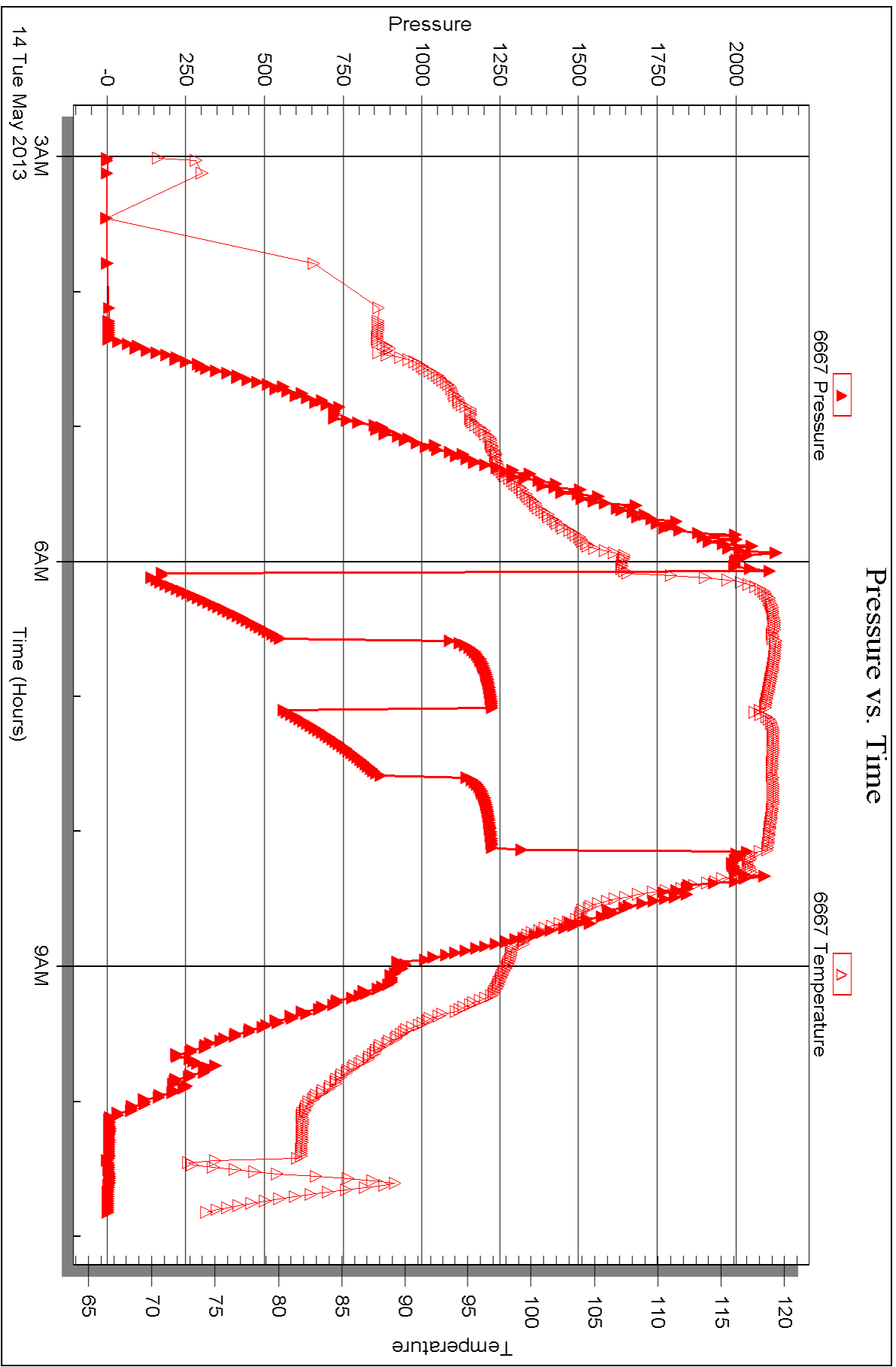
Serial #: 6667

Inside

K&B Norton Inv. LLC

Edwards #1

DST Test Number: 4





## DRILL STEM TEST REPORT

Prepared For: **K&B Norton Inv. LLC.**

1209 W Park Grove Dr.  
Manhattan KS 66503

ATTN: Steve Murphy

### **Edwards #1**

### **5-15s-35w Logan,KS**

Start Date: 2013.05.16 @ 03:51:01

End Date: 2013.05.16 @ 08:51:55

Job Ticket #: 49204                      DST #: 5

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

Printed: 2013.05.28 @ 11:30:43



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

K&B Norton Inv. LLC.  
1209 W Park Grove Dr.  
Manhattan KS 66503  
ATTN: Steve Murphy

**5-15s-35w Logan, KS**

**Edwards #1**

Job Ticket: 49204

**DST#: 5**

Test Start: 2013.05.16 @ 03:51:01

## GENERAL INFORMATION:

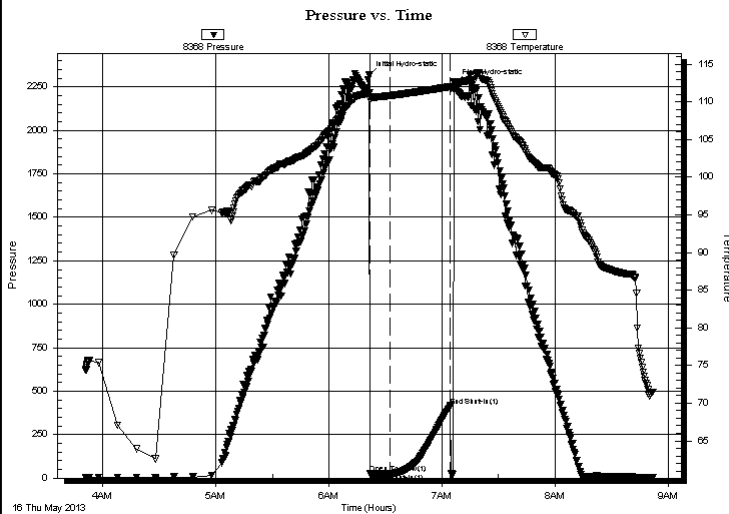
Formation: **Johnson**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 06:21:41  
 Time Test Ended: 08:51:55  
 Interval: **4526.00 ft (KB) To 4570.00 ft (KB) (TVD)**  
 Total Depth: 4570.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Shane McBride  
 Unit No: 55  
 Reference Elevations: 3138.00 ft (KB)  
 3133.00 ft (CF)  
 KB to GR/CF: 5.00 ft

## Serial #: 8368

**Outside**

Press @ Run Depth: 25.56 psig @ 4527.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.16 End Date: 2013.05.16 Last Calib.: 2013.05.16  
 Start Time: 03:51:01 End Time: 08:51:55 Time On Btm: 2013.05.16 @ 06:21:26  
 Time Off Btm: 2013.05.16 @ 07:06:41

TEST COMMENT: Weak blow died in 10 min  
 No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2316.82	111.15	Initial Hydro-static
1	25.07	110.23	Open To Flow (1)
11	25.56	110.81	Shut-In(1)
43	416.12	112.01	End Shut-In(1)
46	2268.19	112.52	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud 100%m	0.03

