



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1212933
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
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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: _____

1212933

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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
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:				

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> <i>(Submit ACO-4)</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	Theron 1-10
Doc ID	1212933

All Electric Logs Run

Dual Induction
Dual Compensated
Microresistivity
Borehole Compensated



INVOICE

*weat.
Prod-LH*

PO Box 93999
Southlake, TX 76092

Invoice Number: 141898

Invoice Date: Mar 12, 2014

Page: 1

Voice: (817) 546-7282

Fax: (817) 246-3361

Bill To:
Murfin Drig. Co., Inc. 250 N. Water STE #300 Wichita, KS 67202

Customer ID	Field Ticket #	Payment Terms	
Murfin	62581	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Mar 12, 2014	4/11/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Theron #1-10		
200.00	CEMENT MATERIALS	Class A Common	17.90	3,580.00
7.00	CEMENT MATERIALS	Chloride	64.00	448.00
210.00	CEMENT SERVICE	Cubic Feet Charge	2.48	520.80
968.70	CEMENT SERVICE	Ton Mileage Charge	2.60	2,518.62
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
100.00	CEMENT SERVICE	Pump Truck Mileage	7.70	770.00
1.00	CEMENT SERVICE	Manifold Rental	275.00	275.00
100.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	440.00
1.00	CEMENT SUPERVISOR	Alan Ryan		
1.00	EQUIPMENT OPERATOR	Kevin Ryan		

Subtotal	10,064.67
Sales Tax	328.28
Total Invoice Amount	10,392.95
Payment/Credit Applied	
TOTAL	10,392.95

ALL PRICES ARE NET, PAYABLE 30 DAYS FOLLOWING DATE OF INVOICE. 1 1/2% CHARGED THEREAFTER. IF ACCOUNT IS CURRENT, TAKE DISCOUNT OF

\$ 3,522.63 *35%*

ONLY IF PAID ON OR BEFORE
Apr 6, 2014

Oh

- 3522.63
6870.32

ALLIED OIL & GAS SERVICES, LLC 062581

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Dakley

DATE <u>3/12/14</u>	SEC. <u>10</u>	TWP. <u>1</u>	RANGE <u>37</u>	CALLED OUT	ON LOCATION	JOB START <u>8:00 AM</u>	JOB FINISH <u>2:30 PM</u>
LEASE <u>Theron</u>	WELL # <u>1-10</u>	LOCATION <u>Bird City, N 70 AA E 70 32</u>	COUNTY <u>Cherokee</u>	STATE <u>KS</u>			
OLD OR NEW (Circle one)		<u>N 2 1/2 E 0 N 0 E 0 S into</u>					

CONTRACTOR MacAn 25 OWNER Same

TYPE OF JOB Surface
HOLE SIZE 12 1/4 T.D. 230'
CASING SIZE 8 1/2 DEPTH 230'
TUBING SIZE _____ DEPTH _____
DRILL PIPE _____ DEPTH _____
TOOL _____ DEPTH _____

PREV. MAX _____ MINIMUM _____
MEAS. LINE _____ SHOE JOINT _____
CEMENT LEFT IN CSG. 15'
PERFS. _____
DISPLACEMENT 13.69 BBL

CEMENT AMOUNT ORDERED 200 Com 370CC

COMMON <u>200</u>	@ <u>17.20</u>	<u>3580.00</u>
POZMIX _____	@ _____	_____
GEL _____	@ _____	_____
CHLORIDE <u>7</u>	@ <u>64.00</u>	<u>448.00</u>
ASC _____	@ _____	_____

EQUIPMENT

PUMP TRUCK CEMENTER <u>Alan</u>	
# <u>426-281</u> HELPER <u>Kevin</u>	
BULK TRUCK	
# <u>818</u> DRIVER <u>Juan T</u>	
BULK TRUCK	
# _____ DRIVER _____	

HANDLING 210 CF @ 2.42 \$520.80
MILEAGE 2.00 @ 700/mile 1400.00
TOTAL 2067.80

REMARKS:
Run Csg, Circulate, Mix Cement,
Displace Cement. Shut in

Cement did circulate
Thank You
Alan Kevin Juan T

CHARGE TO: Murfin Drilling Co
STREET _____
CITY _____ STATE _____ ZIP _____

SERVICE

DEPTH OF JOB <u>230'</u>	
PUMP TRUCK CHARGE <u>1512.25</u>	
EXTRA FOOTAGE @ _____	_____
MILEAGE <u>100 miles</u> @ <u>7.20</u>	<u>720.00</u>
MANIFOLD @ _____	_____
<u>Vehicle 100 miles</u> @ <u>4.40</u>	<u>440.00</u>
TOTAL <u>2997.25</u>	

To: Allied Oil & Gas Services, LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Raymond Bled
SIGNATURE [Signature]

PLUG & FLOAT EQUIPMENT

_____	@ _____	_____
_____	@ _____	_____
_____	@ _____	_____
_____	@ _____	_____
_____	@ _____	_____
TOTAL _____		

SALES TAX (If Any) _____
TOTAL CHARGES 11,064.67
DISCOUNT 3,522.63 IF PAID IN 30 DAYS
6,542.03 Net



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



Invoice

DATE	INVOICE #
3/23/2014	25501

BILL TO
Murfin Drilling Co Inc PO Box 661 Colby, KS 67701-0661

USED FOR IC 103 • Acidizing
 APPROVED JFR • Cement
FLU • Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#1-10	Theron	Rawlins	Company Rig	Oil	Development	Cement Top To ...	Don
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				150	Miles	6.00	900.00
579D	Pump Charge - Top To Bottom LongString - 4615 Feet				1	Job	2,000.00	2,000.00
221	Liquid KCL (Clayfix)				4	Gallon(s)	25.00	100.00T
281	Mud Flush				500	Gallon(s)	1.25	625.00T
290	D-Air				5	Gallon(s)	42.00	210.00T
403-5	5 1/2" Cement Basket				3	Each	300.00	900.00T
406-5	5 1/2" Latch Down Plug & Baffle				1	Each	275.00	275.00T
407-5	5 1/2" Insert Float Shoe With Auto Fill				1	Each	375.00	375.00T
409-5	5 1/2" Turbolizer				15	Each	90.00	1,350.00T
413-5	5 1/2" Roto Wall Scratcher				14	Each	40.00	560.00T
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
325	Standard Cement				200	Sacks	14.50	2,900.00T
276	Flocele				50	Lb(s)	2.50	125.00T
283	Salt				1,000	Lb(s)	0.20	200.00T
284	Calseal				10	Sack(s)	35.00	350.00T
285	CFR-1				141	Lb(s)	4.50	634.50T
330	Swift Multi-Density Standard (MIDCON II)				300	Sacks	18.50	5,550.00T
276	Flocele				150	Lb(s)	2.50	375.00T
581D	Service Charge Cement				500	Sacks	2.00	1,000.00
583D	Drayage				3,814.43	Ton Miles	1.00	3,814.43
	Subtotal							22,443.93
	Sales Tax Rawlins County						7.90%	1,163.63

We Appreciate Your Business!

Total \$23,607.56



CHARGE TO: Murphy Drilling Co.
 ADDRESS: _____
 CITY, STATE, ZIP CODE: _____

TICKET 25501

PAGE 1 OF 2

SERVICE LOCATIONS

1. Hayes KS WELLS/PROJECT NO. 1-10 LEASE Theron COUNTY/PARISH Rawlins STATE KS CITY _____ DATE 3-23-14 OWNER _____

2. Ness City, KS TICKET TYPE SERVICE CONTRACTOR Co. 89 RIG NAME/NO. # 25 SHIPPED VIA 25 DELIVERED TO W. McDonald ORDER NO. _____

3. _____ WELLS/PROJECT NO. _____ LEASE _____ COUNTY/PARISH _____ STATE _____ CITY _____ DATE _____ OWNER _____

4. _____ WELLS/PROJECT NO. _____ LEASE _____ COUNTY/PARISH _____ STATE _____ CITY _____ DATE _____ OWNER _____

WELL TYPE D-1 WELL CATEGORY in field JOB PURPOSE Cement top to Bottom L.S. WELL LOCATION _____

INVOICE INSTRUCTIONS _____

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	LOC	ACCT	DF	DESCRIPTION	MILEAGE		QTY.		UNIT		UNIT PRICE	AMOUNT
						#	113						
575					MILEAGE			150 mi				600	9000
579					Ramp Change - cement top to Bottom L.S.			100		3/16 15 FT.		20000	20000
281					Liquid HCL			4 gal				2500	10000
281					Mud Flush			500 gal				125	62500
290					D-100			5 gal				4200	21000
403					Cement Baskets			300		5 1/2 in		3000	9000
406					Latex Drain Plug & Beate			100		5 1/2 in			27500
407					Insert Seal Shoe w/ H&A Cell			100		5 1/2 in			37500
409					Turboliners			1500		5 1/2 in		9000	135000
413					RTA Wash Scrubbers			1400		5" P1		4000	56000
419					Rotating Head Bore			100		5 1/2 in		20000	20000

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 3-23-14 TIME SIGNED 11:00 A.M. P.M.

SIGNED BY [Signature]

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

SURVEY

OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN? YES NO

WE UNDERSTOOD AND MET YOUR NEEDS? YES NO

OUR SERVICE WAS PERFORMED WITHOUT DELAY? YES NO

WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY? YES NO

ARE YOU SATISFIED WITH OUR SERVICE? YES NO

CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL 749500 AMOUNT 749500

SUBTOTAL 2244393

Rawlins TAX 9% 116363

TOTAL 2360756

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

SWIFT OPERATOR [Signature] APPROVAL [Signature]

Thank You!



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

TICKET CONTINUATION

TICKET No. 25501

CUSTOMER
Murfis Dry Co

WELL
1-12 Thoren

DATE
3-23-14

PAGE 2 OF 2

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	WELL				UNIT PRICE	AMOUNT		
		LOC	ACCT	DF			QTY.	UM	QTY.	UM				
325						Standard Cut EA-2	800	SKS	1820	165		1952	2900.00	
276						Fluocel	50	lbs				2150	107.50	
283						Salt	1000	lbs				20	2000.00	
284						Calced	940	lbs		10	SKS	35.00	3500.00	
285						CER-1	141	lbs				45.00	6345.00	
332						SMD cut,	300	SKS	29778	165		1850	55500.00	
276						Fluocel 1/2 #/sk	150	lbs				2150	3750.00	
581						CEMENT	500	SKS				200	1000.00	
583						MIAGE CHANGE	50	859				100	3814.43	
SERVICE CHARGE							TOTAL WEIGHT		LOADED MILES		CUBIC FEET		TON MILES	
							50859		150		500 SKS		3814.43	
CONTINUATION TOTAL													14998.93	

JOB LOG

SWIFT Services, Inc.

DATE 3-23-14 PAGE NO. 1
TICKET NO. 25501

CUSTOMER *Mexican Drilling Co.*

WELL NO. 1-10

LEASE *Theron*

JOB TYPE *L.S. Cement Top To Bottom*

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1600							4620 ^{TD} DN location - float pipe (Rig waiting)
	1610							Start 5 1/2" - 155#/ft casing to 4615'
								Insert float shoe w/ Auto-Roll
								L.D. Bath - ST-21' - 4594' = 109.3 BBL
								14 - 5' Roto-Wall Scratchers
								Cent. Turbos - 1-2-3-5 to 10-12-15-18-25-36-60
								Cut Baskets 16-37-61
	1735/1755							Bot cir - 30 min *55
								Drop fill up ball 5 JTs out
	1900							Fin casing
	1910							cir/rotate
			10/7					RH-30 SKS SMD MH 20 SKS SMD (12 1/2 gal)
		5	12			250		Mixed Plush
		5 1/2	200			300		KCL Plush
		5	140			300		250 SKS SMD cut @ 11.2 gal
		4	48			300		200 SKS EA-2 cut,
						Val		Fin cut - wash out Pump & Lines
		9				300		L.D. Plug - St. Displ - 15 BBL KCL 1st
		9	70			400		Caught lift
		8	85			800		slow rate
		7	100			1000		slow rate
		6 1/2	105			1100		slow rate
			109			1200		cir press
	2130		109 1/2			1700		Plug Down - Held - Release & Held.
								Wash up & Rackup
								No cut cir - Good returns
								<i>Frank</i>
								Alan Tami, Craig & Isaac
	2215							

Theron #1-10
 Daily Drilling Report
 Page Three

MDCI Theron #1-10 1900' FSL 2200' FEL Sec. 10-T1S-R37W 3111' KB							MDCI Culwell 'C' #1-10 2190' FNL 1680' FWL Sec. 10-T1S-R37W 3150' KB	
Formation	Sample top	Datum	Ref	Log Top	Datum	Ref	Log Top	Datum
Anhydrite	3056	+55	-1	3052	+59	+3	3094	+56
B/Anhydrite	3093	+18	-9	3085	+26	-1	3123	+27
Neva	3512	-401	-6	3505	-394	+1	3545	-395
Red Eagle	3576	-465	-7	3569	-458	Flat	3608	-458
Foraker	3625	-514	-7	3614	-503	+4	3657	-507
Topeka	3842	-731	-5	3834	-723	+3	3876	-726
Oread	3975	-864	-4	3970	-859	+1	4010	-860
Lansing	4052	-941	+1	4050	-939	+3	4092	-942
Stark	4272	-1161	-3	4266	-1155	+3	4308	-1158
BKC	4327	-1216	-1	4321	-1210	+5	4365	-1215
Pawnee	4448	-1337	-9	4442	-1331	-3	4478	-1328
Cherokee	4538	-1427	-5	4529	-1418	+4	4572	-1422
Mississippi	NR						NR	
RTD	4620	-1509		4616	-1505		4650	-1500
LTD							4648	-1498



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc.**

250 N. Water
STE 300
Wichita KS 67202

ATTN: Wes Hansen

Theron #1-10

10-1S-37W Cheyenne KS

Start Date: 2014.03.16 @ 22:54:00

End Date: 2014.03.17 @ 07:25:39

Job Ticket #: 56863 DST #: 1

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

Printed: 2014.03.25 @ 14:41:47



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56863

DST#: 1

Test Start: 2014.03.16 @ 22:54:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:37:30

Time Test Ended: 07:25:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 58

Interval: 3932.00 ft (KB) To 3990.00 ft (KB) (TVD)

Reference Elevations: 3111.00 ft (KB)

Total Depth: 3990.00 ft (KB) (TVD)

3098.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

Serial #: 6752 Inside

Press@RunDepth: 57.18 psig @ 3933.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.16

End Date:

2014.03.17

Last Calib.:

2014.03.17

Start Time: 22:54:01

End Time:

07:25:40

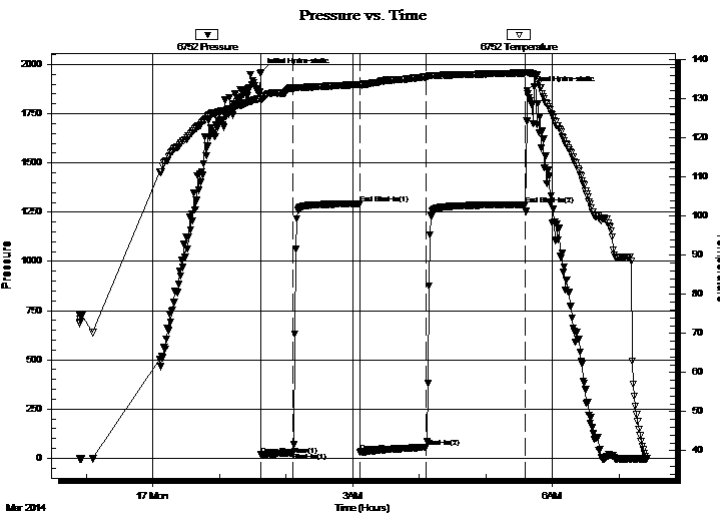
Time On Btm:

2014.03.17 @ 01:37:10

Time Off Btm:

2014.03.17 @ 05:37:20

TEST COMMENT: 30 IF - Surface blow built to 2 1/2"
60 ISI - No return
60 FF - Surface blow started @ 15 mins built to 2"
90 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1960.40	130.08	Initial Hydro-static
1	16.99	129.81	Open To Flow (1)
30	29.21	132.76	Shut-In(1)
90	1293.12	133.66	End Shut-In(1)
90	31.75	133.36	Open To Flow (2)
150	57.18	135.60	Shut-In(2)
239	1289.22	136.63	End Shut-In(2)
241	1868.34	136.75	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
95.00	Mud 100%M	1.33

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56863

DST#: 1

Test Start: 2014.03.16 @ 22:54:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:37:30

Time Test Ended: 07:25:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 58

Interval: 3932.00 ft (KB) To 3990.00 ft (KB) (TVD)

Reference Elevations: 3111.00 ft (KB)

Total Depth: 3990.00 ft (KB) (TVD)

3098.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

Serial #: 8322 Outside

Press@RunDepth: psig @ 3933.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.16

End Date:

2014.03.17

Last Calib.:

2014.03.17

Start Time: 22:54:01

End Time:

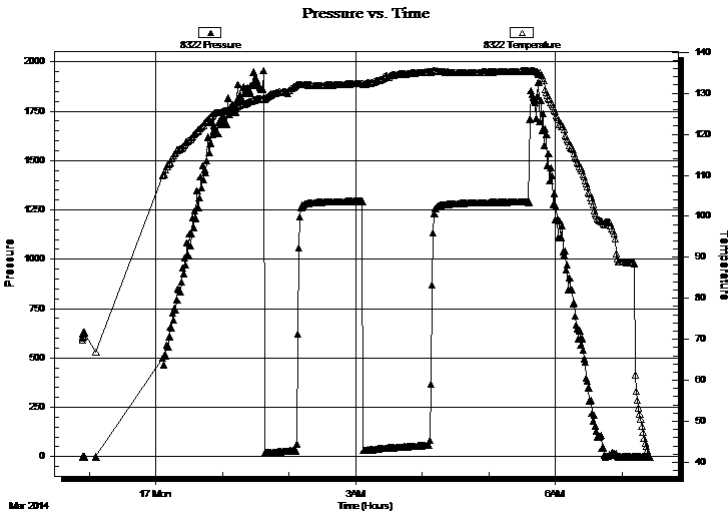
07:25:40

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 IF - Surface blow built to 2 1/2"
60 ISI - No return
60 FF - Surface blow started @ 15 mins built to 2"
90 FSI - No return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
95.00	Mud 100%M	1.33

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56863

DST#: 1

Test Start: 2014.03.16 @ 22:54:00

Tool Information

Drill Pipe:	Length: 3925.00 ft	Diameter: 3.80 inches	Volume: 55.06 bbl	Tool Weight: 2500.00 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: 50000.00 lb
			<u>Total Volume: 55.06 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3932.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	85.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			3906.00	
Shut In Tool	5.00			3911.00	
Hydraulic tool	5.00			3916.00	
Jars	5.00			3921.00	
Safety Joint	2.00			3923.00	
Packer	5.00			3928.00	27.00 Bottom Of Top Packer
Packer	4.00			3932.00	
Stubb	1.00			3933.00	
Recorder	0.00	6752	Inside	3933.00	
Recorder	0.00	8322	Outside	3933.00	
Perforations	21.00			3954.00	
Change Over Sub	1.00			3955.00	
Drill Pipe	31.00			3986.00	
Change Over Sub	1.00			3987.00	
Bullnose	3.00			3990.00	58.00 Bottom Packers & Anchor

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56863

DST#: 1

Test Start: 2014.03.16 @ 22:54:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 74.00 sec/qt

