

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

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

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

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

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

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

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

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

County: _____ Permit #: _____

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

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 Geologist Report / Mud Logs <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
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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				

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

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Bird Dog Oil, LLC
Well Name	RUTTI-GATES 1-5
Doc ID	1488339

All Electric Logs Run

DI
CDNL
Micro
Sonic

JUSTIN D. CARTER

CONSULTING GEOLOGIST

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

Well Name: RUTTI-GATES 1-5
Well Id:
Location: NW, NW, SE Sec. 5 - 22S - 13W Stafford Co., KS
License Number: 15-185-24056-0000
Spud Date: 08/19/19
Surface Coordinates: 2310' FSL, 2310' FEL
Region: Wildcat
Drilling Completed: 08/25/19

Bottom Hole
Coordinates:
Ground Elevation (ft): 1896' K.B. Elevation (ft): 1905'
Logged Interval (ft): 3100' To: 3880' Total Depth (ft): 3880'
Formation: L/KC, CONGL., VIOLA, ARBUCKLE
Type of Drilling Fluid: Chemical Mud

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

OPERATOR

Company: BIRD DOG OIL, LLC
Address: 1801 Broadway, Suite #200
Denver, CO 80202-3840
Co. Geo.: Mr. Scott Stewart

GEOLOGIST

Name: Justin D. Carter
Company: Consulting Geologist
Address: 1640 N. Roosevelt Ave.
Liberal, KS 67901
Phone: 620-655-1187

Comments

Drilling Contractor: Southwind Drilling Rig #3
Tool Pusher: Jay Krier

8 5/8" surface casing set at 432'

Mud: MudCo
Engineer: Rick Hughes

Gas Detector: Blue Stem

DSTs: Trilobite Testing
Tester: Leal Cason

Open-Hole Loggers: ELI Wireline



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bird Dog Oil
 1801 Broadway Ste 200
 Denver, CO 80202
 ATTN: Justin Carter

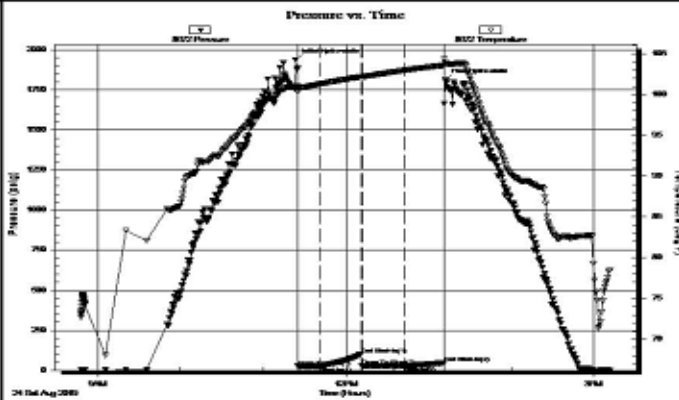
5-22S-13W Stafford
Rutti-Gates 1-5
 Job Ticket: 65896 **DST#: 2**
 Test Start: 2019.08.24 @ 08:48:00

GENERAL INFORMATION:

Formation: **Viola**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 11:25:17
 Tester: Leal Cason
 Time Test Ended: 15:12:02
 Unit No: 74
 Interval: **3690.00 ft (KB) To 3727.00 ft (KB) (TVD)**
 Reference Elevations: 1905.00 ft (KB)
 Total Depth: 3727.00 ft (KB) (TVD)
 1896.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 9.00 ft

Serial #: 8672 Inside
 Press@RunDepth: 28.35 psig @ 3691.00 ft (KB) Capacity: psig
 Start Date: 2019.08.24 End Date: 2019.08.24 Last Calib.: 2019.08.24
 Start Time: 08:48:01 End Time: 15:12:02 Time On Btm: 2019.08.24 @ 11:23:32
 Time Off Btm: 2019.08.24 @ 13:12:17

TEST COMMENT: IF: Weak Blow , Built to 1 1/2 inch
 IS: No Blow Back
 FF: Weak Blow , Built to 1/2 inch
 FSI: No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1938.70	101.00	Initial Hydro-static
2	25.17	100.37	Open To Flow (1)
18	24.93	101.29	Shut-In(1)
48	100.40	102.17	End Shut-In(1)
48	26.96	102.18	Open To Flow (2)
79	28.35	102.96	Shut-In(2)
108	47.15	103.62	End Shut-In(2)
109	1813.81	103.87	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	SOSM 1%O 99%M	0.21

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bird Dog Oil
 1801 Broadway Ste 200
 Denver, CO 80202
 ATTN: Justin Carter

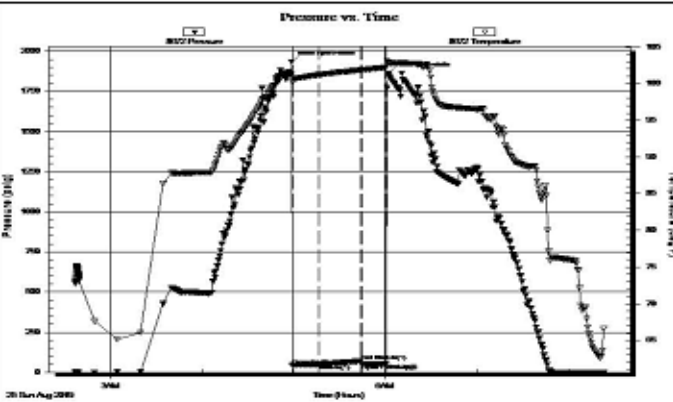
5-22S-13W Stafford
Rutti-Gates 1-5
 Job Ticket: 65897 **DST#: 3**
 Test Start: 2019.08.25 @ 02:37:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 04:59:02 Tester: Leal Cason
 Time Test Ended: 08:23:02 Unit No: 74
 Interval: **3720.00 ft (KB) To 3778.00 ft (KB) (TVD)** Reference Elevations: 1905.00 ft (KB)
 Total Depth: 3778.00 ft (KB) (TVD) 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 9.00 ft

Serial #: 8672 **Inside**
 Press@RunDepth: 49.92 psig @ 3721.00 ft (KB) Capacity: psig
 Start Date: 2019.08.25 End Date: 2019.08.25 Last Calib.: 2019.08.25
 Start Time: 02:37:01 End Time: 08:23:02 Time On Btm: 2019.08.25 @ 04:58:47
 Time Off Btm: 2019.08.25 @ 06:01:32

TEST COMMENT: IF: Weak Blow , Built to 3/4 inch, Dead @ 14 minutes
 IS: No Blow Back
 FF: No Blow , Pulled Test



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1934.89	101.15	Initial Hydro-static
1	43.79	100.19	Open To Flow (1)
18	49.92	101.20	Shut-In(1)
45	70.40	101.86	End Shut-In(1)
46	50.20	101.87	Open To Flow (2)
62	54.31	102.27	Shut-In(2)
63	1860.77	103.00	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
20.00	Mud	0.28

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (MMcf/d)

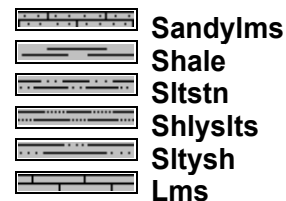
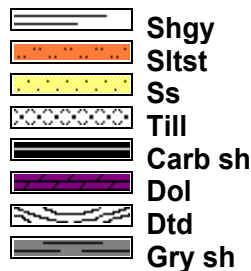
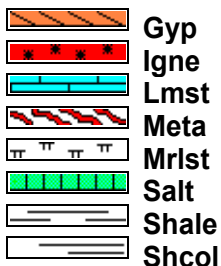
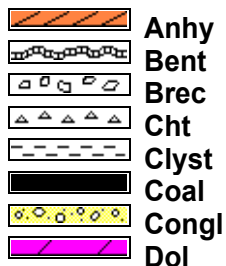
Remarks

After careful review of the sample log, electric logs, and DST reports, the decision was made to P&A the Rutti-Gates #1-5.

Respectfully submitted,

Justin D. Carter
 Consulting Geologist

ROCK TYPES

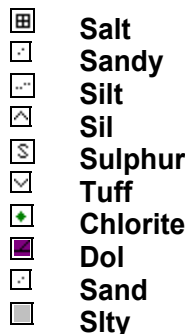


ACCESSORIES

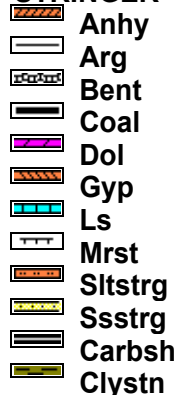
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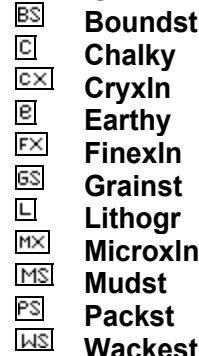
MINERAL



