

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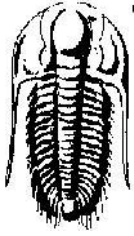
Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Grunder Oil, LLC
Well Name	GRUNDER 4
Doc ID	1768441

Tops

Name	Top	Datum
Anhy	927	1085
Heebner	3613	-1601
BL	3762	-1750
LKC	3792	-1780
BKC	4090	-2078
Miss	4148	-2136
Viola	4283	-2271
Simpson	4392	-2380
Arbuckle	4447	-2435



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Grunder Oil
112 S Main
St John, KS 67576
ATTN: Keaton Jones

5-26S-14W Pratt
Grunder 4
Job Ticket: 71083 **DST#: 1**
Test Start: 2023.11.02 @ 10:42:00

GENERAL INFORMATION:

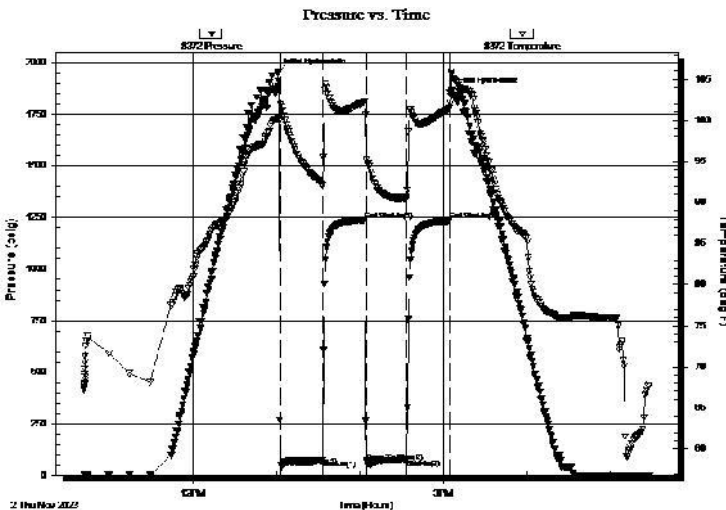
Formation: **LKC "H"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:03:17
Time Test Ended: 17:28:02
Test Type: Conventional Bottom Hole (Initial)
Tester: Leal Cason
Unit No: 72
Interval: 3928.00 ft (KB) To 3943.00 ft (KB) (TVD)
Reference Elevations: 2013.00 ft (KB)
Total Depth: 3943.00 ft (KB) (TVD) 2006.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 8372

Inside

Press@RunDepth: 79.52 psig @ 3934.00 ft (KB) Capacity: psig
Start Date: 2023.11.02 End Date: 2023.11.02 Last Calib.: 2023.11.02
Start Time: 10:42:01 End Time: 17:28:02 Time On Btm: 2023.11.02 @ 13:01:17
Time Off Btm: 2023.11.02 @ 15:05:47

TEST COMMENT: IF: Strong Blow , BOB Immediate, GTS in 9 minutes, Gauged & Sampled
IS: IS: No Blow Back
FF: Strong Blow , BOB & GTS Immediate, Gauged Gas
FS: No Blow Back



PRESSURE SUMMARY

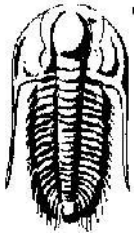
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1952.51	100.14	Initial Hydro-static
2	49.42	101.92	Open To Flow (1)
32	74.39	92.06	Shut-In(1)
63	1238.54	102.25	End Shut-In(1)
64	66.99	95.00	Open To Flow (2)
93	79.52	90.58	Shut-In(2)
124	1234.86	101.47	End Shut-In(2)
125	1861.37	105.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	3765' GIP	0.00
122.00	GSY Oil 40%G 60%O	0.60
28.00	OCM 30%O 70%M	0.39

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.50	20.42	218.12
Last Gas Rate	0.50	18.73	207.53
Max. Gas Rate	0.50	21.00	221.75



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Grunder Oil
 112 S Main
 St John, KS 67576
 ATTN: Keaton Jones

5-26S-14W Pratt
Grunder 4
 Job Ticket: 71083 **DST#: 1**
 Test Start: 2023.11.02 @ 10:42:00

GENERAL INFORMATION:

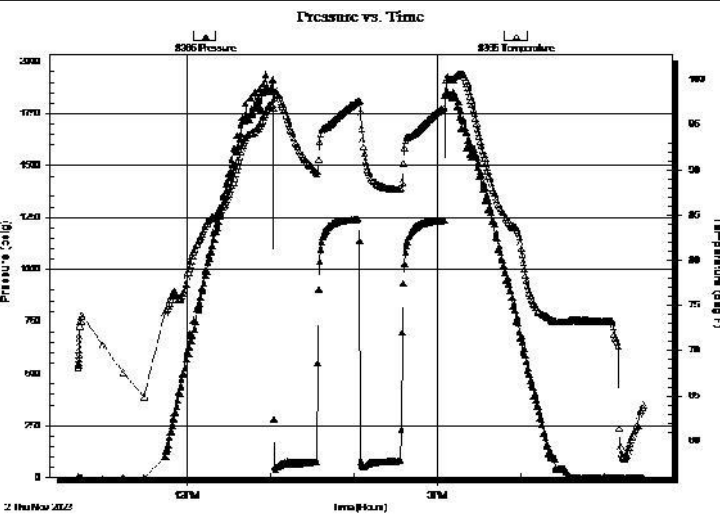
Formation: **LKC "H"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 13:03:17 Tester: Leal Cason
 Time Test Ended: 17:28:02 Unit No: 72
Interval: 3928.00 ft (KB) To 3943.00 ft (KB) (TVD)
 Reference Elevations: 2013.00 ft (KB)
 Total Depth: 3943.00 ft (KB) (TVD) 2006.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 8365

Outside

Press@RunDepth: psig @ 3934.00 ft (KB) Capacity: psig
 Start Date: 2023.11.02 End Date: 2023.11.02 Last Calib.: 2023.11.02
 Start Time: 10:42:01 End Time: 17:28:02 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Strong Blow , BOB Immediate, GTS in 9 minutes, Gauged & Sampled
 IS: IS: No Blow Back
 FF: Strong Blow , BOB & GTS Immediate, Gauged Gas
 FS: No Blow Back



PRESSURE SUMMARY

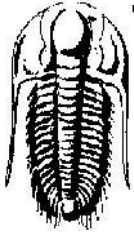
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
0.00	3765' GIP	0.00
122.00	GSY Oil 40%G 60%O	0.60
28.00	OCM 30%O 70%M	0.39

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.50	20.42	218.12
Last Gas Rate	0.50	18.73	207.53
Max. Gas Rate	0.50	21.00	221.75



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Grunder Oil

5-26S-14W Pratt

112 S Main
St John, KS 67576

Grunder 4

Job Ticket: 71083

DST#: 1

ATTN: Keaton Jones

Test Start: 2023.11.02 @ 10:42:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33.6 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.60 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
0.00	3765' GIP	0.000
122.00	GSY Oil 40%G 60%O	0.600
28.00	OCM 30%O 70%M	0.393

Total Length: 150.00 ft Total Volume: 0.993 bbl

Num Fluid Samples: 0

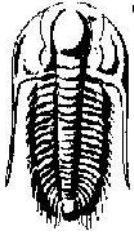
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity w as 35.8 @ 72 degrees



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

GAS RATES

Grunder Oil

5-26S-14W Pratt

112 S Main
St John, KS 67576

Grunder 4

Job Ticket: 71083

DST#: 1

ATTN: Keaton Jones

Test Start: 2023.11.02 @ 10:42:00

Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.67
Z Factor: 0.9

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
1	10	0.50	20.42	218.12
1	20	0.50	18.02	203.09
1	30	0.50	19.15	210.17
2	10	0.50	21.00	221.75
2	20	0.50	19.51	212.42
2	30	0.50	18.73	207.53

