Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1174877

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 # 31725
Name: Shelby Resources LLC
Address 1: 2717 Canal Blvd
Address 2: SUITE C
City: HAYS State: KS Zip: 67601 + ____
Contact Person: Chris Gottschalk
Phone: ( 785 ) 623-1524
CONTRACTOR: License # 5142
Name: Sterling Drilling Company
Wellsite Geologist: Jeremy Schwartz
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 #: ____

10/28/2013 — Spud Date or Recompletion Date
11/05/2013 — Date Reached TD
11/19/2013 — Completion Date or Recompletion Date

API No. 15 - 15-145-21735-00-00
Spot Description: ____
E2 - NW - NE - NE Sec. 3 Twp. 22 S. R. 16 ☐ East ☑ West
330 Feet from ☑ North / ☐ South Line of Section
852 Feet from ☑ East / ☐ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☑ NE ☐ NW ☐ SE ☐ SW
GPS Location: Lat: ____ *(e.g. xx.xxxxx)* , Long: ____ *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Pawnee
Lease Name: Ward-County Unit Well #: 1-3
Field Name: ____
Producing Formation: Simpson
Elevation: Ground: 1986 Kelly Bushing: 1999
Total Vertical Depth: 4040 Plug Back Total Depth: ____
Amount of Surface Pipe Set and Cemented at: 1021 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: 40000 ppm Fluid volume: 1200 bbls
Dewatering method used: Hauled to Disposal
Location of fluid disposal if hauled offsite:
Operator Name: Shelby Resources
Lease Name: F-N Unit License #: 31725
Quarter NW Sec. 13 Twp. 22 S. R. 16 ☐ East ☑ West
County: Barton Permit #: D-31556

**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: 12/30/2013
☑ **Confidential Release Date:** 12/30/2015
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☐ **UIC Distribution**
**ALT** ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 01/02/2014

1174877

Operator Name: Shelby Resources LLC Lease Name: Ward-County Unit Well #: 1-3

Sec. 3 Twp. 22 S. R. 16 ☐ East ☑ West County: Pawnee

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

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

Drill Stem Tests Taken ☑ Yes ☐ No
*(Attach Additional Sheets)*

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Attached

☐ Log Formation (Top), Depth and Datum ☑ Sample

| Name | Top | Datum |
|---|---|---|
| HEEBNER SHALE | 3414 | -1415 |
| LKC | 3538 | -1539 |
| BKC | 3770 | -1771 |
| CONGLOMERATE | 3816 | -1817 |
| SIMPSON SAND | 3908 | -1909 |
| ARBUCKLE | 3960 | -1961 |
| LTD | 4041 | -2042 |

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

| Purpose of String | Size Hole Drilled | Size Casing Set (In O.D.) | Weight Lbs. / Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|---|---|---|
| Surface | 12.25 | 8.625 | 24 | 1021 | 60/40 Poz | 450 | 2% gel/ 3% CC |
| Production | 7.875 | 5.5 | 14 | 3973 | AA-2 | 100 | 2% gel/ 3% CC |
| | | | | | | | |

ADDITIONAL CEMENTING / SQUEEZE RECORD

| Purpose: | Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|
| ___ Perforate<br>___ Protect Casing<br>___ Plug Back TD<br>___ 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 *(Amount and Kind of Material Used)* | Depth |
|---|---|---|---|
| 4 | 3910-13 | | |
| 4 | 3913-18 | | |
| | | | |
| | | | |
| | | | |

TUBING RECORD: Size: 2.375 Set At: 2487 Packer At: Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. 11/19/2013

Producing Method: ☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*

| Estimated Production Per 24 Hours | Oil Bbls. | Gas Mcf | Water Bbls. | Gas-Oil Ratio | Gravity |
|---|---|---|---|---|---|
| | 60 | | 0 | | |

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
*(If vented, Submit ACO-18.)*

METHOD OF COMPLETION:
☐ Open Hole ☑ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)*

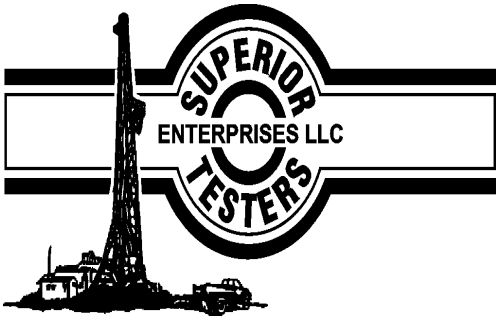
PRODUCTION INTERVAL:

**Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202**

| | |
|---|---|
| Form | ACO1 - Well Completion |
| Operator | Shelby Resources LLC |
| Well Name | Ward-County Unit 1-3 |
| Doc ID | 1174877 |

All Electric Logs Run

| |
|---|
| Dual Induction |
| Compensated Neutron |
| Micro |
| Sonic |
| Cement Bond |




# DRILL STEM TEST REPORT

Prepared For: **Shelby Resources LLC**

2717 Canal Boulevard
Suite C
Hays, Kansas 67601

ATTN: Jeremy Schwartz

## Ward-County Unit 3-1

## 3/22S/16W/Pawnee

Start Date: 2013.11.01 @ 22:23:00

End Date: 2013.11.02 @ 03:02:30

Job Ticket #: 17060 DST #: 1

Superior Testers Enterprises LLC

PO Box 138 Great Bend KS 67530

1-800-792-6902

Printed: 2013.11.02 @ 03:11:58

# DRILL STEM TEST REPORT

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17060 **DST#: 1**

Test Start: 2013.11.01 @ 22:23:00

## GENERAL INFORMATION:

Formation: **Conglomerate**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:09:30
Time Test Ended: 03:02:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 3325 Great Bend/48

**Interval: 3806.00 ft (KB) To 3849.00 ft (KB) (TVD)**
Total Depth: 3849.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

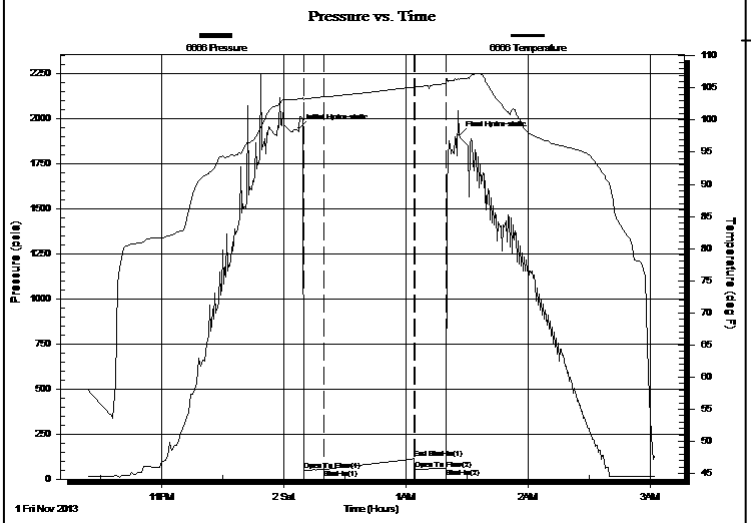
Reference Elevations: 1999.00 ft (KB)
1986.00 ft (CF)
KB to GR/CF: 13.00 ft

**Serial #: 6666** **Outside**

Press@RunDepth: 52.18 psia @ 3846.00 ft (KB)
Start Date: 2013.11.01 End Date: 2013.11.02
Start Time: 22:23:00 End Time: 03:02:30

Capacity: 5000.00 psia
Last Calib.: 2013.11.02
Time On Btm: 2013.11.02 @ 00:07:30
Time Off Btm: 2013.11.02 @ 01:26:00

TEST COMMENT: 1ST Open 10 Minutes/Weak blow /Started as strong surface blow died to weak surface blow /No build
1ST Shut In 45 Minutes/No blow back
2ND Open 15 Minutes/Dead no blow /Flush tool/Good surge/Weak surface blow 30 seconds/Pull test




## PRESSURE SUMMARY

| Time (Min.) | Pressure (psia) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1946.29 | 103.27 | Initial Hydro-static |
| 2 | 50.60 | 103.09 | Open To Flow (1) |
| 12 | 52.18 | 103.61 | Shut-In(1) |
| 57 | 113.72 | 105.14 | End Shut-In(1) |
| 57 | 53.39 | 105.13 | Open To Flow (2) |
| 72 | 60.30 | 105.67 | Shut-In(2) |
| 79 | 1906.72 | 106.35 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 15.00 | Mud 100% | 0.07 |
| | | |
| | | |
| | | |
| | | |
| | | |

## Gas Rates

| | Choke (inches) | Pressure (psia) | Gas Rate (Mcf/d) |
|---|---|---|---|

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17060 **DST#: 1**

Test Start: 2013.11.01 @ 22:23:00

## Tool Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Drill Pipe: | Length: | 3474.00 ft | Diameter: | 3.80 | inches | Volume: | 48.73 | bbl | |
| Heavy Wt. Pipe: | Length: | 0.00 ft | Diameter: | 0.00 | inches | Volume: | 0.00 | bbl | |
| Drill Collar: | Length: | 330.00 ft | Diameter: | 2.25 | inches | Volume: | 1.62 | bbl | |
| | | | | | | Total Volume: | 50.35 | bbl | |

| | |
|---|---|
| Drill Pipe Above KB: | 25.00 ft |
| Depth to Top Packer: | 3806.00 ft |
| Depth to Bottom Packer: | ft |
| Interval between Packers: | 43.00 ft |
| Tool Length: | 70.00 ft |
| Number of Packers: | 2 Diameter: 6.75 inches |

| | | |
|---|---|---|
| Tool Weight: | | 2000.00 lb |
| Weight set on Packer: | | 20000.00 lb |
| Weight to Pull Loose: | | 130000.0 lb |
| Tool Chased | | 0.00 ft |
| String Weight: | Initial | 70000.00 lb |
| | Final | 70000.00 lb |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths | |
|---|---|---|---|---|---|---|
| Shut In Tool | 5.00 | | | 3784.00 | | |
| Hydrolic Tool | 5.00 | | | 3789.00 | | |
| Jars | 5.00 | | | 3794.00 | | |
| Safety Joint | 2.00 | | | 3796.00 | | |
| Packer | 5.00 | | | 3801.00 | 27.00 | Bottom Of Top Packer |
| Packer | 5.00 | | | 3806.00 | | |
| Anchor | 38.00 | | | 3844.00 | | |
| Recorder | 1.00 | 6749 | Inside | 3845.00 | | |
| Recorder | 1.00 | 6666 | Outside | 3846.00 | | |
| Bullnose | 3.00 | | | 3849.00 | 43.00 | Bottom Packers & Anchor |
| **Total Tool Length:** | **70.00** | | | | | |

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17060 **DST#: 1**

Test Start: 2013.11.01 @ 22:23:00

## Mud and Cushion Information

| | | | | | |
|---|---|---|---|---|---|
| Mud Type: | Gel Chem | Cushion Type: | | Oil API: | deg API |
| Mud Weight: | 10.00 lb/gal | Cushion Length: | ft | Water Salinity: | ppm |
| Viscosity: | 48.00 sec/qt | Cushion Volume: | bbl | | |
| Water Loss: | 10.40 in³ | Gas Cushion Type: | | | |
| Resistivity: | ohm.m | Gas Cushion Pressure: | psia | | |
| Salinity: | 8500.00 ppm | | | | |
| Filter Cake: | 1.00 inches | | | | |

