

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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COPELAND

Acid & Cement

BURRTON, KS ♦ GREAT BEND, KS
 (620) 463-5161 (620) 793-3366
 FAX (620) 463-2104 FAX (620) 793-3536

POST OFFICE BOX 438
 HAYSVILLE, KS 67060
 (316) 524-1225
 (316) 524-1027 FAX

Invoice

Page: 1

U56032

INVOICE NUMBER:
C60007-IN

BILL TO:
 DARRAH OIL COMPANY LLC
 PO BOX 2786
 WICHITA, KS 67202-2786

LEASE: BIRBECK KELLER UNIT #1

DATE	ORDER	SALESMAN	ORDER DATE	PURCHASE ORDER	SPECIAL INSTRUCTIONS					
09/17/2019	60007		09/14/2019	BIRBECK KELLER UNIT #1	NET 30					
QUANTITY	U/M	ITEM NO./DESCRIPTION		D/C	PRICE	EXTENSION				
10.00	MI	MILEAGE PICKUP		15.00	2.00	17.00				
10.00	MI	MILEAGE CEMENT PUMP TRUCK		15.00	4.00	34.00				
1.00	EA	PUMP CHARGE SURFACE		15.00	1,100.00	935.00				
325.00	SK	60/40 POZ MIX 2% GEL		15.00	11.25	3,107.81				
17.00	SK	CALCIUM CHLORIDE		15.00	40.00	578.00				
342.00	EA	BULK CHARGE		15.00	1.25	363.38				
150.48	MI	BULK TRUCK - TON MILES		15.00	1.10	140.70				
		<i>8 2300/800</i>								
		<div style="border: 1px solid red; padding: 5px; display: inline-block;"> <p style="text-align: center; margin: 0;">PAID</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">CHK. NO.</td> <td style="font-size: small;">DATE</td> </tr> <tr> <td style="text-align: center;">12074</td> <td style="text-align: center;">11/20/19</td> </tr> </table> </div>		CHK. NO.	DATE	12074	11/20/19			
CHK. NO.	DATE									
12074	11/20/19									
REMIT TO: P.O. BOX 438 HAYSVILLE, KS 67060		COP		Net Invoice: 5,175.89 STFCO Sales Tax: 388.19 Invoice Total: 5,564.08						
RECEIVED BY _____		NET 30 DAYS								

There will be a charge of 1.5% "per month" (18% annual rate) on all accounts over 30 days pas

Copeland Acid & Cement is a subsidiary of Gressel Oil Field Service

Gressel Oil Field Service reserves a security interest in the goods sold until the same are paid for in full and reserve all the rights of a secured party under the Uniform Commercial Code.



FIELD ORDER N° C 60007

BOX 438 - HAYSVILLE, KANSAS 67060
316-524-1225

DATE 14-Sep 20 19

IS AUTHORIZED BY: JOHN JAY DARRAH JR. (NAME OF CUSTOMER)

Address _____ City _____ State _____

TO TREAT WELL AS FOLLOWS Lease BIRBECK KELLER UNIT Well No. #1 Customer Order No. _____

Sec. Twp. _____ County STAFFORD State KS

CONDITIONS: As a part of the consideration hereof it is agreed that Copeland Acid is to service or treat at owners risk, the hereinbefore mentioned well and is not to be held liable for any damage that may occur in connection with said service or treatment. Copeland Acid Service has made no representation, expressed or implied, and no representations have been relied on, as to what may be the results or effect of the servicing or treating said well. The consideration of said service or treatment is payable. There will be no discount allowed subsequent to such date 6% interest will be charged after 60 days. Total charges are subject to correction by our invoicing department in accordance with latest published price schedules.

The undersigned represents himself to be duly authorized to sign this order for well owner or operator.

THIS ORDER MUST BE SIGNED BEFORE WORK IS COMMENCED _____ By _____ Agent

Well Owner or Operator

Agent

CODE	QUANTITY	DESCRIPTION	UNIT COST	AMOUNT
20.0001	10	Mileage P.U.	\$2.00	\$20.00
20.0002	10	Mileage P.T.	\$4.00	\$40.00
20.0005	1	Pump Charge Surface	\$1,100.00	\$1,100.00
20.1002	325	60/40 Poz 2% Gel	\$11.25	\$3,656.25
20.1012	17	Calcium Chloride per 50 lb.	\$40.00	\$680.00
20.0011	342	Bulk Charge	\$1.25	\$427.50
20.0012	150.48	Bulk Truck Miles	\$1.10	\$165.53
		Process License Fee on Gallons		
TOTAL BILLING				\$6,089.28

I certify that the above material has been accepted and used; that the above service was performed in a good and workmanlike manner under the direction, supervision and control of the owner, operator or his agent, whose signature appears below. \$5175.87

Copeland Representative GREG C.

Station GB

WILL

Well Owner, Operator or Agent

Remarks _____

NET 30 DAYS



HURRICANE SERVICES INC

Remit To: Hurricane Services, Inc.
250 N. Water, Suite 200
Wichita, KS 67202
316-303-9515

Customer:
DARRAH OIL
C/O JOHN JAY DARRAH JR
PO BOX 2786
WICHITA, KS 67201-2786

Invoice Date: 9/25/2019
Invoice #: 0344112
Lease Name: Birbeck-Keller
Well #: Unit 1 (New)
County: Stafford
Job Number: ICT2457
District: El Dorado

Date/Description	HRS/QTY	Rate	Total
Longstring	0.000	0.000	0.00
Cement pump #265	1.000	1,350.000	1,350.00
Heavy Eq Mileage	5.000	3.600	18.00
Light Eq Mileage	5.000	1.800	9.00
Ton Mileage-Minimum	1.000	270.000	270.00
Casing Swivel	1.000	346.500	346.50
H-CON	150.000	18.900	2,835.00
HSC Blend	40.000	21.600	864.00
Mud flush	500.000	0.900	450.00
4 1/2" Float Shoe AFU-FT	1.000	315.000	315.00
4 1/2" LD Plug & Baffle	1.000	247.500	247.50

Total 6,705.00

TERMS: Net 30 days. Interest may be charged on past due invoice at rate of 1 ½% per month or maximum allowed by applicable state or federal laws. HSI has right to revoke any discounts applied in arriving at net invoice price if invoice is past due. If revoked, full invoice price without discount plus additional sales tax, as applicable, is due immediately and subject to interest charges. Customer agrees to pay all collection costs directly or indirectly incurred by HSI in the event HSI engages a third party to pursue collection of past due invoice.

SALES TAX: Services performed on oil, gas and water wells in Kansas are subject to sales tax, with certain exceptions. HSI relies on the well information provided by the customer in identifying whether the services performed on wells qualify for exemption.

WE APPRECIATE YOUR BUSINESS!



HURRICANE SERVICES INC

Customer	Darrah Oil Company, LLC	Lease & Well #	Birbeck-Keller Unit #1	Date	9/25/2019
Service District	El Dorado, KS	County & State	Stafford, KS	Legals S/T/R	2-21s-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 #					ICT 2457
Ticket #					ICT 2457


Equipment #	Driver	Job Safety Analysis - A Discussion of Hazards & Safety Procedures			
265	Kevin	<input checked="" type="checkbox"/> Hard hat	<input checked="" type="checkbox"/> Gloves	<input type="checkbox"/> Lockout/Tagout	<input type="checkbox"/> Warning Signs & Flagging
240	Mark	<input checked="" type="checkbox"/> H2S Monitor	<input checked="" type="checkbox"/> Eye Protection	<input type="checkbox"/> Required Permits	<input type="checkbox"/> Fall Protection
77	Jake H	<input checked="" type="checkbox"/> Safety Footwear	<input checked="" type="checkbox"/> Respiratory Protection	<input type="checkbox"/> Slip/Trip/Fall Hazards	<input type="checkbox"/> Specific Job Sequence/Expectations
91	Fuzzy	<input checked="" type="checkbox"/> FRC/Protective Clothing	<input type="checkbox"/> Additional Chemical/Acid PPE	<input type="checkbox"/> Overhead Hazards	<input type="checkbox"/> Muster Point/Medical Locations
		<input checked="" 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
c015	Cement Pump	ea	1.00	\$1,350.00
m010	Heavy Equipment Mileage	mi	5.00	\$18.00
m015	Light Equipment Mileage	mi	5.00	\$9.00
m025	Ton Mileage- Minimum	each	1.00	\$270.00
c040	Casing Swivel	job	1.00	\$346.50
cp025	H-Con	sack	150.00	\$2,835.00
cp031	HSC	sack	40.00	\$864.00
cp170	Mud Flush	gal	500.00	\$450.00
fe070	4 1/2" Float Shoe - AFU Flapper Type	ea	1.00	\$315.00
fe095	4 1/2" Latch Down Plug & Baffle	ea	1.00	\$247.50

Customer Section: On the following scale how would you rate Hurricane Services Inc.?		Total Taxable	\$ -	Tax Rate:		Net:	\$6,705.00
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:	\$ 6,705.00
<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"/> Unlikely 1 2 3 4 5 6 7 8 9 10 Extremely Likely		HSI Representative: Jake Heard					

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 1/2% 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** Seth.Evensen@DarrahOil.com