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

K&B Norton Inv. LLC.  
1209 W Park Grove Dr.  
Manhattan KS 66503  
ATTN: Steve Murphy

**5-15s-35w Logan, KS**

**Edwards #1**

Job Ticket: 49204

**DST#: 5**

Test Start: 2013.05.16 @ 03:51:01

## GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:21:41

Time Test Ended: 08:51:55

**Interval: 4526.00 ft (KB) To 4570.00 ft (KB) (TVD)**

Total Depth: 4570.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Reset)

Tester: Shane McBride

Unit No: 55

Reference Elevations: 3138.00 ft (KB)

3133.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 6667 Inside**

Press @ Run Depth: psig @ 4527.00 ft (KB)

Start Date: 2013.05.16

End Date: 2013.05.16

Capacity: 8000.00 psig

Last Calib.: 2013.05.16

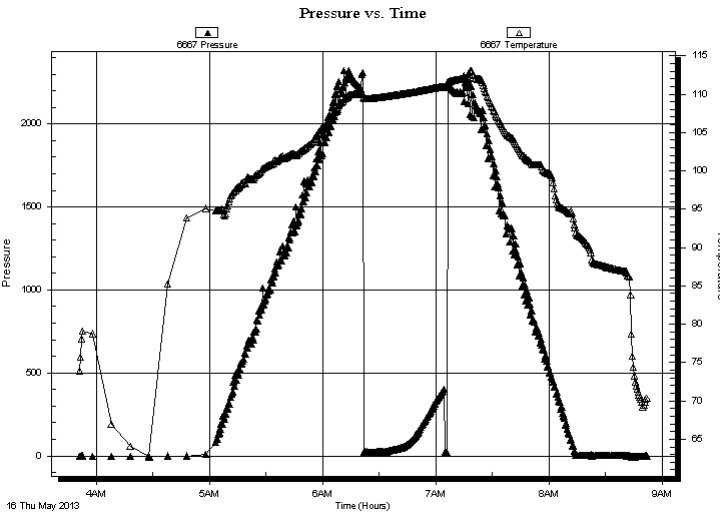
Start Time: 03:51:10

End Time: 08:51:55

Time On Btm:

Time Off Btm:

TEST COMMENT: Weak blow died in 10 min  
No return



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud 100%m	0.03

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

K&B Norton Inv. LLC.

**5-15s-35w Logan, KS**

1209 W Park Grove Dr.  
Manhattan KS 66503

**Edwards #1**

Job Ticket: 49204

**DST#: 5**

ATTN: Steve Murphy

Test Start: 2013.05.16 @ 03:51:01

## Tool Information

Drill Pipe:	Length: 4538.00 ft	Diameter: 3.80 inches	Volume: 63.66 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 63.66 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4526.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	64.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4507.00	
Shut In Tool	5.00			4512.00	
Hydraulic tool	5.00			4517.00	
Packer	5.00			4522.00	20.00 Bottom Of Top Packer
Packer	4.00			4526.00	
Stubb	1.00			4527.00	
Recorder	0.00	6667	Inside	4527.00	
Recorder	0.00	8368	Outside	4527.00	
Perforations	5.00			4532.00	
Change Over Sub	1.00			4533.00	
Drill Pipe	31.00			4564.00	
Change Over Sub	1.00			4565.00	
Bullnose	5.00			4570.00	44.00 Bottom Packers & Anchor

**Total Tool Length: 64.00**





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

K&B Norton Inv. LLC.

**5-15s-35w Logan,KS**

1209 W Park Grove Dr.  
Manhattan KS 66503

**Edwards #1**

Job Ticket: 49204

**DST#: 5**

ATTN: Steve Murphy

Test Start: 2013.05.16 @ 03:51:01

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.77 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	mud 100%m	0.028

Total Length: 2.00 ft      Total Volume: 0.028 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

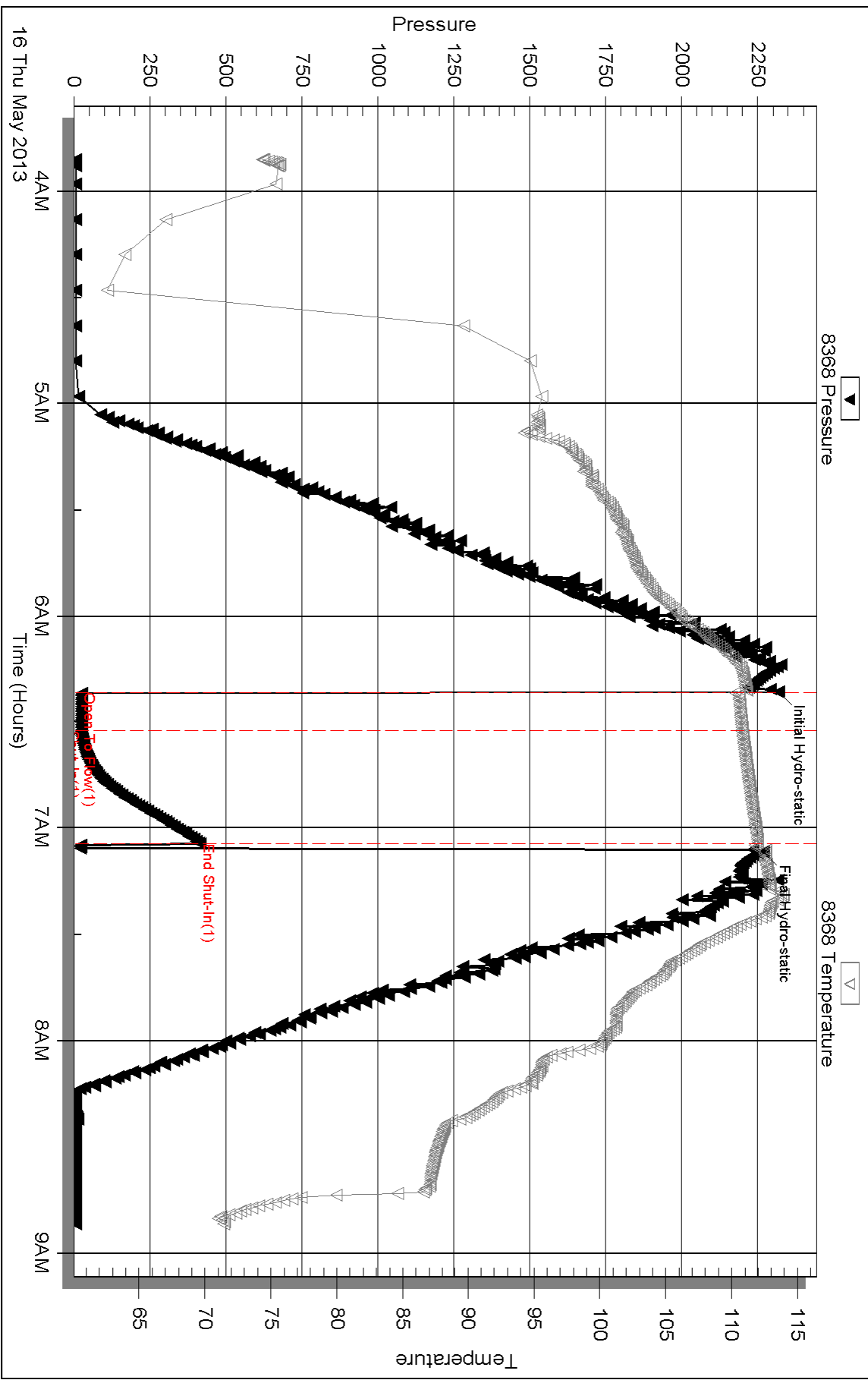
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time



