



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1230325
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

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 SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- 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 ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
-----------------------------------	-----------------	---

API No. 15 - _____

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
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1230325

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 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				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 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)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

Date of First, Resumed Production, SWD or ENHR. _____ Producing Method:
 Flowing Pumping Gas Lift Other *(Explain)* _____

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> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Little LLC 'A' 1-31
Doc ID	1230325

All Electric Logs Run

DIL
DUCP
MEL
BHCS

Cost Prod-mg



QUALITY OILWELL CEMENTING, INC.
PO Box 32 - 740 West Wichita Ave, Russell KS 67665
Phone:785-324-1041 fax:785-483-1087
Email: cementing@ruraltel.net

Date: 7/13/2014
Invoice # 559

P.O.#:
Due Date: 8/12/2014
Division: Russell

Invoice

Contact:
Murfin Drilling Company
Address/Job Location:
Murfin Drilling Company
P.O. Box 288
Russell Ks 67665

USED FOR _____

APPROVED _____

OPERATOR PAY MDC
LEASE: BM

Reference:
LITTER LLC A -1-31

Description of Work:
LONG SURFACE JOB

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 1,312.65	No				
mon, MetsoBeads, Plater, Gel, FloSeal, Calcium)	250	\$ 5,342.35	Yes				
Common-Class A	150	\$ 2,514.71	Yes				
Bulk Truck Matl-Material Service Charge	405	\$ 905.29	No				
Calcium Chloride	5	\$ 311.04	Yes				
Pump Truck Mileage-Job to Nearest Camp	19	\$ 211.93	No				
Flo Seal	62	\$ 138.59	Yes				
8 5/8" Top Rubber Plug	1	\$ 118.47	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	19	\$ 124.01	No				
Baffle Plate Aluminum, 8 5/8"	1	\$ 100.59	Yes				

Invoice Terms:

Net 30

SubTotal: \$ 11,079.64
Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice: \$ (1,661.95)

SubTotal for Taxable Items: \$ 7,246.89
SubTotal for Non-Taxable Items: \$ 2,170.81

6.15% Rush County Sales Tax

Total: \$ 9,417.69
Tax: \$ 445.68

Thank You For Your Business!

Amount Due: \$ 9,863.37
Applied Payments:
Balance Due: \$ 9,863.37

Past Due Invoices are subject to a service charge (annual rate of 24%)
This does not include any applicable taxes unless it is listed.
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[Handwritten signature]

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 559

Date	Sec.	Twp.	Range	County	State	On Location	Finish
7-13-2014	31	16	19	RUSH	KANSAS		2:30 PM
Lease LITTER LLC "A"				Well No. 1-31		Owner 1/2 S 1/4 W 1/4 DNTD	
Contractor MURFIN DRG				Rig # 16		To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Type Job Long Surface				Charge To MURFIN DRILLING CO INC			
Hole Size 12 1/4		T.D. 1310		Street			
Csg. 8 5/8 New		Depth 1309		City		State	
Tbg. Size 23# csg.		Depth		City		State	
Tool BAFFEL Plate		Depth 1268		The above was done to satisfaction and supervision of owner agent or contractor.			
Cement Left in Csg. 42 1/4		Shoe Joint 42.19		Cement Amount Ordered 150 SX Comm. 3% cc			
Meas Line		Displace 80 3/4 / BBL		250 SX QMDC. (LITE/WT) 1/2# SEAL			
EQUIPMENT				Common 150			
Pumptrk 18	No.	Cementer	GLENN G.	250 QMDC			
		Helper	CODY B.				
Bulktrk 21	No.	Driver	CRAIG B.	Gel.			
		Driver	CHAD M.	Calcium 5			
JOB SERVICES & REMARKS				Hulls			
Remarks: STRAP & WEID COLLARS				Salt			
Rat Hole				Flowseal 62#			
Mouse Hole				Kol-Seal			
Centralizers				Mud CLR 48			
Baskets				CFL-117 or CD110 CAF 38			
DV or Port Collar				Sand			
Ran 31 New JOINTS OF 23# Csg				Handling 400 405			
Set @ 1309, Received CIRCULATION				Mileage			
Cement w/ 250 SX QMDC, 150 SX Comm 3% CC,				FLOAT EQUIPMENT			
Release Solid Rubber Plug.				Guide Shoe			
Displaced @ TOTAL OF 80 BBL				Centralizer			
H2O Land Plug @ \$400 #.				Baskets			
SHUT IN @ \$400 #.				Inserts BAFFEL Plate x1			
Cement Did CIRCULATE TO SURFACE				SOLID RUBBER PLUG x1			
THANK'S				Latch Down			
				Pumptrk Charge Long Surface			
				Mileage 19			
				Tax			
				Discount			
				Total Charge			
X Signature Greg Seld							



QUALITY OILWELL CEMENTING, INC.
 PO Box 32 - 740 West Wichita Ave, Russell KS 67665
 Phone: 785-324-1041 fax: 785-483-1087
 Email: cementing@ruraltel.net

Date: 7/19/2014
 Invoice # 269

P.O.#:
 Due Date: 8/18/2014
 Division: Russell

acc.
 Prod-MG

Invoice

Contact:
 Murfin Drilling Company
Address/Job Location:
 Murfin Drilling Company
 P.O. Box 288
 Russell Ks 67665

USED FOR IC 103 103
 APPROVED R au
 RES

OPERATOR PAY MDC
 LEASE: [Signature]

Reference:
 LITTLER LLC A 1-31

Description of Work:
 PROD STRING

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 1,020.55	No	Bulk Truck Mileage-Job to Nearest Bulk Plant	19	\$124.01	No
Common-Class A	175	\$ 2,933.82	Yes				
Gilsonite	875	\$ 1,466.91	Yes				
Cement Scratchers Cable Type, 5 1/2"	17	\$ 1,330.00	Yes				
5 1/2" Turbolizer	9	\$ 583.41	Yes				
Mud Clear	500	\$ 413.53	Yes				
Bulk Truck Matl-Material Service Charge	190	\$ 424.71	No				
Auto Fill Float Shoe, 5 1/2"	1	\$ 342.00	Yes				
Latch Down Plug & Baffle, 5 1/2"	1	\$ 250.35	Yes				
Salt (Fine)	15	\$ 234.04	Yes				
Pump Truck Mileage-Job to Nearest Camp	19	\$ 211.93	No				

Invoice Terms:

Net 30

SubTotal: \$ 9,335.26
 Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice: \$ (1,400.29)

SubTotal for Taxable Items: \$ 6,420.96
 SubTotal for Non-Taxable Items: \$ 1,514.02

Total: \$ 7,934.97
 Tax: \$ 394.89

6.15% Ellis County Sales Tax

Thank You For Your Business!