CEMENT TREATMENT REPORT

Customer: Darrah Oil Company, LLC	Well: Birbeck-Keller Unit #1	Ticket: ICT 2457
City, State:	County: Stafford, KS	Date: 9/25/2019
Field Rep: Seth E.	S-T-R: 2-21s-14w	Service: Longstring

Downhole Information	
Hole Size:	6.25 in
Hole Depth:	3640 ft
Casing Size:	4.5 in
Casing Depth:	3640.5 ft
Intermediate Depth:	7 in
Tool / Packer:	
Depth:	ft
Displacement:	57.88 bbls

Slurry	
Weight:	# / sx
Water / Sx:	gal / sx
Yield:	ft³ / sx
Bbls / Ft.:	
Depth:	ft
Volume:	bbls
Excess:	%
Total Slurry:	bbls
Total Sacks:	sx

Cement Blend		
Product	%	#
Class A		
Gel		
CaCl		
Metso		
KolSeal		
PhenoSeal		
Salt		
Total		-

TIME	RATE	PSI	BBLs	REMARKS	TIME	RATE	PSI	BBLs	REMARKS
				On location safety meeting					Lead Slurry 12 PPG 150 sacks
				Spot in and rig up					Class A cement, gypsum, gel, cacl, metso,
				Run casing					phenoseal
				On bottom break circulation					
				Pump ball. Circulate 2 HRS					Tail Slurry 14.8 PPG 40 sacks
	3.5	250.0	5.0	Pump water					Class A cement, kolseal, salt, gypsum,
	3.5	250.0	12.0	Mix and pump mudflush					fluid loss
	2.5	100.0	7.5	Plug rat hole					
	3.8	200.0	69.0	Mix and pump lead cement					
	3.8	10.0	11.0	Mix and pump 40 sx tail					Cement ESTIMATED to be 900+/- feet inside
				Pump goes down					of 7" intermediate
				Wash pump and lines					
				Drop plug					
	3.5	10.0	1.0	Displace					
	3.5	200.0	23.0	See lift					
	2.5	600.0	55.0	Slow rate					
	2.5	1,100.0	57.8	Bump plug					
				Release pressure					
				Wash up truck					

CREW		UNIT	SUMMARY		
Cementer:	Jake Fuzzy	77 91	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Kevin	265	3.23333 bpm	302.22 psi	241.30 bbls
Bulk #1:	Mark	240			
Bulk #2:					



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Darrah Oil Company

2-21s-14w

125 N Market Suite 1425 Wichita KS 67202+1425

Birback-Keller Unit

ATTN: Seth Evenson

Job Ticket: 65823

DST#: 1

Test Start: 2019.09.23 @ 03:24:00

GENERAL INFORMATION:

Formation: **LKC H-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:36:15

Time Test Ended: 10:24:15

Test Type: Conventional Straddle (Initial)

Tester: Benny Mulligan

Unit No: 66

Interval: 3445.00 ft (KB) To 3525.00 ft (KB) (TVD)

Reference Elevations: 1924.00 ft (KB)

Total Depth: 3550.00 ft (KB) (TVD)

1919.00 ft (CF)

Hole Diameter: 6.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6666 Inside

Press@RunDepth: psig @ 3446.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.09.23

End Date: 2019.09.23

Last Calib.: 2019.09.23

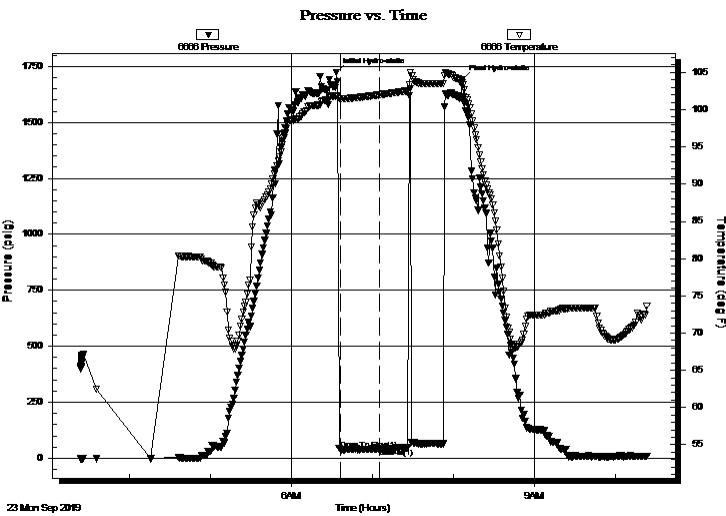
Start Time: 03:24:01

End Time: 10:24:15

Time On Btm: 2019.09.23 @ 06:33:30

Time Off Btm: 2019.09.23 @ 08:07:00

TEST COMMENT: IF-30- built to 4"
ISI-tool would not close so pulled the test



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1723.52	101.89	Initial Hydro-static
3	38.98	101.47	Open To Flow (1)
32	41.75	101.99	Shut-In(1)
94	1691.71	103.63	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	O.C.M. 15%O 85%M	0.50

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Darrah Oil Company

2-21s-14w

125 N Market Suite 1425 Wichita KS 67202+1425

Birback-Keller Unit

Job Ticket: 65823

DST#: 1

ATTN: Seth Evenson

Test Start: 2019.09.23 @ 03:24:00

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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	O.C.M. 15%O 85%M	0.504

Total Length: 90.00 ft Total Volume: 0.504 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6666

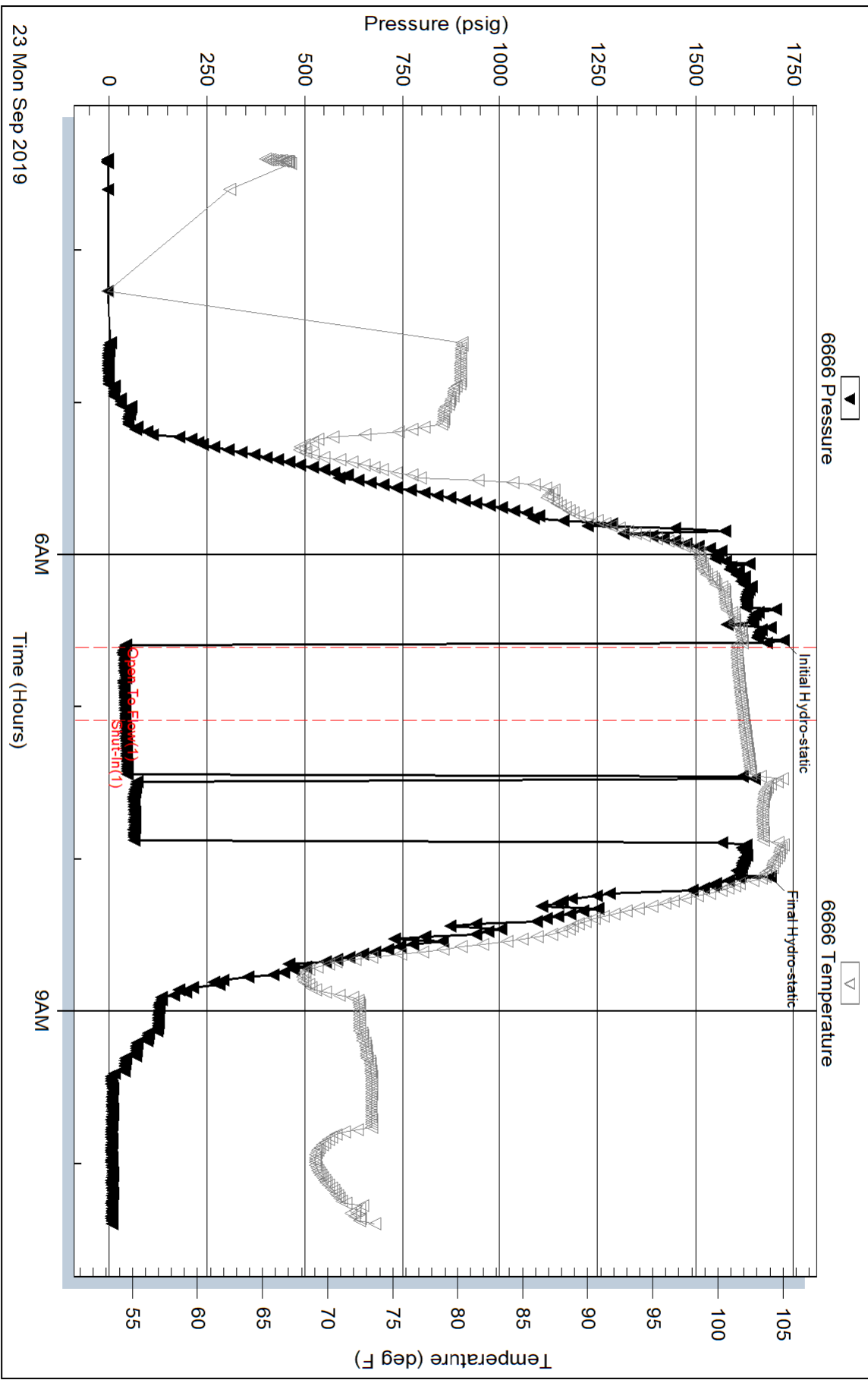
Inside

Darrah Oil Company

Birback-Keller Unit

DST Test Number: 1

Pressure vs. Time



23 Mon Sep 2019

6AM

Time (Hours)