Water Loss: 7.17 in³

Resistivity: ohm.m

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
95.00	Mud 100%M	1.333

Total Length: 95.00 ft Total Volume: 1.333 bbl

Num Fluid Samples: 0

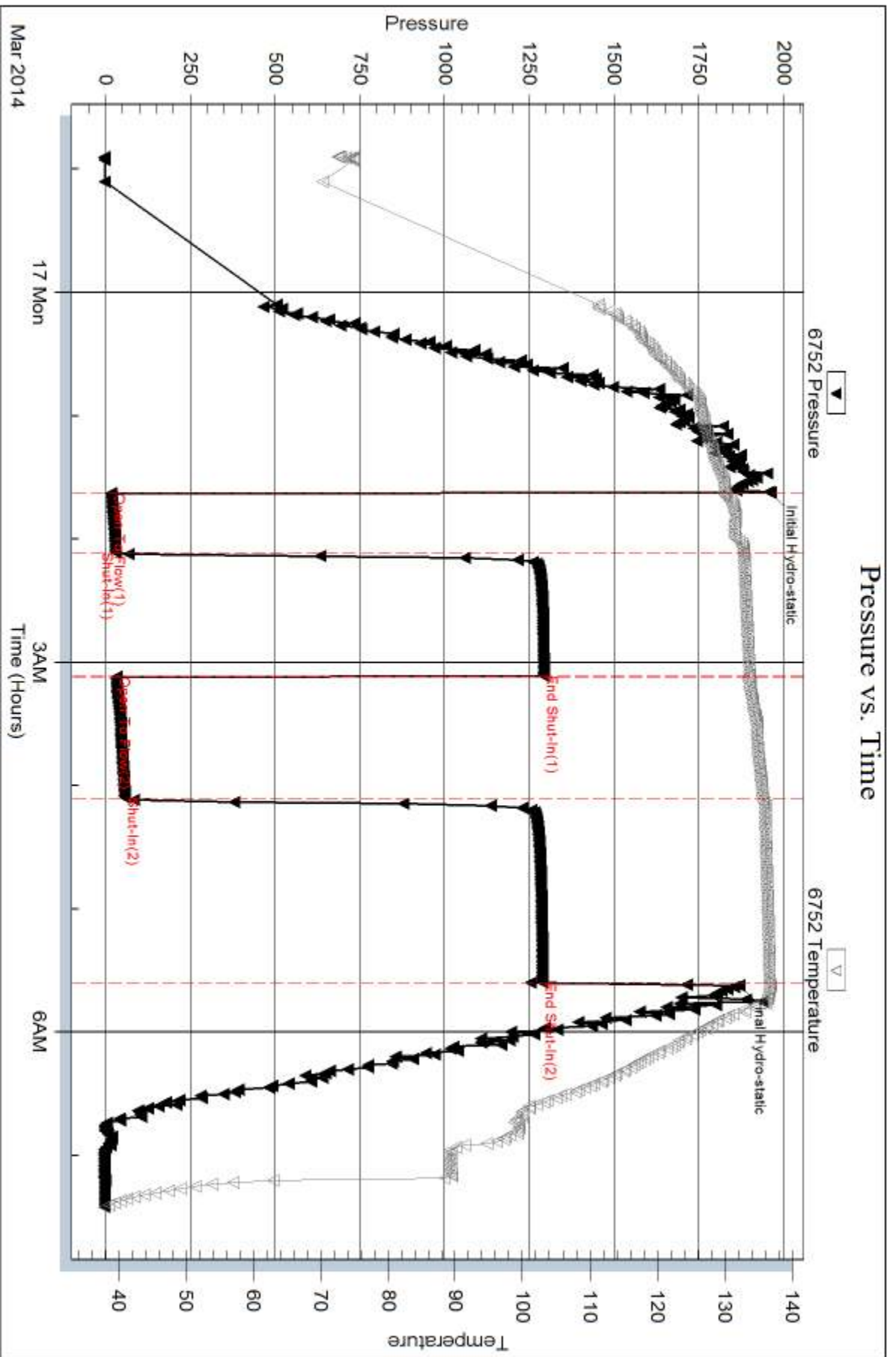
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

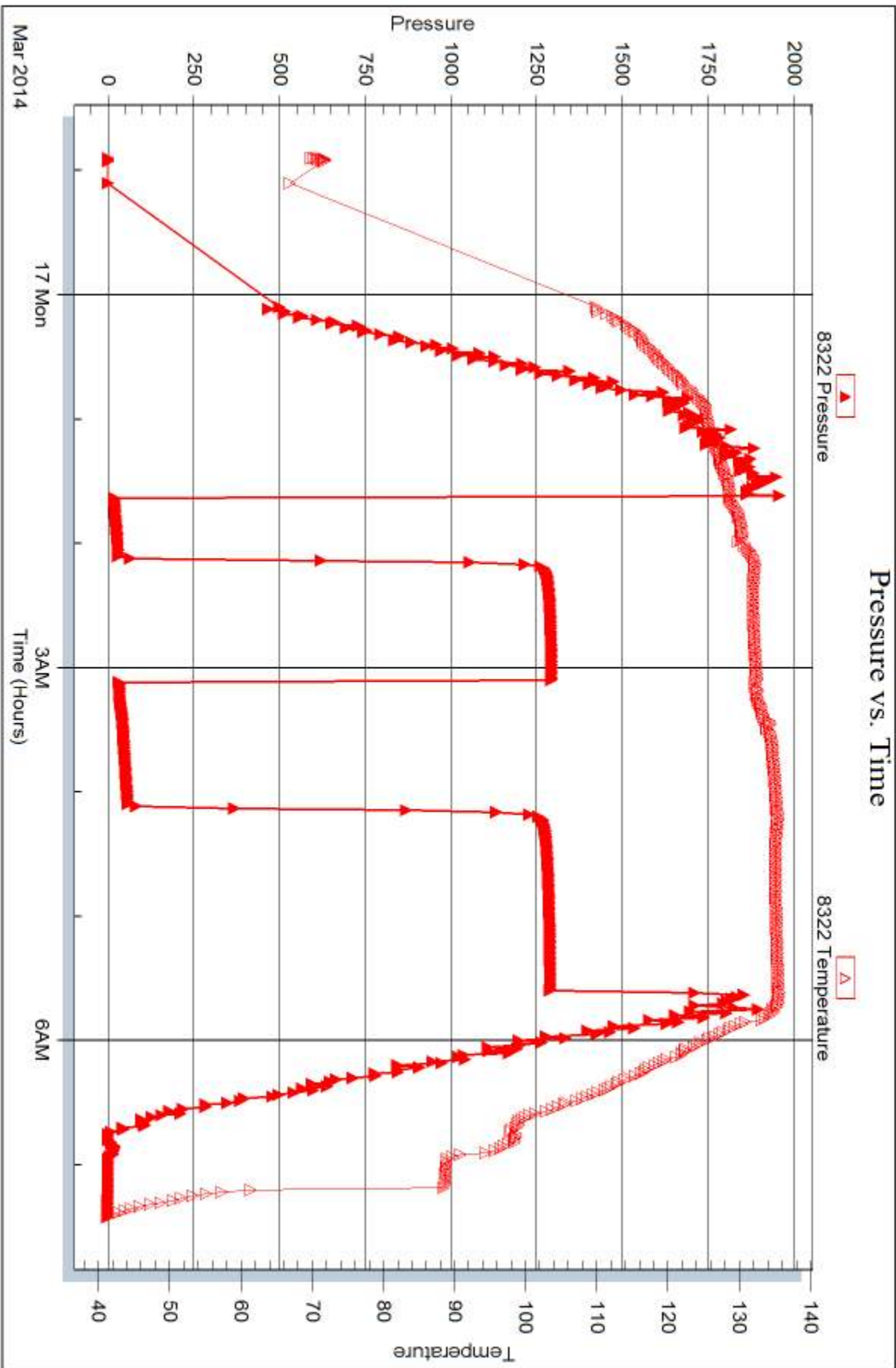


Serial #: 8322

Outside Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 56863

Printed: 2014.03.25 @ 14:41:49



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc.**

250 N. Water
STE 300
Wichita KS 67202

ATTN: Wes Hansen

Theron #1-10

10-1S-37W Cheyenne KS

Start Date: 2014.03.18 @ 04:36:00

End Date: 2014.03.18 @ 13:17:49

Job Ticket #: 56770 DST #: 2

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

Printed: 2014.03.25 @ 14:41:22



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56770

DST#: 2

Test Start: 2014.03.18 @ 04:36:00

GENERAL INFORMATION:

Formation: **LKC "A&D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:16:00

Time Test Ended: 13:17:49

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 58

Interval: 4026.00 ft (KB) To 4130.00 ft (KB) (TVD)

Reference Elevations: 3111.00 ft (KB)

Total Depth: 4130.00 ft (KB) (TVD)

3098.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 13.00 ft

Serial #: 8322 Outside

Press@RunDepth: 66.20 psig @ 4027.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.18

End Date:

2014.03.18

Last Calib.:

2014.03.18

Start Time: 04:36:01

End Time:

13:17:49

Time On Btm:

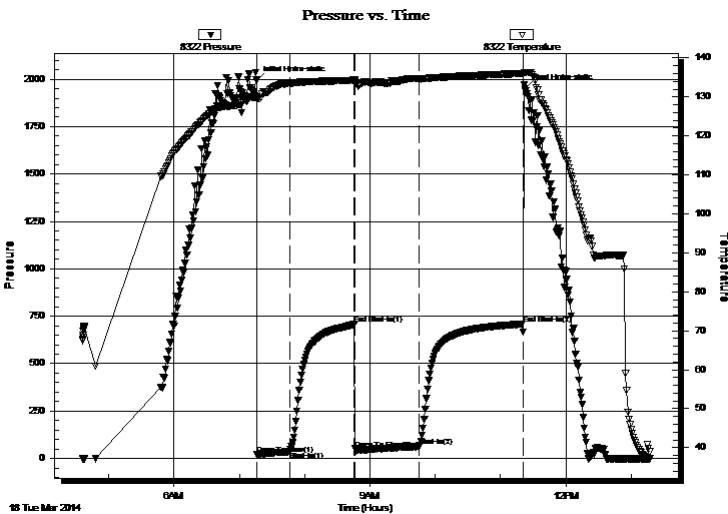
2014.03.18 @ 07:15:40

Time Off Btm:

2014.03.18 @ 11:22:30

TEST COMMENT: 30-IF-Blow Built To 6"
60-ISI-No Return
60-FF-Blow Built To 5 1/2"
90-FSI-No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1994.85	130.00	Initial Hydro-static
1	20.34	129.58	Open To Flow (1)
31	35.49	133.52	Shut-In(1)
90	707.14	134.29	End Shut-In(1)
91	50.70	134.11	Open To Flow (2)
150	66.20	134.65	Shut-In(2)
245	708.57	136.01	End Shut-In(2)
247	1951.46	136.29	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
74.00	ocm 50%o 50%m	1.04
51.00	go 45%g 55%o	0.72

* Recovery from multiple tests

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56770

DST#: 2

Test Start: 2014.03.18 @ 04:36:00

GENERAL INFORMATION:

Formation: **LKC "A&D"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 07:16:00
Time Test Ended: 13:17:49
Interval: **4026.00 ft (KB) To 4130.00 ft (KB) (TVD)**
Total Depth: 4130.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Robert Zodrow
Unit No: 58
Reference Elevations: 3111.00 ft (KB)
3098.00 ft (CF)
KB to GR/CF: 13.00 ft

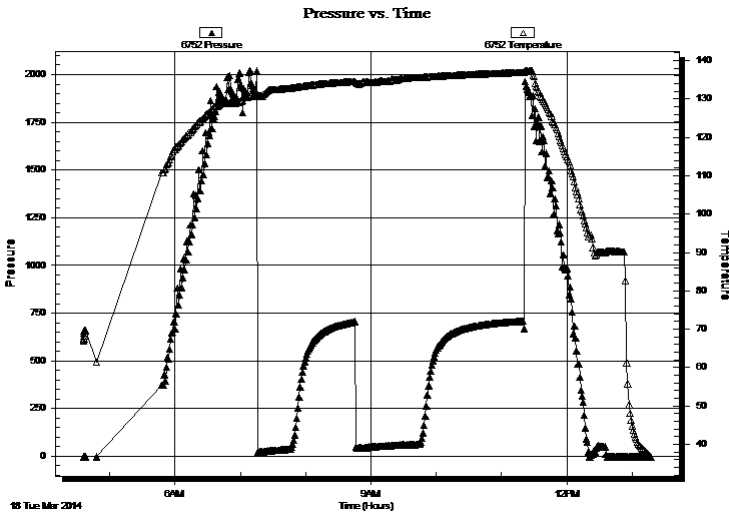
Serial #: 6752

Inside

Press@RunDepth: psig @ 4027.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.03.18 End Date: 2014.03.18 Last Calib.: 2014.03.18
Start Time: 04:36:01 End Time: 13:17:49 Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IF-Blow Built To 6"
60-ISI-No Return
60-FF-Blow Built To 5 1/2"
90-FSI-No Return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
74.00	ocm 50%o 50%m	1.04
51.00	go 45%g 55%o	0.72

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 Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56770

DST#: 2

Test Start: 2014.03.18 @ 04:36:00

Tool Information

Drill Pipe:	Length: 4018.00 ft	Diameter: 3.80 inches	Volume: 56.36 bbl	Tool Weight: 2500.00 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: 54000.00 lb
			<u>Total Volume: 56.36 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4026.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	104.00 ft			
Tool Length:	131.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4000.00	
Shut In Tool	5.00			4005.00	
Hydraulic tool	5.00			4010.00	
Jars	5.00			4015.00	
Safety Joint	2.00			4017.00	
Packer	5.00			4022.00	27.00 Bottom Of Top Packer
Packer	4.00			4026.00	
Stubb	1.00			4027.00	
Recorder	0.00	6752	Inside	4027.00	
Recorder	0.00	8322	Outside	4027.00	
Perforations	36.00			4063.00	
Change Over Sub	1.00			4064.00	
Drill Pipe	62.00			4126.00	
Change Over Sub	1.00			4127.00	
Bullnose	3.00			4130.00	104.00 Bottom Packers & Anchor

Total Tool Length: 131.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56770

DST#: 2

Test Start: 2014.03.18 @ 04:36:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 72.00 sec/qt

Water Loss: 7.58 in³

Resistivity: ohm.m

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

24 deg API

Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
74.00	ocm 50%o 50%m	1.038
51.00	go 45%g 55%o	0.715

Total Length: 125.00 ft Total Volume: 1.753 bbl

Num Fluid Samples: 0

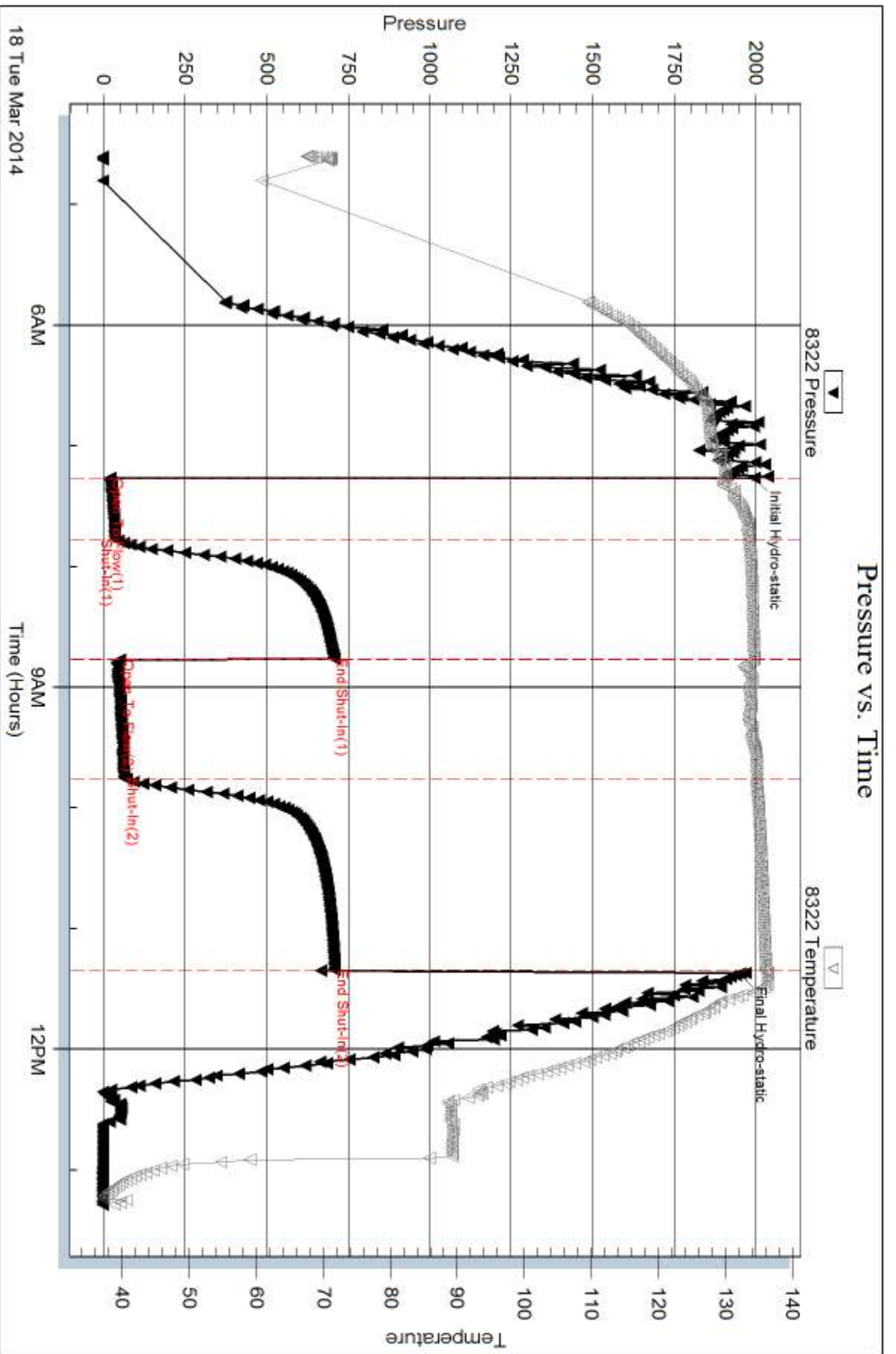
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



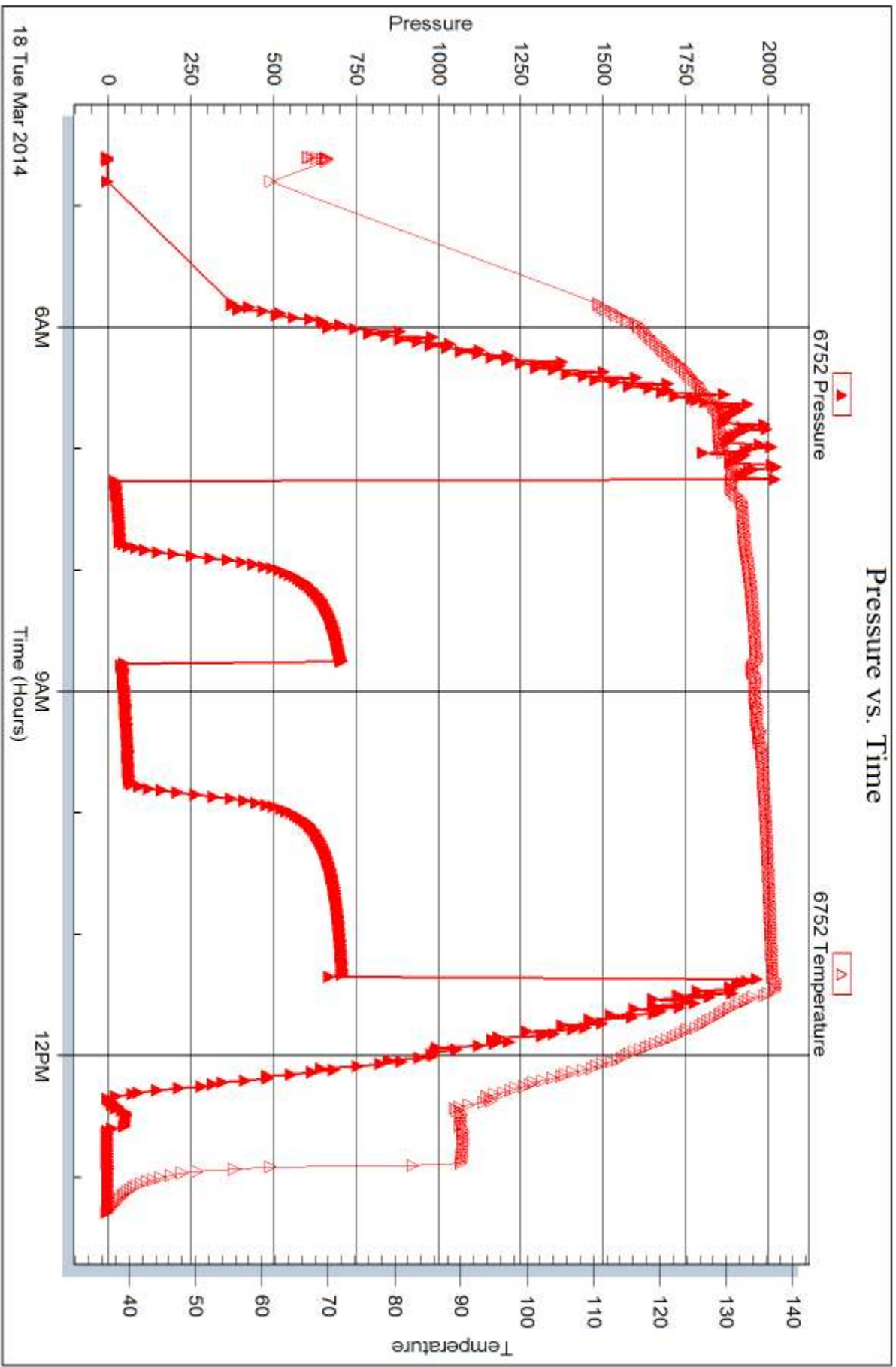
Serial #: 6752

Inside

Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 2



Tribble Testing, Inc

Ref. No: 56770

Printed: 2014.03.25 @ 14:41:25



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc.**

250 N. Water
STE 300
Wichita KS 67202

ATTN: Wes Hansen

Theron #1-10

10-1S-37W Cheyenne KS

Start Date: 2014.03.19 @ 03:02:00

End Date: 2014.03.19 @ 11:57:00

Job Ticket #: 56771 DST #: 3

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

Printed: 2014.03.25 @ 14:41:00



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56771

DST#: 3

Test Start: 2014.03.19 @ 03:02:00

GENERAL INFORMATION:

Formation: **LKC "G"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:11:10
 Time Test Ended: 11:57:00
 Interval: **4130.00 ft (KB) To 4180.00 ft (KB) (TVD)**
 Total Depth: 4180.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Robert Zodrow
 Unit No: 58
 Reference Elevations: 3111.00 ft (KB)
 3098.00 ft (CF)
 KB to GR/CF: 13.00 ft

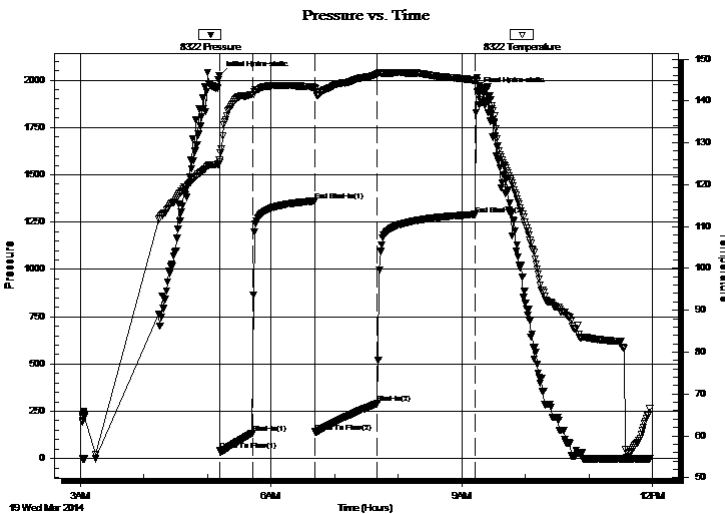
Serial #: 8322

Outside

Press@RunDepth: 291.14 psig @ 4131.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.03.19 End Date: 2014.03.19 Last Calib.: 2014.03.19
 Start Time: 03:02:01 End Time: 11:57:00 Time On Btm: 2014.03.19 @ 05:11:00
 Time Off Btm: 2014.03.19 @ 09:14:09

TEST COMMENT: 30-IF-Bob In 8 Min
 60-ISI-Bob In 47 Min
 60-FF-Bob In 11 Min
 90-FSI-Bob In 55 Min

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2026.07	125.82	Initial Hydro-static
1	41.49	125.32	Open To Flow (1)
31	132.62	141.53	Shut-In(1)
90	1361.96	143.26	End Shut-In(1)
91	141.07	142.82	Open To Flow (2)
149	291.14	146.41	Shut-In(2)
242	1290.71	144.88	End Shut-In(2)
244	1939.30	144.67	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
188.00	ow cm 25%o 27%w 48%m	2.64
564.00	clean oil 40%g 60%o	7.91
0.00	GIP 752'	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56771

DST#: 3

Test Start: 2014.03.19 @ 03:02:00

GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:11:10

Time Test Ended: 11:57:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 58

Interval: **4130.00 ft (KB) To 4180.00 ft (KB) (TVD)**

Total Depth: 4180.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3111.00 ft (KB)

3098.00 ft (CF)

KB to GR/CF: 13.00 ft

Serial #: 6752

Inside

Press@RunDepth: psig @ 4131.00 ft (KB)

Start Date: 2014.03.19

End Date:

2014.03.19

Capacity: 8000.00 psig

Last Calib.: 2014.03.19

Start Time: 03:02:01

End Time:

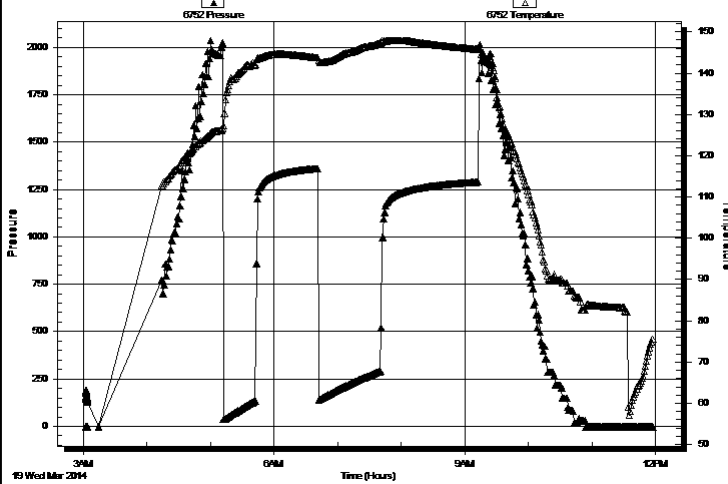
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Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IF-Bob In 8 Min
60-ISI-Bob In 47 Min
60-FF-Bob In 11 Min
90-FSI-Bob In 55 Min

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
188.00	ow cm 25%o 27%w 48%m	2.64
564.00	clean oil 40%g 60%o	7.91
0.00	GIP 752'	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 Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56771

DST#: 3

Test Start: 2014.03.19 @ 03:02:00

Tool Information

Drill Pipe:	Length: 4113.00 ft	Diameter: 3.80 inches	Volume: 57.69 bbl	Tool Weight: 2500.00 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: 90000.00 lb
			<u>Total Volume: 57.69 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4130.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	77.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4104.00	
Shut In Tool	5.00			4109.00	
Hydraulic tool	5.00			4114.00	
Jars	5.00			4119.00	
Safety Joint	2.00			4121.00	
Packer	5.00			4126.00	27.00 Bottom Of Top Packer
Packer	4.00			4130.00	
Stubb	1.00			4131.00	
Recorder	0.00	6752	Inside	4131.00	
Recorder	0.00	8322	Outside	4131.00	
Perforations	13.00			4144.00	
Change Over Sub	1.00			4145.00	
Drill Pipe	31.00			4176.00	
Change Over Sub	1.00			4177.00	
Bullnose	3.00			4180.00	50.00 Bottom Packers & Anchor

Total Tool Length: 77.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56771

DST#: 3

Test Start: 2014.03.19 @ 03:02:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 74.00 sec/qt
Water Loss: 7.17 in³
Resistivity: ohm.m
Salinity: 600.00 ppm
Filter Cake: 2.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 28 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
188.00	ow cm 25%o 27%w 48%m	2.637
564.00	clean oil 40%g 60%o	7.911
0.00	GIP 752'	0.000

Total Length: 752.00 ft Total Volume: 10.548 bbl

Num Fluid Samples: 0

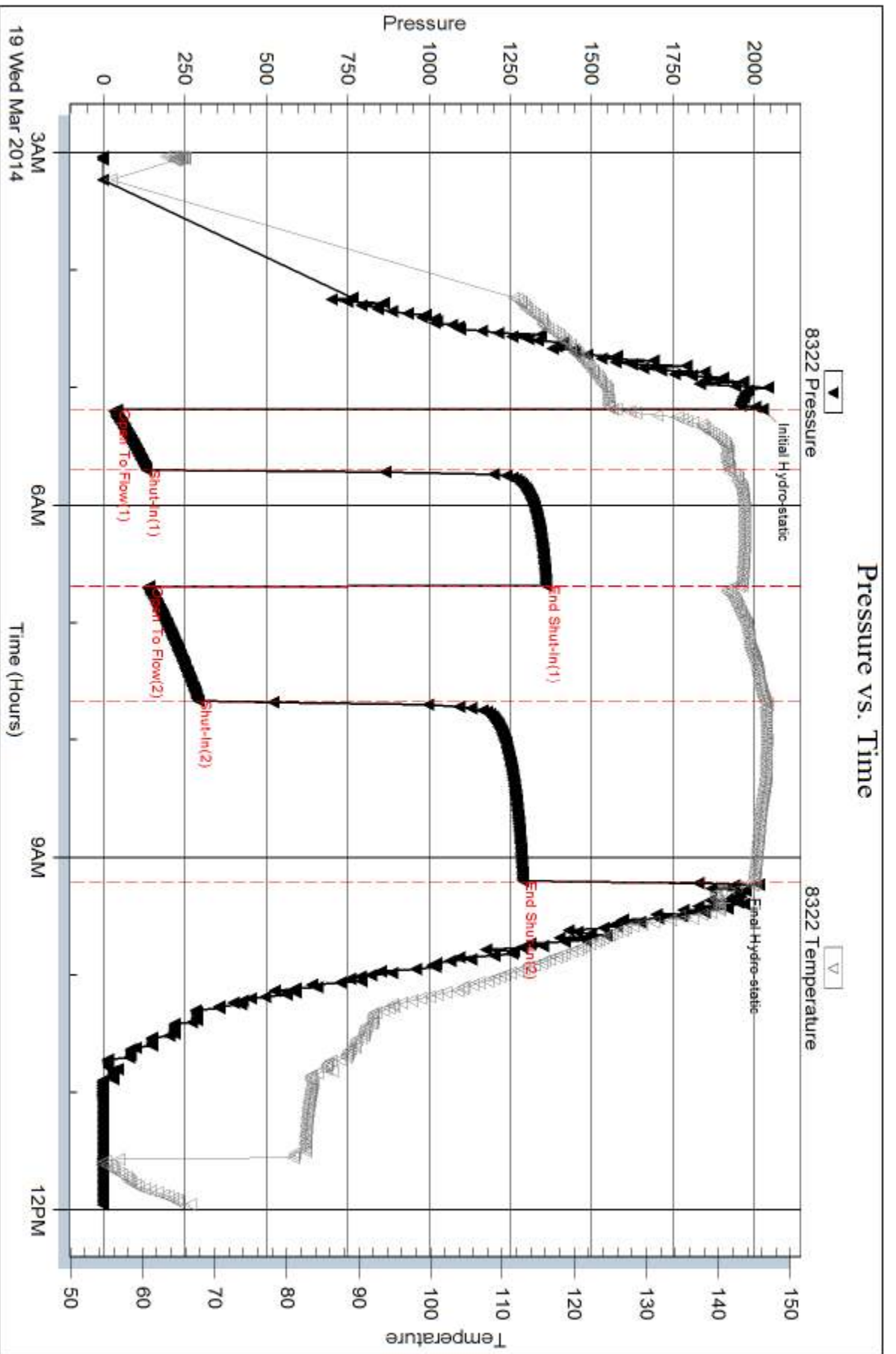
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



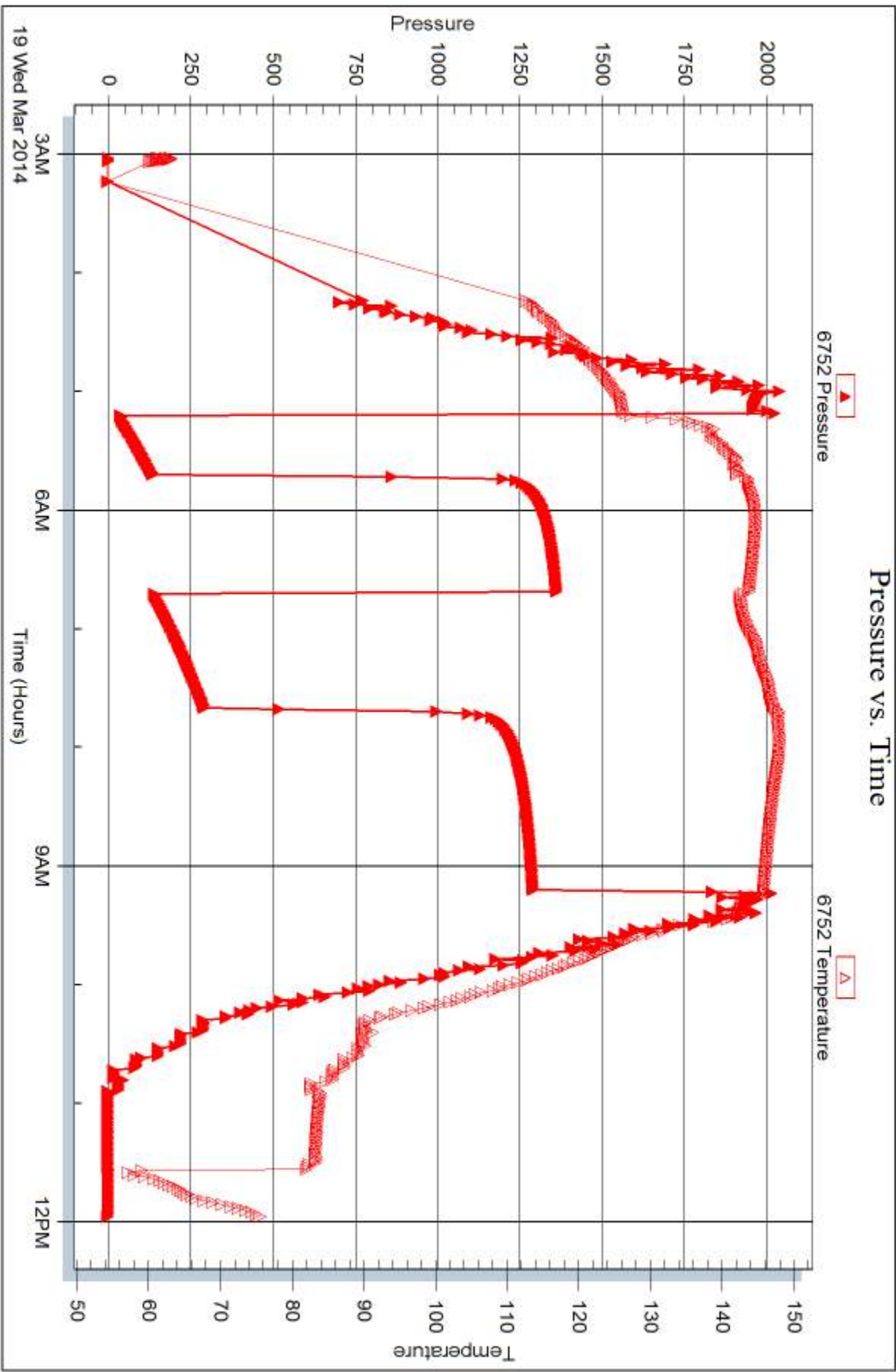
Serial #: 6752

Inside

Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 56771

Printed: 2014.03.25 @ 14:41:03



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc.**

250 N. Water
STE 300
Wichita KS 67202

ATTN: Wes Hansen

Theron #1-10

10-1S-37W Cheyenne KS

Start Date: 2014.03.20 @ 03:50:01

End Date: 2014.03.20 @ 12:14:20

Job Ticket #: 56772 DST #: 4

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

Printed: 2014.03.25 @ 14:40:36



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56772

DST#: 4

Test Start: 2014.03.20 @ 03:50:01

GENERAL INFORMATION:

Formation: **LKC "H--J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:10:50

Time Test Ended: 12:14:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 58

Interval: 4180.00 ft (KB) To 4280.00 ft (KB) (TVD)

Reference Elevations: 3111.00 ft (KB)

Total Depth: 4280.00 ft (KB) (TVD)

3098.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 13.00 ft

Serial #: 8322 Outside

Press@RunDepth: 25.99 psig @ 4181.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.20

End Date:

2014.03.20

Last Calib.:

2014.03.20

Start Time: 03:50:01

End Time:

12:14:20

Time On Btm:

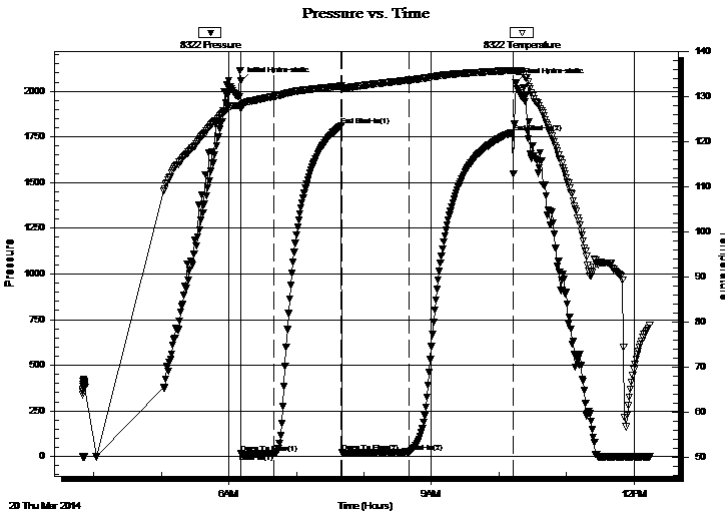
2014.03.20 @ 06:10:40

Time Off Btm:

2014.03.20 @ 10:15:00

TEST COMMENT: 30-IF- Blow Built To 3"
60-ISI- No Return
60-FF- Blow Built To 2"
90-FSI-No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2054.76	127.98	Initial Hydro-static
1	16.74	127.23	Open To Flow (1)
30	17.03	130.01	Shut-In(1)
90	1812.27	132.30	End Shut-In(1)
90	23.96	131.87	Open To Flow (2)
150	25.99	133.61	Shut-In(2)
242	1773.78	135.77	End Shut-In(2)
245	2045.30	135.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	clean oil 95%o 5%g	0.14
30.00	ocm 70%m 30%o	0.42

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

10-1S-37W Cheyenne KS

Theron #1-10

Job Ticket: 56772

DST#: 4

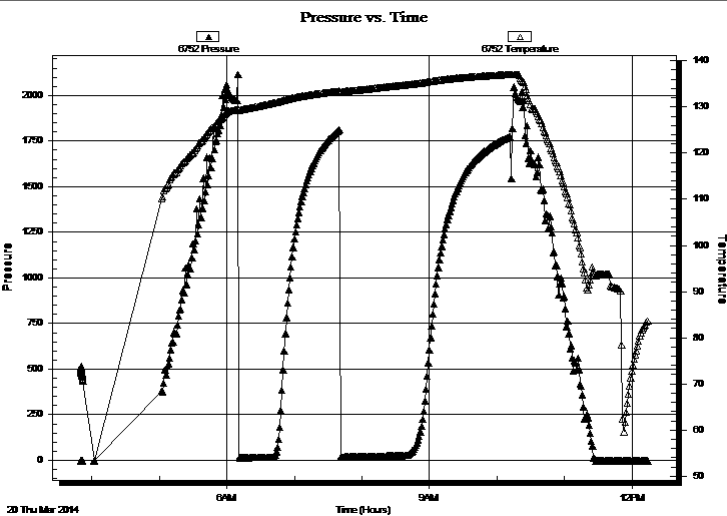
Test Start: 2014.03.20 @ 03:50:01

GENERAL INFORMATION:

Formation:	LKC "H--J"		
Deviated:	No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened:	06:10:50		Tester: Robert Zodrow
Time Test Ended:	12:14:20		Unit No: 58
Interval:	4180.00 ft (KB) To 4280.00 ft (KB) (TVD)		Reference Elevations: 3111.00 ft (KB)
Total Depth:	4280.00 ft (KB) (TVD)		3098.00 ft (CF)
Hole Diameter:	7.88 inches	Hole Condition: Fair	KB to GR/CF: 13.00 ft

Serial #: 6752	Inside		
Press@RunDepth:	psig @ 4181.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2014.03.20	End Date:	2014.03.20
Start Time:	03:50:01	End Time:	12:14:20
		Time On Btm:	
		Time Off Btm:	
		Last Calib.:	2014.03.20

TEST COMMENT: 30-IF- Blow Built To 3"
60-ISI- No Return
60-FF- Blow Built To 2"
90-FSI- No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	clean oil 95%o 5%g	0.14
30.00	ocm 70%m 30%o	0.42

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 Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56772

DST#: 4

Test Start: 2014.03.20 @ 03:50:01

Tool Information

Drill Pipe:	Length: 4177.00 ft	Diameter: 3.80 inches	Volume: 58.59 bbl	Tool Weight: 2500.00 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: 58000.00 lb
			<u>Total Volume: 58.59 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4180.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	100.00 ft			
Tool Length:	127.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4154.00	
Shut In Tool	5.00			4159.00	
Hydraulic tool	5.00			4164.00	
Jars	5.00			4169.00	
Safety Joint	2.00			4171.00	
Packer	5.00			4176.00	27.00 Bottom Of Top Packer
Packer	4.00			4180.00	
Stubb	1.00			4181.00	
Recorder	0.00	6752	Inside	4181.00	
Recorder	0.00	8322	Outside	4181.00	
Perforations	32.00			4213.00	
Change Over Sub	1.00			4214.00	
Drill Pipe	62.00			4276.00	
Change Over Sub	1.00			4277.00	
Bullnose	3.00			4280.00	100.00 Bottom Packers & Anchor

Total Tool Length: 127.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56772

DST#: 4

Test Start: 2014.03.20 @ 03:50:01

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 50.00 sec/qt

Water Loss: 6.79 in³

Resistivity: ohm.m

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

26 deg API

Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	clean oil 95%o 5%g	0.140
30.00	ocm 70%m 30%o	0.421

Total Length: 40.00 ft Total Volume: 0.561 bbl

Num Fluid Samples: 0

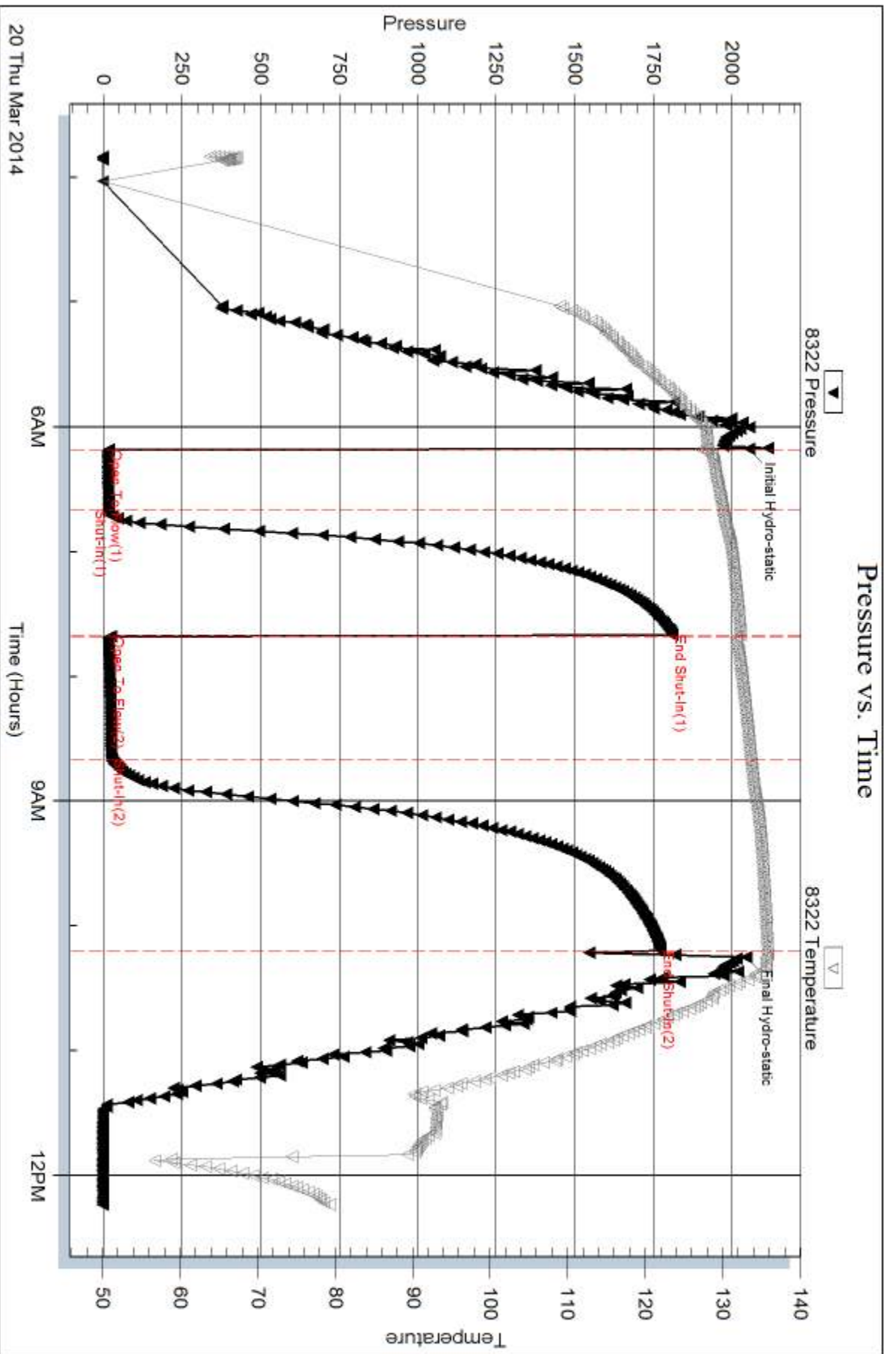
Num Gas Bombs: 0

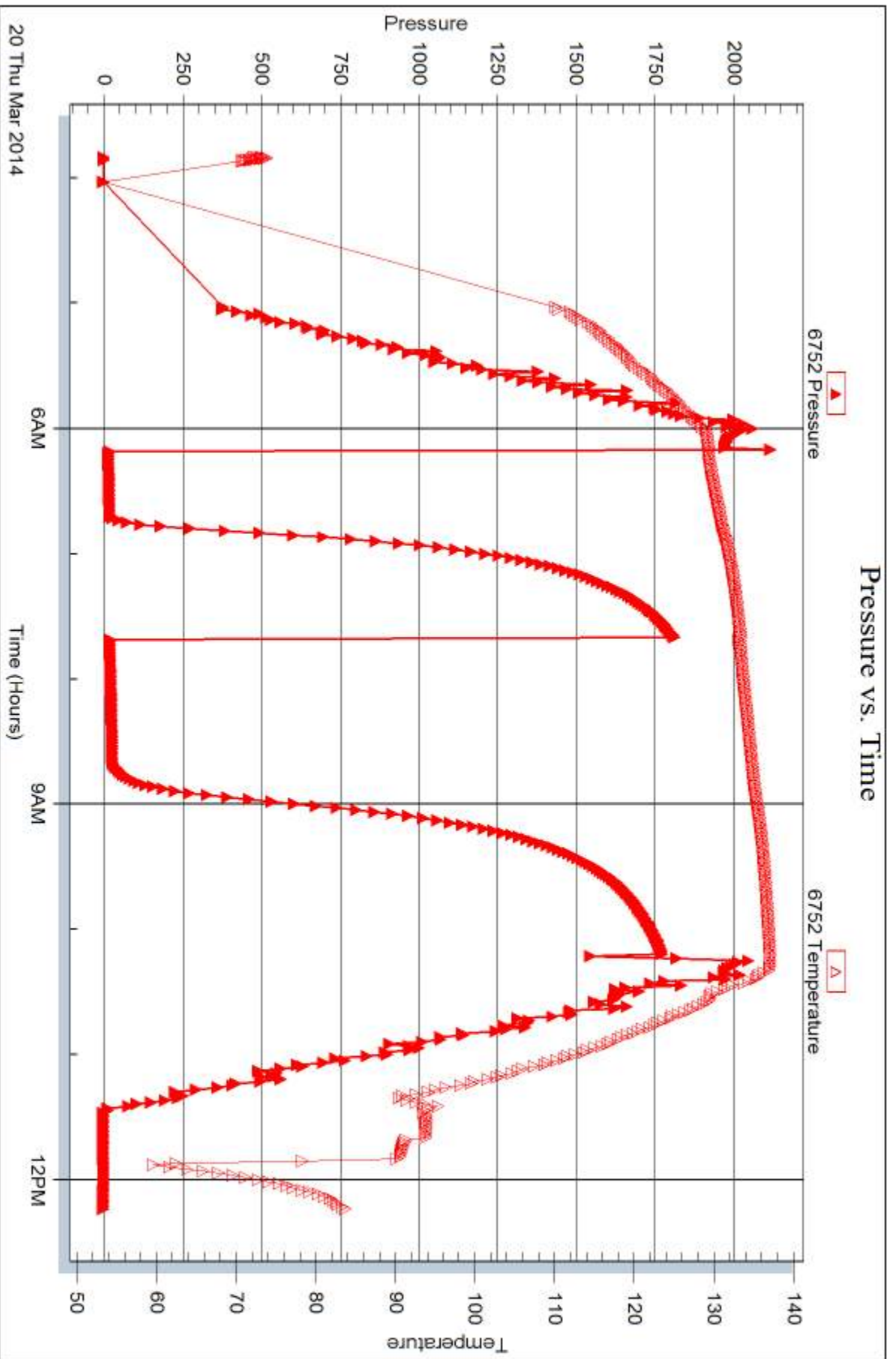
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc.**

250 N. Water
STE 300
Wichita KS 67202

ATTN: Wes Hansen

Theron #1-10

10-1S-37W Cheyenne KS

Start Date: 2014.03.21 @ 18:00:00

End Date: 2014.03.22 @ 04:14:19

Job Ticket #: 56773 DST #: 5

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

Printed: 2014.03.25 @ 14:40:06



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56773

DST#: 5

Test Start: 2014.03.21 @ 18:00:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:21:40

Time Test Ended: 04:14:19

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 58

Interval: 4426.00 ft (KB) To 4470.00 ft (KB) (TVD)

Reference Elevations: 3111.00 ft (KB)

Total Depth: 4470.00 ft (KB) (TVD)

3098.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

Serial #: 6752 Inside

Press@RunDepth: 888.12 psig @ 4427.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.21

End Date:

2014.03.22

Last Calib.:

2014.03.22

Start Time: 18:00:01

End Time:

04:14:19

Time On Btm:

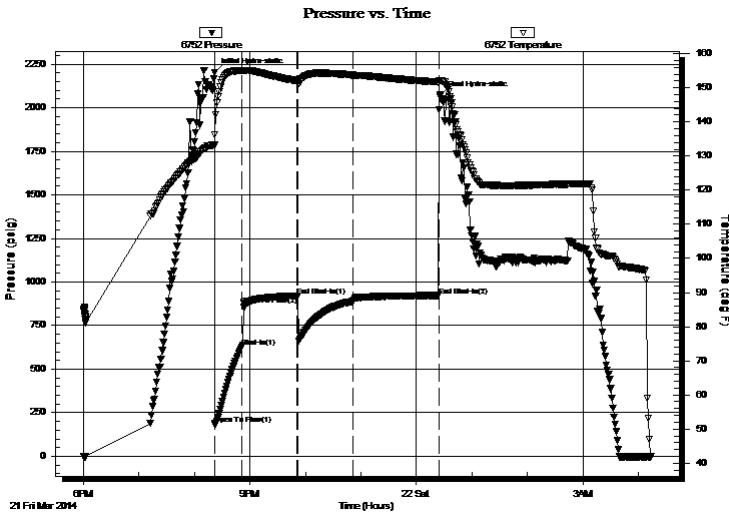
2014.03.21 @ 20:21:30

Time Off Btm:

2014.03.22 @ 00:25:30

TEST COMMENT: 30-IF-Bob In 1 Min
60-IS- Bob In 15 Mins
60-FF- Bob In 2 Mins
90-FSI- Bob In 16 Min Gas To Surface In 30 Mins

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2200.14	133.37	Initial Hydro-static
1	184.30	133.03	Open To Flow (1)
30	624.79	155.05	Shut-In(1)
90	920.84	152.04	End Shut-In(1)
90	920.85	152.03	Open To Flow (2)
150	888.12	153.72	Shut-In(2)
243	921.69	151.72	End Shut-In(2)
244	2071.90	152.17	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
94.00	ocm 3%g 27%o 70%m	1.32
2350.00	clean oil 25%g 75%o	32.96
0.00	Gas To Surface 30 Mins. Into FSI	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

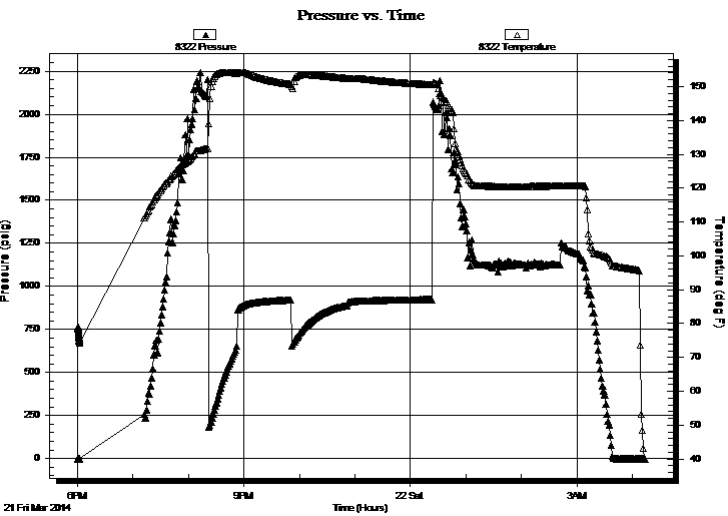
Theron #1-10
Job Ticket: 56773 **DST#: 5**
Test Start: 2014.03.21 @ 18:00:00

GENERAL INFORMATION:

Formation: Pawnee		
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 20:21:40		Tester: Robert Zodrow
Time Test Ended: 04:14:19		Unit No: 58
Interval: 4426.00 ft (KB) To 4470.00 ft (KB) (TVD)		Reference Elevations: 3111.00 ft (KB)
Total Depth: 4470.00 ft (KB) (TVD)		3098.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Good	KB to GR/CF: 13.00 ft

Serial #: 8322	Outside		
Press@RunDepth: psig @ 4427.00 ft (KB)		Capacity: 8000.00 psig	
Start Date: 2014.03.21	End Date: 2014.03.22	Last Calib.: 2014.03.22	
Start Time: 18:00:01	End Time: 04:13:49	Time On Btm:	
		Time Off Btm:	

TEST COMMENT: 30-IF- Bob In 1 Min
60-ISI- Bob In 15 Mins
60-FF- Bob In 2 Mins
90-FSI- Bob In 16 Min Gas To Surface In 30 Mins



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
94.00	ocm 3%g 27%o 70%m	1.32
2350.00	clean oil 25%g 75%o	32.96
0.00	Gas To Surface 30 Mins. Into FSI	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56773

DST#: 5

Test Start: 2014.03.21 @ 18:00:00

Tool Information

Drill Pipe:	Length: 4428.00 ft	Diameter: 3.80 inches	Volume: 62.11 bbl	Tool Weight:	2500.00 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:	64000.00 lb
			<u>Total Volume: 62.11 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial	52000.00 lb
Depth to Top Packer:	4426.00 ft			Final	62000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	44.00 ft				
Tool Length:	71.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4400.00	
Shut In Tool	5.00			4405.00	
Hydraulic tool	5.00			4410.00	
Jars	5.00			4415.00	
Safety Joint	2.00			4417.00	
Packer	5.00			4422.00	27.00 Bottom Of Top Packer
Packer	4.00			4426.00	
Stubb	1.00			4427.00	
Recorder	0.00	6752	Inside	4427.00	
Recorder	0.00	8322	Outside	4427.00	
Perforations	7.00			4434.00	
Change Over Sub	1.00			4435.00	
Drill Pipe	31.00			4466.00	
Change Over Sub	1.00			4467.00	
Bullnose	3.00			4470.00	44.00 Bottom Packers & Anchor

Total Tool Length: 71.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company Inc.

