

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
--	---

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
---	---	------------------------------------

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:	
----------------	-------	---------	------------	--

Form	ACO1 - Well Completion
Operator	Shakespeare Oil Co., Inc.
Well Name	OTTLEY 4-28
Doc ID	1471773

Tops

Name	Top	Datum
Base Anhydrite	2109	+564
Heebner	3606	-933
Lansing	3644	-971
Muncie Creek	3803	-1130
Stark Shale	3903	-1230
Hushpuckney	3939	-1266
Marmaton	4041	-1368
Pawnee	4111	-1438
L. Cherokee Shale	4195	-1522
Johnson	4238	-1565
Mississippian	4310	-1637

Form	ACO1 - Well Completion
Operator	Shakespeare Oil Co., Inc.
Well Name	OTTLEY 4-28
Doc ID	1471773

Perforations

Shots Per Foot	Perforation Top	Perforation Bottom	BridgePlugType	BridgePlugSet At	Material Record
4	4305	4309			250 gal 7.5% MCA
4	4298	4302			250 gal 7.5% MCA
4	4256	4260			250 gal 15% NeFE, 750 gal 15% NeFE
4	4242	4244			250 gal 15% NeFE, 750 gal 15% NeFE
4	4156	4160			250 gal NeFE
4	4120	4124			250 gal 15% NeFE
4	4016	4018			250 gal 15% NeFE
4	4043	4048			250 gal 15% NeFE
4	3876	3890			
4	3856	3861			250 gal 15% MCA
4	3820	3826			250 gal 15% MCA

SWIFT



Services, Inc.

P. O. Box 466
Ness City, KS 67560
Off: 785-798-2300



Invoice

DATE	INVOICE #
6/20/2019	27569

BILL TO
Shakespeare Oil Company, Inc 202 West Main Street Salem, IL 62881

- Acidizing
- Cement
- Tool Rental

INT

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#4-28	Ottley	Logan	Duke Drilling Rig ...	Oil	Development	Shallow Surface	David E
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				80	Miles	5.00	400.00
576D-S	Pump Charge - Shallow Surface (< 500 Ft.)				1	Job	925.00	925.00
290	D-Air				2	Gallon(s)	42.00	84.00T
325	Standard Cement				170	Sacks	13.50	2,295.00T
279	Bentonite Gel				3	Sack(s)	30.00	90.00T
278	Calcium Chloride				8	Sack(s)	40.00	320.00T
276	Flocele				42	Lb(s)	3.00	126.00T
581D	Service Charge Cement				170	Sacks	1.85	314.50
583D	Drayage				673	Ton Miles	0.95	639.35
	Subtotal							5,193.85
	Sales Tax Logan County						8.00%	233.20

RECEIVED

JUN 25 2019

502-5
DH

We Appreciate Your Business!

Total

\$5,427.05

DW

JOB LOG

SWIFT Services, Inc.

DATE 6-20-19 PAGE NO. 2

CUSTOMER Shakespeare WELL NO. 4-28 LEASE Otley JOB TYPE Shallow Surface TICKET NO. 27569

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	2000							On location
								TD - 255 Pipe - 2666 34
	0035							Break Circ
	0040	4	5			100		Pump w/te spacer
		4	41			100		pump cmt - 170 sks @ 14.2 rpm
		4	15.75			300		Disp
	100'					300		Shut in
								Top Complete
								Circ 35 sks cmt to pit
								THANKS
								DAVID ZAED & Kirby



P. O. Box 466
Ness City, KS 67560
Off: 785-798-2300



Invoice

DATE	INVOICE #
7/2/2019	27573

BILL TO
Shakespeare Oil Company, Inc 202 West Main Street Salem, IL 62881

- Acidizing
- Cement
- Tool Rental

INT

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#4-28	Ottley	Logan	Duke Drlg Rig #4	Oil	Development	Long String	David E
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				80	Miles	5.00	400.00
578D-L	Pump Charge - Long String				1	Job	1,400.00	1,400.00
290	D-Air				2	Gallon(s)	42.00	84.00T
221	Liquid KCL (Clayfix)				2	Gallon(s)	25.00	50.00
280	Flocheck 21				500	Gallon(s)	3.50	1,750.00T
419-4	4 1/2" Rotating Head Rental				1	Each	250.00	250.00T
325	Standard Cement				225	Sacks	13.50	3,037.50T
284	Calseal				11	Sack(s)	40.00	440.00T
283	Salt				1,200	Lb(s)	0.25	300.00T
292	Halad 322				200	Lb(s)	8.50	1,700.00T
277	Gilsonite (Coal Seal)				1,125	Lb(s)	1.25	1,406.25T
276	Flocele				30	Lb(s)	3.00	90.00T
581D	Service Charge Cement				225	Sacks	1.85	416.25
583D	Drayage				992	Ton Miles	0.95	942.40
	Subtotal							12,266.40
	Sales Tax Logan County						8.00%	724.62

RECEIVED

JUL 05 2019



*302-5
QH*

We Appreciate Your Business!

Total

\$12,991.02

DW



Services, Inc.

TICKET 27573

CHARGE TO: Shakespeare Q1
 ADDRESS _____
 CITY, STATE, ZIP CODE _____

PAGE 1 OF 1

SERVICE LOCATIONS
 1. Hays KS WELLS/PROJECT NO. 4-28 LEASE OHLEY COUNTY/PARISH Logan STATE KS DATE 7-2-19 OWNER _____
 2. Ness City KS WELLS/PROJECT NO. _____ LEASE _____ COUNTY/PARISH _____ STATE _____ DATE _____ OWNER _____
 3. _____ WELLS/PROJECT NO. _____ LEASE _____ COUNTY/PARISH _____ STATE _____ DATE _____ OWNER _____
 4. _____ WELLS/PROJECT NO. _____ LEASE _____ COUNTY/PARISH _____ STATE _____ DATE _____ OWNER _____

TICKET TYPE SERVICE SALES CONTRACTOR Date Drilling RIG NAME/NO. Log # 4 SHIPPED W/IG DELIVERED TO BRATTEN ORDER NO. _____
 WELLS TYPE Oil WELLS CATEGORY development JOB PURPOSE Long String WELLS PERMIT NO. _____ WELLS LOCATION _____

INVOICE INSTRUCTIONS _____

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	MILEAGE	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
		LOC	ACCT	DF								
575					MILEAGE TR # 111	80	Mi				5.00	400.00
578					Pump Charge - Long String	1	EA				1400.00	1400.00
290					A-Air	2	EA				42.00	84.00
221					Lewis Val	2	EA				25.00	50.00
280					Flocheck 21	500	EA				3.50	1750.00
419					Rotating Head Rental	1	EA				250.00	250.00

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

DATE SIGNED _____ TIME SIGNED _____ A.M. P.M.

SWIFT OPERATOR David Eckert APPROVAL _____

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES (The customer hereby acknowledges receipt of the materials and services listed on this ticket)

REMIT PAYMENT TO:
 SWIFT SERVICES, INC.
 P.O. BOX 466
 NESS CITY, KS 67560
 785-798-2300

SURVEY

OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?	AGREE	UN-DECIDED	DIS-AGREE	Page 1
WE UNDERSTOOD AND MET YOUR NEEDS?				Page 2
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				Total
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				Logan
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO		For 9/10
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				TOTAL

12991 02

Thank You!



PO Box 466
Ness City, KS 67560
OT: 785-798-2300

TICKET CONTINUATION

TICKET No. 27573

CUSTOMER: Shakespeare D.1
DATE: 7-2-19
PAGE 2 OF 3
WE: Ashley 4-28

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	QTY	U/M	QTY	U/M	UNIT PRICE	AMOUNT
		LOC	ACCT	DF								
325						STANDARD Cement	225	SKS			13.50	3037.50
284						CALSWAL	11	SKS			40.00	440.00
283						SALT	1000	lbs			8.50	300.00
292						HAYALD - 322	200	lbs			8.50	1700.00
277						(One Seal (Grisolite))	1125	lbs			1.25	1406.25
276						Flarele	30	lbs			3.00	90.00
581												
583												

SERVICE CHARGE: Cement 1.85
MILEAGE CHARGE: TOTAL 298.05
CUBIC FEET: 225 SKS
TON MILES: 992
1.85 416.25
95 942.40

CONTINUATION TOTAL 8332.10

JOB LOG

SWIFT Services, Inc.

DATE 7-2-19

PAGE NO.

CUSTOMER Shakespeare

WELL NO. 4-28

LEASE Otley

JOB TYPE Long String

TICKET NO. 27573

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1800							On location
								Csg - 4 1/2 x 10.5 # set @ 4385' Baffles @ 4437 Port Collar - 2138'
	1930							Break Circ on Bottom
	2030							Plug Rat Hole - 30 sks Cmt
		5	10			200		pump hcl spacer
		5	12			200		pump Flocheck - 500 GAL
		5	5			200		pump hcl spacer
	2245	5	46			200		pump Cmt - 195 sks @ 15.5 ppm
	2100							Drop plug - Wash P&L
	2105	5.5						START Disp
	2120	5.5	70			900/1600		Load Plug - lift - 900 psi Cmt - 1600 psi
								Release Psi - Dry
								Job Complete
								Thanks Dwain Zach & Kirby

SWIFT



P. O. Box 466
Ness City, KS 67560
Off: 785-798-2300

Invoice

DATE	INVOICE #
7/5/2019	32233

BILL TO
Shakespeare Oil Company, Inc 202 West Main Street Salem, IL 62881

- Acidizing
- Cement
- Tool Rental

INT

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#4- ²⁸ 8	Ottley	Logan	Cheyenne	Oil	Development	Port Collar	Gideon

PRICE REF.	DESCRIPTION	QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way	85	Miles	5.00	425.00
576D-D	Pump Charge - Deep Surface (> 500 Ft.) & Port Collars	1	Job	1,400.00	1,400.00
330	Swift Multi-Density Standard (MIDCON II)	250	Sacks	17.00	4,250.00T
276	Flocele	75	Lb(s)	3.00	225.00T
290	D-Air	3	Gallon(s)	42.00	126.00T
581D	Service Charge Cement	300	Sacks	1.85	555.00
583D	Drayage	1,269	Ton Miles	0.95	1,205.55
	Subtotal				8,186.55
	Sales Tax Logan County			8.00%	368.08

RECEIVED
JUL 12 2019

*502-5
DH*

We Appreciate Your Business!	Total	\$8,554.63
-------------------------------------	--------------	------------

DW



CHARGE TO: Shakespeare Oil & Gas
 ADDRESS
 CITY, STATE, ZIP CODE

TICKET 032233

PAGE 1 OF 1

SERVICE LOCATIONS
 1. Ness City, KS WELL/PROJECT NO. 4-8 LEASE Ortley Otley COUNTY/PARISH Logan CITY Scott City DATE 7-5-2019 OWNER
 2. Cheyenne CONTRACTOR Cheyenne RIG NAME/NO. CT SHIPPED VIA CT DELIVERED TO Location ORDER NO.
 3. WELL TYPE Oil WELL CATEGORY Development JOB PURPOSE Port Collar WELL LOCATION Scott City, N-to Jayhawk
 4. Referral Location INVOICE INSTRUCTIONS Rd. W.S.W. - info

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING		DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT	
		LOC	ACCT								DF
575		1					85	mi	5.00	425.00	
576D		1					1	job	1400.00	1400.00	
330		1					250	sks	17.00	4250.00	
276		1					75	lbs	3.00	225.00	
290		1					3	gal	42.00	126.00	
581		1					300	sks	1.82	555.00	
583		1					1269	ITM	0.95	1205.55	
SURVEY <input type="checkbox"/> OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN? <input type="checkbox"/> WE UNDERSTOOD AND MET YOUR NEEDS? <input type="checkbox"/> OUR SERVICE WAS PERFORMED WITHOUT DELAY? <input type="checkbox"/> WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY? <input type="checkbox"/> ARE YOU SATISFIED WITH OUR SERVICE?										DISAGREE <input type="checkbox"/> UNDECIDED <input type="checkbox"/> AGREE	PAGE TOTAL 1 8186.55

REMIT PAYMENT TO:
 SWIFT SERVICES, INC.
 P.O. BOX 466
 NESS CITY, KS 67560
 785-798-2300

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS.
 X

DATE SIGNED 7-6-2019 TIME SIGNED 2:00 A.M. P.M.

