

**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Staab Oil Company
1607 Hopewell Rd
Hays, KS 67601
ATTN: Janel Staab

8-8s-18w Rooks, KS

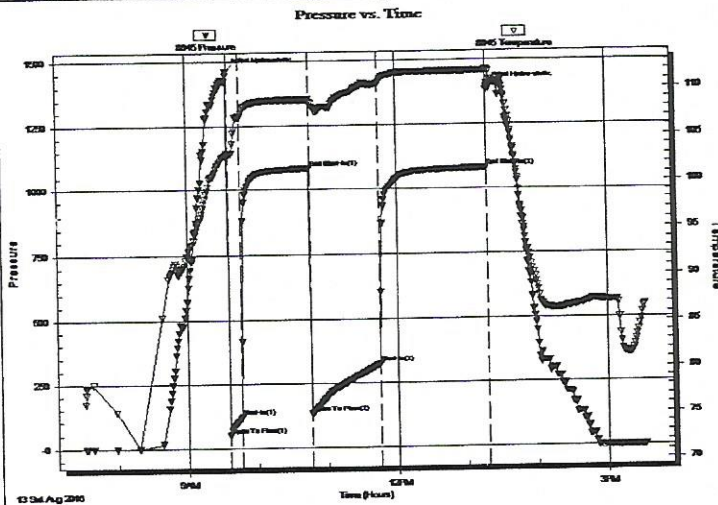
Haines #1
Job Ticket: 65542 **DST#: 1**
Test Start: 2016.08.13 @ 07:31:00

GENERAL INFORMATION:

Formation: **Oread - Toronto**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:35:45
Time Test Ended: 15:32:15
Interval: **3018.00 ft (KB) To 3110.00 ft (KB) (TVD)**
Total Depth: 3110.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Bradley Walter
Unit No: 78
Reference Elevations: 1942.00 ft (KB)
1937.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8845 **Outside**
Press@RunDepth: 325.28 psig @ 3019.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2016.08.13 End Date: 2016.08.13 Last Calib.: 2016.08.13
Start Time: 07:31:05 End Time: 15:32:14 Time On Btm: 2016.08.13 @ 09:35:15
Time Off Btm: 2016.08.13 @ 13:18:15

TEST COMMENT: IF: BOB @ 8 minutes (10' slide)
IS: Surface return, died @ 25 minutes.
FF: BOB @ 8 minutes.
FS: 4" return @ 45 min. receded to 1"



PRESSURE SUMMARY

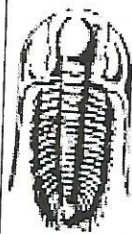
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1463.83	103.28	Initial Hydro-static
1	48.01	103.05	Open To Flow (1)
11	121.39	107.03	Shut-In(1)
71	1086.65	108.95	End Shut-In(1)
72	130.45	108.64	Open To Flow (2)
130	325.28	110.61	Shut-In(2)
222	1081.98	111.95	End Shut-In(2)
223	1394.17	112.02	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
300.00	omcw 1o 9m 90w	2.20
170.00	gow cm 10g 10o 30w 50m	1.27
120.00	gw ocm 10g 20w 20o 50m	1.68
120.00	go 30g 70o	1.68
0.00	300' GIP	0.00

Gas Rates

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



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FLUID SUMMARY

Staab Oil Company
1607 Hopewell Rd
Hays, KS 67601
ATTN: Janel Staab

8-8s-18w Rooks, KS
Haines #1
Job Ticket: 65542 DST#: 1
Test Start: 2016.08.13 @ 07:31:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 38 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 28000 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.18 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 1800.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
300.00	omcw 1o 9m 90w	2.204
170.00	gow cm 10g 10o 30w 50m	1.269
120.00	gw ocm 10g 20w 20o 50m	1.683
120.00	go 30g 70o	1.683
0.00	300' GIP	0.000

Total Length: 710.00 ft Total Volume: 6.839 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: rw is .212 @ 80f = 28,000ppm

