



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1269966
OIL & GAS CONSERVATION DIVISION

Form ACO-1
August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

| | | |
|-----------------------------------|-----------------|---|
| Spud Date or Recompletion Date | Date Reached TD | Completion Date or Recompletion Date |
|-----------------------------------|-----------------|---|

API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____



1269966

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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

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

| | |
|--|---|
| Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____ | <input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum |
|--|---|

| CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used | | | | | | | |
|---|-------------------|---------------------------|-------------------|---------------|----------------|--------------|----------------------------|
| Report all strings set-conductor, surface, intermediate, production, etc. | | | | | | | |
| Purpose of String | Size Hole Drilled | Size Casing Set (In O.D.) | Weight Lbs. / Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| ADDITIONAL CEMENTING / SQUEEZE RECORD | | | | |
|--|------------------|----------------|--------------|----------------------------|
| Purpose: | Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
| <input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone | | | | |
| | | | | |

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
 Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
 Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

| Shots Per Foot | PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated | Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i> | Depth |
|----------------|---|--|-------|
| | | | |
| | | | |
| | | | |
| | | | |

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

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

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

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

| | |
|-----------|-------------------------|
| Form | ACO1 - Well Completion |
| Operator | Outlaw Well Service LLC |
| Well Name | Lowry 5-13 |
| Doc ID | 1269966 |

Tops

| Name | Top | Datum |
|---------------|------|-------|
| ANHYDRITE | 1461 | +548 |
| TOPEKA | 2961 | -952 |
| HEEBNER SHALE | 3165 | -1156 |
| TORONTO | 3186 | -1177 |
| LKC | 3202 | -1193 |
| BKC | 3420 | -1411 |
| ARBUCKLE | 3461 | -1452 |
| RTD | 3532 | -1523 |

OPERATOR

Company: OUTLAW WELL SERVICE LLC
 Address: 1408 WEST 42ND
 HAYS, KANSAS 67601

Contact Geologist: PRESTON WOLF
 Contact Phone Nbr: 785-650-2399
 Well Name: LOWRY # 5-13
 Location: 330 FSL 880 FWL
 API: 15-163-24308-00-00
 Pool:
 State: KANSAS

Field: BRAY
 Country: USA

Scale 1:240 Imperial

Well Name: LOWRY # 5-13
 Surface Location: 330 FSL 880 FWL
 Bottom Location:
 API: 15-163-24308-00-00
 License Number: 34272
 Spud Date: 10/21/2015 Time: 2:00 PM
 Region: ROOKS COUNTY
 Drilling Completed: 10/26/2015 Time: 11:40 PM
 Surface Coordinates: 330 FSL & 880 FWL
 Bottom Hole Coordinates:
 Ground Elevation: 2001.00ft
 K.B. Elevation: 2009.00ft
 Logged Interval: 2850.00ft To: 3530.00ft
 Total Depth: 3530.00ft
 Formation: ARBUCKLE
 Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -99.471318
 Latitude: 39.337021
 N/S Co-ord: 330 FSL
 E/W Co-ord: 880 FWL

LOGGED BY

Company: SOLUTIONS CONSULTING, INC.
 Address: 108 WEST 35TH
 HAYS, KANSAS 67601

Phone Nbr: 785-650-4540 / 785-639-1337
 Logged By: GEOLOGIST

Name: STEVE REED

CONTRACTOR

Contractor: DISCOVERY DRILLING, INC
 Rig #: 4
 Rig Type: MUD ROTARY
 Spud Date: 10/21/2015 Time: 2:00 PM
 TD Date: 10/26/2015 Time: 11:40 PM
 Rig Release: 10/27/2015 Time: 8:00 PM

ELEVATIONS

K.B. Elevation: 2009.00ft Ground Elevation: 2001.00ft
 K.B. to Ground: 8.00ft

NOTES

DUE TO STRUCTURAL POSITON. MARGINAL DRILL STEM TEST RESULTS. AND OVERALL DEPLETION IN THE

AREA, THE LOWRY #5-13 WAS DEEMED NOT COMMERCIALY PRODUCTIVE AT THIS TIME. THE DECISION WAS MADE TO PLUG AND ABANDON.

OPEN HOLE LOGGING BY PIONEER ENERGY SERVICES: DUAL INDUCTION LOG, DUAL COMPENSATED POROSITY LOG, MICRORESISTIVITY LOG

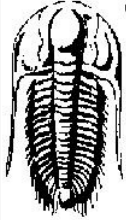
DRILL STEM TESTING BY TRILOBITE TESTING INC: FOUR (4) CONVENTIONAL AND ONE (1) STRADDLE TEST

RESPECTFULLY SUBMITTED BY: STEVE REED

| | WELL NAME | | COMPARISON WELL | COMPARISON WELL |
|----------------------|-------------------|--------------|-------------------|-------------------|
| | LOWRY #5-13 | | DON #1 | CHARLIE #1 |
| | API: 15-163-24308 | | API: 15-163-24301 | API: 15-163-24296 |
| | 2009 KB | | 2013 KB | 2012 KB |
| FORMATION | SAMPLE TOPS | LOG TOPS | LOG TOPS (DATUM) | LOG TOPS (DATUM) |
| ANHYDRITE TOP | 1460 (+549) | 1461 (+548) | +553 | +557 |
| TOPEKA | 2961 (-952) | 2961 (-952) | -950 | -953 |
| HEEBNER | 3165 (-1156) | 3165 (-1156) | -1154 | -1155 |
| TORONTO | 3185 (-1176) | 3186 (-1177) | -1174 | -1176 |
| LKC | 3201 (-1192) | 3202 (-1193) | -1190 | -1192 |
| BKC | 3423 (-1414) | 3420 (-1411) | -1411 | -1411 |
| ARBUCKLE | 3460 (-1451) | 3461 (-1452) | -1450 | -1447 |
| RTD | 3530 (-1521) | 3532 (-1523) | -1532 | -1535 |

SUMMARY OF DAILY ACTIVITY

- 10-21-15** MIRU, spud @ 2:00pm, set 8 5/8" surface pipe to 221.36 w/150 sxs 80/20 poz 2% Gel, 3%CC, survey 1/2°, plug down @ 7:00pm, WOC, drill plug @ 3:00am
- 10-22-15** 555, drilling
- 10-23-15** 2162, drilling, displaced @ 2878
- 10-24-15** 3003, drilling, CFS @ 3250, short trip, CTCH, TOWB for DST #1 3228-3250, survey 1/2°, pipe strap .01' short to board, DST #1 Misrun (bridge @ 1000 feet), Recondition hole, DST #2 3228-3250
- 10-25-15** 3250, DST #2, drilling, CFS@ 3464, DST #3 3407-3464,
- 10-26-15** 3464, DST #4 3407-3470, drilling, TD of 3530 reached @ 11:40pm, CTCH, TOWB for logging, survey 1°, logging
- 10-27-15** 3530, DST #5 straddle 3252-3266, prepare for plugging, release rig @ 8:00pm



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Outlaw Well Service
 1408 West 42nd
 Hays KS 67601
 ATTN: Steve Reed

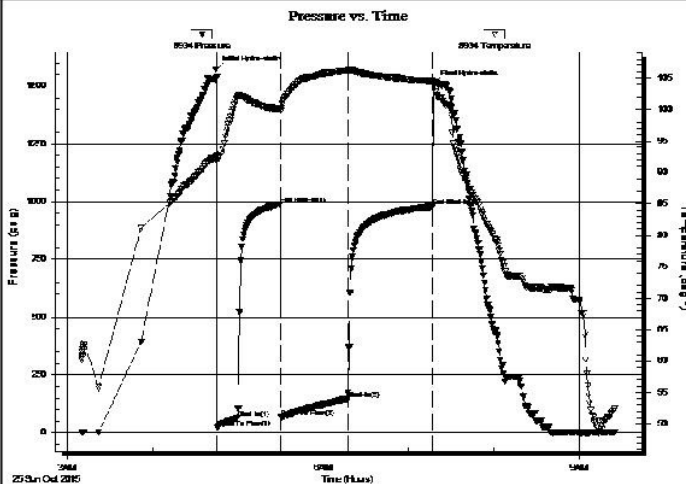
20-8-19, Rooks, KS
Lowry #5-13
 Job Ticket: 64863 **DST#: 2**
 Test Start: 2015.10.25 @ 03:10:00

GENERAL INFORMATION:

Formation: **KC "C"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:45:30
 Time Test Ended: 09:25:00
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brett Dickinson
 Unit No: 59
 Interval: **3228.00 ft (KB) To 3250.00 ft (KB) (TVD)**
 Total Depth: 3250.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Reference Elevations: 2009.00 ft (KB)
 2001.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8934 Outside
 Press@RunDepth: 145.86 psig @ 3229.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.10.25 End Date: 2015.10.25 Last Calib.: 2015.10.25
 Start Time: 03:10:05 End Time: 09:24:59 Time On Btm: 2015.10.25 @ 04:44:45
 Time Off Btm: 2015.10.25 @ 07:18:00

TEST COMMENT: IF-BOB in 12min
 IS-1/8in blow
 FF-BOB in 13min
 FS-1/4in blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1571.44 | 92.47 | Initial Hydro-static |
| 1 | 21.05 | 91.96 | Open To Flow (1) |
| 15 | 63.21 | 101.92 | Shut-In(1) |
| 45 | 988.66 | 100.03 | End Shut-In(1) |
| 46 | 67.24 | 100.13 | Open To Flow (2) |
| 93 | 145.86 | 106.21 | Shut-In(2) |
| 153 | 979.27 | 104.53 | End Shut-In(2) |
| 154 | 1507.65 | 104.34 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------------------|--------------|
| 180.00 | MCW 90%W 10%M | 2.25 |
| 60.00 | GWOCM 5%G 10%O 10%W 75%M | 0.84 |
| 50.00 | GO 15%G 85%O | 0.70 |
| 0.00 | 120ft GIP | 0.00 |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Outlaw Well Service

20-8-19, Rooks, KS

1408 West 42nd
Hays KS 67601

Lowry #5-13

Job Ticket: 64864

DST#: 3

ATTN: Steve Reed

Test Start: 2015.10.26 @ 01:45:00

GENERAL INFORMATION:

Formation: **Arb**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:52:00

Time Test Ended: 08:21:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3407.00 ft (KB) To 3464.00 ft (KB) (TV D)

Total Depth: 3464.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2009.00 ft (KB)

2001.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8934 Outside

Press@RunDepth: 27.23 psig @ 3408.00 ft (KB)

Start Date: 2015.10.26

End Date:

2015.10.26

Capacity: 8000.00 psig

Last Calib.:

2015.10.26

Start Time: 01:45:05

End Time:

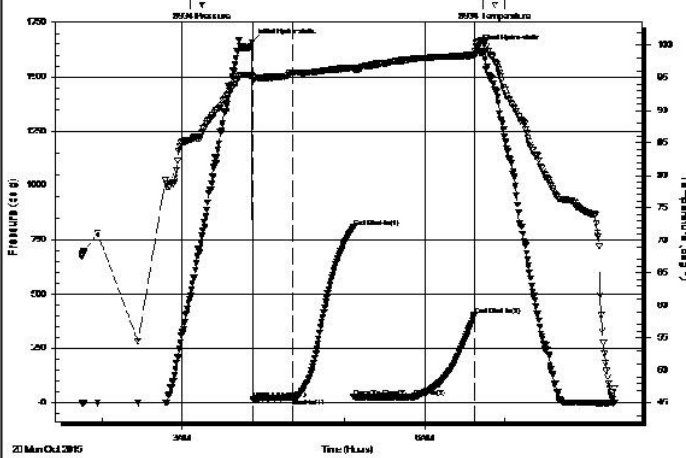
08:21:29

Time On Btm: 2015.10.26 @ 03:51:30

Time Off Btm: 2015.10.26 @ 06:38:45

TEST COMMENT: IF-1in blow
IS-No bloe
FF-1/4in blow
FS-No blow

Pressure vs. Time



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1661.42 | 95.42 | Initial Hydro-static |
| 1 | 16.28 | 94.46 | Open To Flow (1) |
| 31 | 21.70 | 95.88 | Shut-In(1) |
| 76 | 804.74 | 96.59 | End Shut-In(1) |
| 76 | 25.97 | 96.34 | Open To Flow (2) |
| 120 | 27.23 | 97.95 | Shut-In(2) |
| 166 | 403.26 | 98.49 | End Shut-In(2) |
| 168 | 1632.21 | 100.48 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------|--------------|
| 1.00 | Oil | 0.00 |
| 14.00 | V SOCM 5%O 95%M | 0.07 |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Outlaw Well Service

20-8-19, Rooks, KS

1408 West 42nd
Hays KS 67601

Low ry #5-13

Job Ticket: 64865

DST#: 4

ATTN: Steve Reed

Test Start: 2015.10.26 @ 13:15:05

GENERAL INFORMATION:

Formation: **Arb**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:21:00

Time Test Ended: 19:04:59

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3407.00 ft (KB) To 3470.00 ft (KB) (TVD)

Total Depth: 3470.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2009.00 ft (KB)

2001.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8934 Outside

Press@RunDepth: 374.11 psig @ 3408.00 ft (KB)

Start Date: 2015.10.26

End Date:

2015.10.26

Start Time: 13:15:05

End Time:

19:04:59

Capacity: 8000.00 psig

Last Calib.: 2015.10.26

Time On Btm: 2015.10.26 @ 15:20:30

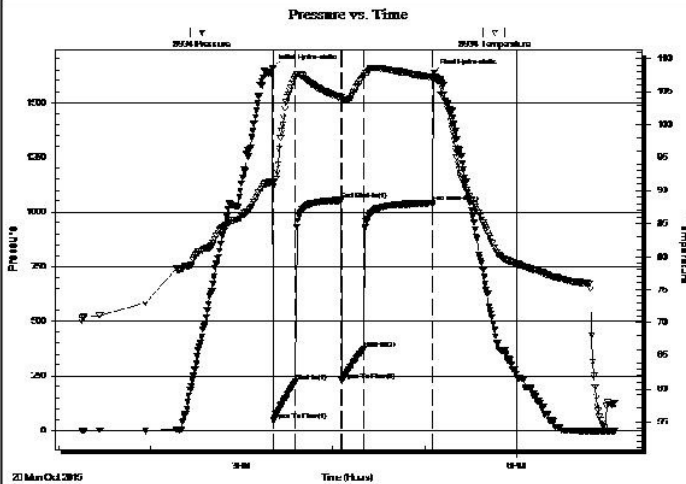
Time Off Btm: 2015.10.26 @ 17:06:00

TEST COMMENT: IF-BOB in 3min

IS-No blow

FF-BOB in 3min

FS-No blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1658.69 | 91.40 | Initial Hydro-static |
| 1 | 44.78 | 90.78 | Open To Flow (1) |
| 15 | 221.97 | 107.26 | Shut-In(1) |
| 45 | 1053.86 | 104.19 | End Shut-In(1) |
| 46 | 229.01 | 103.91 | Open To Flow (2) |
| 60 | 374.11 | 107.42 | Shut-In(2) |
| 105 | 1041.02 | 107.21 | End Shut-In(2) |
| 106 | 1635.49 | 107.37 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------|--------------|
| 480.00 | MCW 70%W 30%M | 6.46 |
| 240.00 | OS WCM 5%W 95%M | 3.37 |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

| | Chcke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|--|----------------|-----------------|------------------|
| | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Outlaw Well Service

20-8-19, Rooks, KS

1408 West 42nd
Hays KS 67601

Low ry #5-13

Job Ticket: 64866

DST#: 5

ATTN: Steve Reed

Test Start: 2015.10.27 @ 06:10:00

GENERAL INFORMATION:

Formation: **KC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:06:30

Time Test Ended: 12:31:15

Test Type: Conventional Straddle (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3252.00 ft (KB) To 3266.00 ft (KB) (TV D)

Reference Elevations: 2009.00 ft (KB)

Total Depth: 3266.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8934 Inside

Press@RunDepth: 129.99 psig @ 3253.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.10.27

End Date: 2015.10.27

Last Calib.: 2015.10.27

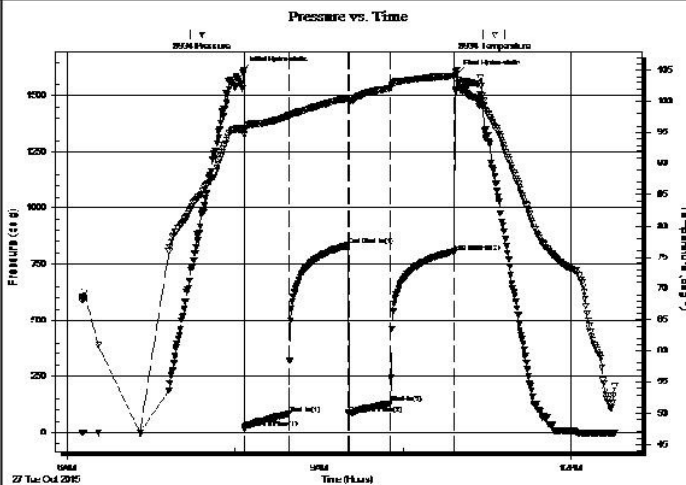
Start Time: 06:10:05

End Time: 12:31:14

Time On Btm: 2015.10.27 @ 08:05:45

Time Off Btm: 2015.10.27 @ 10:38:30

TEST COMMENT: IF-BOB in 21min
IS-No blow
FF-6in blow
FS-No blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1614.59 | 95.64 | Initial Hydro-static |
| 1 | 19.11 | 94.66 | Open To Flow (1) |
| 32 | 81.45 | 97.58 | Shut-in(1) |
| 75 | 833.93 | 100.53 | End Shut-in(1) |
| 75 | 85.54 | 100.15 | Open To Flow (2) |
| 105 | 129.99 | 102.11 | Shut-in(2) |
| 151 | 806.97 | 104.09 | End Shut-in(2) |
| 153 | 1599.10 | 105.02 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------|--------------|
| 2.00 | OS MW 20%M 80%W | 0.01 |
| 248.00 | Water | 3.22 |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 64866

Printed: 2015.10.27 @ 13:00:00

Type

Date

From Depth







To Depth

10/22/2015

0.00ft

0.00ft

ROCK TYPES

| | | |
|--|--|--|
|  Dolprim |  Lmst fw7> |  Carbon Sh |
|  Lmst fw<7 |  shale, gry |  shale, red |