## Recovery Information

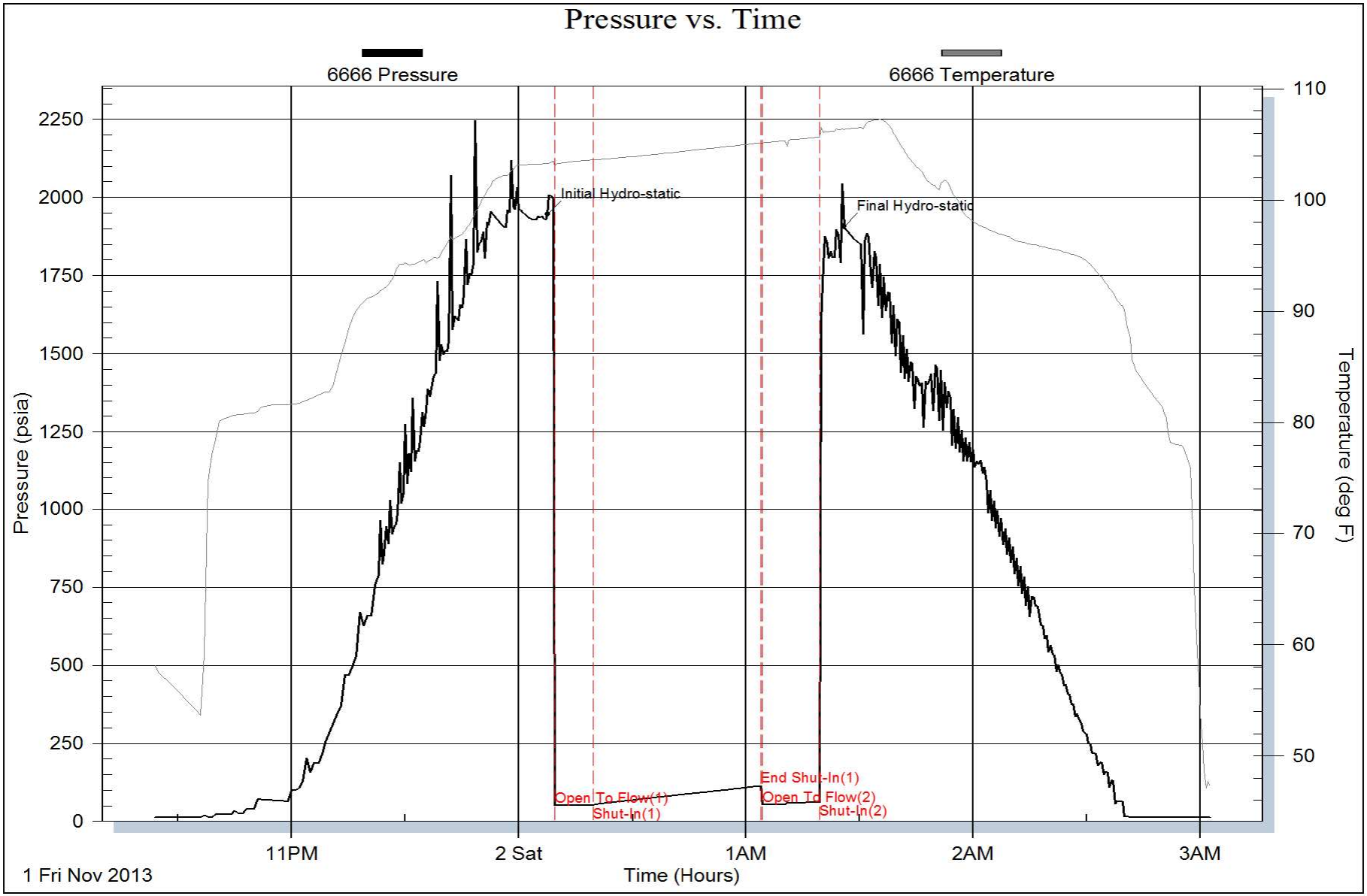
Recovery Table

| Length ft | Description | Volume bbl |
|---|---|---|
| 15.00 | Mud 100% | 0.074 |

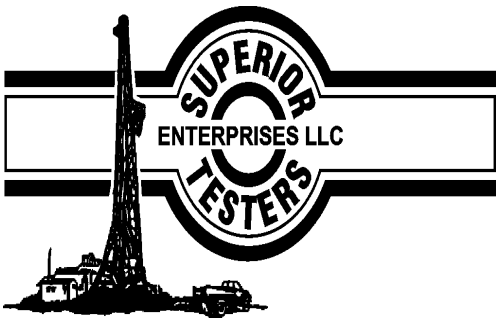
Total Length: 15.00 ft Total Volume: 0.074 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 6666 **Outside** Shelby Resources LLC Ward-County Unit 3-1 DST Test Number: 1




Superior Testers Enterprises LLC Ref. No: 17060 Printed: 2013.11.02 @ 03:11:59




# DRILL STEM TEST REPORT

Prepared For: **Shelby Resources LLC**

2717 Canal Boulevard
Suite C
Hays, Kansas 67601

ATTN: Jeremy Schwartz

## Ward-County Unit 3-1

## 3/22S/16W/Pawnee

Start Date: 2013.11.02 @ 14:36:00
End Date: 2013.11.02 @ 23:22:30
Job Ticket #: 17061 DST #: 2

Superior Testers Enterprises LLC
PO Box 138 Great Bend KS 67530
1-800-792-6902

Printed: 2013.11.02 @ 23:34:59

# DRILL STEM TEST REPORT

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17061 **DST#: 2**

Test Start: 2013.11.02 @ 14:36:00

## GENERAL INFORMATION:

Formation: **Simpson Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 16:08:30
Time Test Ended: 23:22:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 3325 Great Bend/48

**Interval: 3879.00 ft (KB) To 3919.00 ft (KB) (TVD)**
Total Depth: 3919.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

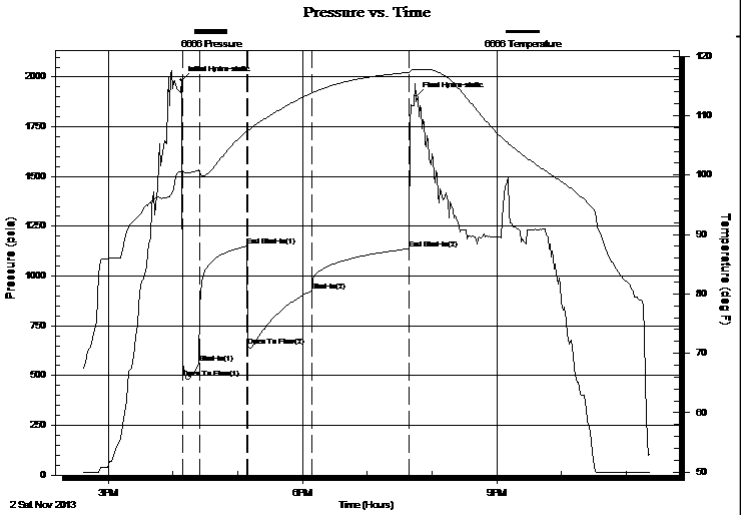
Reference Elevations: 1999.00 ft (KB)
1986.00 ft (CF)
KB to GR/CF: 13.00 ft

**Serial #: 6666** **Outside**

Press@RunDepth: 926.92 psia @ 3916.00 ft (KB)
Start Date: 2013.11.02 End Date: 2013.11.02
Start Time: 14:36:00 End Time: 23:22:30

Capacity: 5000.00 psia
Last Calib.: 2013.11.02
Time On Btm: 2013.11.02 @ 16:07:30
Time Off Btm: 2013.11.02 @ 19:45:00

TEST COMMENT:
1ST Open 15 Minutes/Strong blow /Blow built to bottom of bucket in 1 minute
1ST Shut In 45 Minutes/Blow back built to bottom of bucket in 5 minutes
2ND Open 60 Minutes/Strong blow /Blow built to bottom of bucket in 45 seconds/Gas to surface 2 minutes
2ND Shut In 90 Minutes/Blow back built to bottom of bucket in 3 min 30 seconds




## PRESSURE SUMMARY

| Time (Min.) | Pressure (psia) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1982.37 | 100.71 | Initial Hydro-static |
| 1 | 487.10 | 100.20 | Open To Flow (1) |
| 17 | 560.22 | 100.92 | Shut-In(1) |
| 61 | 1150.37 | 107.39 | End Shut-In(1) |
| 62 | 648.18 | 107.53 | Open To Flow (2) |
| 122 | 926.92 | 113.80 | Shut-In(2) |
| 211 | 1136.90 | 117.26 | End Shut-In(2) |
| 218 | 1903.50 | 117.74 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 2425.00 | Clean gassy Oil | 31.01 |
| 0.00 | Gas 10% Oil 90% | 0.00 |
| 63.00 | Mud cut Gassy Oil | 0.88 |
| 0.00 | Mud 10% Gas 10% Oil 80% | 0.00 |
| 0.00 | Corrected gravity of oil 38 | 0.00 |
| | | |

## Gas Rates

| | Choke (inches) | Pressure (psia) | Gas Rate (Mcf/d) |
|---|---|---|---|
| First Gas Rate | 0.13 | 6.31 | 2.36 |
| Last Gas Rate | 0.13 | 10.18 | 3.81 |
| Max. Gas Rate | 0.13 | 11.97 | 4.48 |

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17061 **DST#: 2**

Test Start: 2013.11.02 @ 14:36:00

## Tool Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Drill Pipe: | Length: | 3534.00 ft | Diameter: | 3.80 | inches | Volume: | 49.57 | bbl | |
| Heavy Wt. Pipe: | Length: | 0.00 ft | Diameter: | 0.00 | inches | Volume: | 0.00 | bbl | |
| Drill Collar: | Length: | 330.00 ft | Diameter: | 2.25 | inches | Volume: | 1.62 | bbl | |
| | | | | | | Total Volume: | 51.19 | bbl | |

| | |
|---|---|
| Drill Pipe Above KB: | 12.00 ft |
| Depth to Top Packer: | 3879.00 ft |
| Depth to Bottom Packer: | ft |
| Interval between Packers: | 40.00 ft |
| Tool Length: | 67.00 ft |
| Number of Packers: | 2 Diameter: 6.75 inches |

| | | |
|---|---|---|
| Tool Weight: | | 2000.00 lb |
| Weight set on Packer: | | 20000.00 lb |
| Weight to Pull Loose: | | 88000.00 lb |
| Tool Chased | | 0.00 ft |
| String Weight: | Initial | 71000.00 lb |
| | Final | 81000.00 lb |

Tool Comments: Dropped bar and reversed out

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths | |
|---|---|---|---|---|---|---|
| Shut In Tool | 5.00 | | | 3857.00 | | |
| Hydrolic Tool | 5.00 | | | 3862.00 | | |
| Jars | 5.00 | | | 3867.00 | | |
| Safety Joint | 2.00 | | | 3869.00 | | |
| Packer | 5.00 | | | 3874.00 | 27.00 | Bottom Of Top Packer |
| Packer | 5.00 | | | 3879.00 | | |
| Anchor | 35.00 | | | 3914.00 | | |
| Recorder | 1.00 | 6749 | Inside | 3915.00 | | |
| Recorder | 1.00 | 6666 | Outside | 3916.00 | | |
| Bullnose | 3.00 | | | 3919.00 | 40.00 | Bottom Packers & Anchor |
| **Total Tool Length:** | **67.00** | | | | | |

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17061 **DST#: 2**

Test Start: 2013.11.02 @ 14:36:00

## Mud and Cushion Information

| | | | | | |
|---|---|---|---|---|---|
| Mud Type: | Gel Chem | Cushion Type: | | Oil API: | deg API |
| Mud Weight: | 9.00 lb/gal | Cushion Length: | ft | Water Salinity: | ppm |
| Viscosity: | 51.00 sec/qt | Cushion Volume: | bbl | | |
| Water Loss: | 8.00 in³ | Gas Cushion Type: | | | |
| Resistivity: | ohm.m | Gas Cushion Pressure: | psia | | |
| Salinity: | 8400.00 ppm | | | | |
| Filter Cake: | 1.00 inches | | | | |

## Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|---|---|---|
| 2425.00 | Clean gassy Oil | 31.010 |
| 0.00 | Gas 10% Oil 90% | 0.000 |
| 63.00 | Mud cut Gassy Oil | 0.884 |
| 0.00 | Mud 10% Gas 10% Oil 80% | 0.000 |
| 0.00 | Corrected gravity of oil 38 | 0.000 |

Total Length: 2488.00 ft Total Volume: 31.894 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