10-1S-37W Cheyenne KS

250 N. Water
STE 300
Wichita KS 67202
ATTN: Wes Hansen

Theron #1-10

Job Ticket: 56773

DST#: 5

Test Start: 2014.03.21 @ 18:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

26 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
94.00	ocm 3%g 27%o 70%m	1.319
2350.00	clean oil 25%g 75%o	32.964
0.00	Gas To Surface 30 Mins. Into FSI	0.000

Total Length: 2444.00 ft Total Volume: 34.283 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

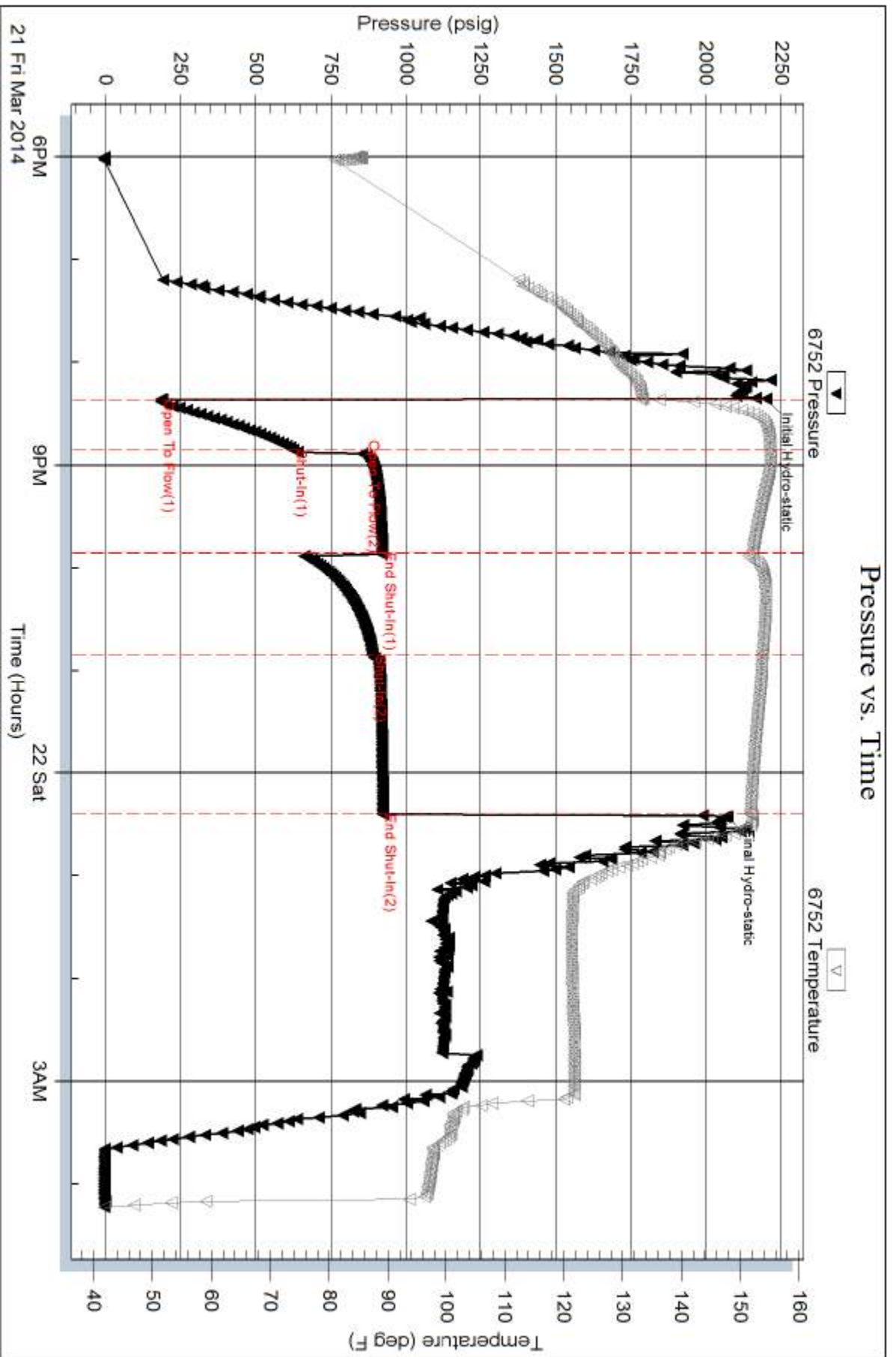
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Inside

Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 56773

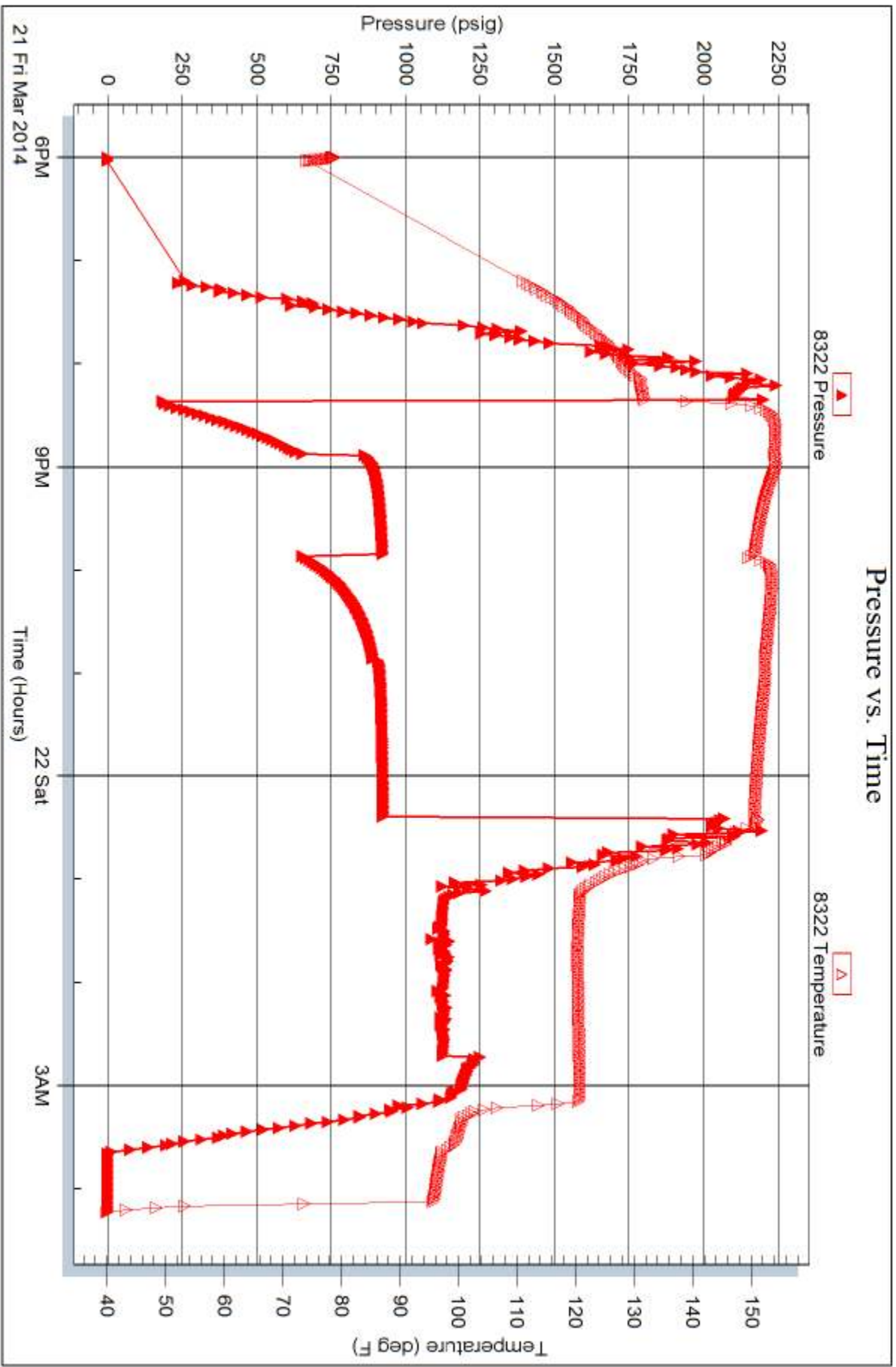
Printed: 2014.03.25 @ 14:40:06

Serial #: 8322

Outside Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 56773

Printed: 2014.03.25 @ 14:40:09



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56863

4/10

Well Name & No. Theron #1-10 Test No. 1 Date 3/16/14
 Company Murfin Drilling Company Inc Elevation 3111 KB 3098 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Wes Hansen Rig Murfin #25
 Location: Sec. 10 Twp. 15 Rge. 37W Co. Dundy State NE

Interval Tested 3932 - 3990 Zone Tested Oread
 Anchor Length 58' Drill Pipe Run 3925' Mud Wt. 9.2
 Top Packer Depth 3927 Drill Collars Run 0' Vis 74
 Bottom Packer Depth 3932 Wt. Pipe Run 0' WL 7.2
 Total Depth 3990 Chlorides 600 ppm System LCM 6
 Blow Description IF - Surface blow built to 2 1/2"
ISI - No return
FF - Surface blow started @ 15 mins built to 2"
FSI - No return

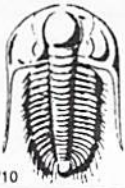
Rec	Feet of	%gas	%oil	%water	%mud
<u>95</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 95' BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1960</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>22:00</u>
(B) First Initial Flow <u>17</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>22:54</u>
(C) First Final Flow <u>29</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>01:36</u>
(D) Initial Shut-In <u>1293</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>05:36</u>
(E) Second Initial Flow <u>32</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>07:25</u>
(F) Second Final Flow <u>57</u>	<input checked="" type="checkbox"/> Mileage <u>134 RT</u> 207.70	Comments _____
(G) Final Shut-In <u>1289</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>1868</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Total <u>1682.70</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1682.70</u>	

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56770

Well Name & No. Theron #1-10 Test No. 2 Date 3-18-2014
 Company Murfin Drilling Inc. Elevation 3111 KB 3098 GL
 Address 250 N Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Wes Hansen Rig Murfin #25
 Location: Sec. 10 Twp. 1 S Rge. 37 W Co. Cheyenne State KS

Interval Tested 4026 - 4130 Zone Tested LKC "A & D"
 Anchor Length 104 Drill Pipe Run 4018 Mud Wt. 9.4
 Top Packer Depth 4022 Drill Collars Run 0 Vis 72
 Bottom Packer Depth ~~4022~~ 4026 Wt. Pipe Run 0 WL 7.6
 Total Depth 4130 Chlorides 700 ppm System LCM 4
 Blow Description IF - Blow Built to 6"
ISL - NO RETURN
FF - Blow Built to 5 1/2"
FSL - NO RETURN

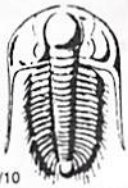
Rec	Feet of	%gas	%oil	%water	%mud
<u>51</u>	<u>90</u>	<u>45</u>	<u>55</u>		
<u>74</u>	<u>0cm</u>		<u>50</u>	<u>50</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total _____ BHT 136 Gravity 24 API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1994 Test 1250 T-On Location 4:00 AM 3-18
 (B) First Initial Flow 20 Jars 250 T-Started 4:36 AM 3-18
 (C) First Final Flow 35 Safety Joint 75 T-Open 7:16 AM 3-18
 (D) Initial Shut-In 707 Circ Sub _____ T-Pulled 11:16 AM 3-18
 (E) Second Initial Flow 51 Hourly Standby _____ T-Out 1:00 pm 3-18
 (F) Second Final Flow 66 Mileage 134 RT 207.70 Comments _____
 (G) Final Shut-In 709 Sampler _____
 (H) Final Hydrostatic 1951 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1782.70
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1782.70

Approved By Wesley Hansen Our Representative Robert Zochow

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56771

Well Name & No. Theron #1-10 Test No. 3 Date 3-19-2014
 Company Murfin Drilling Inc. Elevation 3111 KB 3098 GL
 Address 250 N Water STE. 300 Wichita KS, 67202
 Co. Rep / Geo. Wes Hansen Rig Murfin #25
 Location: Sec. 10 Twp. 1 S Rge. 37 W Co. Cheyenne State KS

Interval Tested 4130-4180 Zone Tested LKC "J"
 Anchor Length 50 Drill Pipe Run 4113 Mud Wt. 9.3
 Top Packer Depth 4126 Drill Collars Run 0 Vis 63
 Bottom Packer Depth 4130 Wt. Pipe Run 0 WL 6.0
 Total Depth 4180 Chlorides 600 ppm System LCM 4.0

Blow Description IF-Bob In 8 min
ISI-Bob In 47 min
FF-Bob In 11 min
FSI-Bob In 55 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>0</u>	<u>Feet of HLP 752'</u>				
<u>564</u>	<u>Feet of clean oil</u>	<u>40</u>	<u>60</u>		
<u>188</u>	<u>Feet of DWCM</u>	<u>25</u>	<u>27</u>	<u>48</u>	
<u> </u>	<u>Feet of</u>	<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>
<u> </u>	<u>Feet of</u>	<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>

Rec Total 752 BHT 145 Gravity 28 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 2026 Test 1250 T-On Location 2:30 AM 3-19
 (B) First Initial Flow 41 Jars 250 T-Started 3:02 AM 3-19
 (C) First Final Flow 133 Safety Joint 75 T-Open 5:11 AM 3-19
 (D) Initial Shut-In 1362 Circ Sub T-Pulled 9:11 AM 3-19
 (E) Second Initial Flow 141 Hourly Standby T-Out 11:45 AM 3-19
 (F) Second Final Flow 291 Mileage 134 RT 207.70 Comments
 (G) Final Shut-In 1291 Sampler
 (H) Final Hydrostatic 1939 Straddle Ruined Shale Packer

Initial Open 30 Shale Packer Ruined Packer
 Initial Shut-In 60 Extra Packer Extra Copies
 Final Flow 60 Extra Recorder Sub Total 0
 Final Shut-In 90 Day Standby Total 1782.70
 Accessibility MP/DST Disc't
 Sub Total 1782.70

Approved By Wesley Hansen Our Representative Robert Zohar

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. 56772

Well Name & No. Itheron # 1-10 Test No. 4 Date 3-20-2014
 Company Murkin Drilling Inc. Elevation 3111 KB 3098 GL
 Address 250 N Water STE. 300 Wichita KS, 67202
 Co. Rep / Geo. Wes Hansen Rig Murkin #25
 Location: Sec. 10 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4180-4280 Zone Tested LKC "H-J"
 Anchor Length 100 Drill Pipe Run 4177 Mud Wt. 9.1
 Top Packer Depth 4176 Drill Collars Run 0 Vis 50
 Bottom Packer Depth 4180 Wt. Pipe Run 0 WL 6.8
 Total Depth 4280 Chlorides 600 ppm System LCM 6.0

Blow Description IF - Blow Built to 3"
ISI - NO RETURN
PF - Blow Built to 2"
FSI - NO RETURN

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>clean oil</u>	<u>5</u>	<u>95</u>		
<u>30</u>	<u>OCM</u>		<u>30</u>	<u>70</u>	

Rec Total 40 BHT 135 Gravity 26 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 2055 Test 1250 T-On Location 3:15 Am 3-20
 (B) First Initial Flow 16 Jars 250 T-Started 3:50 Am 3-20
 (C) First Final Flow 17 Safety Joint 75 T-Open 6:10 Am
 (D) Initial Shut-In 1812 Circ Sub T-Pulled 10:10 Am
 (E) Second Initial Flow 24 Hourly Standby T-Out 12:00 3-20
 (F) Second Final Flow 26 Mileage 134 RT 207.70 Comments
 (G) Final Shut-In 1774 Sampler
 (H) Final Hydrostatic 2045 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies
 Extra Recorder Sub Total 0
 Day Standby Total 1782.70
 Accessibility MP/DST Disc't

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90
 Sub Total 1782.70

Approved By Wesley Hansen Our Representative Robert Zedler

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. 56773

Well Name & No. Theron #1-10 Test No. 5 Date 3-21-2014
 Company MURFIN Drilling Inc Elevation 3111 KB 3098 GL
 Address 250 N Water STE 300 Wichita KS, 67202
 Co. Rep / Geo. Wes Hansen Rig MURFIN #25
 Location: Sec. 10 Twp. 1 S Rge. 37 W Co. Cheyenne State KS

Interval Tested 4426 - 4470 Zone Tested Pawnee
 Anchor Length 44 Drill Pipe Run 4428 Mud Wt. 9.3
 Top Packer Depth 4422 Drill Collars Run 0 Vis 69
 Bottom Packer Depth 4426 Wt. Pipe Run 0 WL 6.4
 Total Depth 4470 Chlorides 600 ppm System LCM 5.0

Blow Description IF - Bob In 1 min
ISF - Bob In 15 mins
FF - Bob In 2 mins
FST - Bob In 16 mins gas to surface in 30 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>2350</u>	<u>clean oil</u>	<u>25</u>	<u>75</u>		
<u>94</u>	<u>OCM</u>	<u>3</u>	<u>27</u>		<u>70</u>
	<u>gas to surface 30mins into</u>				
	<u>FST</u>				

Rec Total 2444 BHT 151 Gravity 36 API RW @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2200</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>5:30 pm 3-21</u>
(B) First Initial Flow <u>184</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>6:00 pm 3-21</u>
(C) First Final Flow <u>625</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>8:21 pm 3-21</u>
(D) Initial Shut-In <u>921</u>	<input checked="" type="checkbox"/> Circ Sub <u>used</u> <u>50</u>	T-Pulled <u>12:21 Am 3-22</u>
(E) Second Initial Flow <u>921</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>4:15 Am 3-22</u>
(F) Second Final Flow <u>888</u>	<input checked="" type="checkbox"/> Mileage <u>134 RT</u> <u>207.70</u>	Comments <u>Reversed Fluid</u>
(G) Final Shut-In <u>921</u>	<input type="checkbox"/> Sampler	<u>OUT</u>
(H) Final Hydrostatic <u>2071</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Extra Recorder	Sub Total <u>183.33</u>
	<input checked="" type="checkbox"/> Day Standby <u>1d 5.5h</u>	Total <u>2016.03</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1832.70</u>	

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

Approved By Wesley Hansen Our Representative Robert Zechow

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.



WESLEY D. HANSEN Consulting Petroleum Geologist

212 N. Market, Suite 257, Wichita, KS 67202
Office: 316-267-7313 Cellular ; 316-772-6188

**KGS
AAPG
Kansas License #418**



**Scale 1:240 (5"=100') Imperial
Measured Depth Log**

Well Name: Murfin Drilling Co., Inc. #1-10 Theron
Location: 1900' FSL, 2200' FEL of Section 10-1S-37W
License Number: API: 15-023-21385 **Region:** Cheyenne County, KS
Spud Date: 3-12-2014 **Drilling Completed:** 3-23-2014
Surface Coordinates: 1900' FSL, 2200' FEL of Section 10-1S-37W

Bottom Hole Vertical hole
Coordinates:
Ground Elevation (ft): 3098' **K.B. Elevation (ft):** 3111'
Logged Interval (ft): 3410' **To:** RTD **Total Depth (ft):** 4620'
Formation: Cherokee at RTD
Type of Drilling Fluid: Chemical - Displaced at 3286'-3305'

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

OPERATOR

Company: Murfin Drilling Co., Inc.
Address: 250 N. Water
Suite 300
Wichita, KS 67202

GEOLOGIST

Name: Wesley D. Hansen
Company: Wesley D. Hansen - Consulting Petroleum Geologist
Address: 212 N. Market, Suite 257
Wichita, KS 67202
Office: 316-263-7313 **Cellular:** 316-772-6188

COMMENTS

Contractor: Murfin Drilling Co., Inc. Rig #25
Pusher: Ray Bland

Surface Casing: 8 5/8" set at 229' w/200sx
Production Casing: 5 1/2" set at 4614' w/500sx

Mud by: Morgan Mud - Dave Korte and Dave Lines were the engineers

DST's by: Trilobite - Ryan Nichols and Robert Zodrow were the testers.