Serial #: 8372

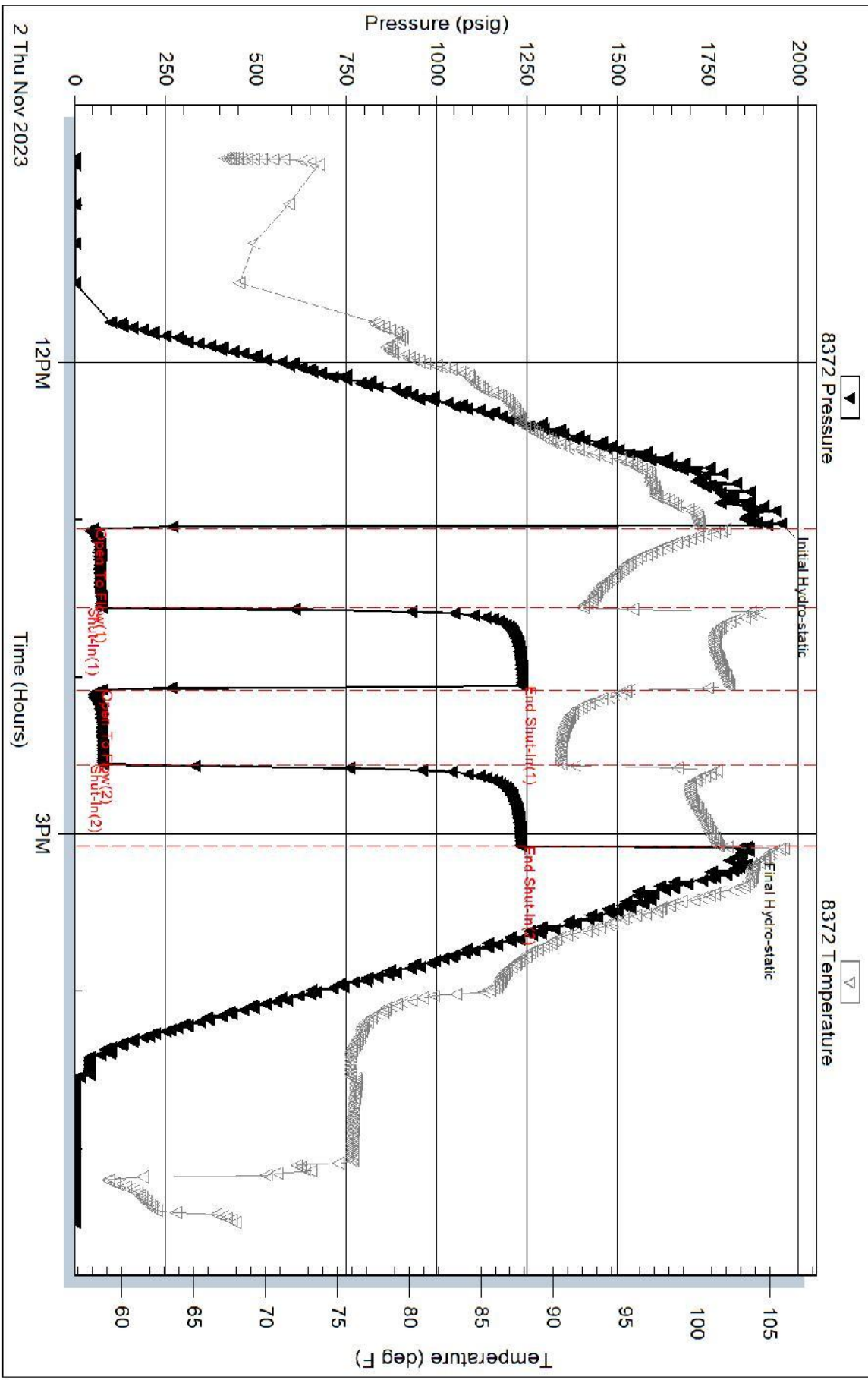
Inside

Grunder Oil

Grunder 4

DST Test Number: 1

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 71083

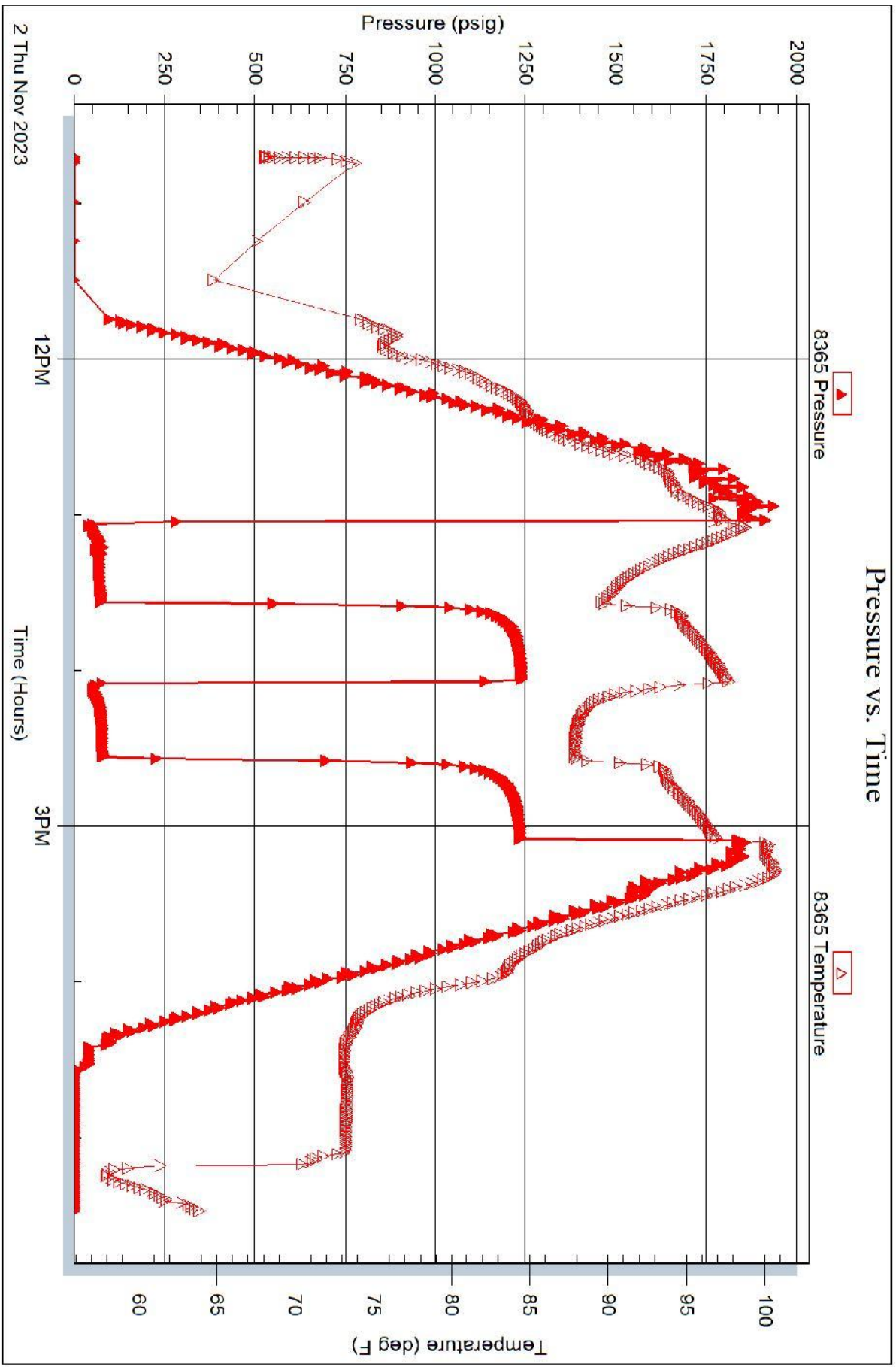
Printed: 2023.11.02 @ 19:28:45

Serial #: 8365

Outside Grunder Oil

Grunder 4

DST Test Number: 1

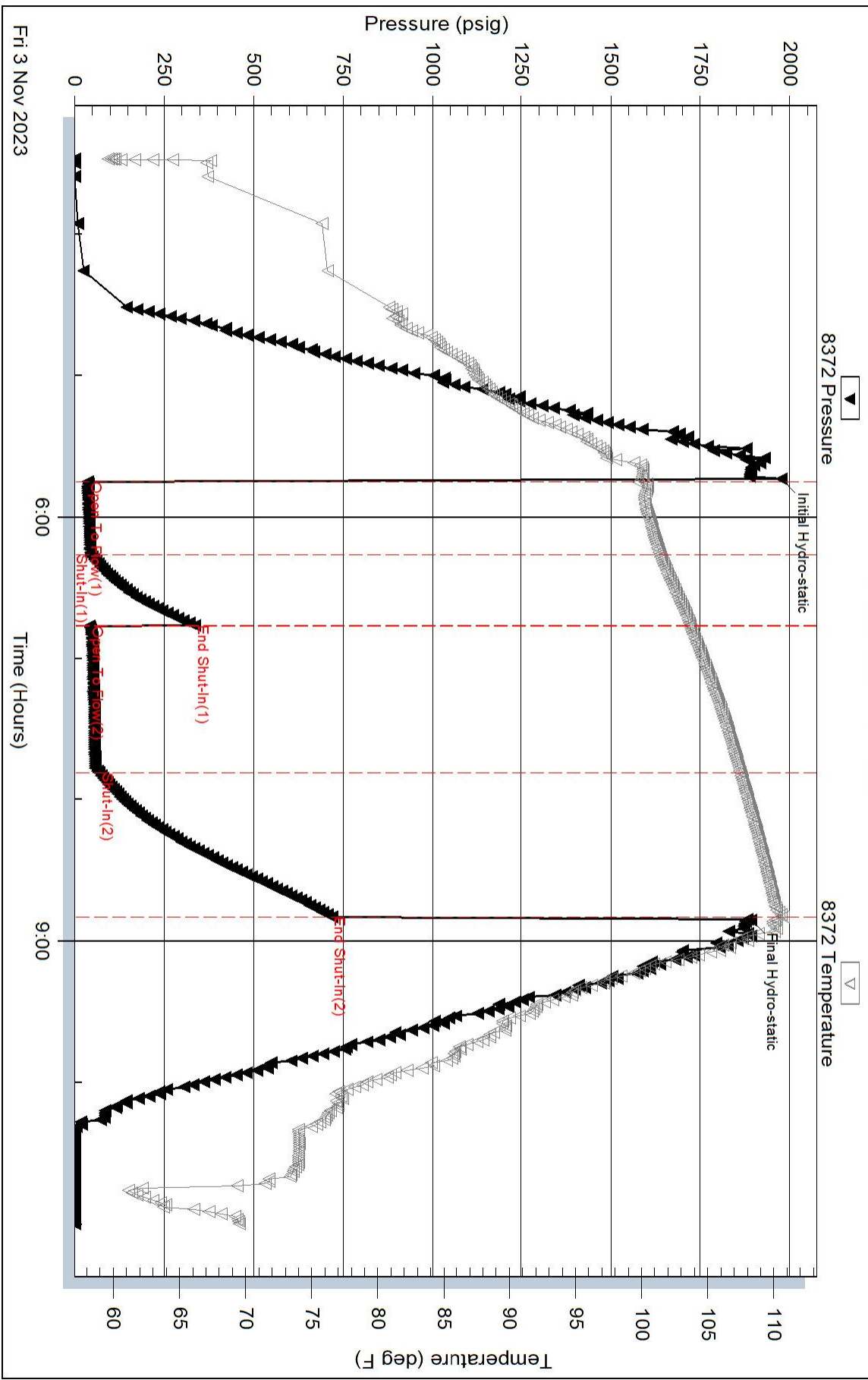


Trilobite Testing, Inc

Ref. No: 71083

Printed: 2023.11.02 @ 19:28:45

Pressure vs. Time





TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Grunder Oil
 112 S Main
 St John, KS 67576
 ATTN: Keaton Jones

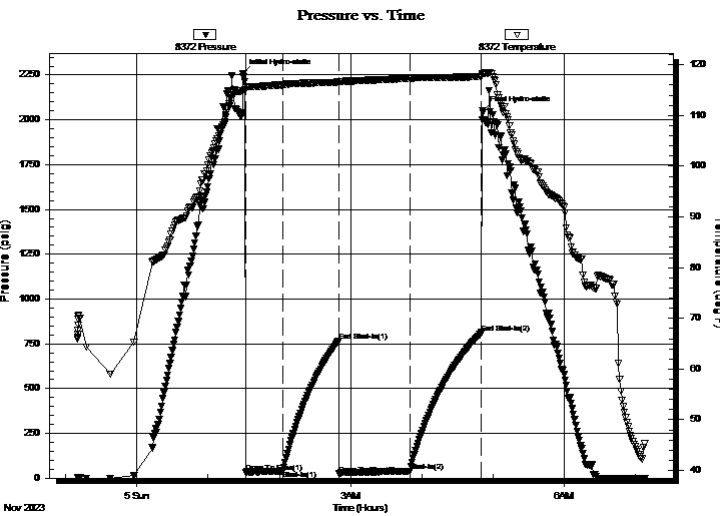
5-26S-14W Pratt
Grunder 4
 Job Ticket: 71085 **DST#: 3**
 Test Start: 2023.11.04 @ 23:10:00

GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:31:47
 Time Test Ended: 07:08:02
 Interval: **4176.00 ft (KB) To 4212.00 ft (KB) (TVD)**
 Total Depth: 4550.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Straddle (Reset)
 Tester: Leal Cason
 Unit No: 72
 Reference Elevations: 2013.00 ft (KB)
 2006.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8372 **Inside**
 Press@RunDepth: 38.58 psig @ 4192.00 ft (KB) Capacity: psig
 Start Date: 2023.11.04 End Date: 2023.11.05 Last Calib.: 2023.11.05
 Start Time: 23:10:01 End Time: 07:08:02 Time On Btm: 2023.11.05 @ 01:29:32
 Time Off Btm: 2023.11.05 @ 04:51:17

TEST COMMENT: IF: Strong Blow , BOB in 30 seconds, Built to 139.38"
 IS: No Blow Back
 FF: Strong Blow , BOB Immediate, Built to 249.25"
 FS: No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2259.47	114.88	Initial Hydro-static
3	30.03	115.38	Open To Flow (1)
34	44.55	116.05	Shut-In(1)
81	763.95	116.55	End Shut-In(1)
81	23.58	116.57	Open To Flow (2)
141	38.58	117.26	Shut-In(2)
201	811.93	117.69	End Shut-In(2)
202	2051.43	118.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	3189' GIP	0.00
30.00	GCM 5%G 95%M	0.15

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Grunder Oil

5-26S-14W Pratt

112 S Main
St John, KS 67576

Grunder 4

Job Ticket: 71085

DST#: 3

ATTN: Keaton Jones

Test Start: 2023.11.04 @ 23:10:00

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: 55.00 sec/qt

Cushion Volume:

bbl

Water Loss: 10.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7000.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	3189' GIP	0.000
30.00	GCM 5%G 95%M	0.148