# DRILL STEM TEST REPORT

**GAS RATES**

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17061 **DST#: 2**

Test Start: 2013.11.02 @ 14:36:00

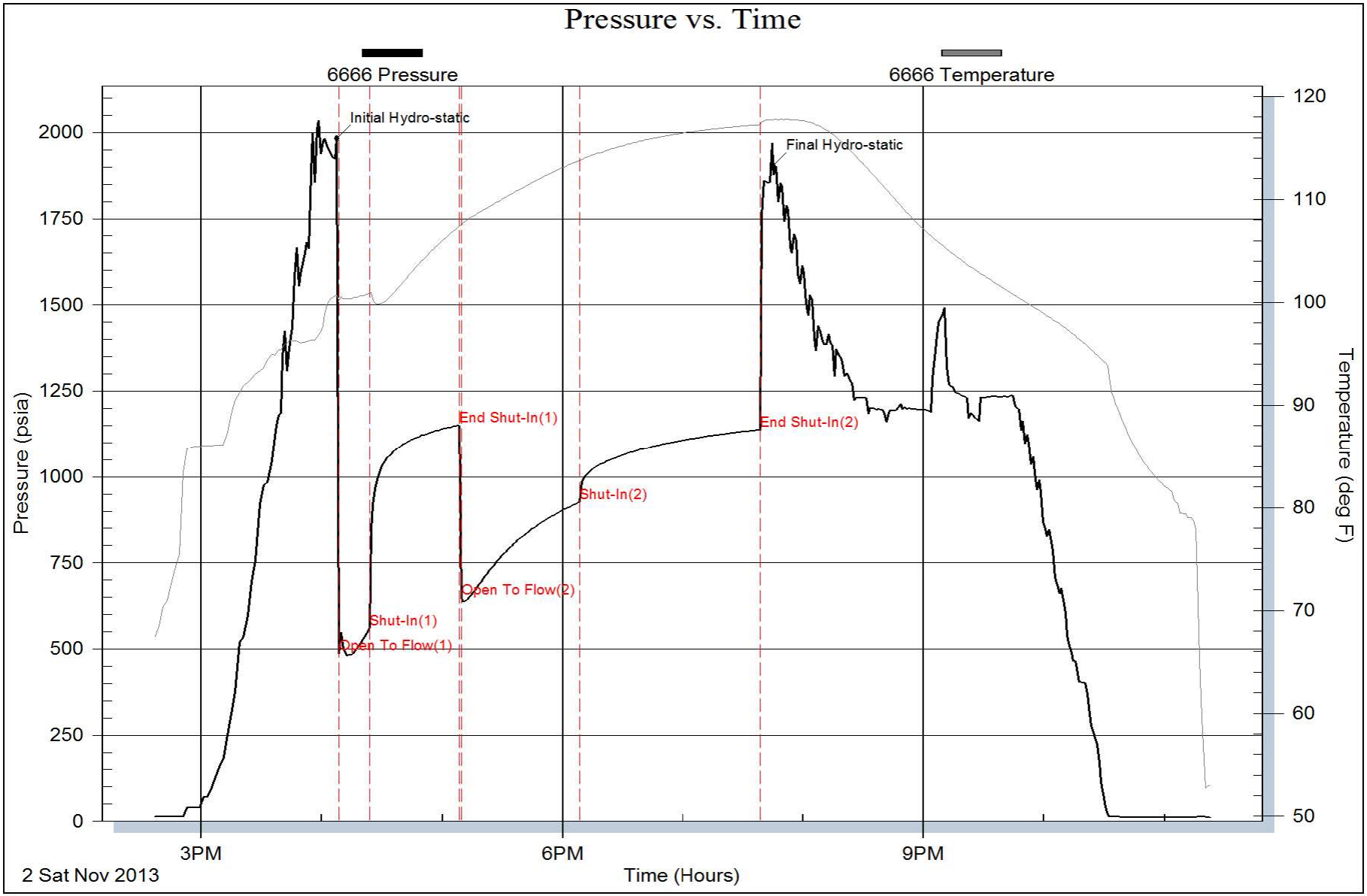
## Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

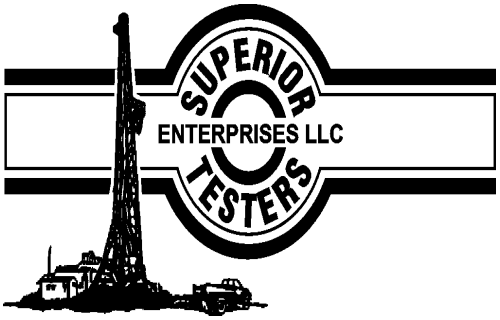
Gas Rates Table

| Flow Period | Elapsed Time | Choke (inches) | Pressure (psia) | Gas Rate (Mcf/d) |
|---|---|---|---|---|
| 2 | 5 | 0.13 | 6.31 | 2.36 |
| 2 | 5 | 0.13 | 6.31 | 2.36 |
| 2 | 15 | 0.13 | 10.74 | 4.02 |
| 2 | 25 | 0.13 | 11.97 | 4.48 |
| 2 | 35 | 0.13 | 11.12 | 4.16 |
| 2 | 45 | 0.13 | 10.18 | 3.81 |
| 2 | 55 | 0.13 | 10.18 | 3.81 |

Serial #: 6666 **Outside** Shelby Resources LLC Ward-County Unit 3-1 DST Test Number: 2




Superior Testers Enterprises LLC Ref. No: 17061 Printed: 2013.11.02 @ 23:34:59




# DRILL STEM TEST REPORT

Prepared For: **Shelby Resources LLC**

2717 Canal Boulevard
Suite C
Hays, Kansas 67601

ATTN: Jeremy Schwartz

## Ward-County Unit 3-1

## 3/22S/16W/Pawnee

Start Date: 2013.11.03 @ 06:52:00

End Date: 2013.11.03 @ 14:58:00

Job Ticket #: 17062 DST #: 3

Superior Testers Enterprises LLC

PO Box 138 Great Bend KS 67530

1-800-792-6902

Printed: 2013.11.03 @ 15:20:52

# DRILL STEM TEST REPORT

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17062 **DST#: 3**

Test Start: 2013.11.03 @ 06:52:00

## GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:43:30
Time Test Ended: 14:58:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 3325 Great Bend/48

**Interval: 3960.00 ft (KB) To 3966.00 ft (KB) (TVD)**
Total Depth: 3966.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

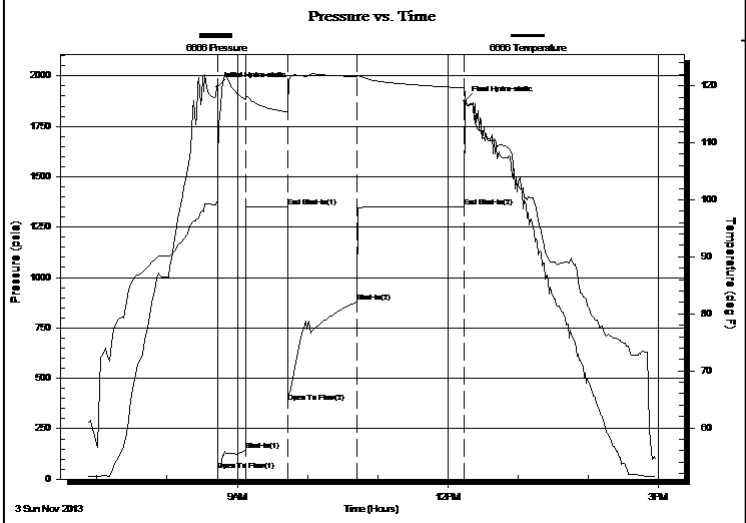
Reference Elevations: 1999.00 ft (KB)
1986.00 ft (CF)
KB to GR/CF: 13.00 ft

**Serial #: 6666** **Inside**

Press@RunDepth: 878.30 psia @ 3962.00 ft (KB)
Start Date: 2013.11.03 End Date: 2013.11.03
Start Time: 06:52:00 End Time: 14:58:00

Capacity: 5000.00 psia
Last Calib.: 2013.11.03
Time On Btm: 2013.11.03 @ 08:43:00
Time Off Btm: 2013.11.03 @ 12:14:30

TEST COMMENT: 1ST Open 15 Minutes/Strong surging blow /Blow built to bottom of bucket in 13 minutes 30 seconds
1ST Shut In 45 Minutes/No blow back
2ND Open 60 Minutes/Strong blow /Blow built to bottom of bucket in 1 minute 30 seconds/Smooth build
2ND Shut In 90 Minutes/No blow back




## PRESSURE SUMMARY

| Time (Min.) | Pressure (psia) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1946.58 | 99.65 | Initial Hydro-static |
| 1 | 45.78 | 106.48 | Open To Flow (1) |
| 24 | 142.66 | 117.64 | Shut-In(1) |
| 60 | 1348.76 | 115.42 | End Shut-In(1) |
| 61 | 382.68 | 116.07 | Open To Flow (2) |
| 120 | 878.30 | 121.61 | Shut-In(2) |
| 211 | 1348.54 | 119.68 | End Shut-In(2) |
| 212 | 1876.77 | 118.67 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 1890.00 | Slightly mud and gas cut water | 23.51 |
| 0.00 | Mud 2% Gas 3% Water 95% | 0.00 |
| 0.00 | Recovery Chlorides 21000 ppm | 0.00 |
| 0.00 | Recov. Resist. .18 ohms @ 68 deg. | 0.00 |
| | | |
| | | |

## Gas Rates

| | Choke (inches) | Pressure (psia) | Gas Rate (Mcf/d) |
|---|---|---|---|

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17062 **DST#: 3**

Test Start: 2013.11.03 @ 06:52:00

## Tool Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Drill Pipe: | Length: | 3630.00 ft | Diameter: | 3.80 inches | Volume: | 50.92 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: | | 20000.00 lb |
| Drill Collar: | Length: | 330.00 ft | Diameter: | 2.25 inches | Volume: | 1.62 bbl | Weight to Pull Loose: | | 88000.00 lb |
| | | | | | Total Volume: | 52.54 bbl | Tool Chased | | 0.00 ft |
| Drill Pipe Above KB: | | 27.00 ft | | | | | String Weight: | Initial | 72000.00 lb |
| Depth to Top Packer: | | 3960.00 ft | | | | | | Final | 82000.00 lb |
| Depth to Bottom Packer: | | ft | | | | | | | |
| Interval between Packers: | | 6.00 ft | | | | | | | |
| Tool Length: | | 33.00 ft | | | | | | | |
| Number of Packers: | | 2 | Diameter: | 6.75 inches | | | | | |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths | |
|---|---|---|---|---|---|---|
| Shut In Tool | 5.00 | | | 3938.00 | | |
| Hydrolic Tool | 5.00 | | | 3943.00 | | |
| Jars | 5.00 | | | 3948.00 | | |
| Safety Joint | 2.00 | | | 3950.00 | | |
| Packer | 5.00 | | | 3955.00 | 27.00 | Bottom Of Top Packer |
| Packer | 5.00 | | | 3960.00 | | |
| Anchor | 1.00 | | | 3961.00 | | |
| Recorder | 1.00 | 6666 | Inside | 3962.00 | | |
| Recorder | 1.00 | 6749 | Outside | 3963.00 | | |
| Bullnose | 3.00 | | | 3966.00 | 6.00 | Bottom Packers & Anchor |
| **Total Tool Length:** | **33.00** | | | | | |

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17062 **DST#: 3**

Test Start: 2013.11.03 @ 06:52:00

## Mud and Cushion Information

| | | | | | |
|---|---|---|---|---|---|
| Mud Type: | Gel Chem | Cushion Type: | | Oil API: | deg API |
| Mud Weight: | 9.00 lb/gal | Cushion Length: | ft | Water Salinity: | ppm |
| Viscosity: | 51.00 sec/qt | Cushion Volume: | bbl | | |
| Water Loss: | 8.00 in³ | Gas Cushion Type: | | | |
| Resistivity: | ohm.m | Gas Cushion Pressure: | psia | | |
| Salinity: | 8400.00 ppm | | | | |
| Filter Cake: | 1.00 inches | | | | |

