



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1224325
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: _____

1224325

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: <input type="checkbox"/> Yes <input type="checkbox"/> No |
|----------------|-------|---------|------------|---|

| | |
|---|--|
| Date of First, Resumed Production, SWD or ENHR. | Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____ |
|---|--|

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

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

OPERATOR

Company: TDI, INC.
 Address: 1310 BISON ROAD
 HAYS, KANSAS 67601

Contact Geologist: TOM DENNING
 Contact Phone Nbr: 785-628-2593
 Well Name: ZIMMERMAN UNIT # 2
 Location: NW NE SE NE Sec.22-15s-18w
 API: 15-051-26,729-00-00
 Pool: IN FIELD
 State: KANSAS

Field: SCHOENCHEN
 Country: USA



Scale 1:240 Imperial

Well Name: ZIMMERMAN UNIT # 2
 Surface Location: NW NE SE NE Sec.22-15s-18w
 Bottom Location:
 API: 15-051-26,729-00-00
 License Number: 4787
 Spud Date: 9/9/2014 Time: 1:30 PM
 Region: ELLIS COUNTY
 Drilling Completed: 9/14/2014 Time: 8:36 AM
 Surface Coordinates: 1480' FNL & 430' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 2008.00ft
 K.B. Elevation: 2018.00ft
 Logged Interval: 2900.00ft To: 3760.00ft
 Total Depth: 3760.00ft
 Formation: ARBUCKLE
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -99.3023774
 Latitude: 38.7363788
 N/S Co-ord: 1480' FNL
 E/W Co-ord: 430' FEL

LOGGED BY

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

Phone Nbr: 785-625-3380
 Logged By: GEOLOGIST Name: HERB DEINES

CONTRACTOR

Contractor: SOUTHWIND DRILLING, INC.
 Rig #: 1
 Rig Type: MUD ROTARY
 Spud Date: 9/9/2014 Time: 1:30 PM
 TD Date: 9/14/2014 Time: 8:36 AM

ELEVATIONS

K.B. Elevation: 2018.00ft
 K.B. to Ground: 10.00ft

Ground Elevation: 2008.00ft

NOTES

RECOMMENDATION TO RUN PRODUCTION CASING BASED ON FAVORABLE RESULTS OF DST # 1.

OPEN HOLE LOGGING BY PIONEER ENERGY SERVICES: DUAL INDUCTION LOG, DUAL COMPENSATED POROSITY LOG. ATTEMPTED TO RUN MICRORESISTIVITY LOG BUT COULDN'T GET THROUGH SALT SECTION. RAN DST # 1 BEHIND LOG WITH NO DOWNHOLE PROBLEMS

DRILL STEM TESTING BY TRILOBITE TESTING INC: ONE (1) STRADDLE TEST

FORMATION TOPS SUMMARY

| | ZIMMERMAN UNIT # 2 | RONALD # 1 | ZIMMERMAN UNIT # 1 |
|------------------|--------------------|-----------------|--------------------|
| | NW NE SE NE | S2 N2 SW NW | NW NE SW NE |
| | SEC.22-15S-18W | SEC.23-15-18W | SEC.22-15-18W |
| | 2008'GL 2018'KB | KB 2004' | KB 1965' |
| <u>FORMATION</u> | <u>LOG TOPS</u> | <u>LOG TOPS</u> | <u>LOG TOPS</u> |
| Anhydrite | 1171+ 847 | + 845 | + 849 |
| B-Anhydrite | 1207+ 811 | + 809 | + 813 |
| Topeka | 2991 - 973 | - 965 | - 964 |
| Heebner Sh. | 3253-1235 | -1226 | -1230 |
| Toronto | 3273-1255 | -1246 | -1250 |
| LKC | 3302-1284 | -1276 | -1280 |
| BKC | 3526-1508 | -1504 | -1503 |
| Arbuckle | 3574-1556 | -1545 | -1582 |
| RTD | 3760-1742 | -1744 | -1712 |

SUMMARY OF DAILY ACTIVITY

| | |
|---------|--|
| 9-09-14 | RU, spud 1:30 PM |
| 9-10-14 | 1080', set 8 5/8" surface casing to 1181' w/ 375 sxs SMD, slope 3/4 degree, plug down 4:30PM, WOC 12 hrs |
| 9-11-14 | 1207', drill plug 4:30 AM |
| 9-12-14 | 2390', drilling, displaced 2876'-2892' |
| 9-13-14 | 3170', drilling |
| 9-14-14 | 3715', drilling, RTD 3760' @ 8:36AM, short trip, TOWB, logs, straddle DST # 1 3569'-3586' |
| 9-15-14 | 3760', finish DST # 1, TIWB, LDDP, run production casing, RD |