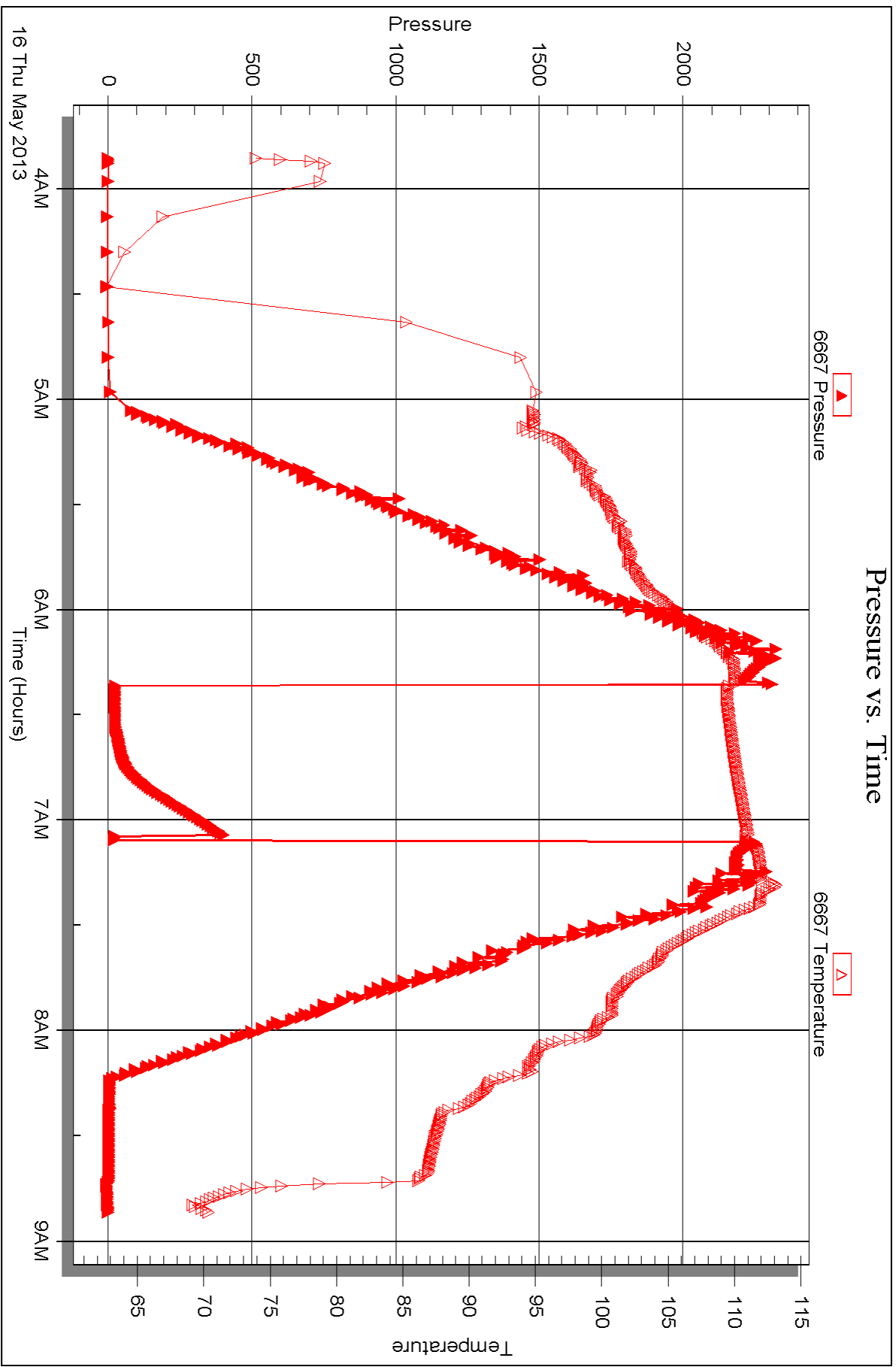
Serial #: 6667

Inside

K&B Norton Inv. LLC.

Edwards #1

DST Test Number: 5





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 53208

Well Name & No. Edwards #1 Test No. 1 Date 5/18/13  
 Company K+B Norton Oil Investments, LLC Elevation 3138 KB 3133 GL  
 Address 1209 W Park Grove Dr. Manhattan KS 66503  
 Co. Rep / Geo. Steve Murphy Rig LD Rig #1  
 Location: Sec. 5 Twp. 15S Rge. 35W Co. Logan State KS

Interval Tested 3814 3884 Zone Tested Topoka  
 Anchor Length 70' Drill Pipe Run 3809 Mud Wt. 8.8  
 Top Packer Depth 3810 Drill Collars Run 0 Vis 42  
 Bottom Packer Depth 3814 Wt. Pipe Run 0 WL 6.4  
 Total Depth 3884 Chlorides 4800 ppm System LCM 1

Blow Description Strong surface blow built to 9in.  
Dead no blowback  
Strong surface blow built to 9in  
Dead no blow back

Rec	Feet of	%gas	%oil	%water	%mud
188	Feet of <u>MCM Free Oil on top</u>			<u>60</u>	<u>40</u>
62	Feet of <u>WCM</u>			<u>10</u>	<u>90</u>

Rec Total 250 BHT 106 Gravity — API RW .978 @ 40° F Chlorides 33000 ppm  
 (A) Initial Hydrostatic 1832  Test 1150 T-On Location 18:50  
 (B) First Initial Flow 29  Jars \_\_\_\_\_ T-Started 19:46  
 (C) First Final Flow 79  Safety Joint \_\_\_\_\_ T-Open 21:58  
 (D) Initial Shut-In 1086  Circ Sub N/C T-Pulled 01:13 5/12  
 (E) Second Initial Flow 86  Hourly Standby \_\_\_\_\_ T-Out 3:14  
 (F) Second Final Flow 128  Mileage 80 RT 124 Comments \_\_\_\_\_  
 (G) Final Shut-In 1079  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1805  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_

Initial Open 45  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 60  
 Sub Total 1274

Approved By [Signature] Our Representative [Signature]  
 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. 53209

Well Name & No. Edwards #1 Test No. 2 Date 5/12/13  
 Company K&B Norton Oil Inv. LLC Elevation 3138 KB 3133 GL  
 Address \_\_\_\_\_  
 Co. Rep / Geo. Steve Murphy Rig LD Rig #1  
 Location: Sec. 5 Twp. 15S Rge. 35W Co. Logan State KJ

Interval Tested 3884 3924 Zone Tested Toronto  
 Anchor Length \_\_\_\_\_ 40 Drill Pipe Run 3870 Mud Wt. 9.1  
 Top Packer Depth \_\_\_\_\_ 3880 Drill Collars Run 0 Vis 42  
 Bottom Packer Depth \_\_\_\_\_ 3884 Wt. Pipe Run 0 WL 8.0  
 Total Depth \_\_\_\_\_ 3924 Chlorides 6000 ppm System LCM 1