9AM

Trilobite Testing, Inc

Ref. No: 65823

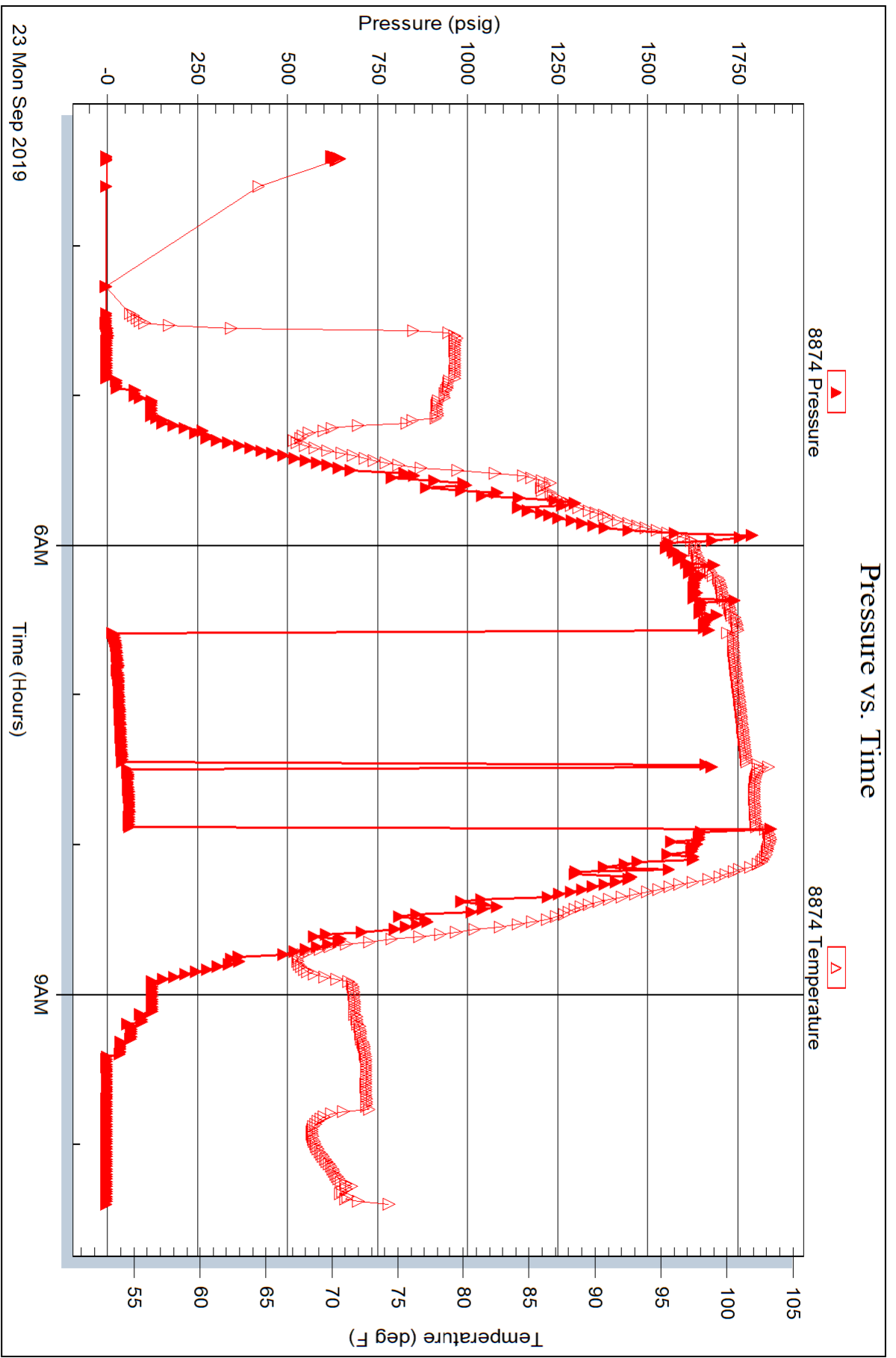
Printed: 2019.09.23 @ 11:16:44

Serial #: 8874

Outside Darrah Oil Company

Birback-Keller Unit

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 65823

Printed: 2019.09.23 @ 11:16:44



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Darrah Oil Company

2-21s-14w

125 N Market Suite 1425 Wichita KS 67202+1425

Birback-Keller Unit

ATTN: Seth Evenson

Job Ticket: 65824

DST#: 2

Test Start: 2019.09.23 @ 17:46:00

GENERAL INFORMATION:

Formation: **Viola-Simpson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:43:00

Time Test Ended: 23:40:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

Interval: 3550.00 ft (KB) To 3610.00 ft (KB) (TVD)

Reference Elevations: 1924.00 ft (KB)

Total Depth: 3610.00 ft (KB) (TVD)

1919.00 ft (CF)

Hole Diameter: 6.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6666 Inside

Press@RunDepth: 35.01 psig @ 3551.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.09.23

End Date: 2019.09.23

Last Calib.: 2019.09.23

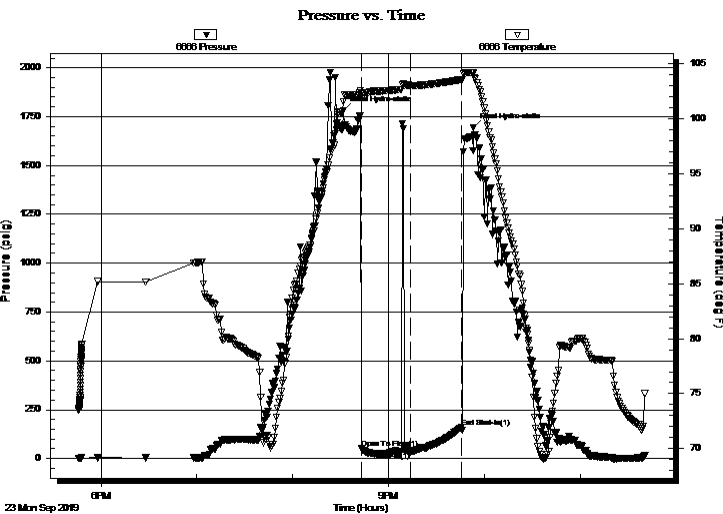
Start Time: 17:46:01

End Time: 23:40:00

Time On Btm: 2019.09.23 @ 20:31:45

Time Off Btm: 2019.09.23 @ 21:53:00

TEST COMMENT: IF-30- weak surface blow that died 4 mins into the flow
ISI-30- no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1782.08	101.58	Initial Hydro-static
12	50.66	102.29	Open To Flow (1)
42	35.01	103.02	Shut-In(1)
74	159.13	103.56	End Shut-In(1)
82	1694.79	104.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud 100%M	0.01

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Darrah Oil Company

2-21s-14w

125 N Market Suite 1425 Wichita KS 67202+1425

Birback-Keller Unit

ATTN: Seth Evenson

Job Ticket: 65824

DST#: 2

Test Start: 2019.09.23 @ 17:46:00

GENERAL INFORMATION:

Formation: **Viola-Simpson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:43:00

Time Test Ended: 23:40:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

Interval: **3550.00 ft (KB) To 3610.00 ft (KB) (TVD)**

Reference Elevations: 1924.00 ft (KB)

Total Depth: 3610.00 ft (KB) (TVD)

1919.00 ft (CF)

Hole Diameter: 6.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8874 Outside

Press@RunDepth: psig @ 3551.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.09.23 End Date: 2019.09.23

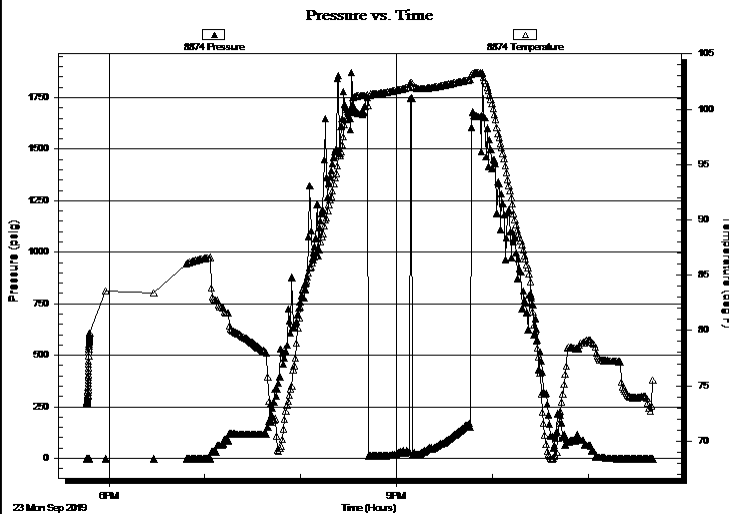
Last Calib.: 2019.09.23

Start Time: 17:46:01 End Time: 23:40:06

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-30- weak surface blow that died 4 mins into the flow
ISI-30- no blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud 100%M	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Darrah Oil Company

2-21s-14w

125 N Market Suite 1425 Wichita KS 67202+1425

Birback-Keller Unit

Job Ticket: 65824

DST#: 2

ATTN: Seth Evenson

Test Start: 2019.09.23 @ 17:46:00

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: 48.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
2.00	Mud 100%M	0.008

Total Length: 2.00 ft Total Volume: 0.008 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

