



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
- 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

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: _____



1095421

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

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

INSTRUCTIONS: Show important tops and base 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. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

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 Electric Log Submitted Electronically <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i> 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
_____ Perforate _____ Protect Casing _____ Plug Back TD _____ Plug Off Zone				

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 Bbbs.	Gas Mcf	Water Bbbs.	Gas-Oil Ratio	Gravity
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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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Form	ACO1 - Well Completion
Operator	Wells, Rodger D. dba Pioneer Resources
Well Name	KNOPP 4
Doc ID	1095421

All Electric Logs Run

COMPENSATED NEUTRON
COMPENSATED DENSITY
DIL
MICROLOG

Form	ACO1 - Well Completion
Operator	Wells, Rodger D. dba Pioneer Resources
Well Name	KNOPP 4
Doc ID	1095421

Tops

Name	Top	Datum
ANHY	2270	+551
TOPEKA	3576	-755
HEEBNER	3804	-983
LANSING	3839	-1018
PA	4294	-1473
FT. SCOTT	4350	-1529
CHEROKEE	4378	-1557
JOHNSON	4418	-1597
MORROW SH	4449	-1628
MISS	4496	-1675

JOB LOG

SWIFT Services, Inc.

DATE 06 13 12 PAGE NO. 7

CUSTOMER **PEONEER RESOURCES** WELL NO. **#4** LEASE **KNOPP** JOB TYPE **ACIDIZE FORMATION** TICKET NO. **22914**

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1133							ON LOCATION QUALITY PLUS SWAB TEST ENG.
								TAN PERFS. 4470'-86'
								FED. HT. SPOT 4490'
								2 7/8 x 5 1/2 TREAT 4455'
								CS. 31' 0.7378 Bbl
								TH. 4455' 25.79445 Bbl
								TOTAL 26.53225 Bbl
	1415	3-0	8.50	✓		VAC		SPOTTED ACID
	1430	4	8.75	✓		0		START PUMPING. REST OF ACID
	1432	2	12	✓		0		ON FEUSIT
	1436	4-0	25	✓		VAC		SHUT DOWN & LET LOAD
	1438	0	27.50	✓		0		LOADED 1 Bbl LATE GOOD SPOT
	1440	18-0	27.50	✓		100		STRAWING.
		"	28	✓		200		" GOOD DROP, BUILDS UP FAST
		"	28.75	✓		300		"
		"	29.50	✓		400		" 3 Bbl OUT
		"	31	✓		500		"
		"	32.25	✓		600		"
		"	33	✓		700		"
		"	33.75	✓		750		" 6 1/4 Bbl OUT
		"	34	✓		750		" DROPPING SLOWER
		"	35	✓		750		" GETTING TIGHT
	2005	1" TO	35.25	✓		750		CLOSED IN 3 3/4 Bbl LEFT
								RIU DOWN
								TICKET
	2015							JOB COMPLETED
								THANK YOU DUSTY RUSSELL

JOB LOG

SWIFT Services, Inc.

