

Confidentiality Requested:

Yes  No

# KANSAS CORPORATION COMMISSION 1263596

## OIL & GAS CONSERVATION DIVISION



Form ACO-1

November 2016

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
- Gas       DH       EOR
- OG       GSW
- 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 EOR     Conv. to SWD
- Plug Back     Liner       Conv. to GSW     Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion    Permit #: \_\_\_\_\_
- SWD              Permit #: \_\_\_\_\_
- EOR              Permit #: \_\_\_\_\_
- GSW              Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No.: \_\_\_\_\_

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     Drill Stem Tests Received
- Geologist Report / Mud Logs Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1263596

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			
Geologist Report / Mud Logs	<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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

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

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:
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Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	CROUCH 1-20
Doc ID	1263596

All Electric Logs Run

DEN-NEUT
INDUCTION
MICRO
SONIC



# 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. 1001

Date	Sec.	Twp.	Range	County	State	On Location	Finish
5-18-15	20	15	35	Logan	KS		7:30 PM
Lease <u>Crouch</u>				Well No. # <u>1</u>		Owner <u>425</u>	
Contractor <u>Discovery # 4</u>				To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Type Job <u>Surface</u>				Charge To <u>Sam Gary Jr &amp; Associates</u>			
Hole Size <u>12 1/4</u>		T.D. <u>220'</u>		Street			
Csg. <u>8 5/8</u>		Depth <u>220'</u>		City			
Tbg. Size		Depth		State			
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.			
Cement Left in Csg. <u>20'</u>		Shoe Joint		Cement Amount Ordered <u>150 ccm 3 1/2 cc 2 1/2 Gel</u>			
Meas Line		Displace <u>13 bbl</u>		Common <u>150</u>			
<b>EQUIPMENT</b>				<b>FLOAT EQUIPMENT</b>			
Pumptrk <u>20</u> No. <u>Cement</u>		Helper <u>David</u>		Poz. Mix			
Bulktrk <u>14</u> No. <u>Driver</u>		Driver <u>Billy</u>		Gel. <u>3</u>			
Bulktrk <u>Pu</u> No. <u>Driver</u>		Driver <u>Brett</u>		Calcium <u>5</u>			
<b>JOB SERVICES &amp; REMARKS</b>				Hulls			
Remarks:				Salt			
Rat Hole				Flowseal			
Mouse Hole				Kol-Seal			
Centralizers				Mud CLR 48			
Baskets				CFL-117 or CD110 CAF 38			
DV or Port Collar				Sand			
<u>Cement</u>				Handling <u>138</u>			
<u>Circulated!!</u>				Mileage			
<u>Quality Oilwell Cementing</u>				Guide Shoe			
				Centralizer			
				Baskets			
				AFU Inserts			
				Float Shoe			
				Latch Down			
				Pumptrk Charge <u>Surface</u>			
				Mileage <u>35</u>			
X Signature				Tax			
				Discount			
				Total Charge			

# 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. 1454

Date	6-3-15	Sec.	20	Twp.	15	Range	35	County	Logan	State	KS	On Location		Finish	5:15PM
Location								Russell Springs E 270R 11 1/2S 3W 1/2S							
Lease	Couch			Well No. 1-20				Owner							
Contractor	Discovery #4			To Quality Oilwell Cementing, Inc.											
Type Job	Rotary Plug			You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.											
Hole Size	7 7/8			T.D. 4820				Charge To Sam Cary Jr & Associates							
Csg.				Depth				Street							
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 255 <sup>60/40</sup> 4 1/2 GR 1/4 #40							
Meas Line				Displace											
<b>EQUIPMENT</b>								Common 153							
Pumptrk	20	No.	Cementer	Craig				Poz. Mix 102							
			Helper												
Bulktrk		No.	Driver	DICK				Gel. 9							
			Driver												
Bulktrk	15	No.	Driver	BILLY				Calcium							
			Driver												
<b>JOB SERVICES &amp; REMARKS</b>								Hulls							
Remarks:								Salt							
Rat Hole 305K								Flowseal 56 FT							
Mouse Hole 155K								Kol-Seal							
Centralizers								Mud CLR 48							
Baskets								CFL-117 or CD110 CAF 38							
D/V or Port Collar								Sand							
1st 2540 505K								Handling 264							
2nd 1387 1005K								Mileage							
3rd 270 505K								<b>FLOAT EQUIPMENT</b>							
4th 40 105K								Guide Shoe							
								Centralizer 8 5/8 Dry Hole Plug							
								Baskets							
								AFU Inserts							
								Float Shoe							
								Latch Down							
								Pumptrk Charge plug							
								Mileage 35							
								Tax							
								Discount							
								Total Charge							
X Signature Mike [Signature]															



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary Jr & Associates, Inc

**20=15s=35w County Logan**

1515 WYNKOOP, STE 700  
Denver Co, 80202

**Crouch 1-20**

Job Ticket: 58663

**DST#: 1**

ATTN: Clayton Camozzi

Test Start: 2015.06.01 @ 00:44:00

## GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 03:32:30

Time Test Ended: 07:57:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Justin Harris

Unit No: 71

**Interval: 4408.00 ft (KB) To 4458.00 ft (KB) (TVD)**

Reference Elevations: 3243.00 ft (KB)

Total Depth: 4458.00 ft (KB) (TVD)

3237.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 6.00 ft

**Serial #: 8674 Inside**

Press@RunDepth: 25.05 psig @ 4409.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.06.01

End Date:

2015.06.01

Last Calib.:

2015.06.01

Start Time: 00:44:05

End Time:

07:57:14

Time On Btm:

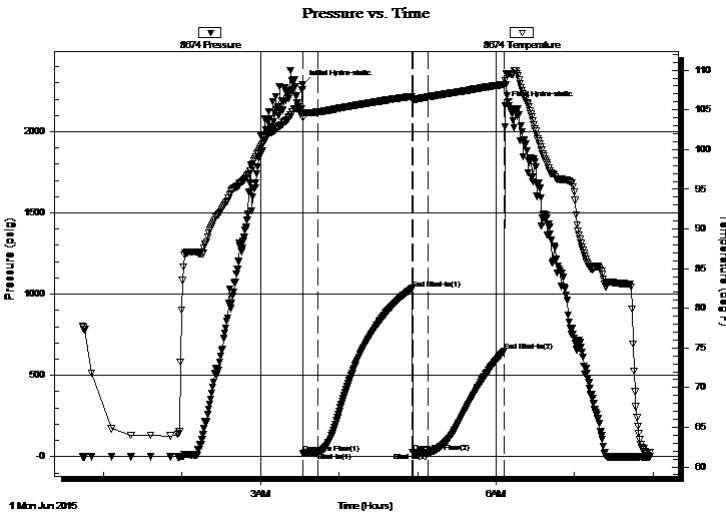
2015.06.01 @ 03:32:00

Time Off Btm:

2015.06.01 @ 06:06:45

TEST COMMENT: 10: Weak surface blow .  
75: No Return.  
10: No Blow .  
60: No Return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2288.07	105.16	Initial Hydro-static
1	22.62	104.05	Open To Flow (1)
12	24.21	104.74	Shut-In(1)
84	1034.59	106.72	End Shut-In(1)
85	25.74	106.20	Open To Flow (2)
97	25.05	106.64	Shut-In(2)
155	650.05	108.20	End Shut-In(2)
155	2161.81	108.66	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud oil spots	0.02

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary Jr & Associates, Inc

**20=15s=35w County Logan**

1515 WYNKOOP, STE 700  
Denver Co, 80202

**Crouch 1-20**

Job Ticket: 58663

**DST#: 1**

ATTN: Clayton Camozzi

Test Start: 2015.06.01 @ 00:44:00

## GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 03:32:30

Time Test Ended: 07:57:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Justin Harris

Unit No: 71

**Interval: 4408.00 ft (KB) To 4458.00 ft (KB) (TVD)**

Total Depth: 4458.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition:

Reference Elevations: 3243.00 ft (KB)

3237.00 ft (CF)

KB to GR/CF: 6.00 ft

## Serial #: 8672 Fluid

Press@RunDepth: psig @ 4376.00 ft (KB)

Start Date: 2015.06.01

End Date:

2015.06.01

Start Time: 00:44:05

End Time:

08:04:44

Capacity: 8000.00 psig

Last Calib.: 2015.06.01

Time On Btm:

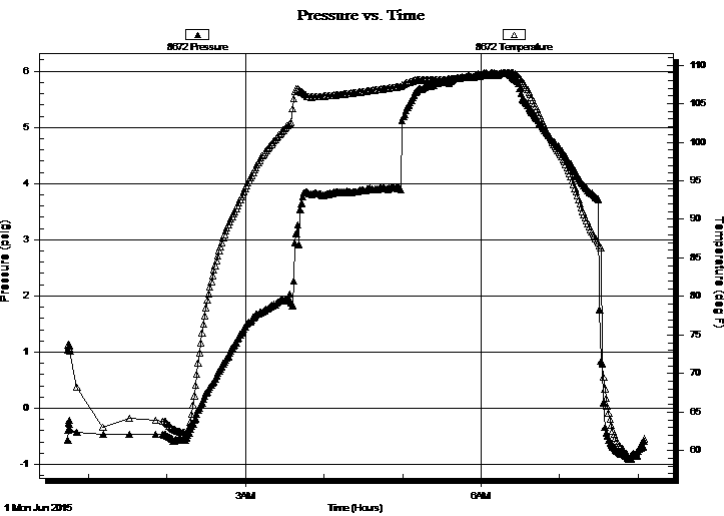
Time Off Btm:

TEST COMMENT: 10: Weak surface blow .

75: No Return.

10: No Blow .

60: No Return.