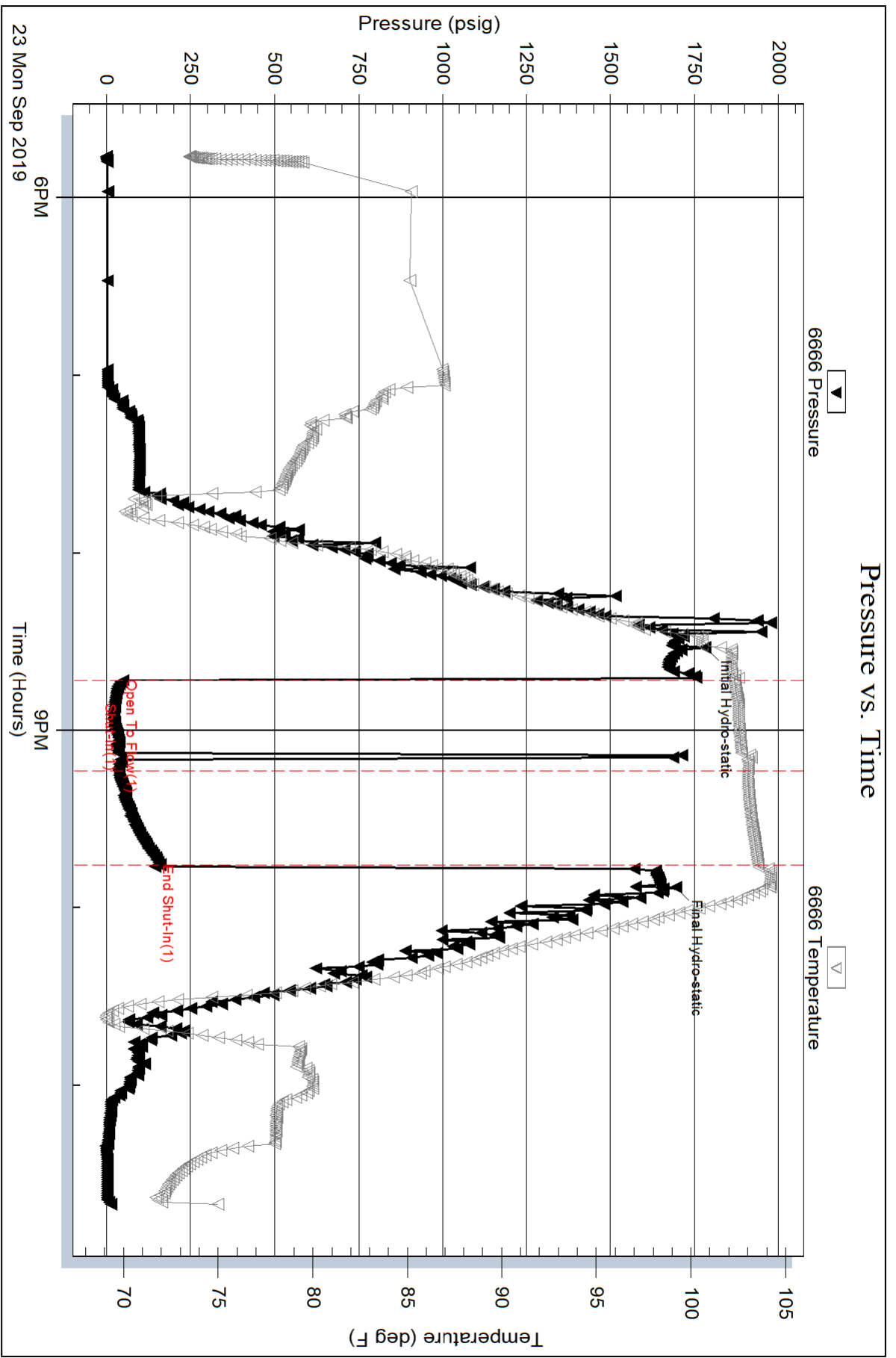
Serial #: 6666

Inside

Darrah Oil Company

Birback-Keller Unit

DST Test Number: 2

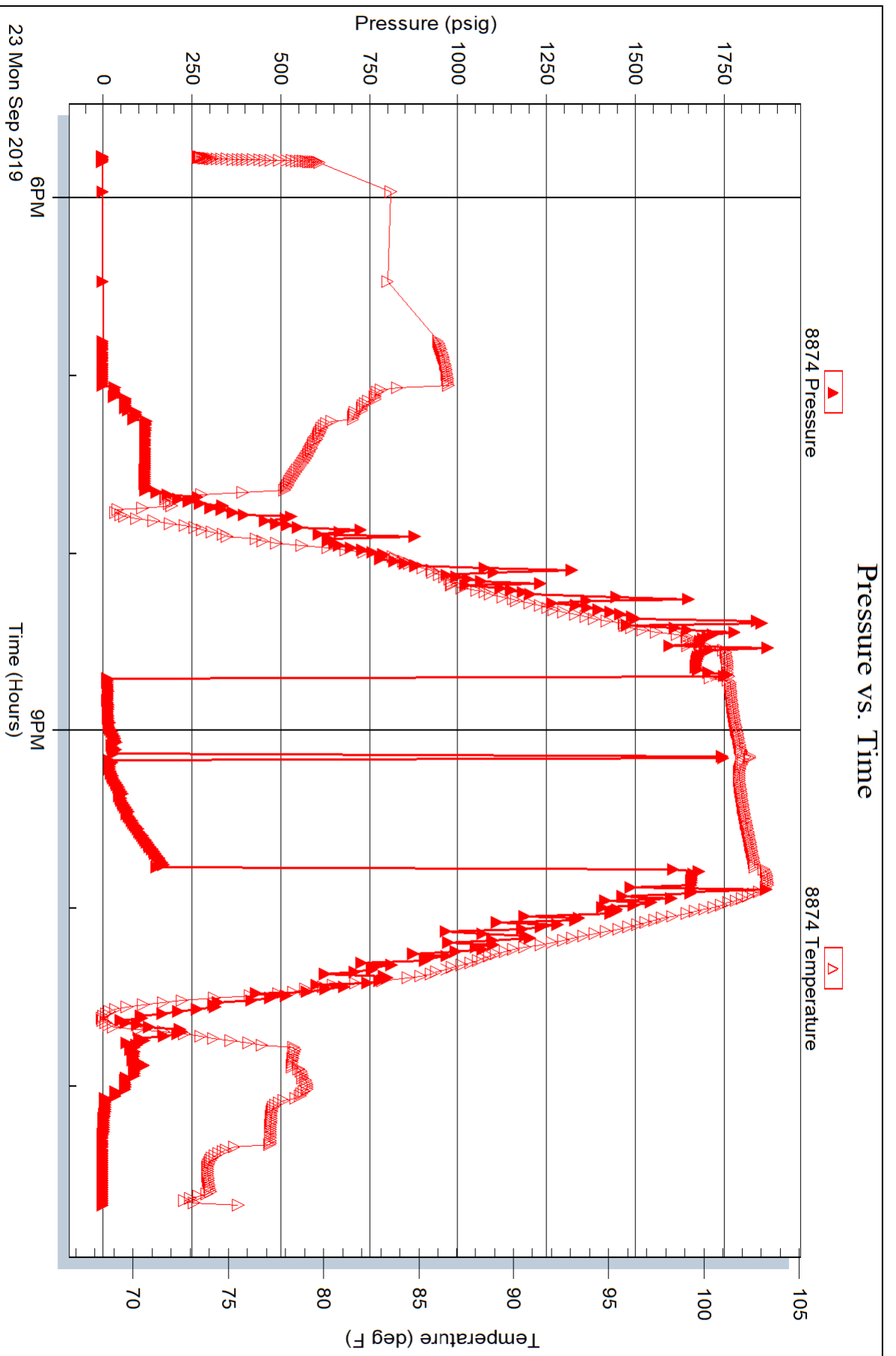


Serial #: 8874

Outside Darrah Oil Company

Birback-Keller Unit

DST Test Number: 2





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Darrah Oil Company

2-21s-14w

125 N Market Suite 1425 Wichita KS 67202+1425

Birback-Keller Unit

ATTN: Seth Evenson

Job Ticket: 65825

DST#: 3

Test Start: 2019.09.24 @ 06:13:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:26:00

Time Test Ended: 13:42:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

Interval: **3550.00 ft (KB) To 3640.00 ft (KB) (TVD)**

Reference Elevations: 1924.00 ft (KB)

Total Depth: 3640.00 ft (KB) (TVD)

1919.00 ft (CF)

Hole Diameter: 6.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6666 Inside

Press@RunDepth: 710.93 psig @ 3551.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.09.24

End Date:

2019.09.24

Last Calib.: 2019.09.24

Start Time: 06:13:01

End Time:

13:42:15

Time On Btm: 2019.09.24 @ 08:18:15

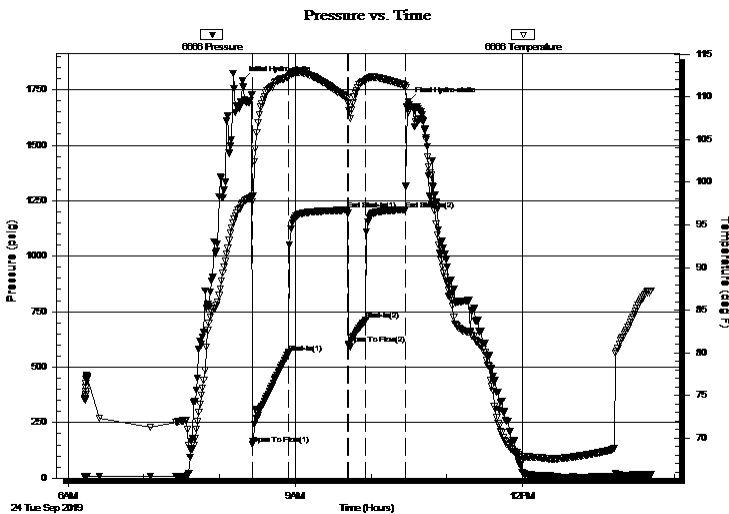
Time Off Btm: 2019.09.24 @ 10:29:45

TEST COMMENT: IF-30- BOB 1min 45secs total build of 172"

ISI-45- 1/4" blow back

FF-15- BOB 2mins total build of 70"

FIS-30- weak surface blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1789.46	97.49	Initial Hydro-static
8	152.53	97.73	Open To Flow (1)
37	565.56	112.34	Shut-In(1)
83	1208.07	109.88	End Shut-In(1)
84	604.50	109.21	Open To Flow (2)
98	710.93	111.87	Shut-In(2)
129	1207.51	111.32	End Shut-In(2)
132	1696.90	108.34	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
240.00	GMCO 10%G 10%M 80%O	0.93
1472.00	GCO 20%G 80%O	14.64

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Darrah Oil Company

2-21s-14w

125 N Market Suite 1425 Wichita KS 67202+1425

Birback-Keller Unit

Job Ticket: 65825

DST#: 3

ATTN: Seth Evenson

Test Start: 2019.09.24 @ 06:13:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

37 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
240.00	GMCO 10%G 10%M 80%O	0.933
1472.00	GCO 20%G 80%O	14.643

Total Length: 1712.00 ft Total Volume: 15.576 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6666

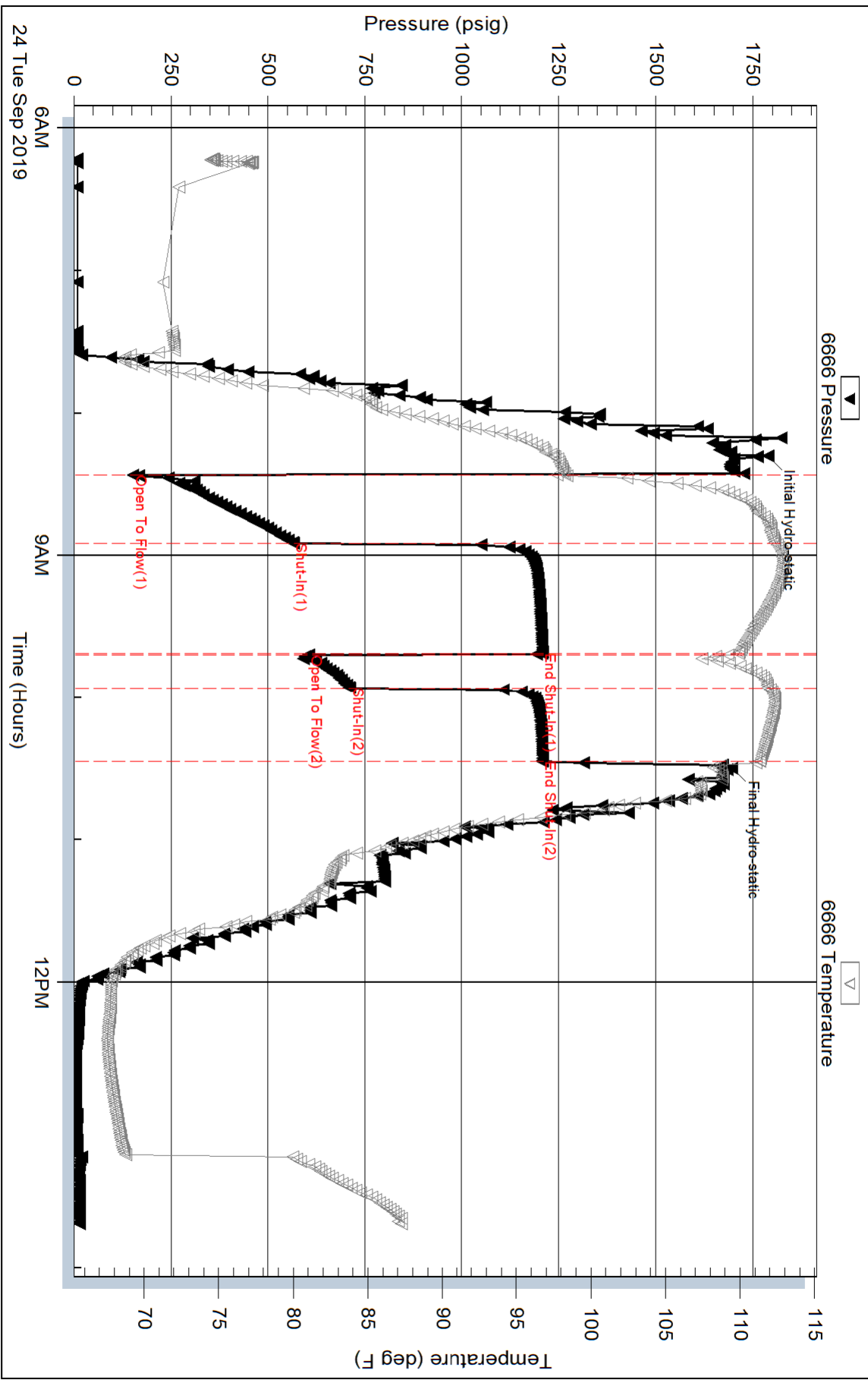
Inside

Darrah Oil Company

Birback-Keller Unit

DST Test Number: 3

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 65825

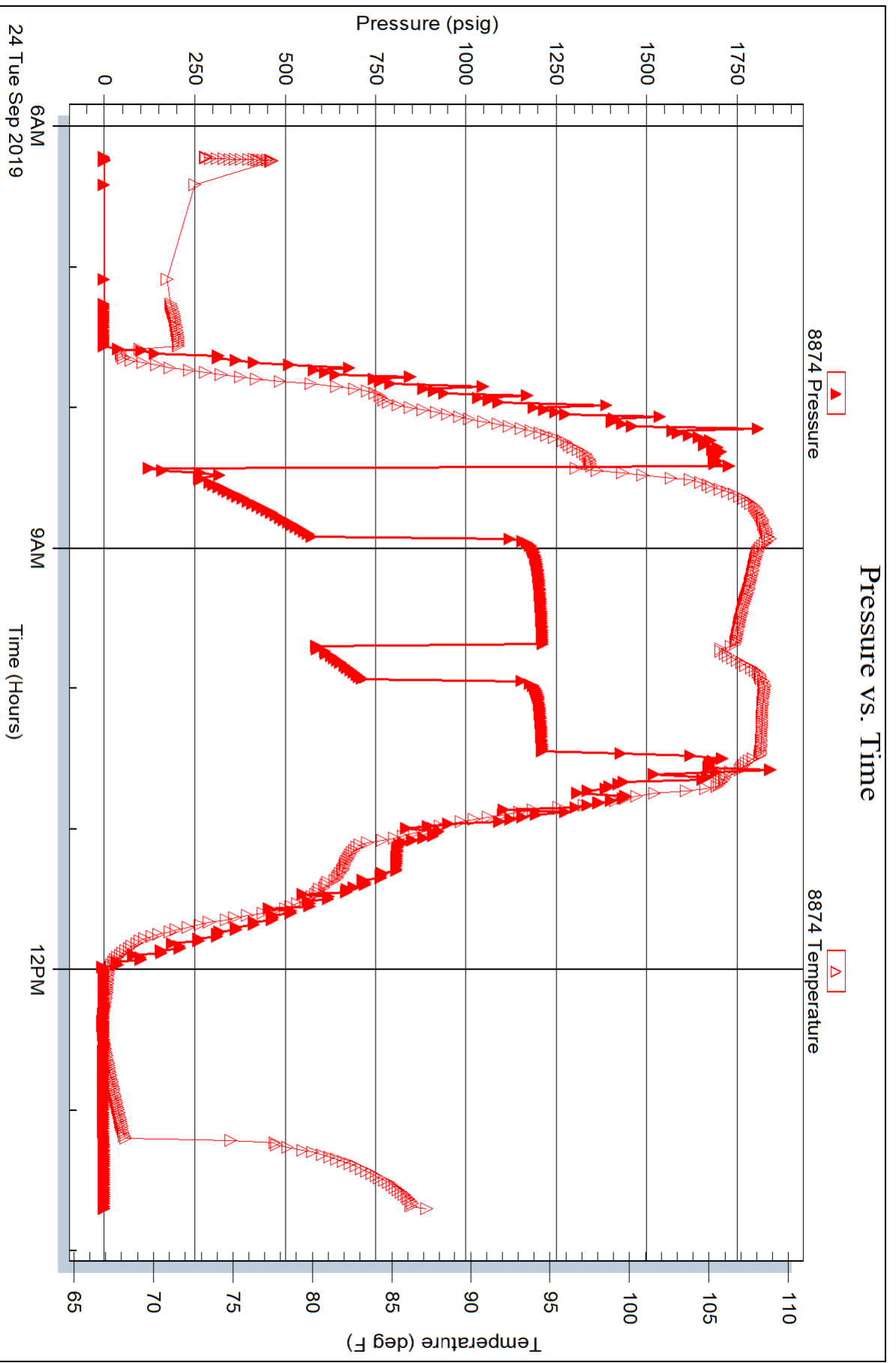
Printed: 2019.09.24 @ 14:20:18

Serial #: 8874

Outside Darrah Oil Company

Birback-Keller Unit

DST Test Number: 3



2800'

Shale grey, waxy, some sandy shale & a few pcs sandstone SS, very fine & pebbles, etc., etc.