DATE 05-16-12 PAGE NO. 1

CUSTOMER PIONEER RESOURCES WELL NO. 4 LEASE KNOOP JOB TYPE 2-STAGE TICKET NO. 21369

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1630							ON LOCATION CMT: Bottom 175 STD EA-2 Top 300 STD
								RTD 4572 SET PIPE 4568 SJ 27.31 INSERT 4546 5 1/2 15.5" I.D. V. ON TOP # 54, 2247 FT CMT 1, 2, 3, 4, 5, 7, 9, 11, 14, 53 BENT 4, 15, 54 RECIPRO SCRAMBLES 1-10 4EA 40 TOTAL
	1715							START C&G FLOTTERR
	1900							TAG - DRILL
	1930							BREAK C&G & RECIPRO P. PIPE
	2040	5.0	12	-		200		500 GALS MUD FLUSH
			20	-				20 GALS MUD FLUSH
			42.5	-				175 STD EA-2
								DROP BOTTOM LOG PLUG, WASH OUT PL
		6.0	0	-		200		START DISJ W/ H2O
			54	-		5		" " W/ MUD
			100	-		600		
			105	-		700		
	2115	4.7	108.2	-		1500		LAND PLUG - RELEASE DRY! DROP DIV. OPENING DRY!
	2130			-		1100		OPEN DIV. CIRC W/ RIG 3 H2O
	0030		7.5					PLUG RH 30, MA 20
	0040	5.0	20	-		200		20 GALS MUD
			150	-		5		200 500 GALS MUD
								DROP DIV. CLOSING PLUG
		5.5	0	-		200		START DISJ
			25	-		400		CIRC CMT TO PIT! 50 SPS!
			50	-		500		
	0100	4.5	53.4	-		1300		LAND & CLOSE DIV.
	0200							JOB COMPLETE THANK YOU! DAVE TISH, ISMC, T.J.

ALLIED CEMENTING CO., LLC. 035958

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31
RUSSELL, KANSAS 67665

SERVICE POINT:
OAKLEY

DATE <u>5-7-12</u>	SEC. <u>13</u>	TWP. <u>14S</u>	RANGE <u>32W</u>	CALLED OUT	ON LOCATION <u>3:30 PM</u>	JOB START <u>5:00 PM</u>	JOB FINISH <u>5:30 PM</u>
LEASE <u>KNOPP</u>	WELL# <u>4</u>	LOCATION <u>OAKLEY 205-1E-10N-E IN</u>			COUNTY <u>LOGAN</u>	STATE <u>Ks</u>	
OLD OR <u>NEW</u> (Circle one)							

CONTRACTOR <u>W+W DRG RES # 2</u>	OWNER <u>SAME</u>
TYPE OF JOB <u>SURFACE</u>	CEMENT AMOUNT ORDERED <u>160 SKS COM 38cc 280 GEL</u>
HOLE SIZE <u>12 1/4"</u> T.D. <u>222</u>	COMMON <u>160 SKS @ 16.25 = 2600.00</u>
CASING SIZE <u>8 7/8"</u> DEPTH <u>220.50</u>	POZMIX @
TUBING SIZE DEPTH	GEL <u>3 SKS @ 21.25 = 63.75</u>
DRILL PIPE DEPTH	CHLORIDE <u>6 SKS @ 58.25 = 349.50</u>
TOOL DEPTH	ASC @
PRES. MAX MINIMUM	@
MEAS. LINE SHOE JOINT	@
CEMENT LEFT IN CSG. <u>15</u>	@
PERFS.	@
DISPLACEMENT <u>13 BBLs</u>	HANDLING <u>173 CU FT @ 2.40 = 415.20</u>
EQUIPMENT	MILEAGE <u>7,896 TONS X 20 X 2.35 = 371.10</u>
PUMP TRUCK CEMENTER <u>TERRY</u>	TOTAL <u>3747.30</u>
# <u>422</u> HELPER <u>WAYNE</u>	
BULK TRUCK	
# <u>404</u> DRIVER <u>CHRIS</u>	
BULK TRUCK	
# DRIVER	

REMARKS:
Hook up to 8 7/8" CASING + BREAK CIRC.
Pump 5 BBLs WATER + MAX 160 SKS COM
38cc 280 GEL. Displace 13 BBLs FRESH
WATER. SHUT IN SWABE + RELEASE
PRESSURE.