DATE SIGNED 8-0-10 TIME SIGNED 3:08 A.M. P.M.

TOTAL 8554.63

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

SWIFT OPERATOR Audrey Fuchs APPROVAL

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 7-5-2019 PAGE NO. 1

CUSTOMER		WELL NO.		LEASE		JOB TYPE		TICKET NO.	
Shakespeare Oil		4-8		Otley		Port Collar		032233	
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS	
				T	C	TUBING	CASING		
	1100							On Location 2 3/8" 4 1/2"	
								PC: 2096'	
	1220	1/2	1		✓	1000		P. Test BS to 1,000 *Hold*	
	1225							Open P.C	
	1230	3	4		✓	300		Injection Rate	
	1235	3 1/2	138		✓	450		Mix 250 sks of SMD 1/4" F10 @ 11.2 ppg *Circulate* 20 sks to the Pit	
	1315	3	7		✓	400		Displace CMT	
	1320							Close PC	
		0	0		✓	1,000		P Test BS to 1,000 *Hold*	
	1325							Run 5 Joints	
	1335	3	25		✓	400		Reverse Clean	
	1345							Wash up Trk #112	
	1415							Job Complete	
								250 sks of SMD 1/4" F10 used -20 sks to the Pit-	
								Thank You,	
								Gudean, Preston, Isaac	

Tim J. Lauer

Petroleum Geologist

Office 316.832.0530
Cell 316.253.1275

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY <u>Shakespeare Oil Company, Inc</u>	ELEVATIONS <u>KB 2673'</u>
LEASE <u># 4-28 Ottley</u>	DF <u> </u>
FIELD <u>APPX SE NE SW NW</u>	GL <u>2664'</u>
LOCATION <u>1800' FNL, 1277' FWL, NW/4</u>	Measurements Are All From <u>Kelly Bushing</u>
SEC <u>28</u> TWP <u>14S</u> RGE <u>32W</u>	CASING
COUNTY <u>Logan</u> STATE <u>Kansas</u>	CONDUCTOR <u> </u>
CONTRACTOR <u>Duke Drilling Rig #4</u>	SPUD <u>6-20-2019</u> COMP <u>7-2-2019</u>
RTD <u>4385'</u> LTD <u>4386'</u>	PRODUCTION <u>4-1/2" @ 4385'</u>
MUD UP <u>3395'</u> TYPE MUD <u>Chemical</u>	ELECTRICAL SURVEYS
SAMPLES SAVED FROM <u>3500' TO RTD</u>	From <u>DCPL, DIL, ML</u>
DRILLING TIME KEPT FROM <u>3450' TO RTD</u>	Engineer: <u>Justin Henrikson</u>
SAMPLES EXAMINED FROM <u>3500' TO RTD</u>	
GEOLOGICAL SUPERVISION FROM <u>3395' to RTD</u>	
GEOLOGIST ON WELL <u>Tim J. Lauer</u>	

FORMATION TOP	ELECTRIC LOG SAMPLE LOG
Base Anhydrite	2109 (+564) 2108 (+565)
Heebner	3606 (-933) 3606 (-933)
Lansing	3646 (-973) 3644 (-971)
Stark	3903 (-1230) 3904 (-1231)
Marmaton	4041 (-1368) 4041 (-1368)
Pawnee	4111 (-1438) 4111 (-1438)
L. Cherokee Shale	4194 (-1521) 4192 (-1519)
Johnson Zone	4233 (-1560) 4230 (-1563)
Mississippian	4310 (-1637) 4310 (-1637)
Total Depth	4385 (-1712) 4385 (-1712)

REMARKS Due to drill stem test results, and log evaluation, operator elected to run production casing to further test the location.

Respectfully submitted,

Tim J. Lauer
7/3/2019

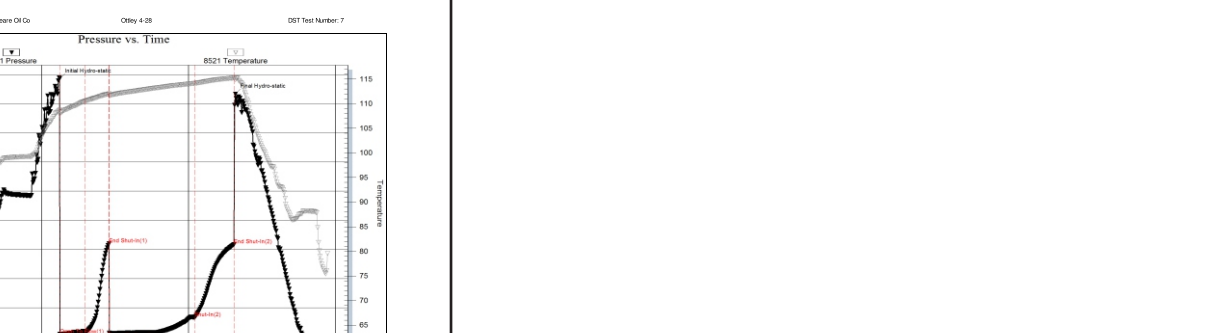
Lat: 38.810061191
Long: 100.887054520
NAD 83
API: 15-109-21,595-00-00

LEGEND

	Anhydrite		Sandstone		Limestone
	Shale		Carb Sh		Cherty LS
	Chert		Dolomite		

DEPTH	SAMPLE DESCRIPTION	REMARKS
2050		SPUD 5:30 PM 6-20-2019 RTD 12:05 AM 7-2-2019
2100	Anhy 2089 (+584)	"BIT RECORD" 1) Smith FHI24Y (New) Under Surface to 3103' 2) Smith FHI24Y (RR) 3103 to 4385' RTD
2150	B/Anhy 2108 (+565)	"VERTICAL SURVEYS" 0' @ 268' 3/4" @ 950' 3/4" @ 1447' 3/4" @ 2241' 3/4" @ 2839' 3/4" @ 3332' 3/4" @ 3695' 0' @ 4315' 0' @ 4385'
2160	B/Anhy (Drilr) 2123 (+550)	6-20-2019 - MIRT RURT Prep to set Surf Csg. 6-21-2019 - 7:00 AM PTD @ 266' WOC set 8-5/8" @ 266' 6-22-2019 - 7:00 AM Drig @ 1480' 6-23-2019 - 7:00 AM Drig @ 2500' 6-24-2019 - 7:00 AM Drig @ 3116' 6-25-2019 - 7:00 AM CFS @ 3660' 6-26-2019 - 7:00 AM Drig @ 3730' 6-27-2019 - 7:00 AM Drig @ 3880' 6-28-2019 - 7:00 AM Drig @ 4035' 6-29-2019 - 7:00 AM PTD @ 4110' GIH after DST(4) 6-30-2019 - 7:00 AM Drig @ 4220' 7-1-2019 - 7:00 AM PTD @ 4315' GIH to run DST(7) 7-2-2019 - 7:00 AM RTD @ 4385' Running Pioneer OH logs 7-3-2019 - 7:00 AM Ran 4 1/2" Prod. Csg. set at 4385' Port collar at 2180' Plug dn. 9:15 pm 7-2-2019
3450		Call Point 3300' 3:00 PM 6-24-2019 Geologist on location 3395' 8:00 PM 6-24-2019 Displace native fluid at 3395' Added Premix to bring mud up Rig Check at 3507' vis: 57 wt 8.8 Chlor: 2.8 LCM: 2#
3500	AA, NS, incr sh; drk gry, vcol, blk, gm-gry, some rd-bm (3520 sp)	Call Point 3300' 3:00 PM 6-24-2019 Geologist on location 3395' 8:00 PM 6-24-2019 Displace native fluid at 3395' Added Premix to bring mud up Rig Check at 3507' vis: 57 wt 8.8 LCM: 2#
3550	LS: most crm-mdk-dk gry, micro-fvln, some dns, pr por, NS, some tan, bm, bf, micro-mgdrln, foss, mealy-gran bt, sil, foss, most pr-occ fr IXLN por, some chalk, NS, n. flr, n. str, n. odor, spgs wash white	
3600	Heeb 3606 (-933)	
3650	Tor 3623 (-950)	
3700	Lans 3644 (-971)	
3750		25 Stand Short Trip Pulled 15-40K over on stands 2-6
3800	Mun. Crk 3823 (-1130)	
3850		Pipe Strap on DST (1) Board: 3702.46' Strap: 3702.46' Diff: 1.26' short
3900	Stark 3904 (-1231)	
3950		Mud Check at 3667' vis: 53 wt 8.9 Chlor: 1.800 LCM: 2# Ph: 11.0 WL: 7.2
4000	BKC 3997 (-1324)	
4050		DST (1) 3635'-3695' 30-30-30-60 Blow: weak, built to 2 1/2" on IFFP no blowback on SISF fair, built to 1 1/4" on FFP no blowback on FISIP
4100	Marm 4041 (-1368)	
4150		40' WCM with oil spots IHP: 1750 FFP: 25-31 ISIP: 586 FHP: 1683 Temp: 108°F Chlorides MUD: 2,000 PPM DST: NA (possible filtrate?) Gravity = NA *Note: Both Shut-in curves still building
4200	Myr 4143 (-1470)	
4250		Mud Check at 3765 before DST: vis: 54 wt 8.9 Chlor: 2,000 LCM: 1.5# Ph: 11.5 WL: 6.4
4300	Marm C 4083 (-1410)	
4350		DST (2) 3710'-3765' 30-30-45-90 Blow: fair, built to 2 1/2" on IFFP no blowback on SISF fair, built to 5 1/2" on FFP no blowback on FISIP
4400	Pawnee 4109 (-1436)	
4450		62' Oil Spd WCM (0% gas, 0% oil, 95% mud, 0% wtr) 124' Total Fluid IHP: 1783 FFP: 42-62 ISIP: 16-38 FHP: 583 Temp: 108°F Chlorides MUD: 2,000 PPM DST: 16,000 PPM Rw: 0.32 Ohms @ 88°F Gravity = NA *Note: Both Shut-in curves still building
4500	Johnson Zn 4236 (-1563)	
4550		Mud Check at 3830: vis: 45 wt 8.9 Chlor: 1.8 LCM: 1.5# Ph: 11.0 WL: 6.4
4600		DST (3) 3705'-3905' 30-30-45-60 Blow: fair, built to 10 3/4" on IFFP no blowback on SISF fair, built to 8 1/2" on FFP no blowback on FISIP
4650		216' SOCM (0% gas, 2% oil, 98% mud, 0% wtr) 124' SWOCM (0% gas, 0% oil, 97% mud, 1% wtr) 340' Total Fluid IHP: 1851 FFP: 97-150 ISIP: 23-81 FHP: 829 Temp: 108°F Chlorides MUD: 2,500 PPM DST: NA (possible filtrate?) Rw: NA *Note: Both Shut-in curves still building
4700		Mud Check at 3905 before DST (3): vis: 59 wt 9.0 Chlor: 2,150 LCM: 2# Ph: 11.5 WL: 6.3
4750		DST (4) 3985'-4110' 30-30-45-90 Blow: strong, both in 15 min, built to 24" no blowback on SISF strong, both in 15 min, built to 33" on FFP no blowback on FISIP
4800		108' OGCM (10% gas, 10% oil, 80% mud, 0% wtr) 172' MC GSY Oil (40% gas, 20% oil, 37% mud, 0% wtr) 62' Oil Spd WCM IHP: 2112 FFP: 115-135 ISIP: 70-68 FHP: 369 Temp: 115°F Chlorides MUD: 2,000 PPM DST: NA *Note: Both Shut-in curves still building
4850		Mud Check at 4027: vis: 49 wt 9.0 Chlor: 2,000 LCM: 1.5# Ph: 11.0 WL: 7.2
4900		DST (5) 4105'-4195' 30-30-30-60 Blow: weak, built to 3 1/4" on IFFP no blowback on SISF weak surf flow, died 15 min on FFP no blowback on FISIP
4950		30' SOCM (0% gas, 1% oil, 99% mud, 0% wtr) 62' Total Fluid IHP: 2112 FFP: 79-70 ISIP: 50-57 FHP: 369 Temp: 115°F Chlorides MUD: 3,000 PPM DST: NA *Note: Both Shut-in curves still building
5000		Mud Check at 4218: vis: 64 wt 9.0 Chlor: 1.8 LCM: 1# Ph: 11.0 WL: 8.0
5050		DST (6) 4190'-4280' 30-30-30-60 Blow: weak, built to 3 1/4" on IFFP no blowback on SISF weak surface blow thru-out FFP, no blowback on FISIP
5100		215' WCM IHP: 2158 FFP: 57-63 ISIP: 51-57 FHP: 2788 Temp: 115°F Chlorides MUD: 4,000 PPM DST: NA *Note: Initial Shut-in curve still bldg. Final Shut-in curve breaking over
5150		Rig Check at 4218: vis: 64 wt 9.0 Chlor: 1.8 LCM: 1# Ph: 11.0 WL: 8.0
5200		DST (7) 4270'-4315' 30-30-60-90 Blow: weak, built to 3 1/4" on IFFP no blowback on SISF weak surf flow, died 15 min on FFP weak 3 1/4" blowback on FISIP
5250		17' SOCM (0% gas, 5% oil, 95% mud, 0% wtr) 45' OGCM (10% gas, 20% oil, 70% mud, 0% wtr) 62' Total Fluid IHP: 2216 FFP: 33-166 ISIP: 800' FHP: 2082 Temp: 116°F Chlorides MUD: 4,000 PPM DST: NA *Note: Both Shut-in curves still bldg.
5300		Mud Check at 4315 during DST: vis: 62 wt 8.8 Chlor: 4,000 LCM: 2# Ph: 10.0 WL: 8.8
5350		Rot TD reached 12:05 AM 7-2-2019

