



1171503

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

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

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

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

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

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

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Summary of Changes

Lease Name and Number: Solko 1-33

API/Permit #: 15-153-20930-00-00

Doc ID: 1171503

Correction Number: 1

Approved By: NAOMI JAMES

Field Name	Previous Value	New Value
Amount of Surface Pipe Set and Cemented at	350	386
Approved Date	12/03/2013	12/04/2013
Date of First or Resumed Production or SWD or Enhr Producing Method Other	No	10/25/2013 Yes
Producing Method Other Detail		TA
Save Link	../..kcc/detail/operatorEditDetail.cfm?docID=1171270	../..kcc/detail/operatorEditDetail.cfm?docID=1171503



CONFIDENTIAL

WELL COMPLETION FORM

Form Must Be Typed
Form must be Signed
All blanks must be Filled

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
- Conv. to GSW
- Plug Back: _____ Plug Back Total Depth _____
- 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

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total 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

- Letter of Confidentiality Received
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Solko 1-33
Doc ID	1171270

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	4178 - 4182 LKC A	400 gal 15% MCA (LKC A & UPR D)	
4	4244 - 4248 UPR D	250 gal 15% MCA	
4	4256 - 4260 LWR D	250 gal 15% MCA	

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Mark Sievers, Chairman
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

December 03, 2013

Leon Rodak
Murfin Drilling Co., Inc.
250 N WATER STE 300
WICHITA, KS 67202-1216

Re: ACO1
API 15-153-20930-00-00
Solko 1-33
SE/4 Sec.33-02S-36W
Rawlins County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
Leon Rodak

MDCI Solko #1-33 330' FSL 330'FEL Sec. 33-2S-36W 3261' KB							MDCI AFT #1-5 330' FNL 2190'FEL Sec. 5-3S-36W 3369' KB	
Formation	Sample top	Datum	Ref	Log tops	Datum	Ref	Log tops	Datum
Anhydrite	3111	+150	+4	3110	+151	+5	3223	+146
B/Anhydrite	3148	+113	+4	3142	+119	+10	3260	+109
Neva	3612	-351	+5	3610	-349	+7	3725	-356
Foraker	3729	-468	+6	3729	-468	+6	3843	-474
Topeka	3970	-709	+8	3964	-703	+14	4086	-717
Oread	4087	-826	+13	4089	-828	+11	4208	-839
Lansing	4174	-913	+12	4178	-917	+8	4294	-925
Stark	4403	-1142	+7	4406	-1145	+4	4518	-1149
BKC	4453	-1192	+8	4454	-1193	+7	4569	-1200
Pawnee	4580	-1319	+5	4583	-1322	+2	4693	-1324
Cherokee	4653	-1392	+6	4655	-1394	+4	4767	-1398
Mississippi	DNR			DNR			DNR	
RTD	4740	-1479					4850	-1481
LTD				4744	-1483		4853	-1484

Robert L. Milford

PETROLEUM GEOLOGIST
Wichita, Kansas

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

OPERATOR **Murfin Drilling Company, Inc.**

LEASE **Solk #1-33**

LOC SPOT **SE SE SE**

LOC FOOTAGE **330' FS, 330' FEL**

SEC. **33** TWP. **25** R. **36W**

COUNTY **Rawlins** STATE **Kansas**

CONTRACTOR **Murfin Drilling Co., Inc.** REG. NO. **8**

DRILLING STARTED **6/2-2013** COMPLETED **8-16-2013**

MUD DISPLACED **3,335** MUD TYPE **Chemical**

DRILLING TIME KEPT FROM **3:20** TO **RTD**

SAMPLES SAVED FROM **3:20** TO **RTD**

SAMPLES EXAMINED FROM **3:50** TO **RTD**

GEOLOGICAL SUPERVISION FROM **3:50** TO **RTD**

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SAMPLES SAVED FROM **3:20** TO **RTD**

SAMPLES EXAMINED FROM **3:50** TO **RTD**

FORMATION

FORMATION NAME	TOP	DATUM	TOP	SAMPLE	DATUM
Stone Corral	3,100'	+151'	3,111'	+150'	
Neva	3,610'	-349'	3,608'	-347'	
Forker	3,729'	-468'	3,728'	-467'	
Topeka	3,964'	-703'	3,963'	-702'	
Oread	4,089'	-828'	4,088'	-827'	
Lansing	4,178'	-917'	4,177'	-916'	
B/KC	4,454'	-1193'	4,452'	-1191'	
Pawnee	4,583'	-1322'	4,581'	-1320'	
Cherokee	4,655'	-1394'	4,653'	-1392'	
Total Depth	4,744'	-1483'	4,740'	-1479'	

MEASUREMENTS FROM

CONDUIT

CASING RECORD

ELEVATIONS

KB 3,261'

GL 3,256'

MEASUREMENTS FROM

CONDUIT

CASING RECORD

ELEVATIONS

KB 3,261'

GL 3,256'

MEASUREMENTS FROM

CONDUIT

CASING RECORD

ELEVATIONS

KB 3,261'

GL 3,256'

MEASUREMENTS FROM

CONDUIT

CASING RECORD

ELEVATIONS

KB 3,261'

GL 3,256'

MEASUREMENTS FROM

CONDUIT

CASING RECORD

DATE	7:00 AM DEPTH	REMARKS
8-7-13	0'	Spud @ 10:15 am. Plug down @ 5:30 pm. Drilled out plug @ 1:30 am on 8-8-13
8-8-13	840'	Cut 840' in last 24 hrs.
8-9-13	2,420'	Cut 1,580' in last 24 hrs; 21 hrs drlg.
8-10-13	3,470'	Cut 1,050' in last 24 hrs; 22 hrs drlg.
8-11-13	4,110'	Cut 640' in last 24 hrs; 21.75 hrs drlg. DST #1 @ 4220'
8-12-13	4,220'	Cut 110' in last 24 hrs; 4.75 hrs drlg. DST #2 @ 4260'
8-13-13	4,365'	Cut 145' in last 24 hrs; 4.5 hrs drlg. DST #3 @ 4365', DST #4 @ 4404'
8-14-13	4,404'	Cut 39' in last 24 hrs; 2 hrs drlg. DST #5 @ 4600'
8-15-13	4,600'	Cut 196' in last 24 hrs; 10 hrs drlg. RTD 4740' @ 11:07 pm
8-16-13	4,740'	Cut 140' in last 24 hrs; 7.25 hrs drlg. Ran production casing

Remarks

The electric log measurements correlate from 1' to 2' lower to the drilling measurements.

Formation tops and lithology on this report have been corrected to the electric log.

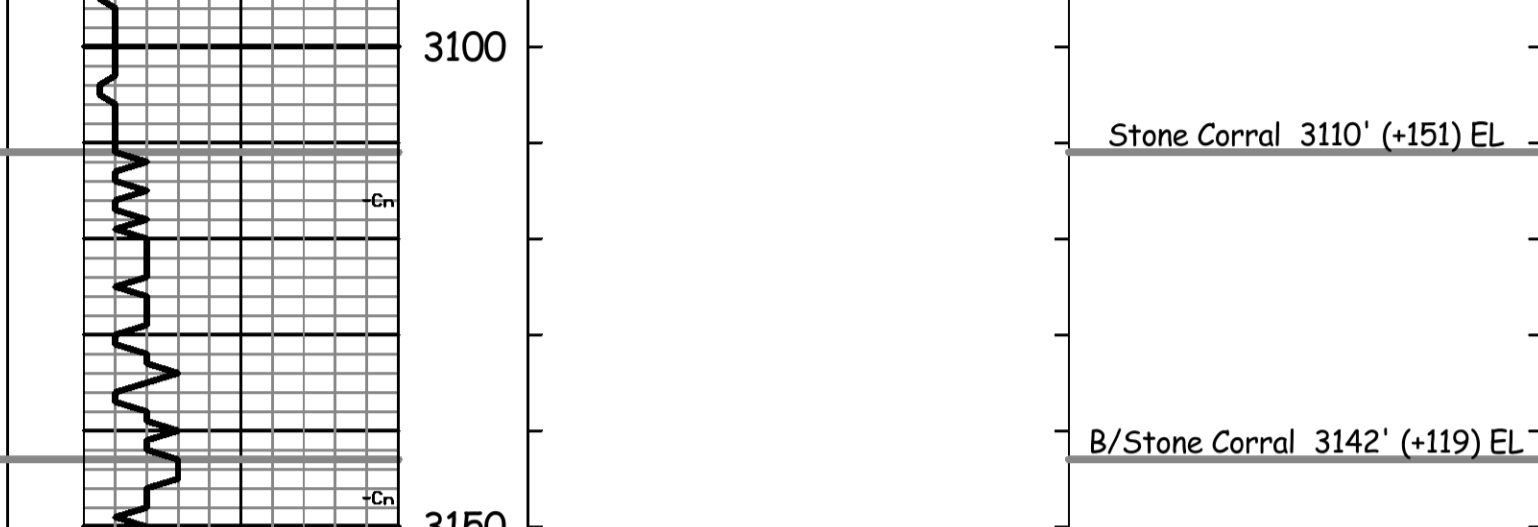
The drilling samples were deposited at the Kansas Geological Survey office in Wichita.