Serial #: 8845

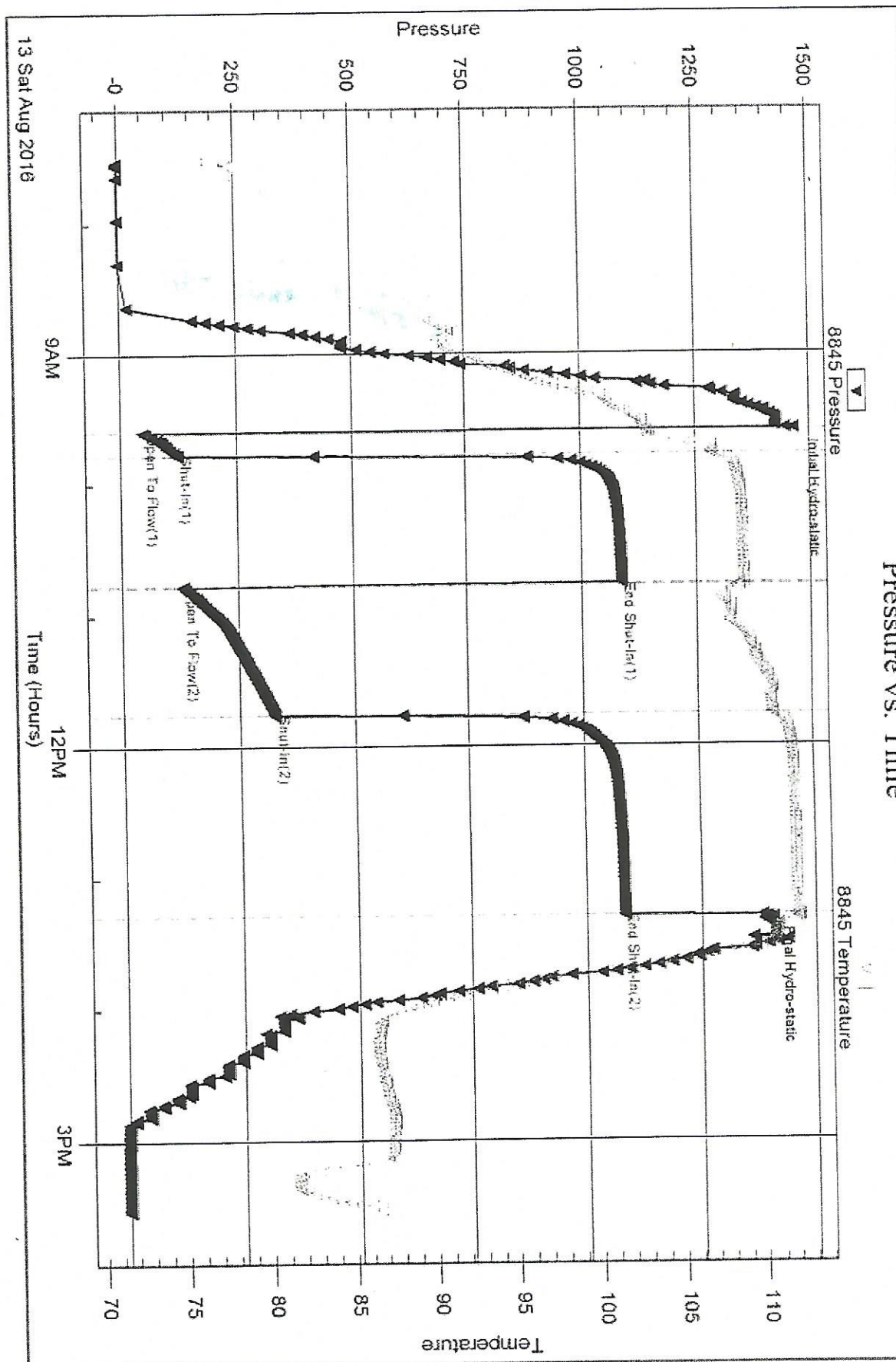
Outside

Staab Oil Company

Haines #1

DST Test Number: 1

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 65542

Printed 2016 08 17 @ 16:39:45

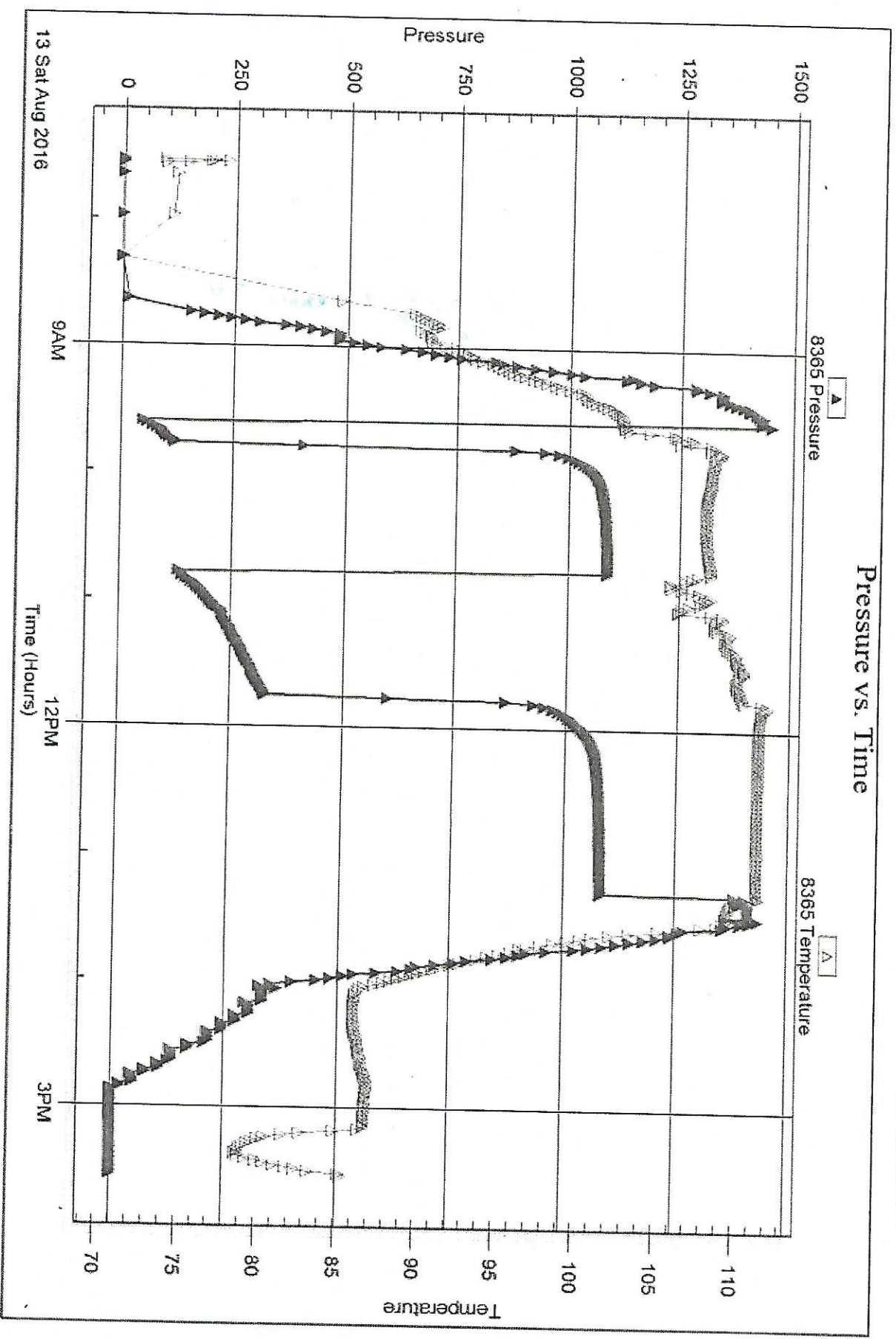
Serial #: 8365

Inside

Stab Oil Company

Haines #1

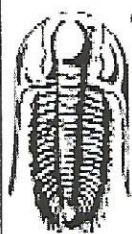
OST Test Number: 1



Traabite Testing, Inc

Ref. No: 65542

Printed: 2016 08 17 @ 16:39:46



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Staab Oil Company

8-8s-18w Rooks, KS

1607 Hopewell Rd
Hays, KS 67601

Haines #1

Job Ticket: 65543

DST#: 2

ATTN: Janel Staab

Test Start: 2016.08.13 @ 23:23:00

GENERAL INFORMATION:

Formation: **LKC A - D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:57:15

Time Test Ended: 07:39:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 78

Interval: **3108.00 ft (KB) To 3184.00 ft (KB) (TVD)**

Total Depth: 3184.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 1942.00 ft (KB)