ROCK TYPES

| | | | |
|--|--|--|---|
|  Dolprim |  shale, grn |  shale, red |  Dol Lime |
|  Lmst fw<7 |  shale, gry |  Shcol | |
|  Lmst fw>7 |  Carbon Sh |  Lscongl | |

ACCESSORIES

MINERAL

- ▲ Chert, dark
- Sandy

FOSSIL

- ◊ Oomoldic

TEXTURE

- C Chalky

OTHER SYMBOLS

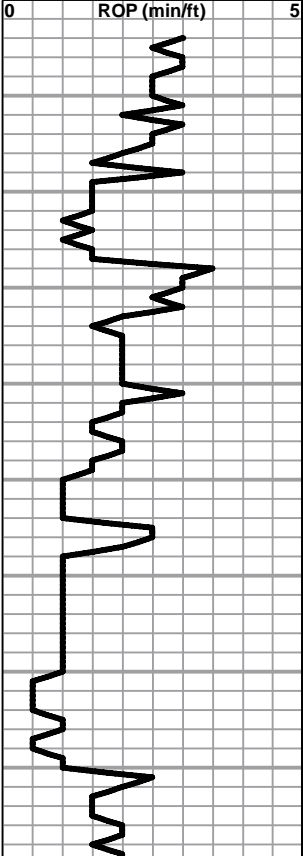
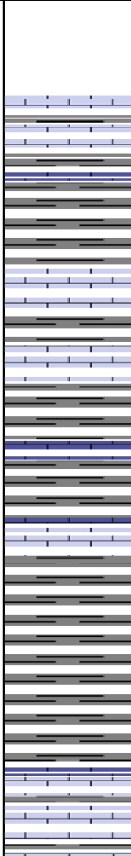
Oil Show

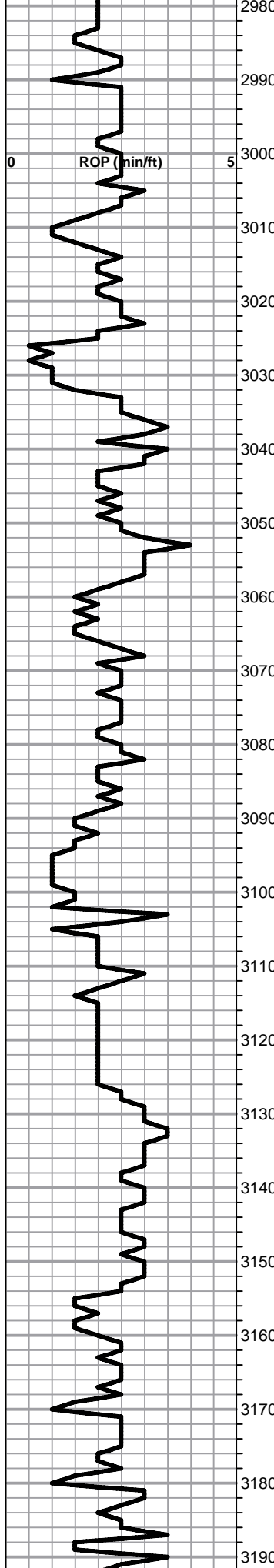
- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Strn
- D Dead Oil Strn
- Fluorescence
- * Gas

DST

- DST Int
- DST alt
- Core
- tail pipe

Printed by GEOstrip VC Striplog version 4.0.8.9 (www.grsi.ca)

| Curve Track #1 ROP (min/ft) | Depth Intervals Cored Interval DST Interval | Lithology | Oil Show | Geological Descriptions |
|--|---|---|---|--|
| <p>1:240 Imperial</p>  | <p>2900</p> <p>2910</p> <p>2920</p> <p>2930</p> <p>2940</p> <p>2950</p> <p>2960</p> <p>2970</p> |  | <p>BEGIN 1' DRILL TIME FROM 2900' TO RTD BEGIN 10' WET AND DRY SAMPLES FROM 2950' TO RTD</p> <p>ANHYDRITE TOP 1171 +847 ANHYDRITE BASE 1207-811</p> <p>Lime, med grayish brn, fnxln, fossiliferous</p> <p>Shale, med gray, soft blocky Lime, lt-med brn, fnxln, fossiliferous</p> <p>Lime, med-dark brn, fnxln, slightly fossiliferous</p> <p>Shale, lt-med gray, soft blocky with slightly sticky clumps in part</p> <p>Lime, lt-dark brn, fnxln</p> | <p>TG, C1 - C5</p> <p>1:240 Imperial</p> <p>8 5/8" SURFACE CASING SET TO 1181' W/ 375 SXS SMD, WOC 12 HRS</p> <p>SLOPE 3/4 DEGREE @1181'</p> |