STRINGER

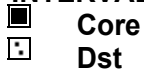


TEXTURE

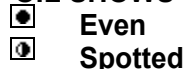


OTHER SYMBOLS

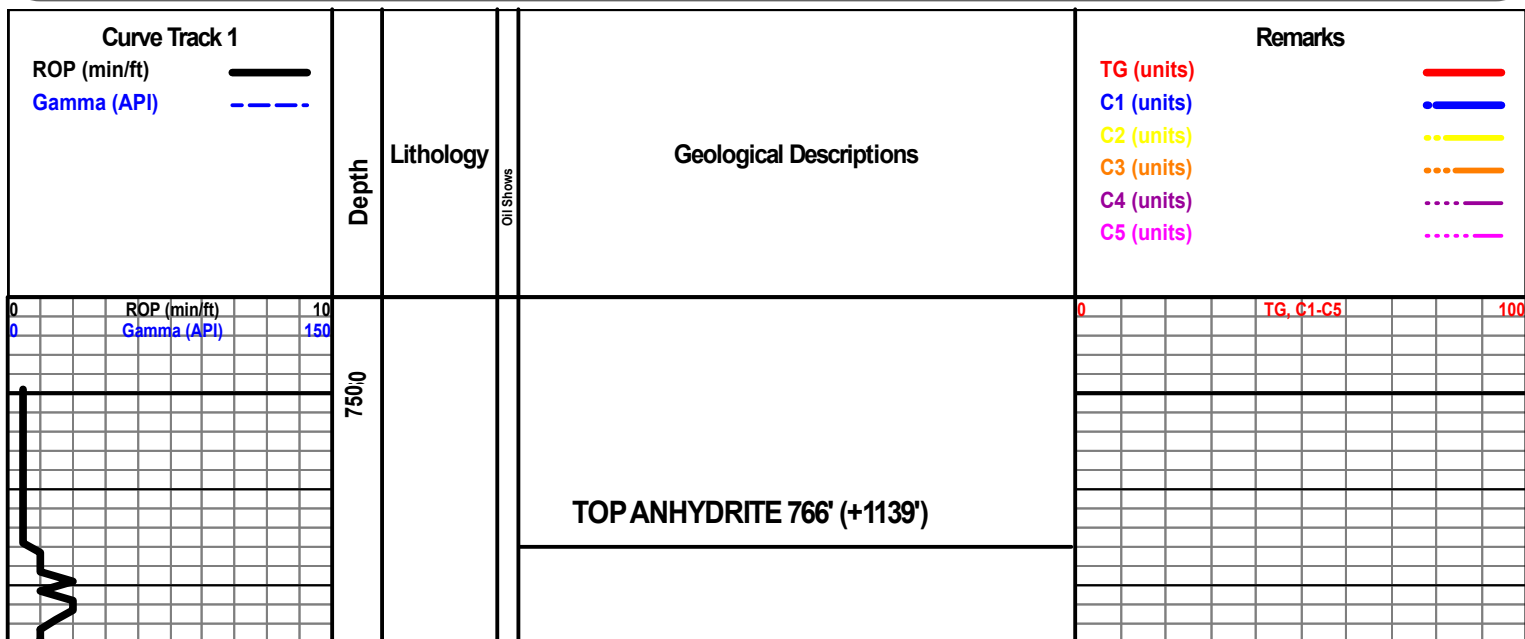
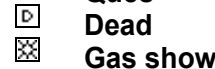
INTERVALS



OIL SHOWS



Ques



BASE ANHYDRITE 791' (+1114')

ROP (min/ft) 10
Gamma (API) 150

8000

DEPTH BREAK

3050

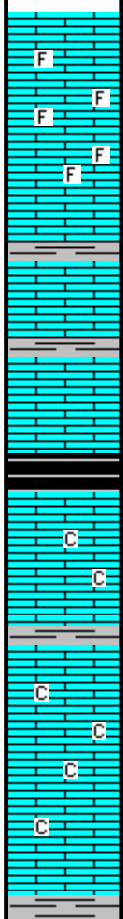
BIT #2
VAREL 7 7/8"
HE-29
SN: 1617112
3/14s

DISPLACE HOLE @ 2907

GEOLOGIST ON LOCATION 8:30 A.M. 08/22/19

3100

WT 8.6
VIS 42
LCM 1/2#
RPM 80
WOB 30K
PP 800
SPM 60



LS- LT TN, HRD DNS, FVF-XLN, SUB-SUCRO MTRX THRU, IMBED FOSS FRAGS SCAT THRU, NO FLO, TR INTER-XLN POR, NS

LS- CRM, HRD DNS, VF-XLN, RE-XLN MTRX IP TO SUB-SUCRO MTRX IP, TR IMBED FOSS FRAGS, NO FLO, NO VIS POR

LS- LT TN, BRITT, FVF-XLN, GRNST, TR SFT WHT CHLK, NO FLO, PR INTER-XLN POR SCAT THRU, NS

LS- CRM, MD/F-XLN, GRNST, SFT WHT CHLK IP, NO FLO, PR INTER-XLN POR THRU, NS

LS- CRM OFF WHT, HRD, FVF-XLN, GRNST IP TO RE-XLN MTRX IP, TR IMBED FOSS FRAGS, NO FLO, NO VIS POR

3150

TG, C1-C5

100

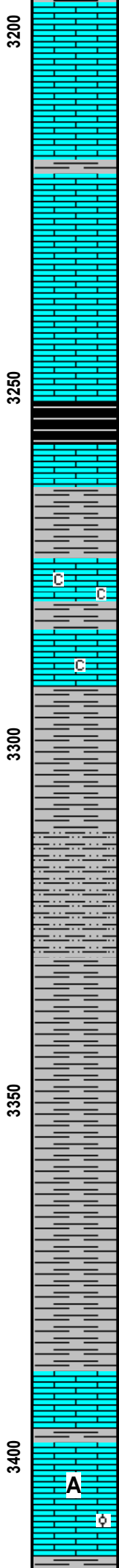
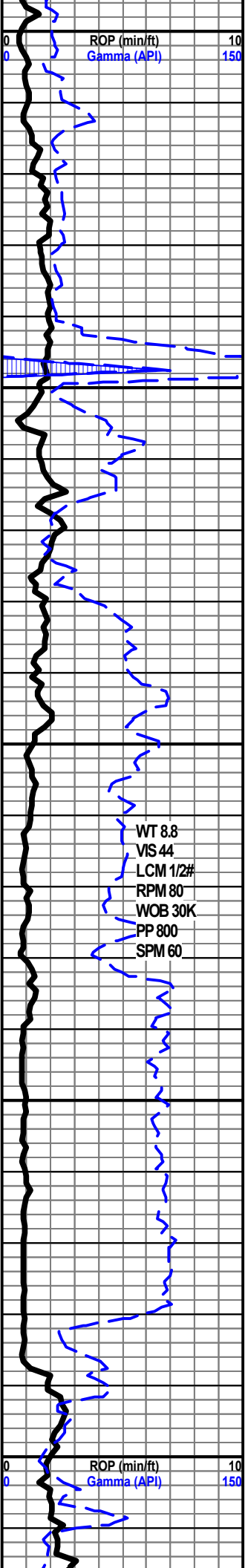
10:00 A.M. 08/22/19

CN

18 U BG

CN

CN



LS- LT TN, HRD TO BRITT IP, VF-XLN, RE-XLN MTRX IP TO TR SUB-SUCRO MTRX, NO FLO, NO VIS POR

LS- TN, HRD DNS, VF-XLN, RE-XLN MTRX IP, NO FLO, NO VIS POR

LS- CRM TN, HRD DNS, VF-XLN, RE-XLN MTRX IP, NO FLO, NO VIS POR

HEEBNER 3253' (-1348')

LS- GY, HRD DNS, CRYPTO-XLN, RE-XLN MTRX THRU, IMBED BLK SH IP, NO FLO, NO VIS POR

TORONTO 3274' (-1369')

LS- WHT, HRD, MD/F-XLN, GRNST IP TO RE-XLN MTRX IP, SFT WHT CHLK IP, NO FLO, TR INTER-XLN POR TO NO VIS POR THRU, NS

DOUGLAS 3292' (-1387')

SH- DK GY BLK RD, FRM, FISS

SLTST- GY, HRD TT, F-GRNS, DISS BLK SH SCAT THRU, PR INTER-GRN POR SCAT THRU, NS

SH- LT GRN, FRM, BLKY, LMY

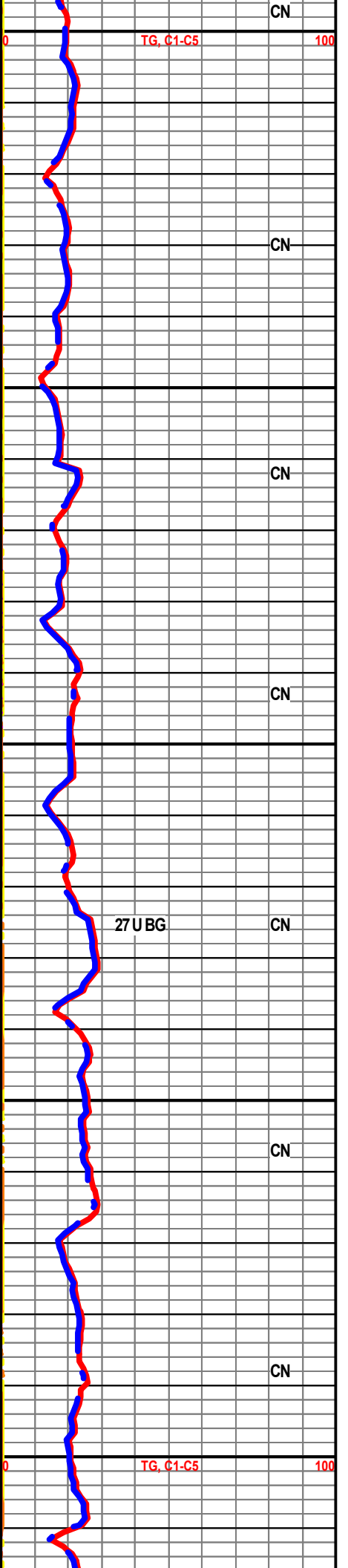
SH- DK GY LT GRN, FRM, BLKY, LMY TO FISS IP

SH- DK GY, A/A

BROWN LIME 3388' (-1483')

LANSING 3398' (-1493')