Logs by: Pioneer Wireline (DIL, CN-CD, MEL, BHCS)

Deviation Surveys: 0.6 deg. @ 230'; 0.8 deg. @ 747'; 0.5 deg. @ 1255'; 0.3 deg. @ 1763'; 0.4 deg. @ 2207'; 0.3 deg. @ 2716'; 0.1 deg. @ 3129'; 0.9 deg. @ 3506'; 1.8 deg. @ 3757'; 2.2 deg. @ 3914'; 2.1 deg. @ 3990'; 2.6 deg. @ 4130'; 2.4 deg. @ 4180'; 2.9 deg. @ 4280'; 2.7 deg. @ 4470'; 2.9 deg. @ 4620'

BIT RECORD

Bit #	Size	MFG	Type	Depth Out	Footage Cut	Hours on bit
1	12 1/4"		GMS	230'	230'	4 1/4
2	7 7/8"	HTC	DP506F	3506'	3276'	34 3/4
3	7 7/8"	HTC	GX22	4620'	1114'	100

FORMATION TOPS AND STRUCTURAL COMPARISON

FORMATION	SAMPLE TOPS		LOG TOPS		COMPARISON WELLS MDCI Culwell C 1-10 10-1S-37W 3150' KB
	Depth	Datum	Depth	Datum	
Anhydrite	3058'	+53	3052'	+59	+3
B/Anhydrite	3094'	+17	3085'	+26	-1
Neva	3512'	-401	3505'	-394	+1
Red Eagle	3576'	-465	3569'	-458	flat
Foraker	3625'	-514	3614'	-503	+4
Topeka	3842'	-731	3834'	-723	+3
Oread	3975'	-864	3970'	-859	+1
Lansing	4052'	-941	4050'	-939	+3
Stark Shale	4272'	-1161	4266'	-1155	+3
BKC	4327'	-1216	4321'	-1210	+5
Pawnee	4448'	-1337	4442'	-1331	-3
Cherokee Shale	4538'	-1427	4529'	-1418	+4
RTD	4620'	-1509			
LTD			4616'	-1505	

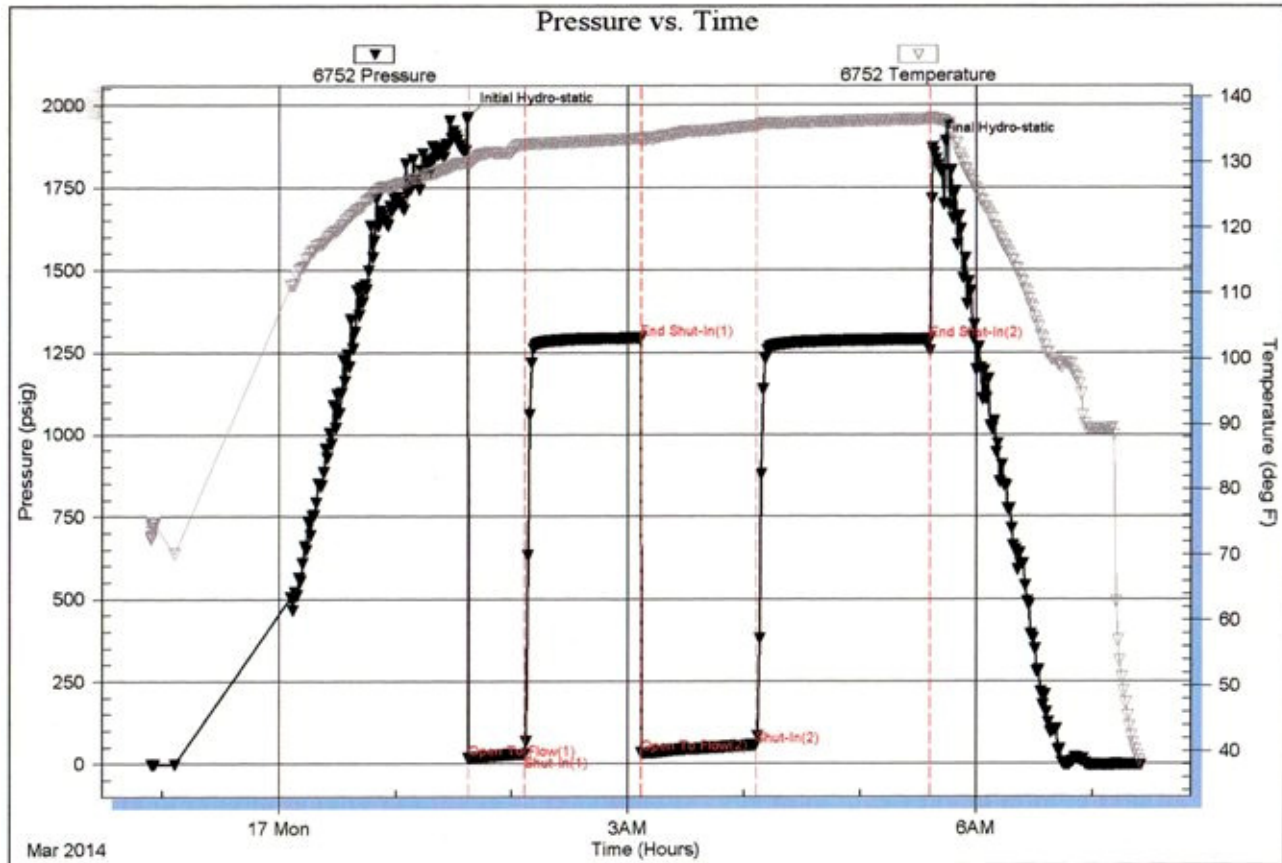
Sample tops 6' to 8' lower than Log tops

DRILL STEM TESTS

DST No. 1 Oread
Interval: 3932'-3990'
Times: 30-60-60-90
Recovery: 95' mud
FP: 17-29/32-57 SIP: 1292-1289
HP: 1960-1868 BHT: 136 deg. F

IFP: surface blow built to 2 1/2 inches
ISIP: no return blow
FFP: surface blow built to 2 inches
FSIP: no return blow

Serial #: 6752 Inside Murfin Drilling Company Inc. Theron #1-10 DST Test Number: 1



DRILL STEM TESTS

DST No. 2 Lansing "A" and "D" Zones
Interval: 4026'-4130'
Times: 30-60-60-90
Recovery: 51' GCO (45g, 55o); 74' OCM (50o,
50m); gravity 24 degrees
FP: 20-35/51-66 SIP: 707-709
HP: 1994-1951 BHT: 136 deg. F

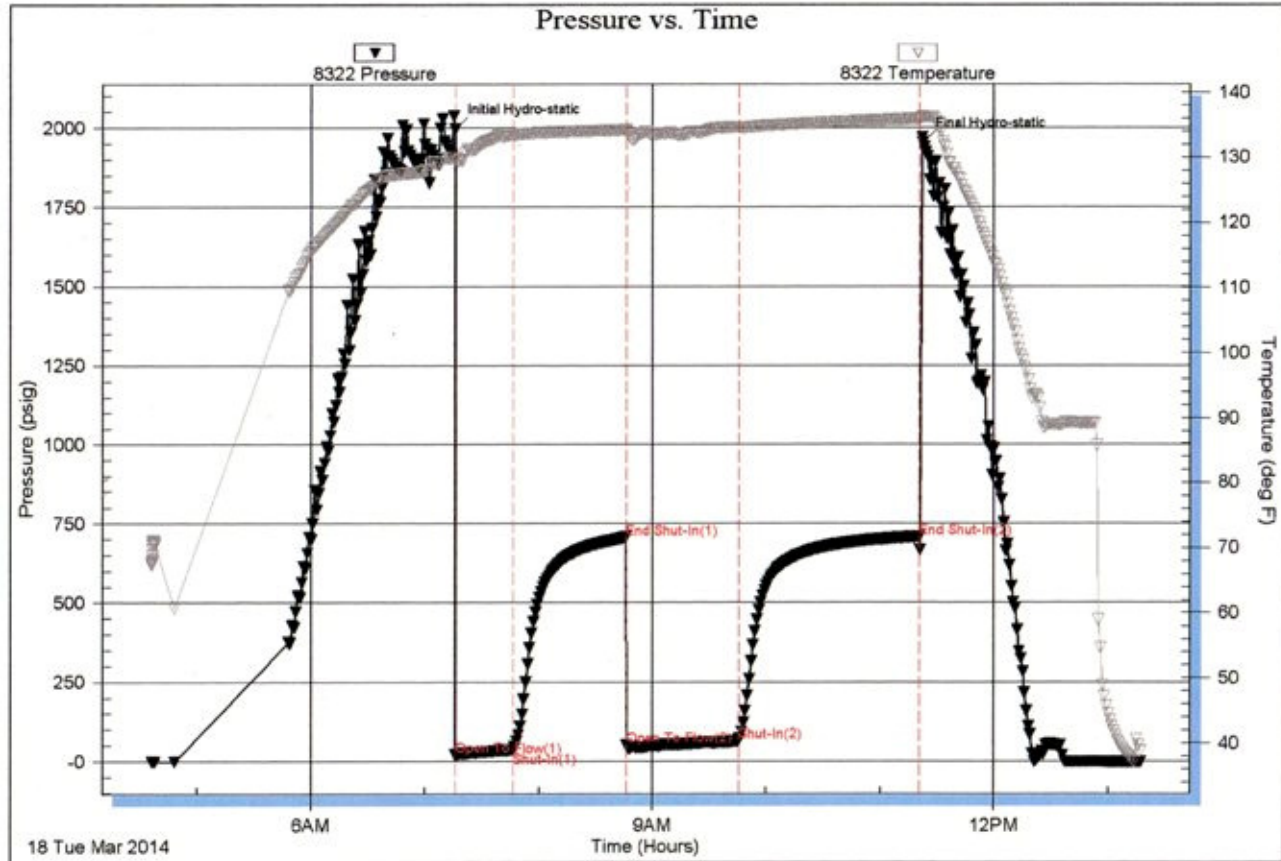
IFP: fair blow built to 6 inches
ISIP: no return blow
FFP: fair blow built to 5 1/2 inches
FSIP: no return blow

Serial #: 8322

Outside Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 56770

Printed: 2014.03.18 @ 13:36:56

DRILL STEM TESTS

DST No. 3 Lansing "G" Zone
Interval: 4130'-4180'
Times: 30-60-60-90
Recovery: 752' GIP; 564' CGO (40g, 60o); 188'
O&WCM (25o, 27w, 48m); oil gravity 28 deg.
FP: 41-133/141-291 SIP: 1362-1291
HP: 2026-1939 BHT: 145 deg. F

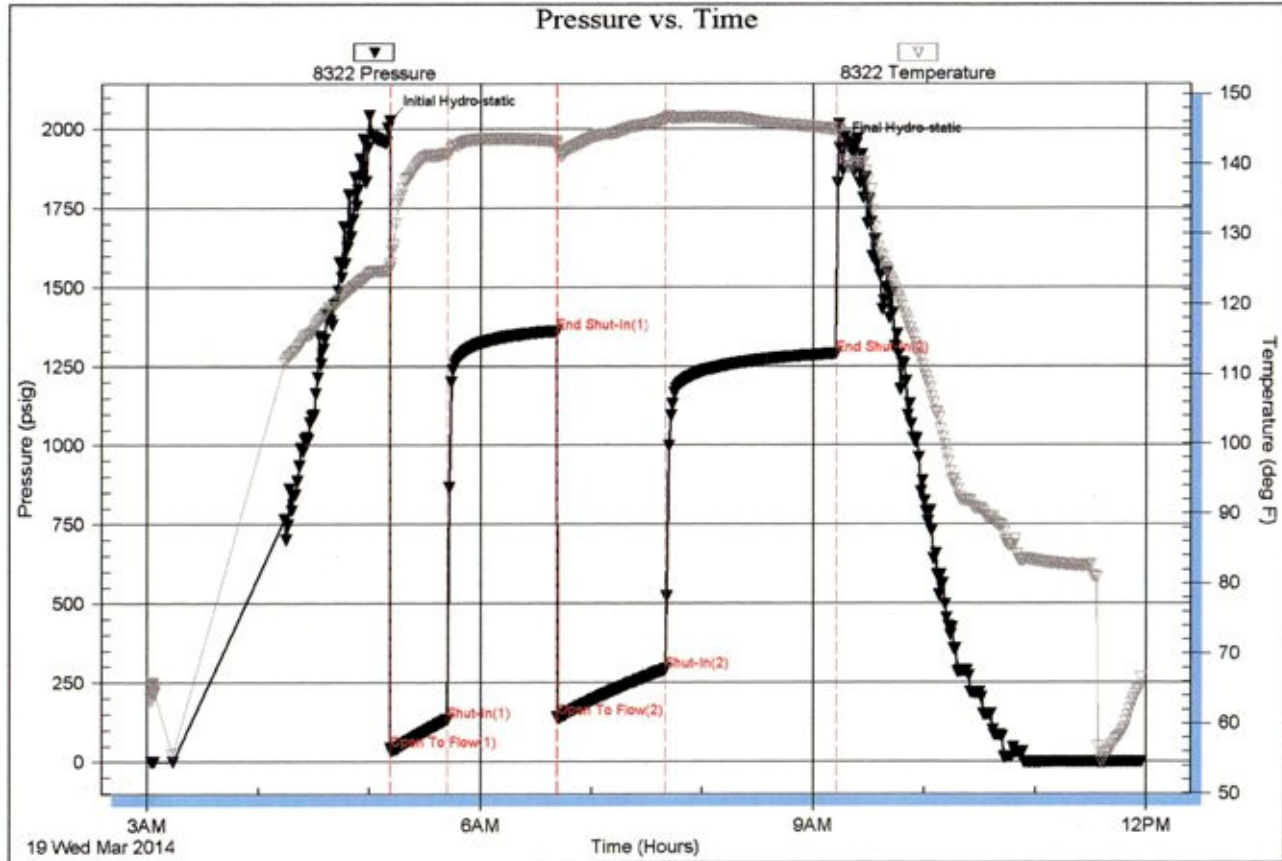
IFP: good blow, B.O.B. in 8 minutes
ISIP: return blow, B.O.B. in 47 minutes
FFP: good blow, B.O.B. in 11 minutes
FSIP: return blow, B.O.B. in 55 minutes

Serial #: 8322

Outside Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 56771

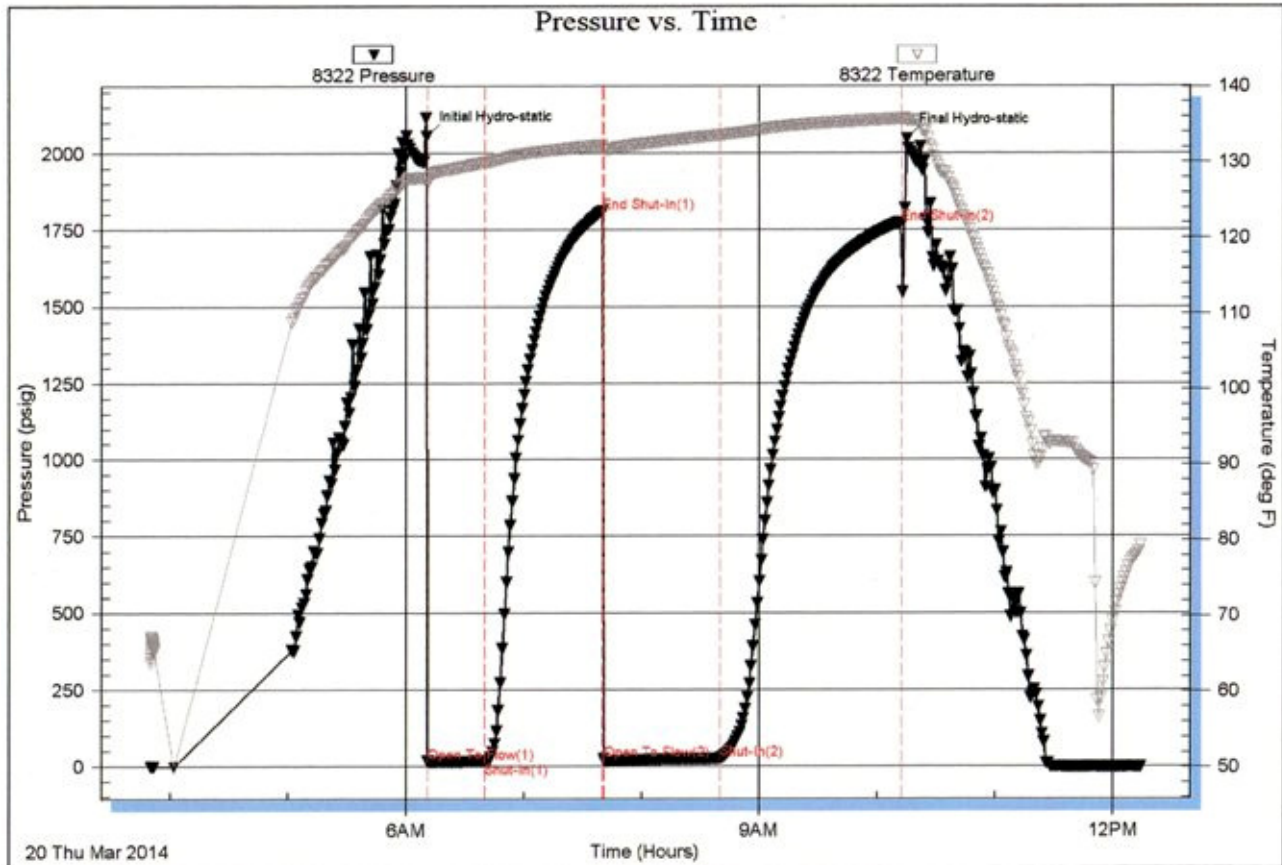
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DRILL STEM TESTS

DST No. 4 Base Lansing "G" through "J"
 Interval: 4180'-4280'
 Times: 30-60-60-90
 Recovery: 10' GCO (5g, 95o); 30' OCM (30o, 70m)
 FP: 16-17/24-26 SIP: 1812-1774
 HP: 2055-2045 BHT: 135 deg. F

IFP: weak blow built to 3" inches
 ISIP: no return blow
 FFP: weak blow built to 2 inches
 FSIP: no return blow

Serial #: 8322 Outside Murfin Drilling Company Inc. Theron #1-10 DST Test Number: 4

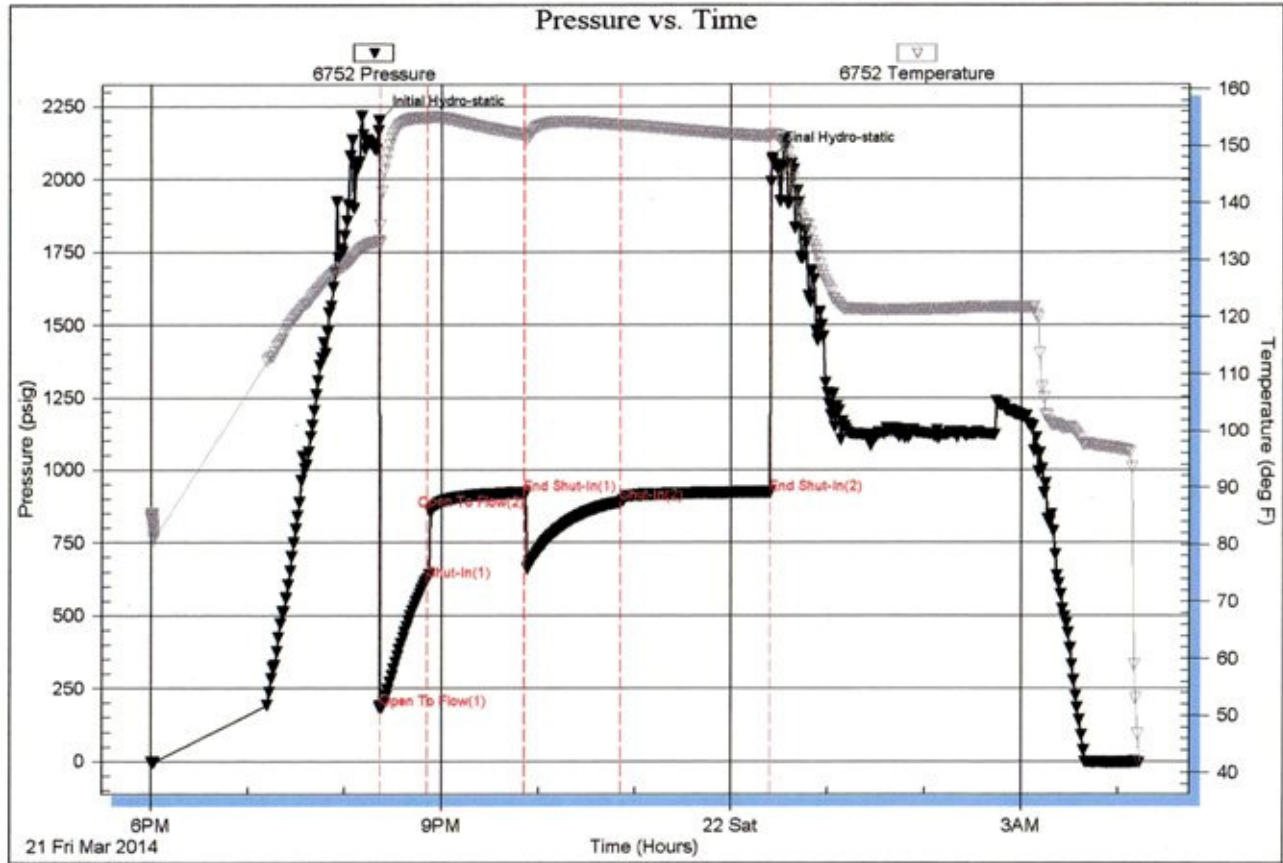


DRILL STEM TESTS

DST No. 5 Pawnee
 Interval: 4426'-4470'
 Times: 30-60-60-90
 Recovery: GTS no measure; 2350' CGO (25g, 75o); 94' G&OCM (3g, 27o, 70m)
 FP: 184-625/921-888 SIP: 921-921
 HP: 2200-2071 BHT: 155 deg. F

IFP: strong blow, B.O.B. in 1 minute
 ISIP: return blow built to B.O.B. in 15 minutes
 FFP: strong blow, B.O.B. in 2 minutes
 FSIP: return blow built to B.O.B. in 16 minutes; GTS 30" into FSIP

Serial #: 6752 Inside Murfin Drilling Company Inc. Theron #1-10 DST Test Number: 5



Triobite Testing, Inc

Ref. No: 56773

Printed: 2014.03.22 @ 05:25:07

ROCK TYPES

- Anhy
- Cht
- Coal
- Congl
- Dol
- Gyp
- Lmst

- Salt
- Shale
- Shcol
- Shgy
- Sltst
- Ss
- Carb sh

- Dol
- Dtd
- Gry sh
- Sandylms
- redshale
- Shale
- Sltstn

- Shlyslts
- Sltysl
- Sdy dolo
- Silty dolo
- Shy dolo
- Shaly ls
- Light dolomite

ACCESSORIES

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite

- Plant
- Strom
- Fuss
- Oomold

MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breclrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr

- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Sltly

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh
- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

OTHER SYMBOLS

INTERVALS

- Core
- Dst
- Dst

EVENTS

- Rft
- Dst top/base

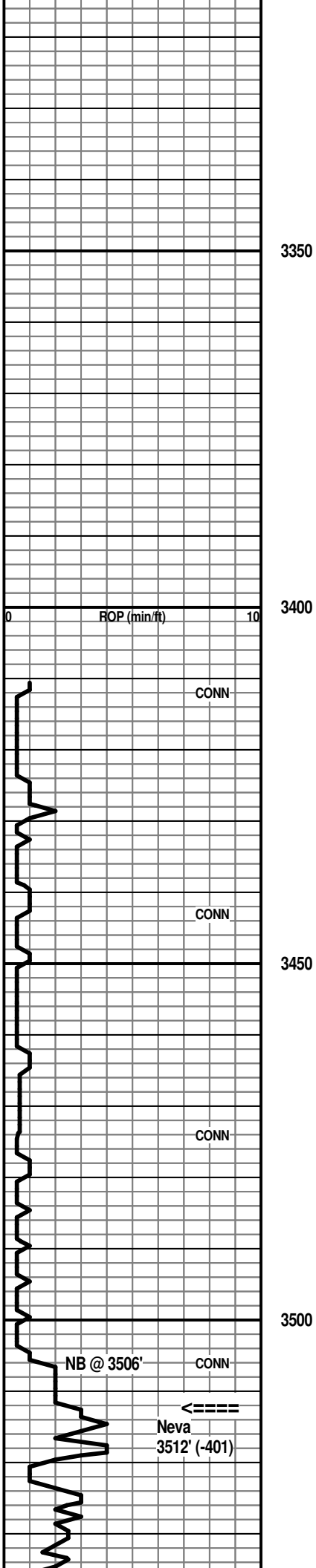
OIL SHOWS

- Even
- Spotted
- Quest.