Amount Due: \$ 8,329.86
 Applied Payments:
 Balance Due: \$ 8,329.86

Past Due Invoices are subject to a service charge (annual rate of 24%)
 This does not include any applicable taxes unless it is listed.
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[Handwritten Signature]

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 269

Date	7-19-14	Sec.	31	Twp.	16	Range	19	County	Rush	State	KS	On Location		Finish	4:30 PM
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Location *Libenthal, 15, W to 170 Rd, 1/2 S, Wn 2*

Lease	<i>Littler LLC. A</i>	Well No.	<i>1-31</i>	Owner	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Contractor	<i>Murfin #16</i>			Charge To	<i>Murfin Drlg Co</i>
Type Job	<i>long string</i>	T.D.	<i>3920</i>	Street	
Hole Size	<i>7 7/8</i>	Depth	<i>3909</i>	City	State
Csg.	<i>5 1/2 15 #</i>	Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Tbg. Size		Depth		Cement Amount Ordered <i>175 sxc om, 10% salt, 5% gillsonite</i>	
Tool		Depth			
Cement Left in Csg.	<i>18</i>	Shoe Joint	<i>18</i>		
Meas Line		Displace	<i>92 1/2 bbl</i>		

EQUIPMENT

Pumptrk	<i>17</i>	No.	Cementor		Common	<i>175</i>
			Helper	<i>Lonnie W.</i>	Poz. Mix	
Bulktrk	<i>15</i>	No.	Driver		Gel.	
			Driver	<i>Heath</i>	Calcium	
Bulktrk	<i>PU</i>	No.	Driver		Hulls	
			Driver	<i>Travis</i>	Salt	<i>15</i>

JOB SERVICES & REMARKS

Remarks:		Flowseal	
Rat Hole	<i>30 sx</i>	Kol-Seal	<i>875H</i>
Mouse Hole	<i>20 sx</i>	Mud CLR 48	<i>500 gal</i>
Centralizers		CFL-117 or CD110 CAF 38	
Baskets		Sand	
D/V or Port Collar		Handling	<i>190</i>
<i>Pipe on bottom broke circulation. Pumped 500 gal Mud CLR-48 with 10 bbl fw behind it. Plugged Rat hole with 30sx and Mouse hole with 15sx. Hooked to 5 1/2 and mixed 120sx. Shut down washed pump and lines. Rebedded plug and Displaced with 92 1/2 bbl. Plug landed and held.</i>		Mileage	
<i>lift pressure 600 psi</i>		FLOAT EQUIPMENT	
<i>Plug landed at 1500 psi</i>		Guide Shoe	
		Centralizer	<i>9 turbos</i>
		Baskets	
		AFU Inserts	
		Float Shoe	
		Latch Down	<i>1</i>
		17 Rec Scratchers	
		Pumptrk Charge	<i>prod string</i>
		Mileage	<i>19</i>

X Signature

Cy Smith

Tax
Discount
Total Charge

Littler LLC 'A' #1-31
 Daily Drilling Report
 Page Two

7/20/14 RTD: 3920'. CT: 13½ hrs. Ran 93jts of 15.5# 5½" prod csg, set @ 3909', Quality cmt w/130sxs of comm. PD @ 4:30PM 7/19. 30sxs RH, 20sxs MH. RR @ 8:30PM 7/19.
 FINAL REPORT

		MDCI Littler LLC 'A' #1-31 2302' FNL 990' FEL Sec. 31-T16S-R19W 2079' KB					Koch Exploration Littler #1 SE SE NE Sec. 31-T16S-R19W 2078' KB		
Formation	Sample top	Datum	Ref	Log tops	Datum	Ref	Log tops	Datum	
Anhydrite	1302	+777	-8	1302	+777	-8	1293	+785	
B/Anhydrite	1340	+739	-7	1338	+741	-5	1332	+746	
Topeka	3115	-1036	-4	3113	-1034	-2	3110	-1032	
Heebner	3400	-1321	-7	3396	-1317	-3	3392	-1314	
Toronto	3418	-1339	-7	3414	-1335	-3	3410	-1332	
Lansing	3446	-1367	-7	3442	-1363	-3	3438	-1360	
Stark	3653	-1574	-8	3650	-1571	-5	3644	-1566	
BKC	3700	-162	-9	3697	-1618	-6	3690	-1612	
Arbuckle	3816	-1737	-15	3813	-1734	-12	3800	-1722	
RTD	3920						3865		
LTD				3919					

Jeff Christian

PETROLEUM GEOLOGIST

Wichita, Kansas

GEOLOGISTS REPORT

DRILLING TIME AND SAMPLE LOG

OPERATOR **MURFIN DRILLING COMPANY**
 LEASE **LITTLER LLC 'A' # 1-31**
 LOCATION **2302' FNL & 990' FEL**

SEC. **31** TWP. **16 S** RNS. **19 W**
 COUNTY **RUSH** STATE **KANSAS**
 FIELD **HAMPION NORTHEAST**

API **15-165-22083**
 CONTRACTOR **COMPANY TOOLS** RIG NO. **16**
 DRILLING STARTED **07/17/2014** COMPLETED **07/19/2014**
 MUD DISPLACED **2820'** MUD TYPE **CHEMICAL**
 DRILLING TIME FROM **3010'** TO **RTD**
 SAMPLES EXAMINED FROM **3010'** TO **RTD**
 SAMPLES EXAMINED FROM **3010'** TO **RTD**
 GEOLOGICAL SUPERVISION FROM **3124'** TO **RTD**

MEASUREMENTS FROM KB
 CASING RECORD
 CONDUCTIVITY **NONE**
 SURFACE **8.5/6" @ 3109'**
 W/ 400 SX
 PRODUCTION **5 1/2" @ 3920'**
 W/ 130 SX

ELEVATIONS
 KB **2079'**
 GL **2074'**

FORMATION NAME LOG TOP DATUM TOP SAMPLE DATE

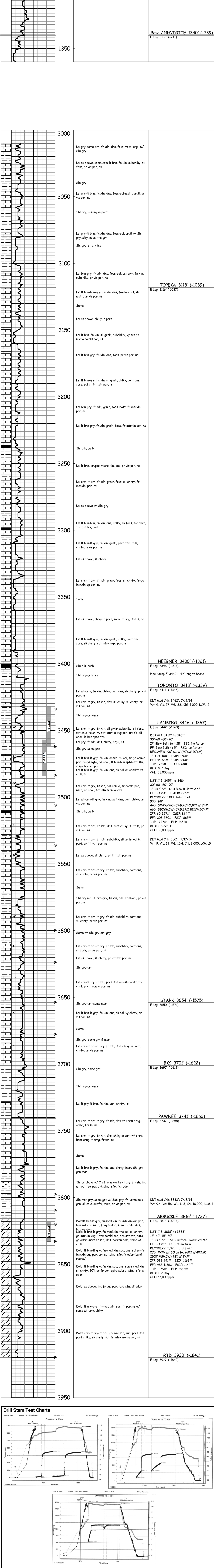
ANHYDRITE	1302'	9(+777)	1302'	(+777)
BASE ANHYDRITE	1338'	(+741)	1340'	(+739)
TOPEKA	3116'	(-1037)	3115'	(-1036)
HEEBNER	3396'	(-1317)	3400'	(-1321)
LANSING	3442'	(-1363)	3446'	(-1367)
STARK	3650'	(-1571)	3653'	(-1574)
BKC	3697'	(-1618)	3700'	(-1621)
PAWNEE	3737'	(-1668)	3741'	(-1662)
ARBUCKLE	3813'	(-1734)	3816'	(-1737)
TOTAL DEPTH	3919'	(-1840)	3920'	(-1841)



DATE	7:00 AM DEPTH	REMARKS
7/12/14	MIRT	SPUD 1:15 pm
7/13/14	1230'	DRLG.
7/14/14	1460'	DRLG. dev. 1/2 deg. @ 1310'
7/15/14	2725'	DRLG.
7/16/14	3462'	CTCH after Short Trip dev 1 1/8 deg.
7/17/14	3484'	TIH after DST # 2
7/18/14	3833'	Short Trip prior to Dst # 3 RTD 3920' @ 11:00 pm
7/19/14	3920'	Logging dev. 1 1/8 deg.