COMPANY & WELL Shakespeare #4-28 Ottley ELEVATIONS KB 2673'
LOCATION 1800' FNL, 1277' FWL, NW/4 DF
SEC 28 TWP 14S RGE 32W GL 2664'
COUNTY Logan STATE Kansas





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 65234

DST#: 1

ATTN: Tim Lauer

Test Start: 2019.06.25 @ 18:14:17

GENERAL INFORMATION:

Formation: **Lansing A-B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:12:47

Time Test Ended: 01:20:17

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 79

Interval: **3635.00 ft (KB) To 3695.00 ft (KB) (TVD)**

Reference Elevations: 2673.00 ft (KB)

Total Depth: 3695.00 ft (KB) (TVD)

2664.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 9.00 ft

Serial #: 8166 Outside

Press@RunDepth: 31.74 psig @ 3636.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.06.25

End Date:

2019.06.26

Last Calib.:

2019.06.26

Start Time:

18:14:22

End Time:

01:20:16

Time On Btm:

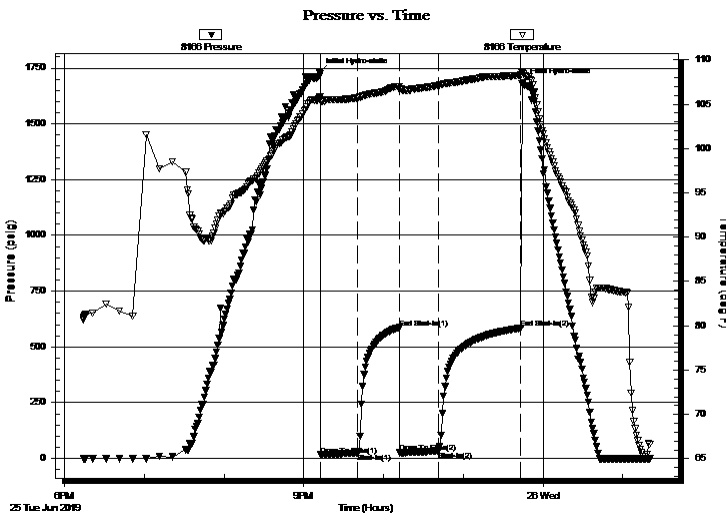
2019.06.25 @ 21:11:47

Time Off Btm:

2019.06.25 @ 23:45:17

TEST COMMENT: IF: 1/2 blow built to 2 1/2.
IS: No return.
FF: 1/2 blow built to 1 1/4.
FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1730.72	105.75	Initial Hydro-static
1	16.28	105.40	Open To Flow (1)
29	24.63	105.72	Shut-In(1)
60	586.88	107.02	End Shut-In(1)
61	25.48	106.62	Open To Flow (2)
90	31.74	107.10	Shut-In(2)
152	583.99	108.27	End Shut-In(2)
154	1683.55	108.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
40.00	w cm oil spots 5%w 95%m	0.56

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 65234

DST#: 1

ATTN: Tim Lauer

Test Start: 2019.06.25 @ 18:14:17

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.20 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
40.00	wcm oil spots 5%w 95%m	0.561

Total Length: 40.00 ft Total Volume: 0.561 bbl

Num Fluid Samples: 0

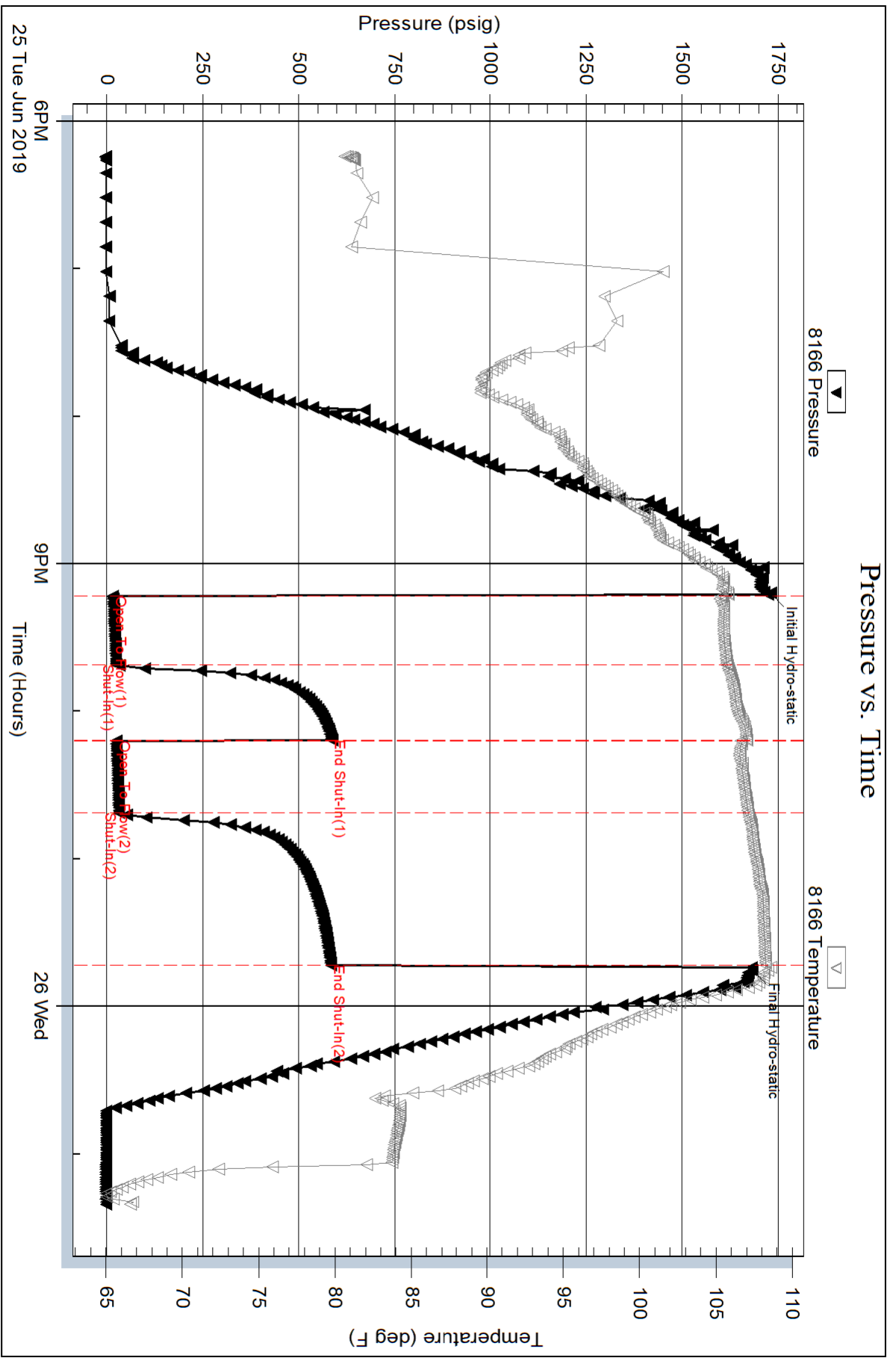
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



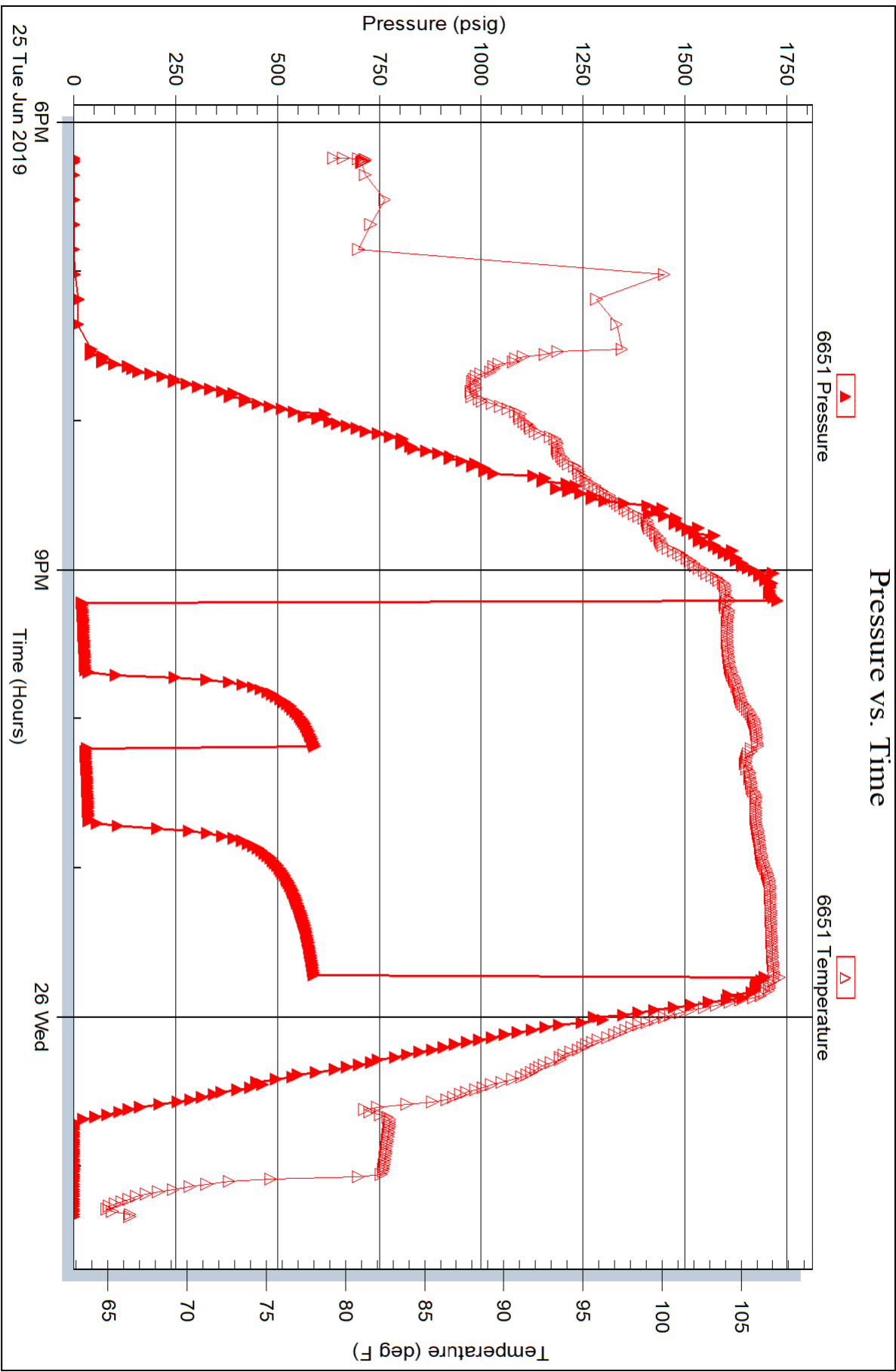
Serial #: 6651

Inside

Shakespeare Oil Co

Ottley 4-28

DST Test Number: 1





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 65235

DST#: 2

ATTN: Tim Lauer

Test Start: 2019.06.26 @ 12:59:36

GENERAL INFORMATION:

Formation: **Lansing C-F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:56:36

Time Test Ended: 20:32:06

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 79

Interval: 3710.00 ft (KB) To 3765.00 ft (KB) (TVD)

Reference Elevations: 2673.00 ft (KB)

Total Depth: 3765.00 ft (KB) (TVD)

2664.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 9.00 ft

Serial #: 8166 Outside

Press@RunDepth: 62.71 psig @ 3711.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.06.26

End Date:

2019.06.26

Last Calib.:

2019.06.26

Start Time: 12:59:41

End Time:

20:32:05

Time On Btm:

2019.06.26 @ 14:54:36

Time Off Btm:

2019.06.26 @ 18:13:36

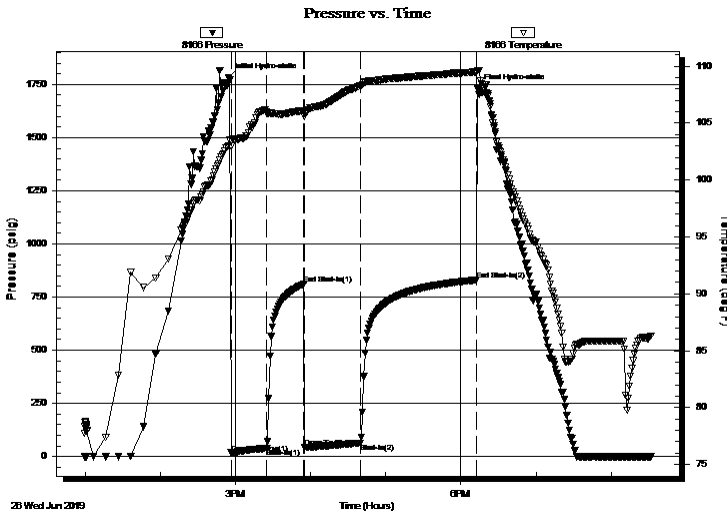
TEST COMMENT: IF: 1/4 blow built to 5.

IS: No return.

FF: Surface blow built to 5 1/2.

FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1783.20	103.02	Initial Hydro-static
2	16.84	102.97	Open To Flow (1)
31	38.60	105.91	Shut-In(1)
60	810.48	106.11	End Shut-In(1)
61	42.13	105.58	Open To Flow (2)
106	62.71	108.30	Shut-In(2)
198	829.66	109.49	End Shut-In(2)
199	1730.94	109.63	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	w cm oil spots 40%w 60%m	0.87
62.00	w cm oil spots 20%w 80%m	0.87

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 65235

DST#: 2

ATTN: Tim Lauer

Test Start: 2019.06.26 @ 12:59:36

Tool Information

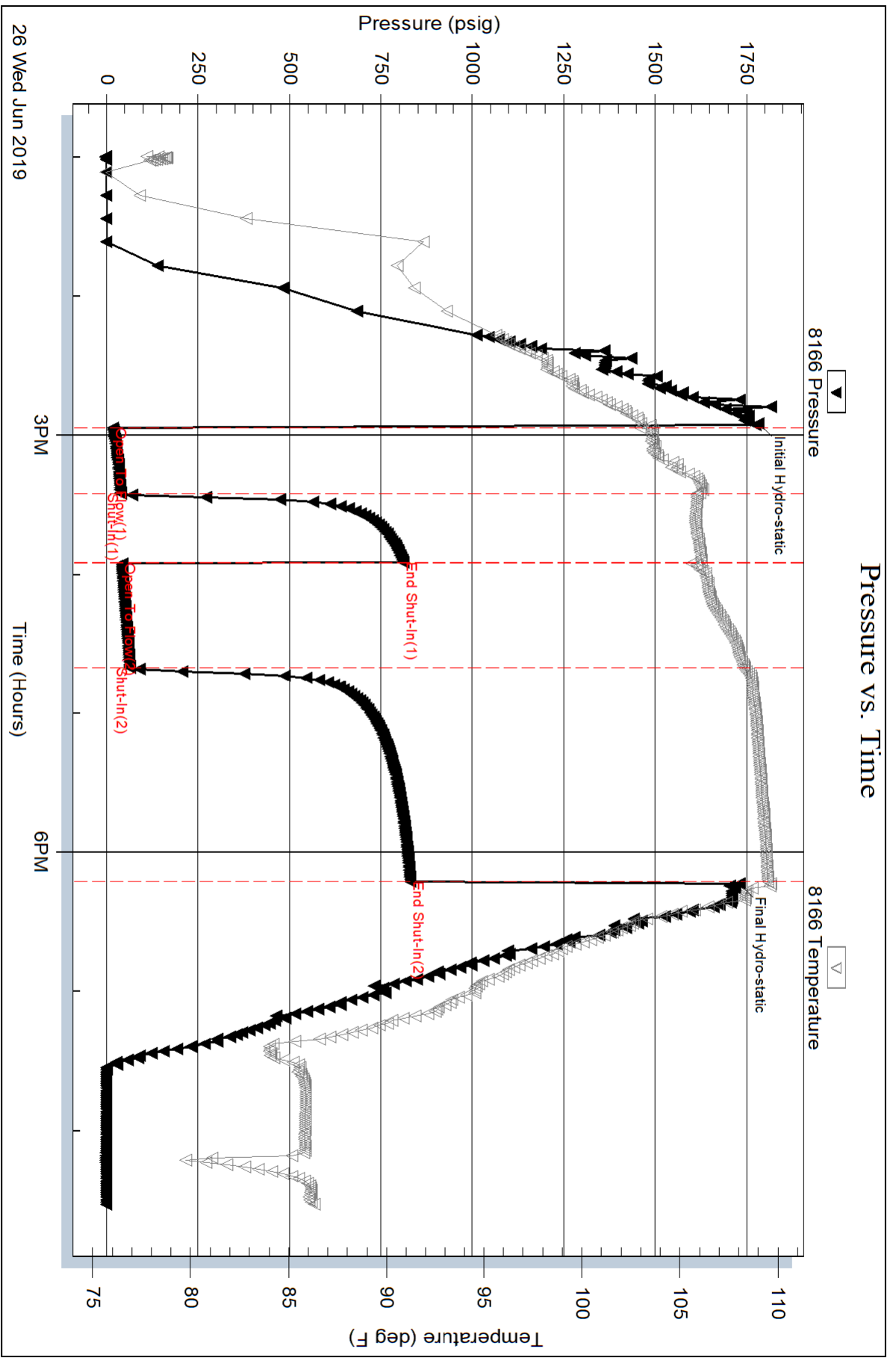
Drill Pipe:	Length: 3690.00 ft	Diameter: 3.80 inches	Volume: 51.76 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 51.76 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3710.00 ft			Final 47000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	55.00 ft			
Tool Length:	82.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Stubb	1.00			3684.00	
Shut In Tool	5.00			3689.00	
Hydraulic tool	5.00			3694.00	
Jars	5.00			3699.00	
Safety Joint	2.00			3701.00	
Packer	5.00			3706.00	27.00 Bottom Of Top Packer
Packer	4.00			3710.00	
Stubb	1.00			3711.00	
Recorder	0.00	6651	Inside	3711.00	
Recorder	0.00	8166	Outside	3711.00	
Perforations	15.00			3726.00	
Change Over Sub	1.00			3727.00	
Drill Pipe	32.00			3759.00	
Change Over Sub	1.00			3760.00	
Bullnose	5.00			3765.00	55.00 Bottom Packers & Anchor

Total Tool Length: 82.00



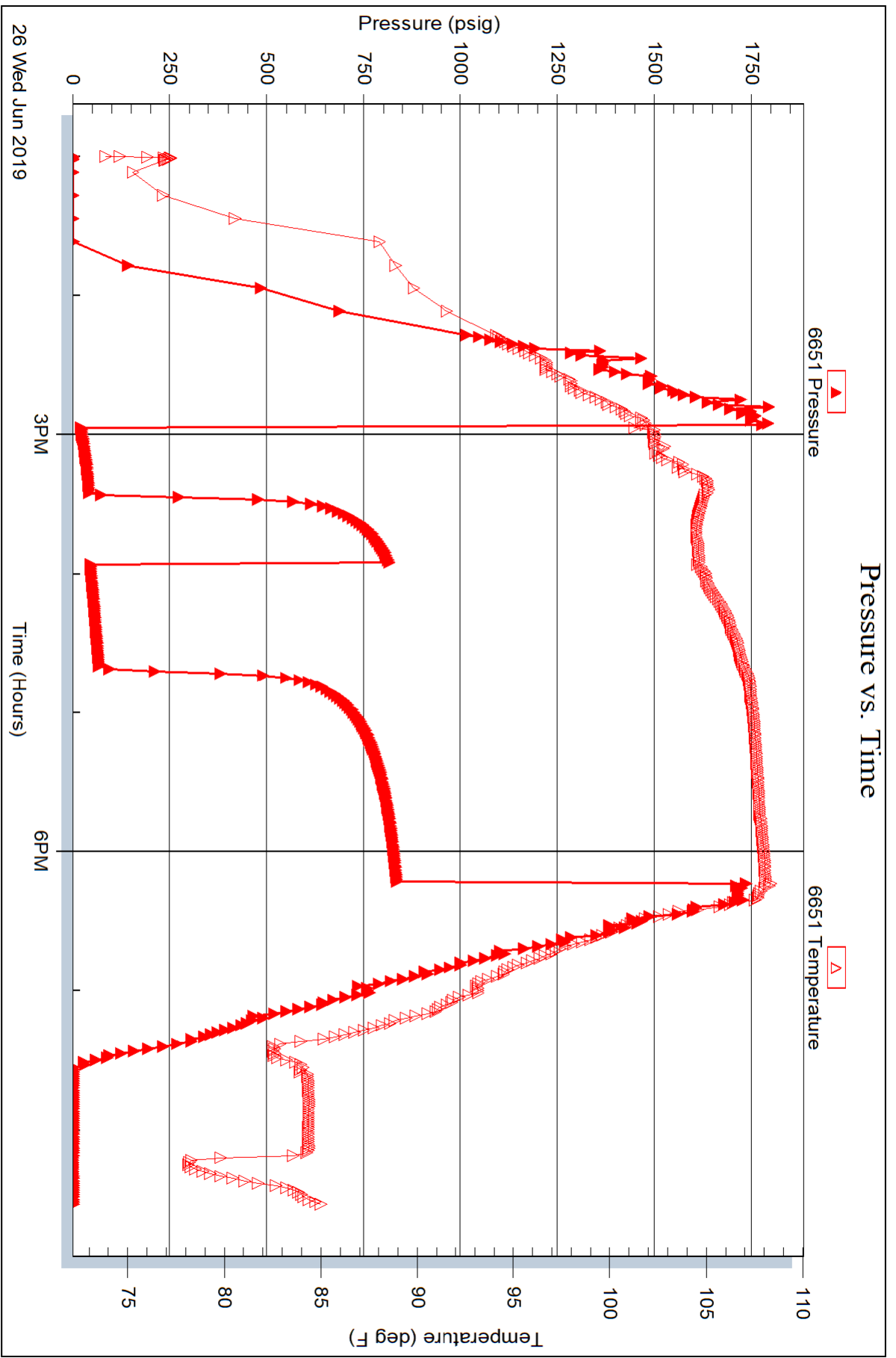
Serial #: 6651

Inside

Shakespeare Oil Co

Ottley 4-28

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 65235

Printed: 2019.06.26 @ 22:30:03



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 64831

DST#: 3

ATTN: Tim Lauer

Test Start: 2019.06.27 @ 11:25:15

GENERAL INFORMATION:

Formation: **H-I-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:12:15

Time Test Ended: 18:18:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: 3795.00 ft (KB) To 3905.00 ft (KB) (TVD)

Reference Elevations: 2673.00 ft (KB)

Total Depth: 3905.00 ft (KB) (TVD)

2664.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8521

Inside

Press@RunDepth: 150.16 psig @ 3900.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.06.27

End Date:

2019.06.27

Last Calib.:

2019.06.27

Start Time: 11:25:15

End Time:

18:18:30

Time On Btm:

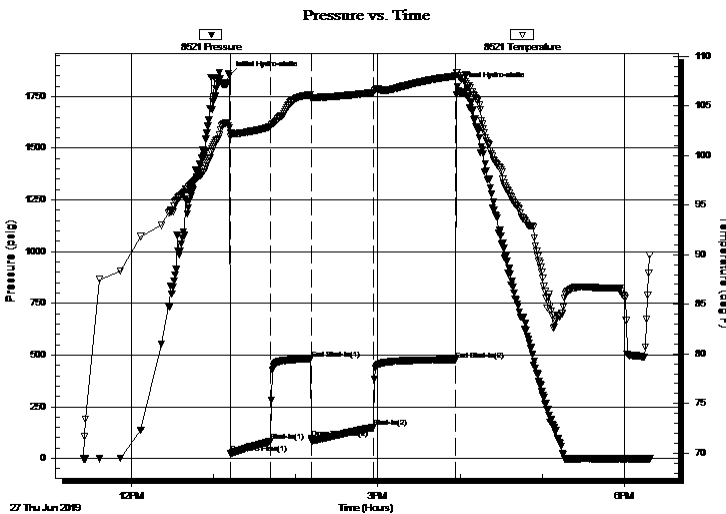
2019.06.27 @ 13:12:00

Time Off Btm:

2019.06.27 @ 15:58:15

TEST COMMENT: IF: Built to 10 3/4" blow
IS: No return blow
FF: Built to 8 1/2" blow
FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1851.89	102.79	Initial Hydro-static
1	23.08	101.88	Open To Flow (1)
30	81.86	102.91	Shut-In(1)
60	481.17	106.11	End Shut-In(1)
60	97.49	105.72	Open To Flow (2)
105	150.16	106.36	Shut-In(2)
165	477.82	108.03	End Shut-In(2)
167	1797.96	108.37	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
216.00	ocm 2%o 98%m	3.03
124.00	w com 1%w 2%o 97%m	1.74

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 64831

DST#: 3

ATTN: Tim Lauer

Test Start: 2019.06.27 @ 11:25:15

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: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
216.00	ocm 2%o 98%m	3.030
124.00	w com 1%w 2%o 97%m	1.739

Total Length: 340.00 ft Total Volume: 4.769 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

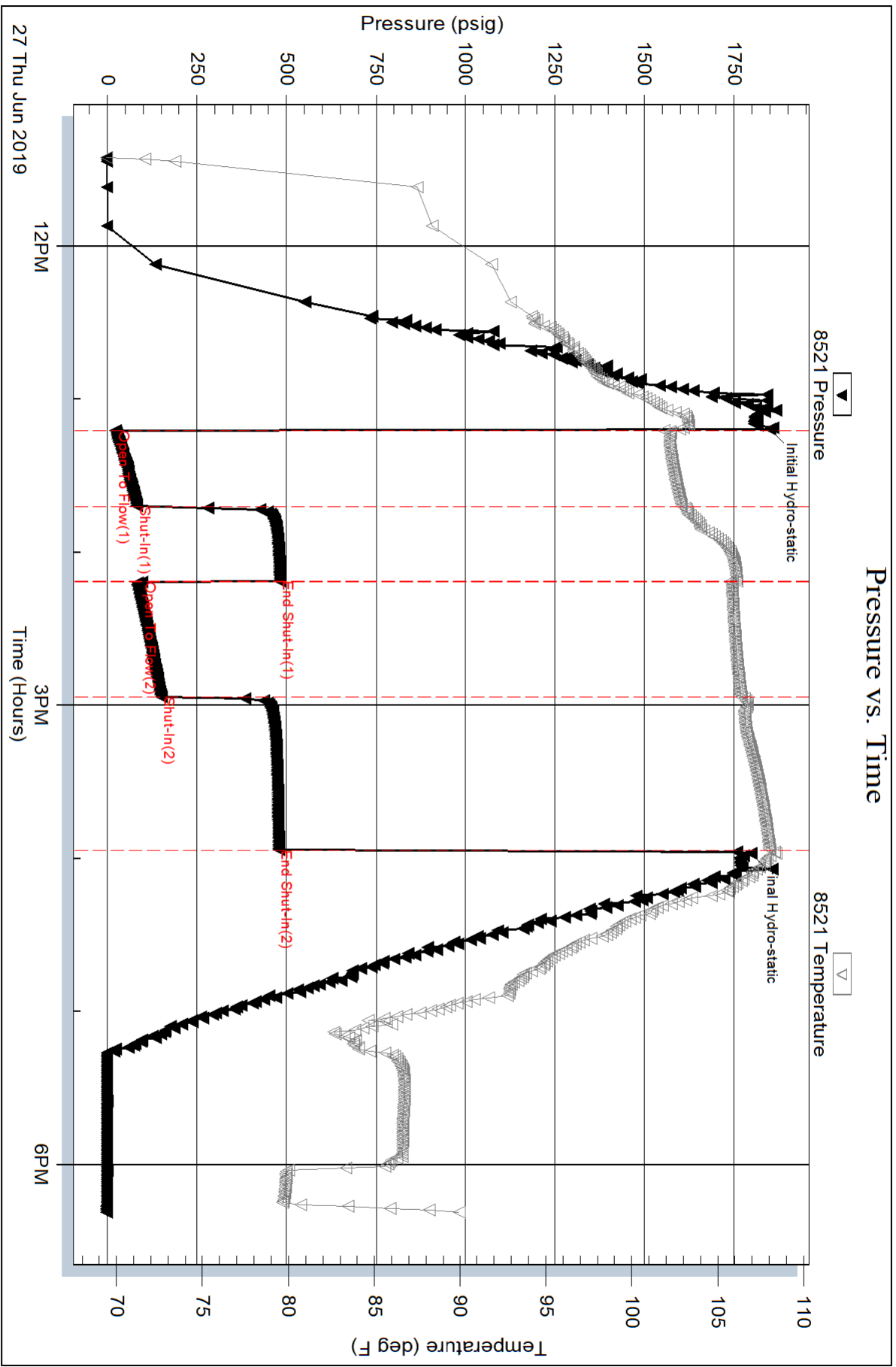
Serial #: 8521

Inside

Shakespeare Oil Co

Ottley 4-28

DST Test Number: 3

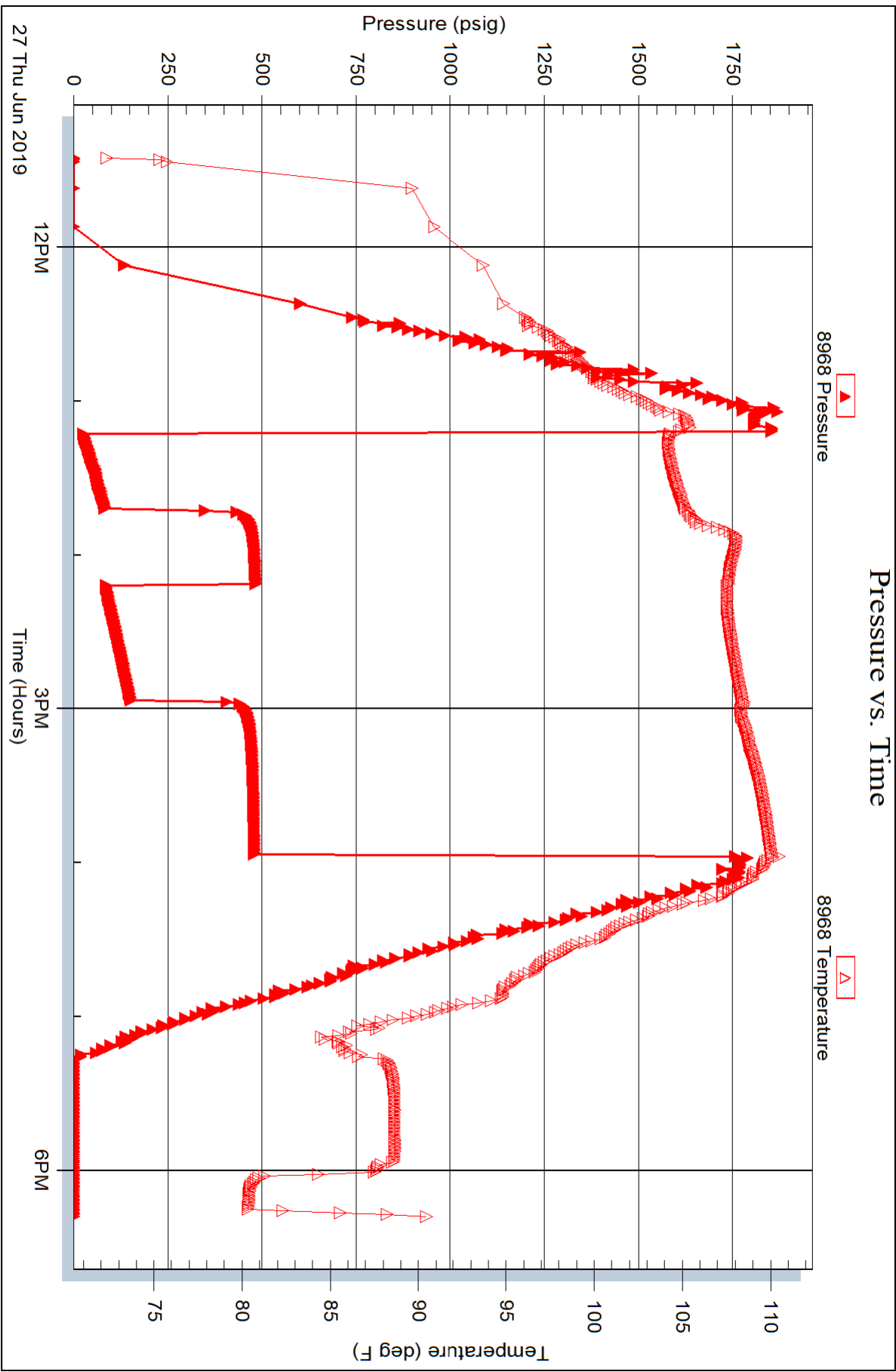


Serial #: 8968

Outside Shakespeare Oil Co

Ottley 4-28

DST Test Number: 3





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 64832

DST#: 4

ATTN: Tim Lauer

Test Start: 2019.06.28 @ 21:00:15

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:15:45

Time Test Ended: 05:04:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: 3985.00 ft (KB) To 4110.00 ft (KB) (TVD)