- Trace
- Dead
- Gas show

Curve Track 1 ROP (min/ft)	Depth	Lithology	Geological Descriptions	Remarks
	3050			Anhydrite 3058' (+53)
	3100			Base/Anhydrite 3094' (+17)
Report Depth & Activity 3-12-2014 MIRT, Spud @ 6:45 PM 3-13 WOC @ 230', drilled out				

- @ 11:45 AM
- 3-14 Drlg. @ 2110'
- 3-15 Drlg. @ 3530'
- 3-16 Drlg. @ 3884'
- 3-17 TIH post DST No. 1 @ 3990'
- 3-18 DST No. 2 @ 4130'
- 3-19 DST No. 3 @ 4180'
- 3-20 DST No. 4 @ 4280'
- 3-21 Drlg. @ 4412'
- 3-22 TIH @ 4470' post DST No. 5
- 3-23 RTD @ 4620' - Logging
- 3-24 5 1/2" casing set at 4614'



3350

3400

3450

3500

PDC samples of no value

Call point at 3110' received at 5:30 PM
3-14-2014 -- Load and departed for well site

Sh: red-brn and gray, silty IP; some red Siltst

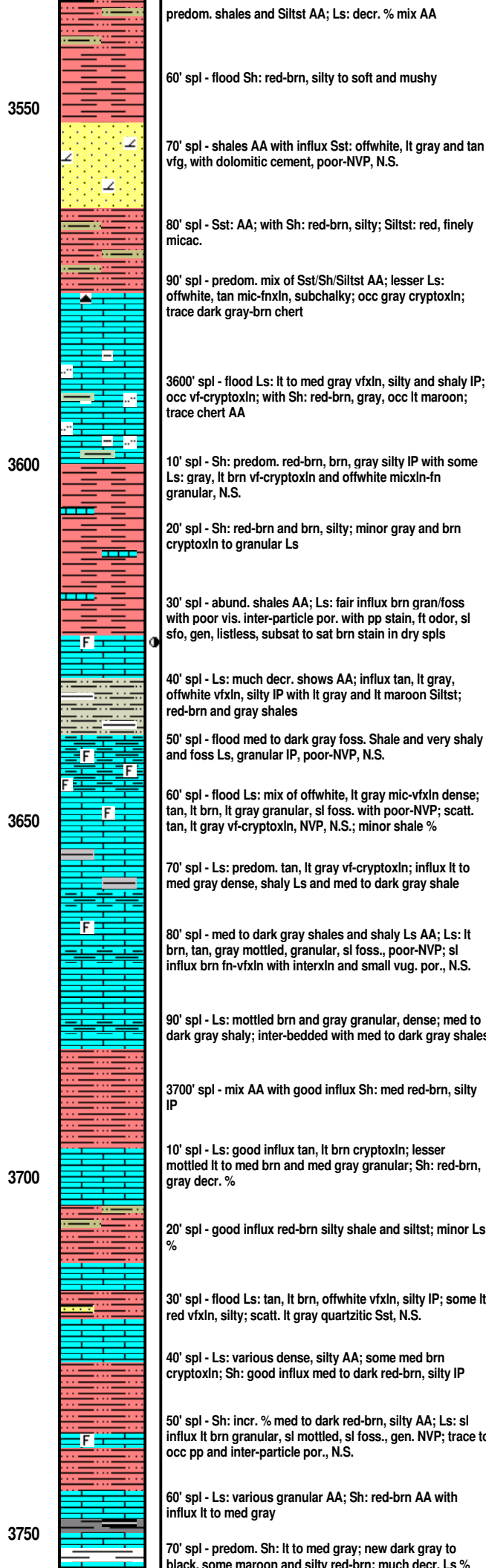
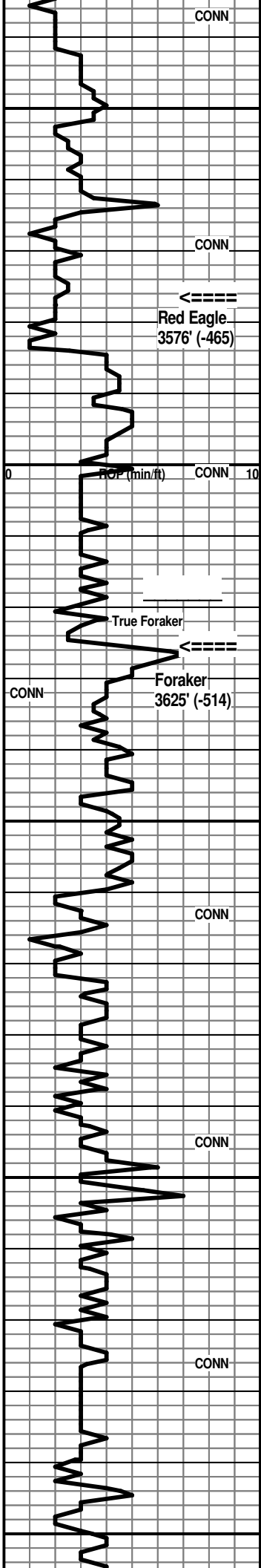
Start 10' samples
PDC bit was tripped at 3506'

Ls: offwhite, some tan mic-fnxln with some pp por.,
subchalky IP; other lt brn and gray fn granular, poor-NVP,
N.S.

Neva 3512' (-401)

Ls: mix AA with influx Siltst: red-brn; silty red-brn shale

7:00 AM at 3530' on 3-15-2014



predom. shales and Siltst AA; Ls: decr. % mix AA

60' spl - flood Sh: red-brn, silty to soft and mushy

70' spl - shales AA with influx Sst: offwhite, lt gray and tan vfg, with dolomitic cement, poor-NVP, N.S.

80' spl - Sst: AA; with Sh: red-brn, silty; Siltst: red, finely micac.

90' spl - predom. mix of Sst/Sh/Siltst AA; lesser Ls: offwhite, tan mic-fnxln, subchalky; occ gray cryptoxln; trace dark gray-brn chert

3600' spl - flood Ls: lt to med gray vfxln, silty and shaly IP; occ vf-cryptoxln; with Sh: red-brn, gray, occ lt maroon; trace chert AA

10' spl - Sh: predom. red-brn, brn, gray silty IP with some Ls: gray, lt brn vf-cryptoxln and offwhite micxn-fn granular, N.S.

20' spl - Sh: red-brn and brn, silty; minor gray and brn cryptoxln to granular Ls

30' spl - abund. shales AA; Ls: fair influx brn gran/foss with poor vis. inter-particle por. with pp stain, ft odor, sl sfo, gen, listless, substat to sat brn stain in dry spls

40' spl - Ls: much decr. shows AA; influx tan, lt gray, offwhite vfxln, silty IP with lt gray and lt maroon Siltst; red-brn and gray shales

50' spl - flood med to dark gray foss. Shale and very shaly and foss Ls, granular IP, poor-NVP, N.S.

60' spl - flood Ls: mix of offwhite, lt gray mic-vfxln dense; tan, lt brn, lt gray granular, sl foss. with poor-NVP; scatt. tan, lt gray vf-cryptoxln, NVP, N.S.; minor shale %

70' spl - Ls: predom. tan, lt gray vf-cryptoxln; influx lt to med gray dense, shaly Ls and med to dark gray shale

80' spl - med to dark gray shales and shaly Ls AA; Ls: lt brn, tan, gray mottled, granular, sl foss., poor-NVP; sl influx brn fn-vfxln with interxln and small vug. por., N.S.

90' spl - Ls: mottled brn and gray granular, dense; med to dark gray shaly; inter-bedded with med to dark gray shales

3700' spl - mix AA with good influx Sh: med red-brn, silty IP

10' spl - Ls: good influx tan, lt brn cryptoxln; lesser mottled lt to med brn and med gray granular; Sh: red-brn, gray decr. %

20' spl - good influx red-brn silty shale and siltst; minor Ls %

30' spl - flood Ls: tan, lt brn, offwhite vfxln, silty IP; some lt red vfxln, silty; scatt. lt gray quartzitic Sst, N.S.

40' spl - Ls: various dense, silty AA; some med brn cryptoxln; Sh: good influx med to dark red-brn, silty IP

50' spl - Sh: incr. % med to dark red-brn, silty AA; Ls: sl influx lt brn granular, sl mottled, sl foss., gen. NVP; trace to occ pp and inter-particle por., N.S.

60' spl - Ls: various granular AA; Sh: red-brn AA with influx lt to med gray

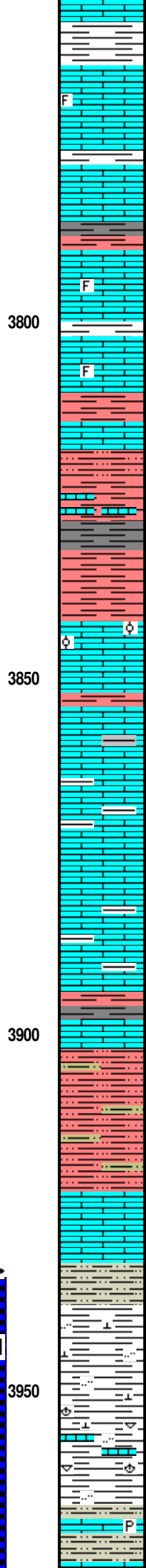
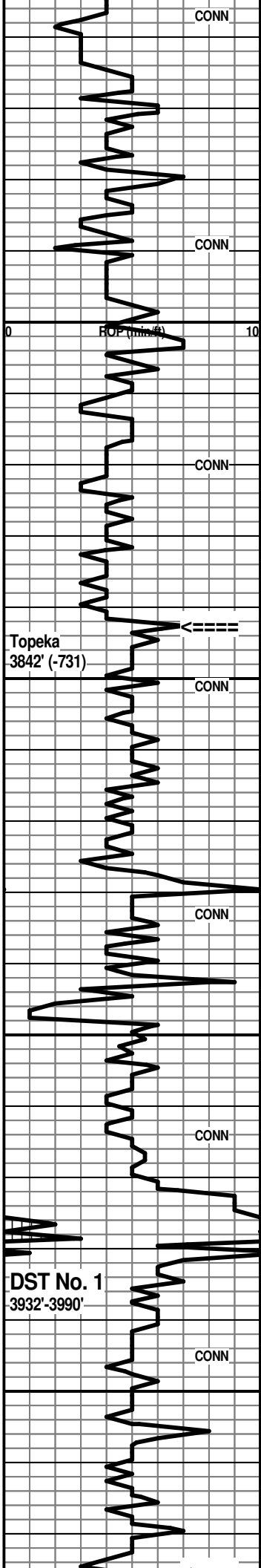
70' spl - predom. Sh: lt to med gray; new dark gray to black. some maroon and silty red-brn: much decr. Ls %

Red Eagle 3576' (-465)

Morgan Mud Check at 3601'
 10:50 AM on 3-15-2014
 wt vis wl pH chl
 9.0 53 7.2 9.5 600
 PV YP GelS lcm solids
 22 16 22/32 4# 5.1%

Geologist on location at 3611'
 11:45 AM on 3-15-2014

Foraker 3625' (-514)



80' spl - Sh: mix AA; Ls: lt gray, tan, lt brn granular, some cryptoxln, NVP; sl influx lt to med brn granular, foss. IP with inter-particle por. with pp black dead and tarry stain, no odor, one minute oil droplet, gas bubbles on brkn surface

90' spl - flood Ls: common lt brn, tan, gray granular with black tarry stain; influx lt brn, gray-brn cryptoxln, NVP and offwhite mic-fnxln, subchalky, N.S.

3800' spl - Ls: mix AA decr. %; Sh: incr. % of red-maroon, med to dark gray, red-brn

10' spl - Ls: mix tan, lt brn granular to cryptoxln, foss. IP, NVP, N.S.; other offwhite, tan mic-vfxln dense; scatt. tan, lt brn fn-vfxln with pp dark stain, vs-l sfo on break, no odor; Sh: red-brn, med gray, occ maroon

20' spl - Ls: various lt to med brn, gray, tan granular, foss. IP; tan mic-vfxln dense; scatt. shows AA, some black tarry stain; Sh: incr. % of med to dark red-brn

30' spl - becoming shale dominated - various red-brn silty IP; Ls various granular AA with sl influx lt gray, tan cryptoxln and offwhite, tan mic-vfxln dense

40' spl - Sh: strong influx med to dark red-brn, silty IP, some soft mushy; lesser med to dark gray

50' spl - Ls: influx lt to med brn, some lt gray and red-brn smooth cryptoxln; occ tan, offwhite oolitic to granular with poor to fair inter-particle por. with lt brn stain, sl sfo, sl sg on break, no odor; Sh: decr. % AA

60' spl - Ls: various cryptoxln AA with influx lt gray granular, NVP, N.S.; streaks of dark red-brn shale

70' spl - Ls: mix lt gray cryptoxln to granular, NVP, N.S.; and Sh: dark red-brn, med to dark gray, some brick red and maroon

80' spl - Ls: various lt gray, lt brn, tan cryptoxln with shales AA

90' spl - incr. % Ls: various cryptoxln AA, some pink to maroon tinted vf-cryptoxln, shaly IP; Sh: streaks AA

3900' spl - interbedded various cryptoxln Ls's and red-brn, gray and maroon shales

10' spl - Ls: tan, lt gray, offwhite cryptoxln and offwhite mic-vfxln dense; Sh: med to dark red-brn, med to dark gray; Siltst: lt to med red

20' spl - predom. Siltst: predom. red-brn with other lt gray finely micac.; much decr. Ls %

30' spl - flood Ls: lt to med brn, yellow-brn, some lt gray smooth cryptoxln; some mottled red-brn vf-cryptoxln; much decr. shale and siltst

40' spl - decr. Ls AA; Siltst: good influx grayish purple, calcar. and grayish-purple silty shale

50' spl - flood Sh: grayish-purple, lt maroon, some gray-green, silty and calcar.

60' spl - Sh: very predom. maroon and grayish-purple, calcar. AA; Ls: scatt. lt gray and brn cryptoxln

70' spl - Sh: various maroon and grayish-purple AA with other yellow-green, gray-green, calcar. with scatt. shells (pelecipods, brachiopods)

80' spl - influx Ls: lt gray, tan, lt brn cryptoxln, foss. and pyritic, hard, NVP; Siltst: good influx offwhite, lt gray

Hole deviation was 1.8 degrees at 3757'
Reduced WOB

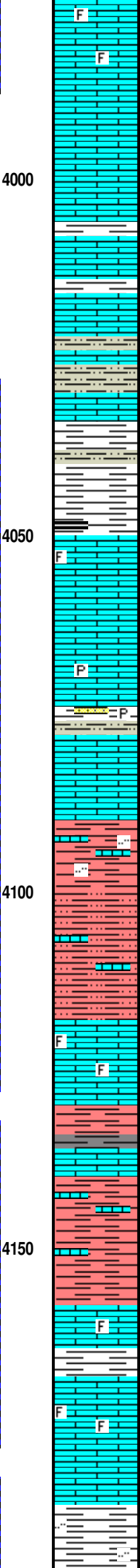
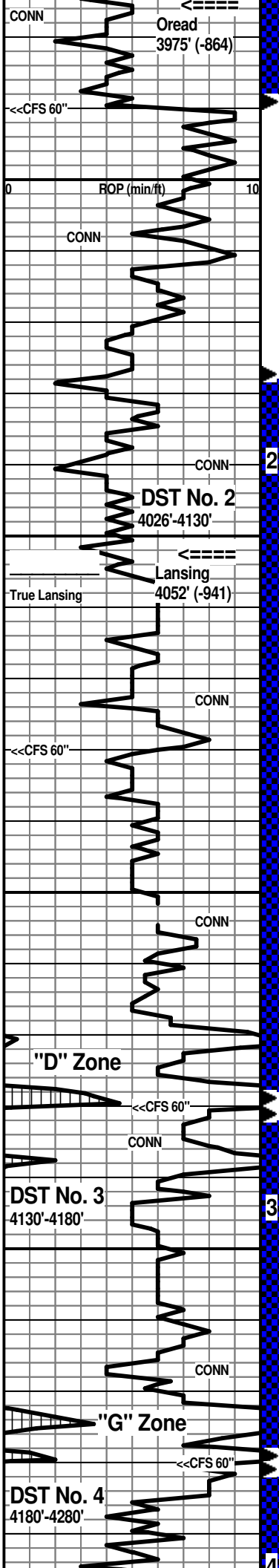
Topeka 3842' (-731)

7:00 AM at 3884' on 3-16-2014

SHS 2.2 degrees at 3914'

Morgan Mud Check at 3929'
12:00 PM on 3-16-2014
wt vis wl pH chl
9.2 74 7.2 10.0 600
PV YP GelS lcm solids
38 20 26/40 6# 6.5%

DST No. 1 Oread
Interval: 3932'-3990'
Times: 30-60-60-90
IFP: surface blow built to 2 1/2 inches
ISIP: no return blow
FFP: surface blow built to 2 inches
FSIP: no return blow
Recovery: 95' mud
FP: 17-29/32-57 SIP: 1292-1289
HP: 1960-1868 BHT: 136 deg. F



90' spl - Ls: tan, lt gray cryptoxln, NVP and offwhite mic-vfxln dense, N.S.; several chips tan, lt gray sl foss. and granular with some vug. por., inter-particle and fossil moldic por. with pp to subsat brn stain, sl-fair sfo, ft odor; several chips offwhite vfxln with pp dark stain, poor vis. por., nfo; 3990' CFS spls >>>

4000' spl - flood Ls: tan, some offwhite vfxln dense, NVP; lesser tan, lt brn cryptoxln, NVP, N.S.; some Sh: med to dark gray

10' spl - Ls: flood tan, lt brn cryptoxln, NVP; decr. shale %

20' spl - Ls: various lt brn, lt gray, tan cryptoxln; offwhite, lt gray mic-vfxln dense; Sh: good influx lt to med gray, some gray-green and red-brn

30' spl - decr. Shale %; Ls: strong influx lt to med brn, gray-brn cryptoxln; very scatt. chips with spotty brn stain, nfo, no odor, ?new?