Total Length: 30.00 ft

Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

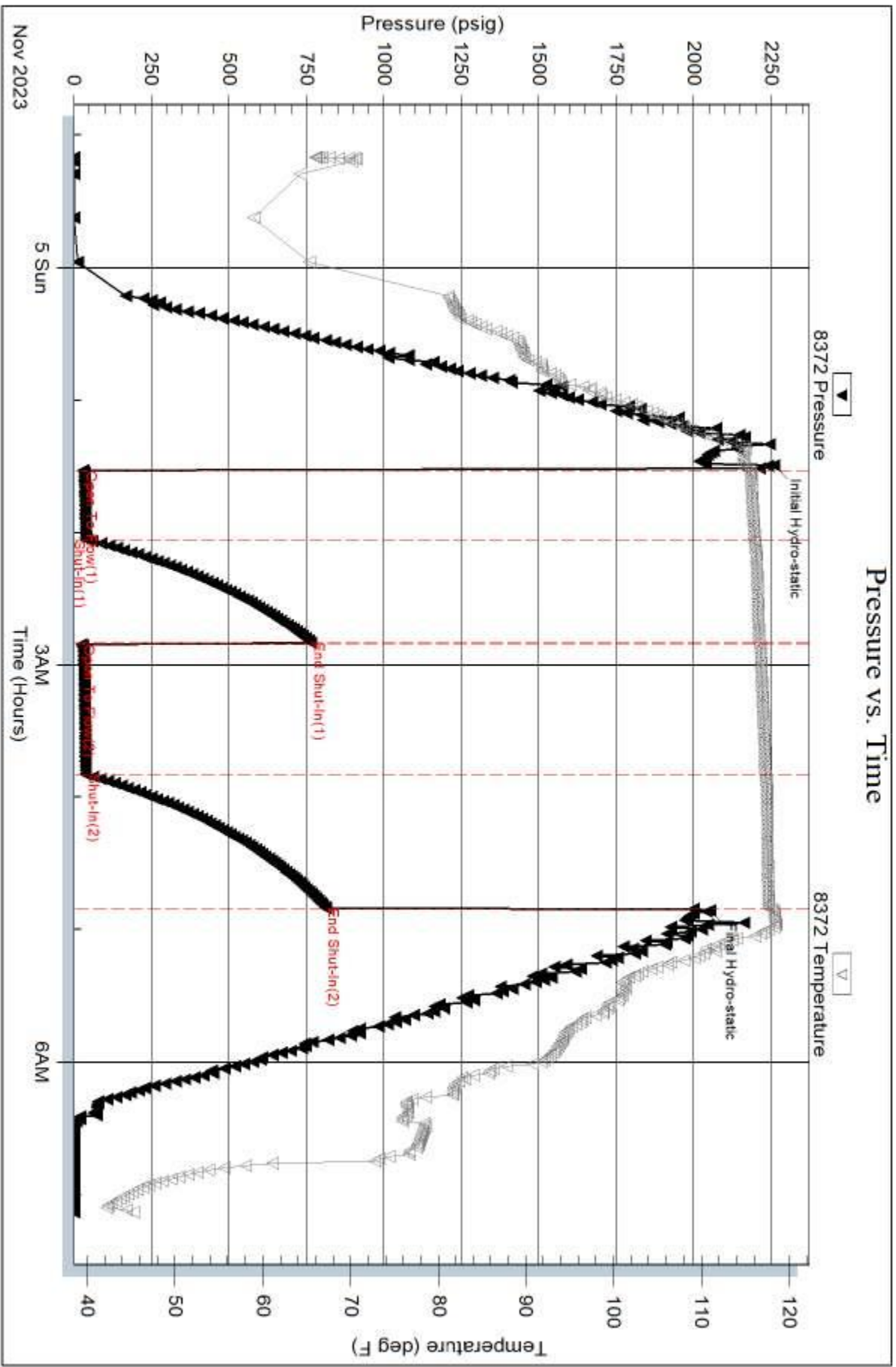
Serial #: 8372

Inside

Grunder Oil

Grunder 4

DST Test Number: 3

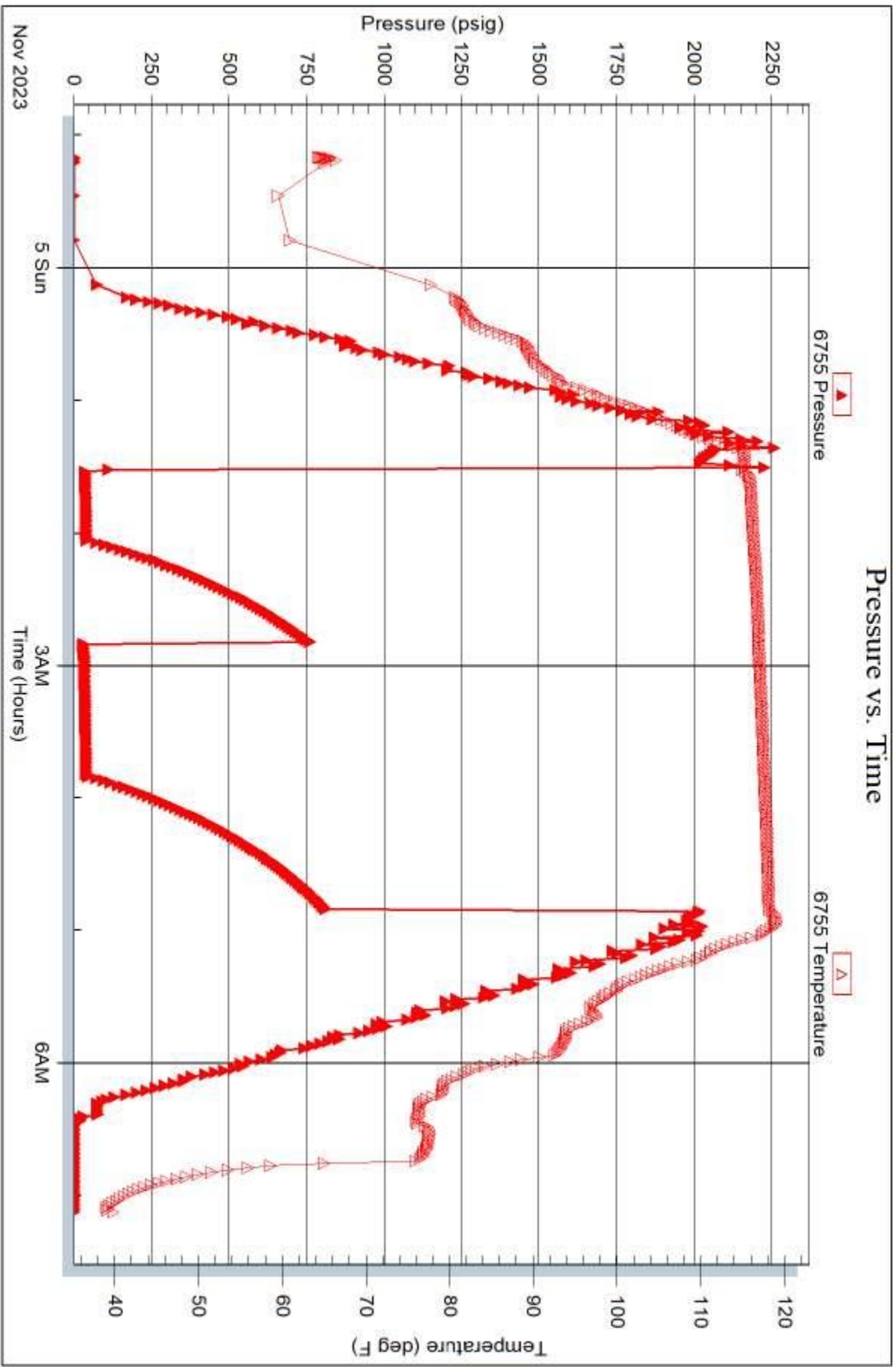


Serial #: 6755

Outside Grunder Oil

Grunder 4

DST Test Number: 3

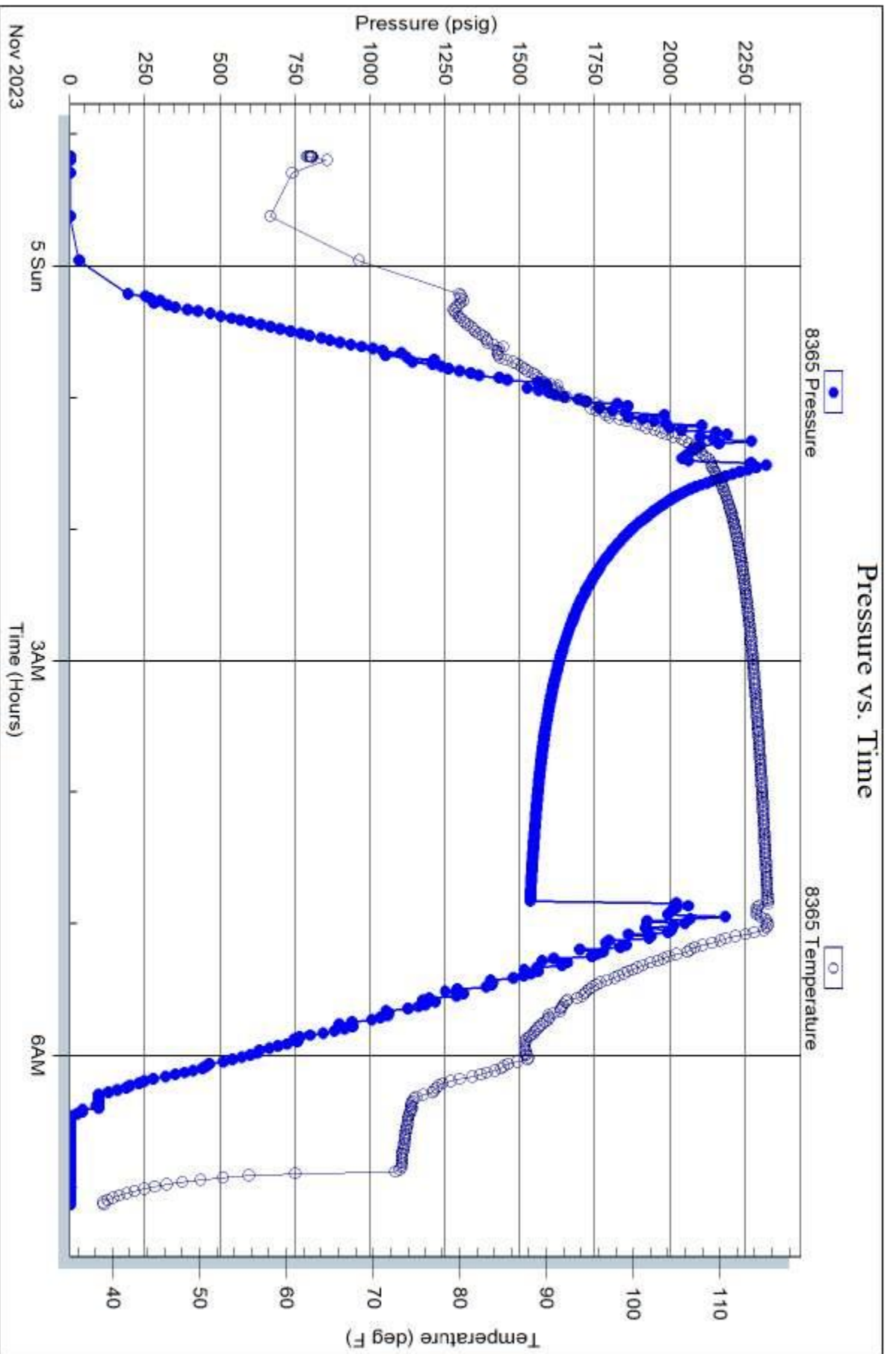


Serial #: 8365

Below (Strat)driller Oil

Grunder 4

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 71085

Printed: 2023.11.05 @ 07:25:40



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Grunder Oil
112 S Main
St John, KS 67576
ATTN: Keaton Jones

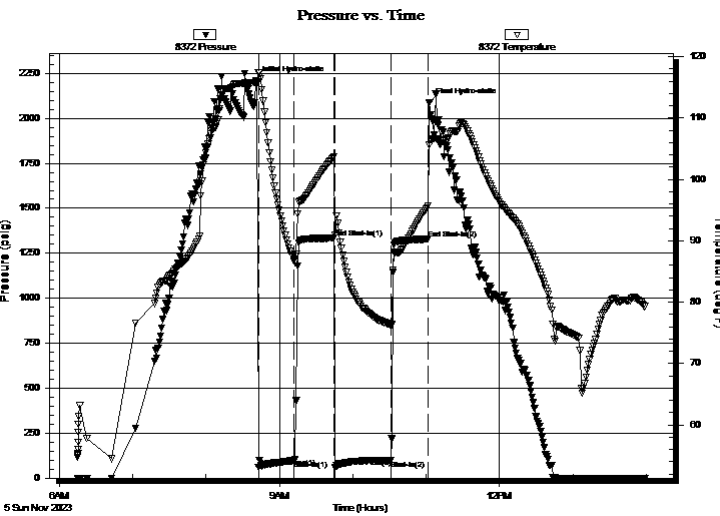
5-26S-14W Pratt
Grunder 4
Job Ticket: 71086 **DST#: 4**
Test Start: 2023.11.05 @ 06:15:00

GENERAL INFORMATION:

Formation: **Mississippi**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:42:47
Time Test Ended: 13:59:02
Interval: **4150.00 ft (KB) To 4178.00 ft (KB) (TVD)**
Total Depth: 4550.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Straddle (Reset)
Tester: Leal Cason
Unit No: 72
Reference Elevations: 2013.00 ft (KB)
2006.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8372 **Inside**
Press@RunDepth: 100.09 psig @ 4159.00 ft (KB) Capacity: psig
Start Date: 2023.11.05 End Date: 2023.11.05 Last Calib.: 2023.11.05
Start Time: 06:15:01 End Time: 13:59:02 Time On Btm: 2023.11.05 @ 08:40:47
Time Off Btm: 2023.11.05 @ 11:02:47

TEST COMMENT: IF: Strong Blow , BOB in 30 seconds, GTS in 8 minutes, Gauged & Sampled
IS: Weak Surface Blow Back
FF: Strong Blow , BOB & GTS Immediate, Gauged Gas
FSI: Weak Surface Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2207.54	115.85	Initial Hydro-static
2	59.37	117.32	Open To Flow (1)
32	99.84	86.71	Shut-In(1)
64	1334.42	103.67	End Shut-In(1)
65	61.28	90.97	Open To Flow (2)
111	100.09	76.28	Shut-In(2)
141	1329.10	95.69	End Shut-In(2)
142	2088.98	105.60	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	4102' GIP	0.00
30.00	GWCM 2%G 30%W 68%M	0.15

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.50	22.61	231.84
Last Gas Rate	0.50	49.31	399.10
Max. Gas Rate	0.50	49.31	399.10



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Grunder Oil
 112 S Main
 St John, KS 67576
 ATTN: Keaton Jones

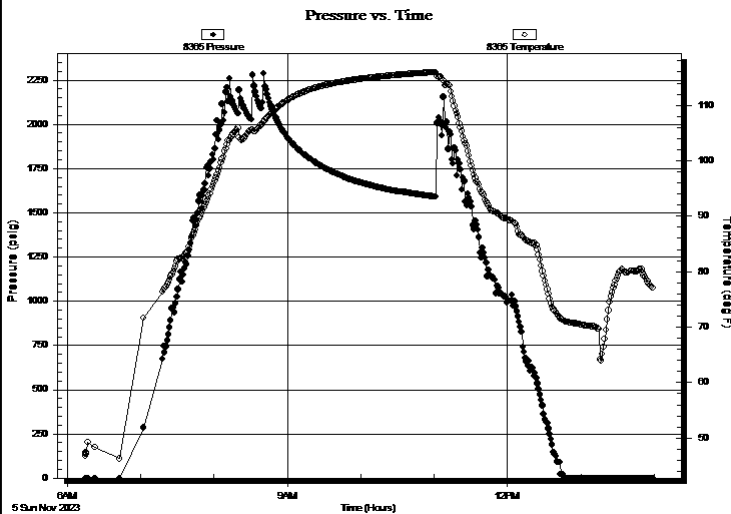
5-26S-14W Pratt
Grunder 4
 Job Ticket: 71086 **DST#: 4**
 Test Start: 2023.11.05 @ 06:15:00

GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 08:42:47
 Time Test Ended: 13:59:02
Interval: 4150.00 ft (KB) To 4178.00 ft (KB) (TVD)
 Total Depth: 4550.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Straddle (Reset)
 Tester: Leal Cason
 Unit No: 72
 Reference Elevations: 2013.00 ft (KB)
 2006.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8365 Below (Straddle)
 Press@RunDepth: psig @ 4200.00 ft (KB) Capacity: psig
 Start Date: 2023.11.05 End Date: 2023.11.05 Last Calib.: 2023.11.05
 Start Time: 06:15:01 End Time: 13:59:02 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Strong Blow , BOB in 30 seconds, GTS in 8 minutes, Gauged & Sampled
 IS: Weak Surface Blow Back
 FF: Strong Blow , BOB & GTS Immediate, Gauged Gas
 FS: Weak Surface Blow Back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
0.00	4102' GIP	0.00
30.00	GWCM 2%G 30%W 68%M	0.15

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.50	22.61	231.84
Last Gas Rate	0.50	49.31	399.10
Max. Gas Rate	0.50	49.31	399.10



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Grunder Oil

5-26S-14W Pratt

112 S Main
St John, KS 67576

Grunder 4

Job Ticket: 71086

DST#: 4

ATTN: Keaton Jones

Test Start: 2023.11.05 @ 06:15:00

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:

30946 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7000.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	4102' GIP	0.000
30.00	GWCM 2%G 30%W 68%M	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW was .2 @ 75 degrees



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

GAS RATES

Grunder Oil

5-26S-14W Pratt

112 S Main
St John, KS 67576

Grunder 4

Job Ticket: 71086

DST#: 4

ATTN: Keaton Jones

Test Start: 2023.11.05 @ 06:15:00

Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.67
Z Factor: 0.9

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
1	10	0.50	22.61	231.84
1	20	0.50	29.44	274.63
1	30	0.50	36.44	318.47
2	10	0.50	37.54	325.36
2	20	0.50	44.24	367.34
2	30	0.50	47.16	385.63
2	40	0.50	48.55	394.33
2	45	0.50	49.31	399.10