Reference Elevations: 2673.00 ft (KB)

Total Depth: 3985.00 ft (KB) (TVD)

2664.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8521 Inside

Press@RunDepth: 135.41 psig @ 4092.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.06.28

End Date:

2019.06.29

Last Calib.:

2019.06.29

Start Time: 21:00:15

End Time:

05:04:00

Time On Btm:

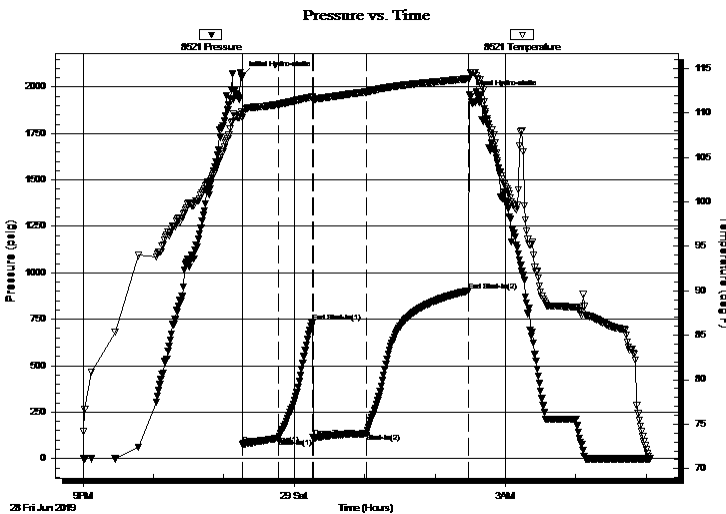
2019.06.28 @ 23:15:30

Time Off Btm:

2019.06.29 @ 02:29:15

TEST COMMENT: IF: Built to 23 3/4" blow BOB in 17 min.
IS: No return blow
FF: Built to 33" blow BOB in 15 min.
FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2060.31	110.14	Initial Hydro-static
1	74.75	109.47	Open To Flow (1)
31	108.72	110.95	Shut-In(1)
60	732.81	111.79	End Shut-In(1)
61	115.80	111.45	Open To Flow (2)
106	135.41	112.35	Shut-In(2)
193	902.37	113.84	End Shut-In(2)
194	1957.39	113.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
108.00	gcom 10%g 10%o 80%m	1.51
62.00	mco 20%m 40%g 40%o	0.87

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 64832

DST#: 4

ATTN: Tim Lauer

Test Start: 2019.06.28 @ 21:00:15

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: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.20 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
108.00	gcom 10%g 10%o 80%m	1.515
62.00	mcgo 20%m 40%g 40%o	0.870

Total Length: 170.00 ft

Total Volume: 2.385 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

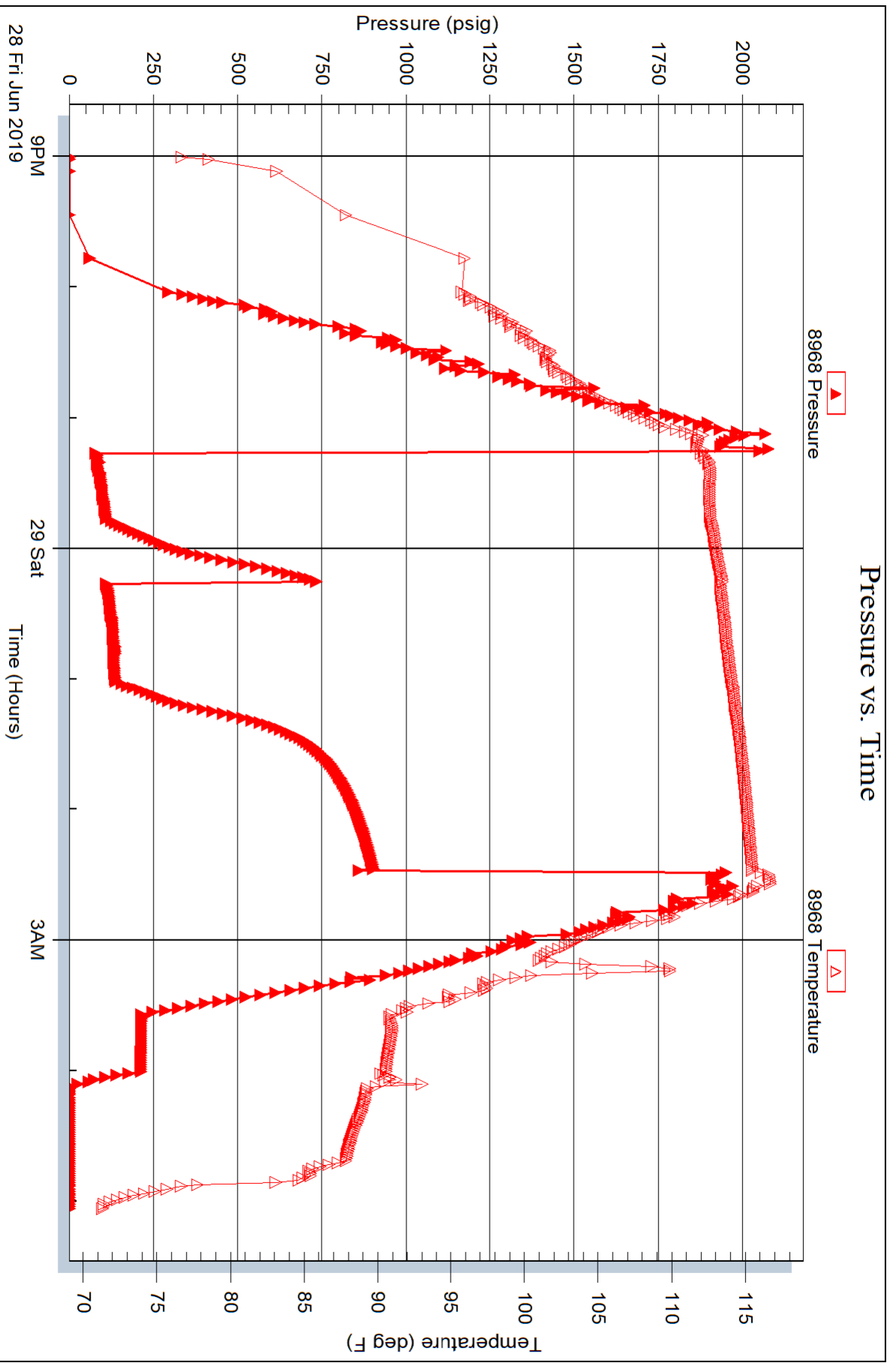
Recovery Comments:

Serial #: 8968

Outside Shakespeare Oil Co

Ottley 4-28

DST Test Number: 4





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 64833

DST#: 5

ATTN: Tim Lauer

Test Start: 2019.06.29 @ 17:49:15

GENERAL INFORMATION:

Formation: **Pawnee-Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:21:45

Time Test Ended: 00:42:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: 4105.00 ft (KB) To 4195.00 ft (KB) (TVD)

Reference Elevations: 2673.00 ft (KB)

Total Depth: 4195.00 ft (KB) (TVD)

2664.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8521

Inside

Press@RunDepth: 70.43 psig @ 4175.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.06.29

End Date:

2019.06.30

Last Calib.:

2019.06.30

Start Time: 19:49:15

End Time:

02:42:45

Time On Btm:

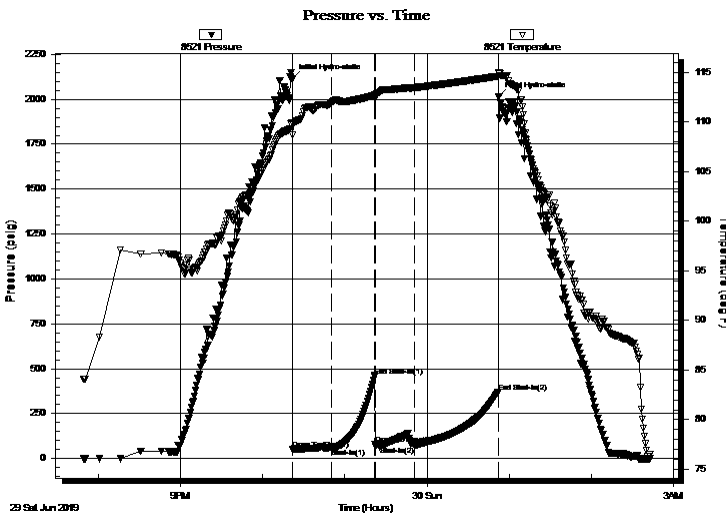
2019.06.29 @ 22:21:30

Time Off Btm:

2019.06.30 @ 00:52:15

TEST COMMENT: IF: Built to 3/4" blow
IS: No return blow
FF: No blow
FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2112.67	109.98	Initial Hydro-static
1	50.23	108.67	Open To Flow (1)
29	57.18	111.92	Shut-In(1)
61	461.40	112.72	End Shut-In(1)
61	79.76	112.38	Open To Flow (2)
90	70.43	113.47	Shut-In(2)
151	369.81	114.63	End Shut-In(2)
151	2013.31	115.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	vsocm 1%o 99%m	0.42

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 64833

DST#: 5

ATTN: Tim Lauer

Test Start: 2019.06.29 @ 17:49:15

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: 67.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.96 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	vsocm 1%o 99%m	0.421

Total Length: 30.00 ft Total Volume: 0.421 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