Remarks
 5 1/2" production casing set to further test the Littler LLC 'A' # 1-31.
 Electric log measurements correlate about 4' high compared to rotary measurements.
 Samples deposited at the Kansas Geological Survey.
 Respectfully Submitted,
Jeff Christian
 Jeff Christian

LITH.	0	DRILL TIME (MIN/FT)	10	DEPTH (92)	SAMPLE DESCRIPTIONS	REMARKS
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DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N Water STE 800
Wichita KS 67202

ATTN: Jeff Christian

Little LLC A '#1-31

31-16s-19w Rush,KS

Start Date: 2014.07.16 @ 09:24:53

End Date: 2014.07.16 @ 16:21:23

Job Ticket #: 58914 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.07.21 @ 09:17:46



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Company
 250 N Water STE 800
 Wichita KS 67202
 ATTN: Jeff Christian

31-16s-19w Rush,KS
Littler LLC A #1-31
 Job Ticket: 58914 **DST#: 1**
 Test Start: 2014.07.16 @ 09:24:53

GENERAL INFORMATION:

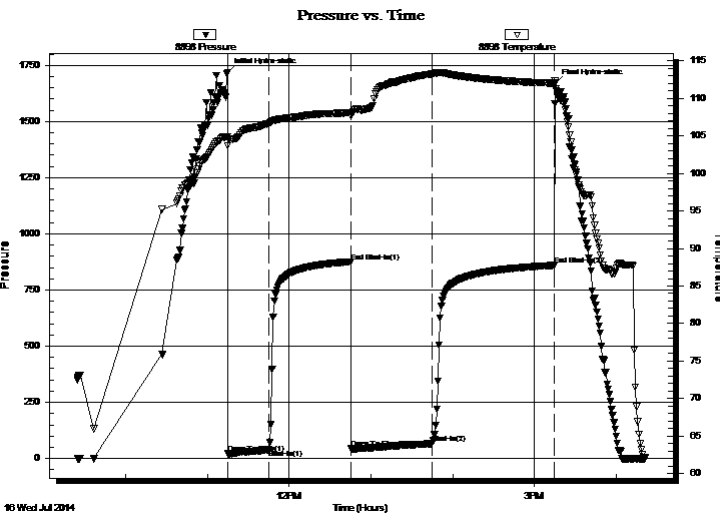
Formation: **LKC A**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 11:15:13
 Time Test Ended: 16:21:23
 Interval: **3432.00 ft (KB) To 3462.00 ft (KB) (TVD)**
 Total Depth: 3462.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Tate Lang
 Unit No: 77
 Reference Elevations: 2079.00 ft (KB)
 2074.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8898

Outside

Press@RunDepth: 66.49 psig @ 3434.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.07.16 End Date: 2014.07.16 Last Calib.: 2014.07.16
 Start Time: 09:24:54 End Time: 16:21:23 Time On Btm: 2014.07.16 @ 11:15:03
 Time Off Btm: 2014.07.16 @ 15:15:23

TEST COMMENT: Fair blow built to 4"
 Dead no blow back
 Fair blow built to 5"
 Dead no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1718.38	104.90	Initial Hydro-static
1	21.24	103.73	Open To Flow (1)
30	39.85	106.68	Shut-In(1)
90	875.91	108.14	End Shut-In(1)
91	43.59	107.65	Open To Flow (2)
150	66.49	113.27	Shut-In(2)
240	859.84	112.04	End Shut-In(2)
241	1667.61	112.06	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	MCW 80%W 20%M	0.99

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company

31-16s-19w Rush, KS

250 N Water STE 800
Wichita KS 67202

Littler LLC A #1-31

Job Ticket: 58914

DST#: 1

ATTN: Jeff Christian

Test Start: 2014.07.16 @ 09:24:53

Tool Information

Drill Pipe:	Length: 3388.00 ft	Diameter: 3.80 inches	Volume: 47.52 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 47.67 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	3432.00 ft			Final	51000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	30.00 ft				
Tool Length:	52.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3415.00	
Hydraulic tool	5.00			3420.00	
Safety Joint	2.00			3422.00	
Packer	5.00			3427.00	22.00 Bottom Of Top Packer
Packer	5.00			3432.00	
Stubb	1.00			3433.00	
Perforations	1.00			3434.00	
Recorder	0.00	8897	Inside	3434.00	
Recorder	0.00	8898	Outside	3434.00	
Perforations	25.00			3459.00	
Bullnose	3.00			3462.00	30.00 Bottom Packers & Anchor

Total Tool Length: 52.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company

31-16s-19w Rush, KS

250 N Water STE 800
Wichita KS 67202

Little LLC A #1-31

Job Ticket: 58914

DST#: 1

ATTN: Jeff Christian

Test Start: 2014.07.16 @ 09:24:53

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:

38000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	MCW 80%W 20%M	0.989

Total Length: 90.00 ft Total Volume: 0.989 bbl

Num Fluid Samples: 0

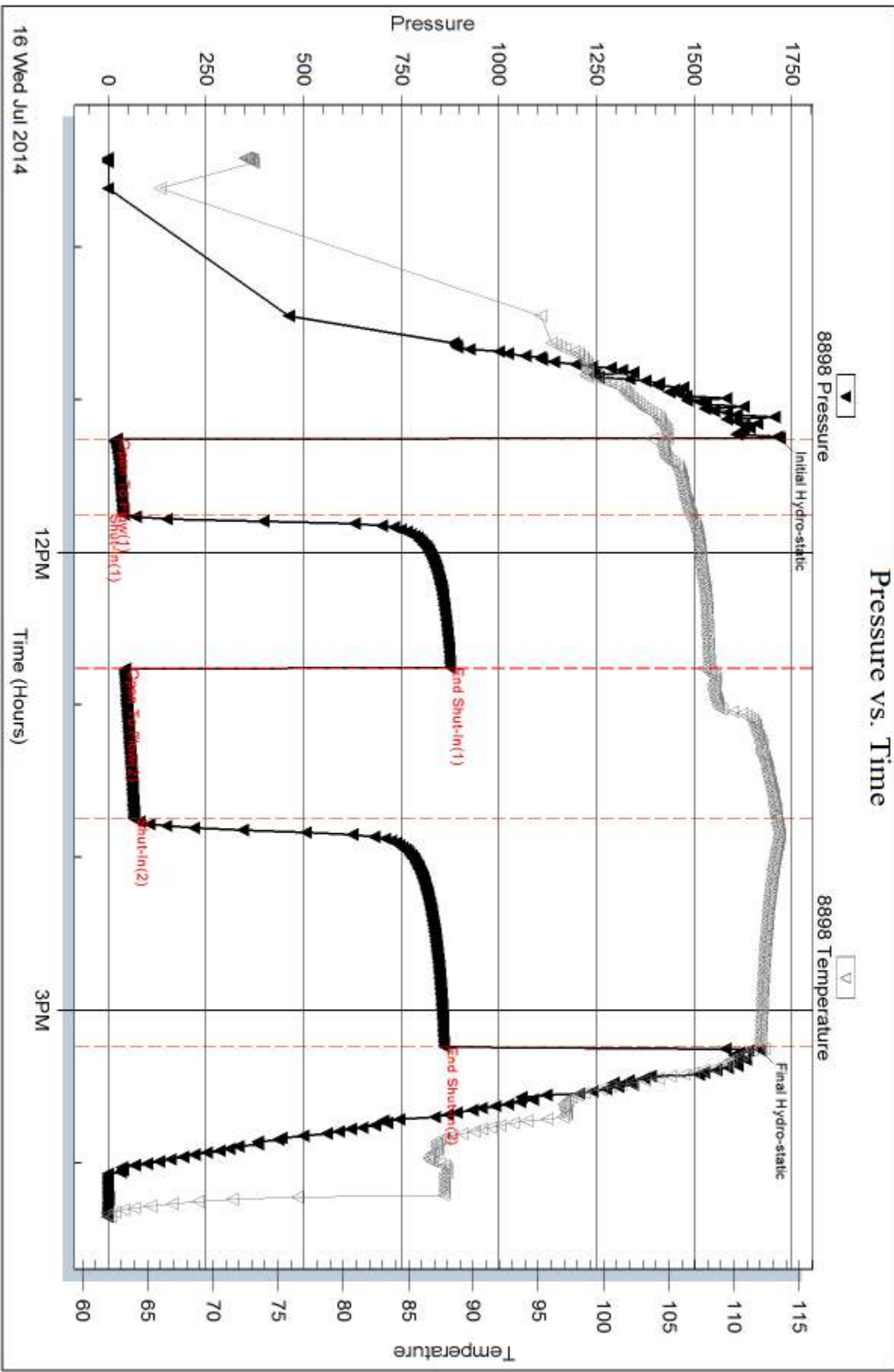
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



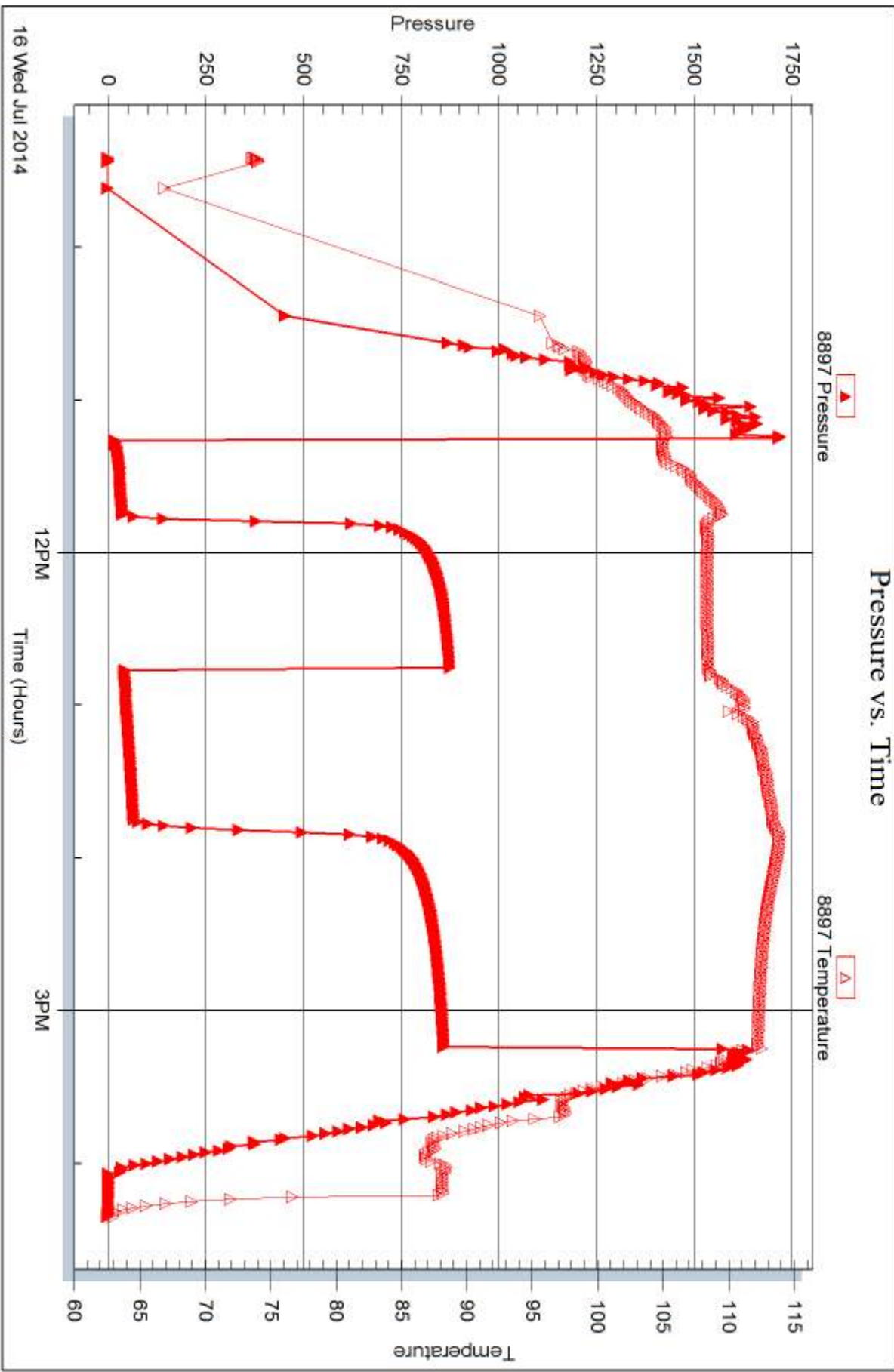
Serial #: 8897

Inside

Murfin Drilling Company

Litter LCA #1-31

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 58914

Printed: 2014.07.21 @ 09:17:47



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N Water STE 800
Wichita KS 67202

ATTN: Jeff Christian

Little LLC A '#1-31

31-16s-19w Rush,KS

Start Date: 2014.07.16 @ 21:33:06

End Date: 2014.07.17 @ 05:43:06

Job Ticket #: 58915 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.07.21 @ 09:17:17



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Company

31-16s-19w Rush, KS

250 N Water STE 800
Wichita KS 67202

Littler LLC A #1-31

Job Ticket: 58915

DST#: 2

ATTN: Jeff Christian

Test Start: 2014.07.16 @ 21:33:06

GENERAL INFORMATION:

Formation: **LKC B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:10:36

Time Test Ended: 05:43:06

Test Type: Conventional Bottom Hole (Reset)

Tester: Tate Lang

Unit No: 77

Interval: 3457.00 ft (KB) To 3484.00 ft (KB) (TVD)