1937.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8845 Outside

Press@RunDepth: 122.97 psig @ 3109.00 ft (KB)

Start Date: 2016.08.13

End Date: 2016.08.14

Capacity: 8000.00 psig

Last Calib.: 2016.08.14

Start Time: 23:23:05

End Time: 07:39:14

Time On Btm: 2016.08.14 @ 01:57:00

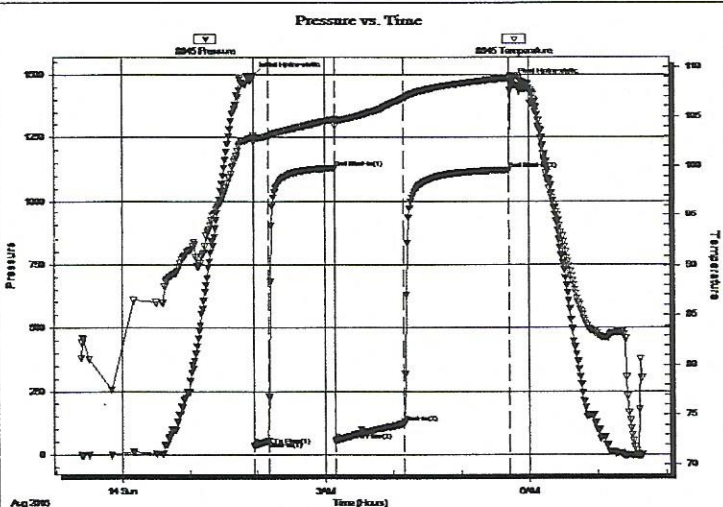
Time Off Btm: 2016.08.14 @ 05:45:00

TEST COMMENT: IF: 5" blow . slid 4'

IS: No return.

FF: 3" blow .

FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1496.46	103.11	Initial Hydro-static
1	34.15	102.36	Open To Flow (1)
13	52.53	102.98	Shut-In(1)
72	1131.11	104.71	End Shut-In(1)
73	53.68	104.06	Open To Flow (2)
133	122.97	106.82	Shut-In(2)
226	1124.03	108.91	End Shut-In(2)
228	1470.43	109.10	Final Hydro-static

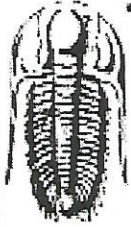
Recovery

Length (ft)	Description	Volume (bbl)
230.00	socm 2o 98m	1.69

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

Staab Oil Company
 1607 Hopewell Rd
 Hays, KS 67601
 ATTN: Janel Staab

8-8s-18w Rooks, KS

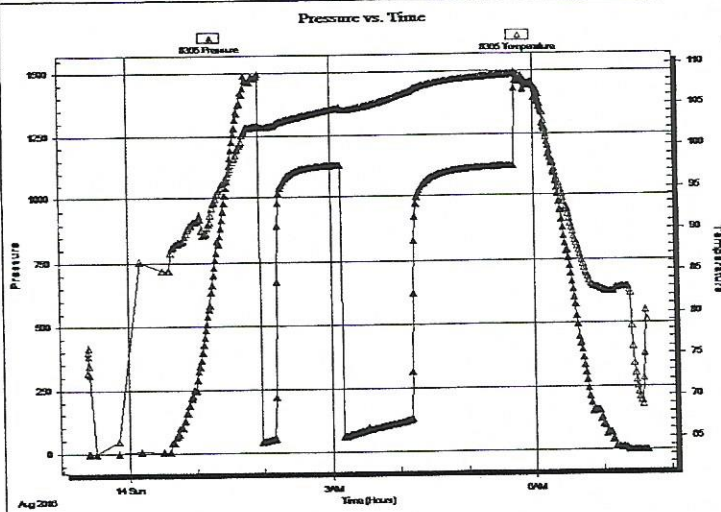
Haines #1
 Job Ticket: 65543 DST#: 2
 Test Start: 2016.08.13 @ 23:23:00

GENERAL INFORMATION:

Formation: **LKC A - D**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 01:57:15 Tester: Bradley Walter
 Time Test Ended: 07:39:15 Unit No: 78
 Interval: **3108.00 ft (KB) To 3184.00 ft (KB) (TVD)**
 Reference Elevations: 1942.00 ft (KB)
 Total Depth: 3184.00 ft (KB) (TVD) 1937.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 5.00 ft

Serial #: 8365 Inside
 Press@RunDepth: psig @ 3109.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.08.13 End Date: 2016.08.14 Last Calib.: 2016.08.14
 Start Time: 23:23:05 End Time: 07:39:14 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: 5" blow . slid 4'
 IS: No return.
 FF: 3" blow .
 FS: No return.



PRESSURE SUMMARY

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

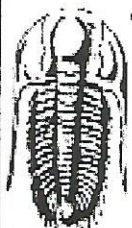
Recovery

Length (ft)	Description	Volume (bbl)
230.00	socm 2o 98m	1.69

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

TOOL DIAGRAM

Staab Oil Company

8-8s-18w Rooks, KS

1607 Hopewell Rd
Hays, KS 67601

Haines #1

Job Ticket: 65543

DST#: 2

ATTN: Janel Staab

Test Start: 2016.08.13 @ 23:23:00

Tool Information

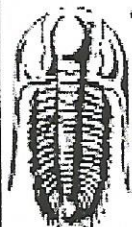
Drill Pipe:	Length: 2638.00 ft	Diameter: 3.80 inches	Volume: 37.00 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 467.00 ft	Diameter: 2.75 inches	Volume: 3.43 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 40.43 bbl</u>	Tool Chased 4.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 53000.00 lb
Depth to Top Packer:	3108.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	76.00 ft			
Tool Length:	96.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3089.00	
Shut In Tool	5.00			3094.00	
Hydraulic tool	5.00			3099.00	
Packer	5.00			3104.00	20.00 Bottom Of Top Packer
Packer	4.00			3108.00	
Stubb	1.00			3109.00	
Recorder	0.00	8365	Inside	3109.00	
Recorder	0.00	8845	Outside	3109.00	
Perforations	7.00			3116.00	
Change Over Sub	1.00			3117.00	
Drill Pipe	63.00			3180.00	
Change Over Sub	1.00			3181.00	
Bullnose	3.00			3184.00	76.00 Bottom Packers & Anchor