Lime, lt-med brn, fnxln, slight bedded chalk

TOPEKA ELog 2991-973

Lime, lt-med brn, fnxln, slightly fossiliferous

Lime, lt-med brn, fnxln, slightly fossiliferous

Lime, lt-med brn-med grayish brn, fnxln-granular, slight bedded chalk

Lime, lt-med brn, fnxln, slightly fossiliferous-fusulinids

Lime, lt brn, granular, bedded chalk, NS

Lime, lt-med brn, fnxln

Lime, lt-med brn-med grayish brn, fnxln, slightly fossiliferous

Lime, lt brn-lt grayish brn, fnxln

Lime, lt brn, fnxln-granular, slightly fossiliferous, soft on crush

Lime, lt-med brn, fnxln, slightly fossiliferous

Lime, lt brn, fnxln-granular, bedded chalk with lt chalky wash, slightly fossiliferous

Lime, lt brn, granular, slight bedded chalk

Shale, black carbonaceous, blocky

Lime, lt brn, fn-vfxln

Lime, crm, fn-vfxln, lithographic, slight bedded chalk

Lime, crm, fnxln, lithographic in part

Lime, crm-lt brn, fnxln, slight bedded chalk

Lime, lt brn, fnxln-granular in part, slight bedded chalk

Lime, granular with increasing bedded chalk

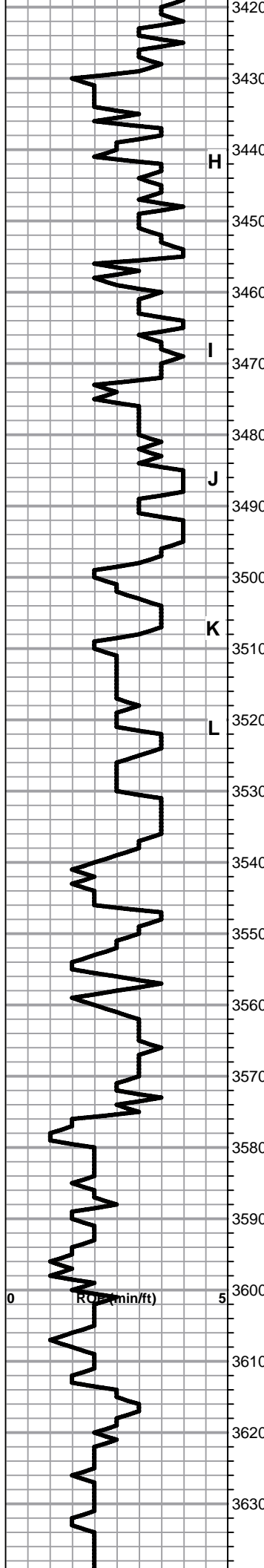
Lime, crm-lt brn, granular

Shale, black carbonaceous, blocky

Lime, lt brn, fnxln-granular, scattered micro xln, NS

Lime, lt brn, fn-vfxln-granular in part

Lime, lt brn with lt gray tinting in part, fnxln



Shale, gray-black carbonaceous, firm blocky

Lime, lt-med brn, fnxln

Lime, crm-lt brn, fnxln-granular in part, slight bedded chalk, dark fossiliferous chert, fresh, sharp, NS

Lime, crm-tan, fn-vfxln, moderate bedded chalk

Lime, lt-med brn-grayish brn, fnxln

Lime, crm-tan, fn-micro xln, slight bedded chalk, NS

Lime, crm-tan, fn-micro xln

Shale, med gray, calcareous, soft-firm blocky

D Lime, crm-tan, fnxln, few chips with flaky gilsonite, NFO, No Odor, No Staining