LS- CRM, HRD DNS, VF-XLN, RE-XLN MTRX IP, TR IMBED OOL, NO FLO, NO VIS CUT, NO VIS POR



CN

CN

CN

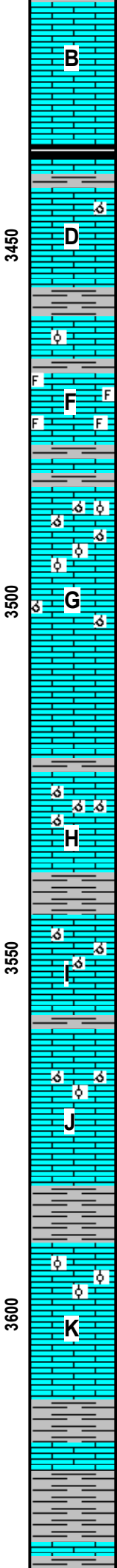
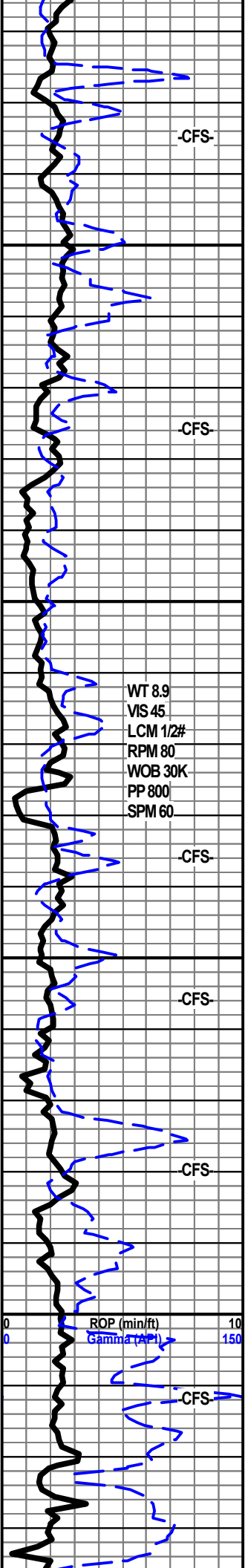
CN

CN

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LS- CRM LT CRM, HRD DNS, F/VF-XLN, RE-XLN MTRX THRU, TR BRIT BLU FLO, V/FAINT SLO BLU STRM CUT, TR INTER-XLN POR TO FRAC POR IP, TR TN STAIN, V/FAINT ODOR, NSFO

LS- WHT, BRITT, F/VF-XLN, GRNST, TR FINE CALC XLS, TR YEL FLO, NO VIS CUT, TR OOMLD POR TO TR INTER-XLN POR, NO STAIN, NO ODOR

LS- TN GY, HRD DNS, VF-XLN, RE-XLN MTRX THRU, TR IMBED OOL, TR SFT WHT CHLK, NO FLO, NO VIS POR

LS- BRN TN, HRD DNS, VF-XLN, GRNST, IMBED FOSS FRAGS THRU, NO FLO, NO VIS CUT, TR INTER-FOSS POR TO NO VIS POR IP, TR BLK RESID STAIN, NO ODOR

LS-WHT LT TN, BRITT, VF-XLN, GRNST THRU, OOL IP, SFT WHT CHLK IP, NO FLO, PR OOMLD POR IP TO TR MICRO PP POR, NS

LS- TN, HRD DNS, VF-XLN, RE-XLN MTRX IP, TR SFT WHT CHLK, NO FLO, TR OOMLD POR, NS

LS- LT TN, HRD DNS, VF-XLN, RE-XLN MTRX THRU, NO FLO, NO VIS POR

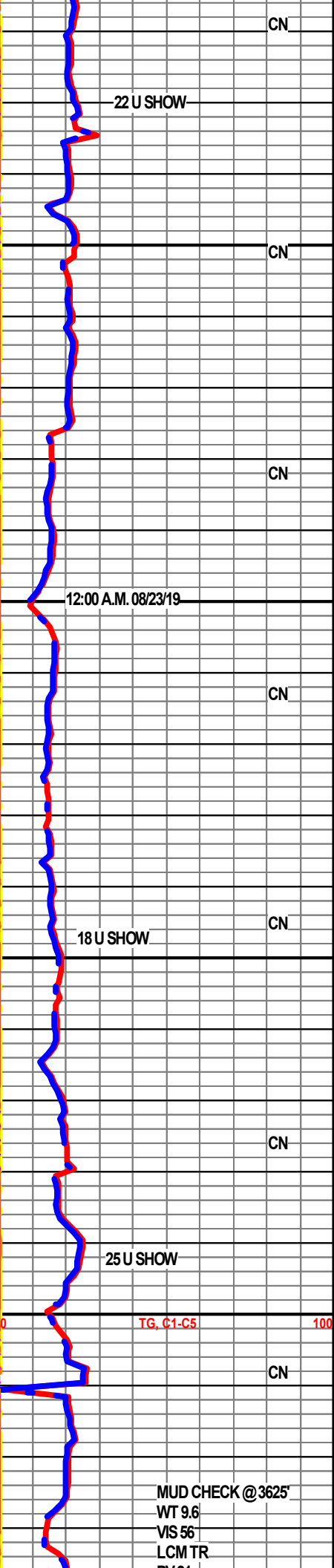
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LS- WHT, BRITT, VF-XLN, GRNST, TR OOL, SFT WHT CHLK SCAT THRU, PR BLU FLO IP, V/FAINT STRM CUT, PR/FR OOMLD POR THRU, TR "TARRY" OIL STAIN, NO ODOR

LS- CRM, BRITT, F/VF-XLN, GRNST, SFT WHT CHLK IP, TR OOL, NO FLO, NO VIS CUT, PR OOMLD POR IP, TR BLK STAIN, NO ODOR

LS- CRM WHT, HRD TO BRITT IP, F-XLN, GRNST, SFT WHT CHLK THRU, OOL IP, YEL GLD FLO IP, FAINT FLUSH TO PR SLO BLU STRM CUT, TR INTER-XLN POR TO TR OOMLD POR, LIVE BLK STAIN IP, FAINT ODOR

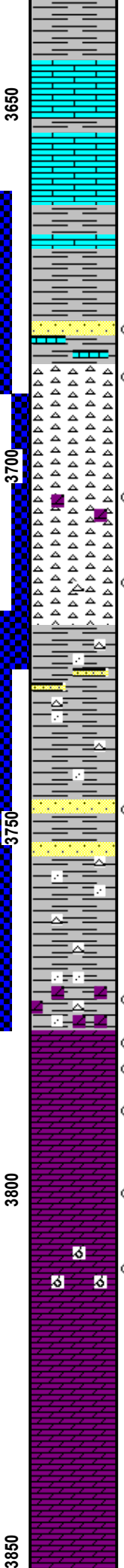
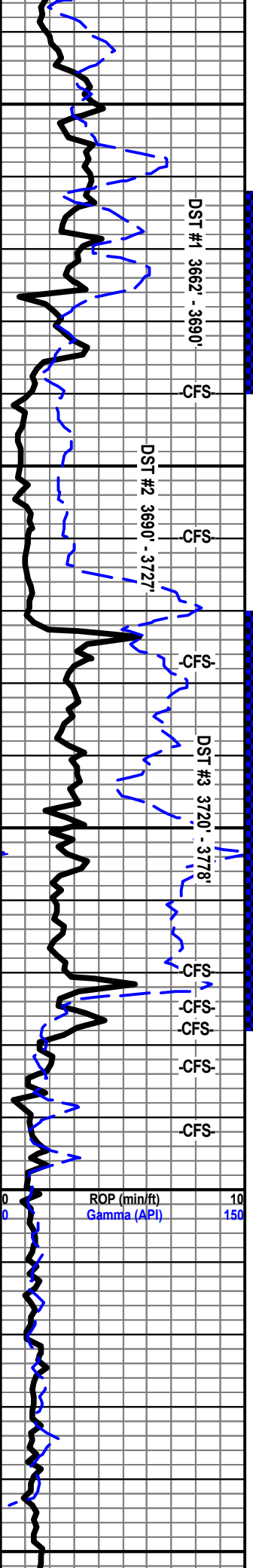
LS- BFF TN, HRD DNS, VF-XLN, RE-XLN MTRX THRU TO TR GRNST, SFT WHT CHLK IP, NO FLO, NO VIS CUT, TR INTER-XLN POR, TR LIVE BLK STAIN, NO ODOR



BKC 3613' (-1708')

LS- CRM BFF, HRD DNS, F/VF-XLN, GRNST IP TO RE-XLN MTRX IP, IMBED GY SH IP, NO FLO, NO VIS POR

MUD CHECK @3625'
 WT 9.6
 VIS 56
 LCM TR



SH- RD, SFT, GMMY

LS- BFF CRM, HRD DNS, CRYPTO-XLN, RE-XLN MTRX THRU, NO FLO, NO VIS POR

LS- CRM, HRD DNS, CRYPTO-XLN, RE-XLN MTRX IP, NO FLO, NO VIS POR

SH- GY RD, FRM, BLKY, FISS IP TO BLKY IP

SS- WHT, TT TO FRI IP, F-GRNS, SUB-RND GRNS, CALC CMNT, SFT WHT CHLK IP, NO FLO, NO VIS CUT, PR/FR INTER-GRN POR, NO ODOR

VIOLA 3685' (-1780')

CHRT- WHT, HRD DNS, ANG, YEL GLD FLO IN 50%, PR SLO BLU STRM CUT, POSS FRAC POR, BLK STAIN IP, FAINT ODOR, NSFO

STRAP OUT @ 3690', 4.26' SHORT TO BOARD

CHRT- WHT, HRD DNS, ANG, TR WHT DOLO, YEL GLD FLO THRU, FAINT SLO BLU STRM CUT, POSS FRAC POR, TR BLK STAIN, TR FREE OIL, FAINT ODOR

CHRT- WHT, HRD DNS, ANG, YEL GLD FLO THRU, PR/FR SLO BLU STRM CUT, POSS FRAC POR, BLK STAIN IP, FAINT ODOR, TR FREE OIL

SIMPSON 3723' (-1818')

SS- WHT, TT, MD/VF-GRNS, PR SRT, SUB-RND GRNS, CALC CMNT, SFT WHT CHLK IP, RND CLR QTZ XLS IP, NO FLO, NO VIS CUT, PR INTER-GRN POR THRU, TR STAIN, NO ODOR

SS- TN CLR, TT TO FRI IP, F-GRNS, SUB-ANG GRNS, CALC CMNT, YEL GLD FLO THRU, FR FLUSH TO FR SLO BLU STRM CUT, PR/FR INTER-GRN POR THRU, TN STAIN SCAT THRU, TR FREE OIL, V/FAINT ODOR

SH- TURQ, FRM, FISS, TR CHRT, TR DOLO

3776' DOLO- WHT TN, HRD DNS, F/VF-XLN, RE-XLN MTRX IP TO SUCRO MTRX IP, YEL GLD FLO THRU, PR FLUSH TO PR/FR SLO BLU STRM CUT, PR INTER-XLN POR IP, TN STAIN SCAT THRU, FAIR ODOR, NSFO