CEMENT died CIRC.
THANK YOU

SERVICE		
DEPTH OF JOB <u>220.50'</u>		
PUMP TRUCK CHARGE <u>1125.00</u>		
EXTRA FOOTAGE @		
MILEAGE <u>20 @ 7.00 = 140.00</u>		
MANIFOLD @		
LUM <u>20 @ 4.50 = 90.00</u>		
TOTAL <u>1345.00</u>		

PLUG & FLOAT EQUIPMENT		
@		
@		
@		
@		
@		
TOTAL		

SALES TAX (If Any) _____
TOTAL CHARGES _____
DISCOUNT _____ IF PAID IN 30 DAYS

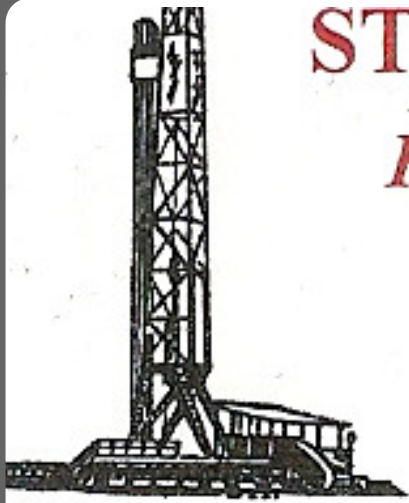
CHARGE TO: PIONEER RESOURCES
STREET _____
CITY _____ STATE _____ ZIP _____

To Allied Cementing Co., 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 Lannie Long
SIGNATURE Lannie Long

STEVEN P. MURPHY, P.G.

Petroleum Geologist (KS #228)



Cell 620.639.3030

Fax 785.387.2400

RR#1, Box 69

Otis, Kansas 67565

geomurphy@gbta.net

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

Well Name: Knopp #4

Location: Logan County

License Number: API # 15-109-21084-00-00

Spud Date: 5/7/12

Surface Coordinates: 335 FNL & 335 FWL (SE NW NW)
Section 13-T14S-R32W

Bottom Hole Coordinates: Vertical well w/minimal deviation

Ground Elevation (ft): 2816'

K.B. Elevation (ft): 2821'

Logged Interval (ft): 3500'

To: TD

Total Depth (ft): RTD - 4570' LTD - 4572'

Formation: Topeka through Mississippian

Type of Drilling Fluid: Chemical (Mudco, Inc)

Region: Kansas

Drilling Completed: 5/16/12

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

OPERATOR

Company: Pioneer Resources

Address: 80 Windmill Drive
Phillipsburg, KS 67661-9622

GEOLOGIST

Name: Steven P. Murphy, PG (Ks License #339)

Company: Consulting Petroleum Geologist

Address: 3365 CR 390
Otis, KS 67565

LogTops (Datum)

The open-hole logging was performed by Jeff Luebbers with Superior Well Services (Hays, KS shop). Logs included Compensated Neutron/Compensated Density, Dual Induction & Microlog.

Formation tops and datums from the open-hole logs include the following:

Anhydrite Top - 2270 (+551)
Anhydrite Base - 2295 (+525)
Topeka - 3576 (-755)
Heebner - 3804 (-983)
Toronto - 3820 (-999)
Lansing - 3839 (-1018)
Muncie Creek Sh - 3998 (-1177)
Stark Sh - 4086 (-1265)
Hushpuckney Sh - 4117 (-1296)
Base KC - 4166 (-1345)
Pawnee 4294 (-1473)
Myrick Station - 4333 (-1512)
Ft. Scott - 4350 (-1529)
Cherokee Sh - 4378 (-1557)
Johnson Zone - 4418 (-1597)
Morrow Sh - 4449 (-1628)
Basal Penn Sandstone - 4468 (-1647)
Mississippian - 4496 (-1675)

DRILL STEM TESTS #1-4

The following drillstem tests were performed by Will MacLean w/Trilobite Testing (Scott City, KS shop):

DST #1 3908-3940 (LKC "E-F")

30:30:30:45

IF: Wk blow built to 2-1/4", no return

FF: Wk blow built to 1-1/4", no return

Recovery: 53' GIP, 10' GMCO (3%G,

85%O, 12%M), 15' WCM (2%W, 98%M),

61' GWCM (2%G, 18%W, 80%M),

61' GOWCM (4%G, 4%O, 18%W, 74%M)