Serial #: 8372

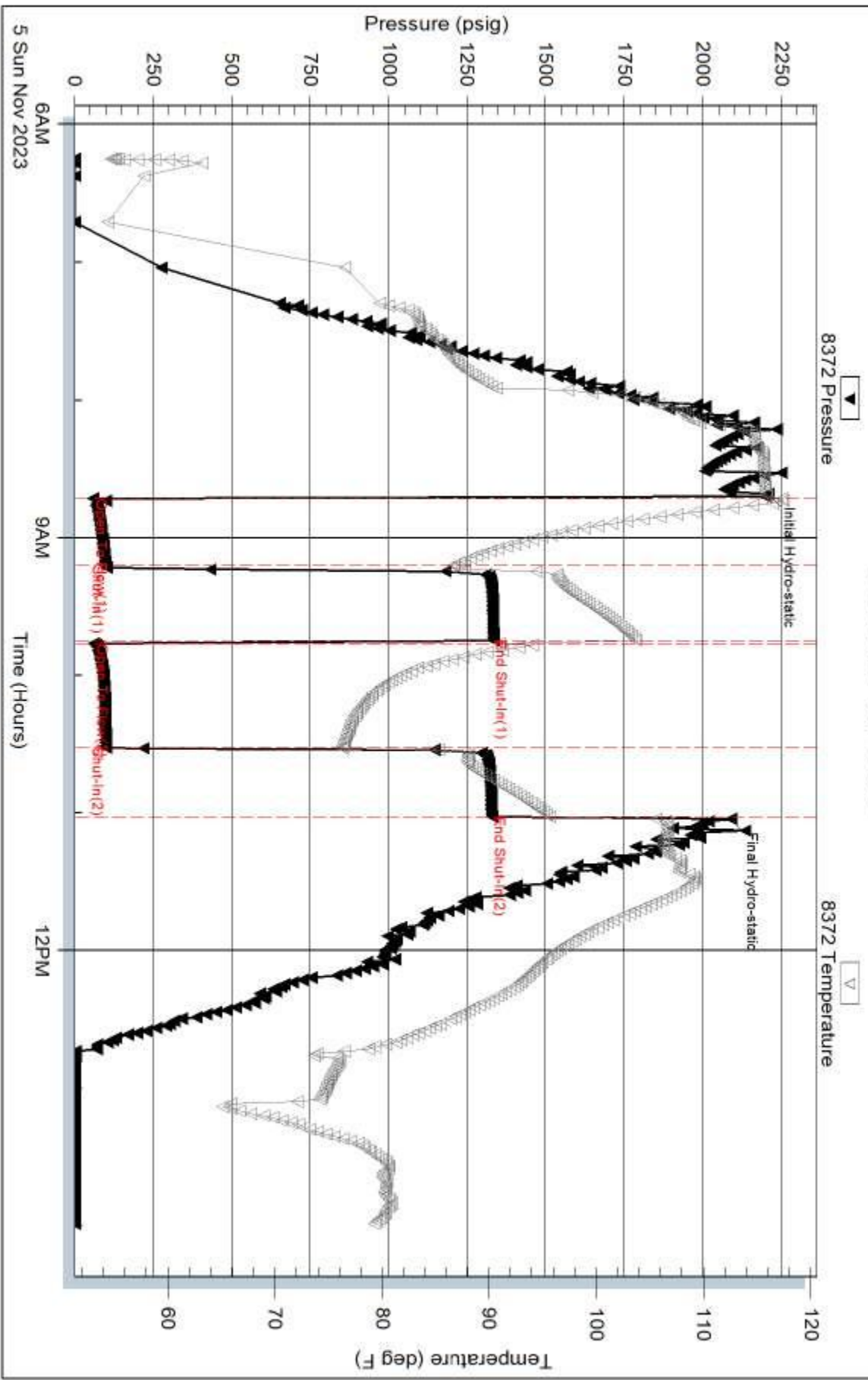
Inside

Grunder Oil

Grunder 4

DST Test Number: 4

Pressure vs. Time

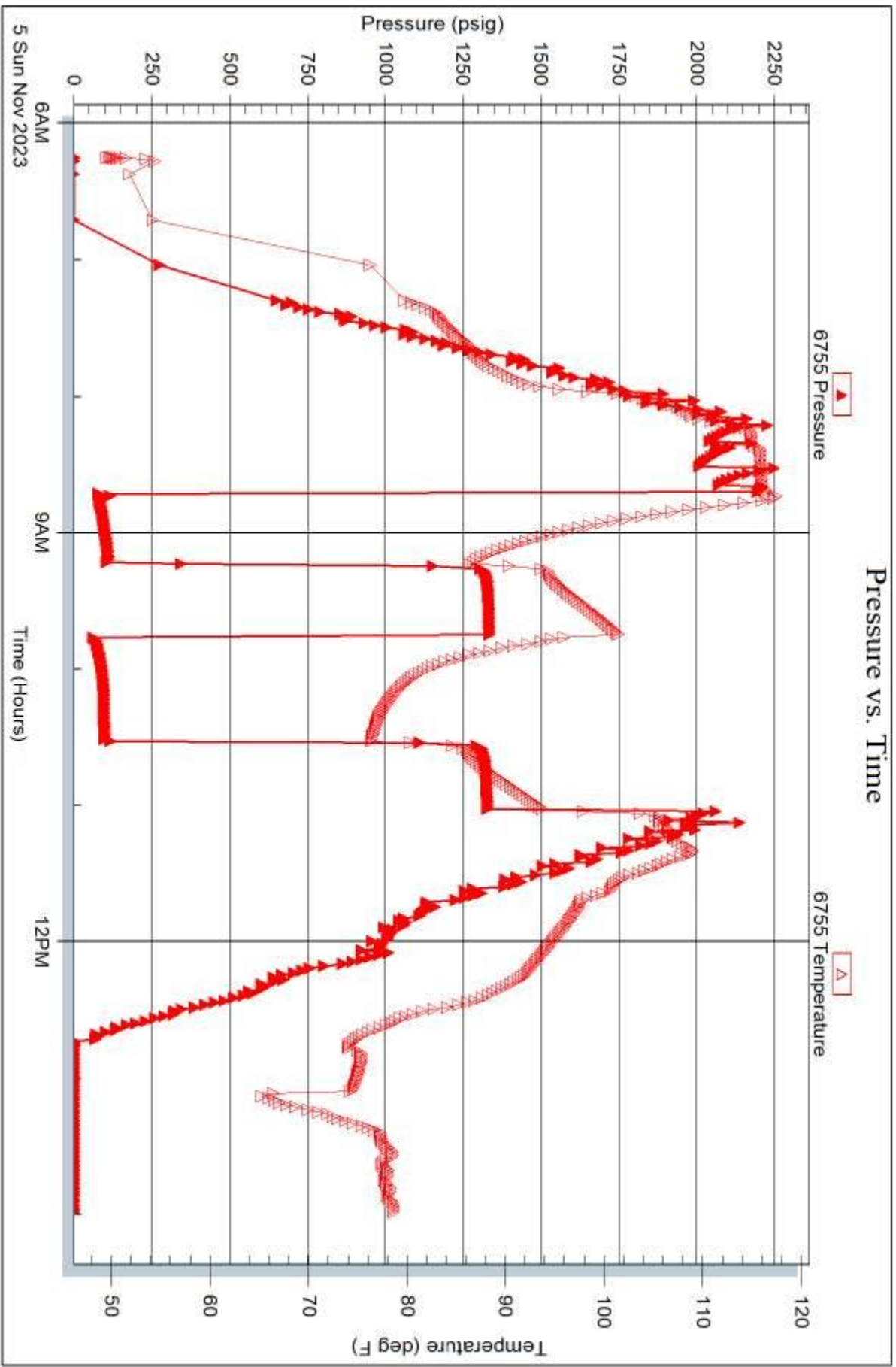


Serial #: 6755

Outside Grunder Oil

Grunder 4

DST Test Number: 4

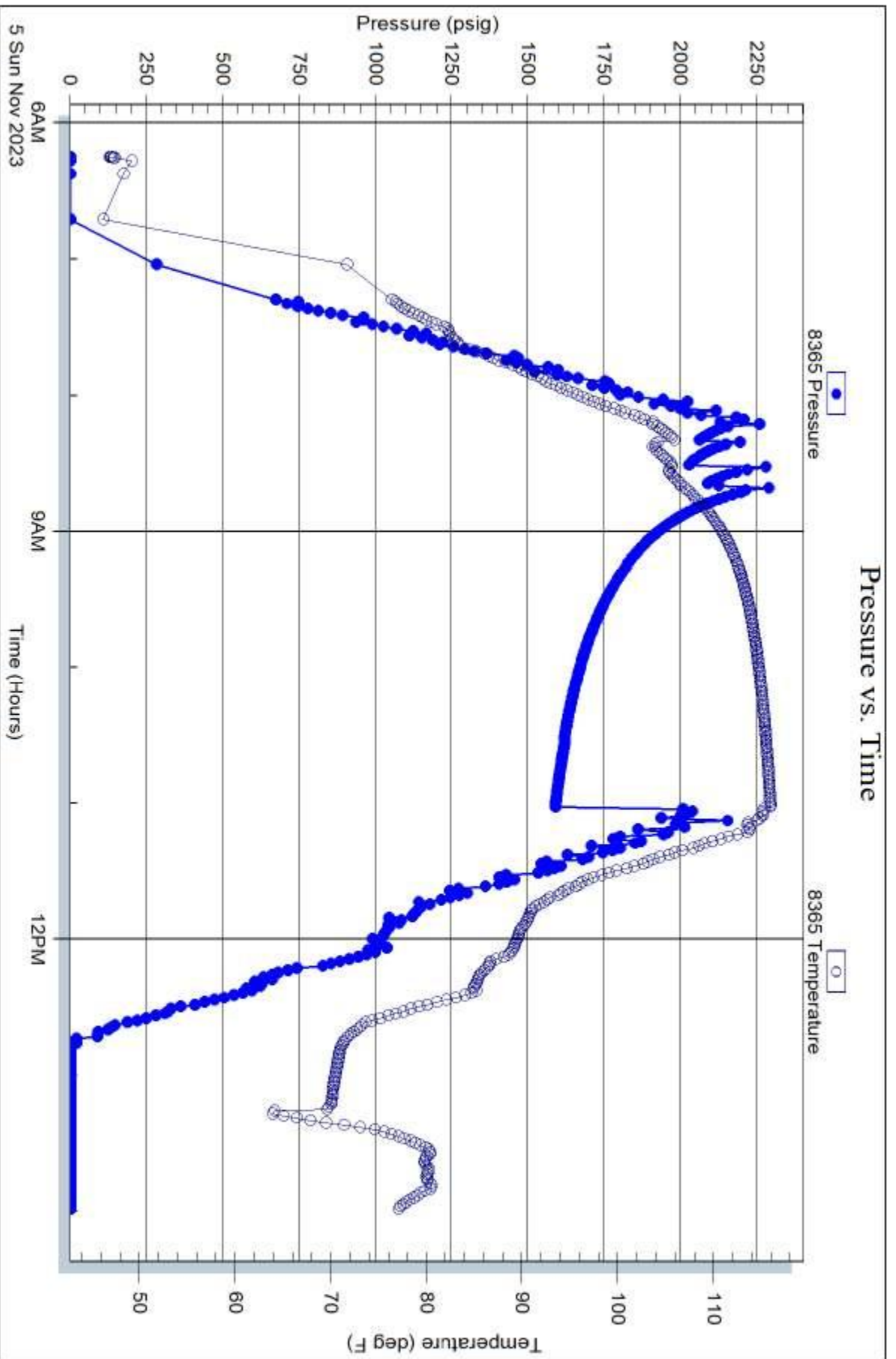


Serial #: 8365

Below (Strat)driller Oil

Grunder 4

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 71086

Printed: 2023.11.05 @ 15:16:27

Grunder Oil, LLC
WellSight Systems
Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Grunder #4
API: 15-151-22579
Location: 4290 FNL, 440 FWL - Sec,5 T26S, R14W
License Number: 30862
Spud Date: 10/29/2023
Surface Coordinates: 37.817871, -98.868937 (NAD27)
Region: NW Pratt County
Drilling Completed: 11/04/2023

Bottom Hole Same As Surface
Coordinates:
Ground Elevation (ft): 2005 K.B. Elevation (ft): 2012
Logged Interval (ft): 3600 To: 4550 Total Depth (ft): 4550
Formation: Arbuckle
Type of Drilling Fluid: Chemical (Andy's)

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

OPERATOR

Company: Grunder Oil
Address:

GEOLOGIST

Name: Keaton Jones
Company: Rockhound Petroleum, LLC
Address: 255 NE 30th
St. John KS 67576

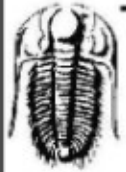
Grunder Oil

Grunder #4

Casing Size:	5.5	API 15.5#	Guide Shoe		1.1	Plugged Back Total Depth:		4522.67	KB	GL
RTD:	4550	LTD:	4550	Casing TD	4538	FT off LTD:		12	Elevation:	2012 2005

JT. #	Length	Csg. Tally	Top of Jt.	JT. #	Length	Csg. Tally	Top of Jt.	JT.#	Length	Csg. Tally	Top of Jt.
SH JT	14.23	15.33	4522.67	49	42.12	2088.80	2449.20	99	42.08	4193.53	344.47
1	42.11	57.44	4480.56	50	42.11	2130.91	2407.09	100	42.09	4235.62	302.38
2	42.09	99.53	4438.47	51	42.09	2173.00	2365.00	101	42.12	4277.74	260.26
3	42.11	141.64	4396.36	52	41.39	2214.39	2323.61	102	42.12	4319.86	218.14
4	42.13	183.77	4354.23	53	42.12	2256.51	2281.49	103	42.09	4361.95	176.05
5	42.10	225.87	4312.13	54	42.12	2298.63	2239.37	104	42.13	4404.08	133.92
6	42.05	267.92	4270.08	55	42.13	2340.76	2197.24	105	42.09	4446.17	91.83
7	42.12	310.04	4227.96	56	42.11	2382.87	2155.13	106	42.11	4488.28	49.72
8	42.10	352.14	4185.86	57	42.13	2425.00	2113.00	107	42.12	4530.40	7.60
9	41.72	393.86	4144.14	58	42.14	2467.14	2070.86	LJT	12.00	4542.40	-4.40
Marker	14.12	407.98	4130.02	59	42.12	2509.26	2028.74				
10	42.07	450.05	4087.95	60	42.12	2551.38	1986.62	108	42.09	OUT	Tag
11	42.09	492.14	4045.86	61	42.15	2593.53	1944.47	109	42.12	OUT	
12	42.09	534.23	4003.77	62	42.14	2635.67	1902.33	PUP	14.17	OUT	
13	42.10	576.33	3961.67	63	42.14	2677.81	1860.19				
14	42.10	618.43	3919.57	64	42.14	2719.95	1818.05				
15	42.12	660.55	3877.45	65	42.13	2762.08	1775.92				
16	41.44	701.99	3836.01	66	42.13	2804.21	1733.79				
17	42.12	744.11	3793.89	67	42.12	2846.33	1691.67				
18	42.10	786.21	3751.79	68	42.14	2888.47	1649.53				
19	42.11	828.32	3709.68	69	42.13	2930.60	1607.40				
20	42.10	870.42	3667.58	70	42.11	2972.71	1565.29				
21	42.06	912.48	3625.52	71	42.14	3014.85	1523.15				
22	42.07	954.55	3583.45	72	42.13	3056.98	1481.02				
23	42.06	996.61	3541.39	73	42.13	3099.11	1438.89				
24	42.10	1038.71	3499.29	74	42.13	3141.24	1396.76				
25	42.10	1080.81	3457.19	75	42.12	3183.36	1354.64				
26	41.41	1122.22	3415.78	76	42.12	3225.48	1312.52				
27	42.12	1164.34	3373.66	77	42.13	3267.61	1270.39				
28	41.74	1206.08	3331.92	78	42.12	3309.73	1228.27				
29	42.10	1248.18	3289.82	79	42.14	3351.87	1186.13				
30	42.07	1290.25	3247.75	80	42.12	3393.99	1144.01				
31	42.10	1332.35	3205.65	81	42.11	3436.10	1101.90				
32	42.12	1374.47	3163.53	82	42.11	3478.21	1059.79				
33	42.07	1416.54	3121.46	83	42.12	3520.33	1017.67				
34	41.75	1458.29	3079.71	84	42.13	3562.46	975.54				
35	42.10	1500.39	3037.61	85	42.13	3604.59	933.41				
36	42.10	1542.49	2995.51	86	42.13	3646.72	891.28				
37	41.65	1584.14	2953.86	87	42.09	3688.81	849.19				
38	41.75	1625.89	2912.11	88	42.09	3730.90	807.10				
39	41.84	1667.73	2870.27	89	42.09	3772.99	765.01				
40	42.11	1709.84	2828.16	90	42.09	3815.08	722.92				
41	42.11	1751.95	2786.05	91	42.12	3857.20	680.80				
42	42.11	1794.06	2743.94	92	42.11	3899.31	638.69				
43	42.10	1836.16	2701.84	93	42.12	3941.43	596.57				
44	42.10	1878.26	2659.74	94	42.1	3983.53	554.47				
45	42.12	1920.38	2617.62	95	42.1	4025.63	512.37				
46	42.09	1962.47	2575.53	96	42.03	4067.66	470.34				
47	42.09	2004.56	2533.44	97	41.67	4109.33	428.67				
48	42.12	2046.68	2491.32	98	42.12	4151.45	386.55				
Totals	2045.58		2491.32		2104.77	4150.35	386.55		489.33	4639.68	4639.68

Total Casing		4534.67	Casing Volume BBL/FT		3	Pup Joints
Plug Back Total		4522.67	0.0238	Total BBLs	107.93	10 Turbo Centralizers
Rotating Scratchers:		None			0	Port Collar
Centralizers:		4522, 4438, 4270, 4185, 4130, 4045, 3961, 3877, 3793, 3709		Basket:	4354-4312 - Floating	
Latch Down Insert Baffle		Top of Shoe JT		Packer Shoe: Bottom of the Shoe Joint		0 Packer Shoe
Equipment/Pipe Not Run:		Joint 108 & 109 + Pup Joint 14.17				2 + PUP Joints Out / Not Run
						1 Cement Basket