Blow Description B.O.B. in 17 mins.  
Dead no blow back  
B.O.B. in 19 mins  
Dead no blow back

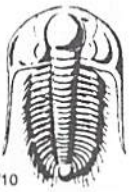
Rec	Feet of	Notes	%gas	%oil	%water	%mud
<u>50</u>	<u>WCM</u>	<u>With oil spots</u>		<u>10</u>	<u>90</u>	
<u>124</u>	<u>WCM</u>			<u>40</u>	<u>60</u>	
<u>186</u>	<u>MCM</u>			<u>90</u>	<u>10</u>	
Rec _____	Feet of _____		%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____		%gas _____	%oil _____	%water _____	%mud _____

Rec Total 360 BHT 110 Gravity \_\_\_\_\_ API RW. 378 @ 77 °F Chlorides 36000 ppm  
 (A) Initial Hydrostatic 1880  Test 1150 T-On Location 9:52  
 (B) First Initial Flow 21  Jars \_\_\_\_\_ T-Started 12:20  
 (C) First Final Flow 49  Safety Joint \_\_\_\_\_ T-Open 12:20  
 (D) Initial Shut-In 1120  Circ Sub NIC T-Pulled 14:50  
 (E) Second Initial Flow 104  Hourly Standby \_\_\_\_\_ T-Out 16:51  
 (F) Second Final Flow 179  Mileage 86 R/1 124 Comments \_\_\_\_\_  
 (G) Final Shut-In 1114  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1820  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 30  
 Final Shut-In 45  
 Sub Total 1274

Approved By Steve Murphy Our Representative [Signature]

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# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 49202

Well Name & No. Edwards #1 Test No. #3 Date 5/13/13  
 Company K3 B Norton Elevation 3138 KB 3133 GL  
 Address 1209 W. Park Grove Dr Manhattan, KS 66503  
 Co. Rep / Geo. Steve Murphy Rig H.D. #1  
 Location: Sec. 5 Twp. 15S Rge. 35W Co. Logan State KS

Interval Tested 3970 4004 Zone Tested B-D  
 Anchor Length 34 Drill Pipe Run 3969' Mud Wt. 9.3  
 Top Packer Depth 3965 Drill Collars Run --- Vis 41  
 Bottom Packer Depth 3970 Wt. Pipe Run --- WL 8.0  
 Total Depth 4004 Chlorides 9000 ppm System LCM #1  
 Blow Description 7 1/4" in blow  
No return  
5 1/2" in blow  
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>wcm w/o. 1 spots</u>			<u>35</u>	<u>65</u>
<u>120'</u>	<u>mew w/o. 7 spots</u>			<u>70</u>	<u>30</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 150' BHT 113° Gravity --- API RW 322 @ 76 ° F Chlorides 20,000 ppm

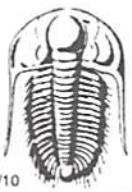
(A) Initial Hydrostatic 1966  Test 1250 T-On Location 02:15  
 (B) First Initial Flow 21  Jars T-Started 02:23  
 (C) First Final Flow 56  Safety Joint T-Open 04:36  
 (D) Initial Shut-In 1064  Circ Sub W/C T-Pulled 07:34  
 (E) Second Initial Flow 58  Hourly Standby T-Out 09:50  
 (F) Second Final Flow 91  Mileage 82 RT 124 Comments \_\_\_\_\_  
 (G) Final Shut-In 1045  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1902  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

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

Sub Total 1374  
 Total 1374  
 MP/DST Disc't \_\_\_\_\_

Approved By Steve Murphy Our Representative [Signature]

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# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 49203

Well Name & No. Edwards #1 Test No. #4 Date 5/14/13  
 Company K3B Norton Elevation 3138 KB 3133 GL  
 Address 1209 W Park Grove Dr. Manhattan, KS, 66503  
 Co. Rep / Geol. Steve Murphy Rig H.D. #1  
 Location: Sec. 5 Twp. 15S Rge. 35W Co. Jogon State KS

Interval Tested 4156 4190 Zone Tested KC  
 Anchor Length 34 Drill Pipe Run 4158 Mud Wt. 9.3  
 Top Packer Depth 4151 Drill Collars Run --- Vis 41  
 Bottom Packer Depth 4156 Wt. Pipe Run --- WL 8.0  
 Total Depth 4190 Chlorides 9000 ppm System LCM #1

Blow Description B.O.B. in 3min  
No return  
B.O.B. in 4min  
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>180</u>	<u>Feet of w/cm w/oil scum</u>	<u>Scum</u>	<u>Scum</u>	<u>50</u>	<u>50</u>
<u>360</u>	<u>Feet of SMCW w/oil scum</u>	<u>Scum</u>	<u>Scum</u>	<u>90</u>	<u>10</u>
<u>1350</u>	<u>Feet of Water w/oil scum</u>	<u>Scum</u>	<u>Scum</u>	<u>100</u>	<u>---</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1890 BHT 118° Gravity --- API RW .199 @ 99° F Chlorides 25500 ppm

(A) Initial Hydrostatic 2111  Test 1250 T-On Location 02:40  
 (B) First Initial Flow 109  Jars T-Started 03:00  
 (C) First Final Flow 560  Safety Joint T-Open 06:05  
 (D) Initial Shut-In 1233  Circ Sub N/C T-Pulled 08:05  
 (E) Second Initial Flow 566  Hourly Standby T-Out \_\_\_\_\_  
 (F) Second Final Flow 870  Mileage 82 RT 124 Comments \_\_\_\_\_  
 (G) Final Shut-In 1232  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2070  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_

Initial Open 30  Extra Packer \_\_\_\_\_  
 Initial Shut-In 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow 30  Day Standby \_\_\_\_\_ Total 1374  
 Final Shut-In 30  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1374

Approved By Steve P. Murphy Our Representative [Signature]

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# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 49204

Well Name & No. Edwards #1 Test No. #5 Date 5/16/13  
 Company Kip B Norton Elevation 3138 KB 3133 GL  
 Address 1209 W Park Grove Dr. Manhattan, Ks, 66503  
 Co. Rep / Geo. Steve Murphy Rig L.D. #1  
 Location: Sec. 5 Twp. 15s Rge. 35w Co. Logan State Ks

Interval Tested 4526 4570 Zone Tested Johanson  
 Anchor Length 44 Drill Pipe Run 4538 Mud Wt. 9.3  
 Top Packer Depth 4521 Drill Collars Run --- Vis 55  
 Bottom Packer Depth 4526 Wt. Pipe Run --- WL 8.8  
 Total Depth 4570 Chlorides 6800 ppm System LCM #1  
 Blow Description Weak blow dried in 10 min.  
No return  
— Pull Tool —

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</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 2' BHT 112° Gravity --- API RW --- @ --- °F Chlorides --- ppm

(A) Initial Hydrostatic 2316  Test 1250 T-On Location 03:30  
 (B) First Initial Flow 25  Jars T-Started 03:50  
 (C) First Final Flow 25  Safety Joint T-Open 06:22  
 (D) Initial Shut-In 416  Circ Sub N/C T-Pulled 07:02  
 (E) Second Initial Flow ---  Hourly Standby T-Out 09:00  
 (F) Second Final Flow ---  Mileage 82 RT 124 Comments ---  
 (G) Final Shut-In ---  Sampler ---  
 (H) Final Hydrostatic 2268  Straddle ---  Ruined Shale Packer ---  
 Shale Packer ---  Ruined Packer ---  
 Extra Packer ---  Extra Copies ---  
 Initial Open 10  Extra Recorder --- Sub Total 0  
 Initial Shut-In 30  Day Standby --- Total 1374  
 Final Flow ---  Accessibility --- MP/DST Disc't ---  
 Final Shut-In --- Sub Total 1374

Approved By \_\_\_\_\_ Our Representative [Signature]  
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# STEVEN P. MURPHY, P.G.