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud oil spots	0.02

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Samuel Gary Jr & Associates, Inc

**20=15s=35w** County Logan

1515 WYNKOOP, STE 700  
Denver Co, 80202

**Crouch 1-20**

Job Ticket: 58663

**DST#: 1**

ATTN: Clayton Camozzi

Test Start: 2015.06.01 @ 00:44:00

### 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: 9.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud oil spots	0.025

Total Length: 5.00 ft      Total Volume:      bbl

Num Fluid Samples: 0

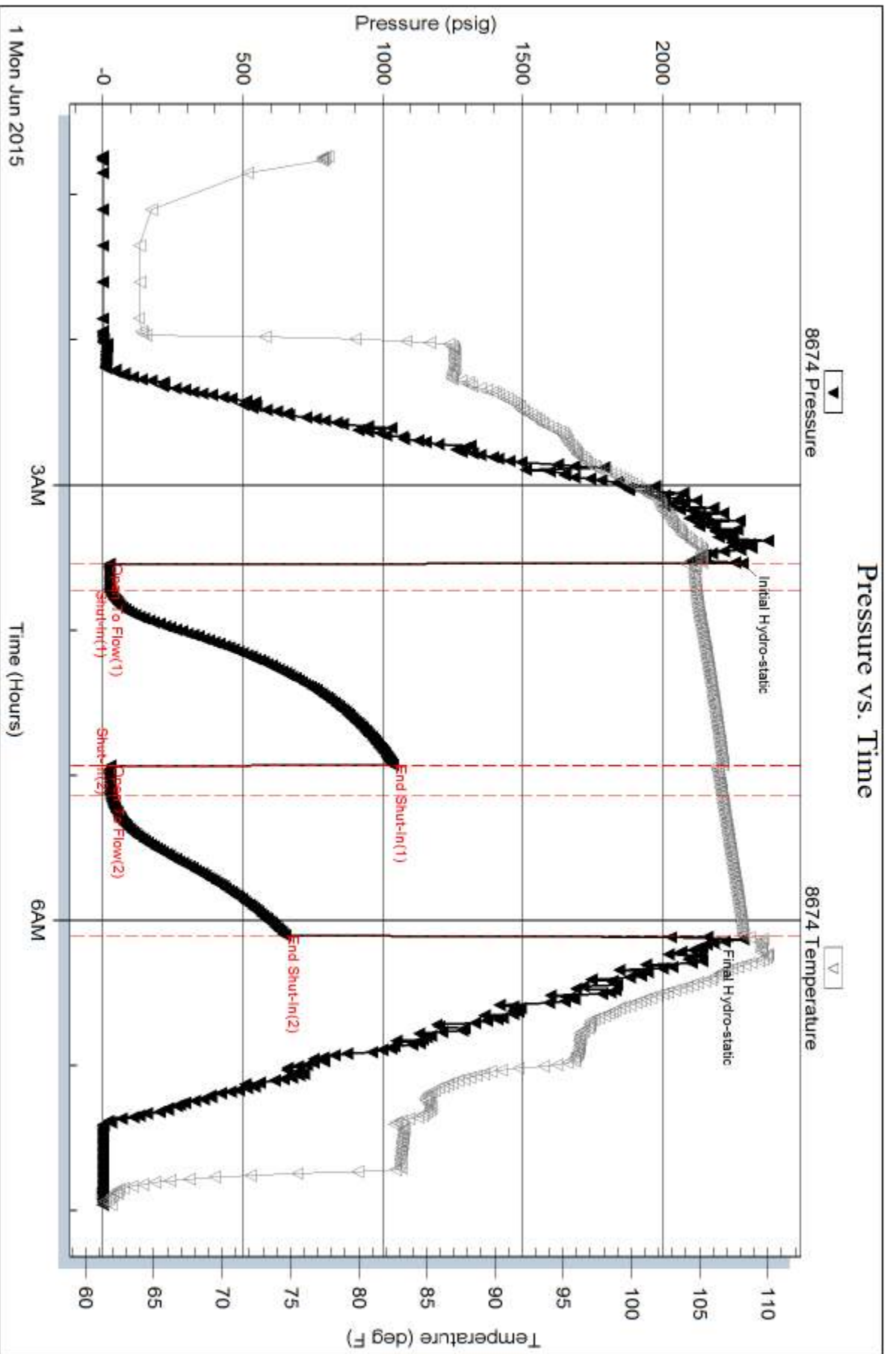
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



Serial #: 8672

Fluid

Samuel Gary Jr & Associates, Inc

Couch 1-20

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 59663

Printed: 2015.06.01 @ 08:36:44



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary Jr & Associates, Inc

**20=15s=35w Logan, KS**

1515 WYNKOOP, STE 700  
Denver CO 80202

**Crouch 1-20**

Job Ticket: 58664

**DST#: 2**

ATTN: Clayton Camozzi

Test Start: 2015.06.03 @ 01:55:00

## GENERAL INFORMATION:

Formation: **"J"**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 03:30:00

Time Test Ended: 09:28:30

Test Type: Conventional Straddle (Reset)

Tester: Justin Harris

Unit No: 71

**Interval: 4237.00 ft (KB) To 4274.00 ft (KB) (TVD)**

Reference Elevations: 3243.00 ft (KB)

Total Depth: 4820.00 ft (KB) (TVD)

3237.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 6.00 ft

**Serial #: 8674 Inside**

Press@RunDepth: 49.32 psig @ 4238.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.06.03

End Date:

2015.06.03

Last Calib.:

2015.06.03

Start Time: 01:55:05

End Time:

09:28:29

Time On Btm:

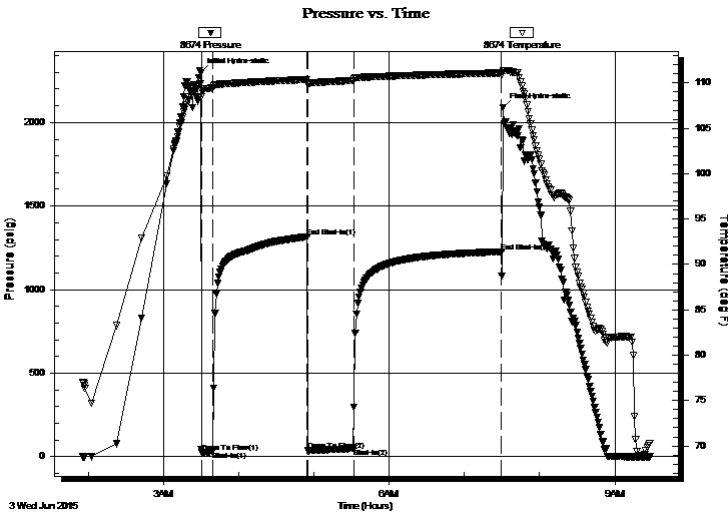
2015.06.03 @ 03:29:15

Time Off Btm:

2015.06.03 @ 07:30:45

**TEST COMMENT:** 10: Weak surface blow build to 1".  
75: No Return.  
35: Weak surface blow build to 1/2".  
120: No Return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2296.64	109.90	Initial Hydro-static
1	24.03	109.15	Open To Flow (1)
10	31.93	109.43	Shut-In(1)
85	1316.39	110.38	End Shut-In(1)
86	35.91	109.97	Open To Flow (2)
122	49.32	110.26	Shut-In(2)
241	1226.81	111.11	End Shut-In(2)
242	2087.99	111.38	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
31.00	MCW 40M 60W	0.15
37.00	MCW 40M 60W	0.51

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary Jr & Associates, Inc

**20=15s=35w Logan, KS**

1515 WYNKOOP, STE 700  
Denver CO 80202

**Crouch 1-20**

Job Ticket: 58664

**DST#: 2**

ATTN: Clayton Camozzi

Test Start: 2015.06.03 @ 01:55:00

## GENERAL INFORMATION:

Formation: **"J"**  
 Deviated: No Whipstock: 0.00 ft (KB)  
 Time Tool Opened: 03:30:00  
 Time Test Ended: 09:28:30  
 Interval: **4237.00 ft (KB) To 4274.00 ft (KB) (TVD)**  
 Total Depth: 4820.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Straddle (Reset)  
 Tester: Justin Harris  
 Unit No: 71  
 Reference Elevations: 3243.00 ft (KB)  
 3237.00 ft (CF)  
 KB to GR/CF: 6.00 ft

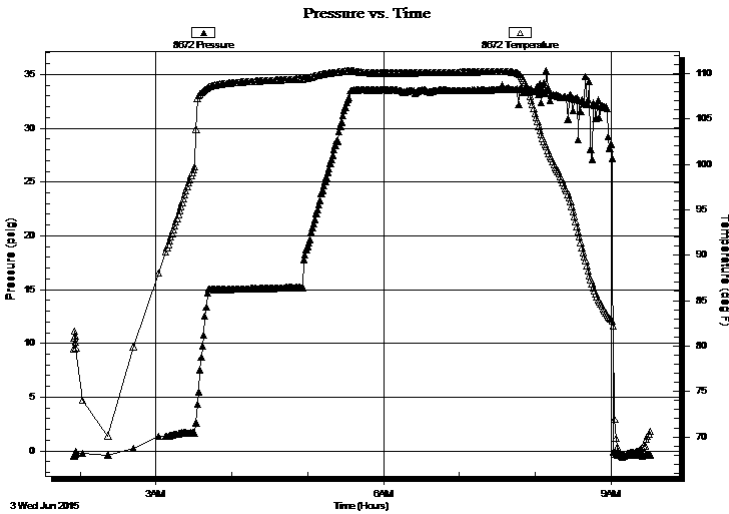
## Serial #: 8672

## Fluid

Press@RunDepth: psig @ 4209.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2015.06.03 End Date: 2015.06.03 Last Calib.: 2015.06.03  
 Start Time: 01:55:05 End Time: 09:31:29 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 10: Weak surface blow build to 1".  
 75: No Return.  
 35: Weak surface blow build to 1/2".  
 120: No Return.