ARBUCKLE 3778' (-1873')

DOLO- LI TN, HRD DNS, VF-XLN, SUCRO MTRX THRU TO TR CHLKY, YEL GLD FLO THRU, PR SLO BLU STRM CUT, PR INTER-XLN POR THRU, TN STAIN THRU, NO ODOR, NSFO

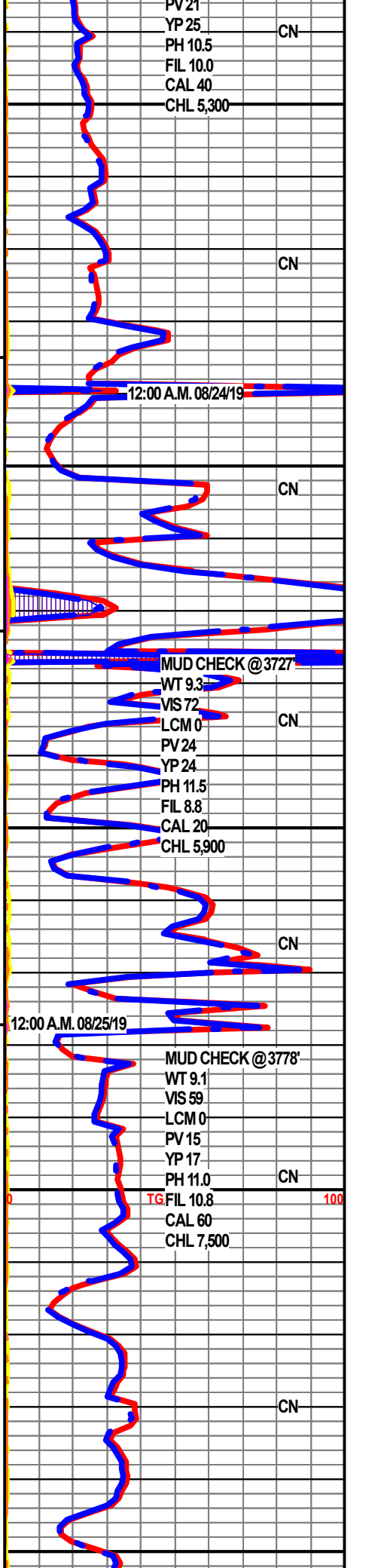
DOLO- CRM TN, HRD TO BRITT IP, F/VF-XLN, SUCRO MTRX THRU, SFT WHT CHLK IP, YEL GLD FLO SCAT THRU, FAINT FLUSH TO PR SLO BLU STRM CUT, PR/FR INTER-XLN POR THRU, TN TO BLK STAIN IP, STRNG ODOR, GD SHOW FREE OIL

3800' DOLO- TN CLR, HRD DNS, MD/VF-XLN, SUCRO MTRX THRU, DLL YEL GLD FLO THRU, PR SLO BLU STRM CUT, FR INTER-XLN POR THRU, TN STAIN THRU, FR ODOR, NSFO

3812' DOLO- BFF, HRD, MD-XLN, SUCRO MTRX THRU, BRIT BLU/GLD FLO SCAT THRU, FR FLUSH TO FR BLU STRM CUT, FR INTER-XLN POR THRU TO OOMLD POR, BLK STAIN SCAT THRU, FR ODOR, TR FREE OIL

DOLO- BFF TN, HRD DNS, MD/VF-XLN, SUCRO MTRX THRU TO TR RE-XLN MTRX, YEL GLD FLO THRU, NO VIS CUT, PR/FR INTER-XLN POR THRU, FAINT ODOR

DOLO- CRM, HRD DNS, MD/VF-XLN, SUCRO MTRX THRU, DLL YEL GLD FLO THRU, NO VIS CUT, PR/FR INTER-XLN POR THRU, NO STAIN, NO ODOR



PV 21
YP 25
PH 10.5
FIL 10.0
CAL 40
CHL 5,300

CN

CN

CN

CN

CN

CN

CN

MUD CHECK @ 3727'
WT 9.3
VIS 72
LCM 0
PV 24
YP 24
PH 11.5
FIL 8.8
CAL 20
CHL 5,900

MUD CHECK @ 3778'
WT 9.1
VIS 59
LCM 0
PV 15
YP 17
PH 11.0
TG FIL 10.8
CAL 60
CHL 7,500

100

DOLO- BFF CRM, HRD DNS, MDF-XLN, SUCRO MTRX THRU,
NO FLO, FR INTER-XLN POR THRU, NS

DOLO- BFF, HRD DNS, MDF-XLN, SUCRO MTRX THRU, NO
FLO, PR/FR INTER-XLN POR IP TO FR OOMLD POR IP, NS

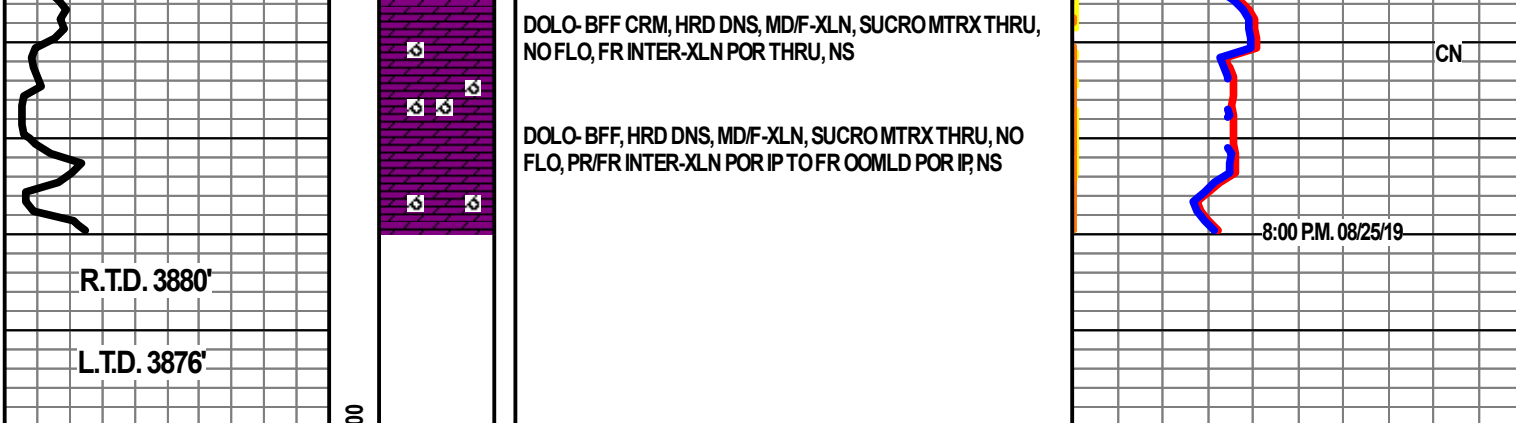
CN

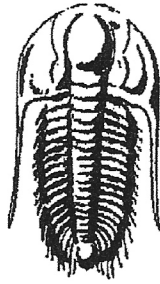
8:00 P.M. 08/25/19

R.T.D. 3880'

L.T.D. 3876'

00





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Bird Dog Oil**

1801 Broadway Ste 200
Denver, CO 80202

ATTN: Justin Carter

Rutti-Gates #1-5

5-22S-13W Stafford,KS

Start Date: 2019.08.23 @ 18:01:00

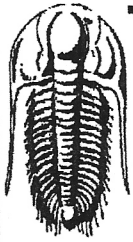
End Date: 2019.08.23 @ 23:43:02

Job Ticket #: 65895 DST #: 1

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bird Dog Oil
 1801 Broadway Ste 200
 Denver, CO 80202
 ATTN: Justin Carter

5-22S-13W Stafford, KS

Rutti-Gates #1-5

Job Ticket: 65895

DST#: 1

Test Start: 2019.08.23 @ 18:01:00

GENERAL INFORMATION:

Formation: **Conglomerate**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:31:47
 Time Test Ended: 23:43:02

Test Type: Conventional Bottom Hole (Initial)
 Tester: Leal Cason
 Unit No: 74

Interval: **3662.00 ft (KB) To 3690.00 ft (KB) (TVD)**
 Total Depth: 3690.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 1905.00 ft (KB)
 1896.00 ft (CF)
 KB to GR/CF: 9.00 ft

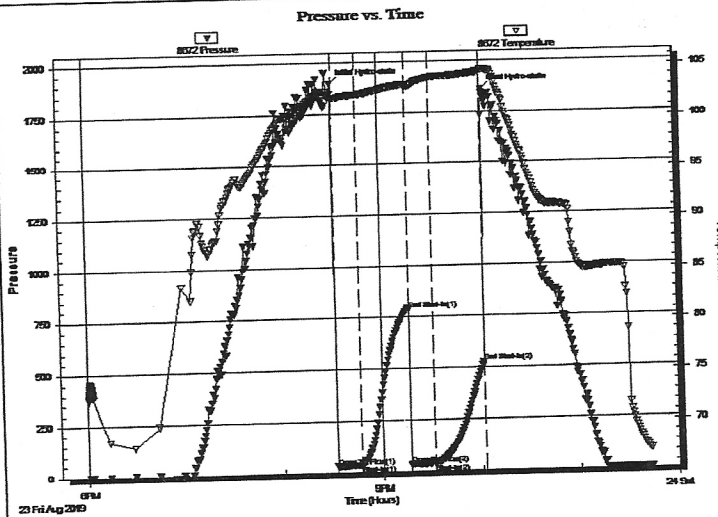
Serial #: 8672

Inside

Press@RunDepth: 33.90 psig @ 3663.00 ft (KB)
 Start Date: 2019.08.23 End Date: 2019.08.23
 Start Time: 18:01:01 End Time: 23:43:02

Capacity: psig
 Last Calib.: 2019.08.23
 Time On Btm: 2019.08.23 @ 20:31:02
 Time Off Btm: 2019.08.23 @ 22:03:02

TEST COMMENT: IF: Weak 3/4" Blow
 IS: No Blow Back
 FF: Weak 1/4" Blow
 FS: No Blow Back