*Petroleum Geologist (KS #228)*

Cell 620.639.3030

Fax 785.387.2400

RR#1, Box 69

Otis, Kansas 67565

geomurphy@gbta.net

Scale 1:240 (5"=100') Imperial  
Measured Depth Log

Well Name: Edwards #1

Location: Logan County

License Number: API #15-109-21175-00-00

Region: Kansas

Spud Date: 5/6/13

Drilling Completed: 5/17/13

Surface Coordinates: 2842' FSL & 2130' FEL (Approx SE SW SW NE)  
Section 5-T15S-R35W

Bottom Hole Coordinates: Same as above (Vertical well w/minimal deviation)

Ground Elevation (ft): 3133

K.B. Elevation (ft): 3138

Logged Interval (ft): 3600

To: TD

Total Depth (ft): RTD - 4730'

Formation: Topeka through Mississippian

Type of Drilling Fluid: Chemical (Mudco - Reid Atkins, Mud Engineer)

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

## OPERATOR

Company: K&B Norton Oil & Investments, LLC

Address: 1209 W. Park Grove Dr

Manhattan, KS 66503

## GEOLOGIST

Name: Steven P. Murphy, PG (KS License #228)

Company: Consulting Petroleum Geologist

Address: 3365 CR 390

Otis, KS 67565

## REMARKS

The open-hole logging was performed by Pioneer Energy Services (Hays, KS shop). Logs included Compensated Neutron/Compensated Density, Dual Induction, Sonic & Microlog.

Formation tops and datums from the open-hole logs include the following:

Anhydrite Top - 2448 (+690)

Anhydrite Base - 2468 (+670)

Heebner - 3886 (-748)

Toronto - 3904 (-766)

Lansing - 3934 (-796)

Muncie Creek Sh - 4105 (-967)

Stark Sh - 4203(-1065)

Hushpuckney Sh - 4242 (-1104)

Base KC - 4276 (-1138)

Pawnee 4407 (-1267)

Myrick Station - 4446 (-1308)

Ft. Scott - 4464 (-1326)

Cherokee Sh - 4492 (-1354)

Johnson Zone - 4550 (-1412)

Morrow Sh - 4625 (-1487)

Basal Penn Sandstone - 4666 (-1528)

Mississippian - 4690 (-1552)

## DSTs

Drillstem testing was performed by Trilobite Testing, Inc. (Scott City shop).

### DST #1 3814-3884 (Topeka)

45:45:45:60

IF: Blow built to 9 in, no return

FF: Blow built to 9 in, no return

Recovery: 188' MCW w/free oil  
on top (60% W, 40% M), 62' WCM  
(10% W, 90% M)

IHP: 1832 FHP: 1805

IFP: 29-79 ISIP: 1086

FFP: 86-128 FSIP: 1079

BHT - 108 F

Chlorides - 33,000 ppm

### DST #2 3884-3924 (Toronto)

30:45:30:45

IF: BOB 17 min, no return

FF: BOB 19 min, no return

Recovery: 50' WCM w/Oil Spots

(10% W, 90% M), 124' WCM

(40% W, 60% M), 186' MCW

(90%W, 10% M)

IHP: 1880 FHP: 1820

IFP: 21-98 ISIP: 1120

FFP: 104-179 FSIP: 1114

BHT - 110 F

Chlorides - 36,000 ppm

### DST #3 3970-4004 (LKC "B-D")

45:45:45:45

IF: 7-1/4" blow, no return

FF: 5-1/2" blow, no return

Recovery: 30' WCM w/Oil Spots

(35% W, 65% M), 120' MCW w/Oil

Spots (70% W, 30% M)

IHP: 1966 FHP: 1902

IFP: 21-56 ISIP: 1064

FFP: 58-91 FSIP: 1045

BHT - 113 F

Chlorides - 20,000 ppm

### DST #4 4156-4190 (LKC "I-J")

30:30:30:30

IF: BOB 3 min, no return

FF: BOB 4 min, no return

Recovery: 180' WCM w/scum of oil

(50% W, 50% M), 360' SMCW w/scum of oil (90% W, 10% M),

1350' W w/scum of oil (Show of free oil in tool)