## Recovery Information

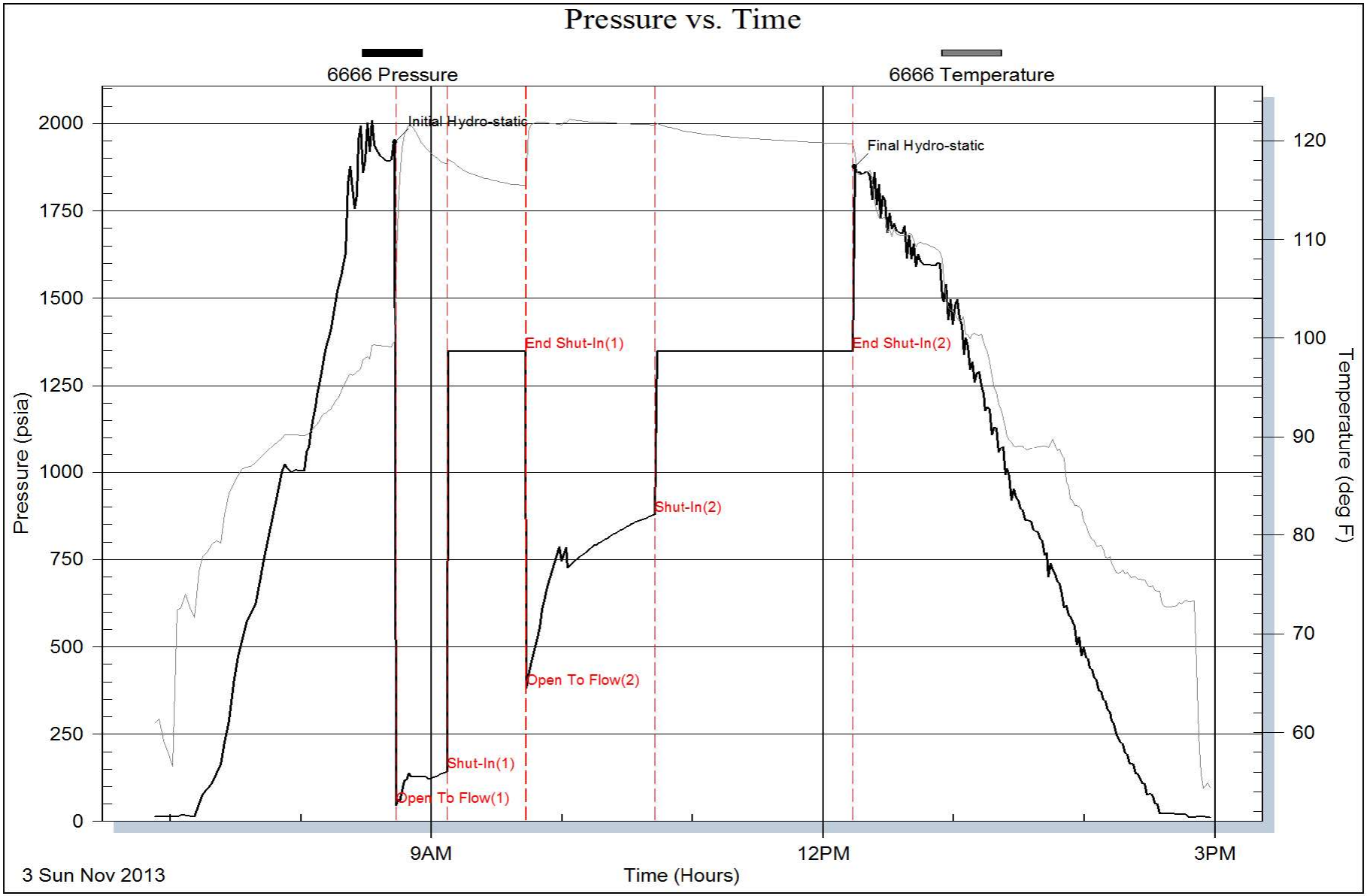
Recovery Table

| Length ft | Description | Volume bbl |
|---|---|---|
| 1890.00 | Slightly mud and gas cut water | 23.506 |
| 0.00 | Mud 2% Gas 3% Water 95% | 0.000 |
| 0.00 | Recovery Chlorides 21000 ppm | 0.000 |
| 0.00 | Recov. Resist. .18 ohms @ 68 deg. | 0.000 |

Total Length: 1890.00 ft Total Volume: 23.506 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 6666 **Inside** Shelby Resources LLC Ward-County Unit 3-1 DST Test Number: 3




Superior Testers Enterprises LLC Ref. No: 17062 Printed: 2013.11.03 @ 15:20:53

# 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. 7227

| Date | Sec. | Twp. | Range | County | State | On Location | Finish |
|---|---|---|---|---|---|---|---|
| 10-29-13 | 3 | 22 | 16 | Pawnee | KS | | 11:30 PM |

Location Larned E to 100th Ave. 1¼ S to M Rd, 1E, SW NE

Lease Ward Conty Unit | Well No. 1-3

Contractor Sterling #5

Type Job Surface

Hole Size 12¼ | T.D. 1025

Csg. 8⅝ | Depth 1021

Tbg. Size | Depth

Tool | Depth

Cement Left in Csg. | Shoe Joint 22.25

Meas Line | Displace 63.5

**EQUIPMENT**

| | | |
|---|---|---|
| Pumptrk 16 | No. | Cementer / Helper Billy |
| Bulktrk 19 | No. | Driver / Driver Lonnie M. |
| Bulktrk P4 | No. | Driver / Driver Travis |

**JOB SERVICES & REMARKS**

Remarks: cement did circulate

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

X Signature Alan Lofton

Owner

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.

Charge To Shelby Resources

Street

City State

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Amount Ordered 450 sx 60/40 3% cc 2% gel ½# Flow 50# Suger

| | | |
|---|---|---|
| Common | 270 | |
| Poz. Mix | 180 | |
| Gel. | 9 | |
| Calcium | 16 | |
| Hulls | | |
| ~~Salt~~ Sugar 50# | | 50 00 |
| Flowseal | 225# | |
| Kol-Seal | | |
| Mud CLR 48 | | |
| CFL-117 or CD110 CAF 38 | | |
| Sand | | |
| Handling | 475 | |
| Mileage | | |

**FLOAT EQUIPMENT**

| | |
|---|---|
| Guide Shoe | 1 Slipon |
| Centralizer | |
| Baskets | |
| AFU Inserts | |
| Float Shoe | |
| Latch Down | |
| | 1 Baffle Plate |
| | 1 basket |
| Pumptrk Charge | Long Surface |
| Mileage | 22 |
| Tax | |
| Discount | |
| Total Charge | |

ASIC
gy services, L.P.

# TREATMENT REPORT

| | | | | | |
|---|---|---|---|---|---|
| SHELBY - Ros. | Lease No. | | | Date 11-05-13 | |
| WARD-County unit | Well # 1-3 | | | | |
| eld Order # 9527 | Station Pratt KS | Casing 5 1/2 | Depth | County PAWNEE | State KS |
| Type Job CNW 5 1/2 Long String | | Formation | | Legal Description 3-22-16 | |

| PIPE DATA | | PERFORATING DATA | | FLUID USED |
|---|---|---|---|---|
| Casing Size 5 1/2 | Tubing Size | Shots/Ft | | Acid |
| Depth 3972 | Depth | From | To | Pre Pad |
| Volume 96 | Volume | From | To | Pad |
| Max Press 2,000 | Max Press | From | To | Frac |
| Well Connection P.C | Annulus Vol. | From | To | |
| Plug Depth 3951 | Packer Depth | From | To | Flush |

| TREATMENT RESUME | | |
|---|---|---|
| RATE | PRESS | ISIP |
| Max | | 5 Min. |
| Min | | 10 Min. |
| Avg | | 15 Min. |
| HHP Used | | Annulus Pressure |
| Gas Volume | | Total Load |

Customer Representative | Station Manager DAVE Scott | Treater Robert Sullivan

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Service Units | 37900 | 27463 | 19831 | 19867 | | | | | | | | |
| Driver Names | Sullivan | Mckown | Pierson | | | | | | | | | |

| Time | Casing Pressure | Tubing Pressure | Bbls. Pumped | Rate | Service Log |
|---|---|---|---|---|---|
| 9:00 | | | | | ON loc Safty meeting |
| | | | | | |
| | | | | | Run 7 jts 5 1/2 csg. |
| | | | | | |
| | | | | | |
| 2:45 | | | | | CASING on Bottom |
| 3:00 | | | | | Hook Rig circ csg |
| 3:45 | 300 | | 12 | 4.5 | St Scavenger cmt 50sk @ 14.2ppg |
| | | | 24 | | St Tail cmt 100sk AA-2 cmt @ 15.3ppg |
| | | | | | cmt mixed Shut down, WASH Line, Pump |
| | | | | | Release Plug |
| | | | | 6 | St Disp |
| | 450 | | 53 | | Lift PS, |
| | | | | 4.5 | Slow Rate |
| 4:30 | 2,000 | | 96 | | Plug down Float held |
| | | | 7 | | Plug RH w/ 30sk |
| | | | 5 | | Plug MH w/ rack |
| | | | | | JOB Complete |
| | | | | | |
| | | | | | THANK YOU |

Scale 1:240 Imperial

| | | | |
|---|---|---|---|
| Well Name: | Ward County Unit #1-3 | | |
| Surface Location: | 330' FNL _852' FEL Sec 3 - 22S- 16W | | |
| Bottom Location: | | | |
| API: | 15-145-21735-00-00 | | |
| License Number: | | | |
| Spud Date: | 10/28/2013 | Time: | 6:45 PM |
| Region: | Pawnee County | | |
| Drilling Completed: | 11/4/2013 | Time: | 7:45 PM |
| Surface Coordinates: | Y = 549149 & X = 1838588 | | |
| Bottom Hole Coordinates: | Y = & X = | | |
| Ground Elevation: | 1986.00ft | | |
| K.B. Elevation: | 1999.00ft | | |
| Logged Interval: | 3100.00ft | To: | 4040.00ft |
| Total Depth: | 4040.00ft | | |
| Formation: | Arbuckle | | |
| Drilling Fluid Type: | Chemical/Fresh Water Gel | | |

## OPERATOR

| | | | |
|---|---|---|---|
| Company: | Shelby Resources, LLC | | |
| Address: | 445 Union Blvd, Suite 208<br>Lakewood, CO 80228 | | |
| Contact Geologist: | Janine Sturdavant | | |
| Contact Phone Nbr: | 303-907-2209 / 720-274-4682 | | |
| Well Name: | Ward County Unit #1-3 | | |
| Location: | 330' FNL _852' FEL Sec 3 - 22S- 16W | API: | 15-145-21735-00-00 |
| Pool: | | Field: | Wildcat |
| State: | Kansas | Country: | USA |

## LOGGED BY

| | | | |
|---|---|---|---|
| Company: | Shelby Resources, LLC | | |
| Address: | 445 UNION BLVD. Suite 208<br>LAKEWOOD, CO. 80228 | | |
| Phone Nbr: | 203-671-6034 | | |
| Logged By: | Geologist | Name: | Jeremy Schwartz |

## NOTES

The Captiva II Ward County Unit #1-3 was drilled to a total depth of 4040', bottoming in the Arbuckle. A TookeDaq gas detector was employed in the drilling of said well.

Three DST's were conducted throughout the Conglomerate, Simpson Sand and Arbuckle zones. The DST reports can be found at the bottom of this log.

Due to the DST results, sample shows, gas kicks, and log analysis it was determined by all parties involved to furthur test the well through production pipe. The dry samples were saved and will be available for furthur review at the Kansas Geological Society Well Sample Library, located in Wichita, KS.