PRESSURE SUMMARY

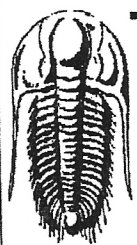
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1898.17	102.48	Initial Hydro-static
1	30.31	101.97	Open To Flow (1)
16	31.36	102.38	Shut-In(1)
46	787.84	103.25	End Shut-In(1)
46	33.20	103.04	Open To Flow (2)
60	33.90	103.90	Shut-In(2)
91	523.79	104.44	End Shut-In(2)
92	1857.59	104.62	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud	0.07

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bird Dog Oil
1801 Broadway Ste 200
Denver, CO 80202
ATTN: Justin Carter

5-22S-13W Stafford, KS
Rutti-Gates #1-5
Job Ticket: 65895 **DST#: 1**
Test Start: 2019.08.23 @ 18:01:00

Tool Information

Drill Pipe:	Length: 3641.00 ft	Diameter: 3.80 inches	Volume: 51.07 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 51.07 bbl</u>	Tool Chased: ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 34000.00 lb
Depth to Top Packer:	3662.00 ft			Final 34000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	54.00 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			3641.00	
Hydraulic tool	5.00			3646.00	
Jars	5.00			3651.00	
Safety Joint	2.00			3653.00	
Packer	5.00			3658.00	26.00 Bottom Of Top Packer
Packer	4.00			3662.00	
Stubb	1.00			3663.00	
Recorder	0.00	8672	Inside	3663.00	
Recorder	0.00	6751	Outside	3663.00	
Perforations	24.00			3687.00	
Bullnose	3.00			3690.00	28.00 Bottom Packers & Anchor

Total Tool Length: 54.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Bird Dog Oil
1801 Broadway Ste 200
Denver, CO 80202
ATTN: Justin Carter

5-22S-13W Stafford,KS
Rutti-Gates #1-5
Job Ticket: 65895 DST#: 1
Test Start: 2019.08.23 @ 18:01:00

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: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.98 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 5300.00 ppm			
Filter Cake: 0.02 inches			

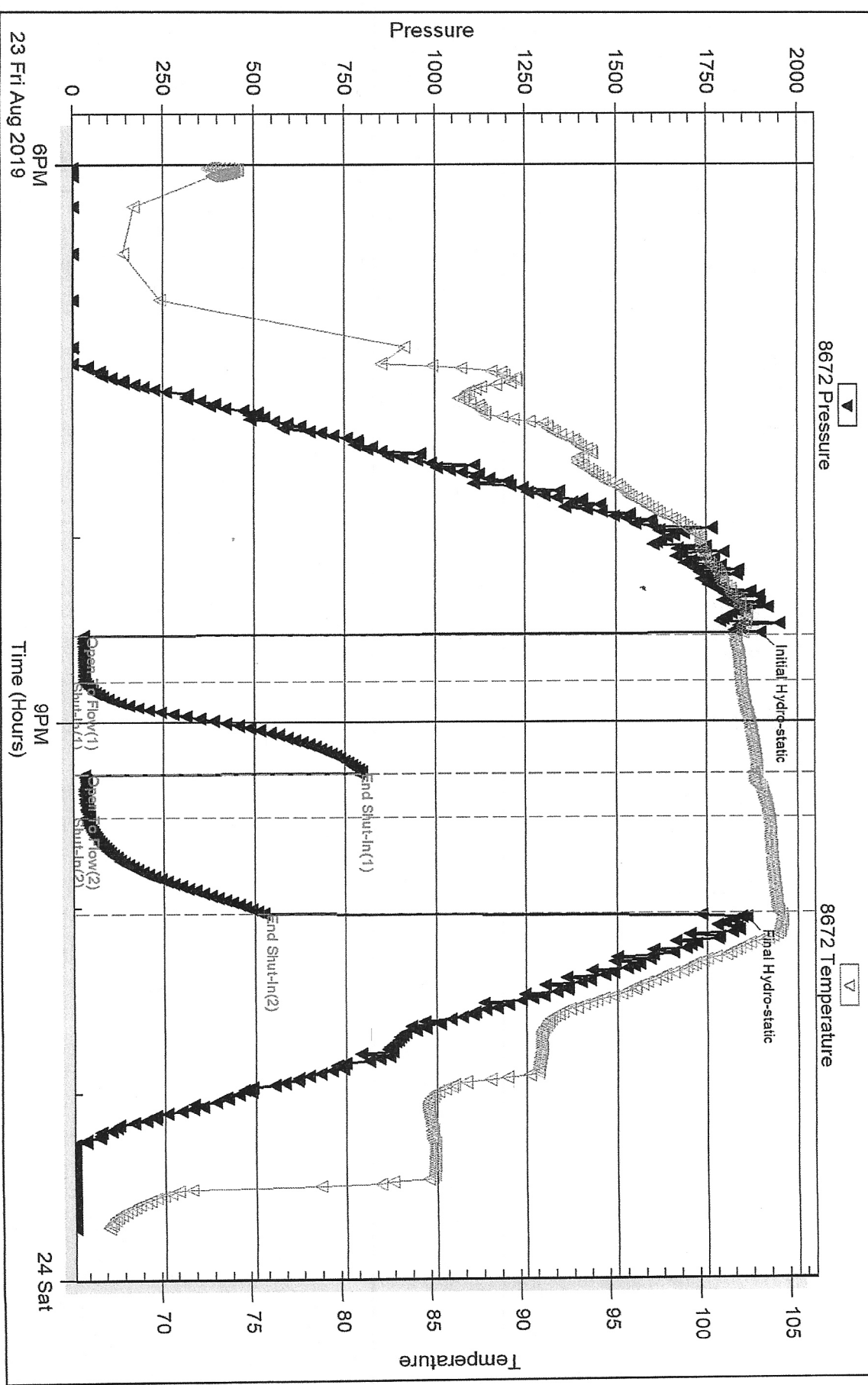
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time

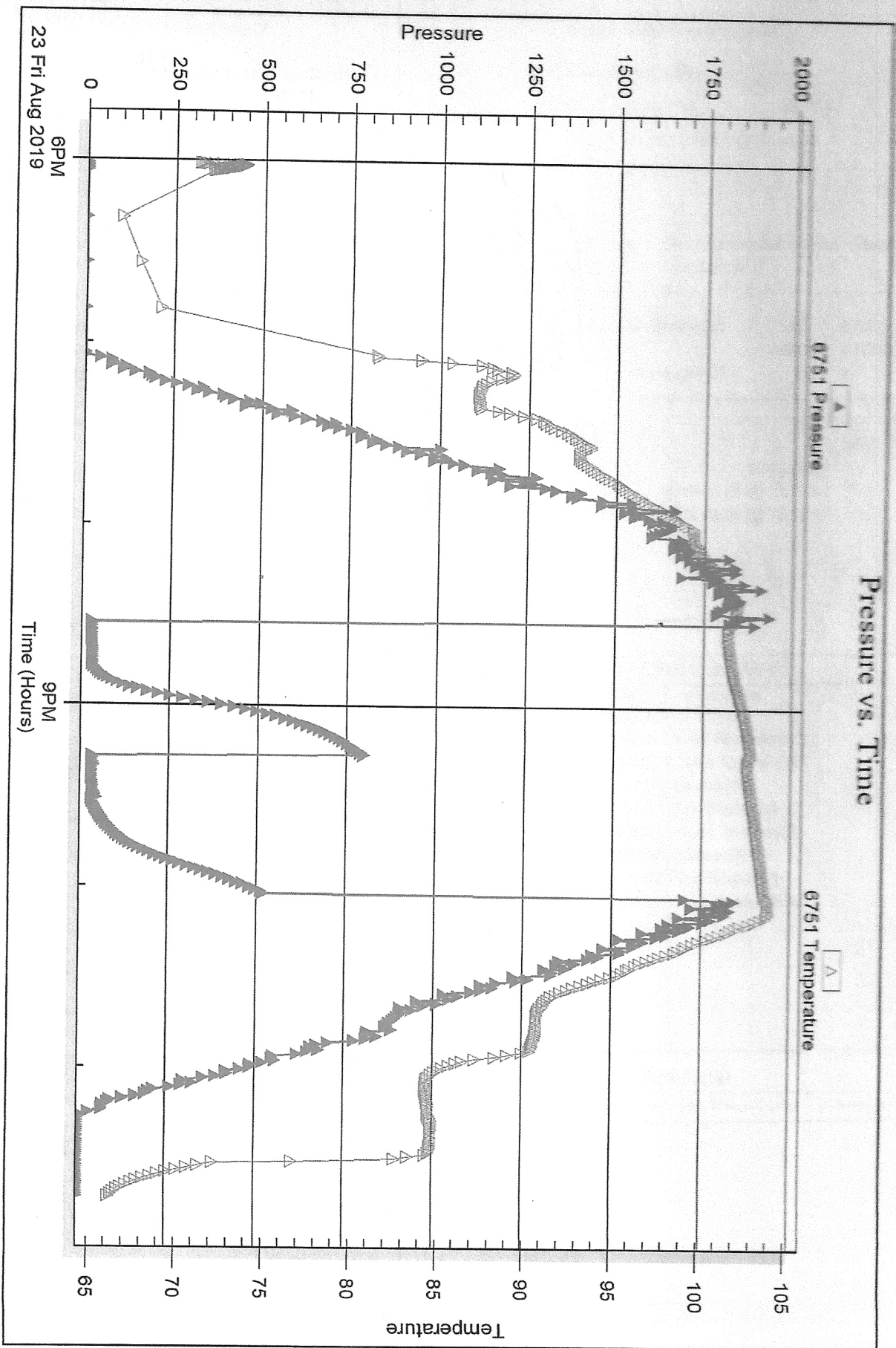


Serial #: 6751

Outside Bird Dog Oil

Rull-Gates #1-5

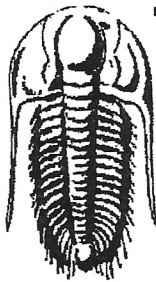
DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 65895