IHP: 2111 FHP: 2070

IFP: 109-560 ISIP: 1233

FFP: 566-870 FSIP: 1232

BHT - 118 F

Chlorides - 25,500 ppm

### DST #5 4526-4570 (Johnson)

10:30

IF: Blow died in 9 min, no return

Recovery: 2' Mud

IHP: 2316 FHP: 2268

IFP: 25-25 ISIP: 416

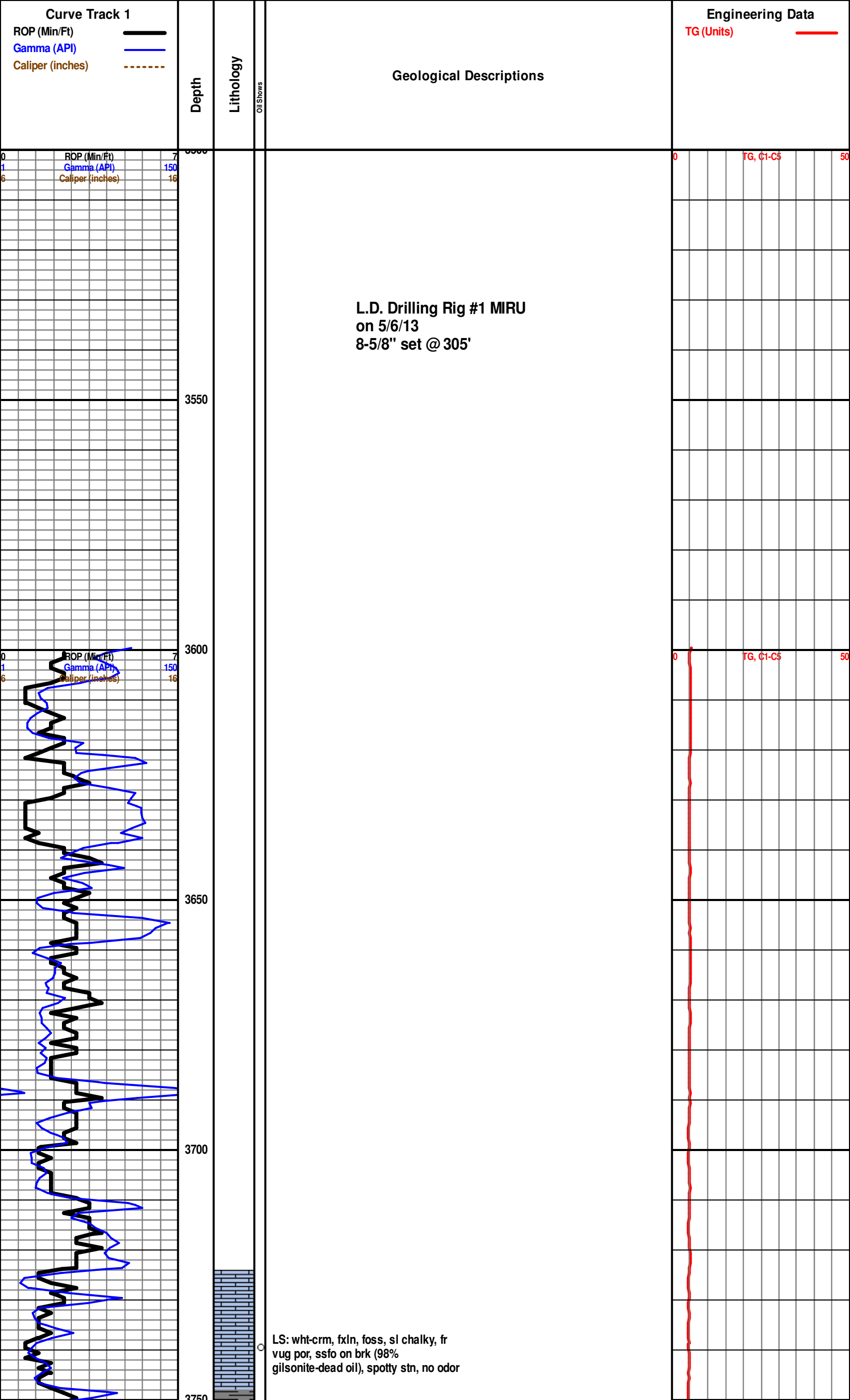
BHT - 112 F

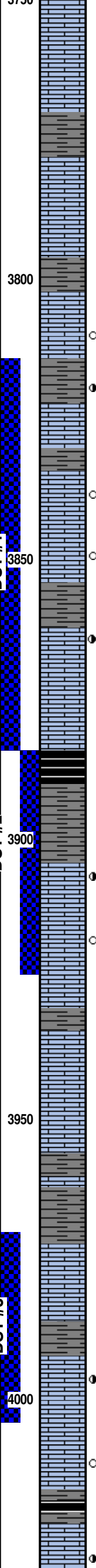
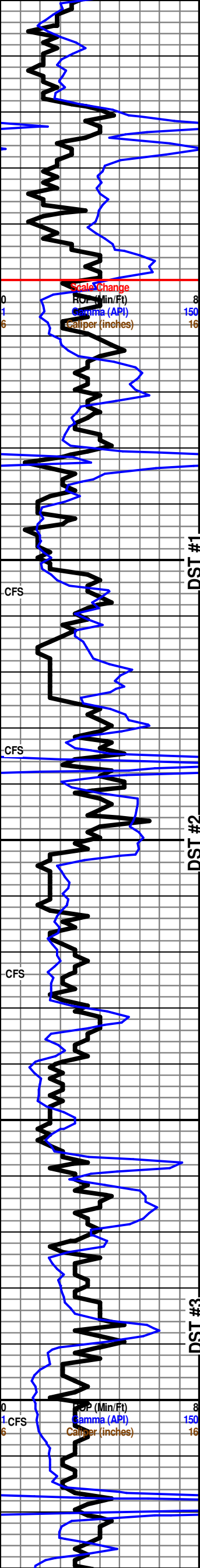
## COMMENTS

Based on the lack of commercial shows of oil, it was recommended that this test be plugged.

Sincerely,

Steven P. Murphy  
Consulting Petroleum Geologist





LS: as above w/no show

SH: gry-blk-grn-red

LS: crm-gry, vfxln, foss in pt, mottled, NS

LS: crm-tan, vfxln, dense, chalky, NS

LS: wht-crm-tan, fxln, oolitic, pr inter-ool por, ssfo, spotty stn, abund gilsonite-dead oil, no odor

LS: wht-crm, fxln, sl foss, oolitic in pt, fr-gd ppt & vug por, fsfo, spotty stn w/some gilsonite-dead oil, sl odor

SH: gry-grn-red

LS: crm-tan, fxln, foss, ool in pt, pr-fr ppt por, ssfo, spotty stn w/gil-dead oil stn, no odor

LS: crm-tan, fxln, foss, oolitic in pt, fr ppt & vug por, ssfo, spotty stn w/gils-dead oil stn, no odor

LS: crm-tan, fxln, foss, sl oolitic, fr-gd ppt & vug por, fsfo, even sat stn, sl odor

LS: crm-tan-gry, vfxln, dense, NS

**HEEBNER 3885 (-747)**  
 SH: blk, carb

SH: gry-grn-red-blk

**TORONTO 3902 (-764)**  
 LS: wht-crm, fxln, sl foss, sl chalky, fr-gd ppt & vug por, fsfo, spotty-even sat stn, fr odor

LS: wht-crm-gry, f-vfxln, mostly dense, sl foss, chalky, rare pr ppt por, vssfo, spotty stn, sl odor (NS in 50 min sample)

SH: gry-grn-red

**LANSING 3931 (-793)**  
 LS: crm-tan-gry, vfxln, dense, sl foss, sl chalky, minor chert, oolitic in pt, NS

LS: as above

SH: red-grn-gry

LS: wht-crm-gry, fxln, fr-gd ppt & vug por, fsfo, spotty to even stn, fr odor

SH: gry-grn-red

LS: wht-crm-tan, fxln, sl chalky, fr-gd ppt & vug por, fsfo, spotty-even stn, str odor

LS: crm-tan, f-vfxln, chalky, pr inxln pot, ssfo, spotty stn, sl odor

SH: blk-grn-red

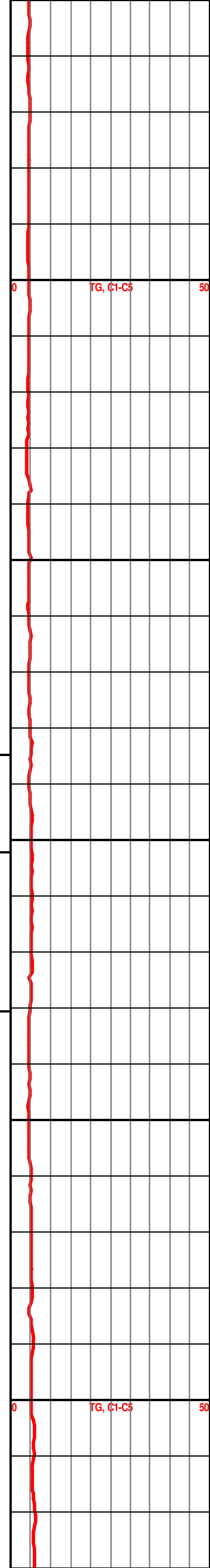
LS: wht-tan, fxln, ool/oolic, pr-fr vug por, fsfo (hvy blk oil), even sat stn, fr