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
31.00	MCW 40M 60W	0.15
37.00	MCW 40M 60W	0.51

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC**

## DRILL STEM TEST REPORT

Samuel Gary Jr & Associaes.Inc

**20=15s=35w Logan,KS**

1515 WYNKOOP, STE 700  
Denver CO 80202

**Crouch 1-20**

Job Ticket: 58664

**DST#: 2**

ATTN: Clayton Camozzi

Test Start: 2015.06.03 @ 01:55:00

### GENERAL INFORMATION:

Formation: **"J"**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 03:30:00

Time Test Ended: 09:28:30

Test Type: Conventional Straddle (Reset)

Tester: Justin Harris

Unit No: 71

**Interval: 4237.00 ft (KB) To 4274.00 ft (KB) (TVD)**

Total Depth: 4820.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3243.00 ft (KB)

3237.00 ft (CF)

KB to GR/CF: 6.00 ft

**Serial #: 8353**

**Below (Straddle)**

Press@RunDepth: psig @ 4275.00 ft (KB)

Start Date: 2015.06.03

End Date:

2015.06.03

Start Time: 01:55:15

End Time:

09:29:45

Capacity: 8000.00 psig

Last Calib.:

2015.06.03

Time On Btm:

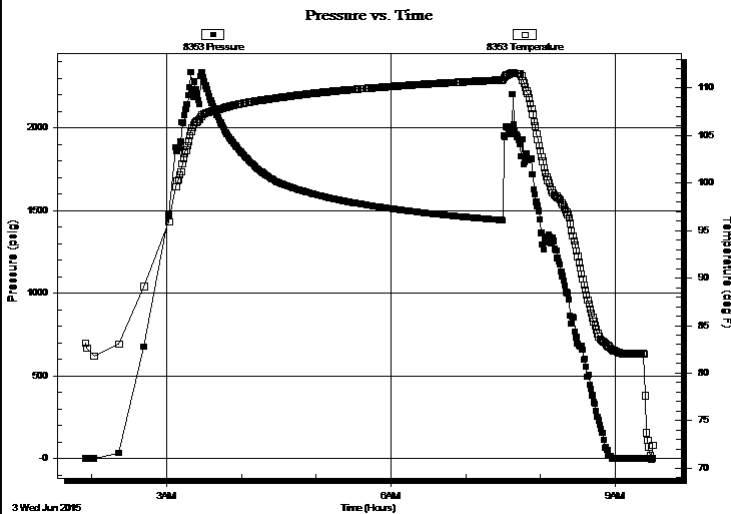
Time Off Btm:

TEST COMMENT: 10: Weak surface blow build to 1".

75: No Return.

35: Weak surface blow build to 1/2".

120: No Return.



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
31.00	MCW 40M 60W	0.15
37.00	MCW 40M 60W	0.51

### Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Samuel Gary Jr & Associaes.Inc

**20=15s=35w Logan,KS**

1515 WYNKOOP, STE 700  
Denver CO 80202

**Crouch 1-20**

Job Ticket: 58664

**DST#: 2**

ATTN: Clayton Camozzi

Test Start: 2015.06.03 @ 01:55:00

## 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:

23000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
31.00	MCW 40M 60W	0.152
37.00	MCW 40M 60W	0.514

Total Length: 68.00 ft      Total Volume: 0.666 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API RW .32 @ 71 F = 23000 Chlorides