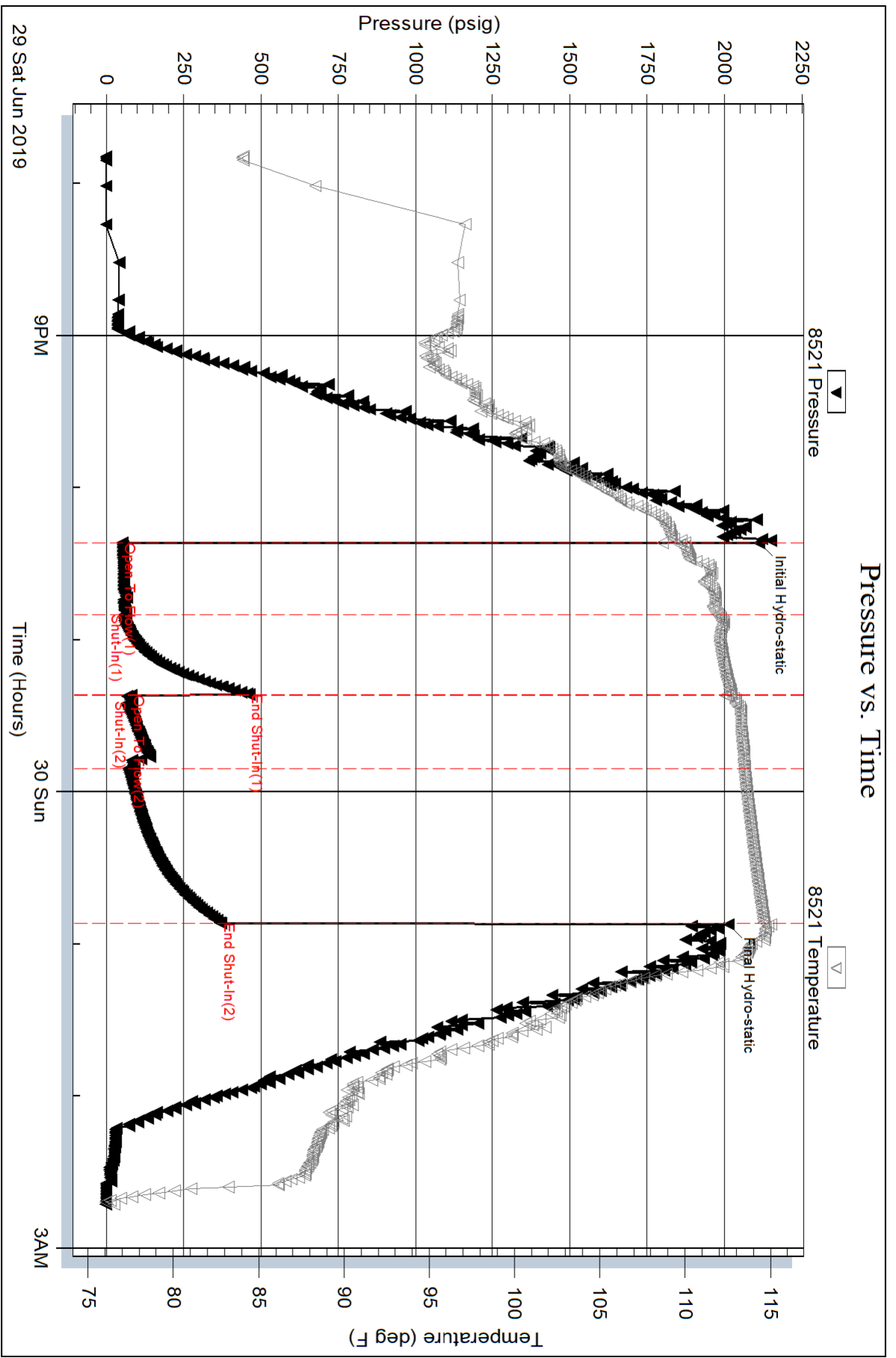
Serial #: 8521

Inside

Shakespeare Oil Co

Ottley 4-28

DST Test Number: 5

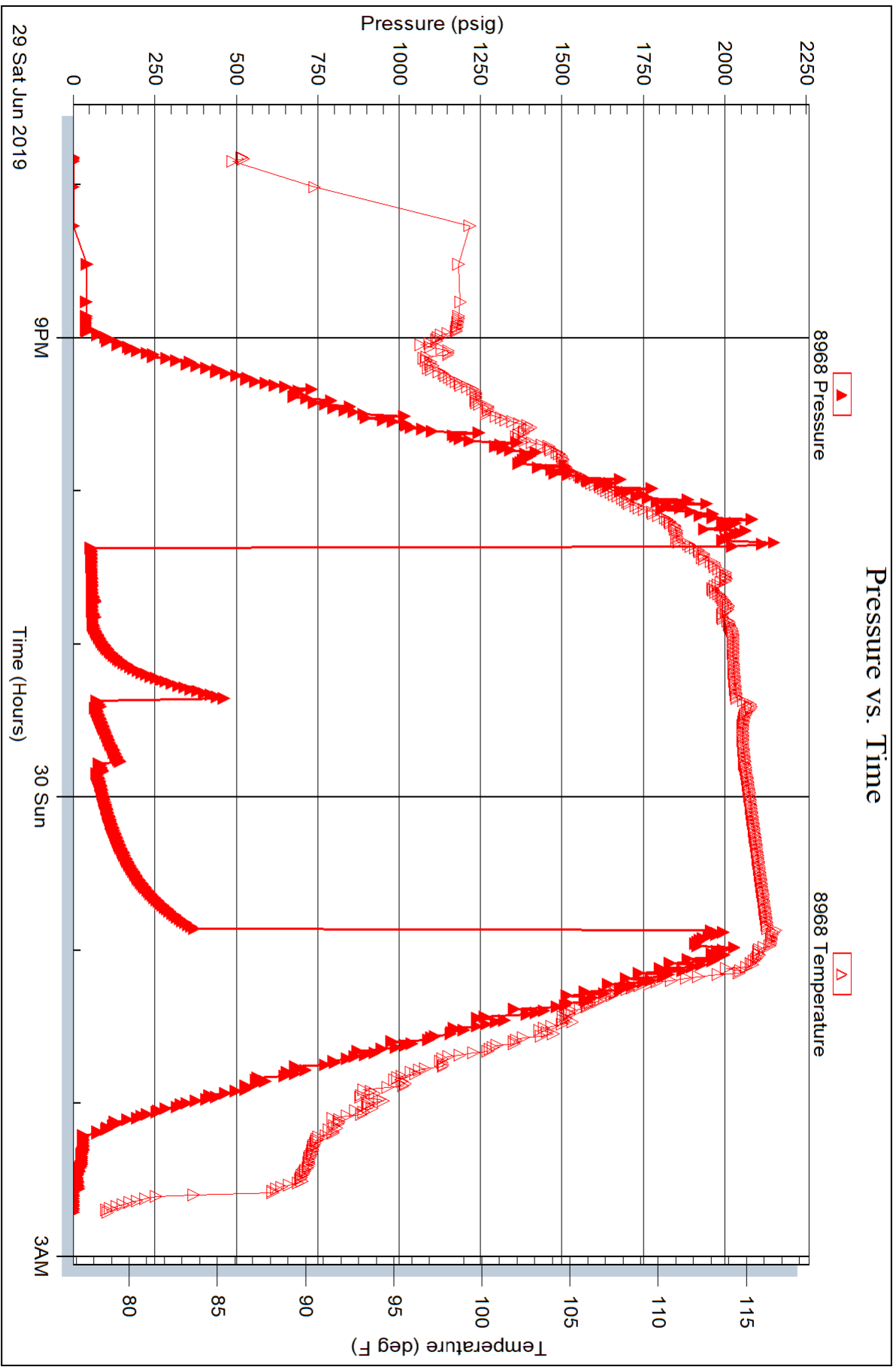


Serial #: 8968

Outside Shakespeare Oil Co

Ottley 4-28

DST Test Number: 5





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 64834

DST#: 6

ATTN: Tim Lauer

Test Start: 2019.06.30 @ 14:15:15

GENERAL INFORMATION:

Formation: **Cherokee-Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:13:30

Time Test Ended: 21:27:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: 4190.00 ft (KB) To 4280.00 ft (KB) (TVD)

Reference Elevations: 2673.00 ft (KB)

Total Depth: 4280.00 ft (KB) (TVD)

2664.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8521 Inside

Press@RunDepth: 63.69 psig @ 4260.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.06.30

End Date: 2019.06.30

Last Calib.: 2019.06.30

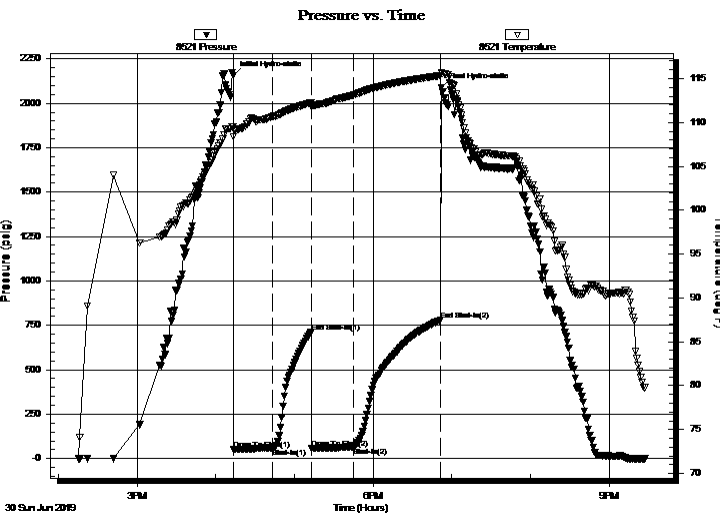
Start Time: 14:15:15

End Time: 21:27:15

Time On Btm: 2019.06.30 @ 16:13:15

Time Off Btm: 2019.06.30 @ 18:52:15

TEST COMMENT: IF: Built to 1/4" blow
IS: No return blow
FF: Built to very weak surface blow
FS: No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2156.82	109.51	Initial Hydro-static
1	51.92	108.34	Open To Flow (1)
31	57.95	110.65	Shut-In(1)
60	711.35	112.25	End Shut-In(1)
60	57.94	111.74	Open To Flow (2)
92	63.69	113.12	Shut-In(2)
158	778.25	115.35	End Shut-In(2)
159	2088.29	115.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	m 100% m	0.28

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 64834

DST#: 6

ATTN: Tim Lauer

Test Start: 2019.06.30 @ 14:15:15

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: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	m 100%m	0.281

Total Length: 20.00 ft Total Volume: 0.281 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