ACCESSORIES

MINERAL

- P Pyrite
- △ Chert White
- Mc Mica
- ▧ Euhed rhombs of dol or c

FOSSIL

- F Fossils < 20%
- φ Oolite
- ⊕ Fossilinid

STRINGER

- ~~~~ Chert

TEXTURE

- C Chalky
- L Lithogr

OTHER SYMBOLS

EVENTS

- ⌋ Casing Shoe
- ▷ RTF
- ▷ Sidewall
- ▶ Left Casing Shoe
- ◀ Right Casing Shoe

INTERVALS

- Core
- DST

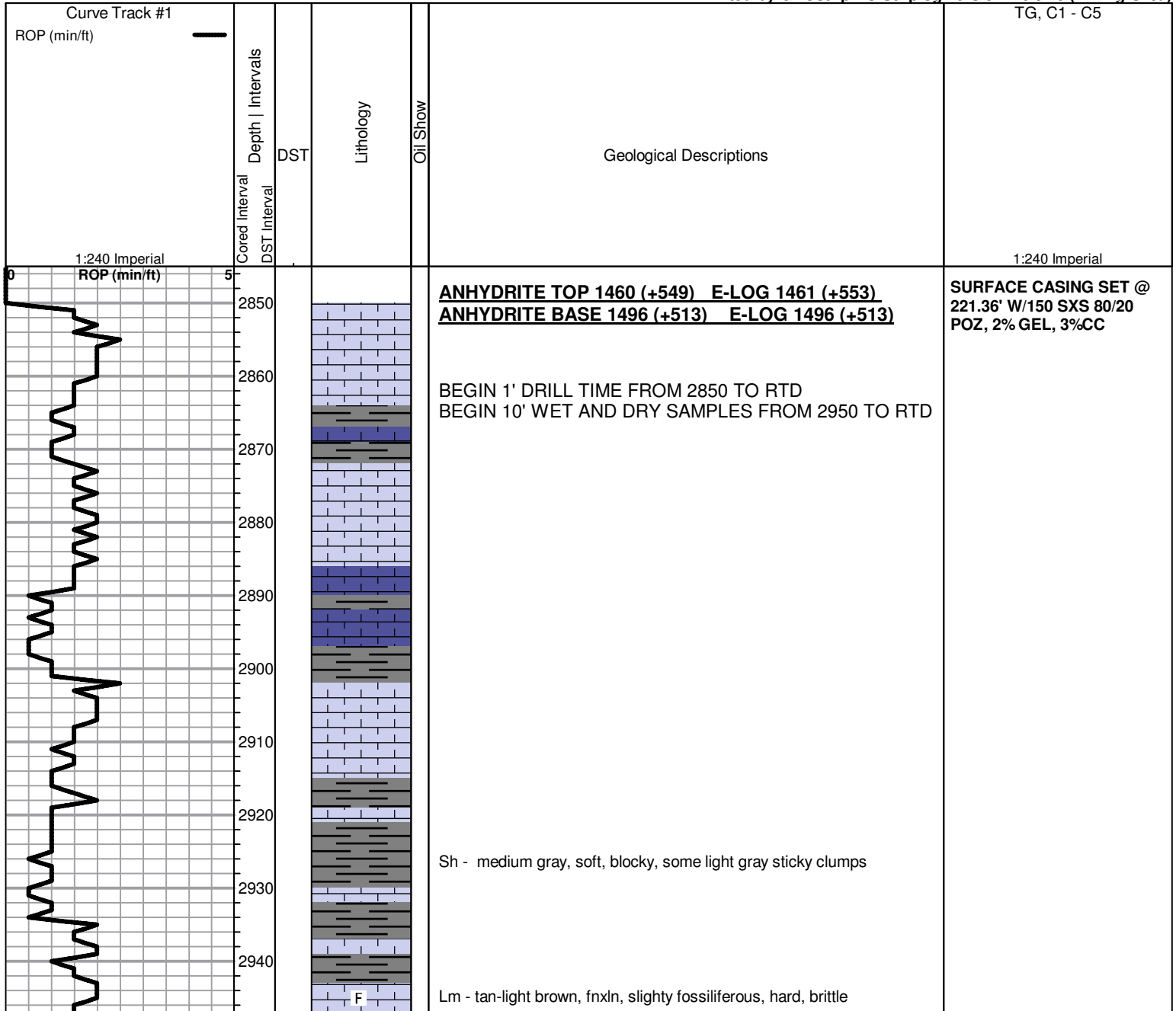
Oil Show

- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Strn
- D Dead Oil Strn
- Fluorescence
- * Gas

DST

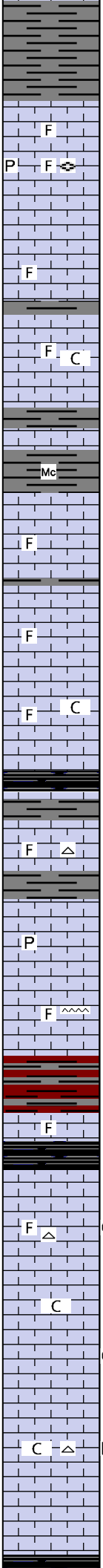
- DST Int
- DST alt
- Core
- tail pipe
- DST
- DST
- DST

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)



2950
2960
2970
2980
2990
3000
3010
3020
3030
3040
3050
3060
3070
3080
3090
3100
3110
3120
3130
3140
3150
3160

0 5
ROP (min/ft)



TOPEKA SPL 2961 (-952) ELOG 2961 (-952)

Lm - tan/cream, fossiliferous, hard, brittle

Lm - tan, fossiliferous, medxn, pyrite, fusulinids

Lm - light-medium gray, medxn, fossiliferous, hard, brittle

Lm - light brown, fnxn, scattered fossils, brittle

Lm - light brown/cream, fnxn, some sucrosic in part, fossiliferous, slightly chalky

Sh - light to medium gray, soft, blocky

Sh - A/A, micaceous in part

Lm - light brown, medxn, fossiliferous, brittle

Lm - medium gray-brown, fnxn with dark fossil clasts, dense, hard

Lm - light brown, medxn, fossiliferous, slightly chalky, brittle

Sh - black carbonaceous, waxy with bronze specks

Lm - cream, medxn, fossiliferous, brittle, tan chert

Lm - cream, fnxn with pyrite inclusions, clean and sharp

Lm - cream, fossiliferous, fn-medxn, brittle, cherty

Sh - reddish brown, firm, blocky, some light gray sticky clumps

Lm - tan, fnxn, scattered fossils, dense, hard

Sh - black carbonaceous, firm, fissile

Lm - tan, fossiliferous, fnxn, scattered vuggy porosity, good odor, few specks of free oil, good streaming wet cut under UV light, tight overall, white chert

Lm - tan, fnxn, hard, dense, cherty, slight bedded chalk, no shows

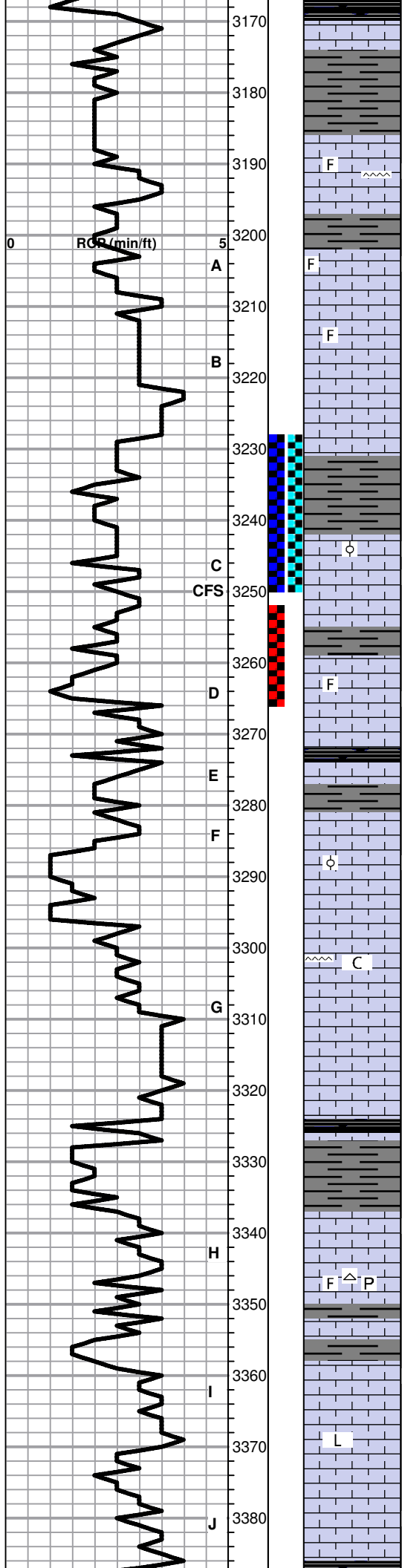
Lm - light brown, fnxn w/pinpoint porosity, scattered light brown stain, good odor, slight SFO, good fluorescence, hard, well cemented

Lm - cream-offwhite, vfxn, hard, brittle, bedded chalk in part, slight gilsonitic stain, white chert

Lm - tan-cream, vfxn, sharp and clean, dense

**MUD WT 8.7
VIS 50
LCM 2 LBS**

HEEBNER SPL 3165 (-1156) ELOG 3165 (-1156)



Sh - black carbonaceous, firm, waxy

Lm - cream, vfxln, dense, hard

Sh - light gray, soft, blocky

TORONTO SPL 3185 (-1176) ELOG 3186 (-1177)

F Lm - cream-bright white, fossiliferous w/scattered stain and some pinpoint porosity, tight overall, dense, hard, no odor, cherty

LKC SPL 3201 (-1192) ELOG 3202 (-1193)

F Lm - cream, fossiliferous w/ oolites, slight vuggy porosity, slight scattered stain, fair odor, NSFO

F Lm - cream-tan, fnxln, dense, fossiliferous, poor development, limited porosity

Lm - cream, vfxln, clean, sharp, no shows

Sh - dark gray, soft, fissile, some light gray sticky clumps

Lm - cream, oolitic w/scattered vugs, scattered golden brown stain, fair odor, slight SFO, good fluorescence, light gassy sheen

Lm - tan-light brown, fnxln, dense, hard, no shows

F Lm - light brown, medxln, slightly fossiliferous with pinpoint porosity, saturated light brown stain, good odor, slight SFO, good streaming wet cut