Silty shale, grey & dark grey, soft. Much lms, thin, often with mud cracks, etc.

50

Shale grey, platy soft some waxy

Top of 2858'

Shale, grey platy, some thin. The grey lms, often with thin red, etc., etc., no vis.

2900'

Lms, grey, light grey, some clay, often thin, waxy, etc., etc., some grey, etc. Shaly, no vis. etc., etc.

Lms, grey, light grey, often with waxy, etc., etc., some clay, etc., etc. A few thin lms, etc., etc.

Shale grey platy. A few thin shaly lms, etc., etc.

50

Lms, light grey, tan, often thin, waxy, etc., etc., some thin, etc., etc. etc., etc., etc., etc., etc.

Lms, light grey, tan, often thin, waxy, etc., etc., no vis., etc., etc., etc., etc., etc.

3000'

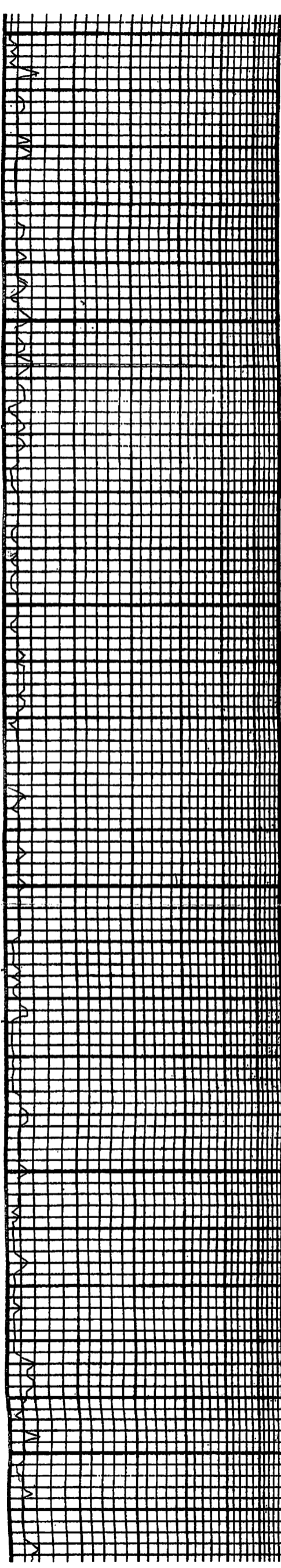
Lms, tan, etc., etc., waxy, etc., etc., some thin, etc., etc. etc., etc., etc., etc., etc.

Rath, lms, light grey, tan, etc., etc., thin, waxy, etc., etc., etc., etc., etc. much mud cracks, etc., etc.

Lms, light grey, tan, soft, etc., etc., silty, etc., etc., etc., etc., etc. etc., etc., etc., etc., etc.

50

Rath, lms, light grey, tan, etc., etc., thin, waxy, etc., etc., etc., etc., etc. etc., etc., etc., etc., etc.



50

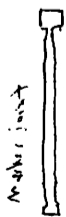
3100'

50

3200'

50

3300'



Light grey to white, fine grained, some very fine grained, some very fine grained. Trc blk carb shale.

Long, grey to white, thin, med res, also much off white, very, chlk. All no vis x

Long, grey to white, thin, med res, also much off white, very, chlk. Some blk carb shale, some blk carb shale.

Long tan - lt grey, v. fine x thin, med res, few no vis, all chlk, up to 20 vis x. A few per blk carb shale.

Long, grey, micro- to fine x thin, med res, some blk carb shale, some blk carb shale, some blk carb shale. Some blk carb shale, blk carb shale.

Long, cream to tan, v. fine x thin, med res, some blk carb, up to 20 vis x. Some blk carb shale, blk carb shale.

Long, grey - cream, v. fine x thin, med res, non-alkaline, no vis x. Increase in grey shale.

Long, grey to cream, v. fine x thin, med res, non-alkaline, no vis x. A few per blk carb shale.

Long, cream to grey, v. fine x thin, med res, non-alkaline, no vis x. Some blk carb shale, blk carb shale.

Long, grey, v. fine x thin, med res, non-alkaline, no vis x. Some shale blk carb shale, blk carb.

Long, grey - cream, v. fine x thin, med res, blk carb shale, blk carb shale, blk carb shale.

Shale, grey to brown, med res, blk carb shale, blk carb shale. Mostly fine, grey, micro- to fine x thin, med res, non-alkaline, no vis x.

Shale, grey, platy, med res, blk carb shale, blk carb shale. Some blk carb shale, blk carb shale. Some blk carb shale, blk carb shale. Some blk carb shale, blk carb shale.

Long, cream to tan, v. fine x thin, med res, no vis x. Some blk carb shale, blk carb shale. A few per blk carb shale, blk carb shale.

Long, cream to tan, v. fine x thin, med res, no vis x. Some blk carb shale, blk carb shale. Some blk carb shale, blk carb shale. Some blk carb shale, blk carb shale.

Shale, mostly, med res, blk carb shale, blk carb shale. Mostly, med res, blk carb shale, blk carb shale. Mostly, med res, blk carb shale, blk carb shale.

Shale, mostly, med res, blk carb shale, blk carb shale. Mostly, med res, blk carb shale, blk carb shale. Mostly, med res, blk carb shale, blk carb shale.

Shale, grey, some blk carb shale, blk carb shale. A few blk carb shale, blk carb shale. A few blk carb shale, blk carb shale.

Silt grey, med res, blk carb shale, blk carb shale. Silt grey, med res, blk carb shale, blk carb shale. Silt grey, med res, blk carb shale, blk carb shale.

Shale, grey, platy, med res, blk carb shale, blk carb shale. Shale, grey, platy, med res, blk carb shale, blk carb shale. Shale, grey, platy, med res, blk carb shale, blk carb shale.

Area 211

Area 3224

3000

Shale, grey, ...

Shale, grey, ...

Shale, grey, ...

Shale, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Lens, grey, ...

Shale, ...

Shale, ...

Shale, ...

50

CFS

3400'

50

CFS

CFS 3500'

CFS 50

Zone 3344

Gr. ch, SSFO, ...

3343 CFS 15 ...

3343 CFS 30 ...

Zone 3420

Zone 3442 (-1538)

Showdown I zone

Some ...

Some ...

A ...

A ...

Partially ...

Arc yellow ...



TEMPERATURE LOG

Company Darrah Oil Company, LLC		Well Birbeck-Keller Unit #1		Field Taylor Northeast		County Stafford		State KS	
Company Darrah Oil Company, LLC		Well Birbeck-Keller Unit #1		Field Taylor Northeast		County Stafford		State KS	
Location:		SEC 2 TWP 21S RGE 14W		API #: 15 185 24058		Other Services			
Permanent Datum		Ground Level		Elevation		1919'		Elevation	
Log Measured From		KB, 5' AGL						K.B. 1924'	
Drilling Measured From		KB						D.F. 1923'	
								G.L. 1919'	

Date	09-26-19	
Run Number	One	
Depth Driller	3460'	
Depth Logger	N/A	
Bottom Logged Interval	2250'	
Top Log Interval	0'	
Open Hole Size	6 3/4"	
Type Fluid	Water	
Density / Viscosity	///	
Max. Recorded Temp.	98.4 DegF	
Estimated Cement Top	1310'	
Time Well Ready	R.O.A	
Time Logger on Bottom	10:00 a.m	
Equipment Number	T-968	
Location	Hays, KS	
Recorded By	Casey P.	
Witnessed By	Mr.	