Respectfully submitted,

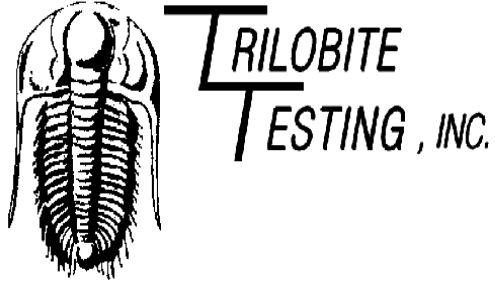
Robert L. Milford

Drill Stem Test Charts

Drill Stem Test by **Trilobite Testing, Inc.**



LITH.	DRILL TIME (MIN/FT)	DEPTH	SAMPLE DESCRIPTIONS	REMARKS
		3100		Stone Corral 3110' (+151) EL
		3150		B/Stone Corral 3142' (+119) EL
		3500		Call depth 3220' @ 10:50 pm on 8-9-13 Mud displaced from 3336' to 3362'
		3520	Sdy Sh: red-brn, fn-vry fn grain sd, intermixed w/ some Sd: crm-lt gry, fn-vry fn grain, sli calc in prt, fri-brittle, pr vis por, NS	Samples start 3520' @ 8:25 am on 8-10-13
		3550	Sdy Sh: A.A. w/ some soft & gummy, & some Sd: A.A., pr vis por, NS	
		3580	Sdy Sh: red-brn, intermixed w/ some Sd: crm-lt gry, fn-vry fn grain, vry sli calc in prt, some sli shly, soft-brittle, pr vis por, NS	
		3600	Sdy Sh: red-brn, w/ small amt of Sdy Sh: lt grn, fn-vry fn grain	Morgan Mud check @ 3589': 69 Vis, 8.6 Wt, 6.0 WL, 600 ppm Chl, 1# LCM
		3610	Sdy Sh: A.A., some soft & gummy	Neva 3610' (-349) EL
		3650	LS: wh-crm, fxln, fos-ool, vry chky-sub chky, pr por, NS Sdy Sh: red-brn, w/ small amt Sd: grn, some sdy	
		3673	Sdy Sh: red-brn	Red Eagle 3673' (-412) EL
		3700	Sd: lt gry, fn-vry fn grain, sli calc, semi fri-brittle, pr vis por, NS Sdy Sh: A.A., w/ some Sd: red-brn to purple	
		3729	LS: crm-lt gry, fxln, sdy in prt (vry fn grain), fos in prt, sub chky-prtly dns, pr por, NS	Forker 3729' (-468) EL
		3750	Sh: red-brn, sdy in prt, tr cht: red-brn, w/ small amt of Sd: lt gry, fn-vry fn grain, sli calc, semi fri-brittle, pr vis por, NS Sdy Sh: red-brn, some soft & gummy, w/ small amt Sd: A.A., pr vis por, NS	
		3780	Sdy Sh: red-brn, some soft & gummy	
		3800	LS: wh-lt gry, fxln, sdy in prt (vry fn grain), some fos, vry chky-sub chky, pr por, NS LS: tan-brn, fxln, sli fos, some shly, sub chky-prtly dns, pr por, NS	
		3850	LS: wh-lt gry, fxln, fos in prt, vry chky-prtly dns, pr por, NS LS: wh-crm, fxln, fos in prt, some sli shly, some calcite, vry chky-prtly dns, pr por, NS LS: gry, fxln, shly in prt, sub chky-prtly dns, pr por, NS Sh: red-brn, soft & gummy in prt, some gry	
		3886	Sh: A.A. LS: crm-lt gry, fxln, fos in prt, sub chky-prtly dns w/ some chky-vry chky, pr por, NS Sh: red-brn, some soft & gummy w/ some Calc Sh: lt gry & red-brn Sh: red-brn, some sdy, some gry & grn	Stotler 3886' (-625) EL
		3900	LS: wh-lt gry, fxln, fos in prt, vry chky-prtly dns, pr por, NS Sh: red-brn, sdy in prt, some soft & gummy, some grn Sh: red-brn, some soft & gummy, some gry & grn	
		3950	LS: crm-gry, fxln, sli fos, sli shly in prt, sub chky-prtly dns, pr por, NS Sh: red-brn, soft & gummy in prt, some gry-grn	Topeka 3964' (-703) EL
		4000	LS: crm-gry, fxln, fos in prt, some blk inclusions, sub chky-prtly dns, pr por, vry scat blk tarry-asp sptd-sub stn, NSFO, no odor LS: crm, fxln, sli fos, some shly (red-brn, mottled), sub chky-prtly dns, pr por, tr lt-drk brn sptd-patchy stn, NSFO, no odor	
		4050	LS: crm, fxln, fos in prt, sub chky-prtly dns, pr por, tr brn-blk sptd stn, NSFO, no odor LS: crm-lt gry, fxln, sli fos, sub chky-prtly dns w/ some chky, pr por, vry scat blk tarry-asp sptd stn, NSFO, no odor LS: A.A., pr por, tr stn, NSFO, no odor Sh: red-brn, some sdy	
		4100	LS: crm-lt gry, fxln, fos in prt, sub chky-prtly dns w/ some chky-vry chky, fr amt blk tarry-asp sptd-sub stn, NSFO, no odor Sh: red-brn, some soft & gummy	
		4150	LS: crm-tan, fxln, fos-ool in prt, sub chky-prtly dns w/ some chky, pr por, fr amt blk tarry-asp sptd-sub stn, NSFO, no odor LS: crm-tan, fxln, sli fos, sub chky-dns, pr por, tr blk tarry-asp sptd-patchy stn, NSFO, no odor LS: lt gry, fxln, shly, sub chky, pr por, NS LS: A.A. w/ Calc Sh: lt gry-purple Calc Sh: A.A. Sh: grn-brn, sli calc w/ Calc Sh: A.A. Sh: red-brn, gry, grn, brn, some calc	4132'-34': problem with Automatic Driller DST #1 4120'-4220' Leavenworth-LKC 'A' IF: blow built to 4" ISI: no blow back FF: blow built to 5" FSI: no blow back Rec: 195' TOTAL FLUID: 5' Free Oil (100% O) 130' OCM (30% O, 70% M) 60' OCMW (20% O, 30% W, 50% M) Chl ppm: 28,000 DST: 600 Mud IFF: 20-59#/30' ISIP: 1227#/60" FFP: 68-106#/60" FSP: 1193#/90"
		4200	Sh: red-brn, gry, grn	Morgan Mud check @ 4175': 62 Vis, 8.9 Wt, 6.4 WL, 600 ppm Chl, 1# LCM
		4250	LS: crm-tan, fxln, sli ool-fos, sub chky-prtly dns w/ some chky-vry chky, pr intrprt w/ some pin point to small vug-moldic por, scat blk (mstly tarry) w/ tr brn sptd-patchy stn, w/ few pcs w/ VSSFO, no odor, some barren por w/ depth LS: crm-lt gry, fxln, sli fos, chky-prtly dns, pr por, NS Sh: red-brn, some silty, some gry & grn LS: crm-brn, fxln, sli fos, sub chky-prtly dns, pr por, NS Sh: red-brn, some gry & grn, some lt gry, soft & gummy LS: crm-tan, fxln, sli fos, some shly (red-brn, mottled), sub chky-prtly dns, pr por, tr blk sptd stn, NSFO, no odor Sh: red-brn, gry, grn	DST #2 4195'-4260' LKC 'D' zn IF: blow built to 6.5" ISI: no blow back FF: BOB in 1" FSI: no blow back Rec: 319' Oil Spotted Mud (100% M) (no water in grind out) 289' WW (20% W, 80% M) 186' MW (60% W, 40% M) 372' MW (90% W, 10% M) 1,855' MW (95% W, 5% M) 5' Mud (heavy) (100% M) Chl ppm: 30,000 DST: 600 Mud IFF: 22-98#/30' ISIP: 1268#/60" FFP: 103-163#/60" FSP: 1268#/90"
		4300	LS: wh-lt gry, fxln, sli fos-ool, sub chky-prtly dns w/ some chky, pr-fr w/ tr gd intrprt-vug por, scat lt-med brn sptd-sub stn, S-FSFO, no odor (pin point-small beads), no odor LS: A.A., w/ incrs wh, chky-vry chky, some barren vug por, tr brn stn, VSSFO, no odor Sh: red-brn, gry, grn, some drk gry	Ran 30 stand short trip prior to DST #1 Pipe Stop @ 4220': Strap short 0.10' Straight Hole Survey @ 4220': 56 Dev, 9.1 Wt, 6.8 WL, 700 ppm Chl, 0.5# LCM
		4350	Sh: A.A. LS: wh-crm, fxln, sli fos, vry chky-prtly dns, mstly pr w/ tr fr introol por, tr brn sptd stn, 1 pc w/ SSSFO, no odor LS: crm-lt gry, fxln, fos, sub chky-prtly dns, pr por, NS LS: A.A., pr por, NS Sh: red-brn, gry-grn, some brn	DST #3 4259'-4365' LKC 'G' 'I' zn IF: blow built to 0.5" FF: no blow back Rec: 281' Oil Spotted Mud (100% M) 186' MW (60% W, 40% M) 372' MW (90% W, 10% M) 1,855' MW (95% W, 5% M) 5' Mud (heavy) (100% M) Chl ppm: 30,000 DST: 600 Mud IFF: 22-23#/30' ISIP: 1309#/60" FFP: 1024-1263#/30" FSP: 1310#/90"
		4400	Sh: A.A. LS: crm-tan, fxln, fos in prt, sub chky-prtly dns w/ some chky, pr por, NS Sh: red-brn, gry, some grn Sh: red-brn, some silty & sli calc, some gry-grn	Morgan Mud check @ 4404': 52 Vis, 9.1 Wt, 6.4 WL, 1,000 ppm Chl, 1.5# LCM
		4450	LS: crm-lt gry, fxln, sli fos, sub chky-prtly dns w/ some chky, pr por, NS Sh: red-brn, some soft & gummy, some gry-grn LS: wh-tan, fxln, fos in prt, sub chky-prtly dns w/ some chky-vry chky, pr por, NS	caught 5' sample @ 4395' Stark 4406' (-1145) EL
		4500	LS: crm-lt gry, fxln, fos in prt, sub chky-prtly dns w/ some chky, pr por, NS Sh: red-brn, brn, gry, grn Sh: red-brn, gry, grn LS: crm-tan, fxln, ool-fos in prt, sub chky-prtly dns, pr por, NS Sh: lt gry (calc), red-brn, grn, gry Sh: red-brn (some calc), gry, grn	
		4550	Sh: A.A. Sh: red-brn, some gry-grn LS: crm-lt gry, fxln, fos in prt, sub chky-prtly dns, pr por, NS LS: A.A., pr por, NS	
		4600	Shly LS: lt-med gry, sli shly-shly, gritty-prtly dns, pr por, NS Sh: lt-med gry, some red-brn & gry, small amt drk gry LS: wh-lt gry, fxln, fos-ool in prt, sub chky-prtly dns w/ some chky, pr-fr w/ tr gd intrprt-l & tr vug por, fr amt lt-drk brn sptd-sub stn, S-FSFO, no odor LS: A.A., incrs chky, pr por, vry scat stn, SSFO, no odor	DST #5 4554'-4600' Pawnee IF: blow built to 1", died back to 0.25" Rec: 5' Oil Spotted Mud (100% M) IFF: 19-21#/30' ISIP: 788#/60" FFP: 22-27#/30" FSP: 780#/60"
		4650	Sh: Blk Carb (small amt) LS: crm-gry, fxln, fos in prt, sub chky-prtly dns, pr por, NS Sh: red-brn (some calc), gry, grn LS: crm-lt gry, fxln, fos in prt, sub chky-prtly dns w/ some chky-vry chky, pr por, NS	Morgan Mud check @ 4600': 61 Vis, 9.1 Wt, 6.0 WL, 1,000 ppm Chl, 1.5# LCM
		4700	Sh: Blk Carb & drk gry, red-brn, grn LS: crm-tan, fxln, fos in prt, sli city (tan), sub chky-prtly dns w/ some chky-vry chky, pr por, NS Sh: med-drk gry, red-brn, grn LS: crm-tan, fxln, fos in prt, sub chky-prtly dns, pr por, NS LS: A.A., pr por, NS	caught 5' sample @ 4675'
		4750	Sdy LS w/ some Calc Sd: crm, fxln, fn grain sd, sli glauc, sub chky-prtly dns, pr vis por, NS LS: crm-tan, fxln, sli fos, sub chky-prtly dns w/ some chky, pr por, NS Sh: red-brn, gry, grn, brn, tr yell, intermixed w/ Sd: clm-wh, fr-med w/ some crs grains, sli calc in prt, semi fri-brittle, pr vis por, NS Sd: A.A., pr vis por, NS Sh: red-brn, gry, grn, brn, w/ small amt of Sd: A.A., pr vis por, NS Sh: A.A. w/ some Sd: clr, med-crs grain, semi fri, fr-ggd por, NS, & some loose Sd grains, clr, med-crs grain, sub rnd-sub ang, NS	Ran 10 stand short trip after CFS R.T.D. 4740' (-1479) L.T.D. 4744' (-1483) Straight Hole Survey @ 4740': 0.125" Dev.



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Rocky Milford

Solko #1-33

33-2s-36w Rawlins,KS

Start Date: 2013.08.11 @ 19:30:00

End Date: 2013.08.12 @ 04:49:30

Job Ticket #: 53356 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.15 @ 14:27:07

Murfin Drilling Co. 33-2s-36w Rawlins,KS Solko #1-33 DST # 1 Leavenworth - LKC "A" 2013.08.11



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.
250 N Water STE #300
Wichita, KS 67202
ATTN: Rocky Milford

33-2s-36w Rawlins,KS

Solko #1-33

Job Ticket: 53356

DST#: 1

Test Start: 2013.08.11 @ 19:30:00

GENERAL INFORMATION:

Formation: **Leavenworth - LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:15:30

Time Test Ended: 04:49:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4120.00 ft (KB) To 4220.00 ft (KB) (TVD)

Reference Elevations: 3261.00 ft (KB)

Total Depth: 4220.00 ft (KB) (TVD)

3256.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8874 Outside

Press @ Run Depth: 106.22 psig @ 4121.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.08.11

End Date:

2013.08.12

Last Calib.:

2013.08.12

Start Time: 19:31:00

End Time:

04:49:30

Time On Btm:

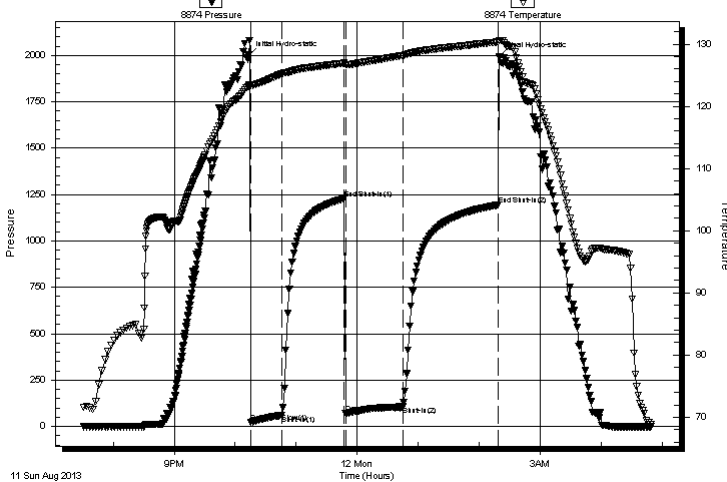
2013.08.11 @ 22:13:30

Time Off Btm:

2013.08.12 @ 02:20:00

TEST COMMENT: 30 - IF- 1/2" Blow built to 4"
60 - IS- No Return
60 - FF- Weak Surface Blow started at 7 min. Built to 5"
90 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2002.06	123.26	Initial Hydro-static
2	20.92	123.35	Open To Flow (1)
32	59.91	125.18	Shut-In(1)
94	1227.46	126.93	End Shut-In(1)
95	68.82	126.72	Open To Flow (2)
151	106.22	128.18	Shut-In(2)
245	1193.87	130.32	End Shut-In(2)
247	1991.95	130.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCWM 20o 30W 50M	0.30
130.00	OCM 30o 70M	0.69
5.00	Free Oil	0.07