IHP: 1942 FHP: 1805

IFP: 25-76 ISIP: 1131

FFP: 80-97 FSIP: 1123

BHT - 111 F

Oil Gravity - 35

Water Chlorides - 36,000 ppm

DST #2 4020-4052 (LKC "H & I")

30:30:30:30

IF: 1/4" blow fell to surface blow, no return

FF: No blow, no return

Recovery: 5' OCM (1% O, 99% M)

IHP: 2010 FHP: 1868

IFP: 21-25 ISIP: 38

FFP: 25-25 FSIP: 31

BHT - 107 F

DST #3 4084-4110 (LKC "K")

30:30:30:30

IF: Wk blow built to 1", no return

FF: Wk surf blow, no return

Recovery: 63' GIP, 1' Oil, 61' OGCM (2% G, 2% O, 95% M), 61' WGM (3% G, 1% W, 96% M)

IHP: 2031 FHP: 1855

IFP: 24-52 ISIP: 1132

FFP: 56-79 FSIP: 1109

BHT - 107 F

DST #4 4252-4312 (Altamont-Pawnee)

45:45:45:60

IF: BOB in 17-1/2 min, no return

FF: BOB in 35-1/2 min, no return

Recovery: 453' MCW

IHP: 2157 FHP: 1926

IFP: 31-149 ISIP: 1140

FFP: 154-228 FSIP: 1142

BHT - 114 F

Chlorides - 24,000 ppm

DRILL STEM TESTS #5-8

DST #5 4320-4346 (MYRICK STATION)

30:30:30:30

IF: Wk surface blow, no return

FF: No blow, no return

Recovery: 5' OCM (2% O, 98% M)

IHP: 2200 FHP: 2021

IFP: 24-27 ISIP: 51

FFP: 26-8 FSIP: 39

BHT - 108 F

DST #6 4346-4376 (FT SCOTT)

15:15:15:15

Wk surface blow died in 4 min, no return

No blow, flushed, died, no return

Recovery: 2' Mud w/oil spots

IHP: 2150 FHP: 2082

IFP: 22-23 ISIP: 27

FFP: 23-23 FSIP: 26

BHT - 108 F

DST #7 4438-4406 (Cherokee Lime)

30:30:30:30

IF: Wk blow built to 3/4", no return

FF: No blow, no return

Recovery: 8' Mud w/oil spots

IHP: 2177 FHP: 2065

IFP: 26-32 ISIP: 780

FFP: 36-40 FSIP: 308

BHT - 112 F

DST #8 4402-4440 (Johnson Zone)

30:30:30:30

IF: Wk surface blow died in 24 min, no return

FF: No blow, no return

Recovery: 5' Mud

IHP: 2213 FHP: 016

IFP: 28-31 ISIP: 108

FFP: 30-32 FSIP: 64

BHT - 107 F

DRILL STEM TEST #9

DST #9 4442-4500 (Morrow Sst)

30:45:30:60

IF: BOB in 4 min, return BOB in 7 min

FF: BOB in 4 min, return BOB in 5 min

Recovery: 2,669' GIP, 252' MCO (10% M, 30% G, 60 %O),

189' Gsy Oil (30% G, 70% O), 252' Muddy Oil (90% O, 10% M), 189' Muddy Gsy Oil (10% M, 40% O, 50% G), 262' Oil (Gravity - 31)

IHP: 2209 FHP: 2136

IFP: 223-283 ISIP: 981

FFP: 287-393 FSIP: 918

BHT - 124 F

COMMENTS


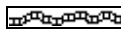
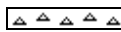



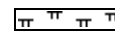
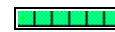
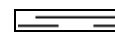
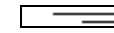
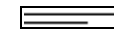