Printed: 2019.08.26 @ 09:52:44



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Bird Dog Oil**

1801 Broadway Ste 200
Denver, CO 80202

ATTN: Justin Carter

Rutti-Gates #1-5

5-22S-13W Stafford,KS

Start Date: 2019.08.24 @ 08:48:00

End Date: 2019.08.24 @ 15:12:02

Job Ticket #: 65896 DST #: 2

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Bird Dog Oil
1801 Broadway Ste 200
Denver, CO 80202
ATTN: Justin Carter

5-22S-13W Stafford, KS
Rutti-Gates #1-5
Job Ticket: 65896 DST#: 2
Test Start: 2019.08.24 @ 08:48:00

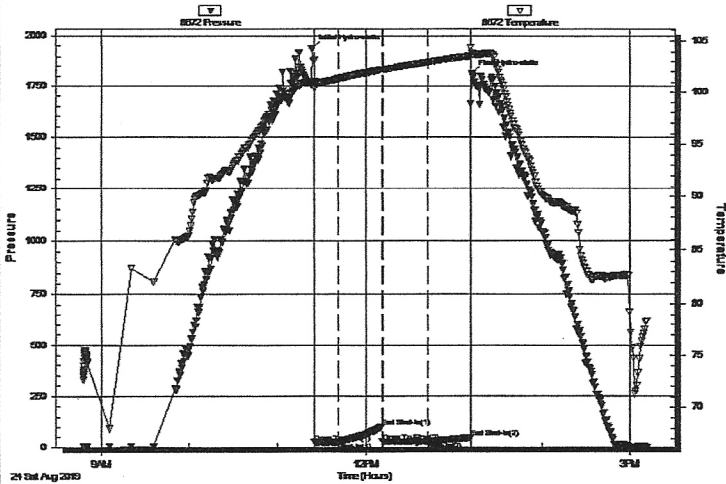
GENERAL INFORMATION:

Formation: **Viola**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:25:17
Time Test Ended: 15:12:02
Test Type: Conventional Bottom Hole (Reset)
Tester: Leal Cason
Unit No: 74
Interval: **3690.00 ft (KB) To 3727.00 ft (KB) (TVD)**
Reference Elevations: 1905.00 ft (KB)
Total Depth: 3727.00 ft (KB) (TVD) 1896.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 9.00 ft

Serial #: 8672 Inside
Press@RunDepth: 28.35 psig @ 3691.00 ft (KB) Capacity: psig
Start Date: 2019.08.24 End Date: 2019.08.24 Last Calib.: 2019.08.24
Start Time: 08:48:01 End Time: 15:12:02 Time On Btm: 2019.08.24 @ 11:23:32
Time Off Btm: 2019.08.24 @ 13:12:17

TEST COMMENT: IF: Weak Blow , Built to 1 1/2"
ISI: No Blow Back
FF: Weak Blow , Built to 1/2"
FSI: No Blow Back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1938.70	101.00	Initial Hydro-static
2	25.17	100.37	Open To Flow (1)
18	24.93	101.29	Shut-In(1)
48	100.40	102.17	End Shut-In(1)
48	26.96	102.18	Open To Flow (2)
79	28.35	102.96	Shut-In(2)
108	47.15	103.62	End Shut-In(2)
109	1813.81	103.87	Final Hydro-static

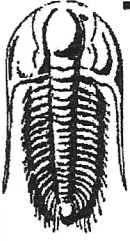
Recovery

Length (ft)	Description	Volume (bbl)
15.00	SOSM 1%O 99%M	0.21

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bird Dog Oil
 1801 Broadway Ste 200
 Denver, CO 80202
 ATTN: Justin Carter

5-22S-13W Stafford,KS

Rutti-Gates #1-5
 Job Ticket: 65896 **DST#: 2**
 Test Start: 2019.08.24 @ 08:48:00

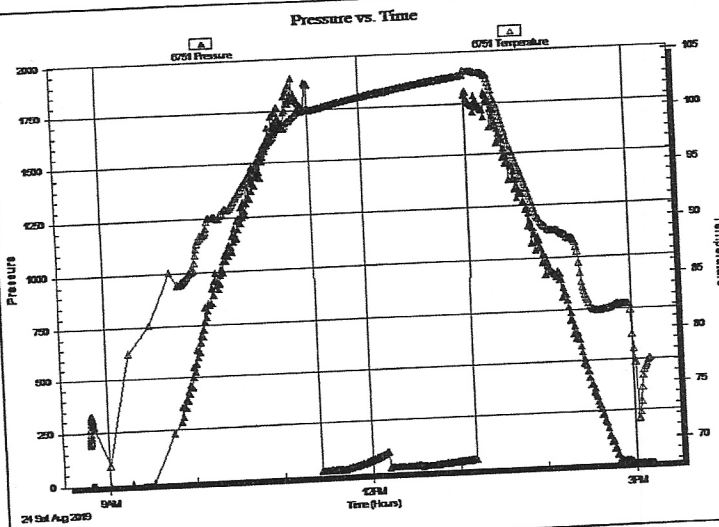
GENERAL INFORMATION:

Formation: **Viola**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 11:25:17
 Time Test Ended: 15:12:02
 Interval: **3690.00 ft (KB) To 3727.00 ft (KB) (TVD)**
 Total Depth: 3727.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)
 Tester: Leal Cason
 Unit No: 74
 Reference Elevations: 1905.00 ft (KB)
 1896.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 6751 Outside Capacity: psig
 Press@RunDepth: psig @ 3691.00 ft (KB) Last Calib.: 2019.08.24
 Start Date: 2019.08.24 End Date: 2019.08.24
 Start Time: 08:48:01 End Time: 15:12:02
 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Weak Blow , Built to 1 1/2"
 IS: No Blow Back
 FF: Weak Blow , Built to 1/2"
 FS: No Blow Back



PRESSURE SUMMARY

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

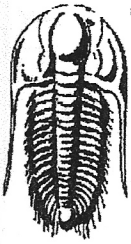
Gas Rates

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

Recovery

Length (ft)	Description	Volume (bbl)
15.00	SOSM 1%O 99%M	0.21

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bird Dog Oil
1801 Broadway Ste 200
Denver, CO 80202
ATTN: Justin Carter

5-22S-13W Stafford,KS
Rutti-Gates #1-5
Job Ticket: 65896 DST#: 2
Test Start: 2019.08.24 @ 08:48:00

Tool Information

Drill Pipe:	Length: 3673.00 ft	Diameter: 3.80 inches	Volume: 51.52 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
		Total Volume: 51.52 bbl		Tool Chased ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 34000.00 lb
Depth to Top Packer:	3690.00 ft			Final 34000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	63.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3669.00	
Hydraulic tool	5.00			3674.00	
Jars	5.00			3679.00	
Safety Joint	2.00			3681.00	
Packer	5.00			3686.00	26.00 Bottom Of Top Packer
Packer	4.00			3690.00	
Stubb	1.00			3691.00	
Recorder	0.00	8672	Inside	3691.00	
Recorder	0.00	6751	Outside	3691.00	
Perforations	33.00			3724.00	
Bullnose	3.00			3727.00	37.00 Bottom Packers & Anchor

Total Tool Length: 63.00



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Bird Dog Oil
1801 Broadway Ste 200
Denver, CO 80202
ATTN: Justin Carter

5-22S-13W Stafford,KS
Rutti-Gates #1-5
Job Ticket: 65896 **DST#: 2**
Test Start: 2019.08.24 @ 08:48:00

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: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.98 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 5300.00 ppm			
Filter Cake: 0.02 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	SOSM 1%O 99%M	0.210

Total Length: 15.00 ft Total Volume: 0.210 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