Lime, crm, fn-micro xln, slight bedded chalk

Lime, crm-tan, fn-vfxln, slight bedded chalk, NS

Lime, crm-tan, fn-micro xln

Lime, crm, fn-vfxln

BKC ELog 3526-1508

Shale, red-reddish brn, soft-soft blocky with lt red wash
Lime, clastic mix

Lime, lt brn, fnxln

Shale, soft with dark red wash with clastic lime mix in part

Lime, lt brn, fnxln, slightly dolomitic, orange chert fragments

Lime, tan-lt brn, fnxln, dolomitic

ARBUCKLE ELog 3574-1556

● Dolomite, lt brn, granular, sucrosic, good odor

● Dolomite, tan, granular, med grain, good odor, saturated stain

● Dolomite, tan-lt brn, fnxln-granular, sucrosic, lt odor

Dolomite, tan-lt brn, fnxln-granular, scattered sucrosic, very lt odor

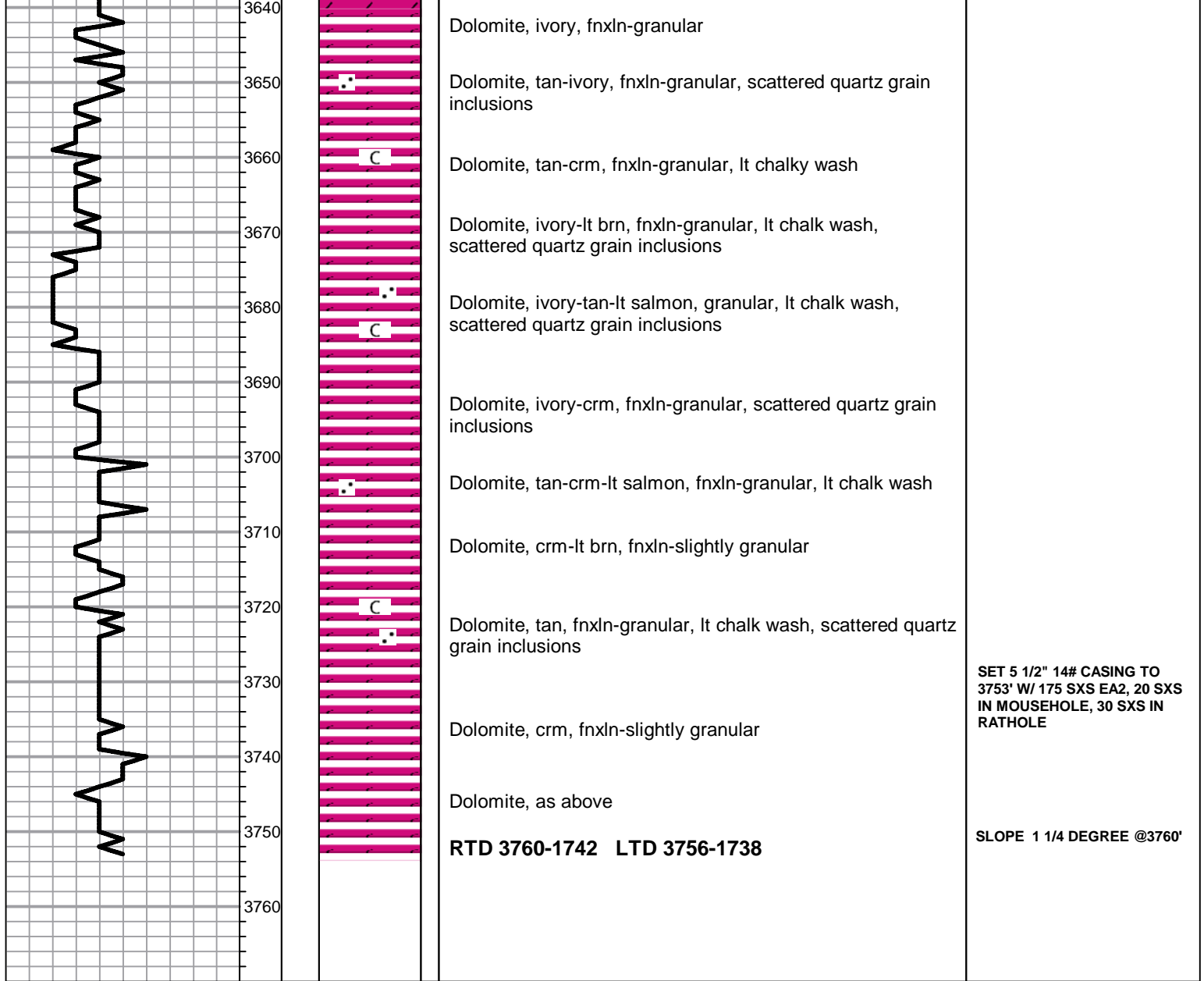
Dolomite, ivory-tan, fnxln-granular

C

Dolomite, ivory-lt brn, fnxln-granular, chalky white wash

Dolomite, ivory-tan, fnxln-granular

DST # 1 STRADDLE TEST
3569' TO 3586', ARBUCKLE
SEE HEADER FOR TEST
SUMMARY





DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd
Hays KS 67601-9696

ATTN: Herb Deines

Zimmerman Unit #2

22 15s 18w Ellis,KS

Start Date: 2014.09.14 @ 19:22:00

End Date: 2014.09.15 @ 01:00:00

Job Ticket #: 56139 DST #: 1

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

Printed: 2014.09.16 @ 10:35:56



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TDI Inc
1310 Bison Rd
Hays KS 67601-9696
ATTN: Herb Deines

22 15s 18w Ellis,KS
Zimmerman Unit #2
Job Ticket: 56139 **DST#: 1**