Reference Elevations: 2079.00 ft (KB)

Total Depth: 3484.00 ft (KB) (TVD)

2074.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8898 Outside

Press@RunDepth: 560.48 psig @ 3459.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.16

End Date:

2014.07.17

Last Calib.:

2014.07.17

Start Time: 21:33:07

End Time:

05:43:06

Time On Btm:

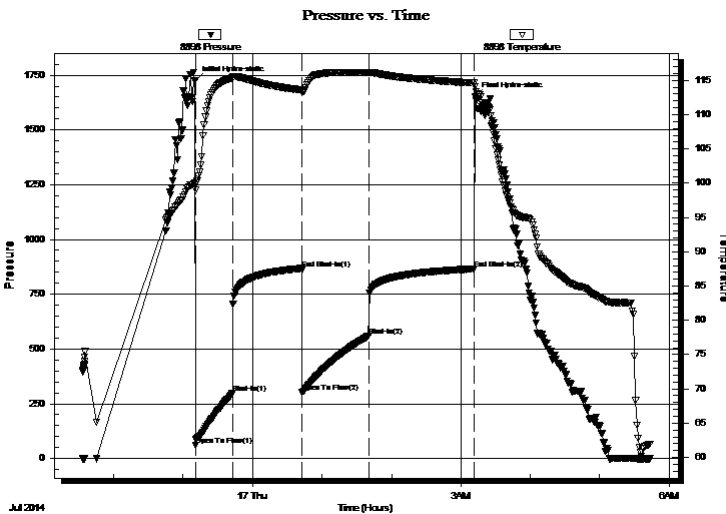
2014.07.16 @ 23:10:26

Time Off Btm:

2014.07.17 @ 03:12:06

TEST COMMENT: B.O.B. in 2 mins
Weak surface blow back built to 2 1/2"
B.O.B. in 3 mins
B.O.B. in 55 mins

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1726.50	100.07	Initial Hydro-static
1	59.91	98.98	Open To Flow (1)
32	297.20	115.37	Shut-In(1)
93	863.90	113.61	End Shut-In(1)
93	302.69	113.28	Open To Flow (2)
150	560.48	116.12	Shut-In(2)
241	864.91	114.63	End Shut-In(2)
242	1651.08	114.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
600.00	GMCW 5%G 85%W 5%M	8.14
60.00	MCGOW 10%G 30%O 50%W 10%M	0.84
350.00	WCGMO 5%G 80%O 10%W 5%M	4.91
90.00	10%G 60%O 10%W 20%M	1.26
0.00	930 GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company

31-16s-19w Rush, KS

250 N Water STE 800
Wichita KS 67202

Little LLC A #1-31

Job Ticket: 58915

DST#: 2

ATTN: Jeff Christian

Test Start: 2014.07.16 @ 21:33:06

Tool Information

Drill Pipe:	Length: 3418.00 ft	Diameter: 3.80 inches	Volume: 47.95 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 48.10 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3457.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	49.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			3440.00	
Hydraulic tool	5.00			3445.00	
Safety Joint	2.00			3447.00	
Packer	5.00			3452.00	22.00 Bottom Of Top Packer
Packer	5.00			3457.00	
Stubb	1.00			3458.00	
Perforations	1.00			3459.00	
Recorder	0.00	8897	Inside	3459.00	
Recorder	0.00	8898	Outside	3459.00	
Perforations	22.00			3481.00	
Bullnose	3.00			3484.00	27.00 Bottom Packers & Anchor

Total Tool Length: 49.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company

31-16s-19w Rush,KS

250 N Water STE 800
Wichita KS 67202

Littler LLC A #1-31

Job Ticket: 58915

DST#: 2

ATTN: Jeff Christian

Test Start: 2014.07.16 @ 21:33:06

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
600.00	GMCW 5%G 85%W 5%M	8.143
60.00	MCGOW 10%G 30%O 50%W 10%M	0.842
350.00	WCGMO 5%G 80%O 10%W 5%M	4.910
90.00	10%G 60%O 10%W 20%M	1.262
0.00	930 GIP	0.000