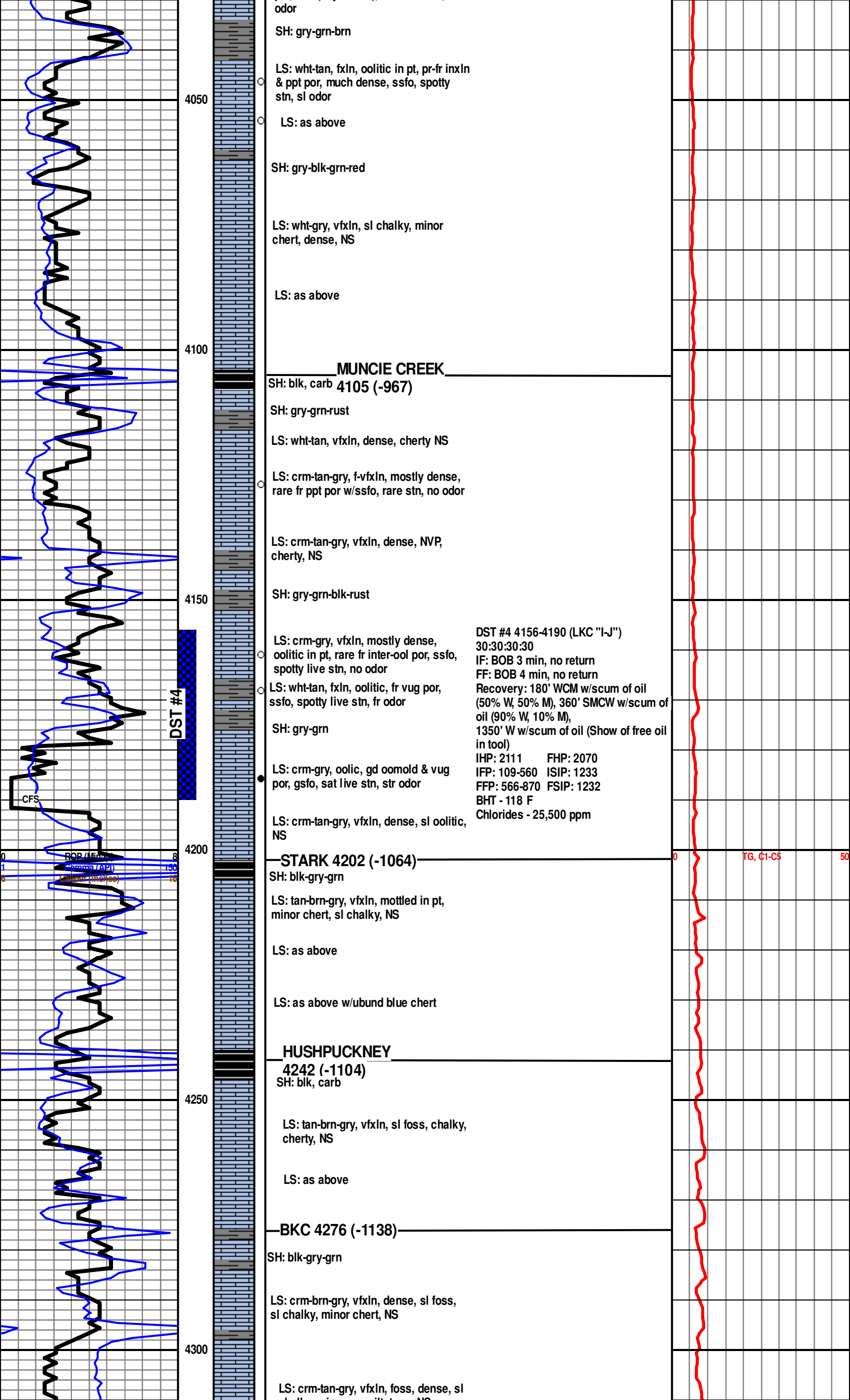
**DST #1 3814-3884 (Topeka)**  
 45:45:45:60  
 IF: Blow built to 9 in, no return  
 FF: Blow built to 9 in, no return  
 Recovery: 188' MCW w/free oil on top (60% W, 40% M), 62' WCM (10% W, 90% M)  
 IHP: 1832 FHP: 1805  
 IFP: 29-79 ISIP: 1086  
 FFP: 86-128 FSIP: 1079  
 BHT - 108 F  
 Chlorides - 33,000 ppm

Strap @ 3884' - 0.63' long  
 Dev Survey - 1 degree

**DST #2 3884-3924 (Toronto)**  
 30:45:30:45  
 IF: BOB 17 min, no return  
 FF: BOB 19 min, no return  
 Recovery: 50' WCM w/Oil Spots (10% W, 90% M), 124' WCM (40% W, 60% M), 186' MCW (90%W, 10% M)  
 IHP: 1880 FHP: 1820  
 IFP: 21-98 ISIP: 1120  
 FFP: 104-179 FSIP: 1114  
 BHT - 110 F  
 Chlorides - 36,000 ppm

**DST #3 3970-4004 (LKC "B-D")**  
 45:45:45:45  
 IF: 7-1/4" blow, no return  
 FF: 5-1/2" blow, no return  
 Recovery: 30' WCM w/Oil Spots (35% W, 65% M), 120' MCW w/Oil Spots (70% W, 30% M)  
 IHP: 1966 FHP: 1902  
 IFP: 21-56 ISIP: 1064  
 FFP: 58-91 FSIP: 1045  
 BHT - 113 F  
 Chlorides - 20,000 ppm