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

33-2s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Solko #1-33

Job Ticket: 53356

DST#: 1

ATTN: Rocky Milford

Test Start: 2013.08.11 @ 19:30:00

Tool Information

Drill Pipe:	Length: 3912.00 ft	Diameter: 3.80 inches	Volume: 54.88 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: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 55.78 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4120.00 ft			Final 57000.00 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
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Shut In Tool	5.00			4098.00	
Hydraulic tool	5.00			4103.00	
Jars	5.00			4108.00	
Safety Joint	3.00			4111.00	
Packer	5.00			4116.00	27.00 Bottom Of Top Packer
Packer	4.00			4120.00	
Stubb	1.00			4121.00	
Recorder	0.00	8653	Inside	4121.00	
Recorder	0.00	8874	Outside	4121.00	
Perforations	28.00			4149.00	
Change Over Sub	1.00			4150.00	
Drill Pipe	64.00			4214.00	
Change Over Sub	1.00			4215.00	
Bullnose	5.00			4220.00	100.00 Bottom Packers & Anchor

Total Tool Length: 127.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

33-2s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Solko #1-33

Job Ticket: 53356

DST#: 1

ATTN: Rocky Milford

Test Start: 2013.08.11 @ 19:30:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

28000 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	OCWM 20o 30W 50M	0.295
130.00	OCM 30o 70M	0.694
5.00	Free Oil	0.070

Total Length: 195.00 ft Total Volume: 1.059 bbl

Num Fluid Samples: 0

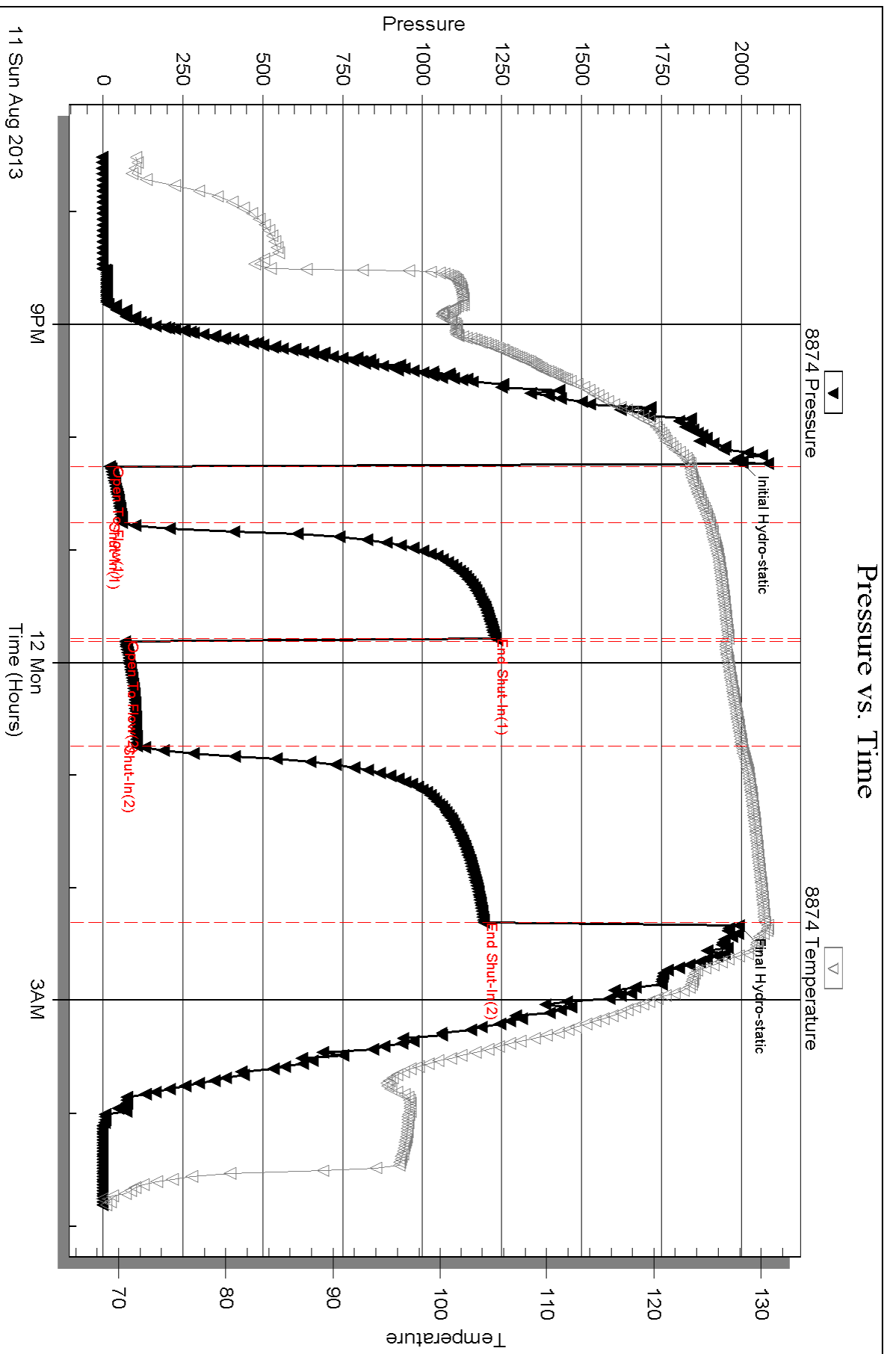
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .28 @ 66 deg = 28000ppm



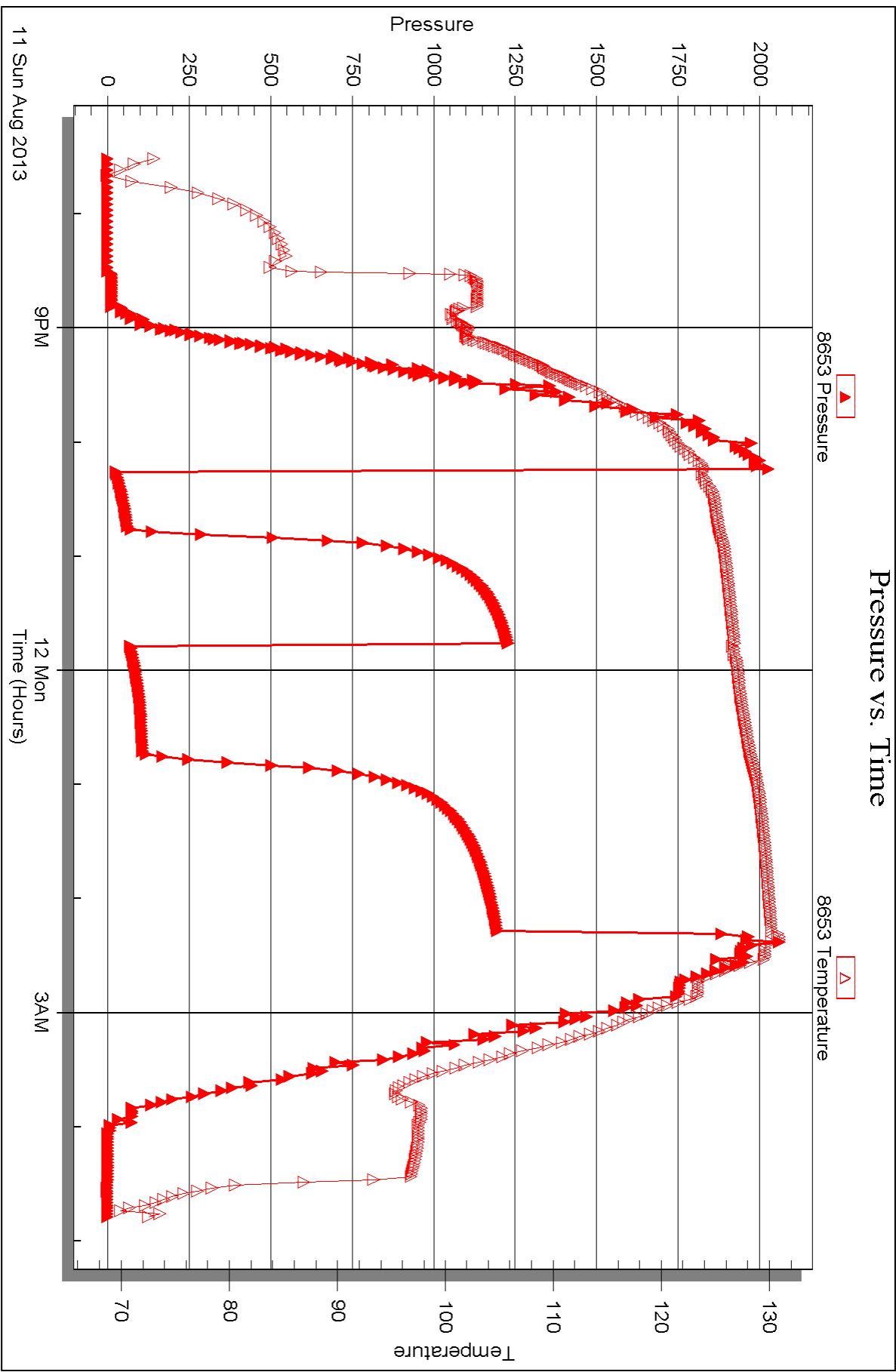
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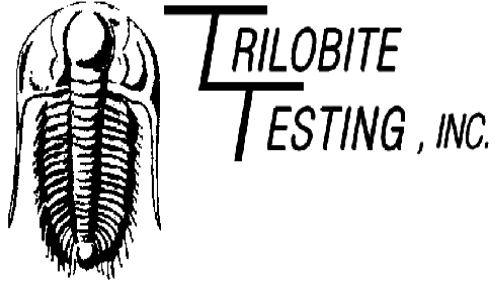
Inside

Murfin Drilling Co.

Solko #1-33

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Rocky Milford

Solko #1-33

33-2s-36w Rawlins,KS

Start Date: 2013.08.12 @ 12:21:00

End Date: 2013.08.12 @ 21:54:30

Job Ticket #: 53357 DST #: 2

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

Printed: 2013.08.15 @ 14:26:28



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.
250 N Water STE #300
Wichita, KS 67202
ATTN: Rocky Milford

33-2s-36w Rawlins,KS
Solko #1-33
Job Ticket: 53357 **DST#: 2**
Test Start: 2013.08.12 @ 12:21:00

GENERAL INFORMATION:

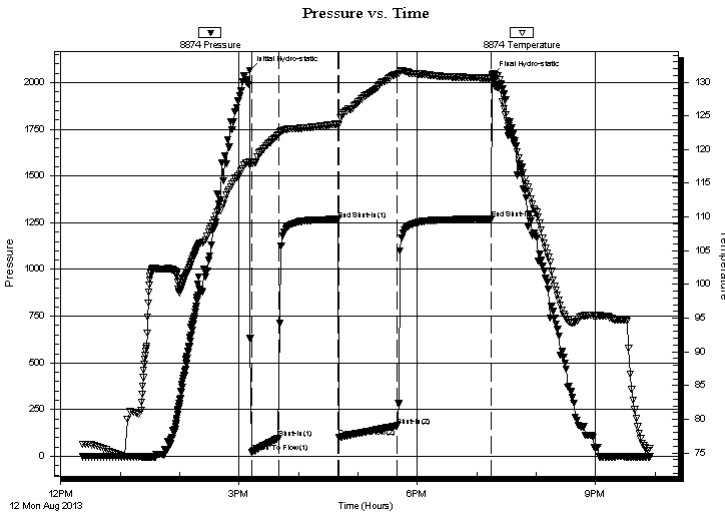
Formation: **LKC "D"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:12:30
Time Test Ended: 21:54:30
Interval: **4195.00 ft (KB) To 4260.00 ft (KB) (TVD)**
Total Depth: 4260.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack
Unit No: 66
Reference Elevations: 3261.00 ft (KB)
3256.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8874 Outside

Press @ Run Depth: 163.54 psig @ 4196.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.08.12 End Date: 2013.08.12 Last Calib.: 2013.08.12
Start Time: 12:22:00 End Time: 21:54:30 Time On Btm: 2013.08.12 @ 15:10:30
Time Off Btm: 2013.08.12 @ 19:15:30

TEST COMMENT: 30 - IF- 1/4" Blow built to 6 1/2"
60 - IS- No Return
60 - FF- Surface Blow built to BoB in 58 min.
90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2064.50	118.21	Initial Hydro-static
2	22.26	118.06	Open To Flow (1)
29	98.17	122.17	Shut-In(1)
89	1268.10	123.80	End Shut-In(1)
91	103.09	123.70	Open To Flow (2)
149	163.54	131.15	Shut-In(2)
244	1268.74	130.53	End Shut-In(2)
245	2035.21	131.07	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
319.00	OSM 100M (oil spots)	2.80

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

33-2s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Solko #1-33

Job Ticket: 53357

DST#: 2

ATTN: Rocky Milford

Test Start: 2013.08.12 @ 12:21:00

Tool Information

Drill Pipe:	Length: 4008.00 ft	Diameter: 3.80 inches	Volume: 56.22 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: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 62000.00 lb
			<u>Total Volume: 57.12 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4195.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	65.00 ft			
Tool Length:	92.00 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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Shut In Tool	5.00			4173.00	
Hydraulic tool	5.00			4178.00	
Jars	5.00			4183.00	
Safety Joint	3.00			4186.00	
Packer	5.00			4191.00	27.00 Bottom Of Top Packer
Packer	4.00			4195.00	
Stubb	1.00			4196.00	
Recorder	0.00	8653	Inside	4196.00	
Recorder	0.00	8874	Outside	4196.00	
Perforations	25.00			4221.00	
Change Over Sub	1.00			4222.00	
Drill Pipe	32.00			4254.00	
Change Over Sub	1.00			4255.00	
Bullnose	5.00			4260.00	65.00 Bottom Packers & Anchor