Test Start: 2014.09.14 @ 19:22:00

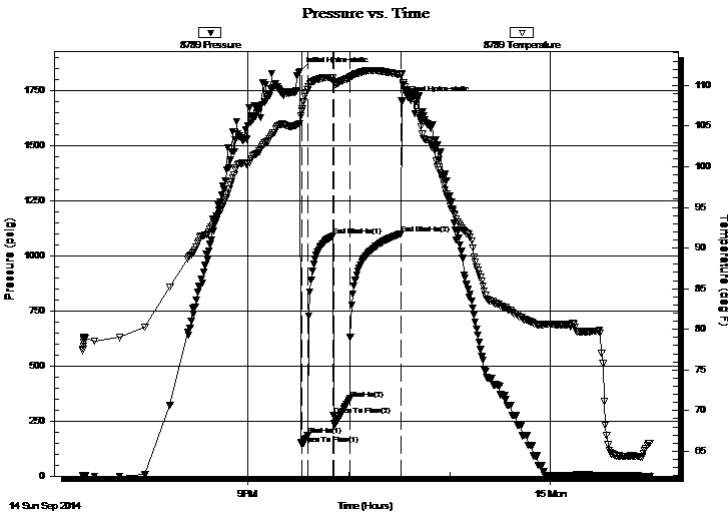
GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:32:15
Time Test Ended: 01:00:00
Interval: **3569.00 ft (KB) To 3586.00 ft (KB) (TVD)**
Total Depth: 3756.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Straddle (Initial)
Tester: Jim Svaty
Unit No: 76
Reference Elevations: 2018.00 ft (KB)
2008.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8789 **Inside**
Press@RunDepth: 350.99 psig @ 3572.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.09.14 End Date: 2014.09.15 Last Calib.: 2014.09.15
Start Time: 19:22:02 End Time: 00:59:00 Time On Btm: 2014.09.14 @ 21:31:00
Time Off Btm: 2014.09.14 @ 22:31:30

TEST COMMENT: 5-IFP- BOB in 50 sec.
15-ISIP- Surface Blow
10-FFP- BOB in 1 min.
30-FSIP- 5 in. Blow Back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1838.40 | 105.31 | Initial Hydro-static |
| 2 | 142.84 | 106.84 | Open To Flow (1) |
| 5 | 186.52 | 109.51 | Shut-In(1) |
| 20 | 1091.68 | 110.90 | End Shut-In(1) |
| 20 | 274.41 | 110.39 | Open To Flow (2) |
| 30 | 350.99 | 110.92 | Shut-In(2) |
| 60 | 1100.81 | 111.34 | End Shut-In(2) |
| 61 | 1705.00 | 111.49 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------|--------------|
| 63.00 | MCO 30% m 70% o | 0.88 |
| 819.00 | CO 100% | 11.49 |
| 0.00 | 252 GIP | 0.00 |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI Inc
1310 Bison Rd
Hays KS 67601-9696
ATTN: Herb Deines