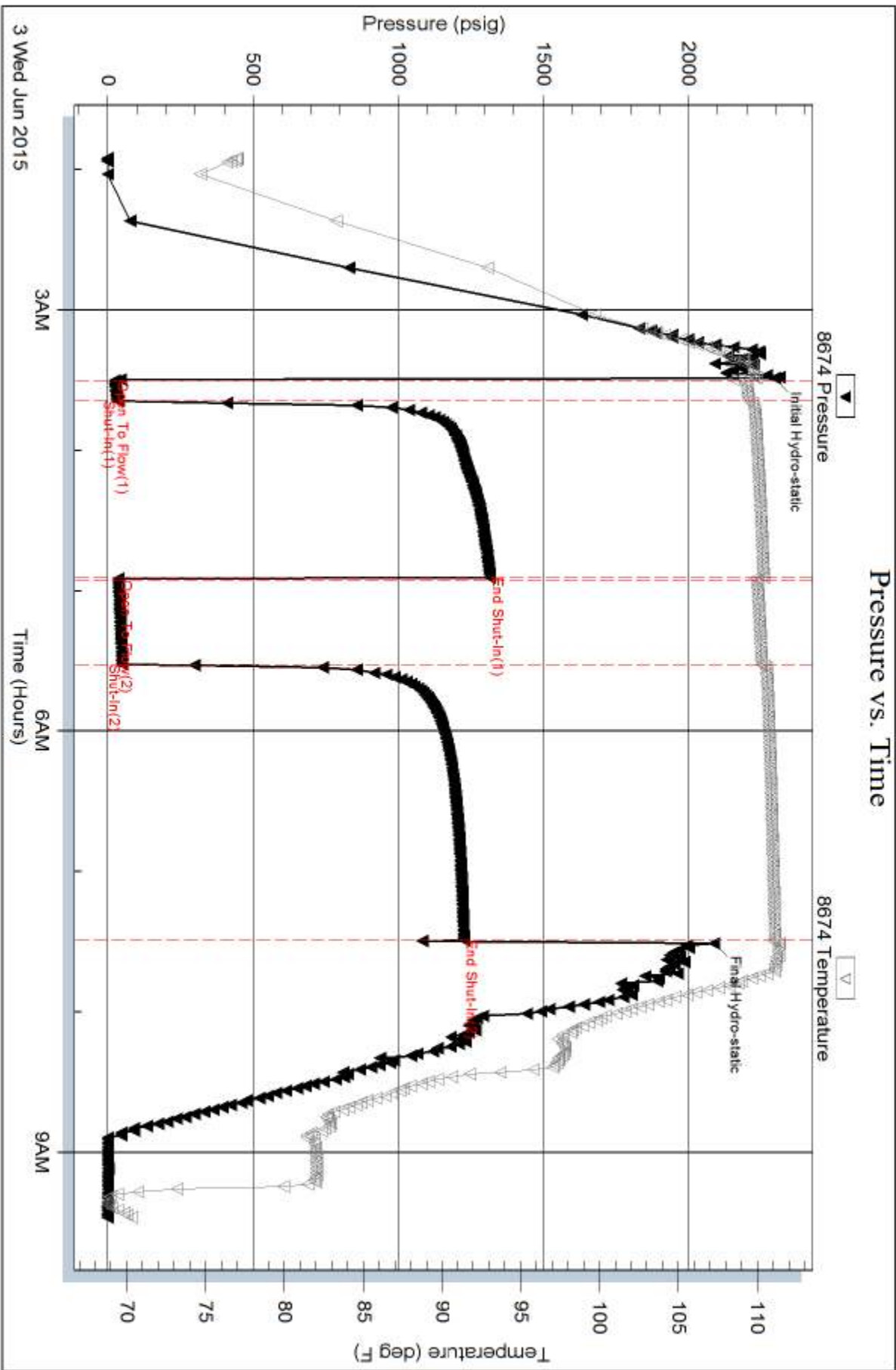
Serial #: 8674

Inside

Samuel Gary Jr & Associates, Inc

Couch 1-20

DST Test Number: 2





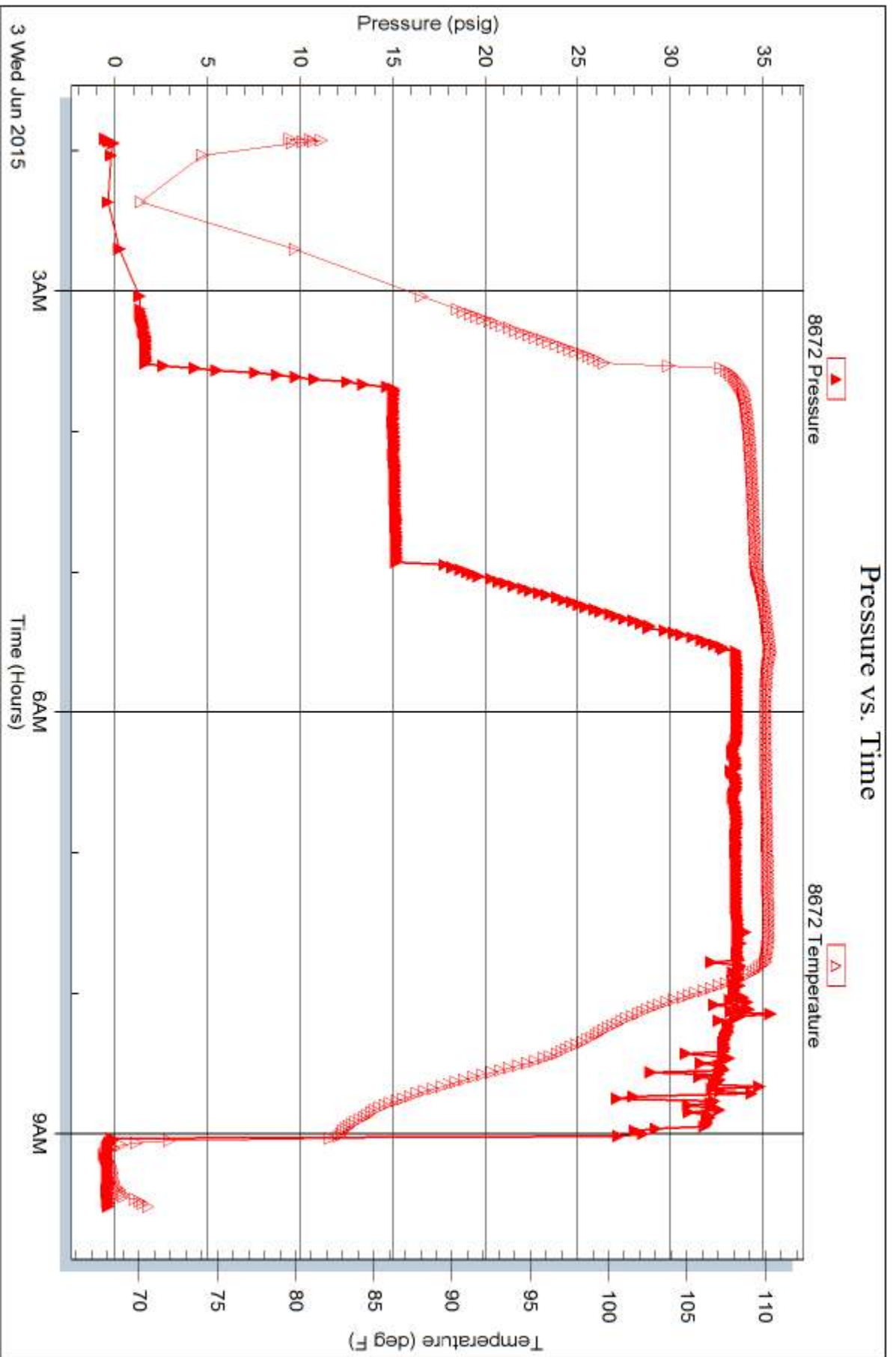
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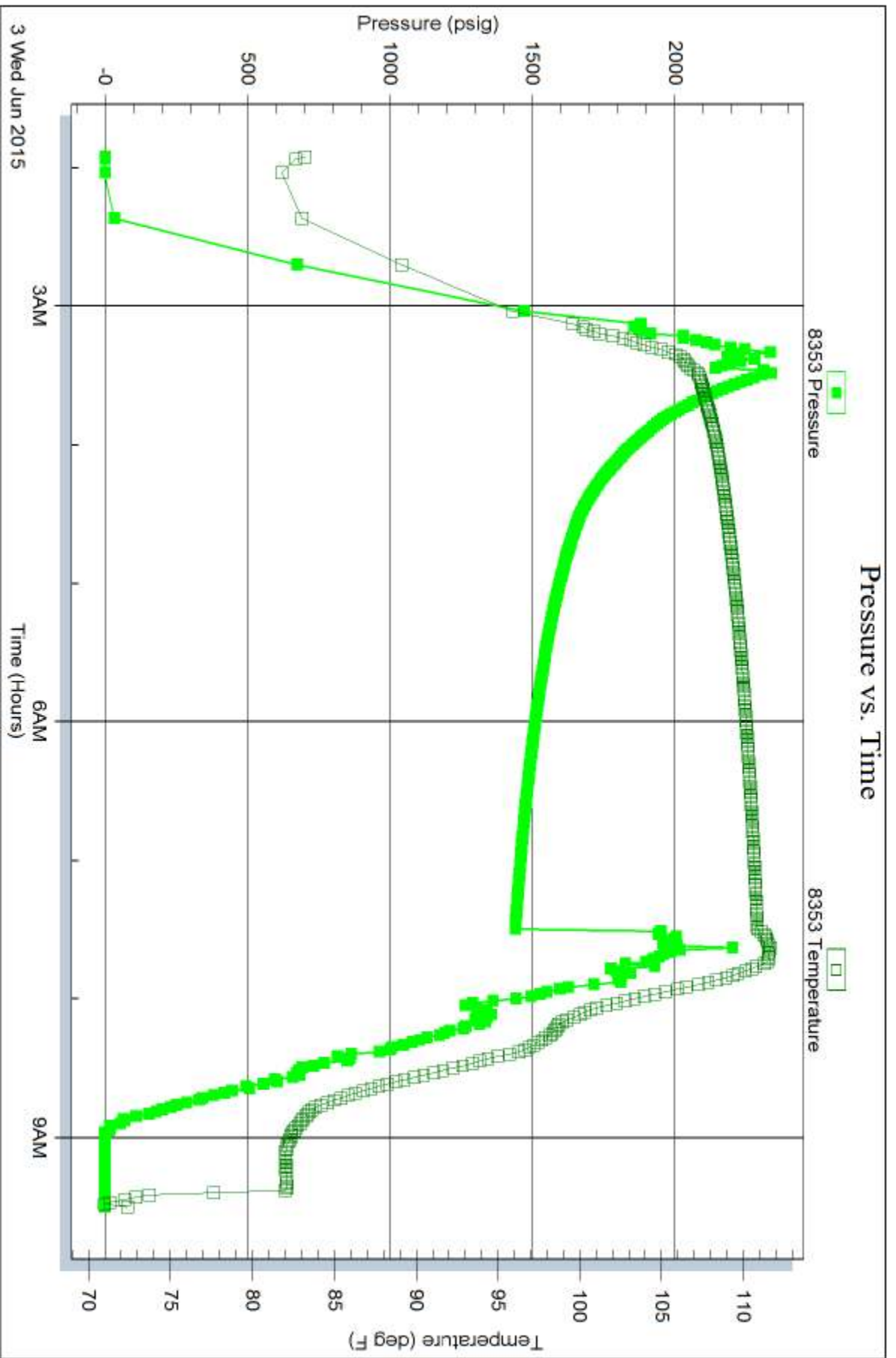
Fluid

Samuel Gary Jr & Associates, Inc

Crouch 1-20

DST Test Number: 2







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

Well Name: SGA Crouch 1-20  
Well Id:  
Location: Sec. 20-15S-35W Logan County, KS  
License Number: 15-109-21409-0000  
Spud Date: May 19, 2015  
Surface Coordinates: 2200' FSL 1050' FEL  
Region: Wildcat  
Drilling Completed: June 2, 2015

Bottom Hole  
Coordinates:  
Ground Elevation (ft): 3235' K.B. Elevation (ft): 3243'  
Logged Interval (ft): 3800' To: 4820' Total Depth (ft): 4820'  
Formation: Lansing / Kansas City  
Type of Drilling Fluid: Natural Chemical

Printed by WellSight Log Manager from WellSight Systems 1-800-447-1534 www.WellSight.com

**OPERATOR**

Company: Samuel Gary Jr. & Assoc.  
Address: 1515 Wynkoop, Ste. #700  
Denver, CO 80202  
Geo: Clayton Camozzi

**GEOLOGIST**

Name: Jeff Kamps  
Company: EARTH TECH OGL, Inc.  
Address: PO Box 683  
Hooker, Okla 73945  
1-580-652-3924  
8918 5Th St  
Great Bend, Ks. 67530  
1-888-543-8378



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Samuel Gary Jr & Associates, Inc

20=15s=35w County Logan

1515 WYNKOOP, STE 700  
Denver Co, 80202

**Crouch 1-20**

Job Ticket: 58663

**DST#: 1**

ATTN: Clayton Camozzi

Test Start: 2015.06.01 @ 00:44:00

### GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 03:32:30

Time Test Ended: 07:57:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Justin Harris

Unit No: 71

Interval: **4408.00 ft (KB) To 4458.00 ft (KB) (TVD)**

Reference Elevations: 3243.00 ft (KB)

Total Depth: 4458.00 ft (KB) (TVD)

3237.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 6.00 ft

**Serial #: 8674**

**Inside**

Press@RunDepth: 25.05 psig @ 4409.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.06.01 End Date: 2015.06.01

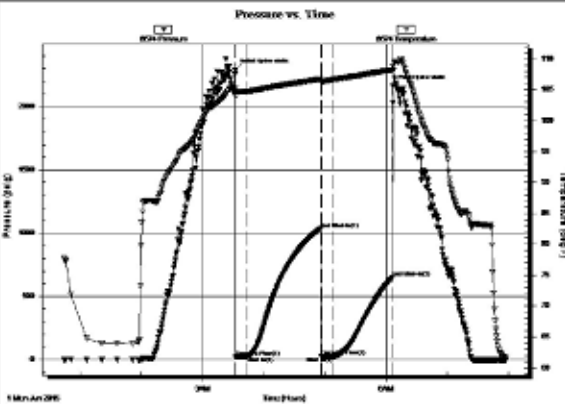
Last Calib.: 2015.06.01

Start Time: 00:44:05 End Time: 07:57:14

Time On Btm: 2015.06.01 @ 03:32:00

Time Off Btm: 2015.06.01 @ 06:06:45

**TEST COMMENT:** 10: Weak surface blow.  
75: No Return.  
10: No Blow.  
60: No Return.



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2288.07	105.16	Initial Hydro-static
1	22.62	104.05	Open To Flow (1)
12	24.21	104.74	Shut-in(1)
84	1034.59	106.72	End Shut-in(1)
85	25.74	106.20	Open To Flow (2)
97	25.05	106.64	Shut-in(2)
155	650.05	108.20	End Shut-in(2)
155	2161.81	108.66	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud oil spots	0.02