Total Tool Length: 92.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

33-2s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Solko #1-33

Job Ticket: 53357

DST#: 2

ATTN: Rocky Milford

Test Start: 2013.08.12 @ 12:21:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
319.00	OSM 100M (oil spots)	2.799

Total Length: 319.00 ft Total Volume: 2.799 bbl

Num Fluid Samples: 0

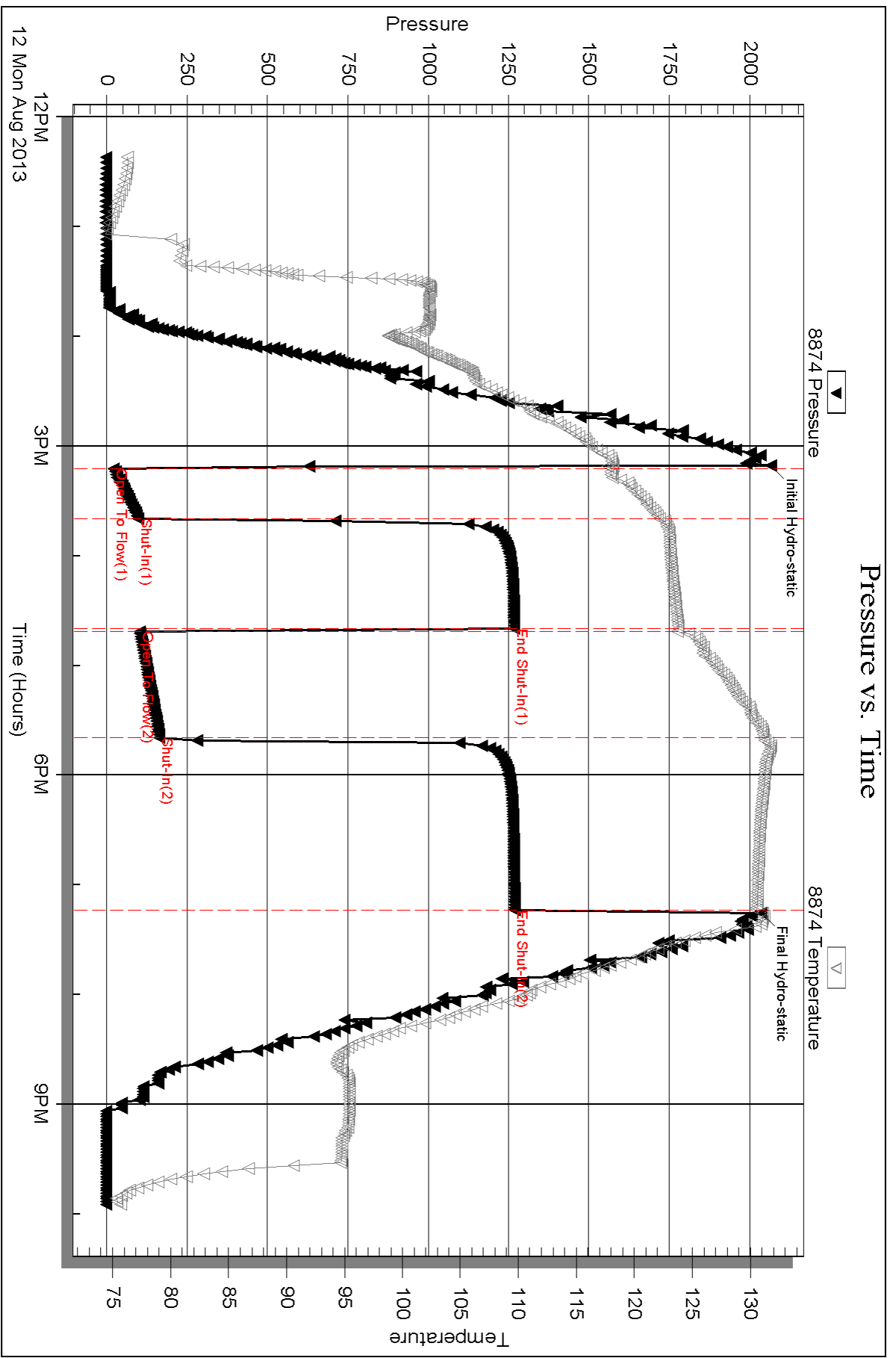
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



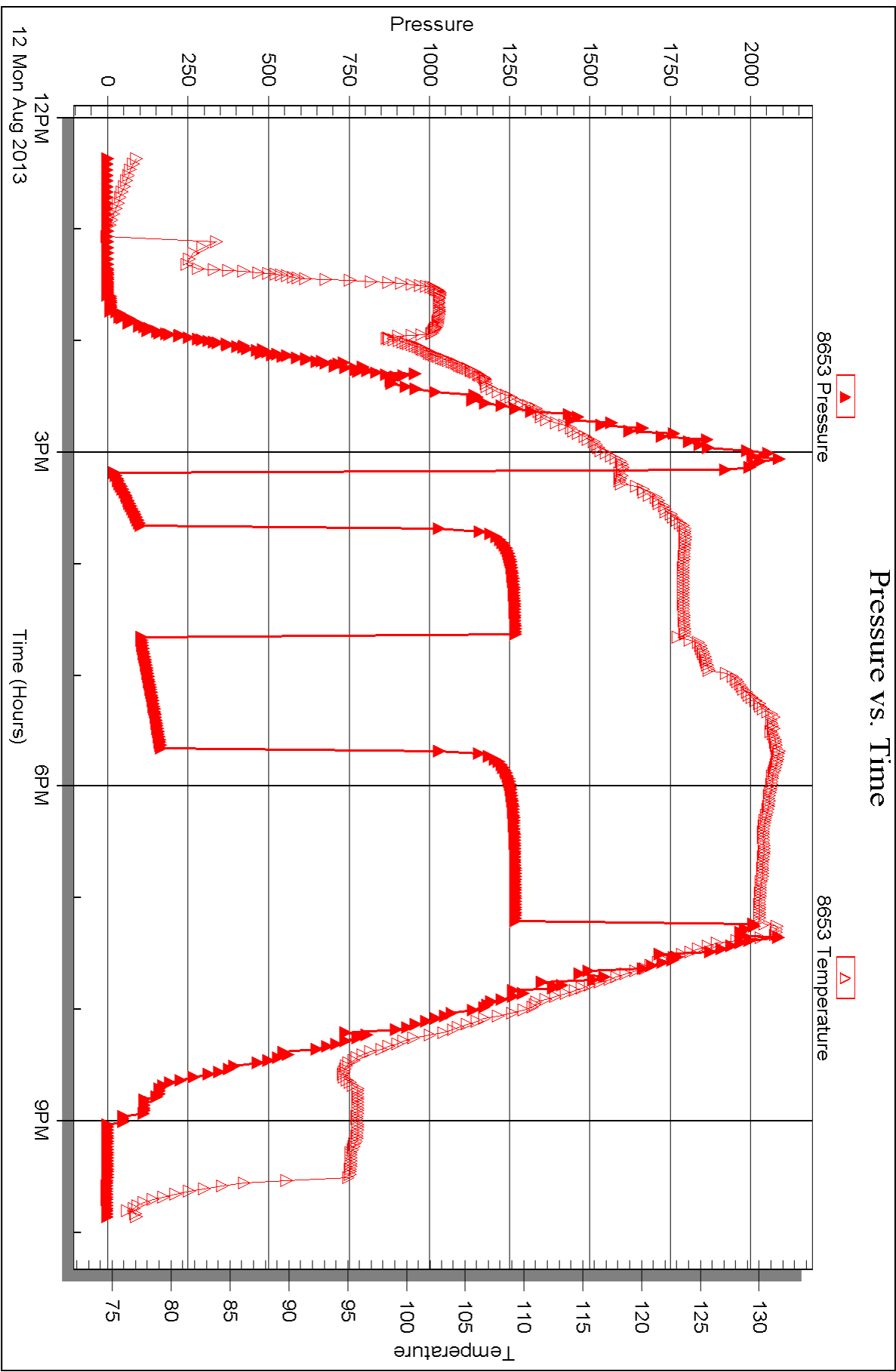
Serial #: 8653

Inside

Murfin Drilling Co.

Solko #1-33

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Rocky Milford

Solko #1-33

33-2s-36w Rawlins,KS

Start Date: 2013.08.13 @ 09:50:00

End Date: 2013.08.13 @ 18:41:00

Job Ticket #: 53358 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.15 @ 14:25:24



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.
250 N Water STE #300
Wichita, KS 67202
ATTN: Rocky Milford

33-2s-36w Rawlins,KS

Solko #1-33

Job Ticket: 53358

DST#: 3

Test Start: 2013.08.13 @ 09:50:00

GENERAL INFORMATION:

Formation: **LKC "G-I"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 12:16:00
 Time Test Ended: 18:41:00
 Interval: **4259.00 ft (KB) To 4365.00 ft (KB) (TVD)**
 Total Depth: 4369.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Kevin Mack
 Unit No: 66
 Reference Elevations: 3261.00 ft (KB)
 3256.00 ft (CF)
 KB to GR/CF: 5.00 ft

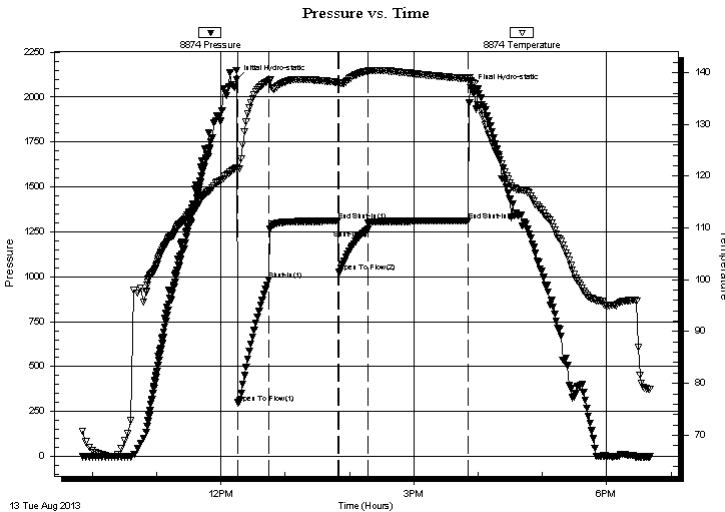
Serial #: 8874

Inside

Press @ Run Depth: 1263.71 psig @ 4260.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.08.13 End Date: 2013.08.13 Last Calib.: 2013.08.13
 Start Time: 09:51:00 End Time: 18:41:00 Time On Btm: 2013.08.13 @ 12:15:00
 Time Off Btm: 2013.08.13 @ 15:53:00

TEST COMMENT: 30 - IF- BoB in 1 min.
 60 - IS- No Return
 30 - FF- BoB in 2 min.
 90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2098.48	121.66	Initial Hydro-static
1	298.71	121.21	Open To Flow (1)
30	980.21	138.38	Shut-In(1)
94	1309.93	138.12	End Shut-In(1)
96	1024.20	137.95	Open To Flow (2)
122	1263.71	140.29	Shut-In(2)
216	1310.73	138.82	End Shut-In(2)
218	2049.45	138.35	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud (Heavy) 100M	0.02
1855.00	MW 5M 95W	24.39
372.00	MW 10M 90W	5.22
186.00	MW 40M 60W	2.61
397.00	WM 80M 20W	5.57

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

33-2s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Solko #1-33

Job Ticket: 53358

DST#: 3

ATTN: Rocky Milford

Test Start: 2013.08.13 @ 09:50:00

Tool Information

Drill Pipe:	Length: 4073.00 ft	Diameter: 3.80 inches	Volume: 57.13 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: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 58.03 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4259.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	106.00 ft			
Tool Length:	133.00 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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Shut In Tool	5.00			4237.00	
Hydraulic tool	5.00			4242.00	
Jars	5.00			4247.00	
Safety Joint	3.00			4250.00	
Packer	5.00			4255.00	27.00 Bottom Of Top Packer
Packer	4.00			4259.00	
Stubb	1.00			4260.00	
Recorder	0.00	8653	Outside	4260.00	
Recorder	0.00	8874	Inside	4260.00	
Perforations	5.00			4265.00	
Change Over Sub	1.00			4266.00	
Drill Pipe	93.00			4359.00	
Change Over Sub	1.00			4360.00	
Bullnose	5.00			4365.00	106.00 Bottom Packers & Anchor

Total Tool Length: 133.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

33-2s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Solko #1-33

Job Ticket: 53358

DST#: 3

ATTN: Rocky Milford

Test Start: 2013.08.13 @ 09:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