Total Length: 1100.00 ft Total Volume: 15.157 bbl

Num Fluid Samples: 0

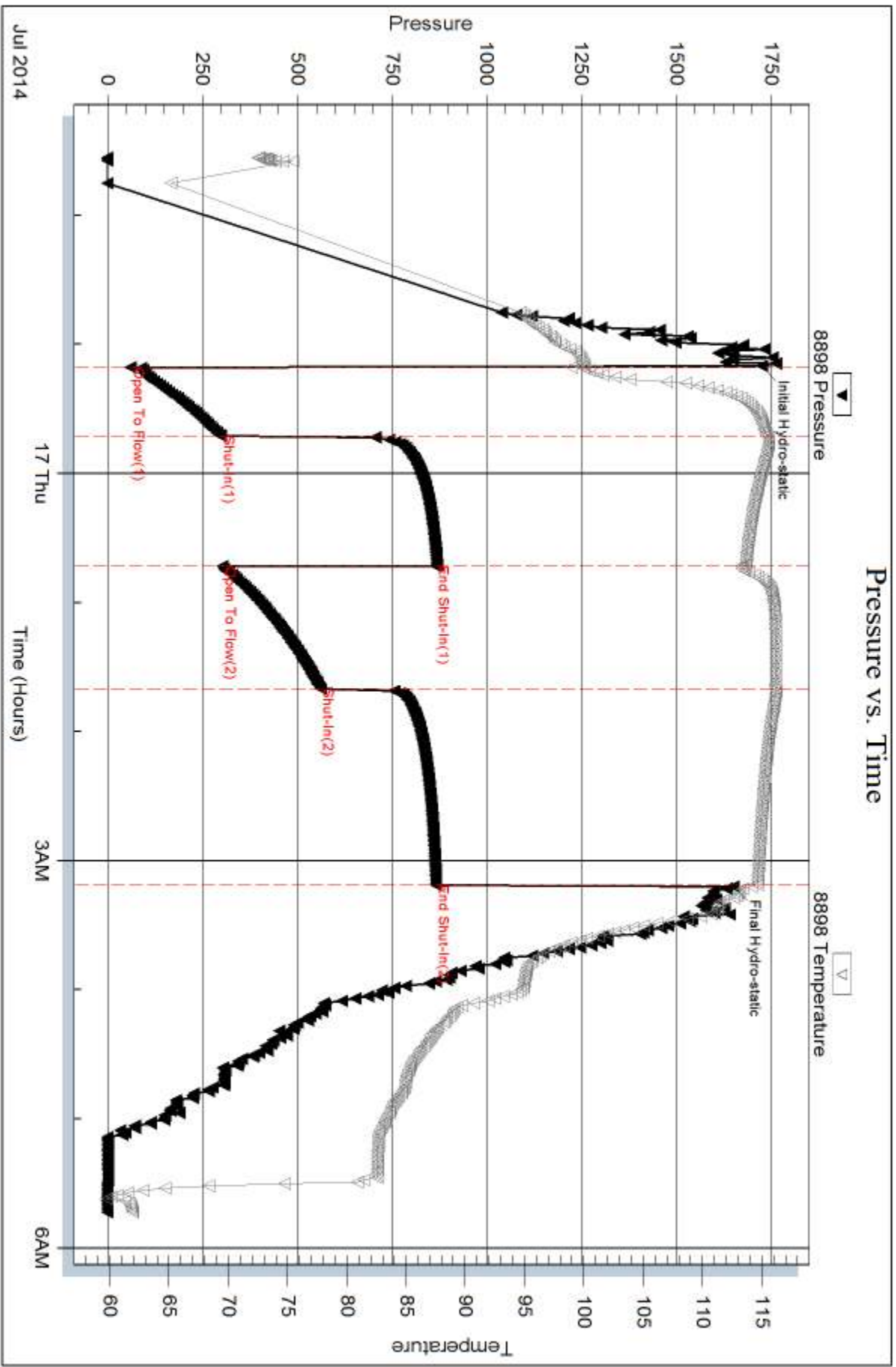
Num Gas Bombs: 0

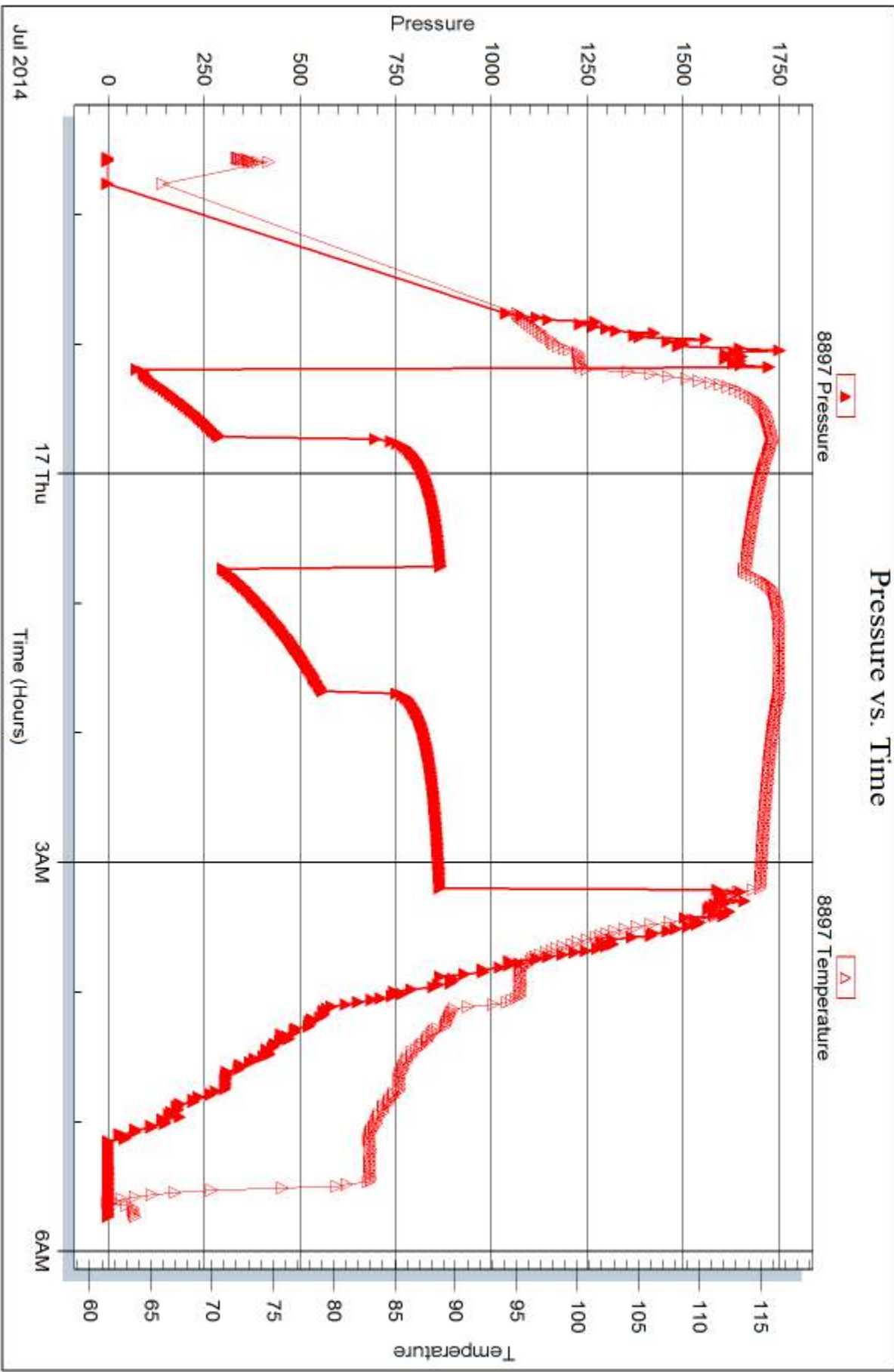
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N Water STE 800
Wichita KS 67202

ATTN: Jeff Christian

Little LLC A '#1-31

31-16s-19w Rush,KS

Start Date: 2014.07.18 @ 10:43:10

End Date: 2014.07.18 @ 17:08:00

Job Ticket #: 58916 DST #: 3

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.07.21 @ 09:16:45



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company

31-16s-19w Rush, KS

250 N Water STE 800
Wichita KS 67202

Littler LLC A #1-31

Job Ticket: 58916

DST#: 3

ATTN: Jeff Christian

Test Start: 2014.07.18 @ 10:43:10

Tool Information

Drill Pipe:	Length: 3798.00 ft	Diameter: 3.80 inches	Volume: 53.28 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 53.43 bbl</u>	Tool Chased	5.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	3818.00 ft			Final	63000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	15.00 ft				
Tool Length:	37.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3801.00	
Hydraulic tool	5.00			3806.00	
Safety Joint	2.00			3808.00	
Packer	5.00			3813.00	22.00 Bottom Of Top Packer
Packer	5.00			3818.00	
Stubb	1.00			3819.00	
Perforations	1.00			3820.00	
Recorder	0.00	8897	Inside	3820.00	
Recorder	0.00	8898	Outside	3820.00	
Perforations	10.00			3830.00	
Bullnose	3.00			3833.00	15.00 Bottom Packers & Anchor

Total Tool Length: 37.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company

31-16s-19w Rush,KS

250 N Water STE 800
Wichita KS 67202

Little LLC A #1-31

Job Ticket: 58916

DST#: 3

ATTN: Jeff Christian

Test Start: 2014.07.18 @ 10:43:10

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 11.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 10000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2100.00	VSMCW 98%W 2%M	29.184
270.00	MCW w ith show of oil on top 60%W 40%M	3.787