22 15s 18w Ellis,KS
Zimmerman Unit #2
Job Ticket: 56139 **DST#: 1**
Test Start: 2014.09.14 @ 19:22:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3555.00 ft | Diameter: 3.80 inches | Volume: 49.87 bbl | Tool Weight: 2500.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 2.75 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 0.00 ft | Diameter: 2.25 inches | Volume: 0.00 bbl | Weight to Pull Loose: 50000.00 lb |
| | | | <u>Total Volume: 49.87 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 7.00 ft | | | String Weight: Initial 46000.00 lb |
| Depth to Top Packer: | 3569.00 ft | | | Final 49000.00 lb |
| Depth to Bottom Packer: | 3586.00 ft | | | |
| Interval between Packers: | 17.00 ft | | | |
| Tool Length: | 207.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|-------------------------|--------------------|-------------------|-----------------|-------------------|-----------------------|
|-------------------------|--------------------|-------------------|-----------------|-------------------|-----------------------|

| | | | | | |
|-----------------|--------|------|---------|---------|-------------------------------------|
| Change Over Sub | 1.00 | | | 3549.00 | |
| Shut In Tool | 5.00 | | | 3554.00 | |
| Hydraulic tool | 5.00 | | | 3559.00 | |
| Packer | 5.00 | | | 3564.00 | 21.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3569.00 | |
| Stubb | 1.00 | | | 3570.00 | |
| Perforations | 2.00 | | | 3572.00 | |
| Recorder | 0.00 | 8789 | Inside | 3572.00 | |
| Recorder | 0.00 | 8289 | Outside | 3572.00 | |
| Perforations | 10.00 | | | 3582.00 | |
| Blank Off Sub | 1.00 | | | 3583.00 | |
| Blank Spacing | 3.00 | | | 3586.00 | 17.00 Tool Interval |
| Packer | 1.00 | | | 3587.00 | |
| Perforations | 7.00 | | | 3594.00 | |
| Change Over Sub | 1.00 | | | 3595.00 | |
| Recorder | 0.00 | 6668 | Below | 3595.00 | |
| Blank Spacing | 156.00 | | | 3751.00 | |
| Change Over Sub | 1.00 | | | 3752.00 | |
| Bullnose | 3.00 | | | 3755.00 | 169.00 Bottom Packers & Anchor |

Total Tool Length: 207.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc **22 15s 18w Ellis,KS**
 1310 Bison Rd **Zimmerman Unit #2**
 Hays KS 67601-9696 Job Ticket: 56139 **DST#: 1**
 ATTN: Herb Deines Test Start: 2014.09.14 @ 19:22:00