40' spl - Ls: lt to med brn, med to dark gray-brn, gray cryptoxln; Siltst: good influx offwhite, lt gray calcar.; Sh: some red-brn, gray

50' spl - Ls: various cryptoxln AA; lesser offwhite, tan mic-vfxln dense; Sh: good incr. % dark red-brn, med to dark gray, some gray-green; much decr. Siltst AA

60' spl - Sh: mix AA, occ black carbon.; Ls: tan, lt to med brn cryptoxln NVP and offwhite, tan mic-vfxln dense; scatt. tan, offwhite foss. tight vf-cryptoxln with spotty black stain, nfo, no odor

70' spl - flood Ls: predom. lt to med brn, lt gray smooth cryptoxln, NVP, N.S.; scatt. offwhite, lt gray vfxln with pp dark stain; scatt. tan, offwhite vf-cryptoxln with spotty pp and edge por. with brown to black stain, sl sfo, no odor

80' spl - Ls: very predom. lt to med brn smooth cryptoxln, trace pyritic, NVP, N.S.; lesser offwhite, tan mic-vfxln dense; scatt. tan cryptoxln with spotty vug. por., sl gran. IP with poor inter-particle por. with lt brn stain, vsl sfo, no odor; CFS 4080' spls - >>>

90' spl - Ls: smooth med brn, lt gray cryptoxln; lesser offwhite mic-vfxln dense; Sh: fairly minor red-brn, gray

4100' spl - Ls: various cryptoxln and dense AA; Sh: sl incr. red-brn

10' spl - Ls: predom. lt to med brn smooth cryptoxln; Sh: med to dark red-brn, red-maroon, silty IP

20' spl - Sh: strong influx med to dark red-brn, silty IP; Ls: cryptoxln AA

30' spl - flood Ls: tan, offwhite, lt brn foss. with inter-particle and fossil moldic por. with pp dark stain to subsat. lt brn stain, fair-good sfo, poss. ft odor; lesser offwhite, lt gray, tan vf-cryptoxln, poor-NVP, N.S.

CFS 4130' spls >>>

40' spl - trashy; Sh: med to dark red-brn, maroon, vc gray; some Ls: various cryptoxln AA, some maroon tinted cryptoxln

50' spl - Sh: med to dark red-brn, med gray, some dark maroon; some Ls: new mottled med to dark brn granular, poor-NVP, N.S.

60' spl - predom. Sh: dark red-brn, lesser med to dark gray and red-maroon; Ls: predom. lt to med brn cryptoxln

70' spl - predom. shales AA; Ls: sl influx offwhite, lt brn granular, sl foss. with some vug. por. with spotty brn stain, nfo, no odor; other cryptoxln AA

80' spl - flood Ls: offwhite vfxln dense, gen. NVP, most N.S., some with patchy stain; fair influx tan fn granular, foss. with inter-particle and vug. por. with pp brn stain, fair-good sfo, subsat. to sat. stain in dry spls, no odor

CFS 4180' spls >>>

90' spl - Ls: predom. lt to med gray cryptoxln; lesser offwhite micln, subchalky; Sh: incr. % med to dark red-brn, red-maroon, some brick red; influx med gray

4200' spl - >>>

Oread 3975' (-864)
 CFS 3990' spls - Ls: mix AA with common shows AA; other tan, lt gray cryptoxln NVP with some spotty stain

7:00 AM at 3990' on 3-17-2014
 SHS was 2.1 degrees at 3990'

Morgan Mud Check at 4002'
 11:40 AM on 3-17-2014
 wt vis wl pH chl
 9.4 72 7.6 9.5 700
 PV YP GeIS lcm solids
 22 26 20/34 4# 7.9%

DST No. 2 Lansing "A" and "D" Zones
 Interval: 4026'-4130'
 Times: 30-60-60-90
 IFP: fair blow built to 6 inches
 ISIP: no return blow
 FFP: fair blow built to 5 1/2 inches
 FSIP: no return blow
 Recovery: 51' GCO (45g, 55o); 74' OCM (50o, 50m);
 gravity 24 degrees
 FP: 20-35/51-66 SIP: 707-709
 HP: 1994-1951 BHT: 136 deg. F

Lansing 4052' (-941)
 CFS 4080' 30' spl - Ls: various cryptoxln and tan, offwhite dense; trace shows AA; 60' spl - Ls: mix AA, trace shows; Sh: influx med to dark red-brn, brick red, pyritic gray; Sst: scatt. lt gray fg to some med grnd, calcar., pyritic IP, N.S.; occ gray shaly Siltst

DST No. 3 Lansing "G" Zone
 Interval: 4130'-4180'
 Times: 30-60-60-90
 IFP: good blow, B.O.B. in 8 minutes
 ISIP: return blow, B.O.B. in 47 minutes
 FFP: good blow, B.O.B. in 11 minutes
 FSIP: return blow, B.O.B. in 55 minutes
 Recovery: 752' GIP; 564' CGO (40g, 60o); 188' O&WCM (25o, 27w, 48m); oil gravity 28 deg.
 FP: 41-133/141-291 SIP: 1362-1291
 HP: 2026-1939 BHT: 145 deg. F

CFS 4130' 30' spl - much decr. shows AA; Ls: flood lt gray vf-cryptoxln, sl shaly IP and offwhite, tan vf-cryptoxln, NVP; 60' spl - Ls: mix lt gray, lt to med brn cryptoxln; lesser lt brn, lt gray granular, NVP, N.S.; scatt. shows AA

7:00 AM at 4130' on 3-18-2014
 SHS was 2.6 degrees at 4130'

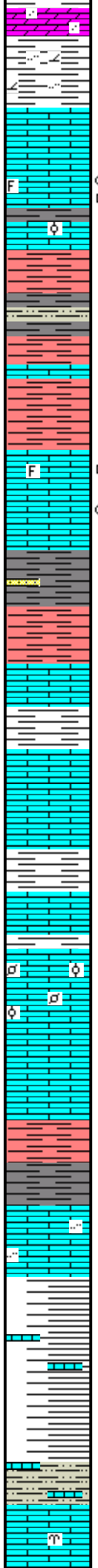
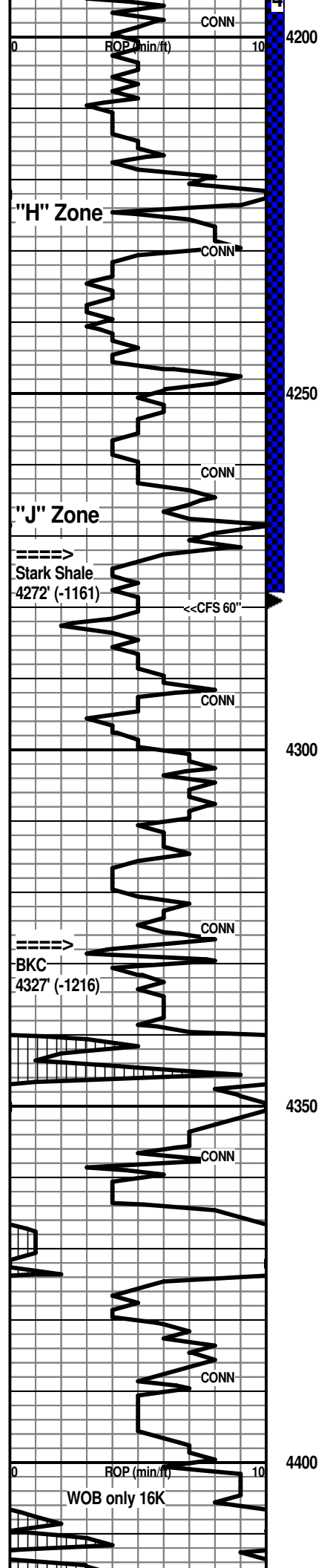
Morgan Mud Check at 4130'
 7:30 AM on 3-18-2014
 wt vis wl pH chl
 9.3 63 6.0 9.5 600
 PV YP GeIS lcm solids
 28 22 22/40 4# 7.2%

CFS 4180' 30' spl -Ls: much decr. shows AA; flood tan, lt gray cryptoxln NVP, N.S.; lesser offwhite, lt gray mic-vfxln dense, subchalky IP; 60' spl - Ls: mix AA, scatt. shows; Sh: some dark red-brn, red-maroon, dark gray

7:00 AM at 4180' on 3-19-2014
 SHS was 2.4 degrees at 4180'

4200' spl - Sh: mix AA with abund. lt to med gray, some purplish-gray; Ls: mix AA with influx med brn, lt to med gray cryptoxln with fnxn edge por. and scatt. vug. por. with chert to est. stain, trace fg, no odor

with sat stain, trace fo, no odor



10' spl - Sh: strong influx dark red-brn, silty IP and it to med gray; Dolo: some lt maroon vfxln, silty; minor Ls % lt gray, offwhite, lt brn vf-cryptoxln

20' spl -Sh: mottled maroon/gray silty to dolomitic; flood Ls: predom. lt gray vf-cryptoxln, NVP, N.S.;

30' spl - Ls: abund. lt gray AA with good influx offwhite mic-vfxln dense, subchaly IP, N.S.; Sh: sl influx med gray

40' spl - Ls: fair influx offwhite foss/granular, gen. tight with subsat. to sat dark pp stain, nfo, no odor, dead; other offwhite, tan granular to sl oolitic, poor-NVP, N.S. and lt gray, lt brn cryptoxln

50' spl - flood Sh: dark red-brn, some silty; lesser lt to med gray; some lt gray and offwhite Siltst

60' spl - Sh: dark red-brn; Ls: some lt gray, lt brn predom. cryptoxln

70' spl - flood Ls: mix tan, offwhite mic-vfxln dense; tan sl granular/foss with gen. poor por.; scatt. brn cryptoxln with gilsonite filled microfractures; some offwhite micxln with black gilsonitic stain, pale ring cut

80' spl - flood Ls: lt to med brn, lt gray, gray-brn cryptoxln, NVP, N.S.; several chips tan cryptoxln with scatt. vug. por. and edge por. with lt brn stain, trace fo, no odor

CFS 4280' 30' spl - Sh: flood lt to med gray and mushy lt gray; some Sst: gray vfg, quartzitic; 60' spl - Sh: AA, some dark red-brn, silty IP; Ls: tan, lt gray vf-cryptoxln, some sl granular, N.S.

90' spl - trashy, various shales; 4300' spl - very predom. Sh: dark red-brn, silty IP with abund. med to dark gray; scatt. Ls: tan, lt gray cryptoxln

10' spl - much decr. shale %; Ls: good influx predom. lt gray granular; other tan, lt gray cryptoxln and offwhite mic-vfxln dense, N.S.

20' spl - Ls: various AA; Sh: dark red-brn and med to dark gray (40% of spl)

30' spl - decr. shale %; Ls: predom. lt to med brn and gray granular, NVP, N.S.; some med brn and gray cryptoxln

40' spl - flood Ls: lt to med brn and gray cryptoxln to granular IP, NVP; some tan pelletal to sl oolitic with spar matrix, N.S.

50' spl - Ls: mix AA; fairly minor Sh: red-brn, dark maroon, trace mottled yellow/gray, med gray

60' spl - Ls: predom. lt gray cryptoxln; lesser gray, lt brn granular, poor-NVP; Sh: influx dark red-brn, med to dark gray, fissile IP

70' spl - Sh: dark red-brn, lesser med gray; Ls: predom. lt to med gray cryptoxln to some granular, NVP; mottled gray, brn and red-brn granular, NVP, N.S.

80' spl - flood Ls: lt to med gray, lt brn cryptoxln and lt gray vfxln, silty to shaly

90' spl - Ls: very predom. lt to med gray, silty and shaly IP; Sh: streaks of med to dark red-brn, lesser maroon, purple; trace dark yellow

4400' spl - predom. Sh: med to dark red-brn, red-maroon, silty IP; lesser vc gray, mottled red/gray, yellow/maroon, purple

10' spl - Sh: med to dark red-brn silty, to finely micac. Siltst; Ls: lt gray, tan cryptoxln to granular, NVP, N.S.

20' spl - Ls: gray, lt brn, offwhite granular, occ mottled pink granular, NVP, N.S.; trace offwhite with fenestral bryozoan por., N.S.; other tan, lt gray, offwhite mic-vfxln dense

Morgan Mud Check at 4180'
 7:45 AM on 3-19-2014
 wt vis wl pH chl
 9.1 50 6.8 9.5 600
 PV YP GelS lcm solids
 22 12 16/26 6# 5.7%

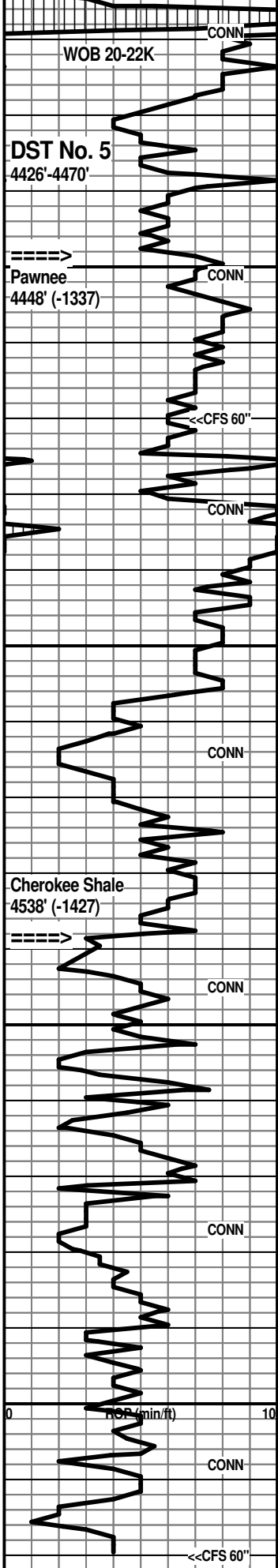
DST No. 4 Base Lansing "G" through "J"
 Interval: 4180'-4280'
 Times: 30-60-60-90
 IFP: weak blow built to 3" inches
 ISIP: no return blow
 FFP: weak blow built to 2 inches
 FSIP: no return blow
 Recovery: 10' GCO (5g, 95o); 30' OCM (30o, 70m)
 FP: 16-17/24-26 SIP: 1812-1774
 HP: 2055-2045 BHT: 135 deg. F

Stark Shale 4272' (-1161)
 7:00 AM at 4280' on 3-20-2014
 SHS was 2.9 degrees at 4280'

Morgan Mud Check at 4280'
 7:45 AM on 3-20-2014
 wt vis wl pH chl
 9.1 51 6.8 9.5 600
 PV YP GelS lcm solids
 21 13 14/20 4# 5.7%

BKC 4327' (-1216)

7:00 AM at 4412' on 3-21-2014



30' spl - Ls: mix AA with influx tan, lt gray, some lt brn cryptoxln and offwhite, lt gray mic-vfxln dense; Sh: streaks of med to dark red-brn, lesser lt to med gray, trace-occ purple

40' spl - Ls: flood lt to med gray mic-vfxln dense, shaly and lt to med gray calcar. shale

50' spl - Ls/Sh AA, some lt gray soft, mushy shale

60' spl - predom. AA; Ls: sl influx med brn, med gray, gray-brn cryptoxln, foss. IP, NVP; other gray, brn, offwhite mottled granular, poor-NVP, N.S.

70' spl - Ls: 3-4 chips tan finely oolitic/granular with pp stain in inter-particle/inter-oolitic por., trace fo, no odor; flood lt to med brn, gray-brn cryptoxln, NVP, N.S.

CFS 4470' 30" spl - Ls: 5-6 chips tan oolitic, fair to good por. AA with shows AA, trace fo floating in spl tray; predom. various cryptoxln AA; abund. lt to med gray mic-fxln dense, shaly; 60" spl - Ls: var. lt to med gray vf-cryptoxln, shaly IP

80' spl - Sh: med to dark gray, some black carbon.

90' spl - Sh: abund. mix AA; Ls: med gray, med brn cryptoxln. foss. IP; other lt gray mic-vfxln dense, NVP, N.S.

4500' spl - flood Ls: lt to med gray vf-cryptoxln, shaly IP, NVP, N.S.

10' spl - Ls: various gray AA, more cryptoxln

20' spl - Ls: various gray, gray-brn vf-cryptoxln, NVP, N.S.; Sh: influx dark gray to black carbon. and fissile

30' spl - Sh: med to dark gray, red-brn; Ls: lt to med brn, lt gray cryptoxln, some granular and offwhite, lt gray mic-vfxln; lt gray dense, shaly

40' spl - flood Ls: tan, lt to med brn predom. cryptoxln; lesser offwhite, tan mic-vfxln dense, subchalky IP; Sh: thin gray beds

50' spl - Ls: various dense AA with influx tan, lt brn, lt gray granular, NVP, N.S.; trace tan, lt gray friable Sst, N.S.; Sh: sl influx lt to med gray, dark gray to black, red-brn, trace maroon

60' spl - Ls: influx med to dark brn cryptoxln and offwhite, tan granular and sandy, N.S.; Sh: vc gray, lesser red-brn and gray-green

70' spl - Ls: predom. lt to med brn cryptoxln; lesser tan, brn granular with poor-NVP, N.S.; trace offwhite fenestral bryozoan Ls, N.S.; minor shale %

80' spl - Ls: tan, lt brn, lt gray cryptoxln, NVP; and offwhite mic-vfxln dense, subchalky; Sh: streaks med to dark gray, black

90' spl - Sh: sl influx vc gray, red-brn, maroon, purple; Sst: fair influx red-brn fn-med grnd, ang-subrnd, some coarse grnd, shaly IP, N.S.; Ls: mix AA

4600' spl - Sh: predom. lt to med gray with Sst AA; Ls: various lt to med brn, gray cryptoxln to sl granular, NVP, N.S.

10' spl - predom. Ls: various cryptoxln AA with Sh: lt to med gray; some Sst AA

20' spl - predom. Sh: vc gray, red-brn, maroon, mottled red/brn sandy; Sst: some offwhite fn-med grnd calcar. with abund. fn-very coarse loose grains, N.S.

CFS 4620' 30" spl - Sh: flood red-brn, red-maroon, lt green sandy, other mc AA; Sst: loose grains AA; 60" spl - Sh: mc AA with more purple, mottled maroon/yellow; mottled sandy mc; Sst: loose grains AA; some dirty gray clusters

DST No. 5 Pawnee
Interval: 4426'-4470'
Times: 30-60-60-90
IFP: strong blow, B.O.B. in 1 minute
ISIP: return blow built to B.O.B. in 15 minutes
FFP: strong blow, B.O.B. in 2 minutes
FSIP: return blow built to B.O.B. in 16 minutes; GTS 30" into FSIP
Recovery: GTS no measure; 2350' CGO (25g, 75o); 94' G&OCM (3g, 27o, 70m)
FP: 184-625/921-888 SIP: 921-921
HP: 2200-2071 BHT: 155 deg. F

Pawnee 4448' (-1337)

Morgan Mud Check at 4458'
1:30 PM on 3-21-2014
wt vis wl pH chl
9.3 69 6.4 10.5 600
PV YP GelS lcm solids
23 21 16/37 5# 7.1%

7:00 AM at 4470' on 3-22-2014
SHS was 2.7 degrees at 4470'

Morgan Mud Check at 4482'

9:25 AM on 3-22-2014
wt vis wl pH chl
9.3 62 6.4 9.5 700
PV YP GelS lcm solids
19 21 13/30 4# 7.1%

Cherokee Shale 4538' (-1427)

7:00 AM at 4620' on 3-23-2014
RTD reached at 9:30 PM on 3-22-2014
CFS 60" - 5 stand short trip - CTCH 1 1/4 hours - drop survey - TOFL

Because of the positive results of DST's No. 2, No. 3 and No. 5: 5 1/2" casing was set for

			<p>No. 5 and No. 5, 5 1/2 casing was set for completion in the Pawnee, Lansing "D" and "G" zones.</p>	SHS was 2.9 degrees at 4620'
	4650		<p>Respectfully submitted,</p> <p>Wesley D. Hansen Petroleum Geologist Kansas License No. 418</p>	