Total Length: 2370.00 ft

Total Volume: 32.971 bbl

Num Fluid Samples: 0

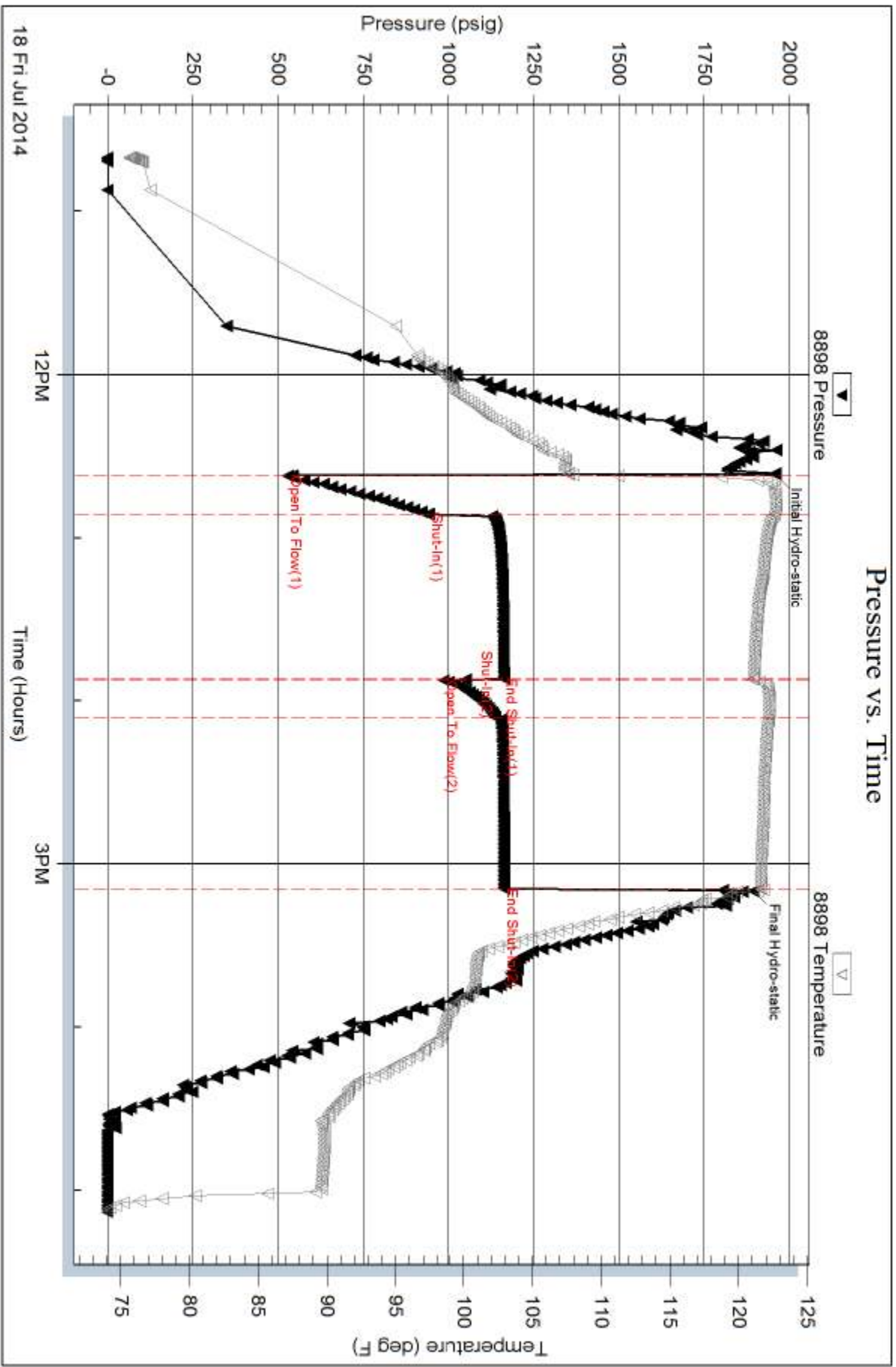
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



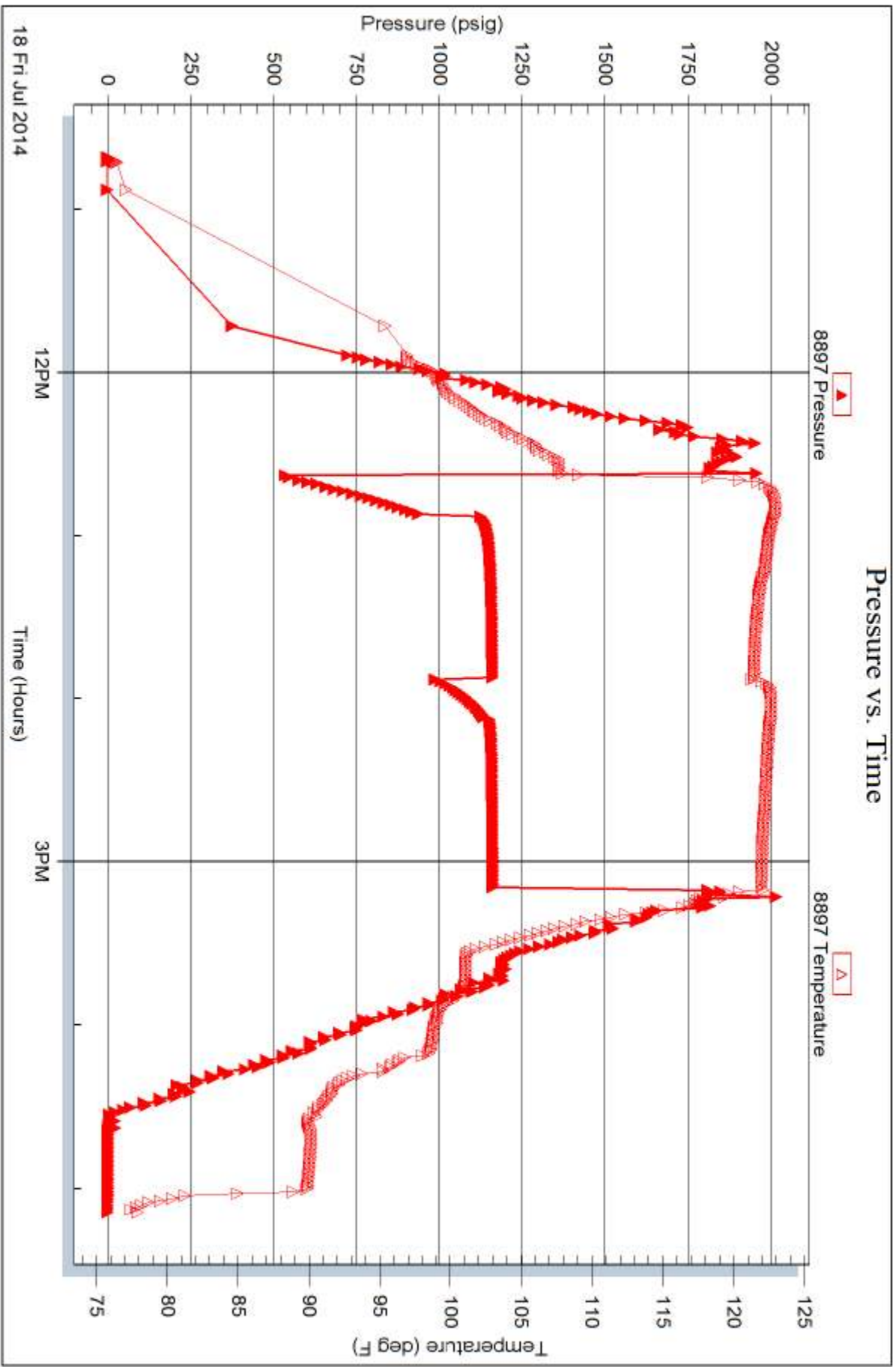
Serial #: 8897

Inside

Murfin Drilling Company

Litter LCA #1-31

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 58916

Printed: 2014.07.21 @ 09:16:46



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58914

Well Name & No. Little LLC 'A' #1-31 Test No. 1 Date 7-14-14
 Company Murfin Drilling Company Elevation 2079 KB 2674 GL
 Address 250 N Water STE 800 Wichita KS 67202
 Co. Rep / Geo. Jeff Christian Rig Murfin #1C
 Location: Sec. 31 Twp. 16S Rge. 19W Co. Rush State KS