Sh - black, carbonaceous, waxy, soft

Lm - tan, vfxln, clean, sharp, dense

F Lm - cream, fnxln, slightly oolitic w/fn pinpoint porosity, scattered staining, slight SFO, good odor, streaming wet cut

C Lm - cream-tan, fnxln, slightly chalky, white and tan chert

Lm - cream, vfxln, dense, hard, clean and barren

Lm - A/A

Sh - black, carbonaceous, firm, waxy

Sh - light gray, soft, blocky

Lm - offwhite, fn pinpoint porosity w/ scattered stain, good odor, few specks of FO, tight overall

F P Lm - cream-tan, fnxln, dense, hard, light brown and white chert, slightly fossiliferous, pyrite

Sh - medium gray, soft, blocky

Lm - cream, fnxln, scattered fn pinpoint porosity, scattered stain, faint odor, NSFO

L Lm - cream, vfxln to lithographic, dense, hard, no shows

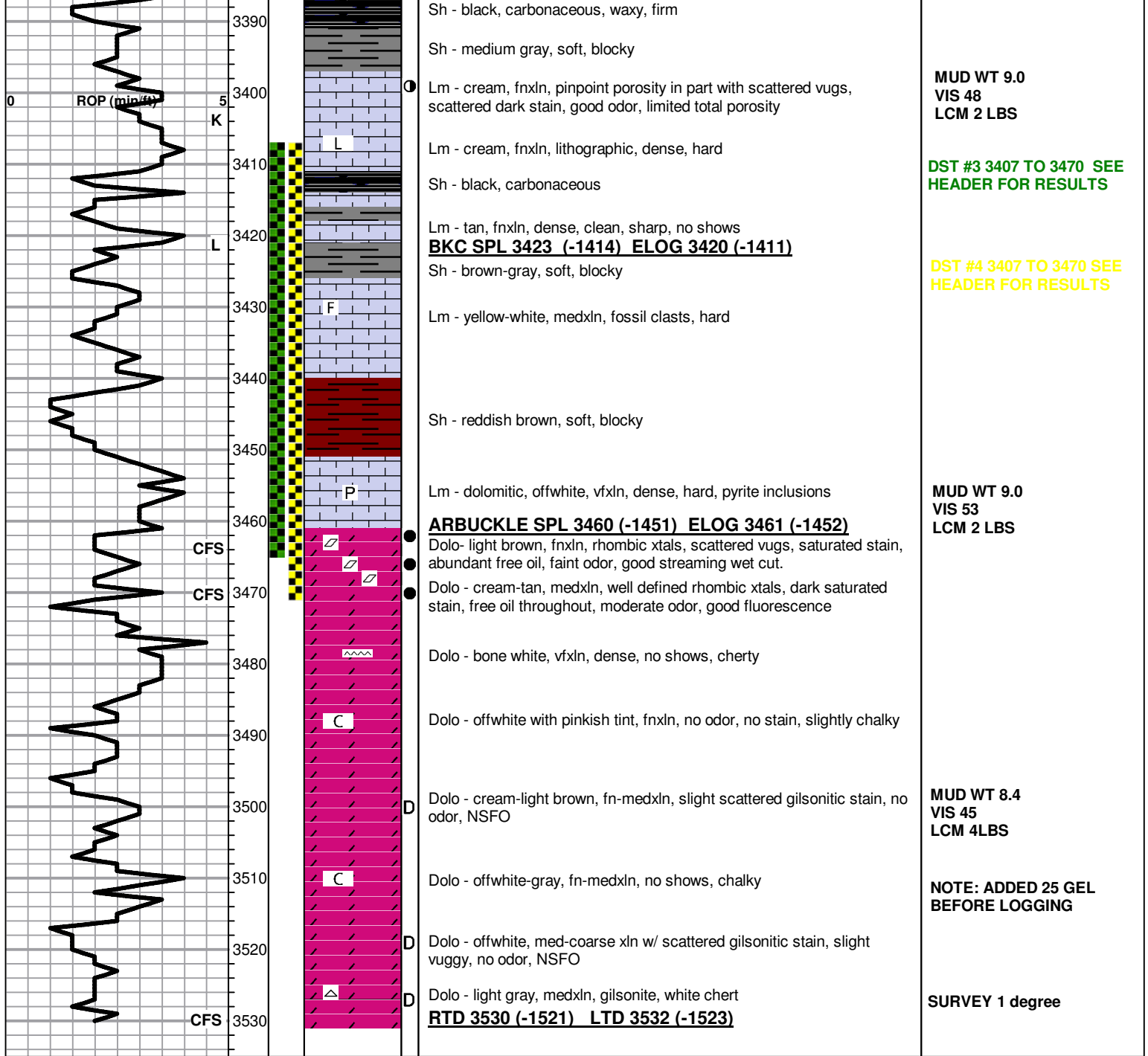
Lm - offwhite-cream, fnxln, scattered pinpoint porosity, scattered dark stain, few specks of FO, good odor, tight overall

**DST #1 MISRUN
bridge near 1000 feet**

**DST #2 3228-3250 SEE
HEADER FOR RESULTS**

**MUD WT 8.9
VIS 56
LCM 2 LBS**

**DST #2 3228-3250 SEE
HEADER FOR RESULTS**



Sh - black, carbonaceous, waxy, firm

Sh - medium gray, soft, blocky

Lm - cream, fnxln, pinpoint porosity in part with scattered vugs, scattered dark stain, good odor, limited total porosity

Lm - cream, fnxln, lithographic, dense, hard

Sh - black, carbonaceous

Lm - tan, fnxln, dense, clean, sharp, no shows
BKC SPL 3423 (-1414) ELOG 3420 (-1411)

Sh - brown-gray, soft, blocky

Lm - yellow-white, medxln, fossil clasts, hard

Sh - reddish brown, soft, blocky

Lm - dolomitic, offwhite, vfxln, dense, hard, pyrite inclusions

ARBUCKLE SPL 3460 (-1451) ELOG 3461 (-1452)

Dolo - light brown, fnxln, rhombic xtals, scattered vugs, saturated stain, abundant free oil, faint odor, good streaming wet cut.

Dolo - cream-tan, medxln, well defined rhombic xtals, dark saturated stain, free oil throughout, moderate odor, good fluorescence

Dolo - bone white, vfxln, dense, no shows, cherty

Dolo - offwhite with pinkish tint, fnxln, no odor, no stain, slightly chalky

Dolo - cream-light brown, fn-medxln, slight scattered gilsonitic stain, no odor, NSFO

Dolo - offwhite-gray, fn-medxln, no shows, chalky

Dolo - offwhite, med-coarse xln w/ scattered gilsonitic stain, slight vuggy, no odor, NSFO

Dolo - light gray, medxln, gilsonite, white chert

RTD 3530 (-1521) LTD 3532 (-1523)

MUD WT 9.0
 VIS 48
 LCM 2 LBS

DST #3 3407 TO 3470 SEE
 HEADER FOR RESULTS

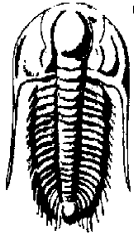
DST #4 3407 TO 3470 SEE
 HEADER FOR RESULTS

MUD WT 9.0
 VIS 53
 LCM 2 LBS

MUD WT 8.4
 VIS 45
 LCM 4LBS

NOTE: ADDED 25 GEL
 BEFORE LOGGING

SURVEY 1 degree



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Outlaw Well Service

20-8-19,Rooks,KS

1408 West 42nd
Hays KS 67601

Lowry #5-13

Job Ticket: 64862

DST#: 1

ATTN: Steve Reed

Test Start: 2015.10.24 @ 20:55:00

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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.60 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| | | |

Total Length: ft Total Volume: bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

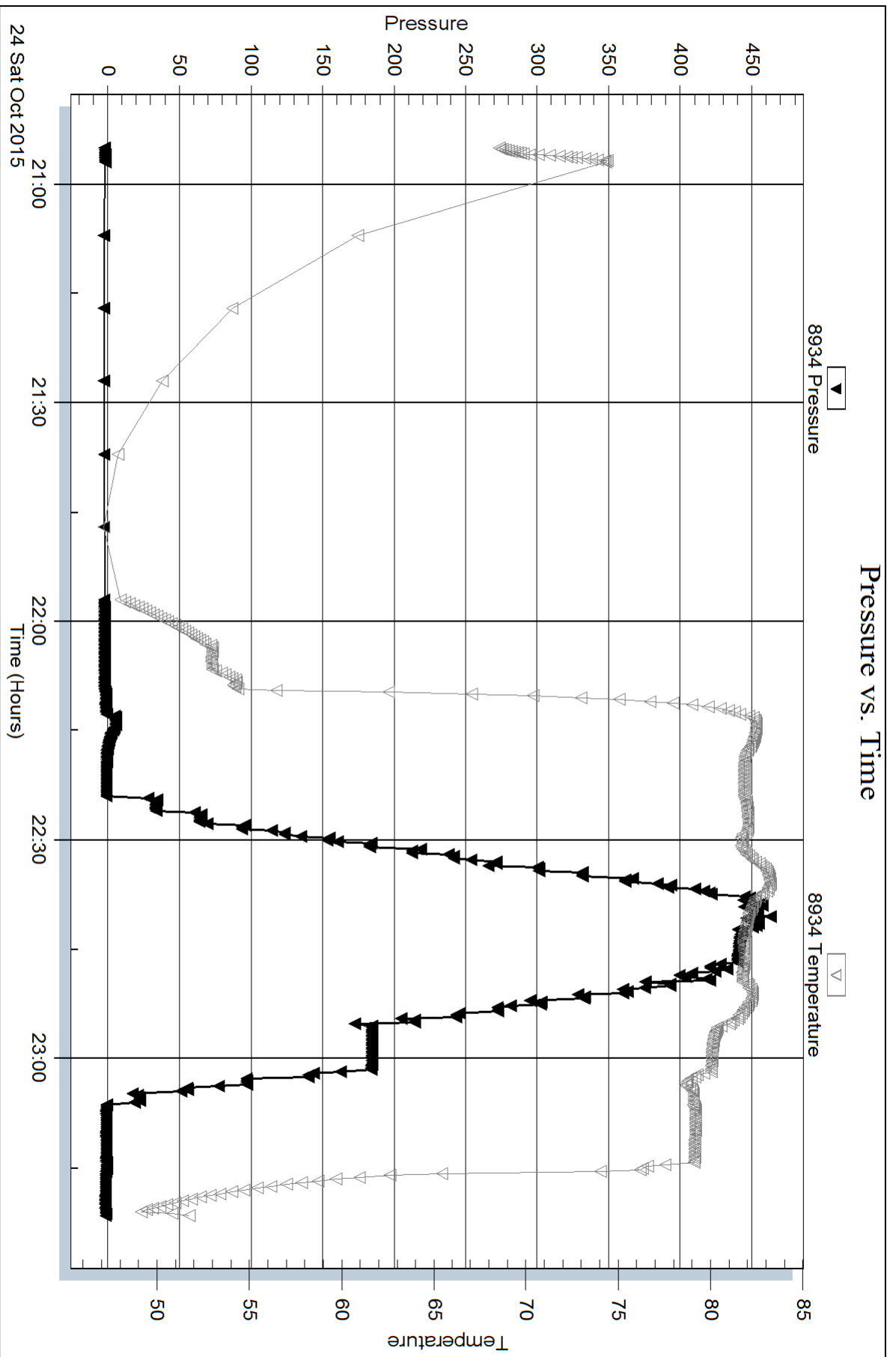
Recovery Comments:

Serial #: 8934

Outside Outlaw Well Service

Low ry #-5-13

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 64862

Printed: 2015.10.25 @ 22:47:20



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Outlaw Well Service
1408 West 42nd
Hays KS 67601
ATTN: Steve Reed

20-8-19, Rooks, KS
Lowry #5-13
Job Ticket: 64863 **DST#: 2**
Test Start: 2015.10.25 @ 03:10:00

GENERAL INFORMATION:

Formation: **KC "C"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:45:30
Time Test Ended: 09:25:00
Interval: **3228.00 ft (KB) To 3250.00 ft (KB) (TVD)**
Total Depth: 3250.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 2009.00 ft (KB)
2001.00 ft (CF)
KB to GR/CF: 8.00 ft
Test Type: Conventional Bottom Hole (Reset)
Tester: Brett Dickinson
Unit No: 59

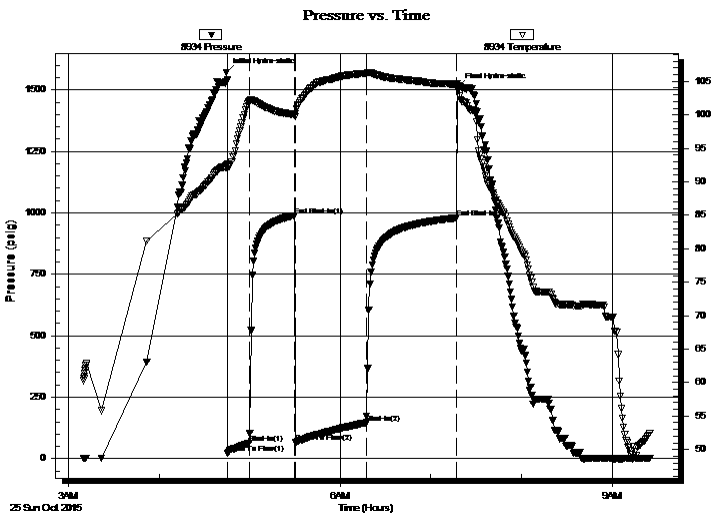
Serial #: 8934

Outside

Press @ Run Depth: 145.86 psig @ 3229.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.10.25 End Date: 2015.10.25 Last Calib.: 2015.10.25
Start Time: 03:10:05 End Time: 09:24:59 Time On Btm: 2015.10.25 @ 04:44:45
Time Off Btm: 2015.10.25 @ 07:18:00

TEST COMMENT: IF-BOB in 12min
ISI-1/8in blow
FF-BOB in 13min
FSI-1/4in blow

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1571.44 | 92.47 | Initial Hydro-static |
| 1 | 21.05 | 91.96 | Open To Flow (1) |
| 15 | 63.21 | 101.92 | Shut-In(1) |
| 45 | 988.66 | 100.03 | End Shut-In(1) |
| 46 | 67.24 | 100.13 | Open To Flow (2) |
| 93 | 145.86 | 106.21 | Shut-In(2) |
| 153 | 979.27 | 104.53 | End Shut-In(2) |
| 154 | 1507.65 | 104.34 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------------------|--------------|
| 180.00 | MCW 90%W 10%M | 2.25 |
| 60.00 | GWOCM 5%G 10%O 10%W 75%M | 0.84 |
| 50.00 | GO 15%G 85%O | 0.70 |
| 0.00 | 120ft GIP | 0.00 |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Outlaw Well Service

20-8-19,Rooks,KS

1408 West 42nd
Hays KS 67601

Lowry #5-13

Job Ticket: 64863

DST#: 2

ATTN: Steve Reed

Test Start: 2015.10.25 @ 03:10:00

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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.60 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbbl |
|--------------|--------------------------|----------------|
| 180.00 | MCW 90%W 10%M | 2.252 |
| 60.00 | GWOCM 5%G 10%O 10%W 75%M | 0.842 |
| 50.00 | GO 15%G 85%O | 0.701 |
| 0.00 | 120ft GIP | 0.000 |

Total Length: 290.00 ft

Total Volume: 3.795 bbl

Num Fluid Samples: 0

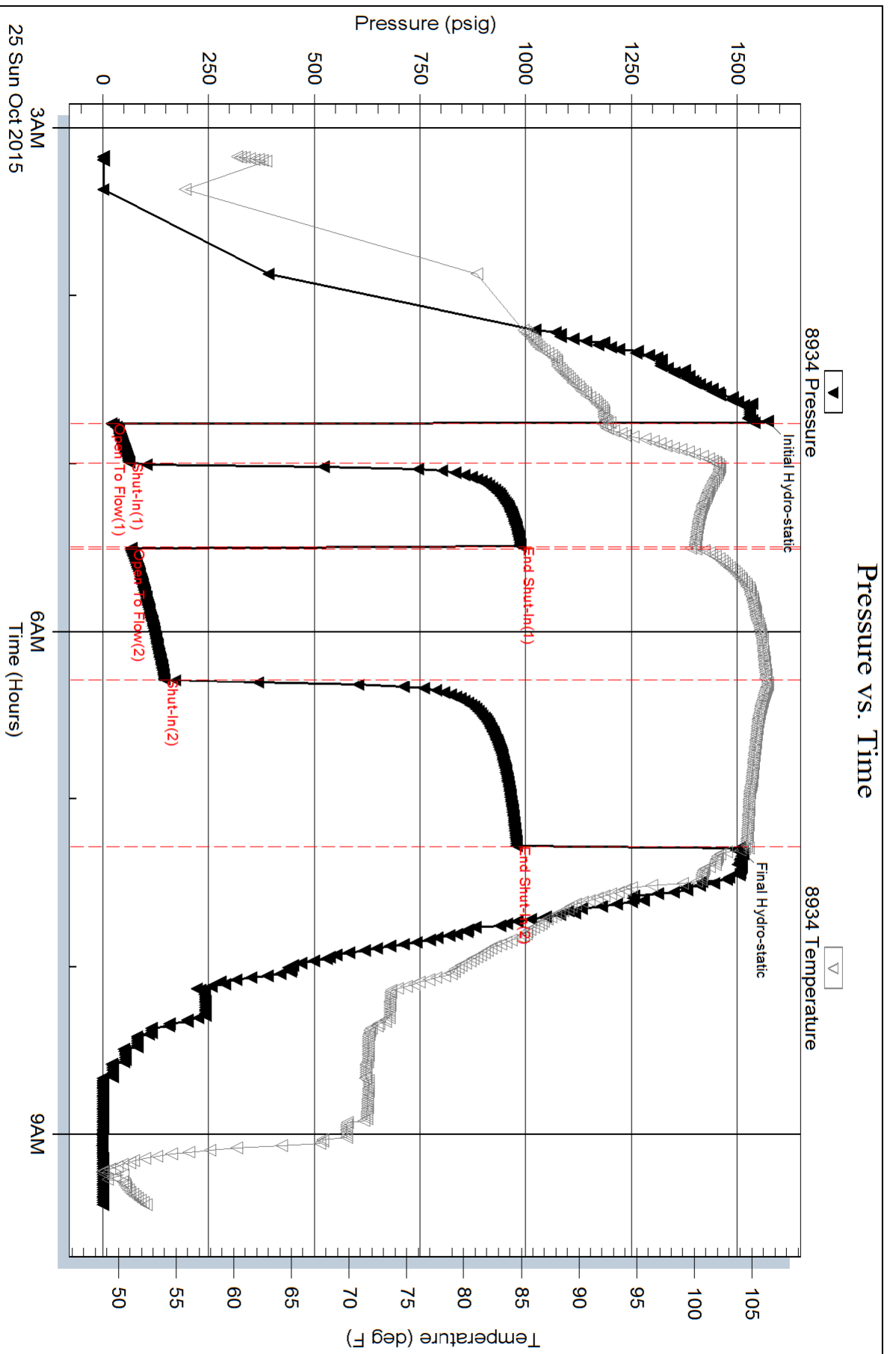
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Outlaw Well Service
 1408 West 42nd
 Hays KS 67601
 ATTN: Steve Reed

20-8-19, Rooks, KS

Lowry #5-13

Job Ticket: 64864

DST#: 3

Test Start: 2015.10.26 @ 01:45:00

GENERAL INFORMATION:

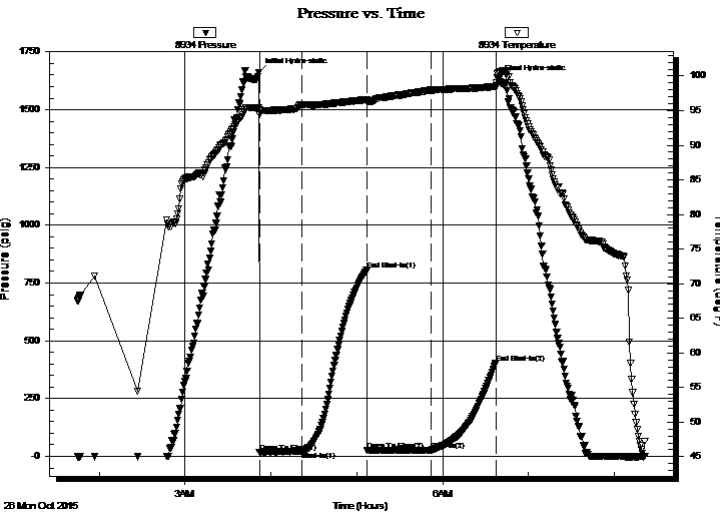
Formation: **Arb**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:52:00
 Time Test Ended: 08:21:30
 Interval: **3407.00 ft (KB) To 3464.00 ft (KB) (TVD)**
 Total Depth: 3464.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brett Dickinson
 Unit No: 59
 Reference Elevations: 2009.00 ft (KB)
 2001.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8934

Outside

Press@RunDepth: 27.23 psig @ 3408.00 ft (KB)
 Start Date: 2015.10.26 End Date: 2015.10.26
 Start Time: 01:45:05 End Time: 08:21:29