30000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud (Heavy) 100M	0.025
1855.00	MW 5M 95W	24.390
372.00	MW 10M 90W	5.218
186.00	MW 40M 60W	2.609
397.00	WM 80M 20W	5.569

Total Length: 2815.00 ft Total Volume: 37.811 bbl

Num Fluid Samples: 0

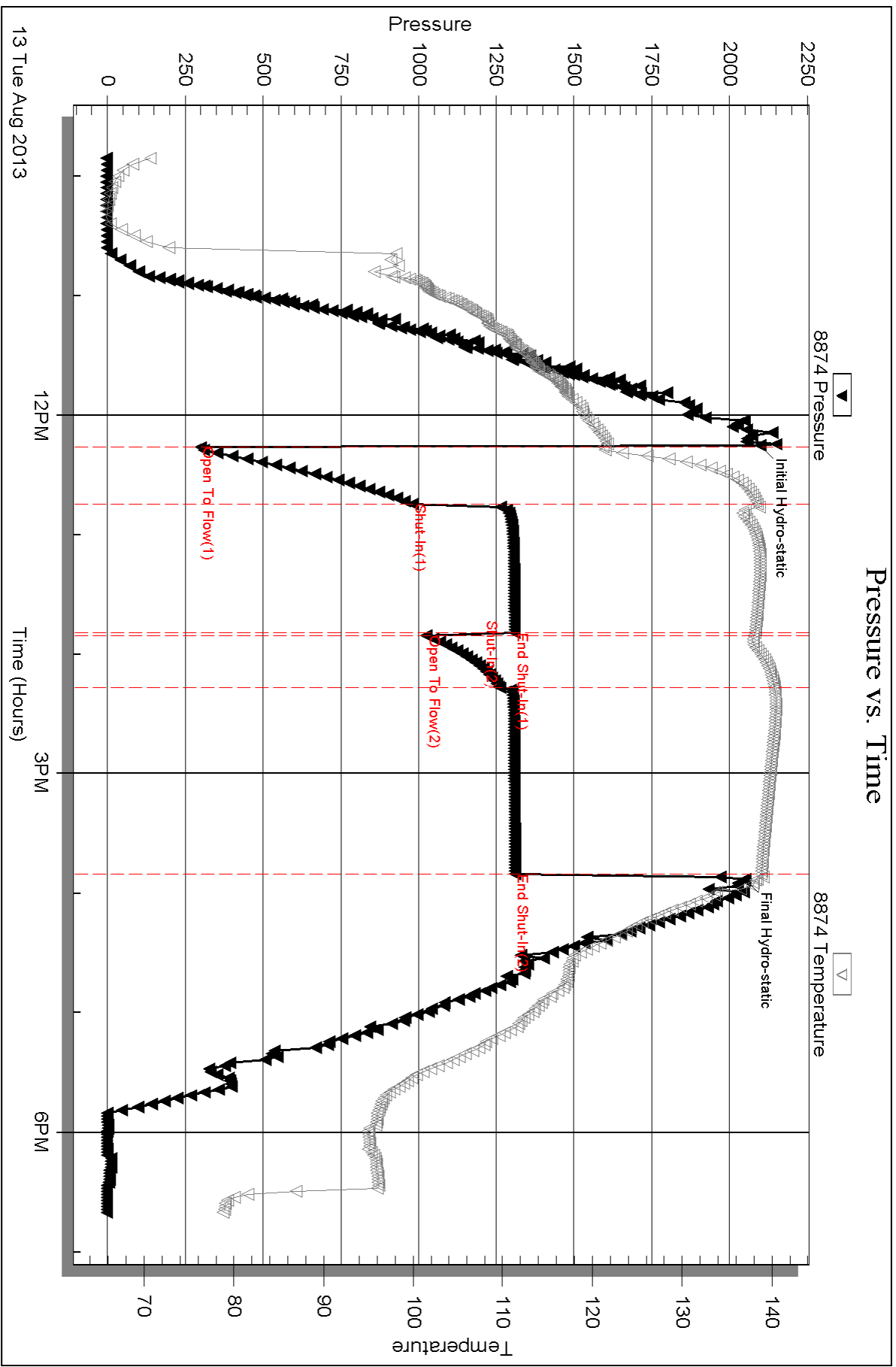
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw = .21 @ 80 DEG = 30,000PPM

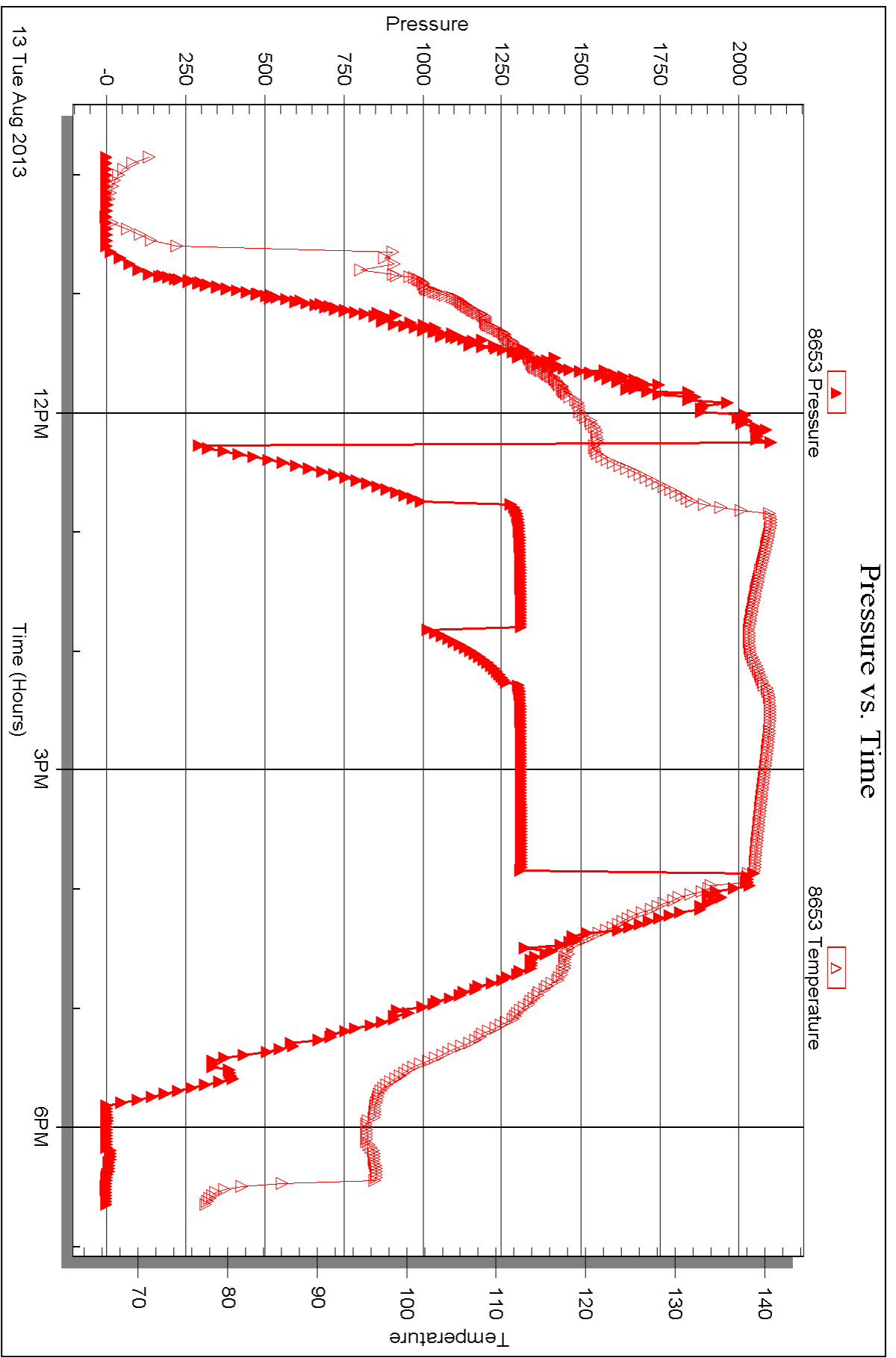


Serial #: 8653

Outside Murfin Drilling Co.

Solko #1-33

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 53358

Printed: 2013.08.15 @ 14:25:27



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Rocky Milford

Solko #1-33

33-2s-36w Rawlins,KS

Start Date: 2013.08.14 @ 02:20:00

End Date: 2013.08.14 @ 10:24:30

Job Ticket #: 53359 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.15 @ 14:24:47



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.
250 N Water STE #300
Wichita, KS 67202
ATTN: Rocky Milford

33-2s-36w Rawlins,KS

Solko #1-33

Job Ticket: 53359

DST#: 4

Test Start: 2013.08.14 @ 02:20:00

GENERAL INFORMATION:

Formation: **LKC "J"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 04:53:30
 Tester: Kevin Mack
 Time Test Ended: 10:24:30
 Unit No: 66
 Interval: **4355.00 ft (KB) To 4404.00 ft (KB) (TVD)**
 Reference Elevations: 3261.00 ft (KB)
 Total Depth: 4404.00 ft (KB) (TVD)
 3256.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 5.00 ft

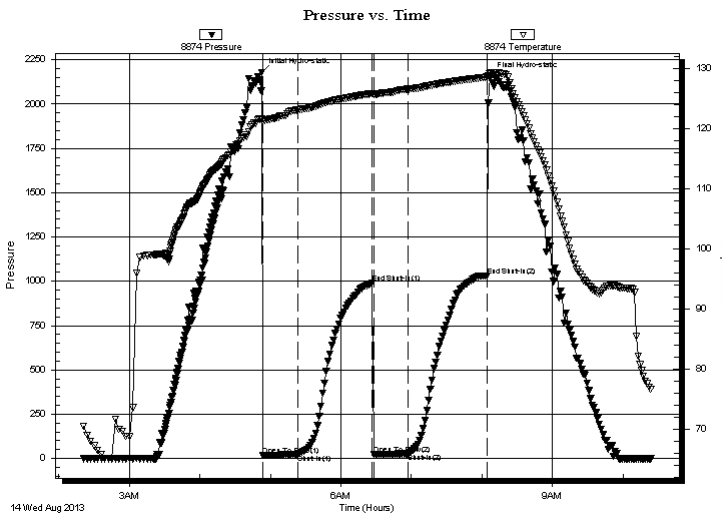
Serial #: 8874

Inside

Press @ Run Depth: 27.09 psig @ 4356.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.08.14 End Date: 2013.08.14 Last Calib.: 2013.08.14
 Start Time: 02:21:00 End Time: 10:24:30 Time On Btm: 2013.08.14 @ 04:52:30
 Time Off Btm: 2013.08.14 @ 08:06:30

TEST COMMENT: 30 - IF- 1/8" Blow built to 1/2"
 60 - IS- No Return
 30 - FF- No Blow
 60 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2179.04	121.73	Initial Hydro-static
1	16.93	121.19	Open To Flow (1)
31	22.57	123.10	Shut-In(1)
94	988.42	125.87	End Shut-In(1)
96	22.89	125.70	Open To Flow (2)
125	27.09	126.60	Shut-In(2)
192	1031.73	128.59	End Shut-In(2)
194	2154.08	129.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM 100M	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

33-2s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Solko #1-33

Job Ticket: 53359

DST#: 4

ATTN: Rocky Milford

Test Start: 2013.08.14 @ 02:20:00

Tool Information

Drill Pipe:	Length: 4171.00 ft	Diameter: 3.80 inches	Volume: 58.51 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: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose:	64000.00 lb
			<u>Total Volume: 59.41 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4355.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	49.00 ft				
Tool Length:	76.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Shut In Tool	5.00			4333.00	
Hydraulic tool	5.00			4338.00	
Jars	5.00			4343.00	
Safety Joint	3.00			4346.00	
Packer	5.00			4351.00	27.00 Bottom Of Top Packer
Packer	4.00			4355.00	
Stubb	1.00			4356.00	
Packer - Shale	0.00			4356.00	
Recorder	0.00	8653	Outside	4356.00	
Recorder	0.00	8874	Inside	4356.00	
Perforations	10.00			4366.00	
Change Over Sub	1.00			4367.00	
Drill Pipe	31.00			4398.00	
Change Over Sub	1.00			4399.00	
Bullnose	5.00			4404.00	49.00 Bottom Packers & Anchor

Total Tool Length: 76.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

33-2s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Solko #1-33

Job Ticket: 53359

DST#: 4

ATTN: Rocky Milford

Test Start: 2013.08.14 @ 02:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	OSM 100M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