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record							
Surface String		7"		WdUFI		Top	Bottom
Prot. String						0'	1770'
Production String		4 1/2"				0'	N/A
Liner							

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Great Bend, KS South 8 mi. (1mi past barton/stafford county line) to 200TH St.,
Then West for 4.5 mi. on 200TH St., North into Location

Thanks for using Gemini Wireline LLC
785-625-1182

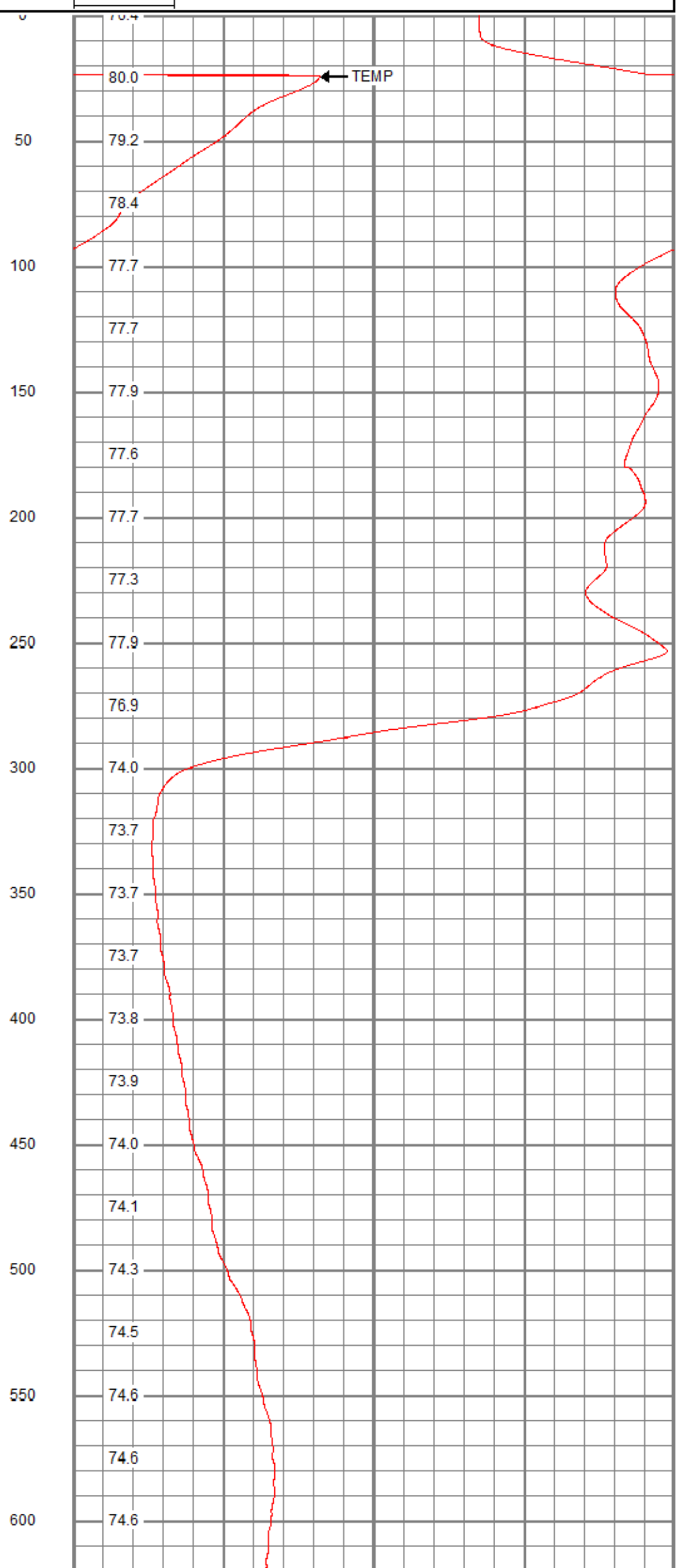
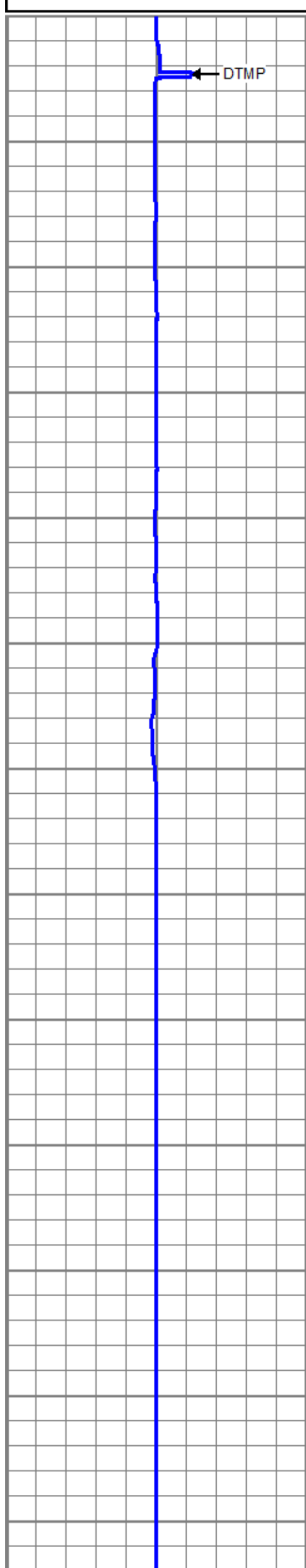


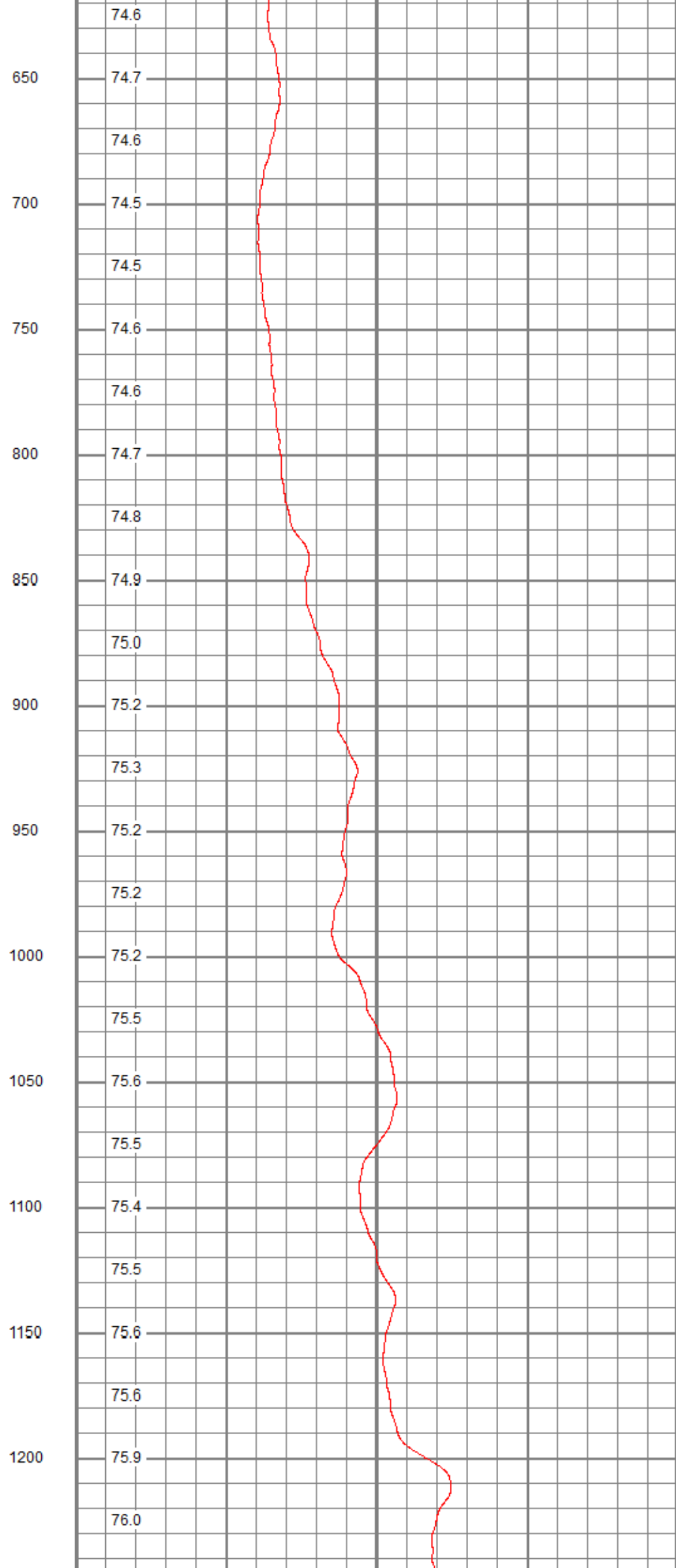
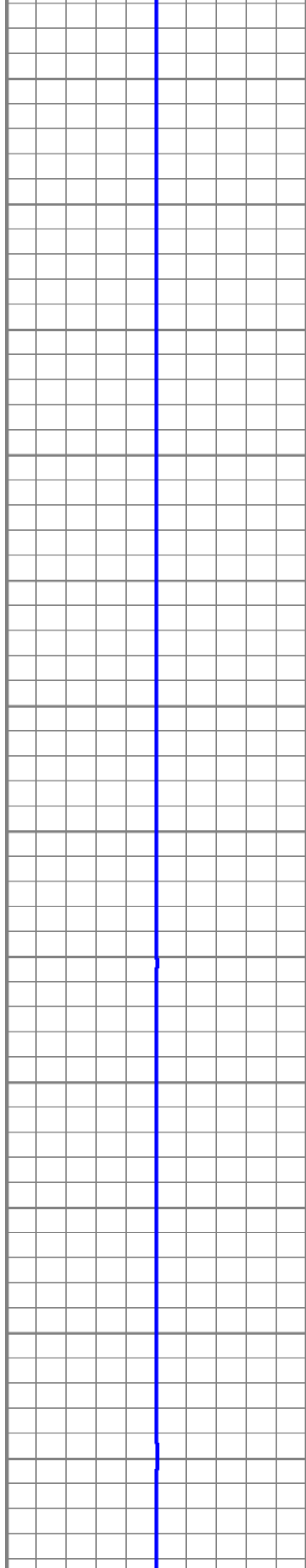
MAIN PASS