 Capacity: 8000.00 psig
 Last Calib.: 2015.10.26
 Time On Btm: 2015.10.26 @ 03:51:30
 Time Off Btm: 2015.10.26 @ 06:38:45

TEST COMMENT: IF-1in blow
 IS-No bloe
 FF-1/4in blow
 FS-No blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1661.42 | 95.42 | Initial Hydro-static |
| 1 | 16.28 | 94.46 | Open To Flow (1) |
| 31 | 21.70 | 95.88 | Shut-In(1) |
| 76 | 804.74 | 96.59 | End Shut-In(1) |
| 76 | 25.97 | 96.34 | Open To Flow (2) |
| 120 | 27.23 | 97.95 | Shut-In(2) |
| 166 | 403.26 | 98.49 | End Shut-In(2) |
| 168 | 1632.21 | 100.48 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|----------------|--------------|
| 1.00 | Oil | 0.00 |
| 14.00 | VSOCM 5%O 95%M | 0.07 |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Outlaw Well Service

20-8-19, Rooks, KS

1408 West 42nd
Hays KS 67601

Lowry #5-13

Job Ticket: 64864

DST#: 3

ATTN: Steve Reed

Test Start: 2015.10.26 @ 01:45:00

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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.60 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|----------------|---------------|
| 1.00 | Oil | 0.005 |
| 14.00 | VSOCM 5%O 95%M | 0.069 |

Total Length: 15.00 ft Total Volume: 0.074 bbl

Num Fluid Samples: 0

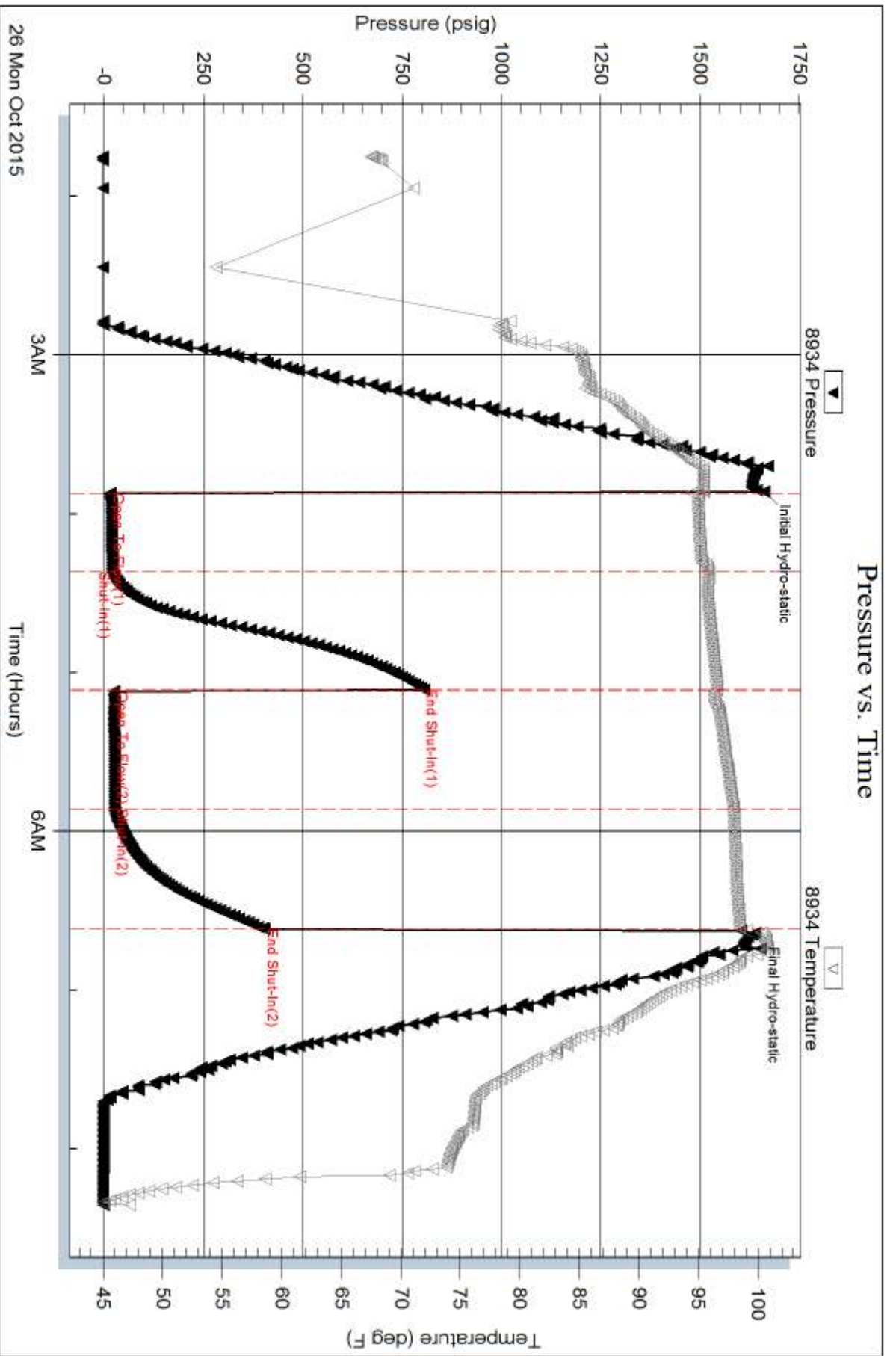
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Outlaw Well Service
 1408 West 42nd
 Hays KS 67601
 ATTN: Steve Reed

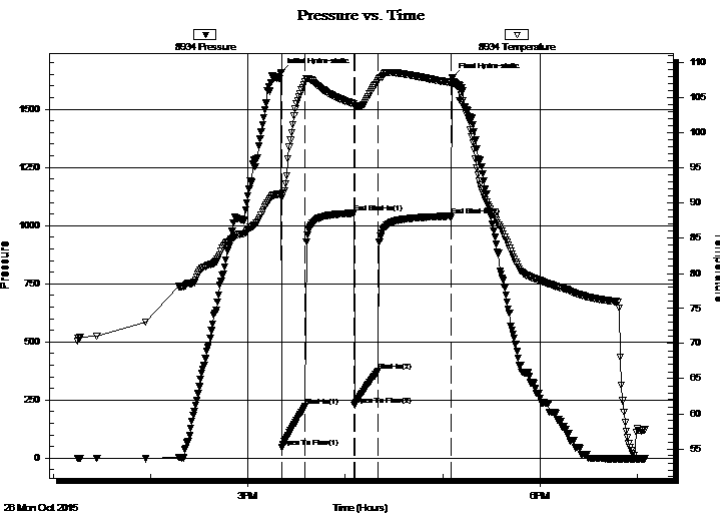
20-8-19, Rooks, KS
Lowry #5-13
 Job Ticket: 64865 **DST#: 4**
 Test Start: 2015.10.26 @ 13:15:05

GENERAL INFORMATION:

Formation: **Arb**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:21:00
 Time Test Ended: 19:04:59
 Interval: **3407.00 ft (KB) To 3470.00 ft (KB) (TVD)**
 Total Depth: 3470.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brett Dickinson
 Unit No: 59
 Reference Elevations: 2009.00 ft (KB)
 2001.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8934 Outside
 Press@RunDepth: 374.11 psig @ 3408.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.10.26 End Date: 2015.10.26 Last Calib.: 2015.10.26
 Start Time: 13:15:05 End Time: 19:04:59 Time On Btm: 2015.10.26 @ 15:20:30
 Time Off Btm: 2015.10.26 @ 17:06:00

TEST COMMENT: IF-BOB in 3min
 IS-No blow
 FF-BOB in 3min
 FS-No blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1658.69 | 91.40 | Initial Hydro-static |
| 1 | 44.78 | 90.78 | Open To Flow (1) |
| 15 | 221.97 | 107.26 | Shut-In(1) |
| 45 | 1053.86 | 104.19 | End Shut-In(1) |
| 46 | 229.01 | 103.91 | Open To Flow (2) |
| 60 | 374.11 | 107.42 | Shut-In(2) |
| 105 | 1041.02 | 107.21 | End Shut-In(2) |
| 106 | 1635.49 | 107.37 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------|--------------|
| 480.00 | MCW 70%W 30%M | 6.46 |
| 240.00 | OS WCM 5%W 95%M | 3.37 |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Outlaw Well Service

20-8-19, Rooks, KS

1408 West 42nd
Hays KS 67601

Lowry #5-13

Job Ticket: 64865

DST#: 4

ATTN: Steve Reed

Test Start: 2015.10.26 @ 13:15:05

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:

25000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.60 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-----------------|---------------|
| 480.00 | MCW 70%W 30%M | 6.460 |
| 240.00 | OS WCM 5%W 95%M | 3.367 |