Total Tool Length: 96.00



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FLUID SUMMARY

Staab Oil Company

8-8s-18w Rooks, KS

1607 Hopewell Rd
Hays, KS 67601

Haines #1

Job Ticket: 65543

DST#: 2

ATTN: Janel Staab

Test Start: 2016.08.13 @ 23:23:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
230.00	socm 2o 98m	1.690

Total Length: 230.00 ft

Total Volume: 1.690 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8845

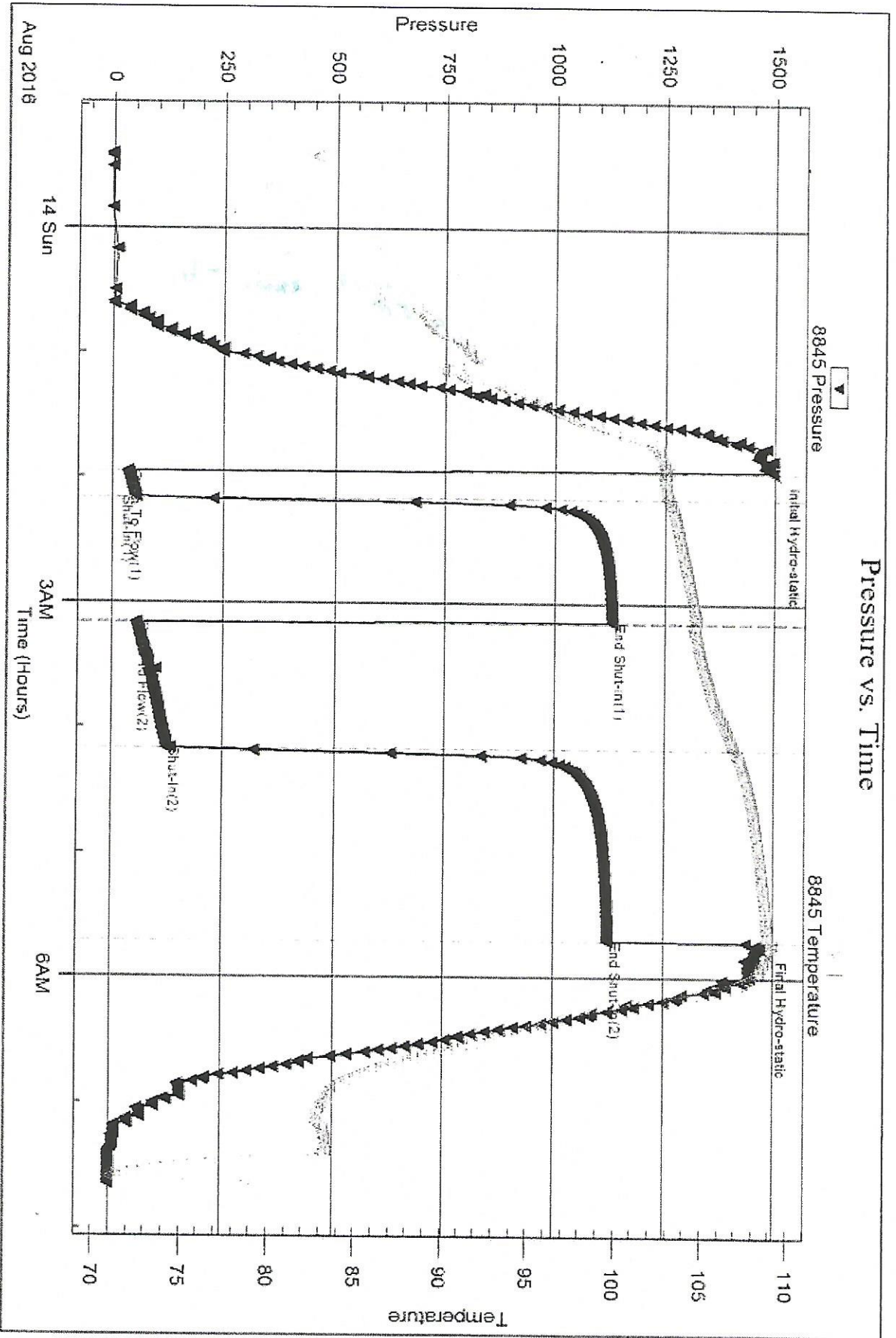
Outside

Staab Oil Company

Hanes #1

OST Test Number: 2

Pressure vs. Time



Tribble Testing, Inc

Ref. No: 65543

Printed 2016 08 17 @ 16:34:43

Serial #: 8365

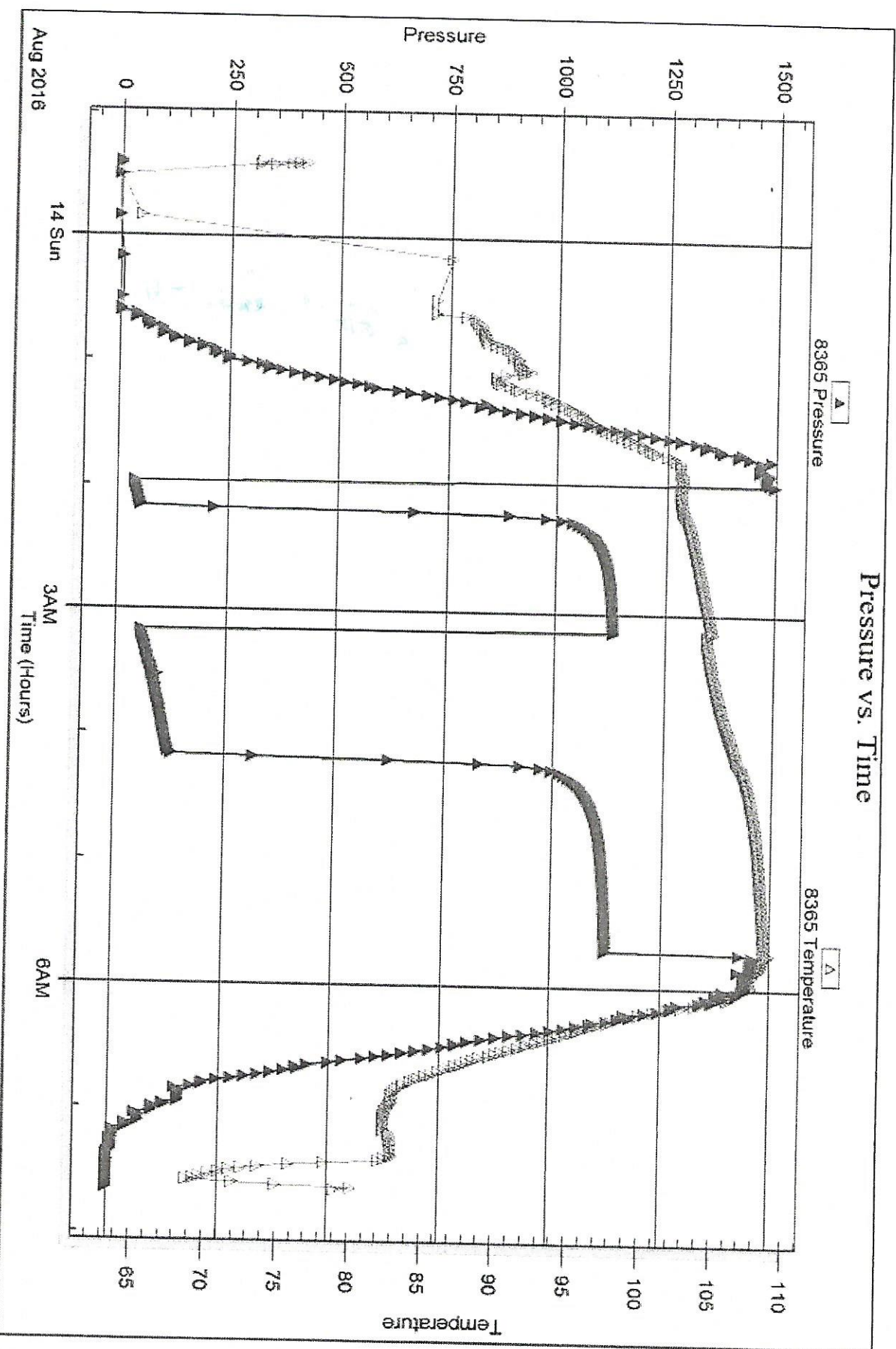
Inside

Staab Oil Company

Haines #1

DST Test Number: 2

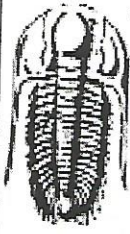
Pressure vs. Time



Triobite Testing, Inc

Ref. No: 05543

Printed: 2016 08 17 @ 16:34:43



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Staab Oil Company
 1607 Hopewell Rd
 Hays, KS 67601
 ATTN: Janel Staab

8-8s-18w Rooks,KS

Haines #1

Job Ticket: 65544 DST#: 3
 Test Start: 2016.08.15 @ 10:00:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 12:17:00
 Time Test Ended: 18:58:00
 Interval: **3367.00 ft (KB) To 3409.00 ft (KB) (TVD)**
 Total Depth: 3444.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)
 Tester: Bradley Walter
 Unit No: 78
 Reference Elevations: 1942.00 ft (KB)
 1937.00 ft (CF)
 KB to GR/CF: 5.00 ft

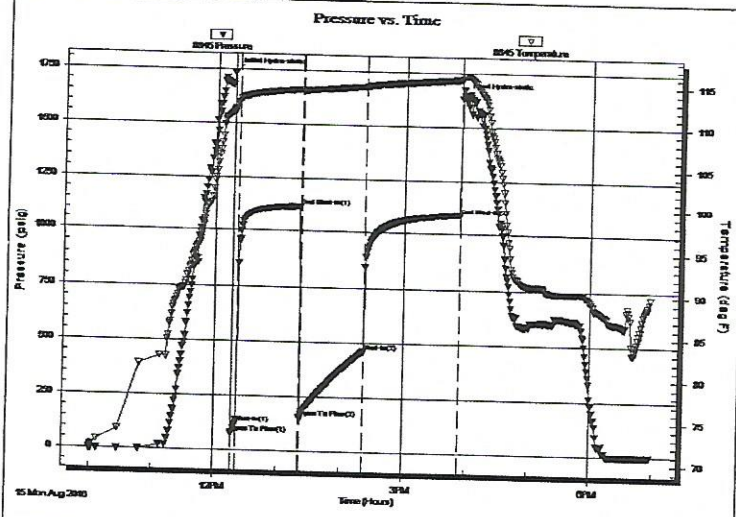