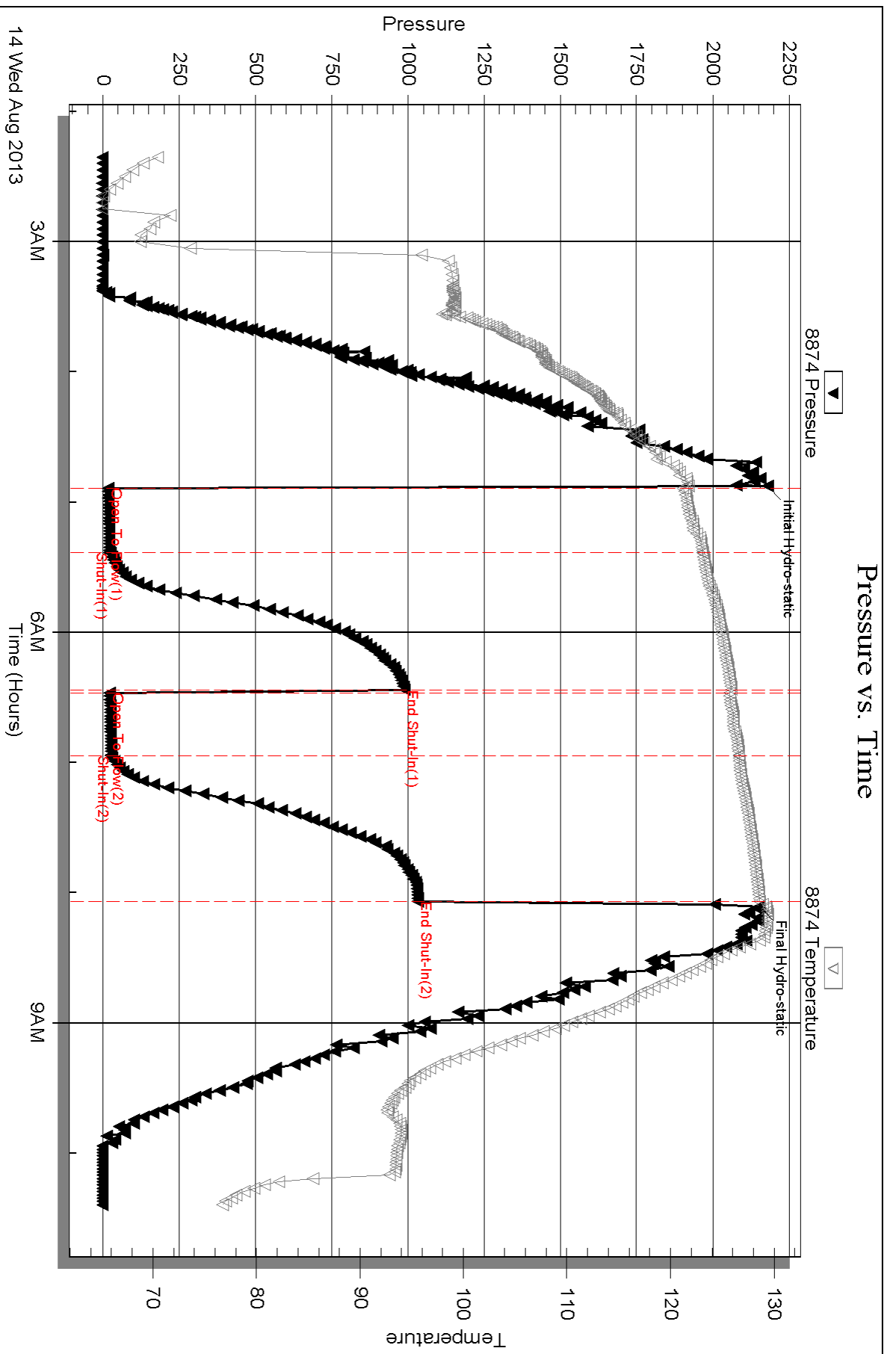
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

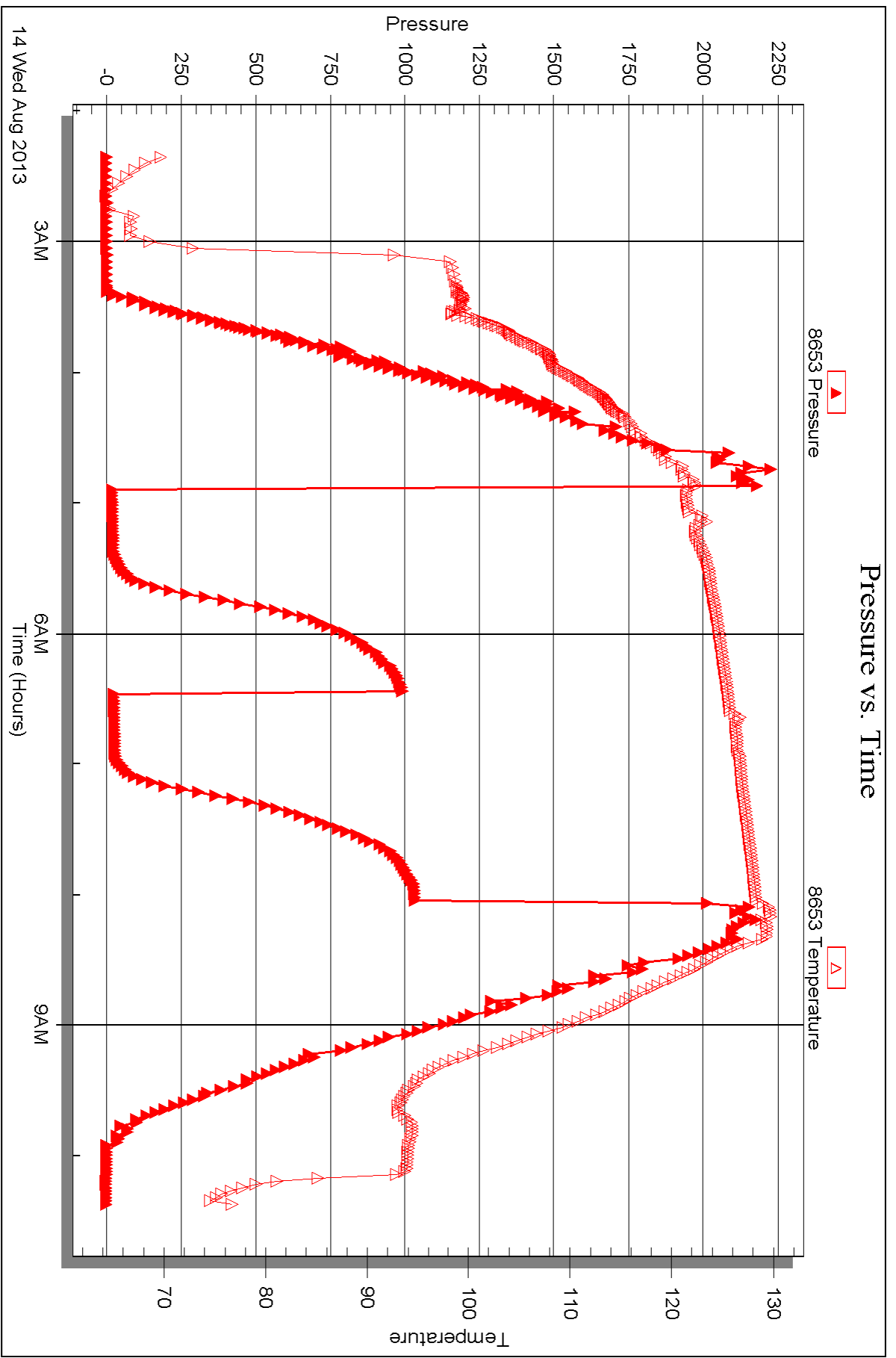


Serial #: 8653

Outside Murfin Drilling Co.

Solko #1-33

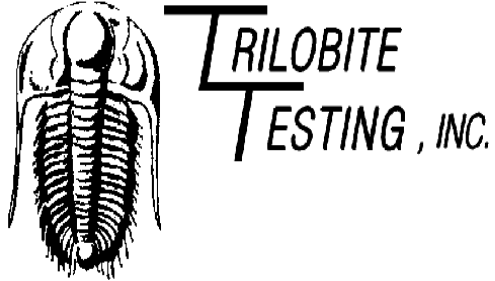
DST Test Number: 4



Triobite Testing, Inc

Ref. No: 53359

Printed: 2013.08.15 @ 14:24:51



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Rocky Milford

Solko #1-33

33-2s-36w Rawlins,KS

Start Date: 2013.08.15 @ 03:20:00

End Date: 2013.08.15 @ 11:25:00

Job Ticket #: 53360 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.08.15 @ 14:24:08



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.
250 N Water STE #300
Wichita, KS 67202
ATTN: Rocky Milford

33-2s-36w Rawlins,KS

Solko #1-33

Job Ticket: 53360

DST#: 5

Test Start: 2013.08.15 @ 03:20:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:34:00

Time Test Ended: 11:25:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4544.00 ft (KB) To 4600.00 ft (KB) (TVD)

Reference Elevations: 3261.00 ft (KB)

Total Depth: 4600.00 ft (KB) (TVD)

3256.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8874 Inside

Press @ Run Depth: 23.48 psig @ 4555.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.08.15

End Date:

2013.08.15

Last Calib.: 2013.08.15

Start Time: 03:21:00

End Time:

11:25:00

Time On Btm: 2013.08.15 @ 05:32:00

Time Off Btm: 2013.08.15 @ 08:40:30

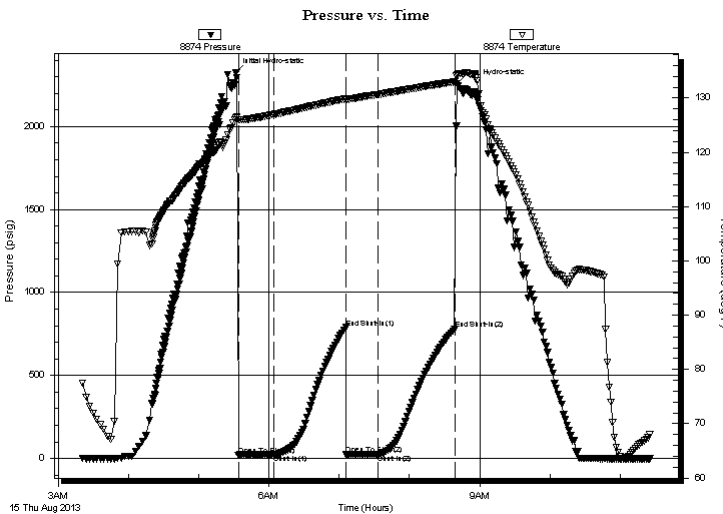
TEST COMMENT: 30 - IF- 1/4" Blow built to 1", then died back to 1/4"

60 - IS- No Return

30 - FF- No Blow

60 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2325.99	126.27	Initial Hydro-static
2	19.85	126.02	Open To Flow (1)
33	21.60	126.99	Shut-In(1)
94	788.56	129.87	End Shut-In(1)
94	22.27	129.61	Open To Flow (2)
122	23.48	130.68	Shut-In(2)
187	780.87	132.98	End Shut-In(2)
189	2257.07	134.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM 100M (Oil Spots)	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

33-2s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Solko #1-33

Job Ticket: 53360

DST#: 5

ATTN: Rocky Milford

Test Start: 2013.08.15 @ 03:20:00

Tool Information

Drill Pipe:	Length: 4353.00 ft	Diameter: 3.80 inches	Volume: 61.06 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: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 61.96 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4554.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	73.00 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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Shut In Tool	5.00			4532.00	
Hydraulic tool	5.00			4537.00	
Jars	5.00			4542.00	
Safety Joint	3.00			4545.00	
Packer	5.00			4550.00	27.00 Bottom Of Top Packer
Packer	4.00			4554.00	
Stubb	1.00			4555.00	
Recorder	0.00	8653	Outside	4555.00	
Recorder	0.00	8874	Inside	4555.00	
Perforations	6.00			4561.00	
Change Over Sub	1.00			4562.00	
Drill Pipe	32.00			4594.00	
Change Over Sub	1.00			4595.00	
Bullnose	5.00			4600.00	46.00 Bottom Packers & Anchor

Total Tool Length: 73.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

33-2s-36w Rawlins,KS

250 N Water STE #300
Wichita, KS 67202

Solko #1-33

Job Ticket: 53360

DST#: 5

ATTN: Rocky Milford

Test Start: 2013.08.15 @ 03:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	OSM 100M (Oil Spots)	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