Mud and Cushion Information

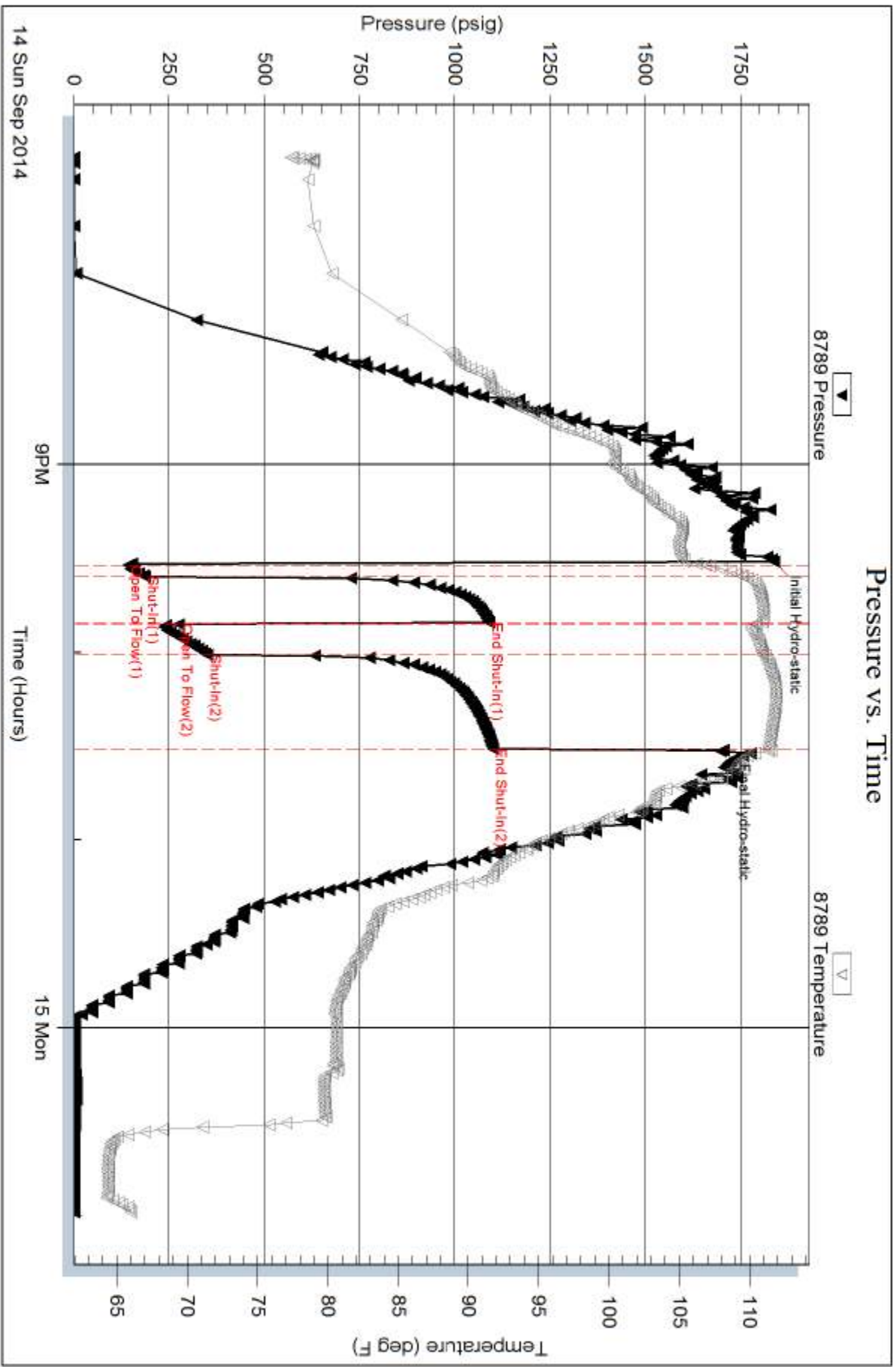
| | | | |
|----------------------------------|----------------------------|-----------------|------------|
| Mud Type: Gel Chem | Cushion Type: | Oil API: | 31 deg API |
| Mud Weight: 10.00 lb/gal | Cushion Length: ft | Water Salinity: | ppm |
| Viscosity: 53.00 sec/qt | Cushion Volume: bbl | | |
| Water Loss: 9.17 in ³ | Gas Cushion Type: | | |
| Resistivity: ohm.m | Gas Cushion Pressure: psig | | |
| Salinity: 6600.00 ppm | | | |
| Filter Cake: 2.00 inches | | | |