Based on the results of DSTs #1, #3, and #9, as well as sample & log analysis, it was recommended that casing be run to produce the Morrow Sandstone. Also, although not included in DST #8, the very lowest section of the Johnson Zone looks possibly productive. Before the well is abandoned, it is recommended that the lower lobe of the Johnson Zone, and the LKC "E, F & K" zones be evaluated through perforations. The following are the recommended perforation intervals:

Lower Johnson Zone: 4446-4448
 Morrow Sst: 4472-4487
 LKC "K" Zone: 4100-4104
 LKC "E" Zone: 3922-3925


Respectfully submitted,

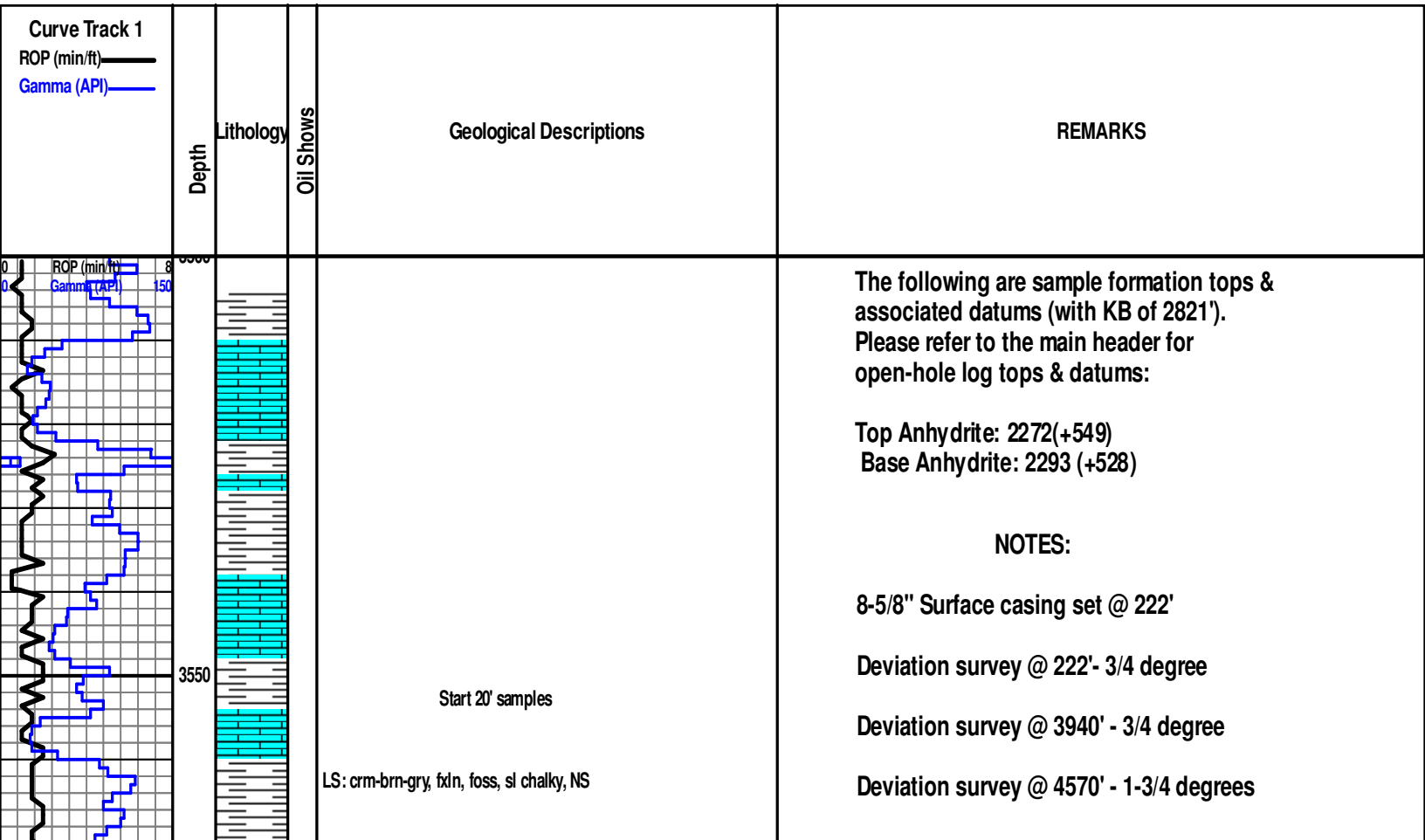
Steven P. Murphy, PG (KS License #228)
 Consulting Petroleum Geologist