Serial #: 8845

Inside

Press@RunDepth: 462.40 psig @ 3368.00 ft (KB)
 Start Date: 2016.08.15 End Date: 2016.08.15
 Start Time: 10:00:05 End Time: 18:58:00

Capacity: 8000.00 psig
 Last Calib.: 2016.08.15
 Time On Btm: 2016.08.15 @ 12:16:30
 Time Off Btm: 2016.08.15 @ 15:55:30

TEST COMMENT: IF: BOB @ 2 minutes.
 IS: 4" return, receded to 1".
 FF: BOB @ 2 min.
 FSI: BOB @ 20 min, Receded to 7".



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1737.53	111.80	Initial Hydro-static
1	75.71	111.55	Open To Flow (1)
5	123.46	112.70	Shut-In(1)
65	1117.60	114.25	End Shut-In(1)
66	153.60	114.05	Open To Flow (2)
126	462.40	114.70	Shut-In(2)
217	1084.96	115.70	End Shut-In(2)
219	1643.73	116.07	Final Hydro-static

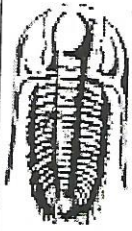
Recovery

Length (ft)	Description	Volume (bbl)
120.00	gmco 30g 30m 40o	0.88
1140.00	go 30g 70o	13.67
0.00	880' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

Staab Oil Company

8-8s-18w Rooks, KS

1607 Hopewell Rd
Hays, KS 67601

Haines #1

Job Ticket: 65544

DST#: 3

ATTN: Janel Staab

Test Start: 2016.08.15 @ 10:00:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: _____ ft (KB)
 Time Tool Opened: 12:17:00
 Time Test Ended: 18:58:00
 Interval: **3367.00 ft (KB) To 3409.00 ft (KB) (TVD)**
 Total Depth: 3444.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)
 Tester: Bradley Walter
 Unit No: 78
 Reference Elevations: 1942.00 ft (KB)
 1937.00 ft (CF)
 KB to GR/CF: 5.00 ft