Total Length: 720.00 ft

Total Volume: 9.827 bbl

Num Fluid Samples: 0

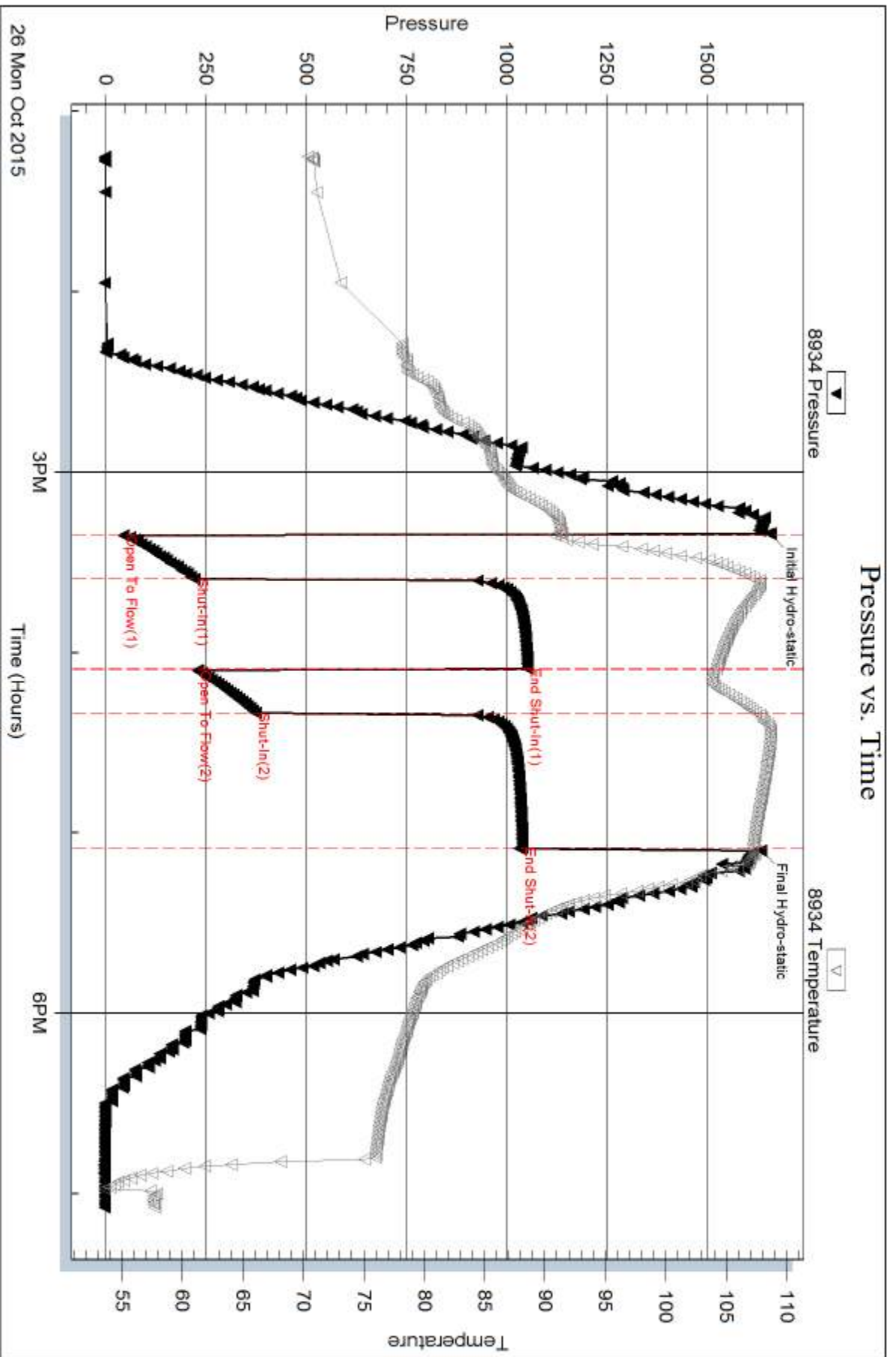
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Outlaw Well Service
 1408 West 42nd
 Hays KS 67601
 ATTN: Steve Reed

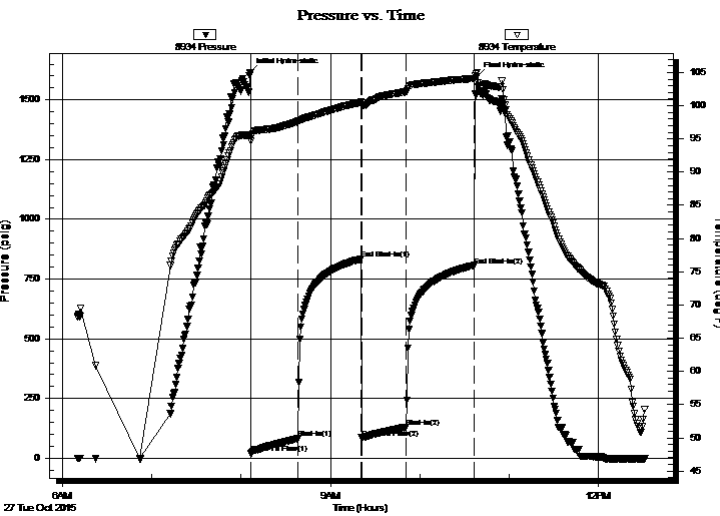
20-8-19, Rooks, KS
Lowry #5-13
 Job Ticket: 64866 **DST#: 5**
 Test Start: 2015.10.27 @ 06:10:00

GENERAL INFORMATION:

Formation: **KC"D"**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Straddle (Reset)
 Time Tool Opened: 08:06:30 Tester: Brett Dickinson
 Time Test Ended: 12:31:15 Unit No: 59
 Interval: **3252.00 ft (KB) To 3266.00 ft (KB) (TVD)** Reference Elevations: 2009.00 ft (KB)
 Total Depth: 3266.00 ft (KB) (TVD) 2001.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 8934 Inside
 Press@RunDepth: 129.99 psig @ 3253.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.10.27 End Date: 2015.10.27 Last Calib.: 2015.10.27
 Start Time: 06:10:05 End Time: 12:31:14 Time On Btm: 2015.10.27 @ 08:05:45
 Time Off Btm: 2015.10.27 @ 10:38:30

TEST COMMENT: IF-BOB in 21min
 IS-No blow
 FF-6in blow
 FS-No blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1614.59 | 95.64 | Initial Hydro-static |
| 1 | 19.11 | 94.66 | Open To Flow (1) |
| 32 | 81.45 | 97.58 | Shut-In(1) |
| 75 | 833.93 | 100.53 | End Shut-In(1) |
| 75 | 85.54 | 100.15 | Open To Flow (2) |
| 105 | 129.99 | 102.11 | Shut-In(2) |
| 151 | 806.97 | 104.09 | End Shut-In(2) |
| 153 | 1599.10 | 105.02 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------|--------------|
| 2.00 | OS MW 20%M 80%W | 0.01 |
| 248.00 | Water | 3.22 |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Outlaw Well Service

20-8-19, Rooks, KS

1408 West 42nd
Hays KS 67601

Lowry #5-13

Job Ticket: 64866

DST#: 5

ATTN: Steve Reed

Test Start: 2015.10.27 @ 06:10:00

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:

76000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.60 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbbl |
|--------------|-----------------|----------------|
| 2.00 | OS MW 20%M 80%W | 0.010 |
| 248.00 | Water | 3.224 |

Total Length: 250.00 ft Total Volume: 3.234 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8934

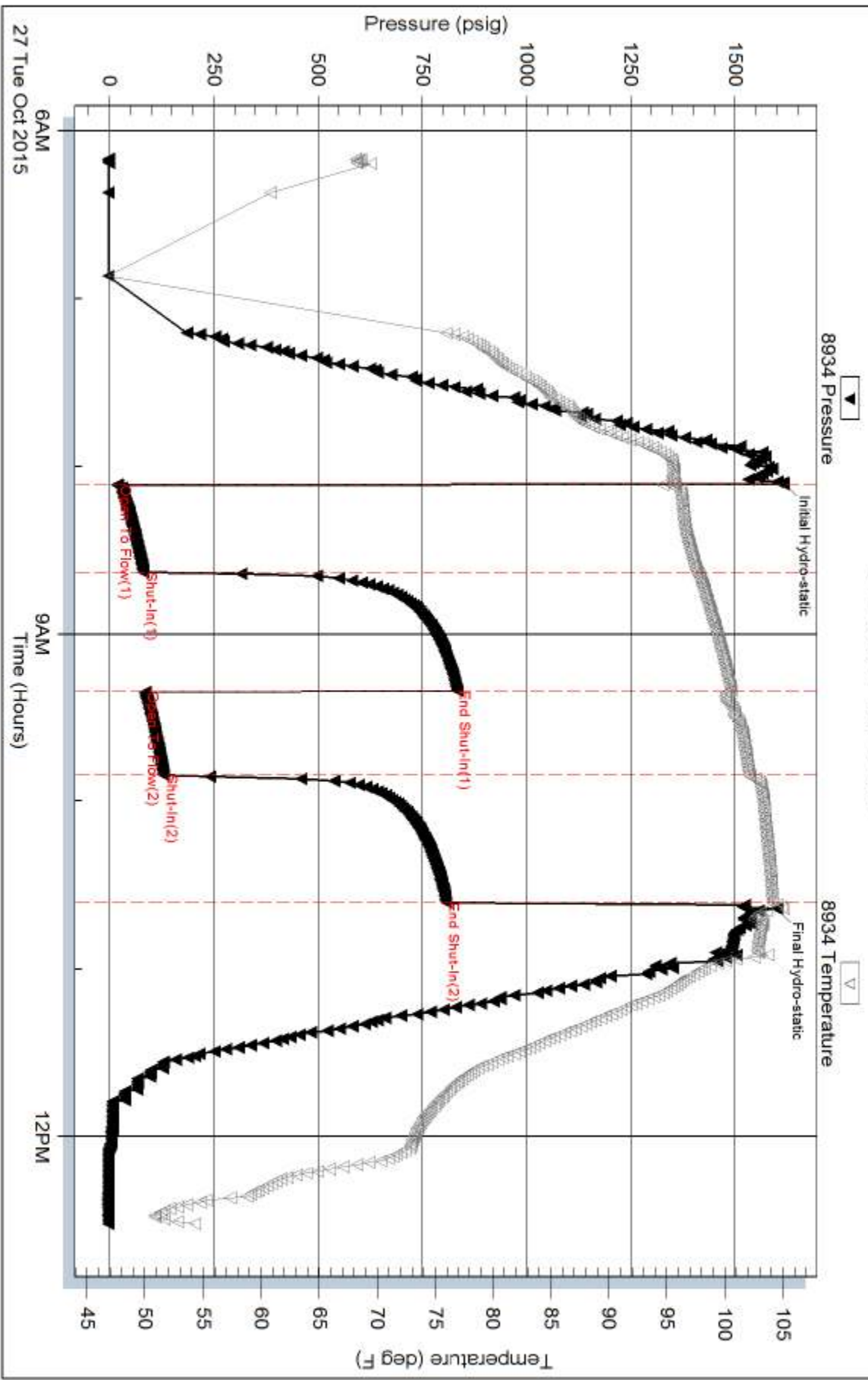
Inside

Outlaw Well Service

Low ry #5-13

DST Test Number: 5

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 64866

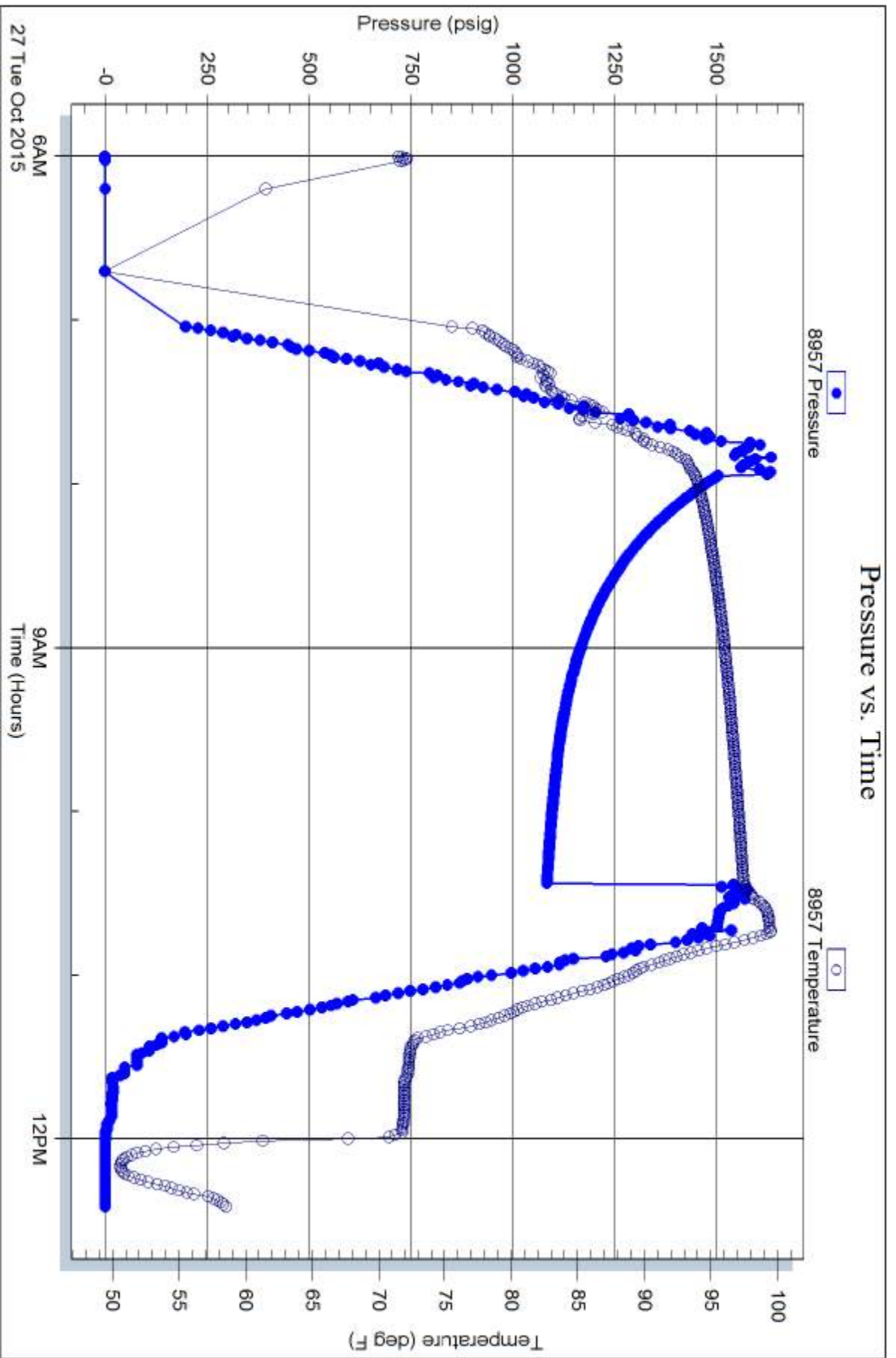
Printed: 2015.10.27 @ 13:00:01

Serial #: 8957

Below (Stratfield) Well Service

Low ry #5-13

DST Test Number: 5



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. 1907

| | | | | | | | | | | | | | | | |
|----------|----------|------|----|------|---|-------|----|---------------------------|-------|-------|----|-------------|--|--------|----------|
| Date | 10-21-15 | Sec. | 20 | Twp. | 8 | Range | 19 | County | ROCKS | State | KS | On Location | | Finish | 7:00p.m. |
| Location | | | | | | | | Zunch 7N QRD 13/4W N into | | | | | | | |

| | | | | | |
|---------------------|--------------|------------|--------|--|--|
| Lease | Lowery | Well No. | 5-13 | 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. |
| Contractor | Discovery #4 | | | | |
| Type Job | Surface | | | | |