Interval Tested ~~3432~~ 3462 Zone Tested LHC 'A'
 Anchor Length 30 Drill Pipe Run 3388 Mud Wt. 9.0
 Top Packer Depth 3427 Drill Collars Run 30 Vis 57
 Bottom Packer Depth 3432 Wt. Pipe Run 0 WL 8.8
 Total Depth 3462 Chlorides 4000 ppm System LCM 1/2 #

Blow Description Fair blow built to 4 in
Dead no blow built
Fair blow built to 5 in
Dead no blow back

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>90</u>	Feet of <u>MCW</u>			<u>80</u>	<u>20</u>

Rec Total 90 BHT 107 Gravity _____ API RW 241 @ 65 °F Chlorides 4000 ppm
 (A) Initial Hydrostatic 1718 Test 1150 T-On Location 0800
 (B) First Initial Flow 40 21 Jars _____ T-Started 0924
 (C) First Final Flow 40 Safety Joint 75 T-Open 1115
 (D) Initial Shut-In 876 Circ Sub _____ T-Pulled 1515
 (E) Second Initial Flow 44 Hourly Standby _____ T-Out 1627
 (F) Second Final Flow 66 Mileage 54 R/T 83.70 Comments _____
 (G) Final Shut-In 80 Sampler _____
 (H) Final Hydrostatic 1668 Straddle _____ Ruined Shale Packer _____
 Initial Open 30 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 60 Extra Packer _____ Extra Copies _____
 Final Flow 60 90 Extra Recorder _____ Sub Total 0
 Final Shut-In _____ Day Standby _____ Total 1308.70
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1308.70

Approved By _____ Our Representative Jeff Christian

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58915

Well Name & No. Littler LLC 'A' #1-31 Test No. 2 Date 7-16-14
 Company Murfin Drilling Company Elevation 2079 KB 2074 GL
 Address _____
 Co. Rep / Geo. Jeff Christian Rig Murfin #16
 Location: Sec. 31 Twp. 16S Rge. 19W Co. Rush State KS

Interval Tested 3457 3484 Zone Tested LMC "B1"
 Anchor Length 27 Drill Pipe Run 3418 Mud Wt. 9.0
 Top Packer Depth 3452 Drill Collars Run 30 Vis 57
 Bottom Packer Depth 3457 Wt. Pipe Run 0 WL 8.8
 Total Depth 3484 Chlorides 4000 ppm System LCM 1/2 #

Blow Description B.O.B. IN 2 mins
Weak surface, blow back built to 2 1/2 in
B.O.B. IN 3 1/2 mins
B.O.B. IN 55 mins

ec	Feet of	%gas	%oil	%water	%mud
<u>600</u>	<u>GMCW</u>	<u>5</u>	<u>85</u>	<u>5</u>	
<u>60</u>	<u>MCGOW</u>	<u>10</u>	<u>30</u>	<u>50</u>	<u>10</u>
<u>350</u>	<u>WCGMO</u>	<u>5</u>	<u>80</u>	<u>10</u>	<u>5</u>
<u>90</u>	<u>WCGMO</u>	<u>10</u>	<u>60</u>	<u>10</u>	<u>20</u>

ec Total 1100 BHT 116 Gravity _____ API RW 091 @ 55 F Chlorides 122000 ppm

- A) Initial Hydrostatic 1727
- B) First Initial Flow 60
- C) First Final Flow 297
- D) Initial Shut-In 864
- E) Second Initial Flow 303
- F) Second Final Flow 560
- G) Final Shut-In 865
- H) Final Hydrostatic 1651

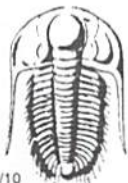
- Test 1150
- Jars _____
- Safety Joint 75
- Circ Sub _____
- Hourly Standby _____
- Mileage 83.70
- Sampler _____
- Straddle _____
- Shale Packer _____
- Extra Packer _____
- Extra Recorder _____
- Day Standby _____
- Accessibility _____
- Sub Total 1308.70

- T-On Location 2110
- T-Started 2133
- T-Open 2311
- T-Pulled 0311
- T-Out 0543

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90

- Comments _____
- Ruined Shale Packer _____
- Ruined Packer _____
- Extra Copies _____
- Sub Total 0
- Total 1308.70
- MP/DST Disc't _____

Approved By _____ Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58916

Well Name & No. Little LLC 'A' #1-31 Test No. 3 Date 7-18-14
 Company Murfin Drilling Company Elevation 2079 KB 2074 GL
 Address _____
 Co. Rep / Geo. Jeff Christian Rig Murfin #16
 Location: Sec. 31 Twp. 16S Rge. 19W Co. Rush State KS

Interval Tested 3818 3833 Zone Tested Arbuckle
 Anchor Length _____ Drill Pipe Run 3798 Mud Wt. 9.4
 Top Packer Depth _____ Drill Collars Run 30 Vis 56
 Bottom Packer Depth _____ Wt. Pipe Run _____ WL 11.2
 Total Depth 3833 Chlorides 10000 ppm System LCM 1#

Blow Description B, O, B, in 1 min
Weight surface slow back died in 50 mins
B, O, B, in 1 min
Dead no blow back

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>2100</u>	Feet of <u>ksmcw</u>			<u>98</u>	<u>2</u>
Rec <u>270</u>	Feet of <u>mcw with show of oil on top</u>			<u>60</u>	<u>40</u>
Rec _____	Feet of _____				
Rec _____	Feet of _____				

Rec Total 2370 BHT _____ Gravity _____ API RW .153 @ 65 ° F Chlorides 5500 ppm
 (A) Initial Hydrostatic 1959 Test 1150 T-On Location 0945
 (B) First Initial Flow 528 Jars _____ T-Started 1033
 (C) First Final Flow 941 Safety Joint 75 T-Open 1264
 (D) Initial Shut-In 1163 Circ Sub _____ T-Pulled 31506
 (E) Second Initial Flow 985 Hourly Standby _____ T-Out 1708
 (F) Second Final Flow 1136 Mileage 83.70 Comments _____
 (G) Final Shut-In 1164 Sampler _____
 (H) Final Hydrostatic 1893 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____

Initial Open 15
 Initial Shut-In 60
 Final Flow 15
 Final Shut-In 60
 Day Standby +4 hrs
 Accessibility _____
 Sub Total 1308.70
 Sub Total 133.33
 Total 1442.03
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]
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