ROCK TYPES

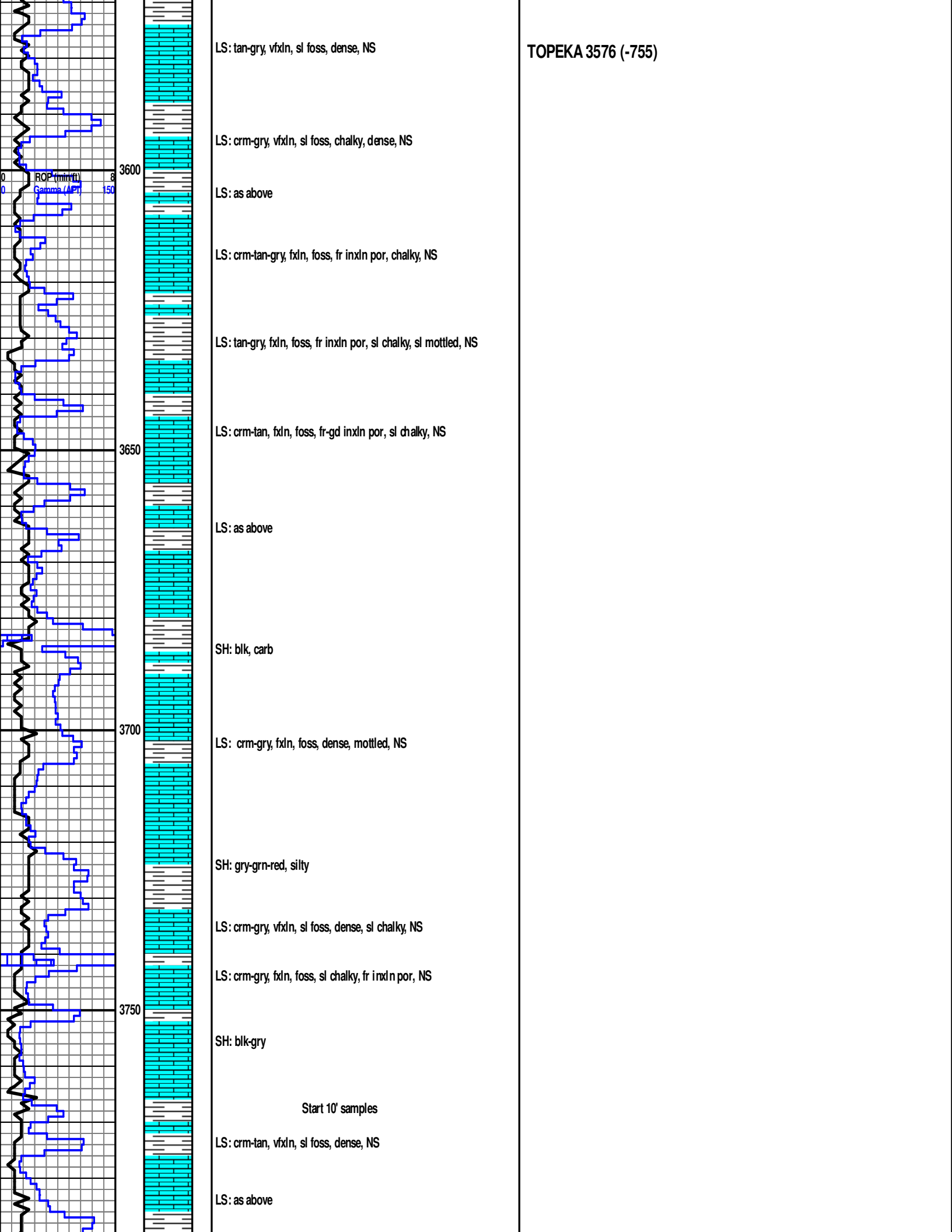
 Anhy  Bent  Brec  Cht  Clyst	 Coal  Congl  Dol  Gyp  Igne	 Lmst  Meta  Mrlst  Salt  Shale	 Shcol  Shgy  Slst  Ss  Till
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OTHER SYMBOLS