Respectfully Submitted,
Jeremy Schwartz
Geologist

## SURFACE CO-ORDINATES

| | |
|---|---|
| Well Type: | Vertical |

Longitude: Latitude:
N/S Co-ord: Y = 549149
E/W Co-ord: X = 1838588

## CONTRACTOR

Contractor: Sterling Drilling Co
Rig #: 5
Rig Type: mud rotary
Spud Date: 10/28/2013 Time: 6:45 PM
TD Date: 11/4/2013 Time: 7:45 PM
Rig Release: Time:

## ELEVATIONS

K.B. Elevation: 1999.00ft Ground Elevation: 1986.00ft
K.B. to Ground: 13.00ft

| DATE | DEPTH | ACTIVITY |
|---|---|---|
| Friday, November 01, 2013 | 3525' | Geologist Jeremy Schwartz on location @ 0445hrs, DRLG ahead through Douglas, |
| | 3795' | Brown Lime, LKC, Stark, BKC, Strap and trip out with PDC bit, replace with button bit |
| | 3849' | DRLG ahead through Marmaton, Conglomerate, Conduct DST #1 in the Conglomerate |
| Saturday, November 02, 2013 | 3849' | DRLG ahead through Conglomerate, Viola, Simpson Shale, Simpson Sand, |
| | 3919' | Conduct DST #2 in the Simpson Sand |
| Sunday, November 03, 2013 | 3966' | DRLG ahead into Arbuckle, Conduct DST #3 in Arbuckle. Rig down for repairs. |
| | | While TIH Wind blew the blocks into the A-Leg area of the derrick and severed the |
| | | 1-1/8" drilling line extending from the drawworks to the fast sheave. The collars |
| | | in the hole at the time were in the slips (and all in the surface pipe). Waiting |
| | | on crane to pick up the blocks and string in a new drilling line |
| Monday, November 04, 2013 | 3966' | Resume DRLG @ 1725hrs. DRLG ahead to TD @ 4040' |
| | 4040' | TD Reached @ 1945hrs. CTCH I hour, TOH, Conduct Logging Operations |
| | | Logging Operations complete @ 0300hrs |
| | | Geologist Jeremy Schwartz off location @ 0330hrs |

| | |
|---|---|
| CLIENT: | SHELBY RESOURCES, LLC |
| WELL NAME: | WARD COUNTY UNIT #1-3 |
| LEGAL: | 330' FNL & 852' FEL 3-22S-16W |
| COUNTY: | PAWNEE COUNTY, KS |
| API : | 15-145-21735-00-00 |
| DRLG CONTRACTOR: | STERLING DRILLING CO. |
| RIG #: | 5 |
| DOGHOUSE #: | 620-388-5433 |
| TOOLPUSHER: | ALAN LOFTIS |
| CELL #: | 620-388-2736 |

| | • | | P&A | | OIL - P&A | |
|---|---|---|---|---|---|---|
| | CAPTIVA II | | CAPTIVA II | | EHRLICH DRILLING | |
| | WARD COUNTY UNIT #1-3 | | WFYOG #2-3 | | BUSTER #1-10 | | BP HUTCHERSON-V R CADE #2 | |
| | E/2-NW-NE-NE | | W2-NW-NW-NE 3-22S-16W | | SW-NE-SW-NE 10-22S-16W | | SW-SW-SW 35-21-16 | |
| | KB 1999 | | KB 1999 | | KB 2018 | | KB 1980 | |
| | LOG TOPS | SAMPLE TOPS | COMP. CARD | LOG CORR. | SMPL. CORR. | COMP. CARD | LOG CORR. | SMPL. CORR. | COMP. CARD | LOG CORR. | SMPL. CORR. |
| FORMATION | DEPTH DATUM | DEPTH DATUM | DEPTH DATUM | | | DEPTH DATUM | | | DEPTH DATUM | | | DEPTH DATUM | | |
| ANHYDRITE TOP | 995 1004 | 997 1002 | 989 1010 | - 6 | - 8 | 1013 1005 | - 1 | - 3 | 975 1005 | - 1 | - 3 |
| BASE | 1018 981 | 1023 976 | 1012 987 | - 6 | - 11 | 1038 980 | + 1 | - 4 | 996 984 | - 3 | - 8 |
| HEEBNER SHALE | 3414 -1415 | 3415 -1416 | 3396 -1397 | - 18 | - 19 | 3465 -1447 | + 32 | + 31 | 3418 -1438 | + 23 | + 22 |
| TORONTO | 3430 -1431 | 3436 -1437 | 3412 -1413 | - 18 | - 24 | 3478 -1460 | + 29 | + 23 | 3435 -1455 | + 24 | + 18 |
| DOUGLAS SHALE | 3448 -1449 | 3450 -1451 | 3430 -1431 | - 18 | - 20 | 3504 -1486 | + 37 | + 35 | 3454 -1474 | + 25 | + 23 |
| BROWN LIME | 3524 -1525 | 3525 -1526 | 3504 -1505 | - 20 | - 21 | 3572 -1554 | + 29 | + 28 | | | |
| LKC | 3538 -1539 | 3540 -1541 | 3514 -1515 | - 24 | - 26 | 3578 -1560 | + 21 | + 19 | 3539 -1559 | + 20 | + 18 |
| STARK SHALE | 3717 -1718 | 3719 -1720 | 3699 -1700 | - 18 | - 20 | 3776 -1758 | + 40 | + 38 | | | |
| BKC | 3770 -1771 | 3769 -1770 | 3749 -1750 | - 21 | - 20 | 3833 -1815 | + 44 | + 45 | 3781 -1801 | + 30 | + 31 |
| MARMATON | 3790 -1791 | 3792 -1793 | 3770 -1771 | - 20 | - 22 | 3846 -1828 | + 37 | + 35 | 3805 -1825 | + 34 | + 32 |
| CONGLOMERATE | 3816 -1817 | 3818 -1819 | 3798 -1799 | - 18 | - 20 | 3880 -1862 | + 45 | + 43 | 3828 -1848 | + 31 | + 29 |
| CONG. SAND | 3862 -1863 | 3862 -1863 | 3824 -1825 | - 38 | - 38 | | | | 3849 -1869 | + 6 | + 6 |
| VIOLA | | | | | | 3892 -1874 | | | 3930 -1950 | | |
| SIMPSON SHALE | 3890 -1891 | 3893 -1894 | 3840 -1841 | - 50 | - 53 | 3979 -1961 | + 70 | + 67 | 3971 -1991 | + 100 | + 97 |
| SIMPSON SAND | 3908 -1909 | 3906 -1907 | 3853 -1854 | - 55 | - 53 | 3984 -1966 | + 57 | + 59 | 3992 -2012 | + 103 | + 105 |
| ARBUCKLE | 3960 -1961 | 3960 -1961 | 3869 -1870 | - 91 | - 91 | 4031 -2013 | + 52 | + 52 | 4066 -2086 | + 125 | + 125 |
| RTD | | 4040 -2041 | 3950 -1951 | | - 90 | 4130 -2112 | | + 71 | 4097 -2117 | | + 76 |
| LTD | 4041 -2042 | | 3950 -1951 | - 91 | | 4117 -2099 | + 57 | | | | |
| | | | TESTED | | | TESTED | | | TESTED | | |
| | | | DST #1 (3787' - 3837') CONG/SIMPSON<br>10-45-60-90<br>IF: Strong BOB 3min<br>1/2in BB<br>FF: Strong BOB 2.5min<br>BB BOB<br>813' CGO, 2330' GIP, 627' OCGM, | | | DST #1 (3905' - 3935') VIOLA<br>Misrun - Packer Failure (depth 30' STB)<br><br>DST #3 Straddle (3922' - 3952') VIOLA<br>15-45-30-60<br>IF: BOB instantly<br>FF: BOB 5min | | | DST #1 (3816' - 3860') CONG SAND<br>Open 1hr - WK Blow<br>15' Mud w/specks of Oil<br>*Initial and final bottom hole pressures as well as initial and final flow pressures were Zero | | |

| PROGNOSIS | | |
|---|---|---|
| ANHYDRITE TOP | 992 | 1007 |
| HEEBNER SHALE | 3406 | -1407 |
| TORONTO | 3422 | -1423 |
| BROWN LIME | 3514 | -1515 |
| LANSING | 3524 | -1525 |
| BKC | 3755 | -1756 |

| | | |
|---|---|---|
| PENN CONG | 3830 | -1831 |
| ARBUCKLE | 3946 | -1947 |
| TD | 4050 | -2051 |

SIP: 540# - 533#

**DST #2 (3866' - 3871') ARBUCKLE**
10-30-20-5
IF: WK Surface died 6min
NO BB
FF: Dead, flushed tool, no help
No BB
**4' Oil Spotted Mud**
SIP: 1108# - 214#

NO BB
**813' M w/spots of oil**
SIP: 1860# - 1650#

**DST #2 (4033' - 4040') ARBUCKLE**
2-45-60-90
IF: 2" Tool Not Open???
FF: BOB 4min
Surface BB
**698' CGO, 315' SMCOW (10%O), 252' SOCW (6%O), 126' OSW**
SIP: 1370# - 1370#

*1st attempt at DST encountered a "Cave-Bridge" and bottom of well could not be reached. Drill Pipe used for ~10hrs to re-condition hole w/very low water loss. Possible formation could have taken on considerable fluid accounting for the low fluid recovery and absence of pressures

| *INFO* | *INFO* | *INFO* |
|---|---|---|
| PF: CONG 3824' - 3830' (24) 4 HPF | | MICT, PF **16/3902'-06', 8/3894'-96'** S.O. NAT 250 MA FRAC 20,000#SD SWB LD & SWB 2 BO & 1BWPH/ 48hrs SET PLUG 3972<br>PF **12/3849'-52'** S.O. NAT FRAC 20,000# SWB LD & SWB 1.5 BOPH N/W, POP<br>**IP: EST 30 BO/CONG (3849'-52')** |

## ROCK TYPES

Cht, Congl, Dolprim, Lmst fw<7, shale, grn, shale, gry, Carbon Sh, shale, red, Ss

## ACCESSORIES

**MINERAL**
△ Chert White

**FOSSIL**
◠ Bioclastic or Fragmental
F Fossils < 20%

**STRINGER**
Chert
Sandstone
Siltstone

**TEXTURE**
C Chalky

## OTHER SYMBOLS

**MISC**
DR Daily Report
Digital Photo
Document
Folder
Link
Vertical Log File
Horizontal Log File
Core Log File
Drill Cuttings Rpt

**Oil Show**
● Good Show
◐ Fair Show
◑ Poor show
◑ Spotted or Trace
○ Questionable Stn
D Dead Oil Stn
■ Fluorescence
✶ Gas