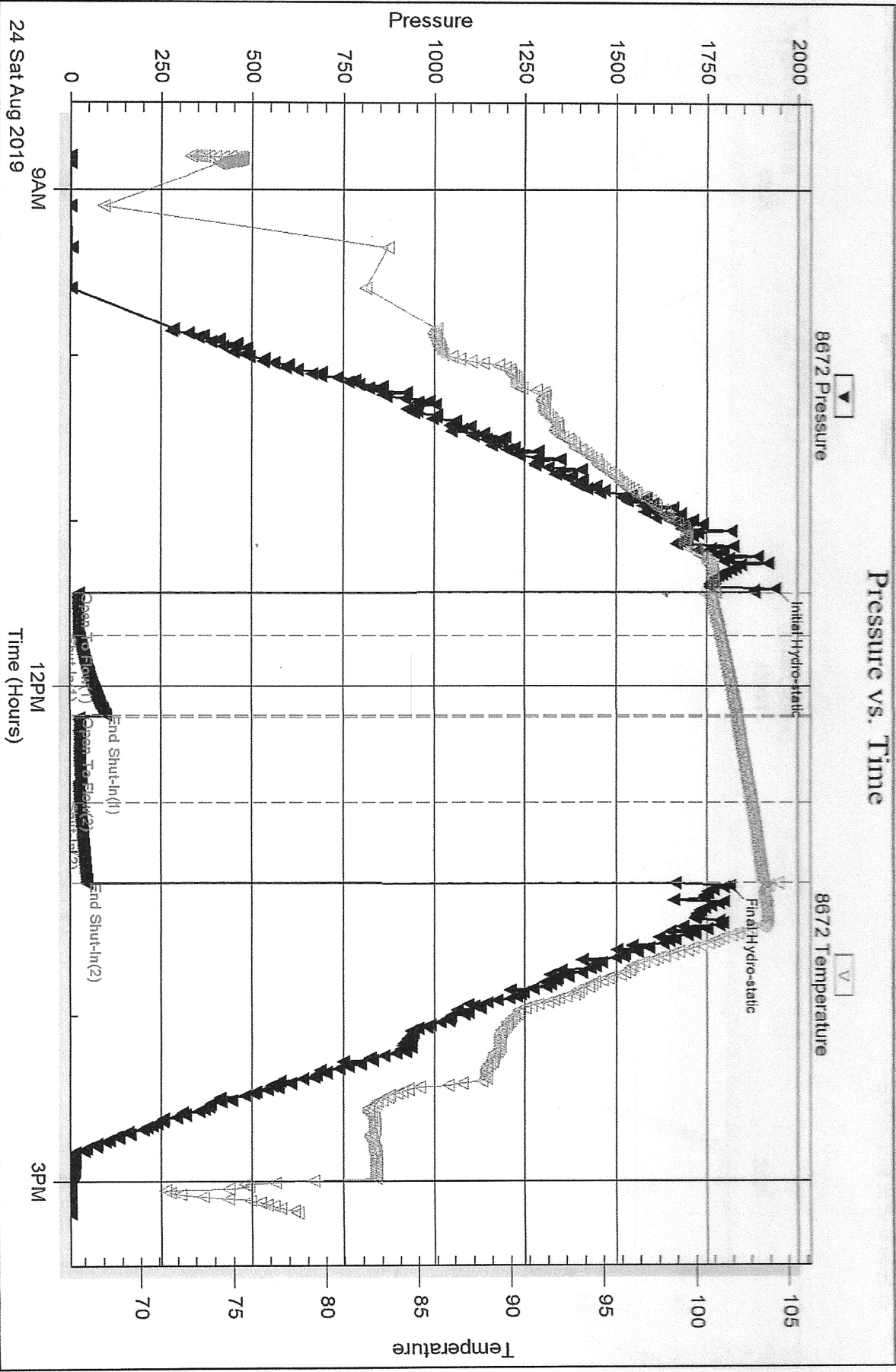
Serial #: 8672

Inside

Blid Dog Oil

Ruth-Gates #1-5

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 65896

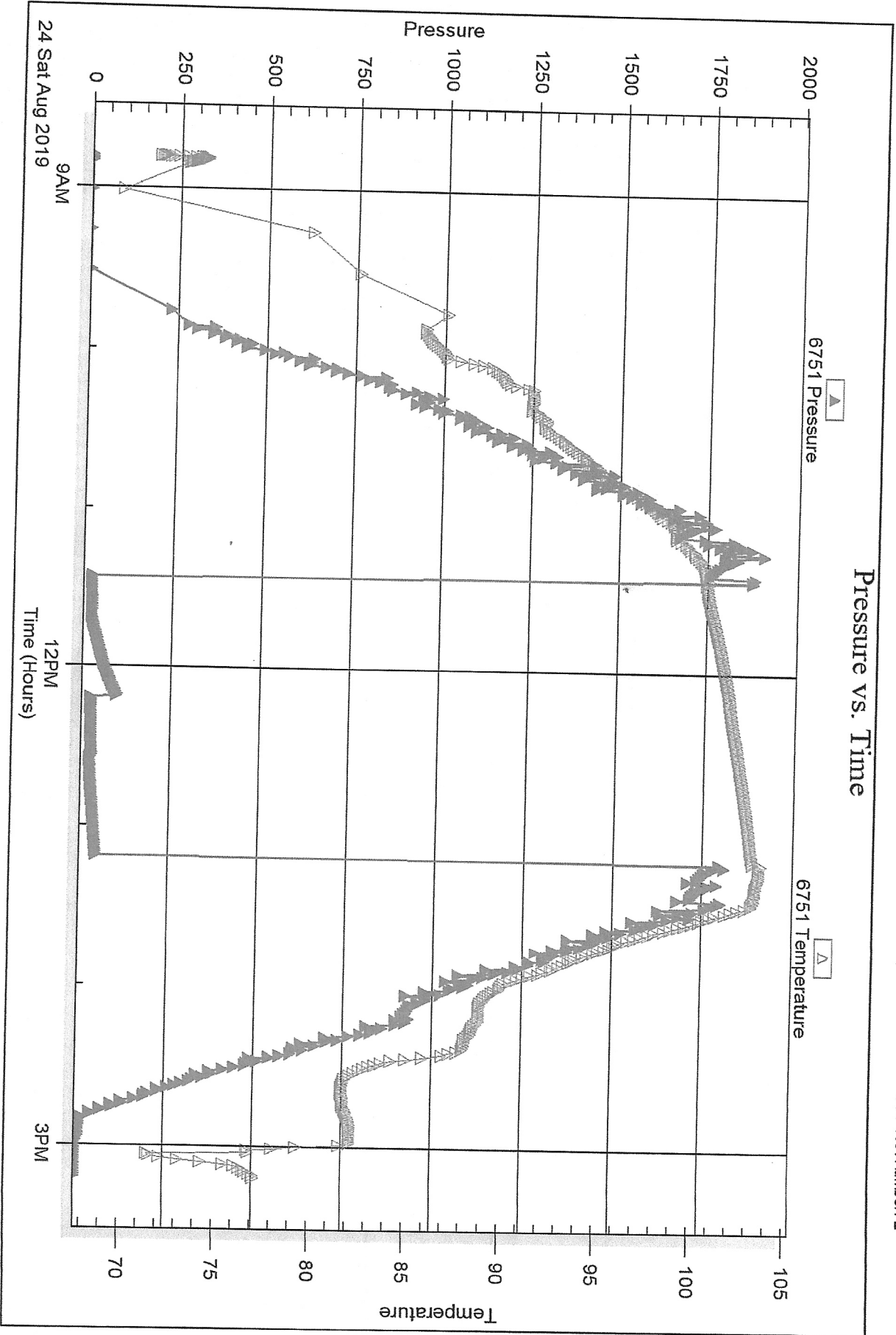
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Serial #: 6751

Outside Bird Dog Oil

Rutti-Gates #1-5

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 65896

Printed: 2019.08.26 @ 09:52:13



DRILL STEM TEST REPORT

Prepared For: **Bird Dog Oil**

1801 Broadway Ste 200
Denver, CO 80202

ATTN: Justin Carter

Rutti-Gates #1-5

5-22S-13W Stafford,KS

Start Date: 2019.08.25 @ 02:37:00

End Date: 2019.08.25 @ 08:23:02

Job Ticket #: 65897 DST #: 3

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bird Dog Oil
 1801 Broadway Ste 200
 Denver, CO 80202
 ATTN: Justin Carter

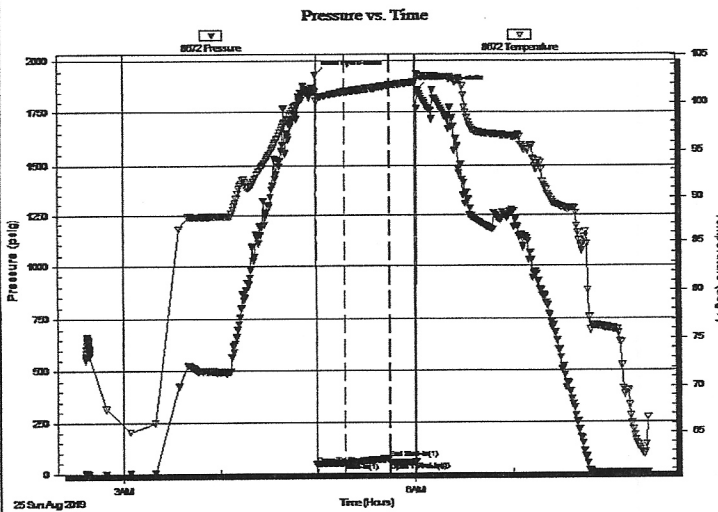
5-22S-13W Stafford, KS
Rutti-Gates #1-5
 Job Ticket: 65897 **DST#: 3**
 Test Start: 2019.08.25 @ 02:37:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:59:02
 Time Test Ended: 08:23:02
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Leal Cason
 Unit No: 74
 Interval: **3720.00 ft (KB) To 3778.00 ft (KB) (TVD)**
 Total Depth: 3778.00 ft (KB) (TVD)
 Reference Elevations: 1905.00 ft (KB)
 1896.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good
 KB to GR/CF: 9.00 ft

Serial #: 8672 Inside
 Press@RunDepth: 49.92 psig @ 3721.00 ft (KB) Capacity: psig
 Start Date: 2019.08.25 End Date: 2019.08.25 Last Calib.: 2019.08.25
 Start Time: 02:37:01 End Time: 08:23:02 Time On Btm: 2019.08.25 @ 04:58:47
 Time Off Btm: 2019.08.25 @ 06:01:32

TEST COMMENT: IF: Weak Blow , Built to 3/4", Dead @ 14 minutes
 IS: No Blow Back
 FF: No Blow , Pulled Test



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1934.89	101.15	Initial Hydro-static
1	43.79	100.19	Open To Flow (1)
18	49.92	101.20	Shut-In(1)
45	70.40	101.86	End Shut-In(1)
46	50.20	101.87	Open To Flow (2)
62	54.31	102.27	Shut-In(2)
63	1860.77	103.00	Final Hydro-static

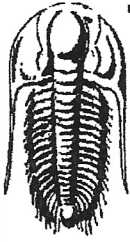
Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud	0.28

* Recovery from multiple tests

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bird Dog Oil
1801 Broadway Ste 200
Denver, CO 80202
ATTN: Justin Carter

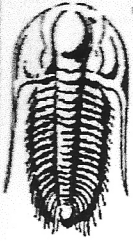
5-22S-13W Stafford,KS
Rutti-Gates #1-5
Job Ticket: 65897 **DST#: 3**
Test Start: 2019.08.25 @ 02:37:00

Tool Information

Drill Pipe:	Length: 3703.00 ft	Diameter: 3.80 inches	Volume: 51.94 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 40000.00 lb
		<u>Total Volume:</u>	<u>51.94 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 34000.00 lb
Depth to Top Packer:	3720.00 ft			Final 34000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	84.00 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			3699.00	
Hydraulic tool	5.00			3704.00	
Jars	5.00			3709.00	
Safety Joint	2.00			3711.00	
Packer	5.00			3716.00	26.00 Bottom Of Top Packer
Packer	4.00			3720.00	
Stubb	1.00			3721.00	
Recorder	0.00	8672	Inside	3721.00	
Recorder	0.00	6751	Outside	3721.00	
Perforations	4.00			3725.00	
Change Over Sub	1.00			3726.00	
Drill Pipe	32.00			3758.00	
Change Over Sub	2.00			3760.00	
Perforations	15.00			3775.00	
Bullnose	3.00			3778.00	58.00 Bottom Packers & Anchor
Total Tool Length:	84.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Bird Dog Oil