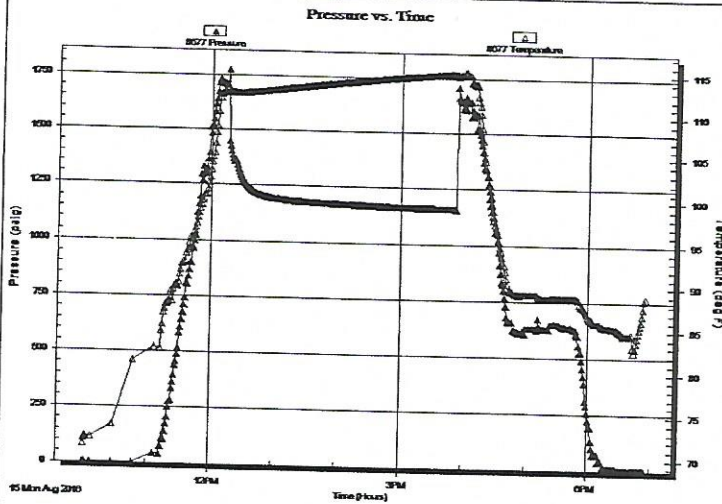
Serial #: 8677

Below (Straddle)

Press@RunDepth: _____ psig @ 3441.00 ft (KB)
 Start Date: 2016.08.15 End Date: _____
 Start Time: 10:00:05 End Time: _____

Capacity: 8000.00 psig
 Last Calib.: 2016.08.15
 Time On Btm: _____
 Time Off Btm: _____

TEST COMMENT: IF: BOB @ 2 minutes.
 IS: 4" return, receded to 1".
 FF: BOB @ 2 min.
 FSI: BOB @ 20 min, Receded to 7".



PRESSURE SUMMARY

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

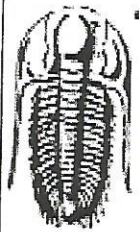
Recovery

Length (ft)	Description	Volume (bbl)
120.00	gmco 30g 30m 40o	0.88
1140.00	go 30g 70o	13.67
0.00	880' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

Staab Oil Company

8-8s-18w Rooks, KS

1607 Hopewell Rd
Hays, KS 67601

Haines #1

ATTN: Janel Staab

Job Ticket: 65544

DST#: 3

Test Start: 2016.08.15 @ 10:00:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)

Test Type: Conventional Bottom Hole (Reset)

Time Tool Opened: 12:17:00

Tester: Bradley Walter

Time Test Ended: 18:58:00

Unit No: 78

Interval: **3367.00 ft (KB) To 3409.00 ft (KB) (TVD)**

Reference Elevations: 1942.00 ft (KB)

Total Depth: 3444.00 ft (KB) (TVD)

1937.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8365 Outside

Press@RunDepth: psig @ 3368.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.08.15 End Date: 2016.08.15

Last Calib.: 2016.08.15

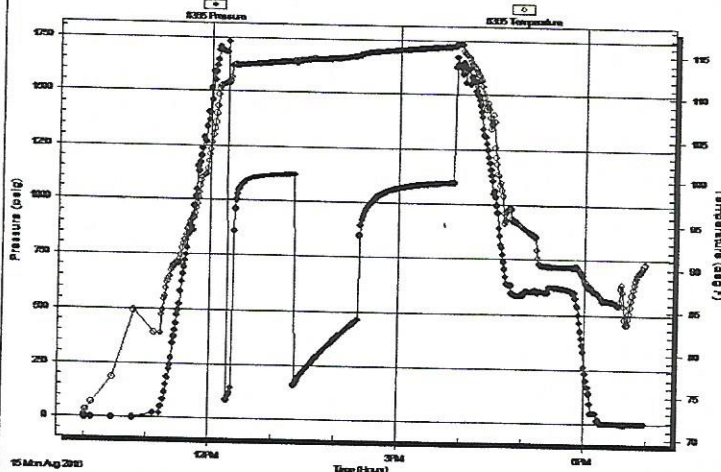
Start Time: 10:00:05 End Time: 18:58:00

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: BOB @ 2 minutes.
IS: 4" return, receded to 1".
FF: BOB @ 2 min.
FSI: BOB @ 20 min, Receded to 7".

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
120.00	gmco 30g 30m 40o	0.88
1140.00	go 30g 70o	13.67
0.00	880' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

TOOL DIAGRAM

Staab Oil Company

8-8s-18w Rooks, KS

1607 Hopewell Rd
Hays, KS 67601

Haines #1

ATTN: Janel Staab

Job Ticket: 65544

DST#: 3

Test Start: 2016.08.15 @ 10:00:00

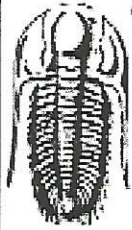
Tool Information

Drill Pipe:	Length: 2898.00 ft	Diameter: 3.80 inches	Volume: 40.65 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 467.00 ft	Diameter: 2.75 inches	Volume: 3.43 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: 70000.00 lb
			Total Volume: 44.08 bbl	Tool Chased: 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	3367.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	77.00 ft			
Tool Length:	104.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3341.00	
Shut In Tool	5.00			3346.00	
Hydraulic tool	5.00			3351.00	
Jars	5.00			3356.00	
Safety Joint	2.00			3358.00	
Packer	5.00			3363.00	27.00 Bottom Of Top Packer
Packer	4.00			3367.00	
Stubb	1.00			3368.00	
Recorder	0.00	8845	Inside	3368.00	
Recorder	0.00	8365	Outside	3368.00	
Perforations	1.00			3369.00	
Change Over Sub	0.50			3369.50	
Drill Pipe	30.00			3399.50	
Change Over Sub	0.50			3400.00	
Perforations	5.00			3405.00	
Blank Off Sub	1.00			3406.00	77.00 Tool Interval
Packer	3.00			3409.00	
Blank Spacing	1.00			3410.00	
Perforations	31.00			3441.00	
Recorder	0.00	8677	Below	3441.00	
Bullnose	3.00			3444.00	1000103.00 Bottom Packers & Anchor
Total Tool Length:	104.00				