### Gas Rates

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

## ROCK TYPES

Anhy  
 Bent  
 Brec  
 Cht  
 Clyst  
 Coal  
 Congl  
 Dol

Gyp  
 Igne  
 Lmst  
 Meta  
 Mrlst  
 Salt  
 Shale  
 Shcol

Shgy  
 Slstst  
 Ss  
 Till  
 Carb sh  
 Dol  
 Dtd  
 Gry sh

Sandylms  
 Shale  
 Slststn  
 Shlyslts  
 Sltys h  
 Lms

### ACCESSORIES

#### FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomold

#### MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breclrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr

- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Sltly

- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

#### STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh
- Clystn

#### TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

### OTHER SYMBOLS

#### INTERVALS

- Core
- Dst
- Dst

#### EVENTS

- Rft
- Sidewall

#### POROSITY TYPE

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

#### SORTING

- Well
- Moderate
- Poor

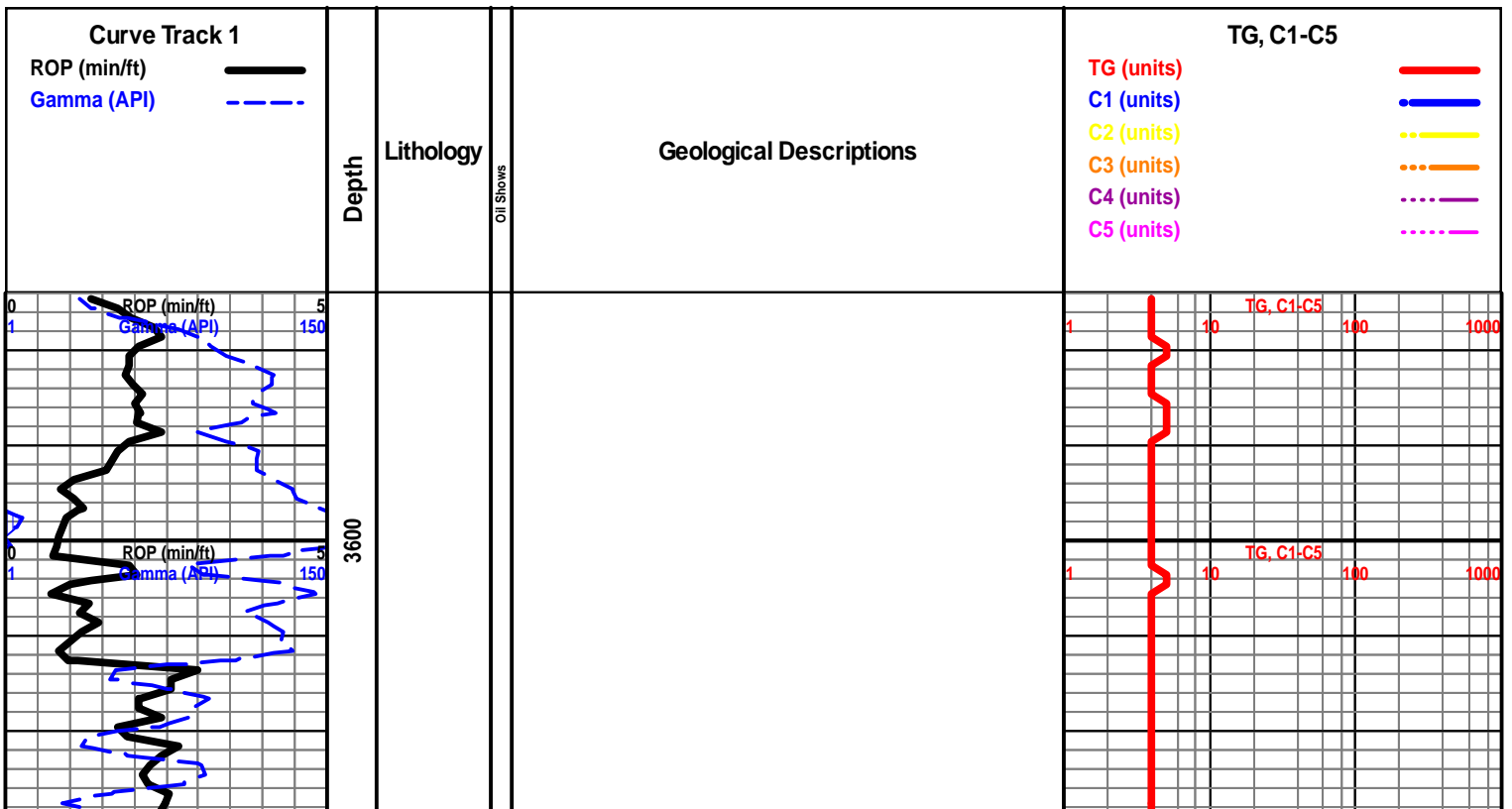
#### ROUNDING

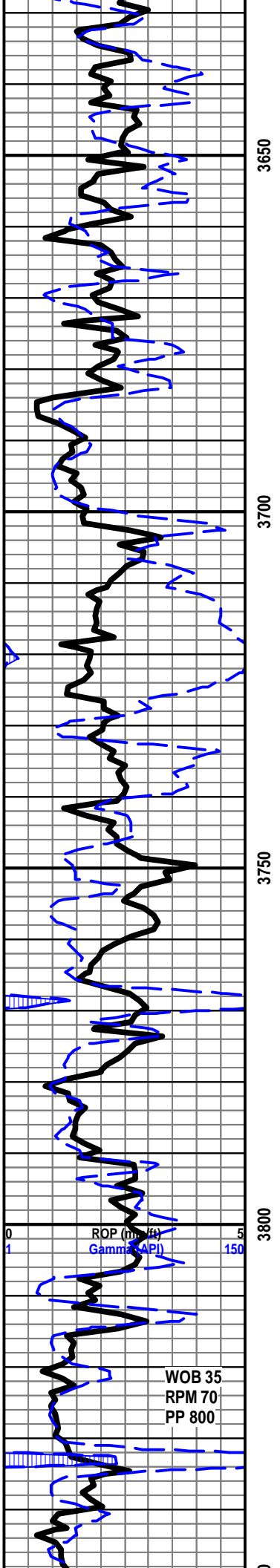
- Rounded
- Subrnd
- Subang

- Angular

#### OIL SHOWS

- Even
- Spotted
- Ques
- Dead
- Gas show





3650

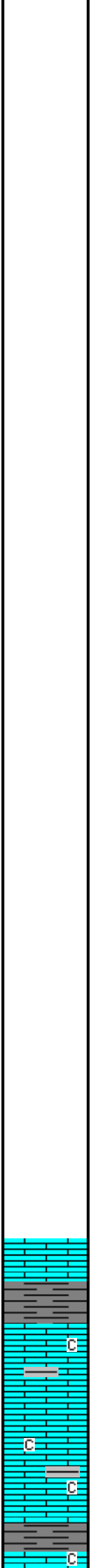
3700

3750

3800

ROP (m/hr)  
Gamma (API)

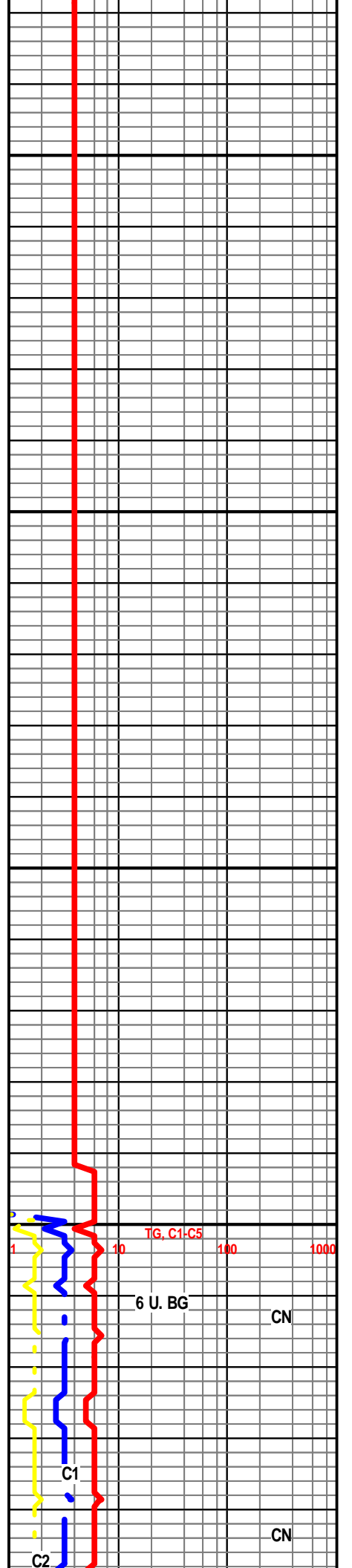
WOB 35  
RPM 70  
PP 800



BEGIN 24 HOUR MANNED UNIT 5/30/15 @ 4:00 AM

LS - OFF WHT TO CRM, BUFF IP, HD DNS TO BRTT, FN TO MD-XLN, RE-XLN IP, IMBD GR SH, LT TR FREE SFT WHT CHLK, DLL YEL MIN FLO IN 10%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO CRM, HD DNS TO BRTT, V BRTT IP



TG, C1-C5

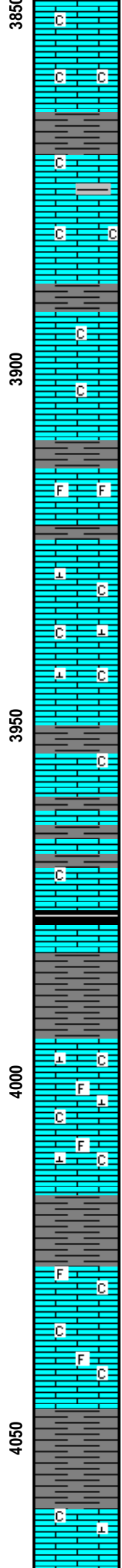
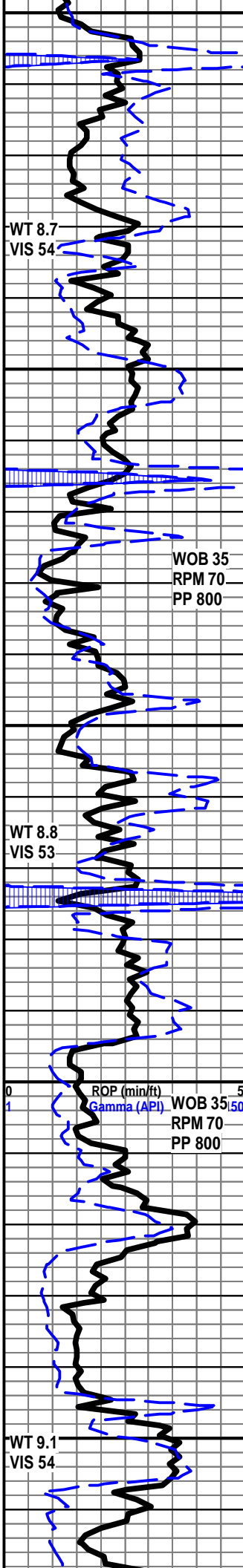
6 U. BG