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Grunder Oil
112 S Main
St John, KS 67576
ATTN: Keaton Jones

5-26S-14W Pratt
Grunder 4
Job Ticket: 71063 **DST#: 1**
Test Start: 2023.11.02 @ 10:42:00

GENERAL INFORMATION:

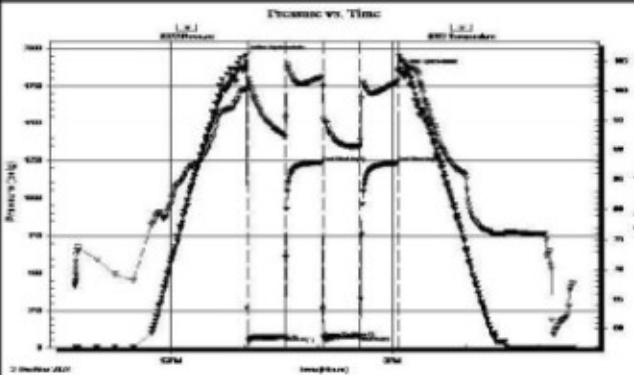
Formation: **LKC "H"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:03:17
Time Test Ended: 17:28:02
Test Type: Conventional Bottom Hole (Initial)
Tester: Leal Cason
Unit No: 72
Interval: **3928.00 ft (KB) To 3943.00 ft (KB) (TVD)**
Total Depth: 3943.00 ft (KB) (TVD)
Reference Elevations: 2013.00 ft (KB)
2006.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good
KB to GR/CF: 7.00 ft

Serial #: 8372

Inside

Press@RunDepth: 79.52 psig @ 3934.00 ft (KB) Capacity: psig
Start Date: 2023.11.02 End Date: 2023.11.02 Last Calib.: 2023.11.02
Start Time: 10:42:01 End Time: 17:28:02 Time On Blrm: 2023.11.02 @ 13:01:17
Time Off Blrm: 2023.11.02 @ 15:05:47

TEST COMMENT: F: Strong Blow, BOB Immediate, GTS in 9 minutes, Gauged & Sampled
IS: IS: No Blow Back
FF: Strong Blow, BOB & GTS Immediate, Gauged Gas
FS: No Blow Back



PRESSURE SUMMARY

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	1952.51	100.14	Initial Hydro-static
2	49.42	101.92	Open To Flow (1)
32	74.39	92.06	Shut-in(1)
63	1238.54	102.25	End Shut-in(1)
64	66.99	95.00	Open To Flow (2)
93	79.52	90.58	Shut-in(2)
124	1234.86	101.47	End Shut-in(2)
125	1861.37	105.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bar)
0.00	3765' GP	0.00
122.00	GSY Oil 40%G 60%O	0.60
28.00	OCM 30%O 70%M	0.39

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.50	20.42	218.12
Last Gas Rate	0.50	18.73	207.53
Max. Gas Rate	0.50	21.00	221.75



**TRIBOLITE
TESTING, INC.**

DRILL STEM TEST REPORT

Grunder Oil
112 S Main
St John, KS 67576
ATTN: Keaton Jones

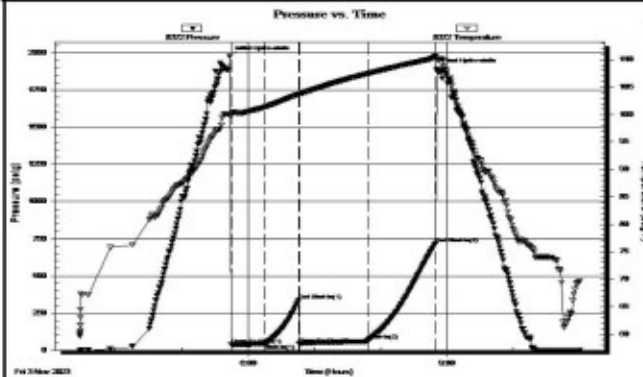
5-26S-14W Pratt
Grunder 4
Job Ticket: 71084 **DST#: 2**
Test Start: 2023.11.03 @ 03:28:00

GENERAL INFORMATION:

Formation: **LKC "I & J"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 05:44:47 Tester: Leal Cason
 Time Test Ended: 11:00:02 Unit No: 72
 Interval: **3950.00 ft (KB) To 3995.00 ft (KB) (TVD)** Reference Elevations: 2013.00 ft (KB)
 Total Depth: **3995.00 ft (KB) (TVD)** 2006.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 8372 Inside
 Press@RunDepth: 69.08 psig @ 3992.00 ft (KB) Capacity: psig
 Start Date: 2023.11.03 End Date: 2023.11.03 Last Calib.: 2023.11.03
 Start Time: 03:28:00 End Time: 11:00:02 Time On Btm: 2023.11.03 @ 05:43:47
 Time Off Btm: 2023.11.03 @ 08:51:02

TEST COMMENT: IF: Weak Blow , Built to 7.11"
 IS: No Blow Back
 FF: Fair Blow , BOB in 48 minutes, Built to 14.3"
 FS: No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1977.14	99.99	Initial Hydro-static
1	36.76	99.75	Open To Flow (1)
32	44.12	101.38	Shut-in(1)
62	337.02	103.66	End Shut-in(1)
63	41.45	103.67	Open To Flow (2)
125	69.08	107.46	Shut-in(2)
187	718.33	110.71	End Shut-in(2)
188	1891.81	110.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	281' GP	0.00
30.00	GOOM 5%G 5% O 90%M	0.15

* Recovery from multiple tests

Gas Rates

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



**TRIOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Grunder Oil
112 S Main
St John, KS 67576
ATTN: Keaton Jones

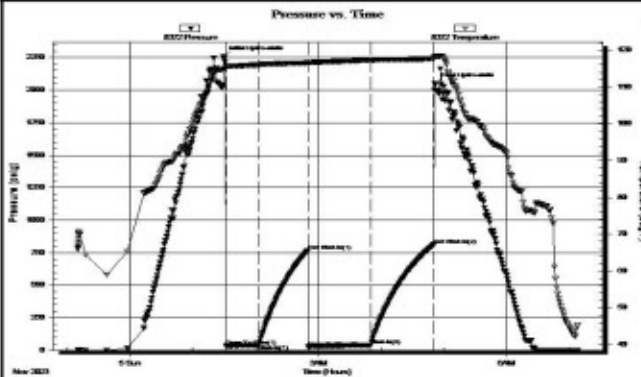
5-26S-14W Pratt
Grunder 4
Job Ticket: 71085 **DST#: 3**
Test Start: 2023.11.04 @ 23:10:00

GENERAL INFORMATION:

Formation: **Mississippi**
Deviated: No Whipstock ft (KB)
Time Tool Opened: 01:31:47
Time Test Ended: 07:08:02
Test Type: Conventional Straddle (Reset)
Tester: Leal Cason
Unit No: 72
Interval: **4176.00 ft (KB) To 4212.00 ft (KB) (TVD)**
Reference Elevations: 2013.00 ft (KB)
Total Depth: 4550.00 ft (KB) (TVD) 2006.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 8372 **Inside**
Press@RunDepth: 38.58 psig @ 4192.00 ft (KB) Capacity: psig
Start Date: 2023.11.04 End Date: 2023.11.05 Last Calib.: 2023.11.05
Start Time: 23:10:01 End Time: 07:08:02 Time On Btm: 2023.11.05 @ 01:29:32
Time Off Btm: 2023.11.05 @ 04:51:17

TEST COMMENT: F: Strong Blow, BOB in 30 seconds, Built to 139.38*
IS: No Blow Back
FF: Strong Blow, BOB immediate, Built to 249.25*
FST: No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2259.47	114.88	Initial Hydro-static
3	30.03	115.38	Open To Flow (1)
34	44.55	116.05	Shut-in(1)
81	763.95	116.55	End Shut-in(1)
81	23.58	116.57	Open To Flow (2)
141	38.58	117.26	Shut-in(2)
201	811.93	117.69	End Shut-in(2)
202	2051.43	118.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	3189' GP	0.00
30.00	GCM 5%G 95%M	0.15

* Recovery from multiple tests

Gas Rates

	Choke (Inches)	Pressure (psig)	Gas Rate (Mc/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Grunder Oil
112 S Main
St John, KS 67576
ATTN: Keaton Jones

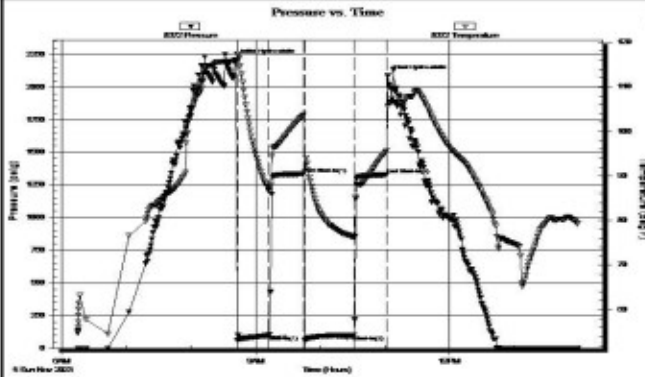
5-26S-14W Pratt
Grunder 4
Job Ticket: 71086 **DST#: 4**
Test Start: 2023.11.05 @ 06:15:00

GENERAL INFORMATION:

Formation: **Mississippi**
Deviated: No Whipstock ft (KB)
Test Type: Conventional Straddle (Reset)
Time Tool Opened: 08:42:47 Tester: Leal Cason
Time Test Ended: 13:59:02 Unit No: 72
Interval: **4150.00 ft (KB) To 4178.00 ft (KB) (TVD)** Reference Elevations: 2013.00 ft (KB)
Total Depth: 4550.00 ft (KB) (TVD) 2006.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 8372 Inside
Press@RunDepth: 100.09 psig @ 4159.00 ft (KB) Capacity: psig
Start Date: 2023.11.05 End Date: 2023.11.05 Last Calib.: 2023.11.05
Start Time: 06:15:01 End Time: 13:59:02 Time On Btm: 2023.11.05 @ 08:40:47
Time Off Btm: 2023.11.05 @ 11:02:47

TEST COMMENT: F: Strong Blow , BOB in 30 seconds, GTS in 8 minutes, Gauged & Sampled
IS: Weak Surface Blow Back
FF: Strong Blow , BOB & GTS Immediate, Gauged Gas
FSt Weak Surface Blow Back



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2207.54	115.85	Initial Hydro-static
2	59.37	117.32	Open To Flow (1)
32	99.84	86.71	Shut-in(1)
64	1334.42	103.67	End Shut-in(1)
65	61.28	90.97	Open To Flow (2)
111	100.09	76.28	Shut-in(2)
141	1329.10	95.69	End Shut-in(2)
142	2088.98	105.60	Final Hydro-static

Length (ft)	Description	Volume (bbl)
0.00	4102' GP	0.00
30.00	GWCM 2%G 30%W 68%M	0.15

	Choke (inches)	Pressure (psig)	Gas Rate (Mcfd)
First Gas Rate	0.50	22.61	231.84
Last Gas Rate	0.50	49.31	399.10
Max. Gas Rate	0.50	49.31	399.10

* Recovery from multiple tests

ROCK TYPES

	Anhy		Clyst		Gyp		Mrlst		Shgy
	Bent		Coal		Igne		Salt		Sltst
	Brec		Congl		Lmst		Shale		Ss
	Cht		Dol		Meta		Shcol		Till

ACCESSORIES

- MINERAL**
- Anhy
 - Arggrn
 - Arg
 - Bent
 - Bit
 - Breclfrag
 - Calc
 - Carb
 - Chtdk
 - Chtlt
 - Dol
 - Feldspar
 - Ferrpel
 - Ferr
 - Glau

- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff

- FOSSIL**
- Algae
 - Amph
 - Belm
 - Bioclst
 - Brach
 - Bryozoa
 - Cephal
 - Coral
 - Crin
 - Echin
 - Fish
 - Foram
 - Fossil
 - Gastro
 - Oolite

- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

- STRINGER**
- Anhy
 - Arg
 - Bent
 - Coal
 - Dol
 - Gyp
 - Ls
 - Mrst

- Siltstrg
- Ssstrg

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

OTHER SYMBOLS

- POROSITY**
- Earthy
 - Fenest
 - Fracture
 - Inter
 - Moldic
 - Organic
 - Pinpoint