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DRILL STEM TEST REPORT

FLUID SUMMARY

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8-8s-18w Rooks,KS

1607 Hopewell Rd
Hays, KS 67601

Haines #1

Job Ticket: 65544

DST#: 3

ATTN: Janel Staab

Test Start: 2016.08.15 @ 10:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

39 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
120.00	gmco 30g 30m 40o	0.882
1140.00	go 30g 70o	13.673
0.00	880' GIP	0.000

Total Length: 1260.00 ft

Total Volume: 14.555 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

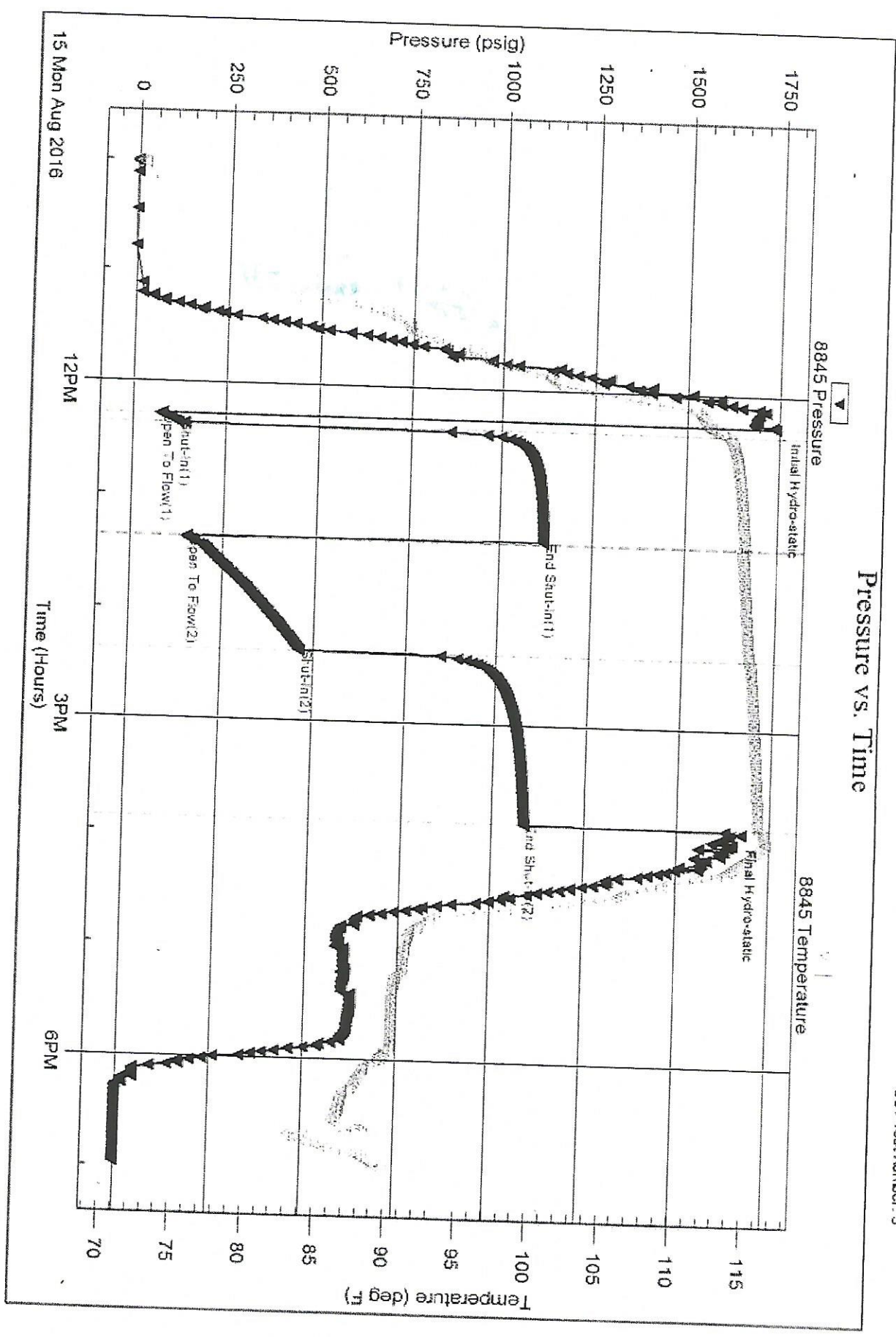
Laboratory Location:

Recovery Comments:

Serial # 8845 Inside Staab Oil Company

Haines #1

OST Test Number: 3

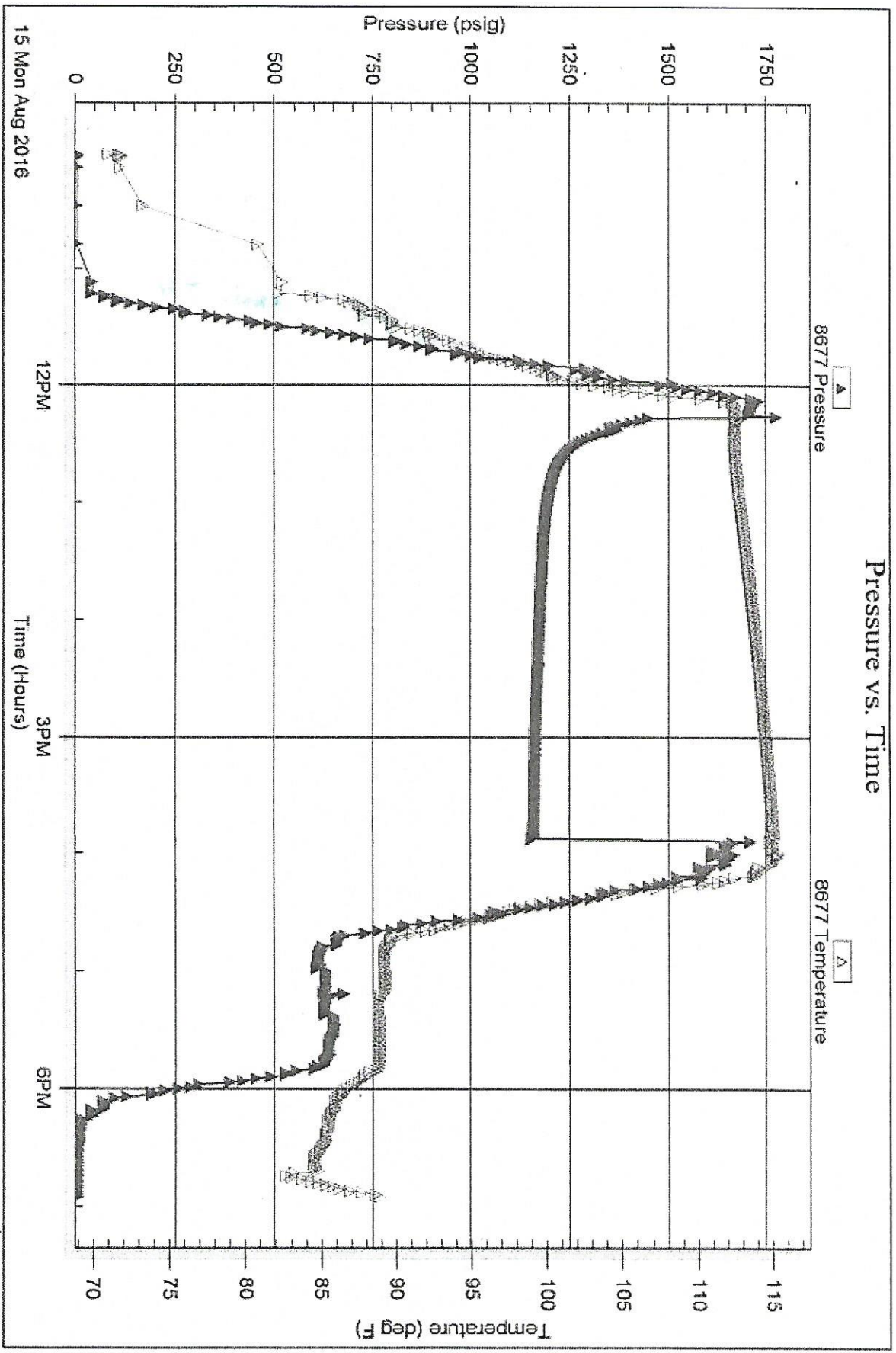


Serial #: 8677

Below (Stratfield) Oil Company

Haines #1

DST Test Number: 3



Tribble Testing, Inc

Ref. No: 65544

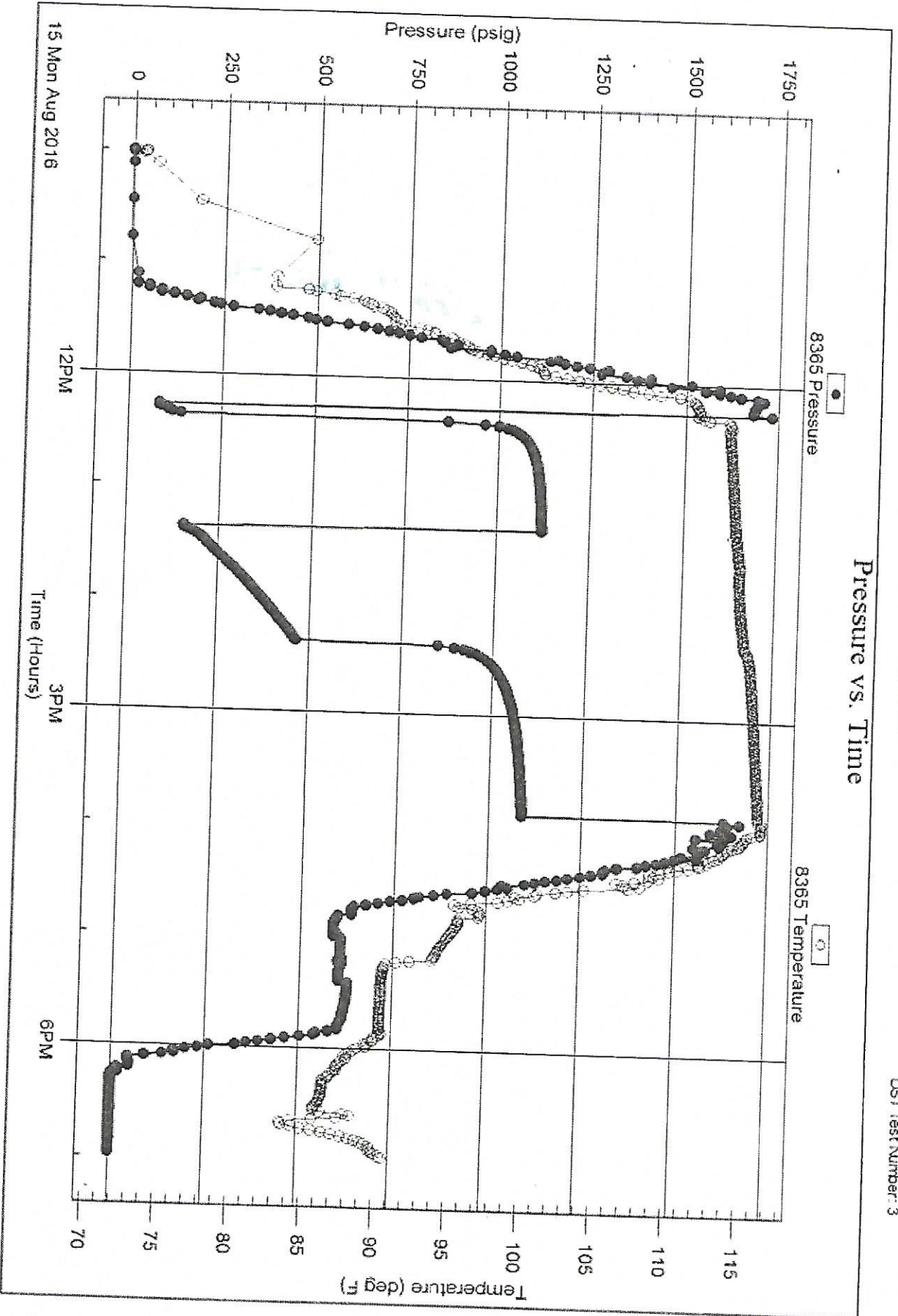
Printed: 2016 08 17 @ 16:34 02

Serial #: 8365

Outside Staab Oil Company

Haines #1

DST Test Number: 3



Tribble Testing, Inc

Ref. No: 65544

Printed 2016 08 17 @ 16:34:03