C1

C2

CN

CN



LS - OFF WHT TO CRM, HD DNS TO BRTT, V BRTT IP, MD-XLN TO V TT SUCRO MTRX, ABTD FREE SFT WHT CHLK, LT TR IMBD RD & GRY SH, DLL YEL MIN FLO IN 30%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO WHT, HD DNS TO MD DNS, MD-XLN TO RE-XLN, V TT SUCRO MTRX IP, ABTD FREE SFT WHT CHLK, ABTD IMBD RD GMMY SH, DLL YEL MIN FLO IN 10%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO CRM, HD DNS TO BRTT, FN TO MD-XLN, RE-XLN IP, S-SUCRO IP, IMBD SFT WHT CHLK, IMBD RD & GRY SH, DLL YEL MIN FLO IN 30% NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO CRM, HD DNS TO MD DNS, BRTT IP, MD-XLN TO RE-XLN, S-CHLKY, TR IMBD FOSS FRAGS, DLL YEL MIN FLO IN 20%, PR INTER-FOSS POR IN 1%, NO CUT OR SHOW

LS - OFF WHT TO CRM, BUFF IP, HD DNS TO V BRTT, MD-XLN TO FN-XLN, RE-XLN IP, S-CHLKY, ABTD FREE SFT WHT CHLK, TR IMBD CALC-XLS, NO VIS FLO, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO CRM, LT GRY IP, HD DNS TO MD DNS, MD-XLN TO RE-XLN, TT SUCRO MTRX IP, ABTD FREE SFT WHT CHLK THRU, DLL YEL MIN FLO IN 30%, NO VIS POR, NO CUT OR SHOW

**HEEBNER 3975' (-732')**

SH - GRY TO LT GRY, SFT TO V SFT, GMMY, SMTH SLTY TXT

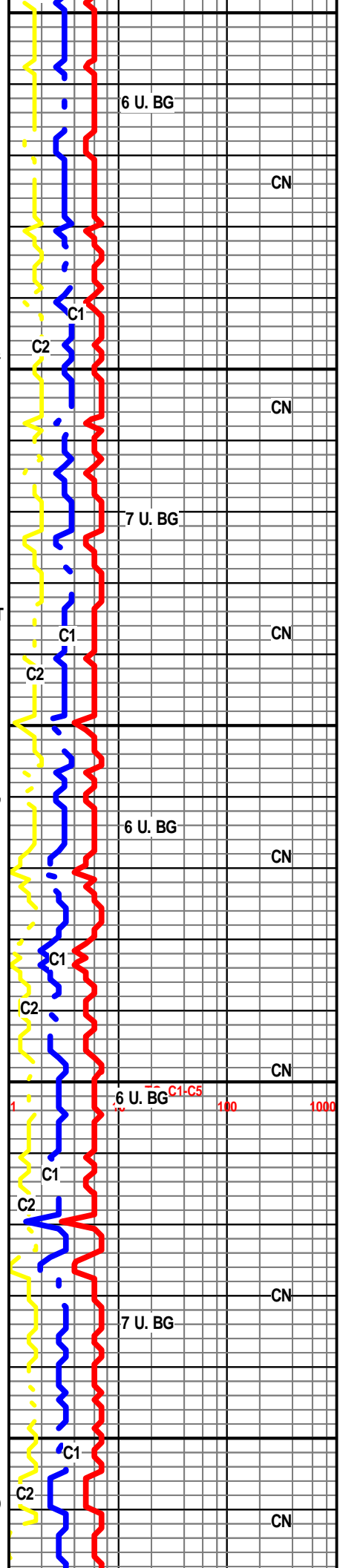
LS - OFF WHT TO LT CRM, WHT IP, HD DNS TO MD DNS, MD-XLN TO FN-XLN, LT TR RE-XLN, S-CHLKY, LT TR IMBD CALC-XLS, LT TR IMBD FOSS FRAGS, NO VIS FLO, PR INTER-XLN POR IN 1%, NO CUT OR SHOW

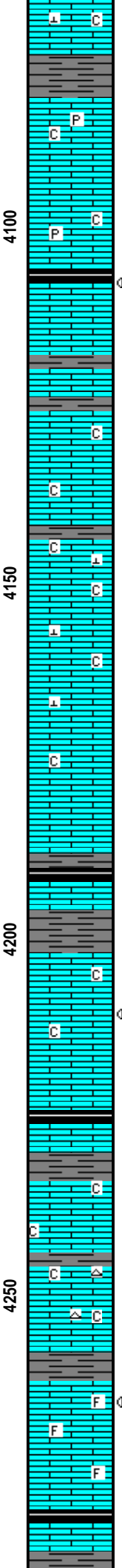
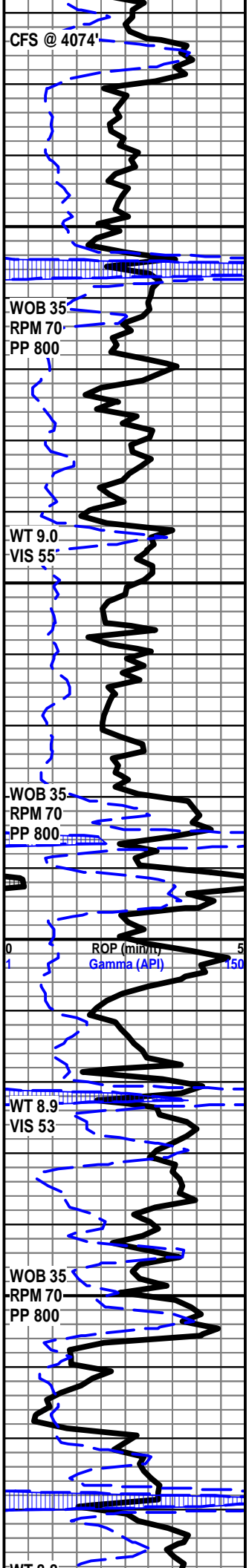
**LANSING 4026' (-783')**

LS - OFF WHT TO LT GRY, WHT, HD DNS TO BRTT, FN TO MD-XLN, TR IMBD FOSS FRAGS, ABTD FREE SFT WHT CHLK, DLL YEL MIN FLO IN 30%, PR INTER-FOSS POR IN 1%, NO CUT OR SHOW

**LANSING "C" 4058' (-815')**

LS - OFF WHT TO LT CRM(W/DRK TN OIL STN IN 20%), HD DNS TO BRTT, FN TO MD-XLN, S-SUCRO, TR IMBD SFT WHT CHLK, LT TR IMBD CALC-XLS, YEL GLD FLO IN 20%, SPTTD BRI YEL IN 10. FR INTER-XLN IN 3%. FR TO PR





VUG POR IN 2%, FR INST FLUSH CUT, PR TO FR SLOW STRM CUT IN 10%, NO OIL ODOR, TR LIVE OIL ON SAMPLES

LS - OFF WHT TO LT GRM, BUFF, HD DNS TO BRTT, FN TO MD-XLN, RE-XLN IP, S-CHLKY, LT TR IMBD FOSS FRAGS, LT TR IMBD PYR, DLL YEL MIN FLO IN 30%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO LT GRY(W/LT TN OIL STN IN 20%), HD DNS TO BRTT, FN TO VF-XLN, MD-XLN IP, S-SUCRO, YEL GLD FLO IN 30%, PR INTER-XLN POR IN 2%, FR VUG POR IN 1%, PR INST FLUSH CUT, FR SLOW STRM CUT IN 20%, FAIR OIL ODOR, NO LCH ON DISH

LS - OFF WHT TO LT CRM, BUFF, HD DNS TO MD DNS, BRTT IP, FN TO MD-XLN, S-CHLKY, LT TR FREE SFT WHT CHLK, DLL YEL MIN FLO IN 30%, PR INTER-XLN POR IN 2%, NO CUT OR SHOW

LS - OFF WHT TO CRM, WHT IP, HD DNS TO BRTT, FN TO VF-XLN, MD-XLN IP, S-CHLKY, FREE SFT WHT CHLK, LT TR IMBD CALC-XLS, DLL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO CRM, WHT IP, LT GRY IP, HD DNS TO BRTT, MD DNS IP, FN-XLN, S-CHLKY, LT TR IMBD FOSS FRAGS, LT TR IMBD CALC-XLS, DLL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO LT WHT, CRM, LT GRY, HD DNS TO BRTT, FN TO VF-XLN, S-SUCRO, LT TR IMBD CALC-XLS, DLL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

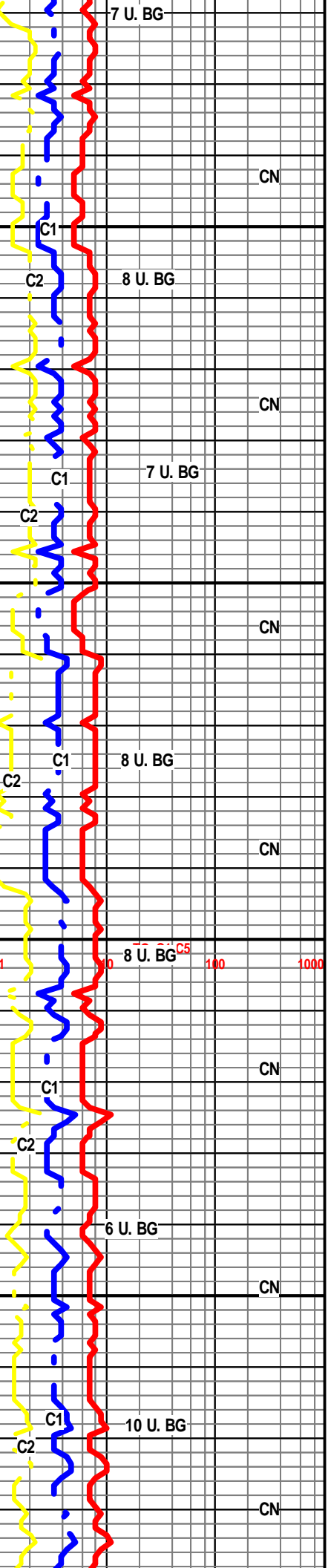
**LANSING "H" 4200' (-957')**

LS - OFF WHT TO WHT(W/ DRK TN OIL STN IN 10%), HD DNS TO BRTT, FN TO VF-XLN, S-CHLKY, FREE SFT WHT CHLK THRU, LT TR IMBD PYR, DLL YEL MIN FLO IN 30%, PR INTER-XLN POR IN 1%, NO VIS CUT, NO ODOR