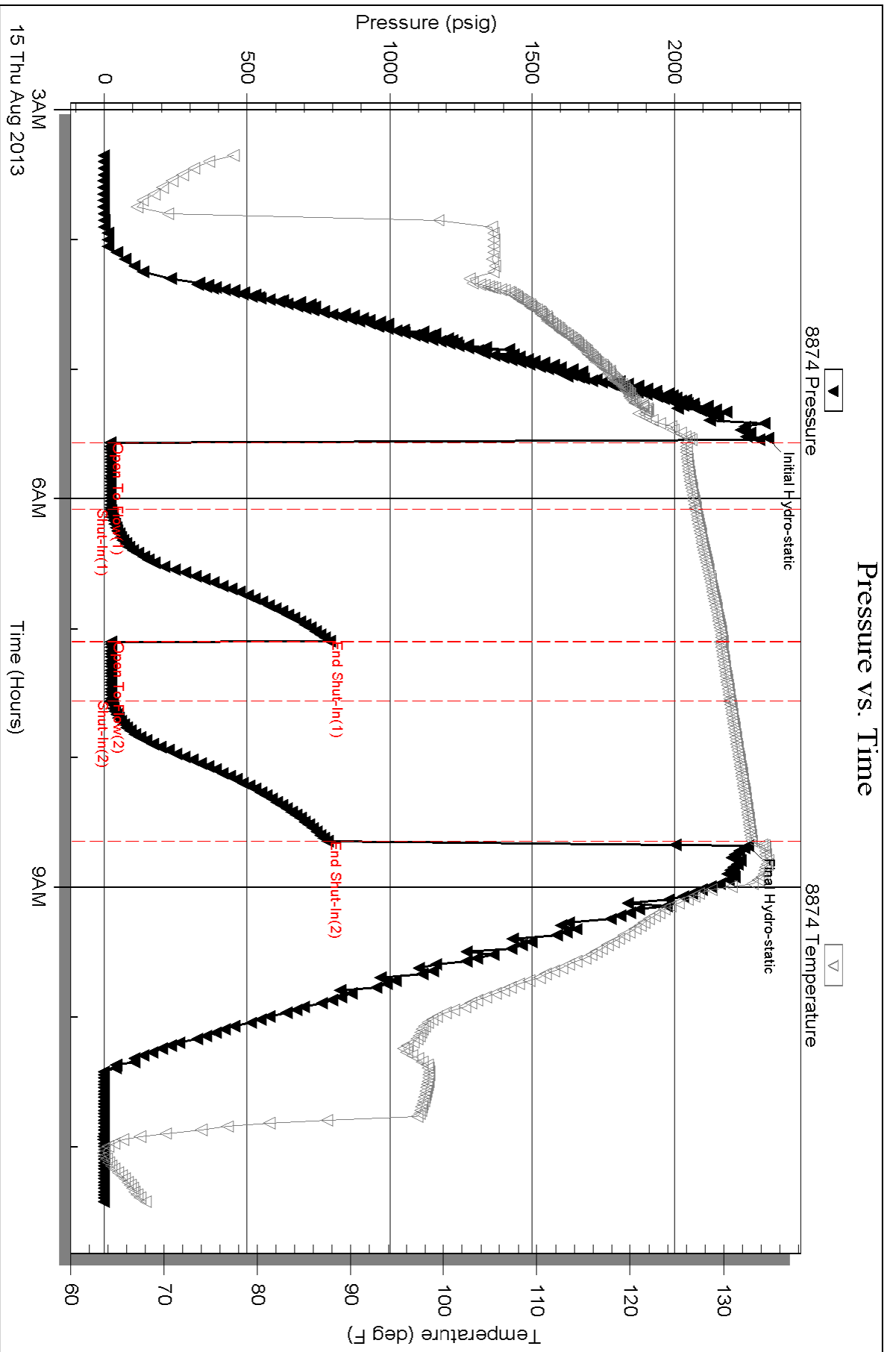
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

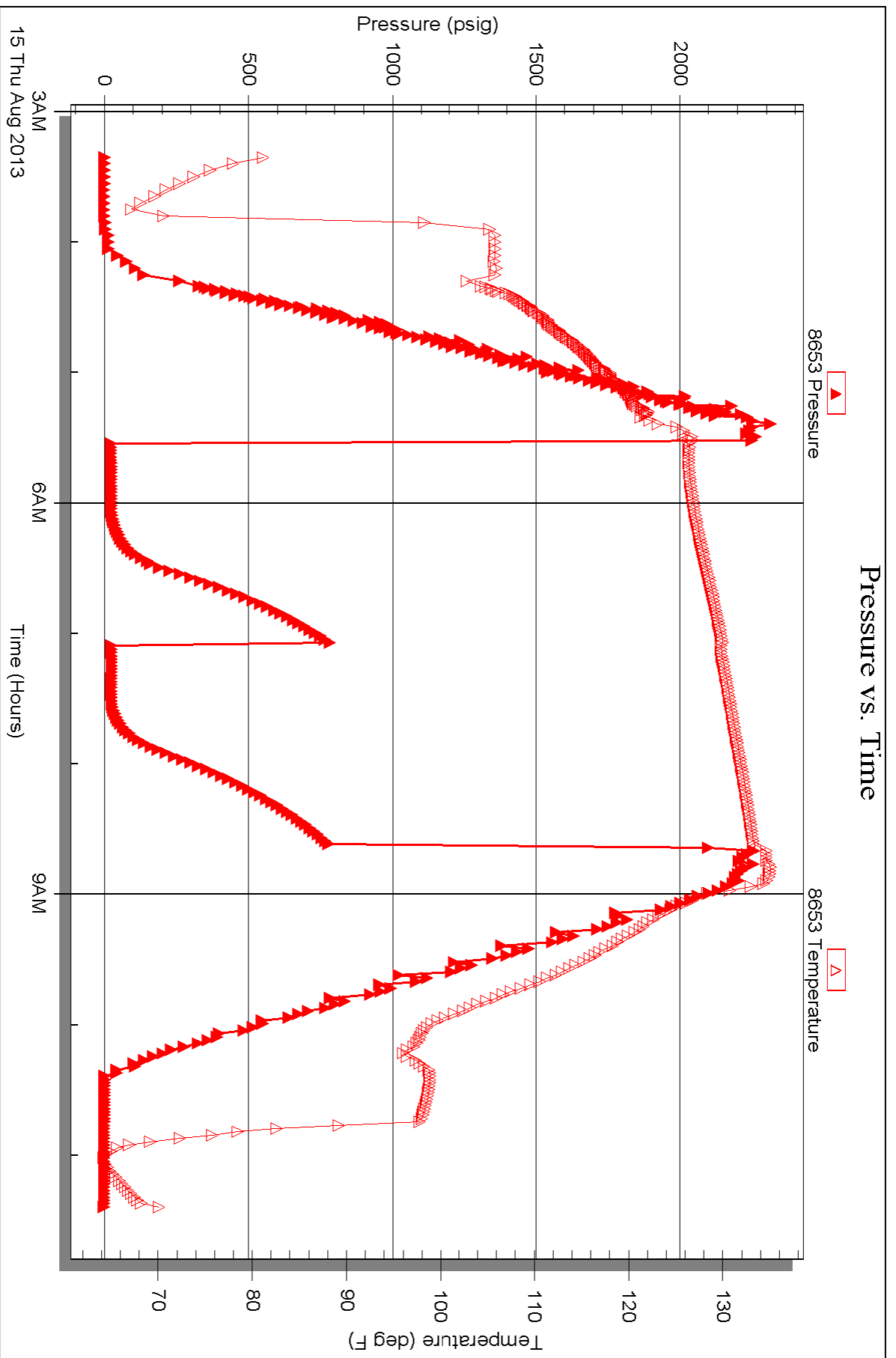


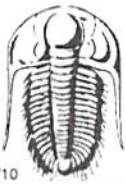
Serial #: 8653

Outside Murfin Drilling Co.

Solko #1-33

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53356

Well Name & No. SOLKO #1-33 Test No. 1 Date 8-11-13
 Company Muffin Drilling Co. Elevation 3261 KB 3256 GL
 Address 250 N Water STE #300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Muffin #8
 Location: Sec. 33 Twp. 2S Rge. 36W Co. Rawlins State KS

Interval Tested 4120-4220 Zone Tested Leavenworth - LKC "A"
 Anchor Length 100 Drill Pipe Run 3912' Mud Wt. 8.9
 Top Packer Depth 4116 Drill Collars Run 184' Vis 62
 Bottom Packer Depth 4120 Wt. Pipe Run 0 WL 6.4
 Total Depth 4220 Chlorides 6000 ppm System LCM 1#

Blow Description IF-1/2" Blow built to 4"
ISI - No Return
FF - Weak Surface Blow started at 7 min. Built to 5"
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Free Oil</u>	<u>1000</u>			
<u>130</u>	<u>OCM</u>	<u>30</u>		<u>70</u>	
<u>60</u>	<u>OCWM</u>	<u>20</u>	<u>30</u>	<u>50</u>	

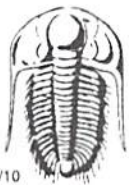
Rec Total 195 BHT 130 Gravity → API RW .28 @ 66 °F Chlorides 28,000 ppm

(A) Initial Hydrostatic 2000 Test 1250 T-On Location 6:10 PM
 (B) First Initial Flow 20 Jars 250 T-Started 7:30 PM
 (C) First Final Flow 59 Safety Joint 75 T-Open 10:15 PM
 (D) Initial Shut-In 1227 Circ Sub NIC T-Pulled 2:15 AM
 (E) Second Initial Flow 68 Hourly Standby T-Out 5:00 AM
 (F) Second Final Flow 106 Mileage 102 RT 158.10 Comments
 (G) Final Shut-In 1193 Sampler
 (H) Final Hydrostatic 1991 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 1733.10
 Accessibility MP/DST Disc't
 Sub Total 1733.10

Approved By _____ Our Representative [Signature]

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53357

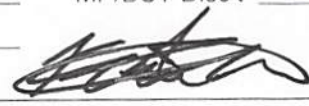
Well Name & No. Solko #1-33 Test No. 2 Date 8-12-13
 Company Murrin Drilling Co. Elevation 3261 KB 3256 GL
 Address 250 N Water STE #3008 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murrin #8
 Location: Sec. 33 Twp. 25 Rge. 36W Co. Rawlins State KS

Interval Tested 4195-4260 Zone Tested LKC "D"
 Anchor Length 65' Drill Pipe Run 4008' Mud Wt. 9.1
 Top Packer Depth 4191 Drill Collars Run 184' Vis 56
 Bottom Packer Depth 4195 Wt. Pipe Run 0 WL 6.8
 Total Depth 4260 Chlorides 700 ppm System LCM 0.5#
 Blow Description IF- 1/4" Blow built to 6 1/2"
ISE- NO Return
FF- Surface Blow built to BusB in 58 min.
FSI-

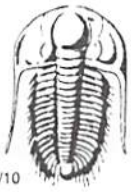
Rec	Feet of	%gas	%oil	%water	%mud
<u>319</u>	<u>OSM</u>	<u>SPOTS</u>		<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 319 BHT 131 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>1984 2064</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>11:50 AM</u>
(B) First Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>12:21 PM</u>
(C) First Final Flow <u>98</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>3:11 PM</u>
(D) Initial Shut-In <u>1268</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>7:11 PM</u>
(E) Second Initial Flow <u>103</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>10:00 PM</u>
(F) Second Final Flow <u>163</u>	<input checked="" type="checkbox"/> Mileage <u>102 RT</u> 158.10	Comments
(G) Final Shut-In <u>1268</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2035</u>	<input type="checkbox"/> Straddle	
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1733.10</u>
	Sub Total <u>1733.10</u>	MP/DST Disc't

Approved By _____ Our Representative 

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53358

Well Name & No. Solko # 1-33 Test No. 3 Date 8-13-13
 Company Murfin Drilling Co. Elevation 3261 KB 3256 GL
 Address 250 N Water STE # 3000 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #8
 Location: Sec. 33 Twp. 2S Rge. 36W Co. Rawlins State KS

Interval Tested 4259-4365 Zone Tested LKC "6-1"
 Anchor Length 106' Drill Pipe Run 4073 Mud Wt. 9.0
 Top Packer Depth 4255 Drill Collars Run 184' Vis 54
 Bottom Packer Depth 4259 Wt. Pipe Run 0 WL 6.4
 Total Depth 4365 Chlorides 6000 ppm System LCM .5#

Blow Description IF - BoB in 1 min.
ISI - No Return
FF - BoB in 2 min
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
397	6M		20	80	
186	MW		60	40	
372	MW		90	10	
1855	MW		95	5	
5	Mud (heavy)			100	

Rec Total 2815 BHT 139 Gravity - API RW .21 @ 80 ° F Chlorides 30,000 ppm

(A) Initial Hydrostatic 2078 Test 1250 T-On Location 8:50 AM
 (B) First Initial Flow 298 Jars 250 T-Started 9:50 AM
 (C) First Final Flow 980 Safety Joint 75 T-Open 12:15 PM
 (D) Initial Shut-In 1309 Circ Sub N/C T-Pulled 3:45 PM
 (E) Second Initial Flow 1024 Hourly Standby _____ T-Out 6:50 PM
 (F) Second Final Flow 1263 Mileage 102 RT 158.10
 (G) Final Shut-In 1310 Sampler _____
 (H) Final Hydrostatic 2049 Straddle _____

Initial Open 30 Shale Packer _____
 Initial Shut-In 60 Shale Packer _____
 Final Flow 30 Extra Packer _____
 Final Shut-In 9.0 Extra Recorder _____
 Sub Total 0
 Total 1733.10
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53359