5-22S-13W Stafford,KS

1801 Broadway Ste 200
Denver, CO 80202

Rutti-Gates #1-5

Job Ticket: 65897

DST#: 3

ATTN: Justin Carter

Test Start: 2019.08.25 @ 02:37:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 72.00 sec/qt

Water Loss: 8.79 in³

Resistivity: ohm.m

Salinity: 5300.00 ppm

Filter Cake: 0.02 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbbl

psig

Oil API:

Water Salinity:

deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
20.00	Mud	0.281

Total Length: 20.00 ft Total Volume: 0.281 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8672

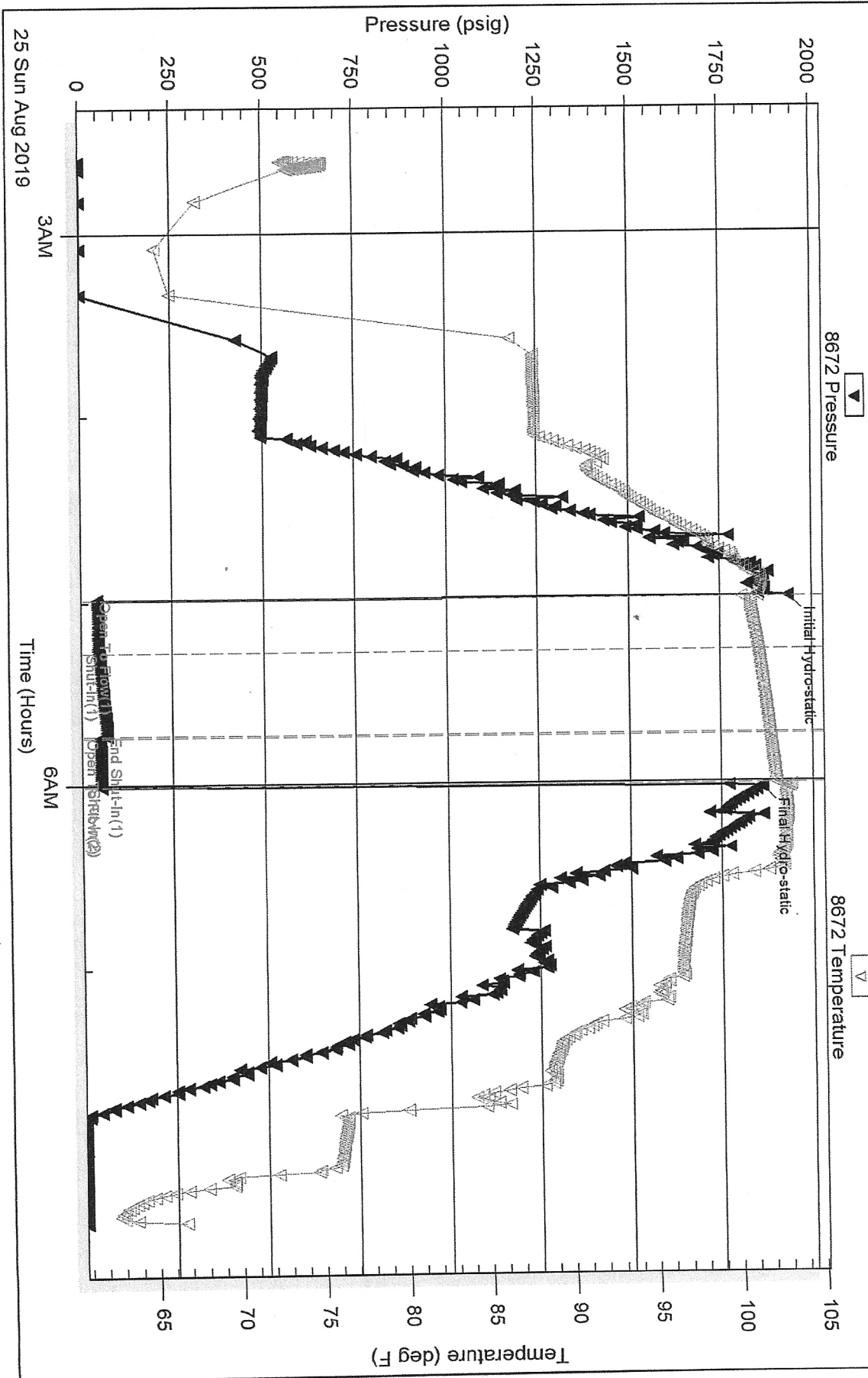
Inside

Bird Dog Oil

Rutti-Gates #1-5

DST Test Number: 3

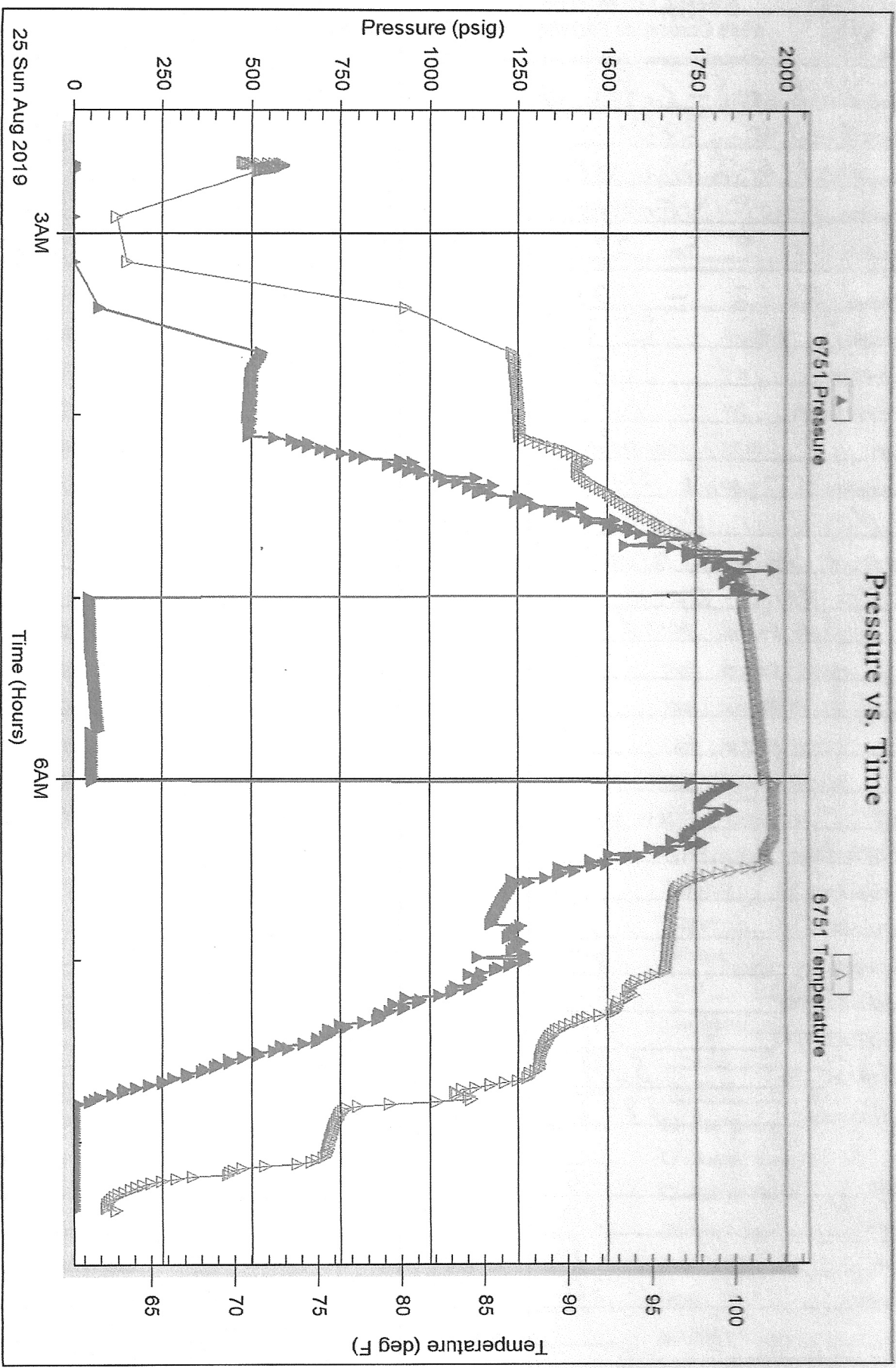
Pressure vs. Time



Triobite Testing, Inc

Ref. No: 65897

Printed: 2019.08.26 @ 09:51:49



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. 1498

Date	8-18-19	Sec.	5	Twp.	22	Range	13	County	Stafford	State	KS	On Location		Finish	11:45 PM
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Lease Rutti-Gates Location 281 K-19 Hwy, 1/2 W, N/Int.

Well No.	1-5	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	Southwind #3	Charge To	Bird dog
Type Job	Surface	Street	
Hole Size	12 1/4	City	
Csg.	8 5/8"	State	
Tbg. Size		The above was done to satisfaction and supervision of owner agent or contractor.	
Tool		Cement Amount Ordered	450 60/40 4% O.C. 2% Gel
Cement Left in Csg.	15'	Shoe Joint	15'
Meas Line		Displace	26 1/2 BLS. 1/2 Flo-seal

EQUIPMENT

Pumptrk	17	No.	Cementer	David
			Helper	
Bulktrk	21	No.	Driver	Doug
			Driver	
Bulktrk	p.u.	No.	Driver	Rick
			Driver	

JOB SERVICES & REMARKS

Remarks: Cement Did Circulate

Rat Hole	Flowseal
Mouse Hole	Kol-Seal
Centralizers	Mud CLR 48
Baskets	CFL-117 or CD110 CAF 38
D/V or Port Collar	Sand
	Handling
	Mileage

FLOAT EQUIPMENT

	Guide Shoe
	Centralizer
	Baskets
	AFU Inserts
	Float Shoe
	Latch Down

	Pumptrk Charge	
	Mileage	
		Tax
		Discount
		Total Charge

X
Signature