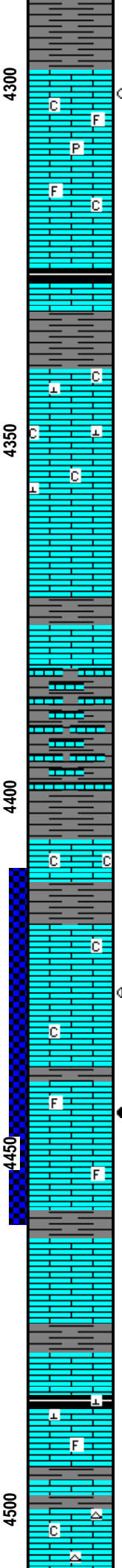
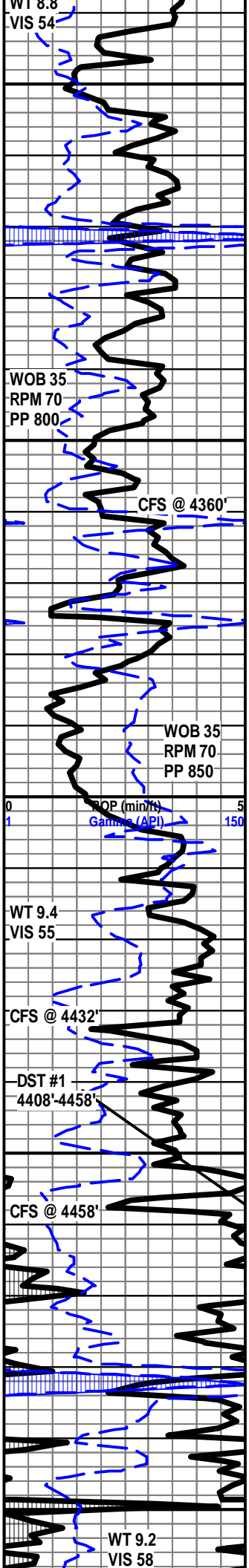
LS - OFF WHT TO WHT, LT CRM, BUFF, HD DNS TO BRTT, FN TO VF-XLN, S-CHLKY, LT TR FREE SFT WHT CHLK, LT TR IMBD RD SH, DLL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO WHT, CRM IP, BUFF, HD DNS TO BRTT, FN TO VF-XLN, MD-XLN IP, S-SUCRO, LT TR FREE S-ANG OFF WHT CHRT, DLL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO LT CRM, HD DNS TO MD DNS, BRTT IP, FN TO MD-XLN, S-CHLKY, TR IMBD FOSS FRAGS, DLL YEL FLO IN 20%, SPTTD BRI YEL FLO IN 10%, GD INTER-XLN POR IN 5%, NO CUT OR SHOW







SH - LT GRY TO GRY, FRM TO SFT IP, BLKY SMTH TXT

LS - OFF WHT TO WHT, HD DNS TO BRTT, FN TO VF-XLN, S-CHLKY, ABTD FREE SFT WHT CHLK, LT TR IMBD FOSS FRAGS, LT TR IMBD PYR, DLL YEL FLO IN 30%, FR TO GD INTER-XLN POR IN 3%, NO CUT OR SHOW

SH - GRY TO DRK GRY, FRM TO SFT, BLKY SMTH TXT

LS - OFF WHT TO LT GRY, MOTT, HD DNS TO BRTT, FN TO MD-XLN, RE-XLN IP, S-CHLKY, ABTD FREE SFT TO FRM WHT CHLK THRU, TR IMBD CALC-XLS, LT TR FREE FOSS FRAGS, DLL YEL MIN FLO IN 40%, PR INTER-FOSS POR IN 2%, NO CUT OR SHOW

LS - OFF WHT TO CRM, LT GRY IP, HD DNS TO BRTT, FN TO VF-XLN, MD-XLN IP, S-CHLKY, TR FREE S-ANG OFF WHT CHRT, DLL YEL MIN FLO IN 30%, PR INTER-XLN POR IN 1%, NO CUT OR SHOW

**BKC 4380' (-1137')**

SH - LT GRY TO GRY, FRM TO SFT IP BLKY SMTH TXT, ABTD FREE FN-XLN OFF WHT LS, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO WHT, LT GRY, MOTT, HD DNS TO BRTT, MD-XLN TO RE-XLN, S-CHLKY, IMBD GRY SH THRU, TR IMBD CALC-XLS, DLL YEL MIN FLO IP, NO VIS POR, NO CUT OR SHOW

LS - CRM TO BUFF, OFF WHT MOTT(W/ LT TN OIL STN IN 30%), HD DNS TO BRTT, FN-XLN TO MD-XLN, ABTD FREE SFT WHT CHLK, YEL GLD FLO IN 20%, SPTTD BRI YEL FLO IN 20%, FR VUG POR IN 2%, FR INTER-XLN POR IN 1%, GD INST FLUSH CUT, FR TO GD SLOW STRM CUT IN 20%, FAINT OIL ODOR, LIVE OIL IN SAMPLE CUP AND ON SAMPLES

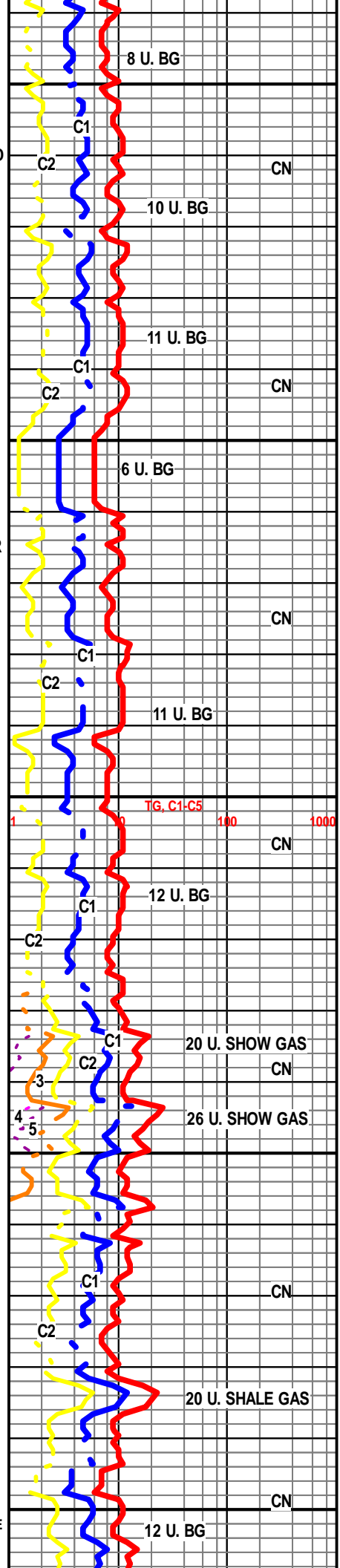
LS - OFF WHT TO CRM(W/ LT TN OIL STN IN 50%) HD DNS TO V BRTT, FN TO MD-XLN, RE-XLN IP, S-SUCRO, IMBD FOSS FRAGS, YEL GLD FLO IN 70%, SPTTD BRI YEL FLO IN 50%, FR TO GD INTER-XLN POR IN 4%, GD VUG POR IN 3%, EXCEL INST FLUSH CUT, GD TO EXCEL SLOW STRM CUT THRU, GOOD OIL ODOR, LIVE OIL ON SAMPLES AND IN SAMPLE CUP

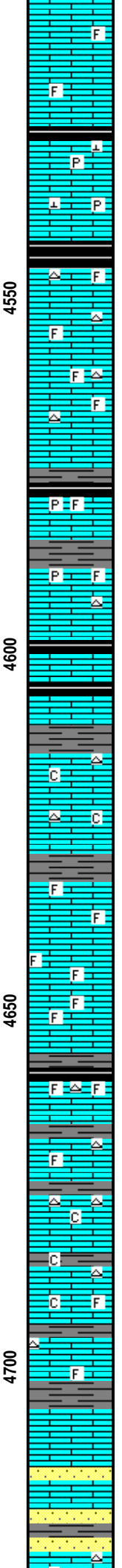
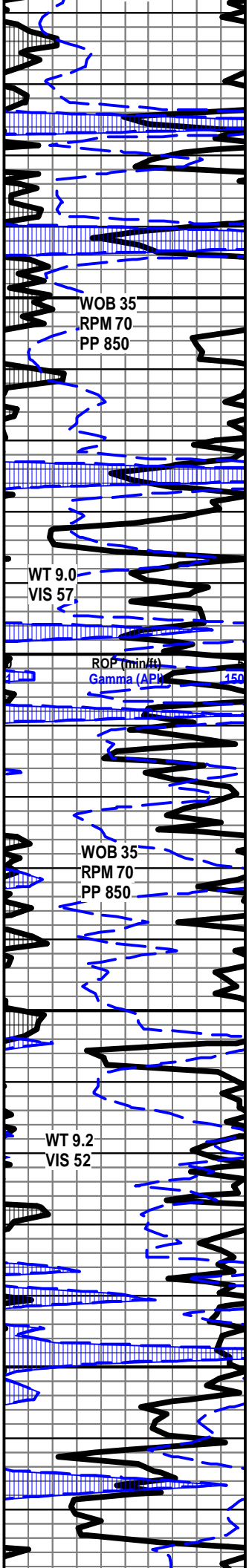
LS - OFF WHT TO LT GRY, HD DNS TO BRTT, FN TO VF-XLN, S-SUCRO, ABTD RD & GRY SH THRU, DLL YEL MIN FLO IN 30%, NO VIS POR, NO CUT OR SHOW