**DST**
DST Int
DST alt

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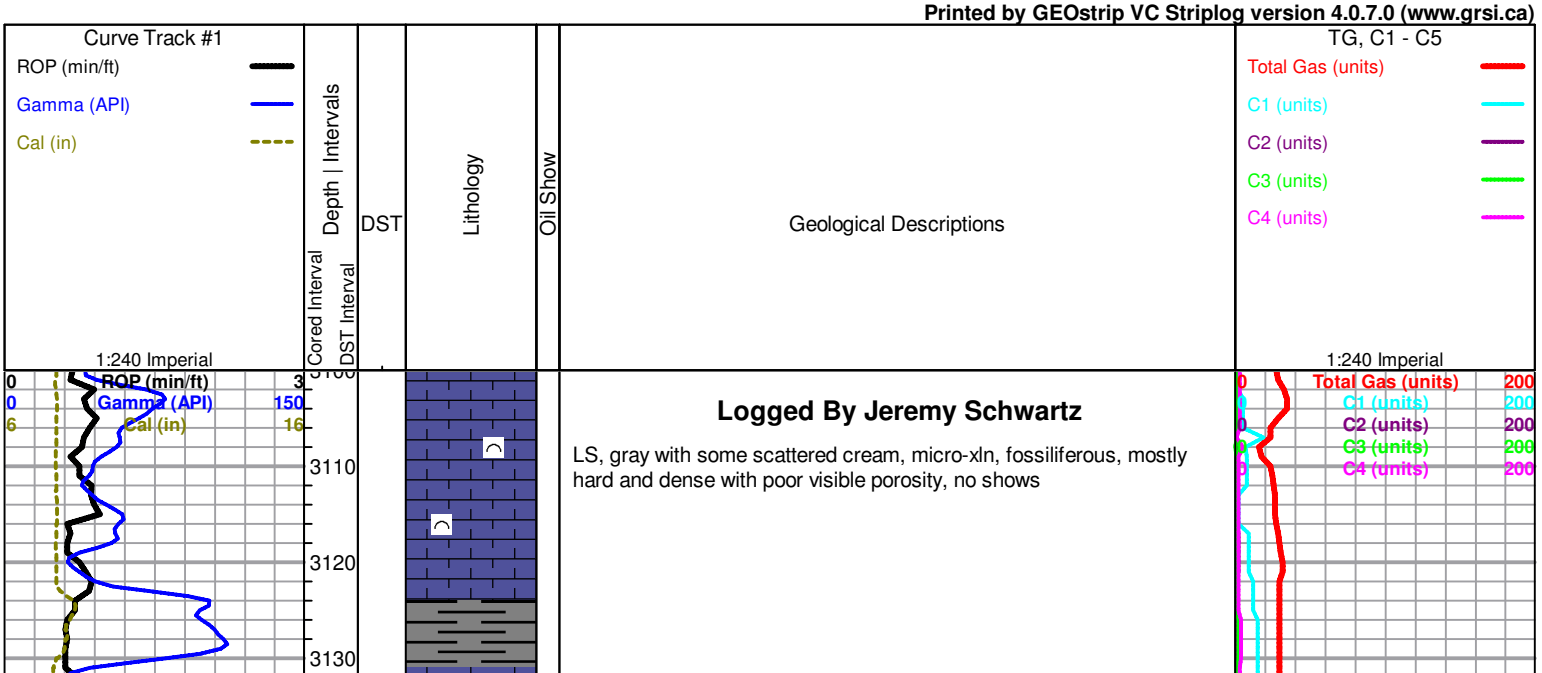
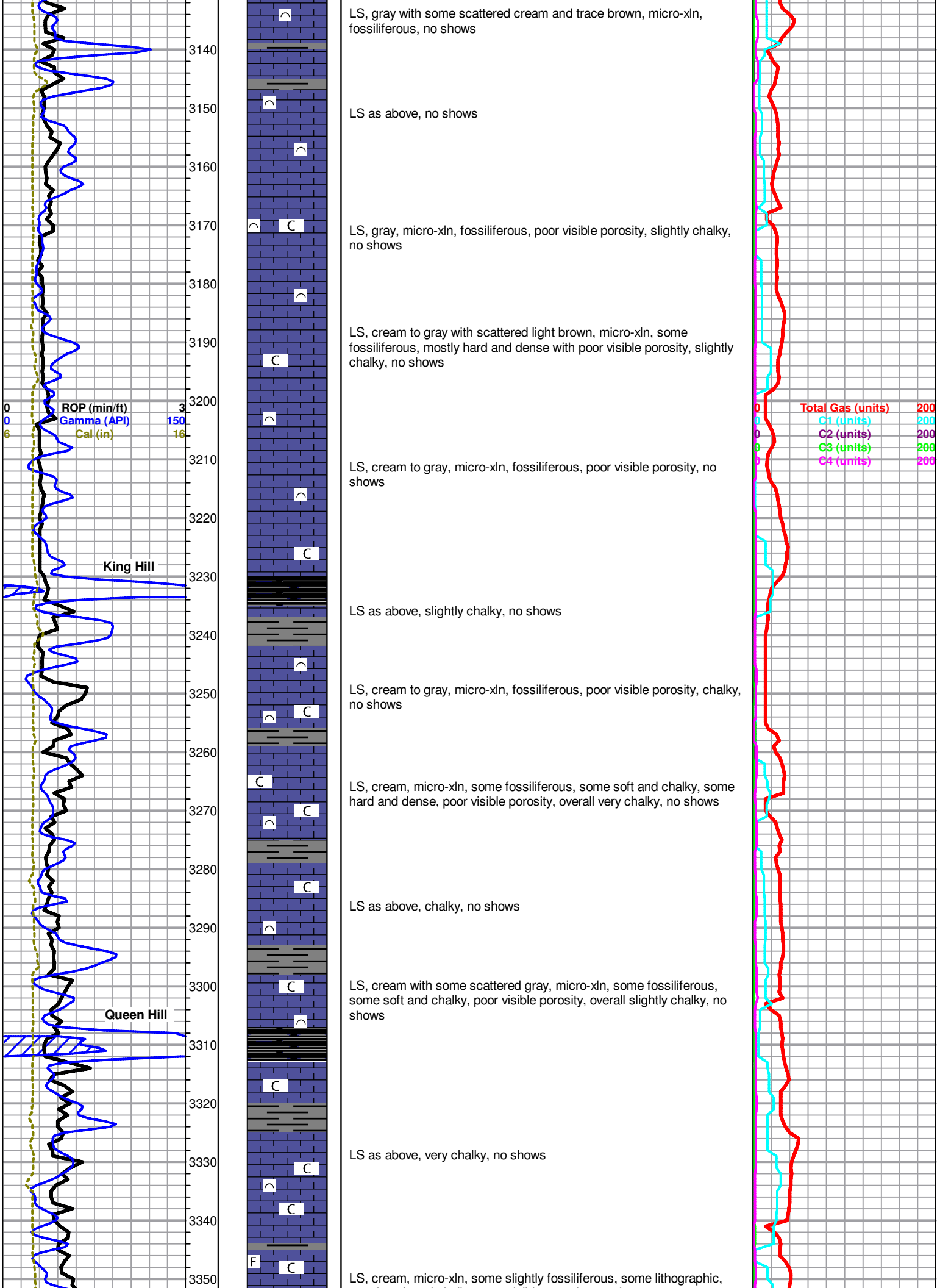





LS, gray with some scattered cream and trace brown, micro-xln, fossiliferous, no shows

LS as above, no shows

LS, gray, micro-xln, fossiliferous, poor visible porosity, slightly chalky, no shows

LS, cream to gray with scattered light brown, micro-xln, some fossiliferous, mostly hard and dense with poor visible porosity, slightly chalky, no shows

LS, cream to gray, micro-xln, fossiliferous, poor visible porosity, no shows

LS as above, slightly chalky, no shows

LS, cream to gray, micro-xln, fossiliferous, poor visible porosity, chalky, no shows

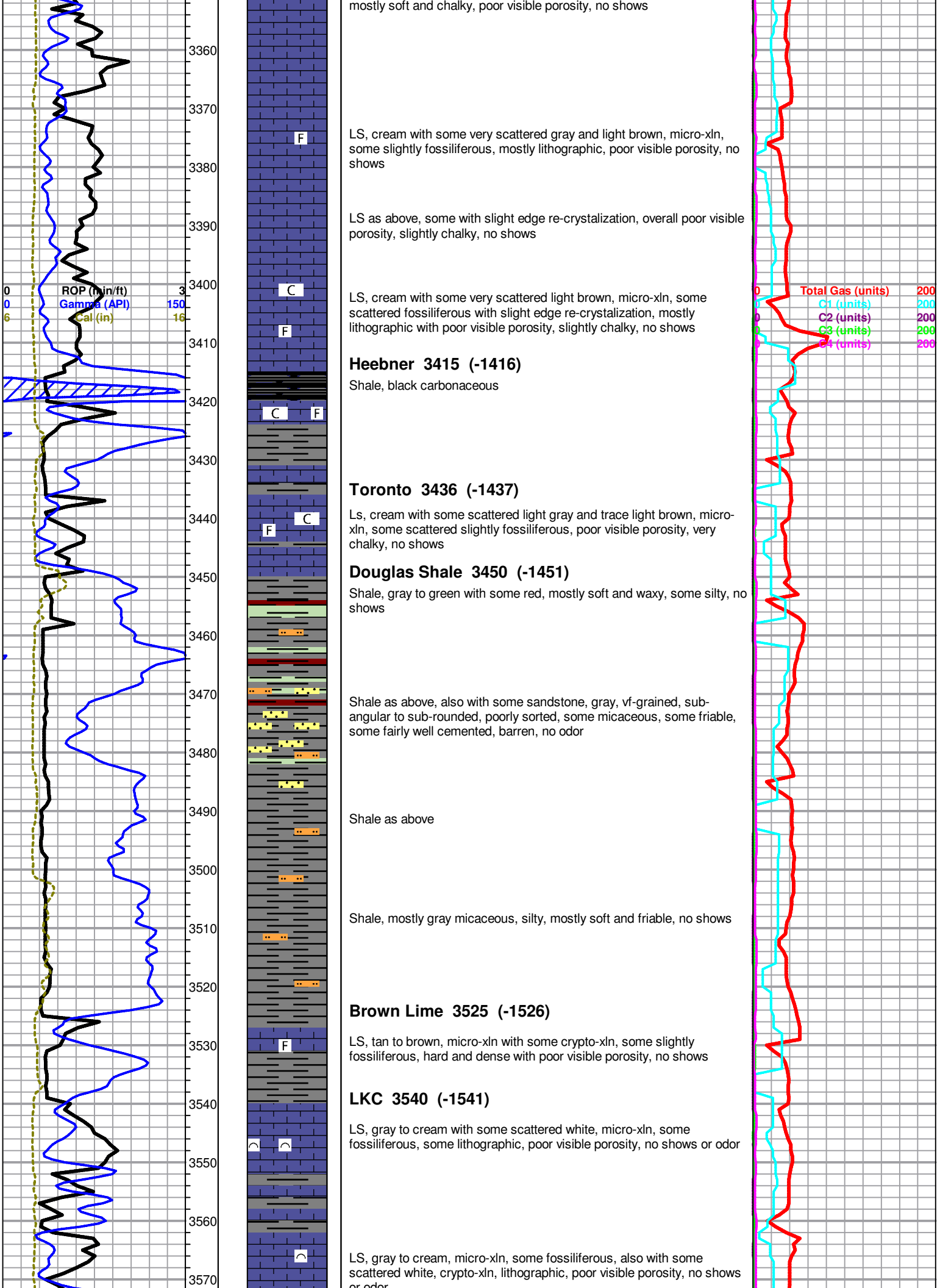
LS, cream, micro-xln, some fossiliferous, some soft and chalky, some hard and dense, poor visible porosity, overall very chalky, no shows

LS as above, chalky, no shows

LS, cream with some scattered gray, micro-xln, some fossiliferous, some soft and chalky, poor visible porosity, overall slightly chalky, no shows

LS as above, very chalky, no shows

LS, cream, micro-xln, some slightly fossiliferous, some lithographic,




mostly soft and chalky, poor visible porosity, no shows

LS, cream with some very scattered gray and light brown, micro-xln, some slightly fossiliferous, mostly lithographic, poor visible porosity, no shows

LS as above, some with slight edge re-crystalization, overall poor visible porosity, slightly chalky, no shows

LS, cream with some very scattered light brown, micro-xln, some scattered fossiliferous with slight edge re-crystalization, mostly lithographic with poor visible porosity, slightly chalky, no shows

**Heebner 3415 (-1416)**

Shale, black carbonaceous

**Toronto 3436 (-1437)**

Ls, cream with some scattered light gray and trace light brown, micro-xln, some scattered slightly fossiliferous, poor visible porosity, very chalky, no shows

**Douglas Shale 3450 (-1451)**

Shale, gray to green with some red, mostly soft and waxy, some silty, no shows

Shale as above, also with some sandstone, gray, vf-grained, sub-angular to sub-rounded, poorly sorted, some micaceous, some friable, some fairly well cemented, barren, no odor