4050  
4100  
4150  
4200  
4250  
4300

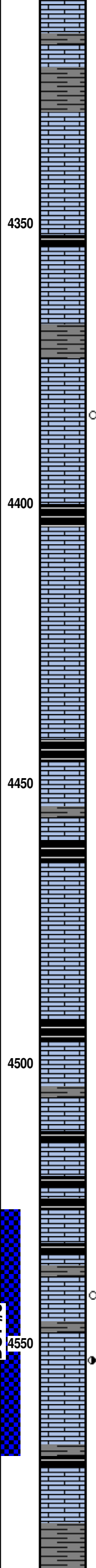
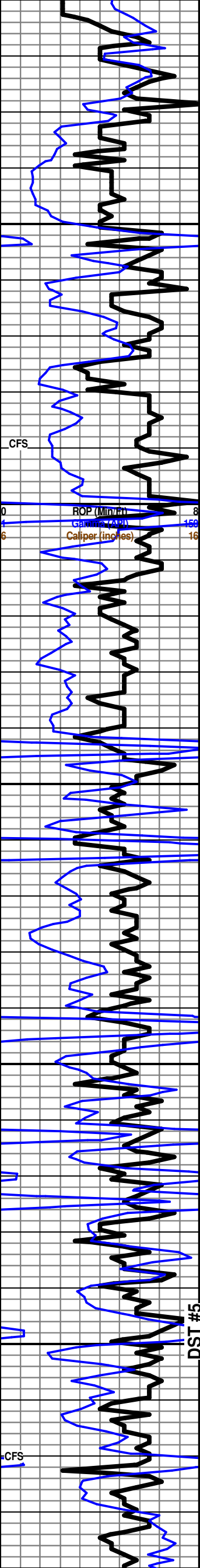
odor  
SH: gry-grn-brn  
LS: wht-tan, fxl, oolitic in pt, pr-fr inxl & ppt por, much dense, ssfo, spotty stn, sl odor  
LS: as above  
SH: gry-blk-grn-red  
LS: wht-gry, vfxln, sl chalky, minor chert, dense, NS  
LS: as above  
**MUNCIE CREEK**  
SH: blk, carb 4105 (-967)  
SH: gry-grn-rust  
LS: wht-tan, vfxln, dense, cherty NS  
LS: crm-tan-gry, f-vfxln, mostly dense, rare fr ppt por w/ssfo, rare stn, no odor  
LS: crm-tan-gry, vfxln, dense, NVP, cherty, NS  
SH: gry-grn-blk-rust  
LS: crm-gry, vfxln, mostly dense, oolitic in pt, rare fr inter-ool por, ssfo, spotty live stn, no odor  
LS: wht-tan, fxl, oolitic, fr vug por, ssfo, spotty live stn, fr odor  
SH: gry-grn  
LS: crm-gry, oolic, gd oomold & vug por, gsfo, sat live stn, str odor  
LS: crm-tan-gry, vfxln, dense, sl oolitic, NS  
**STARK 4202 (-1064)**  
SH: blk-gry-grn  
LS: tan-brn-gry, vfxln, mottled in pt, minor chert, sl chalky, NS  
LS: as above  
LS: as above w/ubund blue chert  
**HUSHPUCKNEY**  
4242 (-1104)  
SH: blk, carb  
LS: tan-brn-gry, vfxln, sl foss, chalky, cherty, NS  
LS: as above  
**BKC 4276 (-1138)**  
SH: blk-gry-grn  
LS: crm-brn-gry, vfxln, dense, sl foss, sl chalky, minor chert, NS  
LS: crm-tan-gry, vfxln, foss, dense, sl

**DST #4 4156-4190 (LKC "I-J")**  
30:30:30:30  
IF: BOB 3 min, no return  
FF: BOB 4 min, no return  
Recovery: 180' WCM w/scum of oil (50% W, 50% M), 360' SMCW w/scum of oil (90% W, 10% M), 1350' W w/scum of oil (Show of free oil in tool)  
IHP: 2111 FHP: 2070  
IFP: 109-560 ISIP: 1233  
FFP: 566-870 FSIP: 1232  
BHT - 118 F  
Chlorides - 25,500 ppm

DST #4

CFS  
ROP (Min) 8  
Gamma (API) 130  
Caliper (Inches) 10

0 100 200 300 400 500  
TG, C1-C5 50



chalky, minor gry siltstone, NS

SH: red-gry-grn-blk (wash red)

**ALTAMONT 4332 (-1194)**

LS: crm-tan-gry, vfxln, dense, NS

LS: as above

SH: blk-gry-grn

LS: crm-tan, vfxln, dense, sl chalky, NS

SH: red-blk-grn-brn

LS: wht-tan, vfxln, dense, sl foss, chalky, NS

LS: wht-tan, vfxln, dense, vssfo on brk, tr stn, no odor

LS: crm-tan, vfxln, dense, sl chalky, NS

SH: blk, carb

**PAWNEE 4404 (-1266)**

LS: tan-brn, vfxln, dense, pelletal, NS

LS: as above w/abund chert

LS & Cht: as above

SH: blk, carb

**MYRICK STA 4446 (-1308)**

LS: tan-brn-gry, vfxln, dense, pelletal in pt, NS

SH: blk, carb

**FT SCOTT 4462 (-1324)**

LS: crm-brn, vfxln, sl foss, dense, cherty, NS

LS: crm-brn-gry, vfxln, sl foss, dense, abund chert, NS

**CHEROKEE 4490 (-1352)**

SH: blk, carb

LS: crm-brn-gry, vfxln, dense, NS

LS & SH: as above

LS: crm-brn, vfxln, dense, NS

SH: blk, carb

LS: crm-brn, vfxln, sl foss, dense, NS

**JOHNSON 4520 (-1382)**

SH: blk, carb

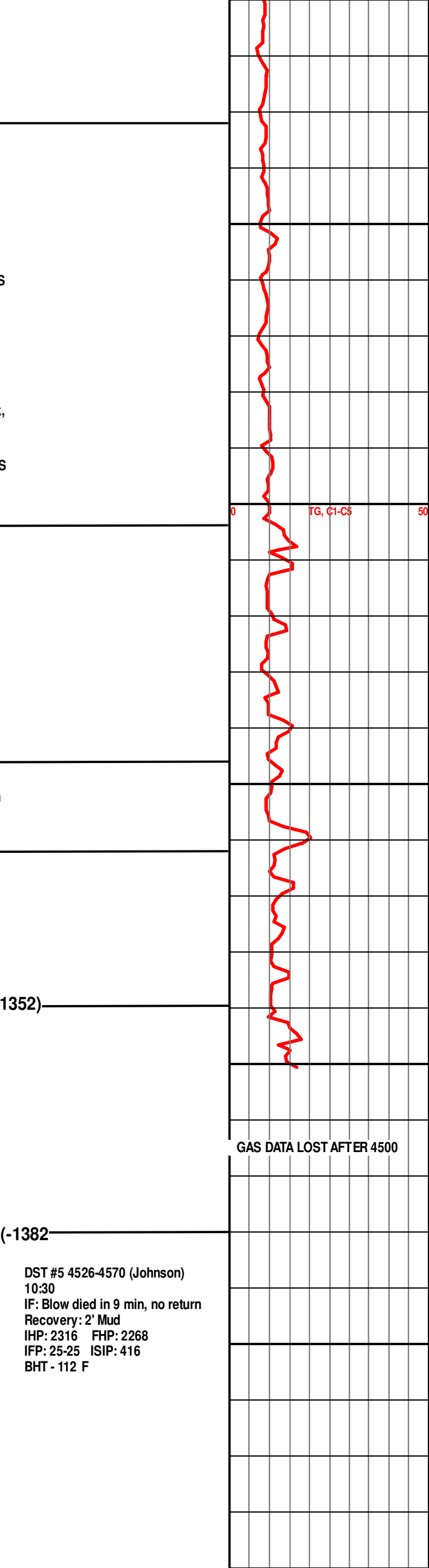
LS: crm-brn, vfxln, dense, rare pr ppt por, vssfo, sl stn, sl odor

LS: crm-brn, fxln, much dense, some w/fr-gd vug & ppt por, fsfo, spotty stn, str odor

LS: tan-brn, vfxln, dense, NVP, abund blk chert, NS

SH: grn-blk-gry-mar

LS: wht-tan-brn, vfxln, dense, NVP, cherty, NS



GAS DATA LOST AFTER 4500

DST #5 4526-4570 (Johnson)  
 10:30  
 IF: Blow died in 9 min, no return  
 Recovery: 2' Mud  
 IHP: 2316 FHP: 2268  
 IFP: 25-25 ISIP: 416  
 BHT - 112 F



Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

June 25, 2013

Ken Norton  
K & B Norton Oil & Investments, LLC  
1209 W. PARK GROVE DR.  
MANHATTAN, KS 66503-2469

Re: ACO1  
API 15-109-21175-00-00  
Edwards 1  
NE/4 Sec.05-15S-35W  
Logan County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Ken Norton