**LABETTE SHALE 4483' (-1240)**

LS - OFF WHT TO CRM, DRK GRM, HD DNS TO BRTT, FN TO VF-XLN, MD-XLN IP, S-CHLKY, TR IMBD CALC-XLS, LT TR IMBD FOSS FRAGS, DLL YEL MIN FLO IN 10%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO CRM, HD DNS TO BRTT, FN TO MD-XLN, VF-XLN IP, S-SUCRO, IMBD FOSS FRAGS, FREE S-ANG OFF WHT CHRT, LT TR FREE SFT WHT CHLK, DLL YEL FLO IN 10%, NO VIS POR, NO CUT OR SHOW





LS - LT GRY TO CRM, HD DNS TO BR TT, FN TO VF-XLN, MD-XLN IP, S-SUCRO, TR IMBD FOSS FRAGS, NO VIS FLO, NO VIS POR, NO CUT OR SHOW

LS - LT GRY TO OFF WHT, CRM IP, HD DNS TO MD DNS, BR TT IP, S-SUCRO, IMBD CALC-XLS, LT TR IMBD PYR, NO VIS FLO, NO VIS POR, NO CUT OR SHOW

**FORT SCOTT 4545' (-1302')**

LS - OFF WHT TO LT GRY, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, IMBD FOSS FRAGS, FREE S-ANG OFF WHT CHRT, DLL YEL MIN FLO IN 10%, NO VIS POR, NO CUT OR SHOW

LS - LT GRY TO TN, HD DNS TO BR TT, FN TO MD-XLN, RE-XLN IP, S-SUCRO, IMBD FOSS FRAGS, FREE S-ANG OFF WHT CHRT, DLL YEL MIN FLO IP, NO VIS POR, NO CUT OR SHOW

**CHEROKEE 4578' (-1335')**

LS - LT GRY TO TN, HD DNS TO BR TT, FN TO MD-XLN, RE-XLN IP, S-SUCRO, LT TR IMBD FOSS FRAGS, LT TR PYR, DLL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO LT GRY, HD DNS TO BR TT, FN TO MD-XLN, RE-XLN IP, ABDT IMBD BLK CARB SH, NO VIS FLO, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO LT GRY, HD DNS TO BR TT, FN TO VF-XLN, S-CHLKY, TR FREE S-ANG OFF WHT CHRT, LT TR FREE SFT WHT CHLK, DLL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

LS - CRM TO LT GRY, OFF WHT, HD DNS TO BR TT, FN TO MD-XLN, RE-XLN IP, IMBD FOSS FRAGS, DLL YEL MIN FLO IN 20%, FR INTER-FOSS POR IN 2%, NO CUT OR SHOW

LS - OFF WHT TO CRM, LT GRY, HD DNS TO BR TT, FN TO MD-XLN, S-SUCRO, IMBD FOSS FRAGS, LT TR FREE S-ANG OFF WHT CHRT, LT TR IMBD CALC-XLS, DLL YEL MIN FLO IN 10%, PR INTER-XLN POR IN 3%, NO CUT OR SHOW

LS - OFF WHT TO CRM, TN IP, HD DNS TO BR TT, FN TO MD-XLN, RE-XLN IP, S-SUCRO, LT TR IMBD CALC-XLS, TR IMBD FOSS FRAGS, FREE S-ANG OFF WHT CHRT, DLL YEL MIN FLO IN 10%, NO CUT OR SHOW

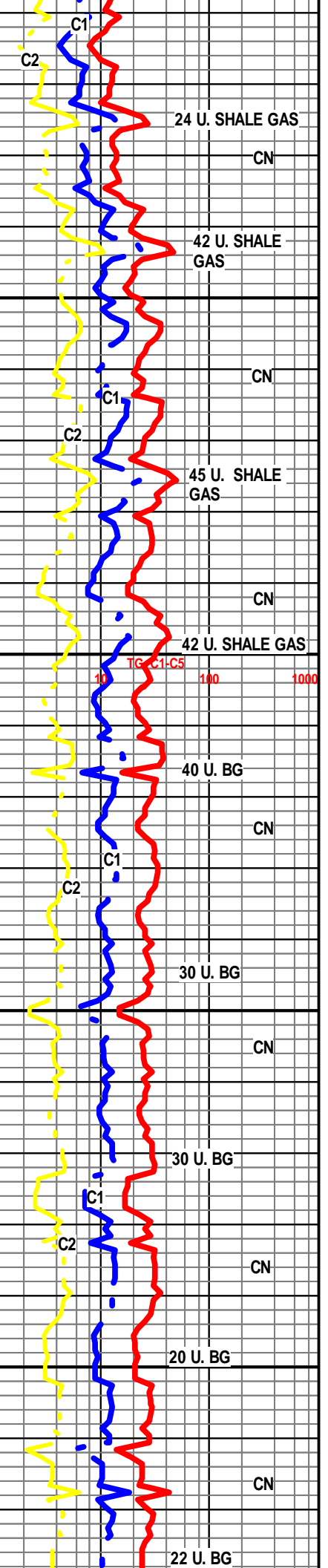
LS - OFF WHT TO CRM, LT TN IP, HD DNS TO BR TT, FN TO MD-XLN, VF-XLN IP, S-CHLKY, IMBD FOSS FRAGS, LT TR IMBD SFT WHT CHLK, SCAT TR FREE S-ANG TRANS TN CHRT, DLL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

**MORROW 4704' (-1461')**

LS - OFF WHT TO CRM, MOTT, HD DNS TO MD DNS, RE-XLN, ABDT IMBD GRY SH, IMBD CALC-XLS, NO VIS FLO, PR INTER-XLN POR IN 2%, NO CUT OR SHOW

SS - CLR FRSTY OFF WHT, HD TT TO V FRI, FN S-RND CLR QURTZ GRNS, NO VIS FLO, EXCEL INTER-GRN POR THRU, NO CUT OR SHOW

LS - OFF WHT TO CRM, BUFF, MOTT, HD DNS TO V BR TT, RE-XLN TO



WOB 35  
RPM 70  
PP 850

WT 9.3  
VIS 54

ROP (min)  
Gamma (API)

R.T.D. @ 4820'

SHORT TRIP

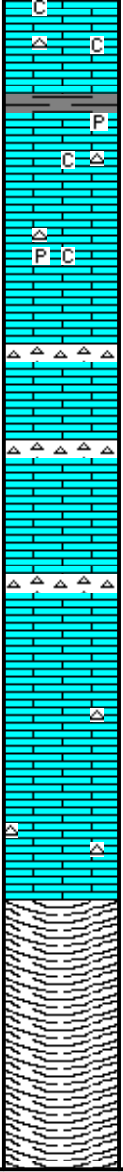
C.T.C.H. 1 HOUR

T.O.F.L.

4750

4800

50



MD-XLN, S-CHLKY, FREE S-ANG OFF WHT CHRT, DLL YEL MIN FLO IN 10%, NO CUT OR SHOW

### MISSISSIPPIAN 4740' (-1497)

LS - CRM TO OFF WHT, WHT IP, HD DNS TO MD DNS, V BRTT, MD-XLN TO FN-XLN, S-CHLKY, FREE S-ANG OFF WHT TRANS CHRT, IMBD PYR, DLL YEL MIN FLO IN 30%, NO VIS POR, NO CUT OR SHOW

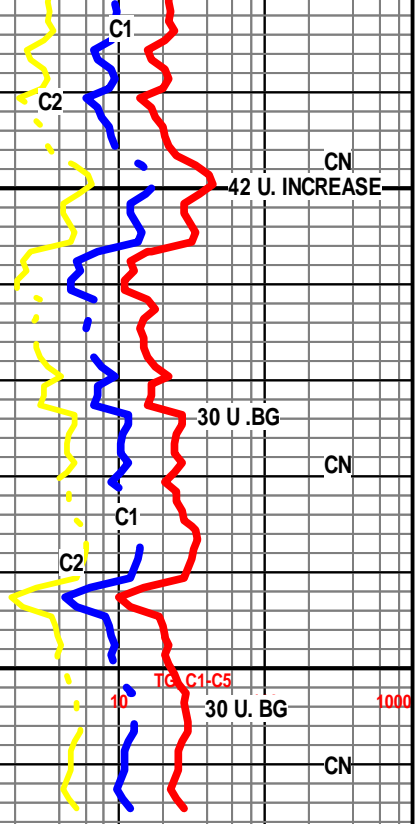
LS - OFF WHT TO LT GRY, WHT IP, HD DNS TO MD DNS, FN TO MD-XLN, TR RE-XLN, S-CHLKY, FREE S-ANG TRANS & OFF WHT CHRT THRU, FREE SFT WHT CHLK, DLL YEL MIN FLO IN 10%, PR INTER-XLN POR IN 2%, NO CUT OR SHOW

LS - OFF WHT TO WHT, TN IP, HD DNS TO BRTT, FN TO MD-XLN, S-CHLKY, FREE SFT WHT CHLK THRU, TR IMBD CALC-XLS, LT TR FREE S-ANG OFF WHT CHRT, DLL YEL MIN FLO IP, NO VIS POR, NO CUT OR SHOW

LS - OFF WHT TO WHT, CRM IP, BUFF, HD DNS TO BRTT, FN TO MD-XLN, S-CHLKY, TR IMBD FN S-RND CLR QURTZ GRNS, FREE S-ANG OFF WTH CHRT, DLL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

R.T.D. AT 4820' @ 1:45 PM CST ON JUNE 2, 2015

LOGGING SERVICES COMPLETED BY: WEATHERFORD



R.T.D. @ 4820'

SAMPLES WILL BE DELIVERED TO KGS

THANK YOU FOR CHOOSING EARTH TECH

LOG COMPLETED BY: JEFF KAMPS