4/10

Well Name & No. Solko # 1-33 Test No. 4 Date 8-14-13
 Company Muffin Drilling Co. Elevation 3261 KB 3256 GL
 Address 2500 N Water STE # 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Muffin #8
 Location: Sec. 33 Twp. 25 Rge. 36W Co. Rawlins State KS

Interval Tested 4355-4404 Zone Tested LRC "J"
 Anchor Length 49' Drill Pipe Run 4171 Mud Wt. 9.0
 Top Packer Depth 4351 Drill Collars Run 184' Vis 54
 Bottom Packer Depth 4355 Wt. Pipe Run 8 WL 6.4
 Total Depth 4404 Chlorides 6000 ppm System LCM 2#

Blow Description IF-1/8" Built to 1/2"
IST - No Return
FF - No Blow

FSI - No Return

Rec	Feet of	%gas	Spots	%oil	%water	%mud
<u>5</u>	<u>OSM</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 5 BHT 129 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 2179 Test 1250 T-On Location 1:45 AM
 (B) First Initial Flow 16 Jars 250 T-Started 2:20 AM
 (C) First Final Flow 22 Safety Joint 75 T-Open 4:55 AM
 (D) Initial Shut-In 988 Circ Sub N/C T-Pulled 7:55 AM
 (E) Second Initial Flow 22 Hourly Standby T-Out 10:30 AM
 (F) Second Final Flow 27 Mileage 1082 RT 158.10 Comments
 (G) Final Shut-In 1031 Sampler
 (H) Final Hydrostatic 2154 Straddle Ruined Shale Packer

Initial Open 30 Shale Packer 250 Ruined Packer
 Initial Shut-In 60 Extra Packer Extra Copies
 Final Flow 30 Extra Recorder Sub Total 0
 Final Shut-In 60 Day Standby Total 1983.10
 Accessibility MP/DST Disc't
 Sub Total 1983.10

Approved By _____ Our Representative [Signature]

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53360

Well Name & No. Solko # 1-33 Test No. ~~150~~ 5 Date 8-15-13
 Company Murfin Drilling Co. Elevation 3261 KB 3256 GL
 Address 2505 N Water STE #300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #8
 Location: Sec. 33 Twp. 2S Rge. 36W Co. Rawlins State KS

Interval Tested 4554-4600 Zone Tested Pawnee
 Anchor Length 46' Drill Pipe Run 4353 Mud Wt. 9.1
 Top Packer Depth 4550 Drill Collars Run 184 Vis 52
 Bottom Packer Depth 4554 Wt. Pipe Run Ø WL 6.4
 Total Depth 4600 Chlorides 1,000 ppm System LCM tr

Blow Description IF - 1/4" Blow built to 1", then died back to 1/4"
ISI - NO Return
FF - NO Blow
FSI - NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>OSM</u>	<u>SPOTS</u>		<u>1000</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 133 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2325
 (B) First Initial Flow 19
 (C) First Final Flow 21
 (D) Initial Shut-In 788
 (E) Second Initial Flow 22
 (F) Second Final Flow 23
 (G) Final Shut-In 780
 (H) Final Hydrostatic 2257

Test 1250
 Jars 250
 Safety Joint 75
 Circ Sub NIC
 Hourly Standby
 Mileage 102 RT 158.10
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1733.10

T-On Location 3:00 AM
 T-Started 3:20 AM
 T-Open 5:35 AM
 T-Pulled 8:35 AM
 T-Out 11:30 AM

Comments
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1733.10
 MP/DST Disc't

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

Approved By _____ Our Representative

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lvz



INVOICE

PO Box 93999
Southlake, TX 76092

Invoice Number: 137854

Invoice Date: Aug 7, 2013

Page: 1

Voice: (817) 546-7282
Fax: (817) 246-3361

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

Now Includes:



Customer ID	Field Ticket #	Payment Terms	
Murfin	60774	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Aug 7, 2013	9/6/13

Quantity	Item	Description	Unit Price	Amount
		Solko #1-33		
350.00	CEMENT MATERIALS	Class A Common	17.90	6,265.00
12.00	CEMENT MATERIALS	Chloride	64.00	768.00
367.50	CEMENT SERVICE	Cubic Feet	2.48	911.40
1,270.50	CEMENT SERVICE	Ton Mileage	2.60	3,303.30
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
75.00	CEMENT SERVICE	Pump Truck Mileage	7.70	577.50
1.00	CEMENT SERVICE	Manifold Head Rental	275.00	275.00
75.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	330.00
1.00	CEMENT SUPERVISOR	Andrew Forslund		
1.00	EQUIPMENT OPERATOR	Paul Beaver		

Subtotal	13,942.45
Sales Tax	555.61
Total Invoice Amount	14,498.06
Payment/Credit Applied	
TOTAL	14,498.06

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

\$ 4,879.85

ONLY IF PAID ON OR BEFORE

Sep 1, 2013

21512

ALLIED OIL & GAS SERVICES, LLC 060774

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:

Oakley

DATE <u>8-7-13</u>	SEC. <u>33</u>	TWP. <u>2</u>	RANGE <u>36</u>	CALLED OUT	ON LOCATION	JOB START <u>5:00 PM</u>	JOB FINISH <u>5:30 PM</u>
LEASE <u>SOLKO</u>	WELL# <u>1-33</u>	LOCATION <u>McDonald 3N</u>	COUNTY <u>Rawlins</u>	STATE <u>KS</u>			
OLD OR <u>NEW</u> (Circle one)		<u>into</u>					

CONTRACTOR Murfin 8
 TYPE OF JOB Surface
 HOLE SIZE 12 1/4 T.D. 386'
 CASING SIZE 8 5/8 DEPTH 386'
 TUBING SIZE _____ DEPTH _____
 DRILL PIPE _____ DEPTH _____
 TOOL _____ DEPTH _____
 PRES. MAX _____ MINIMUM _____
 MEAS. LINE _____ SHOE JOINT _____
 CEMENT LEFT IN CSG. 15'
 PERFS. _____
 DISPLACEMENT 23.63 BBL

OWNER same
 CEMENT:
 AMOUNT ORDERED 350 sks com
3% cc
 COMMON 350 sks @ 12.90 6265.00
 POZMIX _____ @ _____
 GEL _____ @ _____
 CHLORIDE 12 sks @ 64.00 768.00
 ASC _____ @ _____
 _____ @ _____
 _____ @ _____
 _____ @ _____
 _____ @ _____
 _____ @ _____
 _____ @ _____
 HANDLING 32.5 cu/ft @ 2.48 911.40
 MILEAGE 2.40 700/mile 11.94 700 3303.30
 TOTAL 11247.70

EQUIPMENT
 PUMP TRUCK CEMENTER Andrew Toland
 # 423-281 HELPER Paul Becker
 BULK TRUCK
 # 323 DRIVER Alex (TWS)
 BULK TRUCK
 # _____ DRIVER _____

REMARKS:

Cement did circulate

Thank you

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

SERVICE

DEPTH OF JOB 386'
 PUMP TRUCK CHARGE _____ 1511.25
 EXTRA FOOTAGE _____ @ _____
 MILEAGE 75 miles @ 7.70 577.50
 MANIFOLD head @ _____ 225.00
light vehicle @ 41.40 330.00
 _____ @ _____

TOTAL 2694.75

PLUG & FLOAT EQUIPMENT

_____ @ _____
 _____ @ _____
 _____ @ _____
 _____ @ _____
 _____ @ _____

TOTAL _____

To: Allied Oil & Gas Services, LLC.
 You are hereby requested to rent cementing equipment and furnish cement 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 Rodney Fart

SIGNATURE Rodney Fart

SALES TAX (If Any) _____
 TOTAL CHARGES 13,942.45
 DISCOUNT 4,879.85 IF PAID IN 30 DAYS
9,062.59 Net.



P. O. Box 4
Ness City, KS
Off: 785-798-

Accts
cc: WFT
cc: Lin
cc: BBA LR-1

Invoice

DATE	INVOICE #
8/16/2013	24366

BILL TO

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

USED FOR C103

APPROVED JR

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#1-33	Solko	Rawlins	Company Tools	Oil	Development	5-1/2" LongString	Wayne
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				150	Miles	6.00	900.00
578D-L	Pump Charge - Long String - 4739 Feet				1	Job	1,500.00	1,500.00
221	Liquid KCL (Clayfix)				4	Gallon(s)	25.00	100.00T
281	Mud Flush				500	Gallon(s)	1.25	625.00T
403-5	5 1/2" Cement Basket				3	Each	285.00	855.00T
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				10	Each	40.00	400.00T
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
325	Standard Cement				200	Sacks	14.00	2,800.00T
330	Swift Multi-Density Standard (MIDCON II)				300	Sacks	17.00	5,100.00T
276	Flocele				125	Lb(s)	2.00	250.00T
283	Salt				1,000	Lb(s)	0.20	200.00T
284	Calseal				9	Sack(s)	35.00	315.00T
285	CFR-1				150	Lb(s)	4.00	600.00T
290	D-Air				5	Gallon(s)	42.00	210.00T
581D	Service Charge Cement				500	Sacks	2.00	1,000.00
583D	Drayage				3,814.13	Ton Miles	1.00	3,814.13
	Subtotal							20,869.13
	Sales Tax Rawlins County						7.90%	1,078.75
We Appreciate Your Business!							Total	\$21,947.88



CHARGE TO: MURKIN DRILL CO. INC
 ADDRESS:
 CITY, STATE, ZIP CODE

TICKET No **24366**
 PAGE 1 OF 2

SERVICE LOCATIONS
 1. Ness City, KS WELLP/PROJECT NO. 1-33 LEASE SOLKO COUNTY/PARISH RAWLINS STATE KS CITY RAWLINS DATE 8-16-13 OWNER same
 2. TICKET TYPE SERVICE CONTRACTOR Go Tools RIG NAME/NO.
 3. WELL TYPE Oil WELL CATEGORY DEVELOPMENT JOB PURPOSE 5 1/2" LONGSTRAKE SHIPPED VIA OR DELIVERED TO LOCATION ORDER NO.
 4. REFERRAL LOCATION INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DE							
575		1			MILEAGE # 112					6.00	900.00
578		1			PUMP CHARGE	1	EA	4739	EA	1500.00	1500.00
221		1			LEAD KCL	4	EA			25.00	100.00
281		1			MUDFISH	500	GA			1.25	625.00
403		1			CEMENT BASKETS	3	EA			285.00	855.00
406		1			LATCH DOWN PIV & BATTIE	1	EA	5 1/2"		275.00	275.00
407		1			TASSER FLOOR SHOE w/AUTO FALL	1	EA			375.00	375.00
409		1			TURBOBITTERS	15	EA			90.00	1350.00
413		1			ROTOWELL SCREACHERS	10	EA			40.00	400.00
419		1			ROTARAK HEAD RENTAL	1	EA			200.00	200.00

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

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS
 DATE SIGNED 8-16-13 TIME SIGNED 1700
 SIGNED BY [Signature] P.M.

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

SURVEY

OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?	AGREE	UN-DECIDED	DIS-AGREE
WE UNDERSTOOD AND MET YOUR NEEDS?			
OUR SERVICE WAS PERFORMED WITHOUT DELAY?			
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?			
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	

CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL #1 6580100
 #2 1428913
 sub total 20,869.13
 TAX 1,078.75
 TOTAL 21,947.88

SWIFT OPERATOR Wayne Watson APPROVAL
 CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.
 Thank You!

JOB LOG.

SWIFT Services, Inc.

DATE 8-16-13 PAGE NO.

CUSTOMER MURPHY DRUG CO. INC. WELL NO. 1-33 LEASE SOLKO JOB TYPE 5 1/2" LONGSTRING TICKET NO. 24366

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL/GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1700							ON LOCATION
	2100							START 5 1/2" CASING IN WELL
								TD-4740 SET- 4739
								TP-4739 5 1/2" 15.5
								ST-22'
								CONTRACTORS - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 34, 4
								CMT. BSKTS - 10, 35, 45
	2340							DROP BALL - CIRCULATE ROTATE
	0035	6	12		✓		450	PUMP 500 GAL MUD FLUSH
	0037	6	20		✓		450	PUMP 20 BBL KCL-FLUSH
	0045		7-5					PLUG RH (30 SKS) MH (20 SKS)
	0050	6 1/2	140		✓		400	MIX CEMENT - 250 SKS SMD = 11.2 PPG
		6	48		✓		150	200 SKS FA2 = 15.4 PPG
	0135							WASH OUT PUMP + LEVES
	0135							RELEASE LATCH DOWN PLUG
	0140	6 1/2	0		✓			DISPLACE PLUG (1ST TANK KCL WATER)
		6 1/2	110				1200	
	0155	6	112.3				1750	PLUG DOWN - PSE UP LATCH IN PLUG
	0200						OK	RELEASE PSE - HELD
								CIRCULATED 25 SKS CMT TO POT
	0300							WASH TRUCK - JOB COMPLETE

THANK YOU
WAYNE, BRIAN, JOHN, DOUG