- Vuggy
- SORTING**
- Well
 - Moderate
 - Poor

- ROUNDING**
- Rounded
 - Subrnd
 - Subang
 - Angular

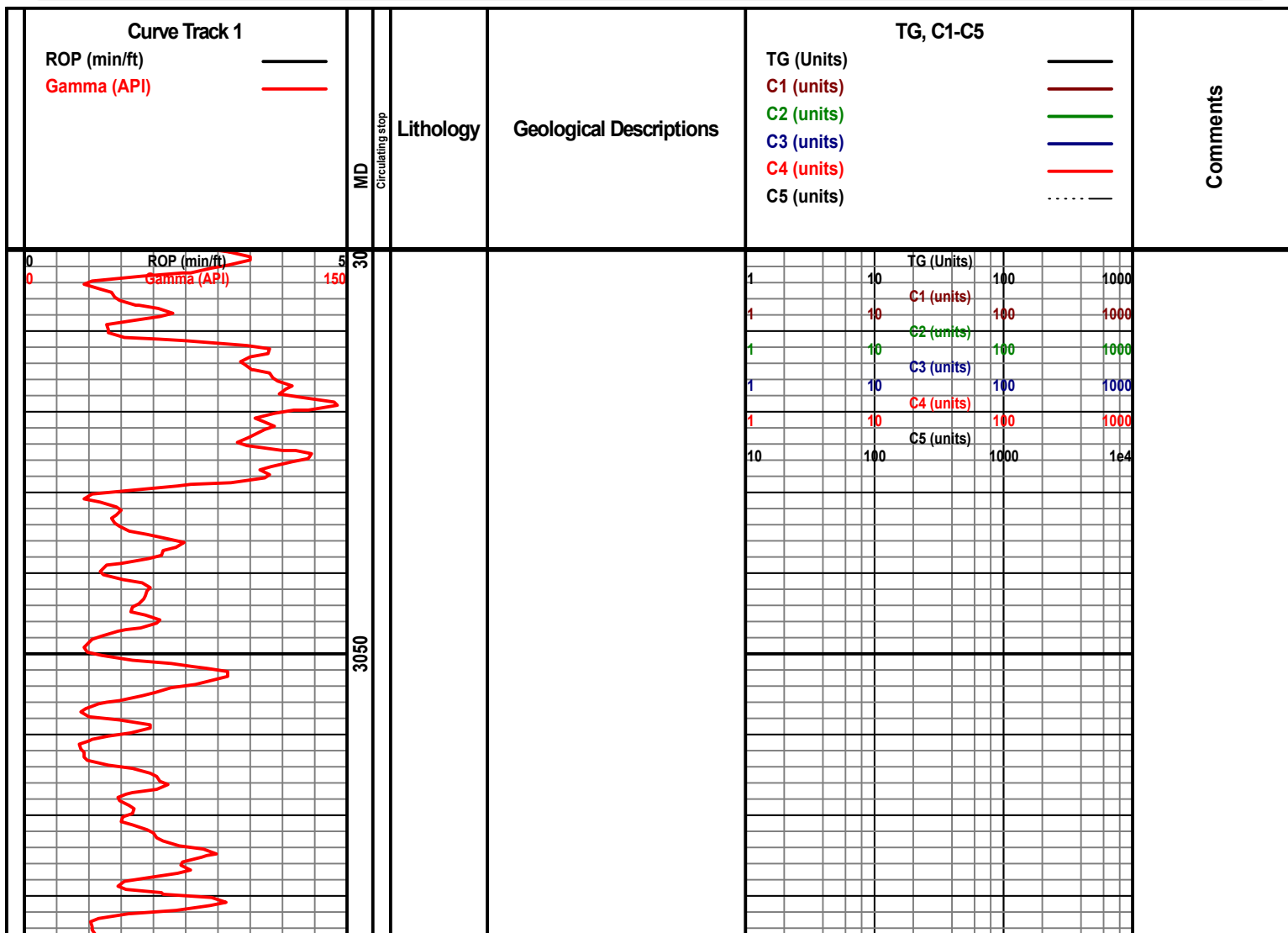
- OIL SHOW**
- Even

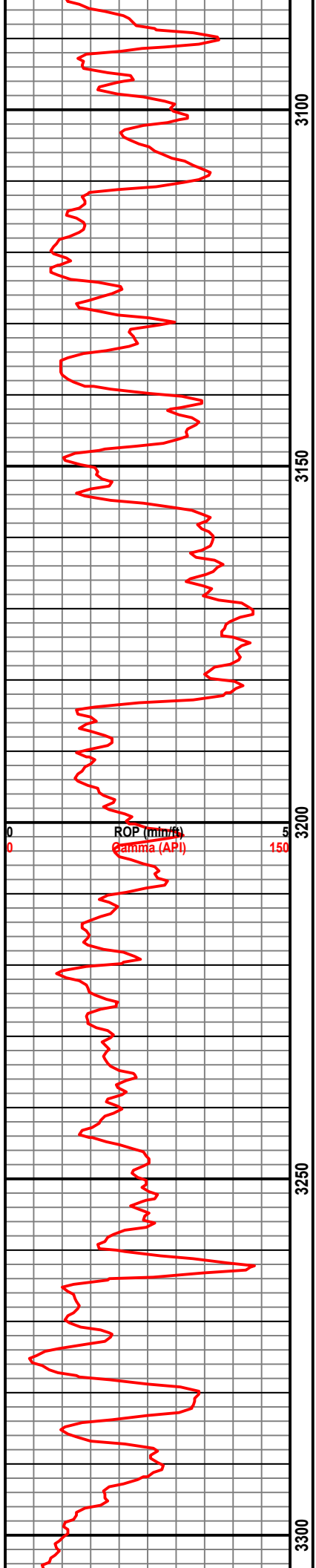
- Spotted
- Ques
- Dead

- INTERVAL**
- Core
 - Dst 2
 - Dst 4

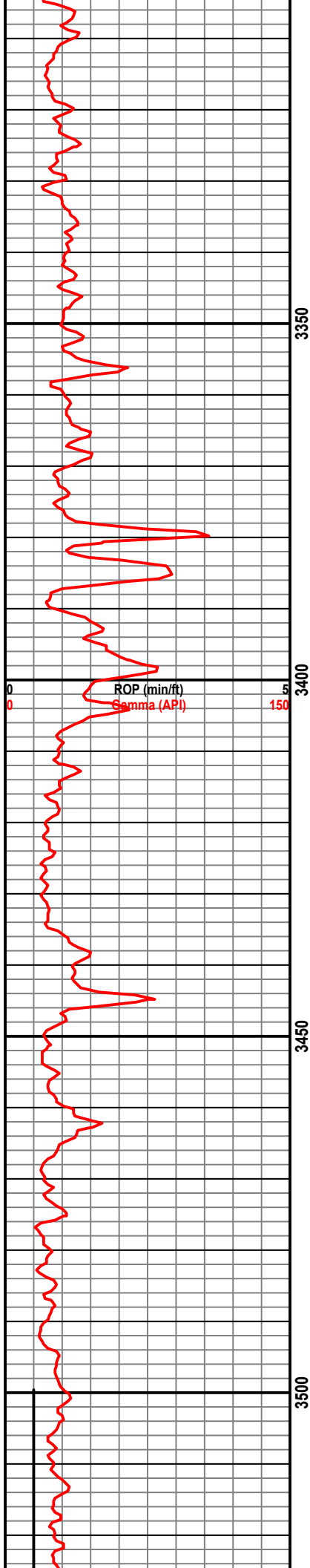
- Dst 3
- Dst

- EVENT**
- Rft
 - Sidewall

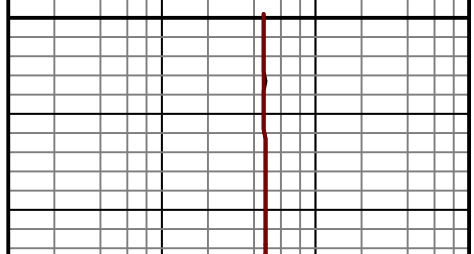


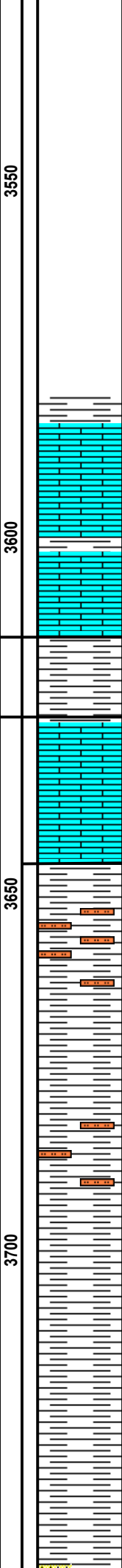
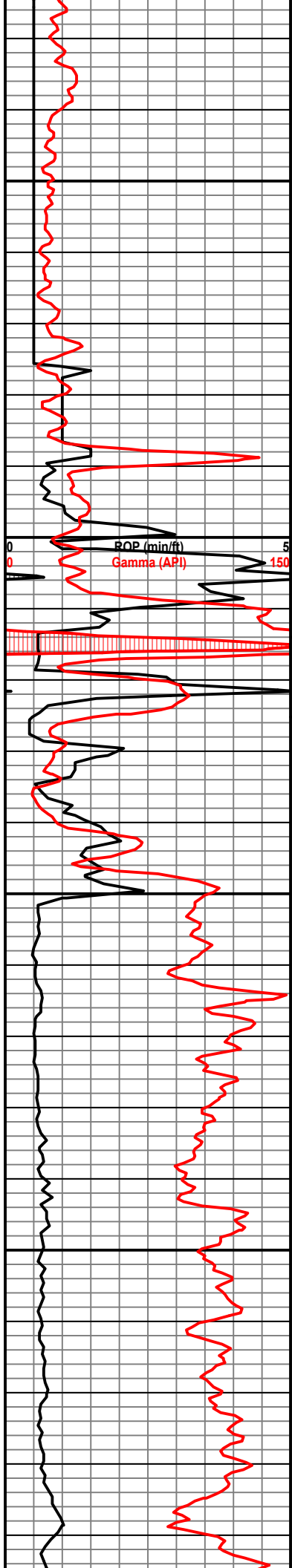


		TG (Units)		
1	10		100	1000
		C1 (units)	100	1000
1	10		100	1000
		C2 (units)	100	1000
1	10		100	1000
		C3 (units)	100	1000
1	10		100	1000
		C4 (units)	100	1000
1	10		100	1000
		C5 (units)	1000	1e4
10	100			



	TG (Units)		
1	10	100	1000
1	10	C1 (units)	100
1	10	C2 (units)	1000
1	10	C3 (units)	100
1	10	C4 (units)	1000
1	10	C5 (units)	100
10	100	1000	1e4





Ls - tan, MedXln, Vugg-Ooli por,
Foss, Sme Scat InterXLn Por N/S

Heebner (-1601)

Sh - Blk, Carb
Toronto (-1613)

Ls - Tan, fXln, Scat Foss, Mstly No
Vis Por

Douglas (-1634)

Sh - Gry, Silty/Sandy

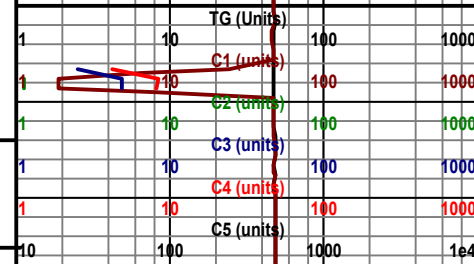
Sh - Gry

Sh - Gry, Silty

Sh - Gry

Sh - Gry

Sh - Gry



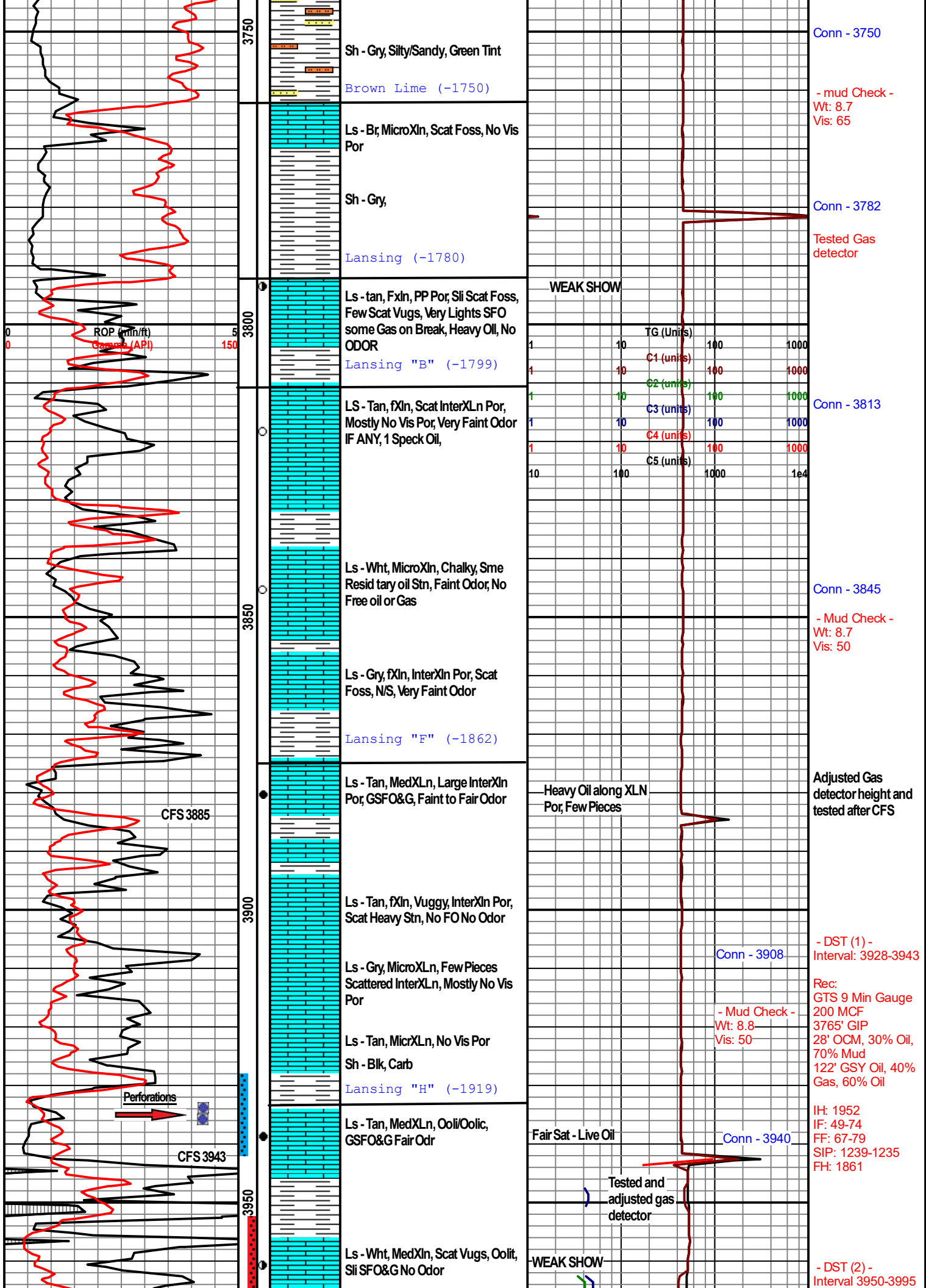
Mud Pump Issues

Conn - 3624

Conn - 3655

Conn - 3687

Conn - 3718



Sh - Gry, Silty/Sandy, Green Tint
Brown Lime (-1750)
Ls - Br, MicroXln, Scat Foss, No Vis Por
Sh - Gry,
Lansing (-1780)

Ls - tan, Fxln, PP Por, Sli Scat Foss, Few Scat Vugs, Very Lights SFO some Gas on Break, Heavy Oil, No ODOR
Lansing "B" (-1799)

LS - Tan, fXln, Scat InterXLn Por, Mostly No Vis Por, Very Faint Odor IF ANY, 1 Speck Oil,
Ls - Wht, MicroXln, Chalky, Sme Resid tary oil Strn, Faint Odor, No Free oil or Gas

Ls - Gry, fXln, InterXln Por, Scat Foss, N/S, Very Faint Odor
Lansing "F" (-1862)

Ls - Tan, MedXLn, Large InterXln Por, GSFO&G, Faint to Fair Odor
Ls - Tan, fXln, Vuggy, InterXln Por, Scat Heavy Strn, No FO No Odor

Ls - Gry, MicroXLn, Few Pieces Scattered InterXLn, Mostly No Vis Por
Ls - Tan, MicrXLn, No Vis Por
Sh - Blk, Carb
Lansing "H" (-1919)

Ls - Tan, MedXLn, Ooli/Oolic, GSFO&G Fair Odr
Ls - Wht, MedXLn, Scat Vugs, Oolit, Sli SFO&G No Odor

WEAK SHOW

TG (Units)	100	1000
C1 (units)	100	1000
C2 (units)	100	1000
C3 (units)	100	1000
C4 (units)	100	1000
C5 (units)	1000	1e4

Conn - 3750

- mud Check -
Wt: 8.7
Vis: 65

Conn - 3782

Tested Gas detector

Conn - 3813

Conn - 3845

- Mud Check -
Wt: 8.7
Vis: 50

Adjusted Gas detector height and tested after CFS

Conn - 3908

- DST (1) -
Interval: 3928-3943

Rec:
GTS 9 Min Gauge
200 MCF
3765' GIP
28' OCM, 30% Oil,
70% Mud
122' GSY Oil, 40% Gas, 60% Oil