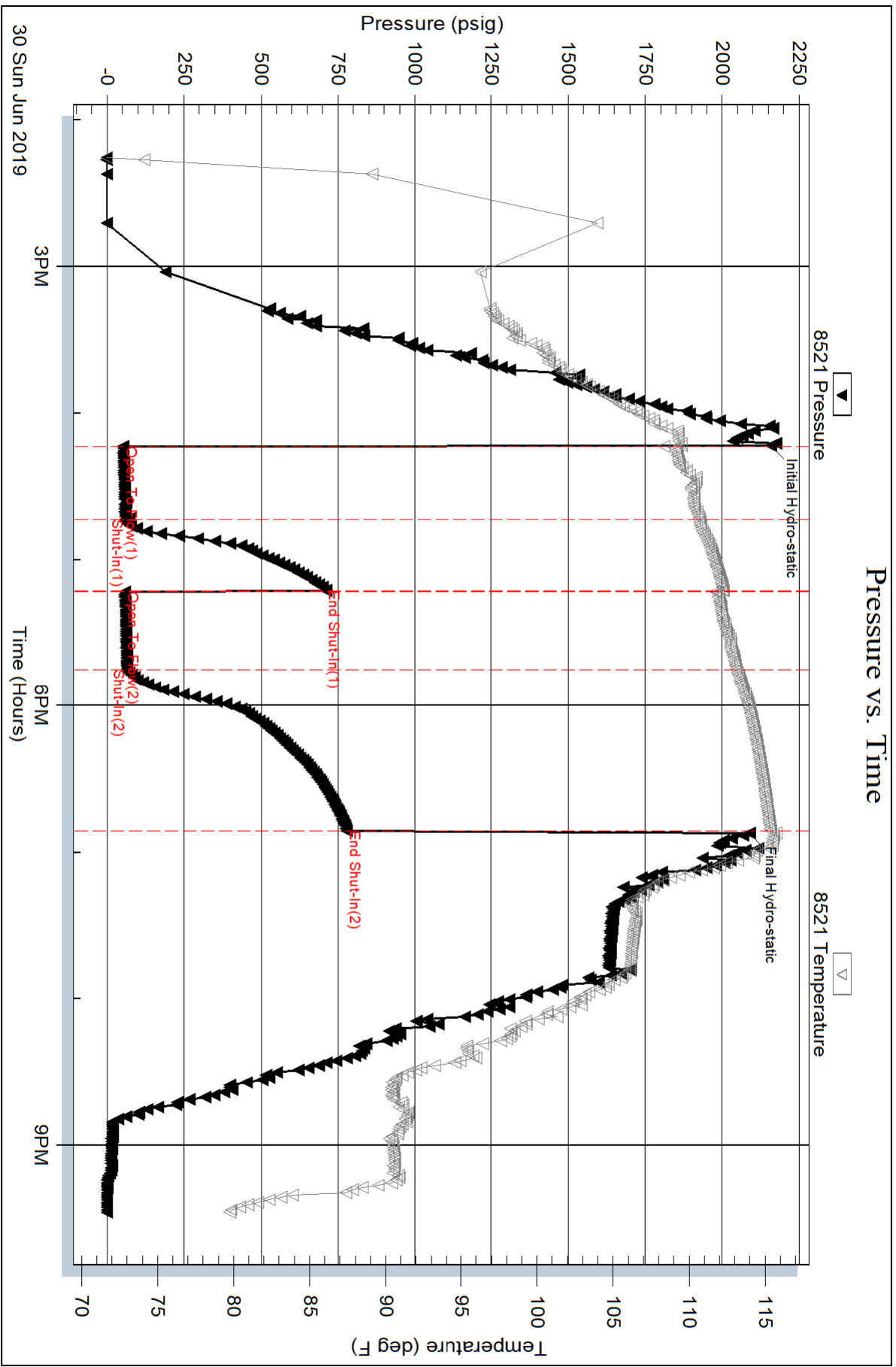
Serial #: 8521

Inside

Shakespeare Oil Co

Ottley 4-28

DST Test Number: 6

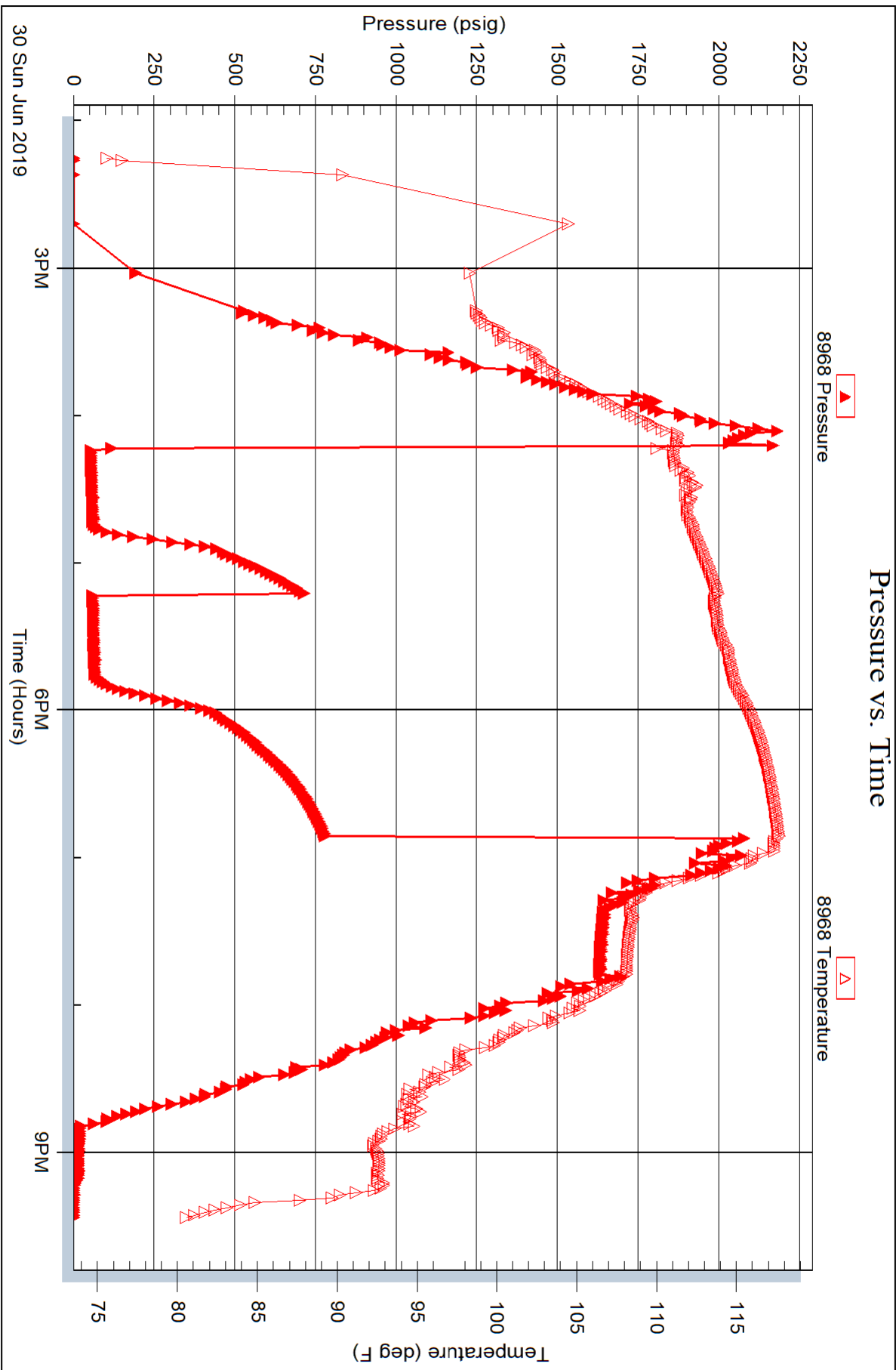


Serial #: 8968

Outside Shakespeare Oil Co

Otley 4-28

DST Test Number: 6





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

ATTN: Tim Lauer

Job Ticket: 64835

DST#: 7

Test Start: 2019.07.01 @ 06:30:15

GENERAL INFORMATION:

Formation: **Morrow Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:22:15

Time Test Ended: 14:51:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: 4270.00 ft (KB) To 4315.00 ft (KB) (TVD)

Reference Elevations: 2673.00 ft (KB)

Total Depth: 4315.00 ft (KB) (TVD)

2664.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8521

Inside

Press@RunDepth: 166.52 psig @ 4310.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.01 End Date: 2019.07.01

Last Calib.: 2019.07.01

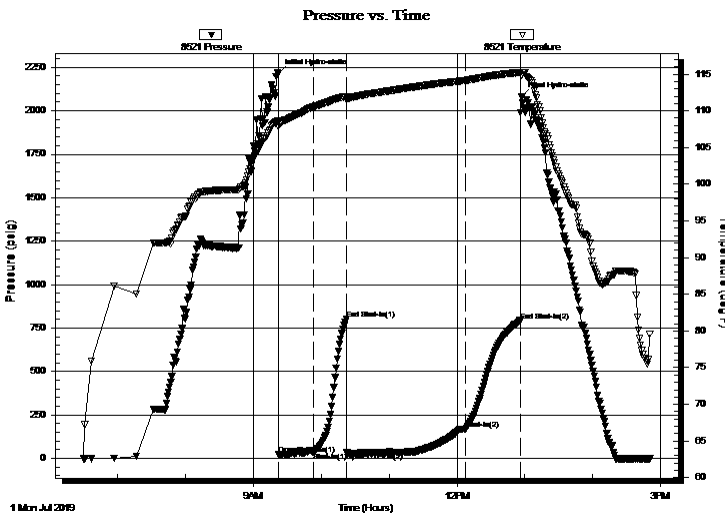
Start Time: 06:30:15 End Time: 14:51:00

Time On Btm: 2019.07.01 @ 09:22:00

Time Off Btm: 2019.07.01 @ 12:57:15

TEST COMMENT: IF: Built to 3/4" blow
IS: No return blow
FF: Built to 4 1/4" blow
FS: Return blow built to 3/4" and died to 1/2" blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2214.00	108.69	Initial Hydro-static
1	22.07	107.82	Open To Flow (1)
31	36.62	110.51	Shut-In(1)
61	800.21	111.98	End Shut-In(1)
61	33.24	111.56	Open To Flow (2)
166	166.52	114.14	Shut-In(2)
214	792.36	115.23	End Shut-In(2)
216	2082.81	114.89	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
17.00	ocm 5%o 95%m	0.24
45.00	sgcom 10%g 20%o 70 %m	0.63

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Shakespeare Oil Co

28-14s-32w Logan Ks

202 W Main St
Salem, IL 62881

Ottley 4-28

Job Ticket: 64835

DST#: 7

ATTN: Tim Lauer

Test Start: 2019.07.01 @ 06:30:15

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: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
17.00	ocm 5%o 95%m	0.238
45.00	sgcom 10%g 20%o 70 %m	0.631

Total Length: 62.00 ft

Total Volume: 0.869 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

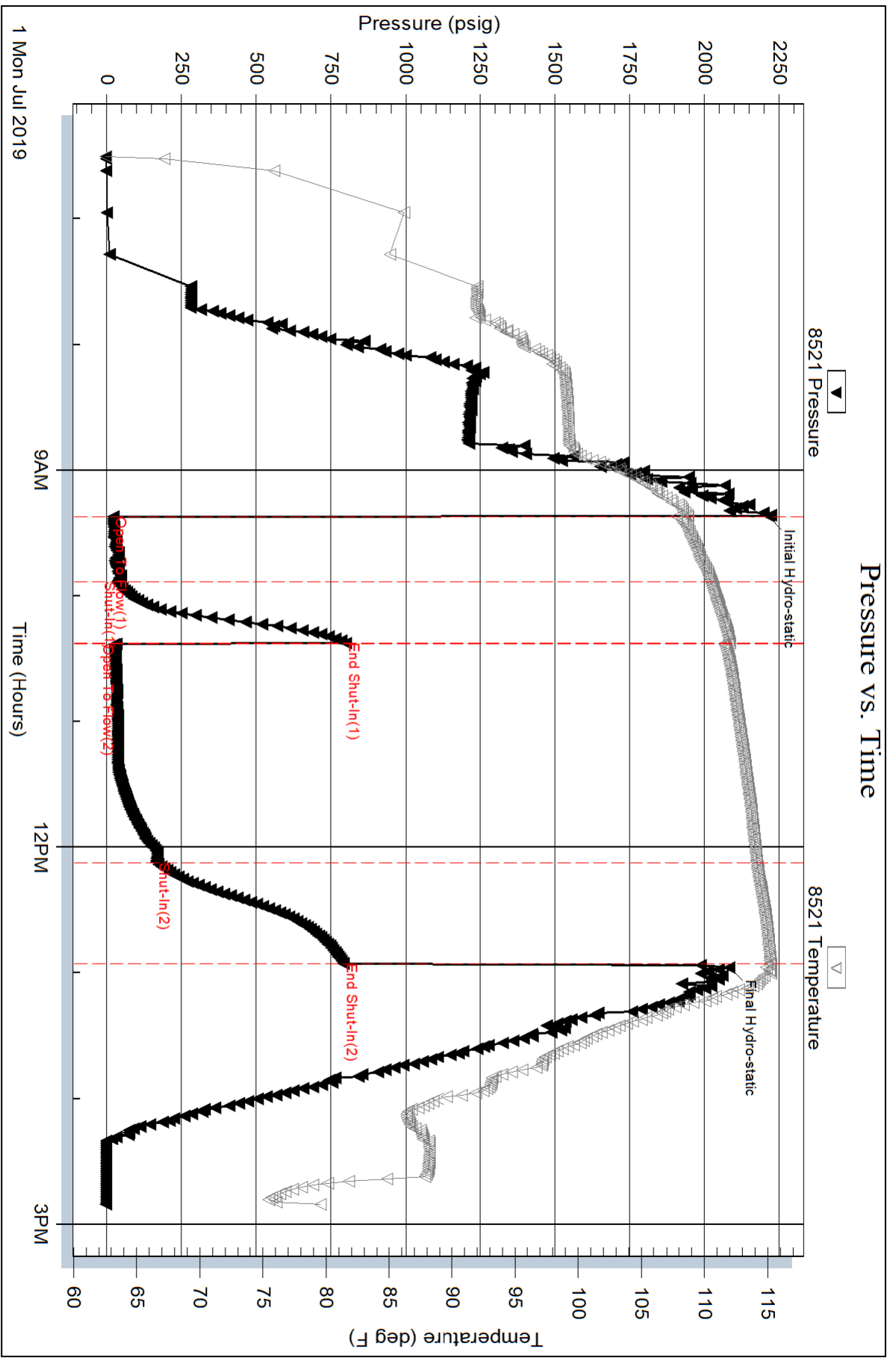
Serial #: 8521

Inside

Shakespeare Oil Co

Ottley 4-28

DST Test Number: 7



Serial #: 8968

Outside Shakespeare Oil Co

Ottley 4-28

DST Test Number: 7