Shale as above

Shale, mostly gray micaceous, silty, mostly soft and friable, no shows

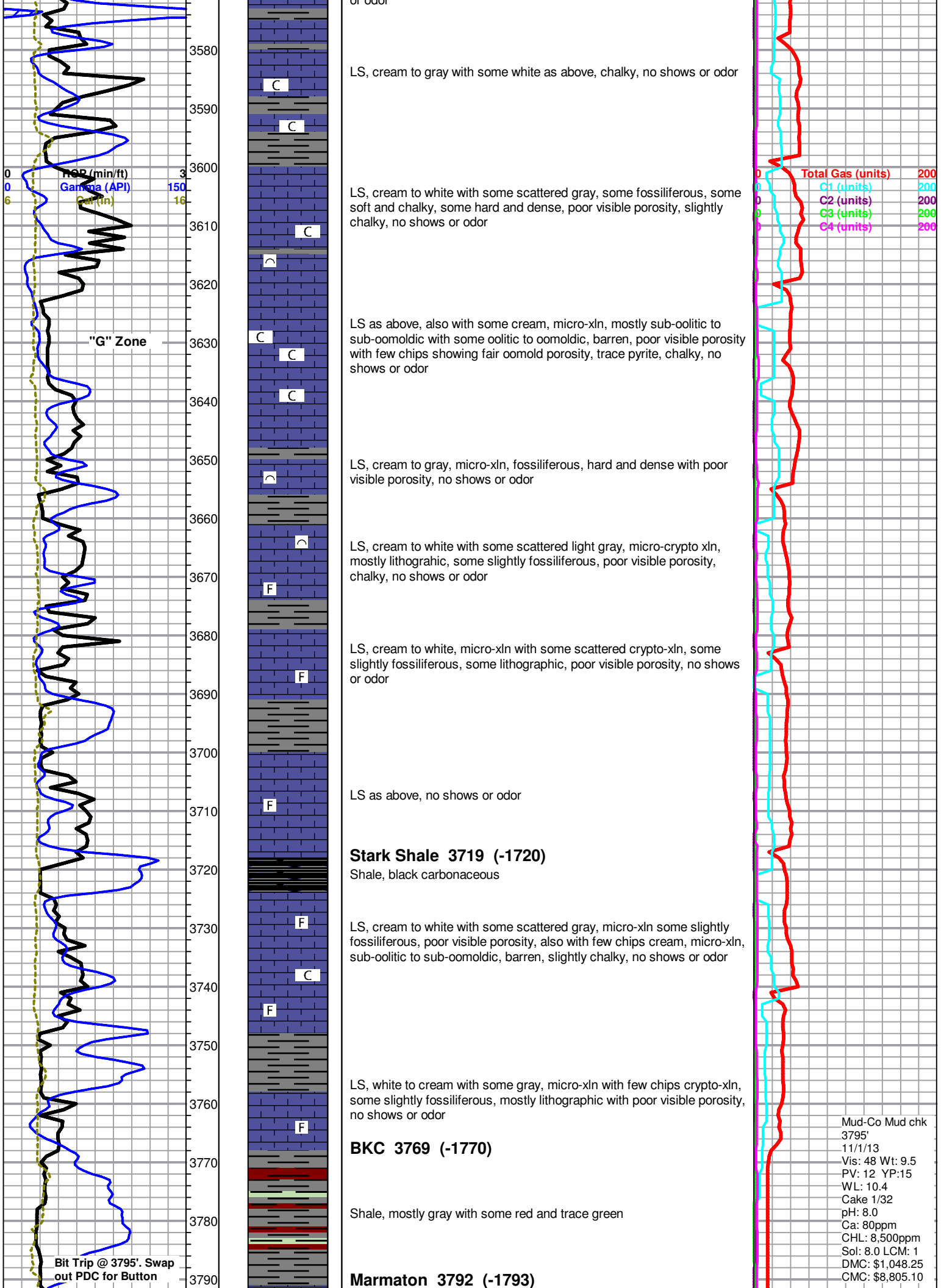
**Brown Lime 3525 (-1526)**

LS, tan to brown, micro-xln with some crypto-xln, some slightly fossiliferous, hard and dense with poor visible porosity, no shows

**LKC 3540 (-1541)**

LS, gray to cream with some scattered white, micro-xln, some fossiliferous, some lithographic, poor visible porosity, no shows or odor

LS, gray to cream, micro-xln, some fossiliferous, also with some scattered white, crypto-xln, lithographic, poor visible porosity, no shows or odor


0 ROP (min/ft) 3
0 Gamma (API) 150
6 Caliper (in) 16
3580
3590
3600
3610
3620
"G" Zone
3630
3640
3650
3660
3670
3680
3690
3700
3710
3720
3730
3740
3750
3760
3770
3780
3790
Bit Trip @ 3795'. Swap out PDC for Button
C
C
C
C
C
C
C
F
F
F
C
F
F
LS, cream to gray with some white as above, chalky, no shows or odor
LS, cream to white with some scattered gray, some fossiliferous, some soft and chalky, some hard and dense, poor visible porosity, slightly chalky, no shows or odor
LS as above, also with some cream, micro-xln, mostly sub-oolitic to sub-oomoldic with some oolitic to oomoldic, barren, poor visible porosity with few chips showing fair oomold porosity, trace pyrite, chalky, no shows or odor
LS, cream to gray, micro-xln, fossiliferous, hard and dense with poor visible porosity, no shows or odor
LS, cream to white with some scattered light gray, micro-crypto xln, mostly lithograhic, some slightly fossiliferous, poor visible porosity, chalky, no shows or odor
LS, cream to white, micro-xln with some scattered crypto-xln, some slightly fossiliferous, some lithographic, poor visible porosity, no shows or odor
LS as above, no shows or odor
Stark Shale 3719 (-1720)
Shale, black carbonaceous
LS, cream to white with some scattered gray, micro-xln some slightly fossiliferous, poor visible porosity, also with few chips cream, micro-xln, sub-oolitic to sub-oomoldic, barren, slightly chalky, no shows or odor
LS, white to cream with some gray, micro-xln with few chips crypto-xln, some slightly fossiliferous, mostly lithographic with poor visible porosity, no shows or odor
BKC 3769 (-1770)
Shale, mostly gray with some red and trace green
Marmaton 3792 (-1793)
0 Total Gas (units) 200
0 C1 (units) 200
0 C2 (units) 200
0 C3 (units) 200
0 C4 (units) 200
Mud-Co Mud chk
3795'
11/1/13
Vis: 48 Wt: 9.5
PV: 12 YP:15
WL: 10.4
Cake 1/32
pH: 8.0
Ca: 80ppm
CHL: 8,500ppm
Sol: 8.0 LCM: 1
DMC: $1,048.25
CMC: $8,805.10

SCALE CHANGE

SC

0 ROP (min/ft) 10
0 Gamma (API) 150
0 ROP (min/ft) 10
0 Gamma (API) 150
6 Cal (in) 16

DST #1

CFS @ 3849'
1905hrs
11/1/13

CFS @ 3856'
0630hrs
11/2/13

CFS @ 3882'
0855hrs
11/2/13

DST #2

CFS @ 3919'
1130hrs
11/2/13

DST #3

Slight Bit Bounce ~3960'

CFS @ 3966'
0330hrs
11/3/13

0 ROP (min/ft) 10
0 Gamma (API) 150
6 Cal (in) 16

3800 3810 3820 3830 3840 3850 3860 3870 3880 3890 3900 3910 3920 3930 3940 3950 3960 3970 3980 3990 4000 4010

F C C C

LS, cream to gray with some white, micro-crypto xln, some fossiliferous, poor visible porosity, also with trace tan to gray/brown and orange chert, no shows or odor

LS as above, also with abundant gray and red shale and trace chert

WARD-COUNTY UNIT 1-3 DST #1.jpg

## Conglomerate 3818 (-1819)

LS, mixed cream to gray with some scattered brown, some fossiliferous, some lithographic, dense with poor visible porosity, abundant gray and red shale with trace green, also with mixed tan to white and orange cherts, red wash, no shows or odor

3849' 30" Mixed cream to gray LS, micro-xln, dense with poor visible porosity, with mixed gray and red shale and white to tan and brown cherts, some tripolitic, some chips with good visible pinpoint porosity and mostly saturated to saturated brown to black stain, slow streaming cut with milky white fluorescence, few chips slowly bleed oil and few gas bubbles when left under lamp, fair show free oil in tray, good odor

3849' 60" LS, cherts, and shales as above, triploiitc cherts dropping out

3856' Mixed cream to gray LS, abundant gray and red shale, and some tan to white cherts, few with tripolitic edges and scattered brown to black gilsonitic stain, NSFO, poor odor

Mixed LS, few chips cream, micro-xln, oomoldic, barren, abundant gray and red shales with trace green, also with mixed tan to orange and white chert, some with tripolitic edges with very scattered black gilsonitic stain, found one small sand cluster, light gray, vf-grained, sub-angular to sub-rounded, poorly sorted, friable, barren, chalky, no odor

Chert, white to tan, vitreous, sharp, some with tripolitic edges and slight black gilsonitic stain, NSFO, no odor in tray

## Simpson Shale 3890 (-1891)

Shale, gray and red with some green

## Simpson Sand 3906 (-1907)

WARD-COUNTY UNIT 1-3 DST #2.jpg

SS, medium to coarse grained, sub-rounded to sub-angular, some barren, some with scattered black stain, mostly fair to well cemented, calcareous, some clusters show good visible porosity, some mostly saturated to saturated brown to black stain, upon break clusters have fair show free oil and slight show gas bubbles, slow streaming cut with milky white fluorescence, good show free oil in tray, fair odor

3916'-3922' Lower Simpson Sandstone, unconsolidated, friable, poorly cemented, no shows

Below 3920' Shale, gray to green with some red, also with some scattered sandstone, sub-rounded to sub-angular, well cemented with poor visible porosity, mostly barren, some with very scattered brown to black stain, no cut, abundant green clay, few globs have sand grains trapped, poor odor

As above, with influx of green shale

## Arbuckle 3960 (-1961)

WARD-COUNTY UNIT 1-3 DST #3.jpg

3966' 30" Mixed green to gray shales with some red, scattered SS clusters, transluscent, sub-rounded to sub-angular, mostly barren, few with very scattered black stain, also with dolomite, mostly cream with some scattered white, micro-xln, some dense and lithographic, some sucrosic with fair to good rhombic development and fair to good visible porosity, some chips friable, barren, no cut, poor odor

3966' 60" As above, with overall more dolomite and less shales and SS, poor odor in cup

Dolomite, cream with some scattered white, micro-xln, mostly lithographic, some sub-sucrosic, dense with poor visible porosity, trace pyrite, no shows or odor

Dolomite as above, trace pyrite, slightly chalky, no shows or odor

Dolomite, cream with some scattered white and brown, micro-xln with some crypto-xln, lithographic, some sub-sucrosic, mostly dense with poor visible porosity, few chips sucrosic with several small scattered vugs and poor to fair

Deviation Survey 1/4 Degree
Strap 1.97STB

0 Total Gas (units) 200
C1 (units) 200
0 C2 (units) 200
C3 (units) 200
C4 (units) 200

**Driller accidentally kicked geolograph back in while making a connection. False reading from 3856' - 3858'**

Mud-Co Mud chk
3920'
11/2/13
Vis: 51 Wt: 9.4
PV: 14 YP:19
WL: 8.0
Cake 1/32
pH: 9.0
Ca: 20ppm
CHL: 8,400ppm
Sol: 7.4 LCM: 1
DMC: $770.65
CMC: $9,575.75

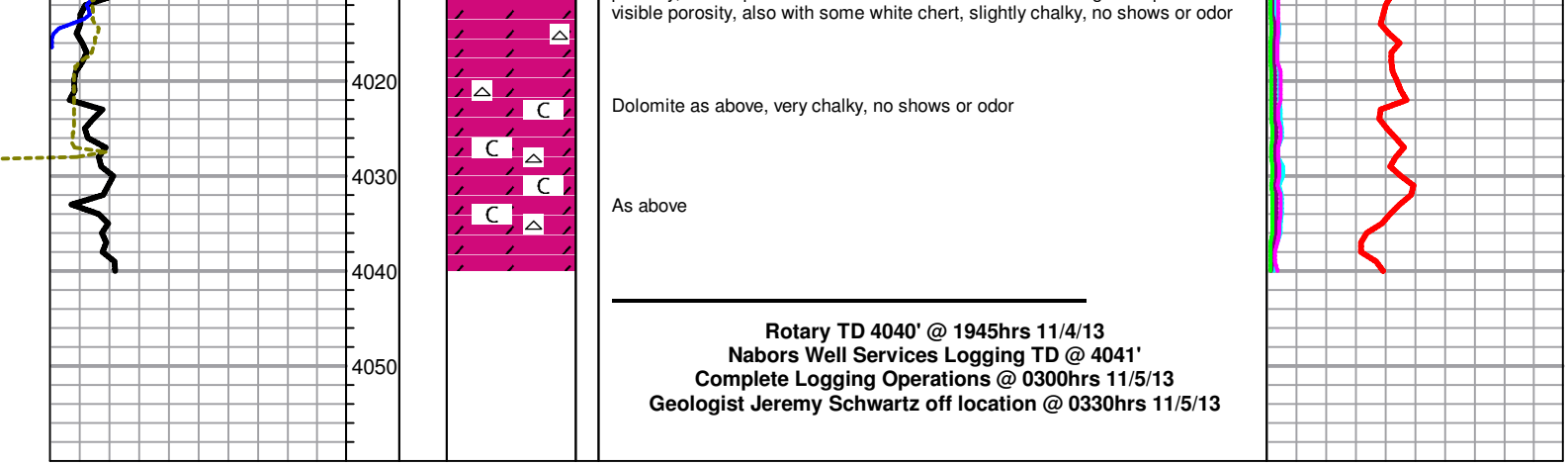
SC

0 Total Gas (units) 250
C1 (units) 250
0 C2 (units) 250
C3 (units) 250
0 C4 (units) 250

Mud-Co Mud chk
3966'
11/3/13
Vis: 53 Wt: 9.1
PV: 16 YP:17
WL: 7.2
Cake 1/32
pH: 10.0
Ca: 20ppm
CHL: 7,200ppm
Sol: 5.3 LCM: 1
DMC: $1,750.80
CMC: $11,326.55