- Mud Check -
Wt: 8.8
Vis: 50

Conn - 3940

IH: 1952
IF: 49-74
FF: 67-79
SIP: 1239-1235
FH: 1861

WEAK SHOW

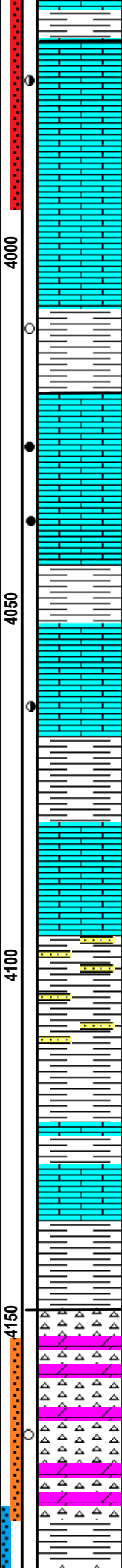
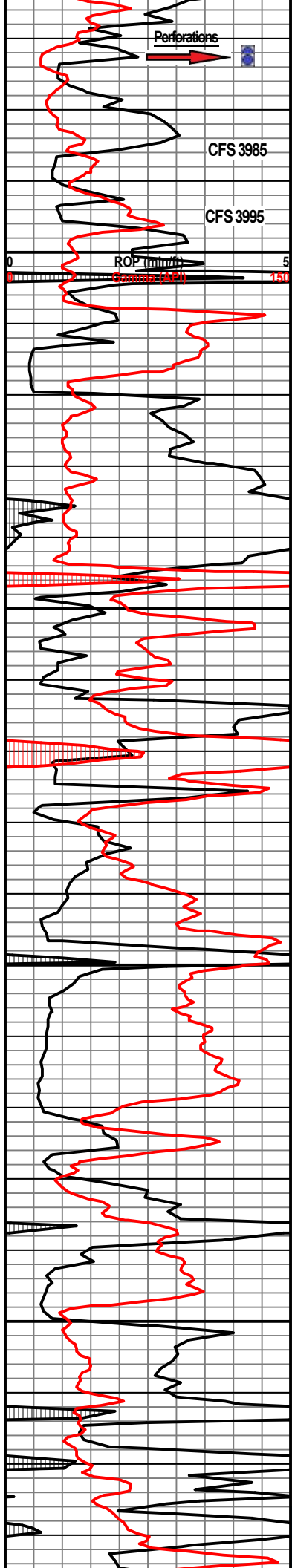
- DST (2) -
Interval 3950-3995

ROP (min/ft)
Gas (API)

CFS 3885

CFS 3943

Perforations



Lansing "J" (-1970)

Ls - Br, MedXln, Oolitic, Sli Oolic, Very Sli SFO&G, Faint odor if any

Ls - tan, MedXLn, Oolic/Ooli, Mstly Baren Por, No Shows, Faint Odor

Ls - Gry, MednXLn, InterXln Por, Fresh Stn, No Free Oil Faint odr If Any

Lansing "K" (-2006)

Ls - Wht/Gry, fXln, Mostly PP Por, Sme InterXLn Por, Very Few scat Oolic/Ooli Por, GSFO&G, Faint Odor

Ls - tan, Fxln, Scat Vugs, PP Por, Abundant Fresh Stn, GSFO&G Fair Odor

Ls - Gry, Lrge InterXln Por, Vry Sli SFO Mostly Fresh Stn, Faint Odor

Sandy Shale, Green,Blue, Very Fine GR, RD, Well Sort,

Ls, Purple Tint, scat Oolit, Green Shales

Mississippian (-2136)

Dol, Br, MicroXln, Sli Ooli, Cherty, Mostly No Vis Por - DSE/N/S

Chrty, Dol, off white, sharp, No Vis Por, Very few pieces with fresh stain, N/S/N/O

Cherty Dol, Mslt Brown, No Vis por N/S



Rec: 281' GIP
30' OCM, 5% Gas, 5% Oil, 90% Mud

Conn - 3971

WEAK SHOW

- Mud Check -
Wt: 8.8
Vis: 55

IH: 1977
IF: 37-44
FF: 41-69
SIP: 337-718
FH: 1892

30-30-60-60

Conn - 4003

Very thin oolic Por

Good Odor
Abundant Gas

Conn - 4034

- Mud Report -
Depth: 4030
Wt: 8.6
Vis: 54
Fil: 9.6
Chl: 6,000
Lcm: 2#

Conn - 4066

- Mud Check -
Wt: 8.8
Vis: 56

Conn - 4129

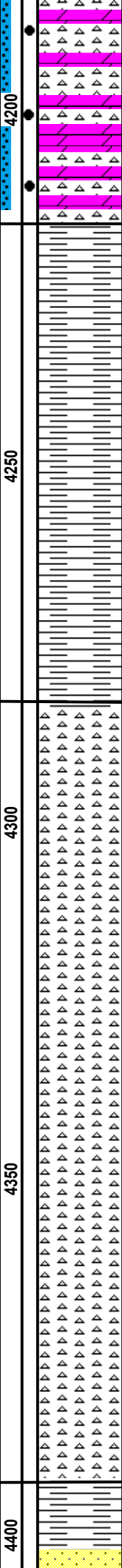
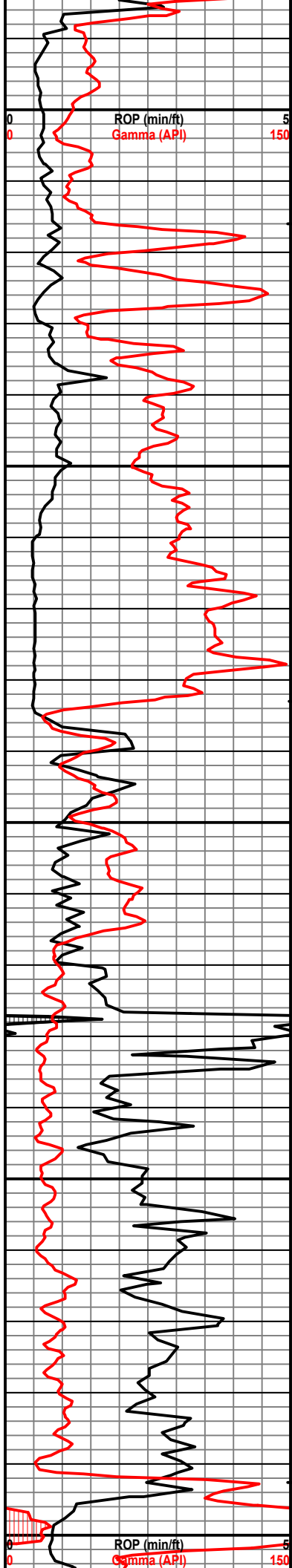
Conn - 4160

- DST (4) -
Interval: 4150-4178

Rec: 4102' GIP
30' GWCM, 2% G,
30%W, 68%M

gauged:
IF: 318 MCF 30
Min
FF: 400 MCF 45
Min

- Mud Check -
Wt: 8.8
Vis: 53



Dol - Wnt, Chert, MicroXln, Sme MicroOolit, Abundant Oil Stm, PP Por with Free Oil, Good Show of Gas No Odor

Dol - Cherty, Whte, Black, scat tripooli, Abundant staining, Show of gas, No Odor

Kinderhook SH (-2204)

Sh - Green, Sli Sandy

Shale - green, Sme Maroon, Silty

As Above

Viola (-2271)

Ch - White, Sharp, No Vis Por N/S

Ch - White, Scat Ooli, Mostly No Vis Por

Chert - Gry/White, Sli Ooli, Mostly No Vis Por, N/S

Ch - White, No Vis Por

Simpson (-2380)

SH, Gm, Sandy, Sub Angl, medGr

			IH: 2207	
			IF: 59-99	
			FF: 61-100	
			SIP: 1334-1329	
			FH: 2089	
1	10	TG (Units)	100	1000
1	10	C1 (units)	100	1000
1	10	C2 (units)	100	1000
1	10	C3 (units)	100	1000
1	10	C4 (units)	100	1000
1	10	Heavy Staining	100	1000
10	100	C5 (units)	1000	1e4

Conn - 4192

- Mud Check -
Wt: 9.1
Vis: 52

Conn - 4223

- DST (3) -
Interval: 4176-4212

Rec: 3189' GIP
30' GCM 5%G,
95%M

IH: 2259
IF: 30-45
FF: 24-39
SIP: 764-812
Increasing

Conn - 4255

Conn - 4286

Conn - 4318

Conn - 4350

Conn - 4381

- Mud Check -
Wt: 9.1
Vis: 52

SS - Med Gr, Well Sort, Sub RD, Well
 Consol, Minimal Shale, N/S

Sh - Gm

Sh - Green, Sandy, Black Organic
 Material

Arbuckle (-2435)

Dol - Br, MicroXLn, scat interXln por,
 Mostly no vis por

Br - MedXln, Sli Sucrosic, InterXln
 Por, No Shows No Odor

Tan, MedXln, InterXln Por, Suco,
 Vuggy, N/S

Tan, White Matrix, Large XLnDev,
 N/S

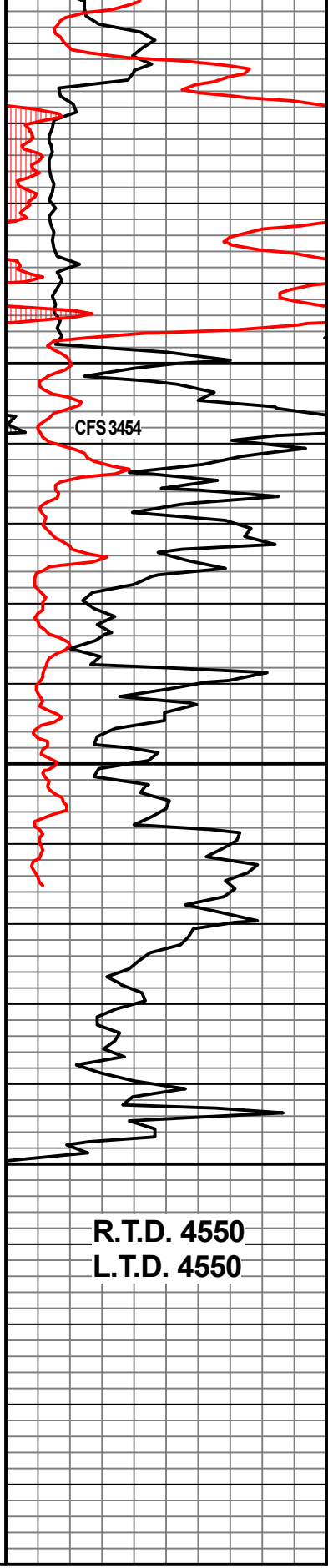
1	10	C1 (units)	100	1000
1	10	C2 (units)	100	1000
1	10	C3 (units)	100	1000
1	10	C4 (units)	100	1000
10	100	C5 (units)	1000	1e4

Conn - 4413

Conn - 4444

Conn - 4476

- Mud Check -
 Depth: 4475
 Wt: 9.2
 Vis: 55
 Fil: 10.4
 Chl: 7,000
 Lcm: 2#



4450

4500

4550

R.T.D. 4550
 L.T.D. 4550

00



CEMENT TREATMENT REPORT

Customer: GRUNDER OIL COMPANY	Well: GRUNDER 4	Ticket: WP4853
City, State: BYERS KS	County: PRATT KS	Date: 10/28/2023
Field Rep:	S-T-R: 9-26S-14W	Services: SURFACE

Downhole Information	
Hole Size:	12 1/4 in
Hole Depth:	433 ft
Casing Size:	8 5/8 in
Casing Depth:	431 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Tool Depth:	ft
Displacement:	26.1 bbls

Calculated Slurry - Lead	
Blend:	H-325
Weight:	14.8 ppg
Water / Sx:	6.4 gal / sx
Yield:	1.40 ft ³ / sx
Annular Bbls / Ft.:	bbls / ft.
Depth:	ft
Annular Volume:	0.0 bbls
Excess:	
Total Slurry:	98.3 bbls
Total Sacks:	400 sx

Calculated Slurry - Tail	
Blend:	CLASS A
Weight:	15.6 ppg
Water / Sx:	5.2 gal / sx
Yield:	1.18 ft ³ / sx
Annular Bbls / Ft.:	bbls / ft.
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	30.0 bbls
Total Sacks:	145 sx

TIME	RATE	PSI	STAGE BBLs	TOTAL BBLs	REMARKS
4:55 PM			-	-	ON LOCATION
6:10 PM				-	RUN 8 5/8 CASING
7:17 PM				-	CASING ON BOTTOM
7:22 PM				-	HOOK TO CASING
7:25 PM				-	BREAK CIRCULATION WITH RIG
7:34 PM	2.0	50.0	3.0	3.0	PUMP 3 BBL WATER
7:36 PM	6.0	330.0	98.3	101.3	MIX 400 SKS H-325
7:55 PM				101.3	DROP PLUG
7:57 PM	3.0	100.0		101.3	START DISPLACEMENT
8:05 PM		100.0	26.1	127.4	PLUG DOWN, SHUT IN WELL
		100.0	26.6	154.0	CEMENT DID NOT CIRCULATE, PUMP .5 BBL. STILL NO CEMENT
				154.0	RAN A LINE IN TO AROUND 30'
				154.0	RAN 1 INCH IN AND COULD NOT GET PAST 30'
10:24 PM	1.0	30.0	1.0	155.0	PUMP 1 BBL WATER
10:26 PM	2.5	150.0	30.0	185.0	MIX 145 SKS CLASS A CEMENT
					CEMENT TO SURFACE
				-	
				-	
				-	
				-	
				-	
				-	
				-	
				-	
				-	JOB COMPLETE, THANK YOU!
				-	MIKE MATTAL
				-	AUSTIN & KENNY

CREW		UNIT	SUMMARY		
Cementer:	MATTAL	912	Average Rate	Average Pressure	Total Fluid
Pump Operator:	CLIFTON	539/521	2.9 bpm	123 psi	185 bbls
Bulk #1:	JULIAN	181/533			
Bulk #2:	JULIAN	176/534			



Customer	GRUNDER OIL COMPANY	Lease & Well #	GRUNDER #1	Date	10/31/2023
Service District	PRATT, KS.	County & State	PRATT, KS.	Legals S/T/R	9-26S-14W
Job Type	1" TOP OFF	<input type="checkbox"/> FROD <input type="checkbox"/> WJ <input type="checkbox"/> SWD	New Well?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> No	Job #
Equipment #	Driver	Ticket #			