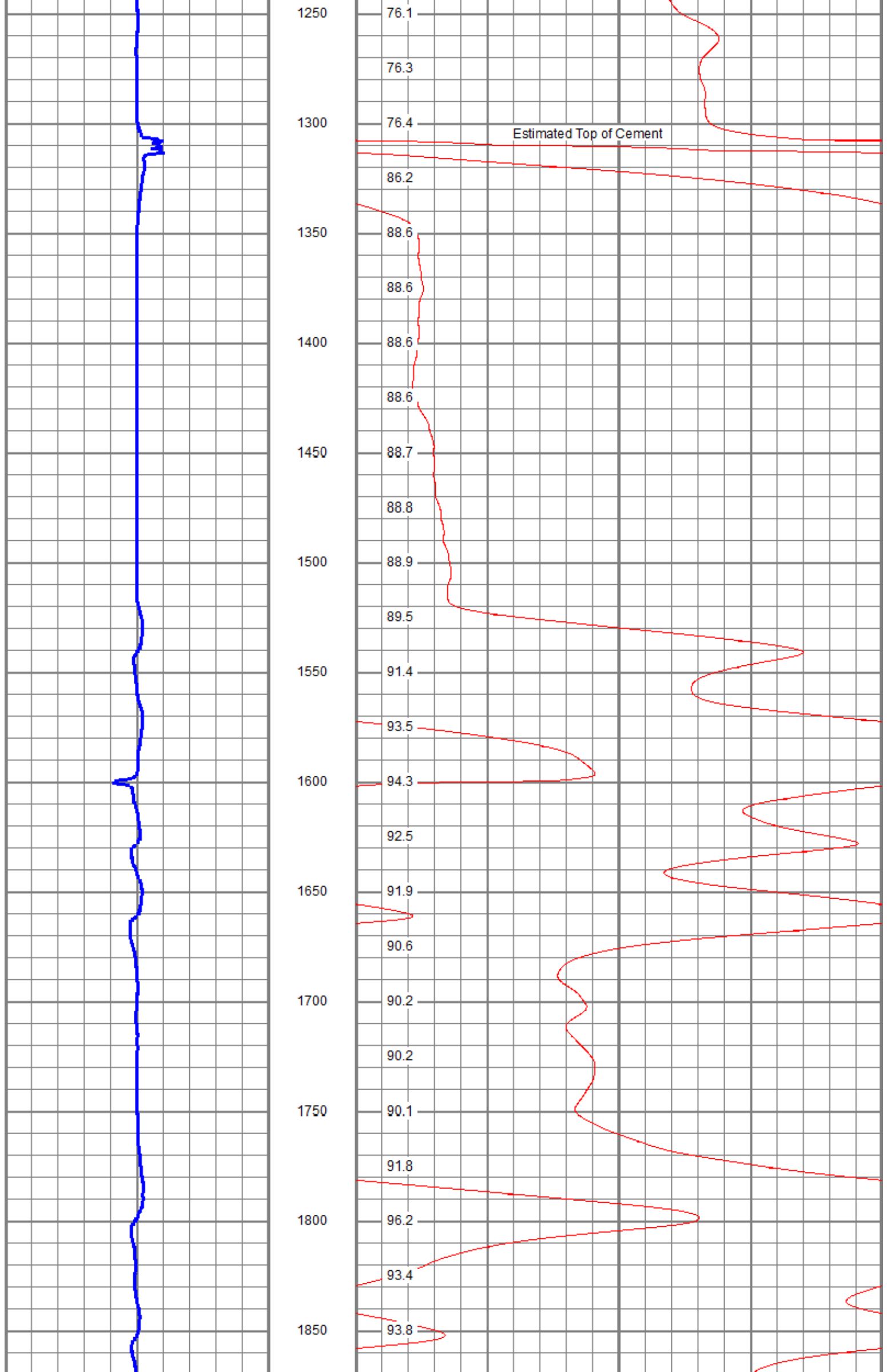
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 Dataset Pathname pass2
 Presentation Format temp
 Dataset Creation Thu Sep 26 09:05:09 2019
 Charted by Depth in Feet scaled 1:600

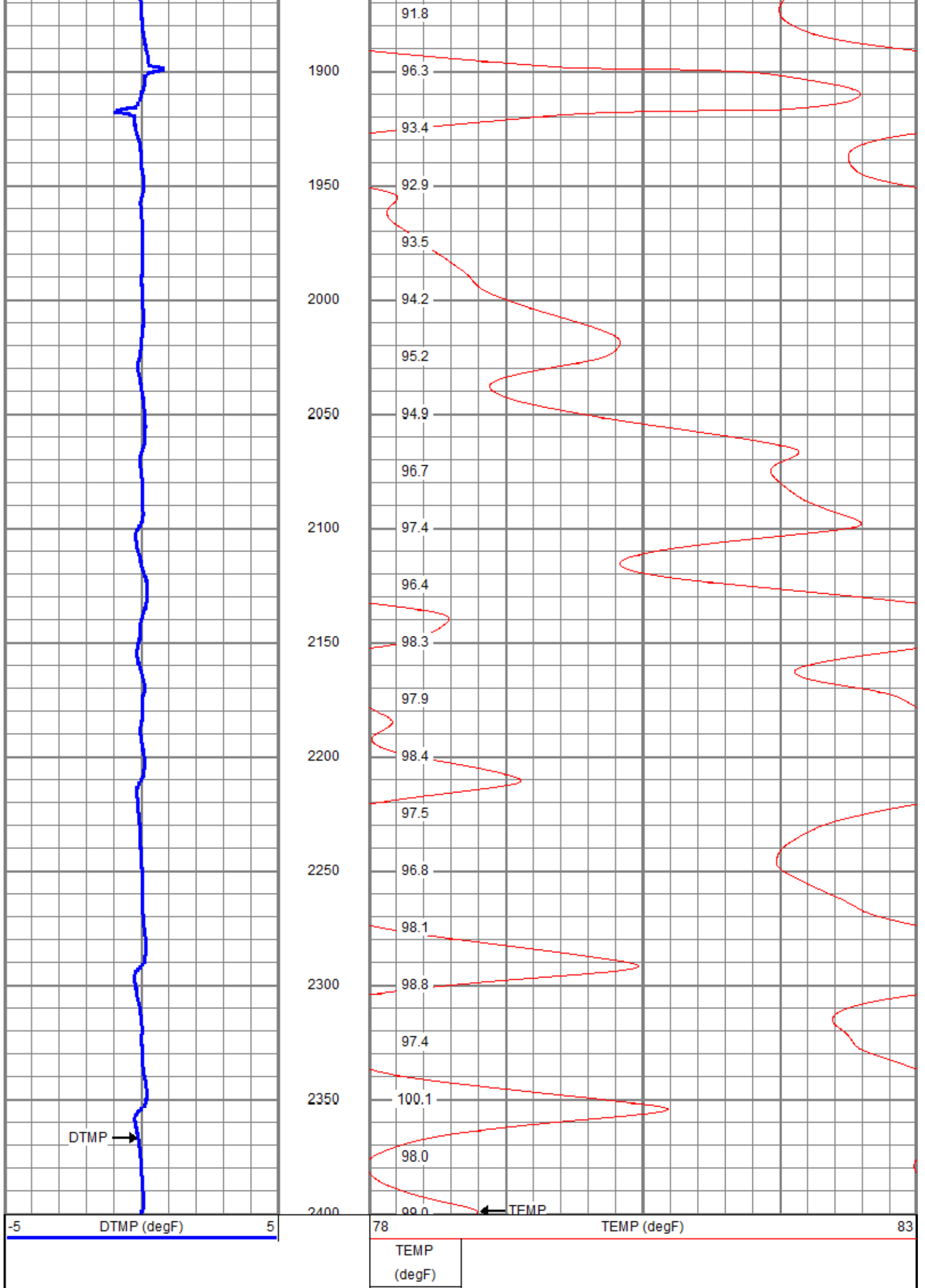
-5	DTMP (degF)	5	78	TEMP (degF)	83
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TEMP
(degF)









Calibration Report

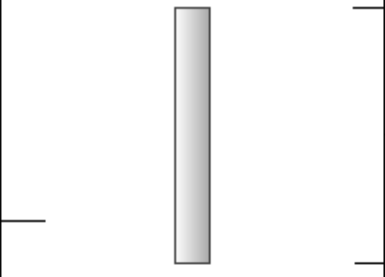
Database File dobirbeck-kellerunit#1temp.db
 Dataset Pathname pass2
 Dataset Creation Thu Sep 26 09:05:09 2019

Temperature Calibration Report

Serial Number: 1
 Tool Model: C
 Performed: Fri Jul 31 16:24:47 2015

	Reference	Reading
Low Reference:	56.00 degF	590.26 cps
High Reference:	163.00 degF	1683.31 cps

Gain: 0.11
 Offset: -1.78
 Delta Spacing: 2

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
TEMP	0.20		TEMP-C (1)	1.25	1.83	2.00

Dataset: dobirbeck-kellerunit#1temp.db: field/well/run1/pass2
 Total length: 1.25 ft
 Total weight: 2.00 lb
 O.D.: 1.83 in