| Hole Size | 12 1/4 | T.D. | 222 | Charge To | Outlaw Well Service |
| Csg. | 8 5/8 | Depth | 222 | 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. | 1.5' | Shoe Joint | | Cement Amount Ordered | 150 ⁸⁰ /20 3 1/4 CC 2 1/4 GEL |
| Meas Line | | Displace | 13 BCL | | |

EQUIPMENT

| | | | | | | |
|---------|----|-----|----------|-------|----------|-----|
| Pumptrk | 18 | No. | Cementer | Craig | Common | 130 |
| | | | Helper | | Poz. Mix | 20 |
| Bulktrk | | No. | Driver | MIK | Gel. | 3 |
| | | | Driver | | Calcium | 6 |
| Bulktrk | 9 | No. | Driver | Aug | | |
| | | | Driver | | | |

JOB SERVICES & REMARKS

| | | | |
|------------------------------------|--|-------------------------|-----|
| Remarks: | | Hulls | |
| Rat Hole | | Salt | |
| Mouse Hole | | Flowseal | |
| Centralizers | | Kol-Seal | |
| Baskets | | Mud CLR 48 | |
| D/V or Port Collar | | CFL-117 or CD110 CAF 38 | |
| 8 5/8 on bottom. Est. Circulation. | | Sand | |
| Mix 150 SK & Displace. | | Handling | 159 |
| | | Mileage | |

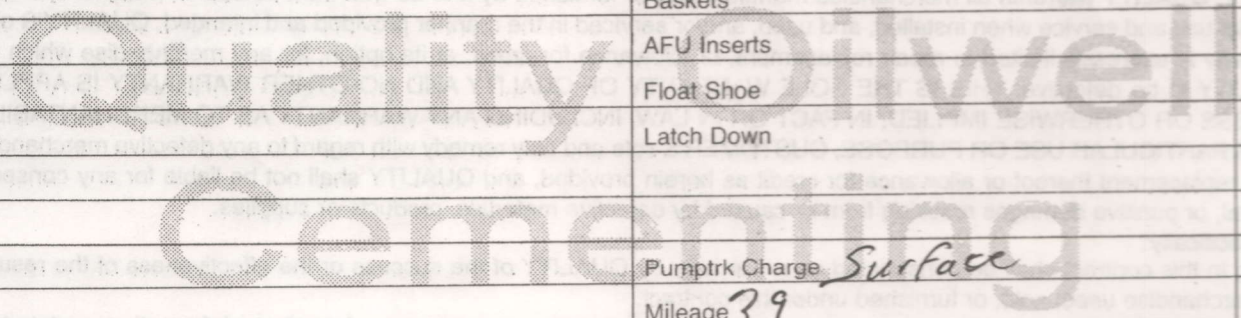
Cement Circulated!

FLOAT EQUIPMENT

| | |
|-------------|--|
| Guide Shoe | |
| Centralizer | |
| Baskets | |
| AFU Inserts | |
| Float Shoe | |
| Latch Down | |

| | |
|----------------|---------|
| Pumptrk Charge | Surface |
| Mileage | 39 |
| Tax | |
| Discount | |
| Total Charge | |

X Signature



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. 1177

| | | | | | | | | | | | | | | | |
|------|----------|------|----|------|---|-------|----|---|------|-------|----|-------------|--|--------|------|
| Date | 10-27-15 | Sec. | 20 | Twp. | 8 | Range | 19 | County | Roos | State | KS | On Location | | Finish | 8:30 |
| | | | | | | | | Location Zurich 7N to QRA 13/4 W N into | | | | | | | |

| | | | | | |
|---------------------|----------|--|----------|------------|--|
| Lease | Lowry | Well No. | 5-13 | 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. |
| Contractor | Discover | | 4 | Charge To | artkew well service |
| Type Job | Plug | Hole Size | 2 7/8 | T.D. | 3530 |
| Hole Size | 2 7/8 | Csg. | DP 4 1/2 | Depth | 3440 |
| Csg. | DP 4 1/2 | Tbg. Size | | Depth | |
| Tbg. Size | | Tool | | Depth | |
| Tool | | Cement Left in Csg. | | Shoe Joint | |
| Cement Left in Csg. | | Meas Line | | Displace | mud/water |
| Meas Line | | Cement Amount Ordered 305 60/40 4% 6cl 1/4 #12 | | | |

EQUIPMENT

| | | | | | | |
|---------|-----|-----|----------|-------|----------|-----|
| Pumptrk | 17 | No. | Cementor | | Common | 183 |
| | | | Helper | NIKI | Poz. Mix | 122 |
| Bulktrk | 19 | No. | Driver | Douie | Gel. | 11 |
| | | | Driver | | Calcium | |
| Bulktrk | Pu. | No. | Driver | Bill | | |
| | | | Driver | | | |

JOB SERVICES & REMARKS

| | |
|--------------------|-------------------------|
| Remarks: | Salt |
| Rat Hole | Flowseal 76# |
| Mouse Hole | Kol-Seal |
| Centralizers | Mud CLR 48 |
| Baskets | CFL-117 or CD110 CAF 38 |
| D/V or Port Collar | Sand |

1st 3440' 50SKS

2nd 1480' 50SKS

3rd 850' 100SKS

4th 280' 50SKS

40' 10SKS

RH 30SKS

MH 35SKS

Handling 316

Mileage

FLOAT EQUIPMENT

Guide Shoe

Centralizer

Baskets

AFU Inserts

Float Shoe

Latch Down

wooden Plug

Pumptrk Charge surface plug

Mileage \$ 39

Tax

Discount

Total Charge

X Signature Mike Saddle