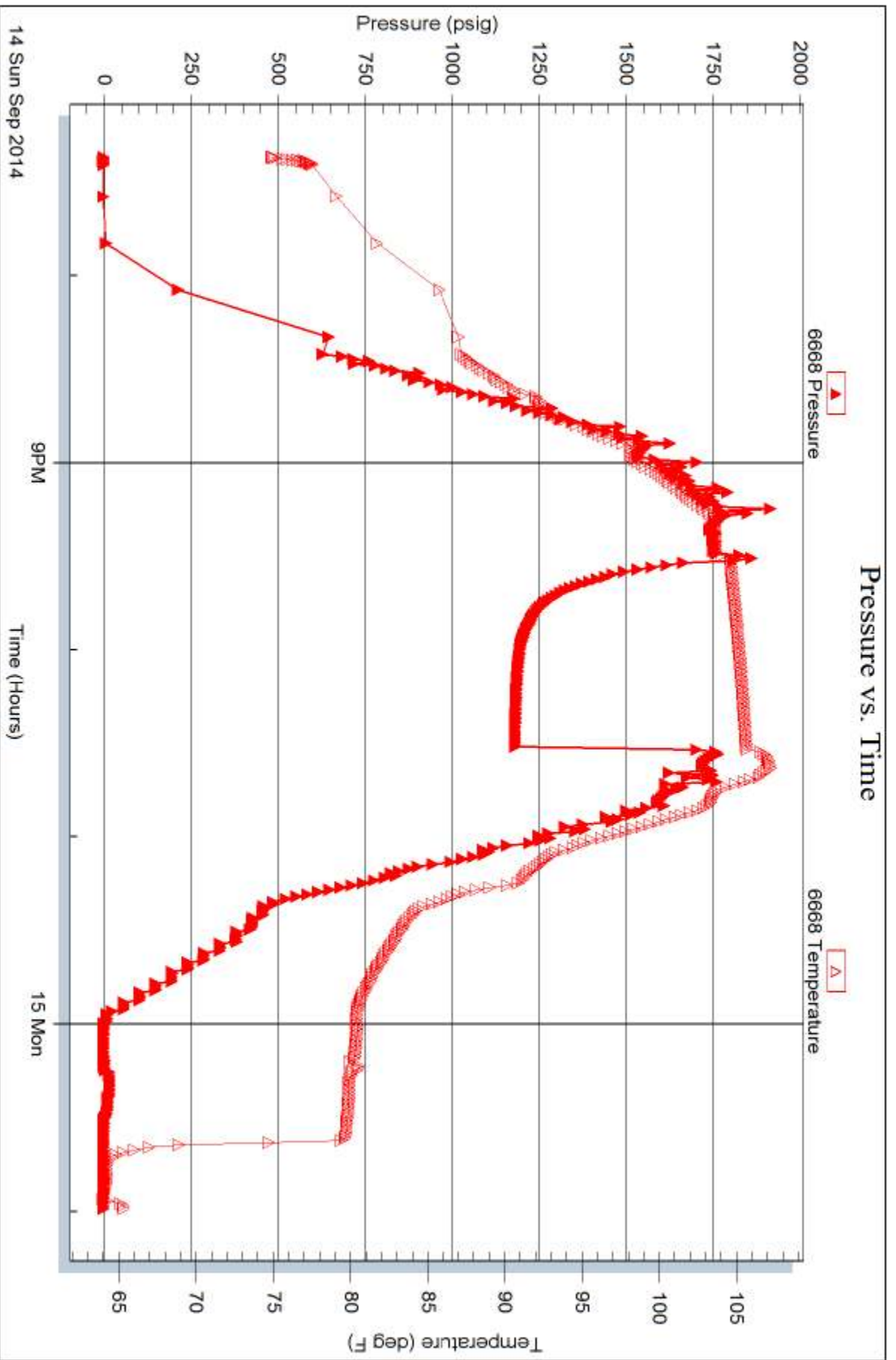
Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|---------------------------------------|---------------|
| 63.00 | MCO 30% _m 70% _o | 0.884 |
| 819.00 | CO 100% | 11.488 |
| 0.00 | 252 GIP | 0.000 |

Total Length: 882.00 ft Total Volume: 12.372 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56139

Well Name & No. Zimmerman Unit #2 Test No. 1 Date 9-14-14
 Company TDI Inc. Elevation 2018 KB 2008 GL
 Address 1310 Bison Rd Hays KS 67601-9696
 Co. Rep / Geo. Herb Dienes Rig Southwind #1
 Location: Sec. 22 Twp. 15^s Rge. 18^w Co. Ellis State KS

Interval Tested 3569-3586 Zone Tested Arbuckle
 Anchor Length 17 - 170TP Drill Pipe Run 3555 Mud Wt. 9.5
 Top Packer Depth 3569 Drill Collars Run ~~0~~ Vis 53
 Bottom Packer Depth 3586 Wt. Pipe Run ~~0~~ WL 9.2
 Total Depth 3756 LTD Chlorides 6600 ppm System LCM 2
 Blow Description IFP- BOB in 50 sec.
ISIP- Surface Blow
FFP- BOB in 1 min.
FSIP- 5 in. Blow Back

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|-----------------|------------|------|-----------|------|
| <u>63</u> | <u>mco</u> | <u>70</u> | | <u>30</u> | |
| <u>819</u> | <u>CO</u> | <u>100</u> | | | |
| | <u>252 ISIP</u> | | | | |
| | | | | | |
| | | | | | |

Rec Total 882 BHT 111 Gravity 31 API RW @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1838 Test 1150 T-On Location 18:39
 (B) First Initial Flow 142 Jars _____ T-Started 19:22
 (C) First Final Flow 186 Safety Joint _____ T-Open 21:32
 (D) Initial Shut-In 1091 Circ Sub _____ T-Pulled 22:32
 (E) Second Initial Flow 274 Hourly Standby _____ T-Out 01:00
 (F) Second Final Flow 350 Mileage 24 RT 37.20 Comments _____
 (G) Final Shut-In 1100 Sampler _____
 (H) Final Hydrostatic 1705 Straddle 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 5 Extra Recorder _____ Sub Total 0
 Initial Shut-In ~~15~~ Day Standby _____ Total 1787.20
 Final Flow 10 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 30 Sub Total 1787.20

Approved By _____ Our Representative [Signature]
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