Mud-Co Mud chk
3966'
11/4/13
Vis: 58 Wt: 9.3
PV: 17 YP:15
WL: 7.2
Cake 1/32
pH: 9.5
Ca: 40ppm
CHL: 8,600ppm
Sol: 6.7 LCM: 1
DMC: $0.00
CMC: $11,326.55

0 Total Gas (units)
C1 (units)
0 C2 (units) 250
C3 (units) 250
C4 (units) 250




visible porosity, also with some white chert, slightly chalky, no shows or odor

Dolomite as above, very chalky, no shows or odor

As above

**Rotary TD 4040' @ 1945hrs 11/4/13**
**Nabors Well Services Logging TD @ 4041'**
**Complete Logging Operations @ 0300hrs 11/5/13**
**Geologist Jeremy Schwartz off location @ 0330hrs 11/5/13**

## WARD-COUNTY UNIT 1-3 DST #1.jpg

# DRILL STEM TEST REPORT

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17060 **DST#: 1**

Test Start: 2013.11.01 @ 22:23:00

## GENERAL INFORMATION:

Formation: **Conglomerate**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:09:30
Time Test Ended: 03:02:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 3325 Great Bend/48

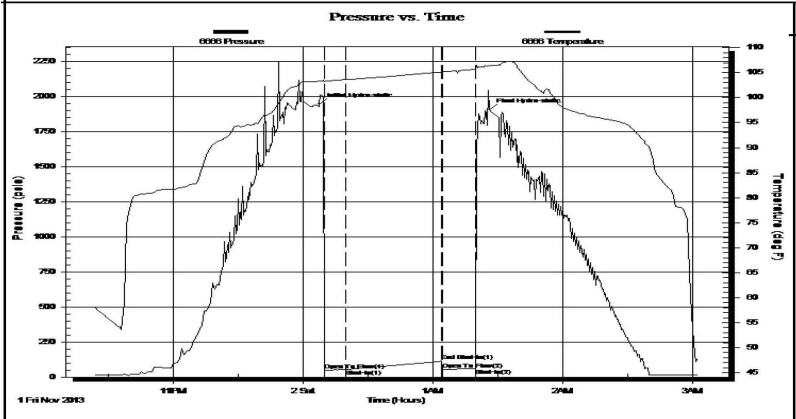
**Interval: 3806.00 ft (KB) To 3849.00 ft (KB) (TVD)**
Total Depth: 3849.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

Reference Elevations: 1999.00 ft (KB)
1986.00 ft (CF)
KB to GR/CF: 13.00 ft

**Serial #: 6666** **Outside**
Press@RunDepth: 52.18 psia @ 3846.00 ft (KB)
Start Date: 2013.11.01 End Date: 2013.11.02
Start Time: 22:23:00 End Time: 03:02:30

Capacity: 5000.00 psia
Last Calib.: 2013.11.02
Time On Btm: 2013.11.02 @ 00:07:30
Time Off Btm: 2013.11.02 @ 01:26:00

TEST COMMENT: 1ST Open 10 Minutes/Weak blow /Started as strong surface blow died to weak surface blow /No build
1ST Shut In 45 Minutes/No blow back
2ND Open 15 Minutes/Dead no blow /Flush tool/Good surge/Weak surface blow 30 seconds/Pull test




## PRESSURE SUMMARY

| Time (Min.) | Pressure (psia) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1946.29 | 103.27 | Initial Hydro-static |
| 2 | 50.60 | 103.09 | Open To Flow (1) |
| 12 | 52.18 | 103.61 | Shut-In(1) |
| 57 | 113.72 | 105.14 | End Shut-In(1) |
| 57 | 53.39 | 105.13 | Open To Flow (2) |
| 72 | 60.30 | 105.67 | Shut-In(2) |
| 79 | 1906.72 | 106.35 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 15.00 | Mud 100% | 0.07 |
| | | |
| | | |
| | | |
| | | |
| | | |

## Gas Rates

| | Choke (inches) | Pressure (psia) | Gas Rate (Mcf/d) |
|---|---|---|---|

# WARD-COUNTY UNIT 1-3 DST #2.jpg

## DRILL STEM TEST REPORT

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17061 **DST#: 2**

Test Start: 2013.11.02 @ 14:36:00

### GENERAL INFORMATION:

Formation: **Simpson Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 16:08:30
Time Test Ended: 23:22:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 3325 Great Bend/48

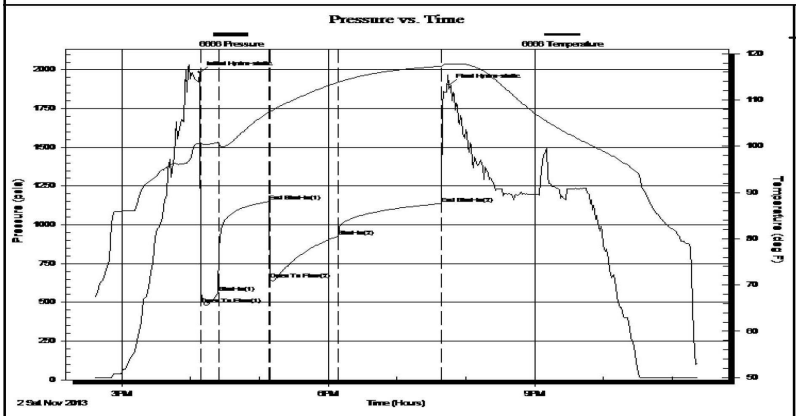
**Interval: 3879.00 ft (KB) To 3919.00 ft (KB) (TVD)**
Total Depth: 3919.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

Reference Elevations: 1999.00 ft (KB)
1986.00 ft (CF)
KB to GR/CF: 13.00 ft

**Serial #: 6666** **Outside**
Press@RunDepth: 926.92 psia @ 3916.00 ft (KB)
Start Date: 2013.11.02 End Date: 2013.11.02
Start Time: 14:36:00 End Time: 23:22:30

Capacity: 5000.00 psia
Last Calib.: 2013.11.02
Time On Btm: 2013.11.02 @ 16:07:30
Time Off Btm: 2013.11.02 @ 19:45:00

TEST COMMENT:
1ST Open 15 Minutes/Strong blow /Blow built to bottom of bucket in 1 minute
1ST Shut In 45 Minutes/Blow back built to bottom of bucket in 5 minutes
2ND Open 60 Minutes/Strong blow /Blow built to bottom of bucket in 45 seconds/Gas to surface 2 minutes
2ND Shut In 90 Minutes/Blow back built to bottom of bucket in 3 min 30 seconds




### PRESSURE SUMMARY

| Time (Min.) | Pressure (psia) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1982.37 | 100.71 | Initial Hydro-static |
| 1 | 487.10 | 100.20 | Open To Flow (1) |
| 17 | 560.22 | 100.92 | Shut-In(1) |
| 61 | 1150.37 | 107.39 | End Shut-In(1) |
| 62 | 648.18 | 107.53 | Open To Flow (2) |
| 122 | 926.92 | 113.80 | Shut-In(2) |
| 211 | 1136.90 | 117.26 | End Shut-In(2) |
| 218 | 1903.50 | 117.74 | Final Hydro-static |

### Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 2425.00 | Clean gassy Oil | 31.01 |
| 0.00 | Gas 10% Oil 90% | 0.00 |
| 63.00 | Mud cut Gassy Oil | 0.88 |
| 0.00 | Mud 10% Gas 10% Oil 80% | 0.00 |
| 0.00 | Corrected gravity of oil 38 | 0.00 |
| | | |

### Gas Rates

| | Choke (inches) | Pressure (psia) | Gas Rate (Mcf/d) |
|---|---|---|---|
| First Gas Rate | 0.13 | 6.31 | 2.36 |
| Last Gas Rate | 0.13 | 10.18 | 3.81 |
| Max. Gas Rate | 0.13 | 11.97 | 4.48 |

# WARD-COUNTY UNIT 1-3 DST #3.jpg

# DRILL STEM TEST REPORT

Shelby Resources LLC

2717 Canal Boulevard
Suite C
Hays, Kansas 67601
ATTN: Jeremy Schwartz

**3/22S/16W/Pawnee**

**Ward-County Unit 3-1**

Job Ticket: 17062 **DST#: 3**

Test Start: 2013.11.03 @ 06:52:00

## GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:43:30
Time Test Ended: 14:58:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 3325 Great Bend/48

**Interval: 3960.00 ft (KB) To 3966.00 ft (KB) (TVD)**
Total Depth: 3966.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

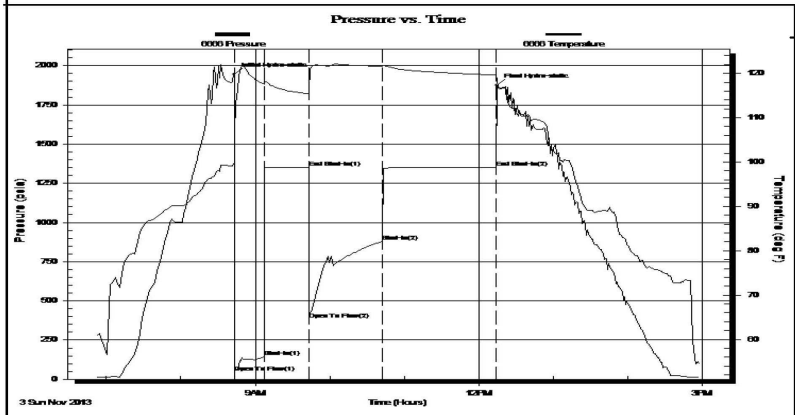
Reference Elevations: 1999.00 ft (KB)
1986.00 ft (CF)
KB to GR/CF: 13.00 ft

**Serial #: 6666** **Inside**

Press@RunDepth: 878.30 psia @ 3962.00 ft (KB)
Start Date: 2013.11.03 End Date: 2013.11.03
Start Time: 06:52:00 End Time: 14:58:00

Capacity: 5000.00 psia
Last Calib.: 2013.11.03
Time On Btm: 2013.11.03 @ 08:43:00
Time Off Btm: 2013.11.03 @ 12:14:30

TEST COMMENT: 1ST Open 15 Minutes/Strong surging blow /Blow built to bottom of bucket in 13 minutes 30 seconds
1ST Shut In 45 Minutes/No blow back
2ND Open 60 Minutes/Strong blow /Blow built to bottom of bucket in 1 minute 30 seconds/Smooth build
2ND Shut In 90 Minutes/No blow back




## PRESSURE SUMMARY

| Time (Min.) | Pressure (psia) | Temp (deg F) | Annotation |
|---|---|---|---|
| 0 | 1946.58 | 99.65 | Initial Hydro-static |
| 1 | 45.78 | 106.48 | Open To Flow (1) |
| 24 | 142.66 | 117.64 | Shut-In(1) |
| 60 | 1348.76 | 115.42 | End Shut-In(1) |
| 61 | 382.68 | 116.07 | Open To Flow (2) |
| 120 | 878.30 | 121.61 | Shut-In(2) |
| 211 | 1348.54 | 119.68 | End Shut-In(2) |
| 212 | 1876.77 | 118.67 | Final Hydro-static |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|---|---|---|
| 1890.00 | Slightly mud and gas cut water | 23.51 |
| 0.00 | Mud 2% Gas 3% Water 95% | 0.00 |
| 0.00 | Recovery Chlorides 21000 ppm | 0.00 |
| 0.00 | Recov. Resist. .18 ohms @ 68 deg. | 0.00 |
| | | |
| | | |

## Gas Rates

| | Choke (inches) | Pressure (psia) | Gas Rate (Mcf/d) |
|---|---|---|---|