Equipment #	Driver	Job Safety Analysis - A Discussion of Hazards & Safety Procedures			
936	LESLEY	<input checked="" type="checkbox"/> Hard hat	<input checked="" type="checkbox"/> Gloves	<input type="checkbox"/> Lockout/Tagout	<input type="checkbox"/> Warning Signs & Flagging
540-522	McGRAW	<input checked="" type="checkbox"/> H2S Monitor	<input checked="" type="checkbox"/> Eye Protection	<input type="checkbox"/> Required Permits	<input type="checkbox"/> Fall Protection
256-526	JULLIAN	<input checked="" type="checkbox"/> Safety Footwear	<input type="checkbox"/> Respiratory Protection	<input type="checkbox"/> Slip/Trip/Fall Hazards	<input checked="" type="checkbox"/> Specific Job Sequence/Expectations
		<input checked="" type="checkbox"/> FRC/Protective Clothing	<input type="checkbox"/> Additional Chemical/Acid PPE	<input type="checkbox"/> Overhead Hazards	<input checked="" type="checkbox"/> Muster Point/Medical Locations
		<input checked="" type="checkbox"/> Hearing Protection	<input checked="" type="checkbox"/> Fire Extinguisher	<input type="checkbox"/> Additional concerns or issues noted below	

Comments	
1" TOP OFF	

Product/Service Code	Description	Unit of Measure	Quantity	Net Amount
CP010	Class A Cement	sack	140.00	\$2,800.00
CP100	Calcium Chloride	lb	263.00	\$197.25
M015	Light Equipment Mileage	mi	20.00	\$40.00
M010	Heavy Equipment Mileage	mi	40.00	\$160.00
M020	Ton Mileage	tn	132.00	\$198.00
C060	Cement Blending & Mixing Service	sack	140.00	\$196.00
D010	Depth Charge: 0'-500'	job	1.00	\$1,000.00
C035	Cement Data Acquisition	job	1.00	\$250.00
R061	Service Supervisor	day	1.00	\$275.00

Customer Section: On the following scale how would you rate Hurricane Services Inc.?		Total Taxable	\$ -	Tax Rate:		Net:	\$5,116.25
Based on this job, how likely is it you would recommend HSI to a colleague?		State tax laws deem certain products and services used on new wells to be sales tax exempt. Hurricane Services relies on the customer provided well information above to make a determination if services and/or products are tax exempt.		Sale Tax:	\$ -	Total:	\$ 5,116.25
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7	8
9	10	Extremely Likely					
		HSI Representative: <i>KEVIN LESLIE</i>					

TERMS: Cash in advance unless Hurricane Services Inc. (HSI) has approved credit prior to sale. Credit terms of sale for approved accounts are total invoice due on or before the 30th day from the date of invoice. Past due accounts shall pay interest on the balance past due at the rate of 1 1/4% per month or the maximum allowable by applicable state or federal laws. In the event it is necessary to employ an agency and/or attorney to affect the collection, Customer hereby agrees to pay all fees directly or indirectly incurred for such collection. In the event that Customer's account with HSI becomes delinquent, HSI has the right to revoke any discounts previously applied in arriving at net invoice price. Upon revocation, the full invoice price without discount is immediately due and subject to collection. Prices quoted are estimates only and are good for 30 days from the date of issue. Pricing does not include federal, state, or local taxes, or royalties and stated price adjustments. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Any discount is based on 30 days net payment terms or cash. **DISCLAIMER NOTICE:** Technical data is presented in good faith, but no warranty is stated or implied. HSI assumes no liability for advice or recommendations made concerning the results from the use of any product or service. The information presented is a best estimate of the actual results that may be achieved and should be used for comparison purposes and HSI makes no guarantee of future production performance. Customer represents and warrants that well and all associated equipment in acceptable condition to receive services by HSI. Likewise, the customer guarantees proper operational care of all customer owned equipment and property while HSI is on location performing services. The authorization below acknowledges the receipt and acceptance of all terms/conditions stated above, and Hurricane has been provided accurate well information in determining taxable services.

X *Kevin Leslie*

CUSTOMER AUTHORIZATION SIGNATURE



TREATMENT REPORT

Customer: GRUNDER OIL COMPANY	Well: GRUNDER #1	Ticket: WP 4864
City, State:	County: PRATT, KS.	Date: 10/31/2023
Field Rep:	S-T-R: 9-26S-14W	Service: 1" TOP OFF

Downhole Information

Hole Size:	in
Hole Depth:	ft
Casing Size:	in
Casing Depth:	ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	bbls

Calculated Slurry - Lead

Blend:	
Weight:	ppg
Water / Sx:	gal / sx
Yield:	ft ³ / sx
Annular Bbls / Ft.:	bbs / ft.
Depth:	ft
Annular Volume:	0.0 bbls
Excess:	
Total Slurry:	0.0 bbls
Total Sacks:	0 sx

Calculated Slurry - Tail

Blend:	CLASS A CEMENT + 2% CC
Weight:	15 ppg
Water / Sx:	6.0 gal / sx
Yield:	1.30 ft ³ / sx
Annular Bbls / Ft.:	bbs / ft.
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	32.5 bbls
Total Sacks:	140 sx

TIME	RATE	PSI	STAGE BBLs	TOTAL BBLs	REMARKS
12:30PM			-	-	ON LOCATION- SPOT EQUIPMENT AND RIG UP TO 1" PIPE
	1.5	40.0	20.0	20.0	PUMP WATER AHEAD TO SEE IF CELLAR FILLS UP --- HARD CEMENT @ 50' DEEP
	1.5	40.0		20.0	MIX CEMENT TO FILL UP BACKSIDE
1:40PM		60.0	32.5	52.5	CELLAR FULL - WAIT 20 MINUTES TO MAKE SURE IT DOESN'T FALL
2:00PM				52.5	CELLAR STAID FULL THE HOLE TIME
2:05PM				52.5	WASH UP PUMP TRUCK
				52.5	
				52.5	JOB COMPLETE,
				52.5	THANKS- KEVEN NAD CREW
				52.5	
				52.5	

CREW		UNIT	SUMMARY		
Cementer:	LESLEY	936	Average Rate	Average Pressure	Total Fluid
Pump Operator:	McGRAW	540-522	1.5 bpm	47 psi	53 bbls
Bulk #1:	JULLIAN	256-526			
Bulk #2:					



Customer	Grunder Oil Company		Lease & Well #	Grunder 4		Date	11/6/2023	
Service District	Pratt Kansas		County & State	Pratt, Kansas		Legals S/T/R	5-26s-14w	
Job Type	Longstring	<input checked="" type="checkbox"/> PROD <input type="checkbox"/> INJ <input type="checkbox"/> SWD	New Well?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> No		Job #		
Equipment #	Driver	Job Safety Analysis - A Discussion of Hazards & Safety Procedures						

916	M Brungardt	<input checked="" type="checkbox"/> Hard hat	<input checked="" type="checkbox"/> Gloves	<input type="checkbox"/> Lockout/Tagout	<input type="checkbox"/> Warning Signs & Flagging
179/522	M McGraw	<input type="checkbox"/> H2S Monitor	<input checked="" type="checkbox"/> Eye Protection	<input type="checkbox"/> Required Permits	<input type="checkbox"/> Fall Protection
182/534	EJ McGraw	<input checked="" type="checkbox"/> Safety Footwear	<input type="checkbox"/> Respiratory Protection	<input checked="" type="checkbox"/> Slip/Trip/Fall Hazards	<input type="checkbox"/> Specific Job Sequence/Expectations
181/533	B Whitfeild	<input checked="" type="checkbox"/> FRC/Protective Clothing	<input type="checkbox"/> Additional Chemical/Acid PPE	<input checked="" type="checkbox"/> Overhead Hazards	<input checked="" type="checkbox"/> Muster Point/Medical Locations
68	B Strickland	<input type="checkbox"/> Hearing Protection	<input type="checkbox"/> Fire Extinguisher	<input type="checkbox"/> Additional concerns or issues noted below	

Comments

Product/ Service Code	Description	Unit of Measure	Quantity	Net Amount
cp030	H-Long	sack	250.00	\$8,750.00
cp030	H-Long	sack	50.00	\$1,750.00
cp120	Cello-flake	lb	75.00	\$131.25
cp132	Cement Fluid Loss 2	lb	14.00	\$210.00
cp155	Gas Block	lb	705.00	\$3,172.50
fe145	5 1/2" Float Shoe - AFU Flapper Type	ea	1.00	\$375.00
fe170	5 1/2" Latch Down Plug & Baffle	ea	1.00	\$350.00
fe130	5 1/2" Cement Basket	ea	1.00	\$300.00
fe135	5 1/2 Turbolizer	ea	12.00	\$1,500.00
cp170	Mud Flush	gal	500.00	\$500.00
af056	Liquid KCL Substitute 2	gal	6.00	\$120.00
m015	Light Equipment Mileage	mi	20.00	\$40.00
m010	Heavy Equipment Mileage	mi	40.00	\$160.00
m020	Ton Mileage	tm	277.00	\$415.50
c060	Cement Blending & Mixing Service	sack	300.00	\$420.00
d015	Depth Charge: 4001'-5000'	job	1.00	\$2,500.00
c035	Cement Data Acquisition	job	1.00	\$250.00
c050	Cement Plug Container	job	1.00	\$250.00
c040	Casing Swivel	job	1.00	\$300.00
r061	Service Supervisor	day	1.00	\$275.00
c025	Cement Pump - Hourly Service	hr	2.00	\$500.00

Customer Section: On the following scale how would you rate Hurricane Services Inc.?		Net:	\$22,269.25
Based on this job, how likely is it you would recommend HSI to a colleague?		Total Taxable	\$ -
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Tax Rate:	
Unlikely 1 2 3 4 5 6 7 8 9 10 Extremely Likely		State tax laws deem certain products and services used on new wells to be sales tax exempt. Hurricane Services relies on the customer provided well information above to make a determination if services and/or products are tax exempt.	Sale Tax: \$ -
		Total:	\$ 22,269.25
HSI Representative: <i>Mark Brungardt</i>			

TERMS: Cash in advance unless Hurricane Services Inc. (HSI) has approved credit prior to sale. Credit terms of sale for approved accounts are total invoice due on or before the 30th day from the date of invoice. Past due accounts shall pay interest on the balance past due at the rate of 1 1/4% per month or the maximum allowable by applicable state or federal laws. In the event it is necessary to employ an agency and/or attorney to affect the collection, Customer hereby agrees to pay all fees directly or indirectly incurred for such collection. In the event that Customer's account with HSI becomes delinquent, HSI has the right to revoke any discounts previously applied in arriving at net invoice price. Upon revocation, the full invoice price without discount is immediately due and subject to collection. Prices quoted are estimates only and are good for 30 days from the date of issue. Pricing does not include federal, state, or local taxes, or royalties and stated price adjustments. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Any discount is based on 30 days net payment terms or cash. **DISCLAIMER NOTICE:** Technical data is presented in good faith, but no warranty is stated or implied. HSI assumes no liability for advice or recommendations made concerning the results from the use of any product or service. The information presented is a best estimate of the actual results that may be achieved and should be used for comparison purposes and HSI makes no guarantee of future production performance. Customer represents and warrants that well and all associated equipment in acceptable condition to receive services by HSI. Likewise, the customer guarantees proper operational care of all customer owned equipment and property while HSI is on location performing services. The authorization below acknowledges the receipt and acceptance of all terms/conditions stated above, and Hurricane has been provided accurate well information in determining taxable services.

X _____ **CUSTOMER AUTHORIZATION SIGNATURE**



CEMENT TREATMENT REPORT

Customer: Grunder Oil Company	Well: Grunder 4	Ticket: wp 4877
City, State: Byers Kansas	County: Pratt .Kansas	Date: 11/6/2023
Field Rep: Keaton Jones	S-T-R: 5-26s-14w	Service: Longstring

Downhole Information	
Hole Size:	7 7/8 in
Hole Depth:	4550 ft
Casing Size:	5 1/2 in
Casing Depth:	4533 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Tool Depth:	ft
Displacement:	107.0 bbls

Calculated Slurry - Lead	
Blend:	H-Long
Weight:	15.0 ppg
Water / Sx:	5.7 gal / sx
Yield:	1.43 ft ³ / sx
Annular Bbls / Ft.:	bbs / ft.
Depth:	ft
Annular Volume:	0.0 bbls
Excess:	
Total Slurry:	68.7 bbls
Total Sacks:	270 sx

Calculated Slurry - Tail	
Blend:	H-Long
Weight:	15 ppg
Water / Sx:	5.7 gal / sx
Yield:	1.43 ft ³ / sx
Annular Bbls / Ft.:	bbs / ft.
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	7.6 bbls
Total Sacks:	30 sx

TIME	RATE	PSI	STAGE BBLs	TOTAL BBLs	REMARKS
9:30 PM			-	-	on location job and safety
9:40 PM					spot trucks and rig up
					turbolizers 1,2,4,6,8,11,13,15,17,18,20 21
					baskets 5
11:00 PM					start casing in the hole
1:35 AM					on bottom and establish circulation
3:20 AM					start flush
	5.0	300.0	12.0	12.0	mud flush
	5.0	300.0	10.0	22.0	fresh water with 2% kcl
3:25 AM					flush in
3:27 AM	2.0	-	7.6	7.6	plug rat hole with 30 sacks h- long ,,
3:35 AM					start cement down hole
	5.0	270.0	68.7		mix 270 sacks H-Long at 15ppg
3:50 AM					cement in and shut down and close in the well
					wash pump and lines and release the plug
3:55 AM					open the top valve on the manifold and start displacement
	6.5	270.0	20.0		
	c025 6.5	280.0	40.0		
	6.5	750.0	60.0		
	6.5	850.0	70.0		
	6.5	1,000.0	80.0		
	4.5	1,160.0	90.0		slow rate
	4.5	1,000.0	100.0		
4:15 AM		1,070.0	107.0		plug down
					took pressure from 1070 1570 psi
					release pressure and plug held

CREW		UNIT	SUMMARY		
Cementer:	M Brungardt	916	Average Rate	Average Pressure	Total Fluid
Pump Operator:	M McGraw	179/522	5.3 bpm	604 psi	665 bbls
Bulk #1:	Ej McGraw	182/534			
Bulk #2:	B Whitfeild	181/533			

Conservation Division
266 N. Main St., Ste. 220
Wichita, KS 67202-1513



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Andrew J. French, Chairperson
Dwight D. Keen, Commissioner
Annie Kuether, Commissioner

Laura Kelly, Governor

March 28, 2024

Fred Grunder
Grunder Oil, LLC
122 S MAIN ST
ST JOHN, KS 67576-2117

Re: ACO-1
API 15-151-22579-00-00
GRUNDER 4
NE/4 Sec.05-26S-14W
Pratt County, Kansas

Dear Fred Grunder:

K.A.R. 82-3-107 provides for all completion information to be filed within 120 days of the spud date. Subsection(e)(2) of that regulation states "All rights to confidentiality shall be lost if the filings are not timely."

The above referenced well was spudded on 10/29/2023 and the ACO-1 was received on March 27, 2024 (not within the 120 days timely requirement).

Therefore, your request for confidential treatment of data contained within the ACO-1 filing cannot be granted at this time.

If you should have any questions, please do not hesitate to contact me at (316)337-6200.

Sincerely,

Production Department