OIL SHOW  Even  Spotted  Ques	 Dead  Gas	INTERVAL  Core  Dst	EVENT  Conn  Rft  Sidewall
--	--	--	---



TOPEKA 3576 (-755)



LS: tan-gry, vfxln, sl foss, dense, NS

LS: crm-gry, vfxln, sl foss, chalky, dense, NS

LS: as above

LS: crm-tan-gry, fxl n, foss, fr inxln por, chalky, NS

LS: tan-gry, fxl n, foss, fr inxln por, sl chalky, sl mottled, NS

LS: crm-tan, fxl n, foss, fr-gd inxln por, sl chalky, NS

LS: as above

SH: blk, carb

LS: crm-gry, fxl n, foss, dense, mottled, NS

SH: gry-grn-red, silty

LS: crm-gry, vfxln, sl foss, dense, sl chalky, NS

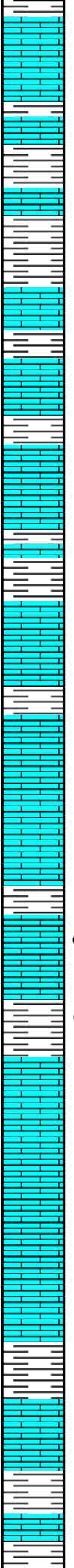
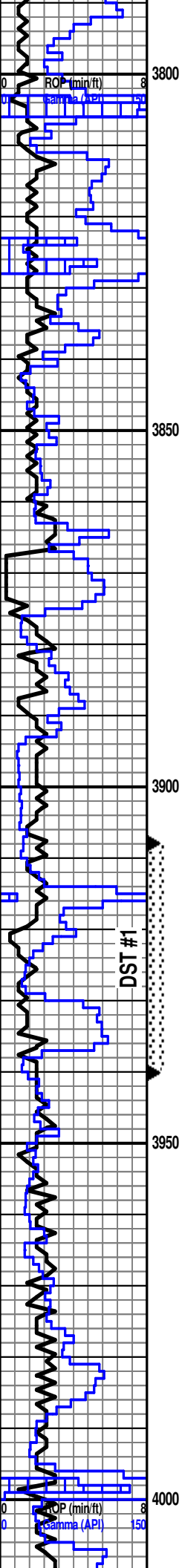
LS: crm-gry, fxl n, foss, sl chalky, fr inxln por, NS

SH: blk-gry

Start 10' samples

LS: crm-tan, vfxln, sl foss, dense, NS

LS: as above



LS: crm-gry, vfxln, dense, NS

SH: blk, carb

SH: gry-grn-red

SH: as above

LS: crm-tan, fxlN, sl foss, dense, chalky, NS

SH: gry-grn

LS: wht-tan, vfxln, dense, chalky, NS

LS: crm-tan-gry, vfxln, oolitic in pt, dense, NS

SH: gry-grn

LS: wht-crm, fxlN, oolic in pt, chalky, dense, NS

LS: as above

SH: gry-grn-blk

LS: crm, vfxln, dense, sl chalky, NS

SH: grn-gry

LS: crm-gry, vfxln, dense, chalky, NS

● LS: crm-tan, fxlN, fr ppt por, ssfo (gsy on brk), even brn stn, str odor

● LS: wht-tan, fxlN, oolic, fr-gd ppt & vug por, fsfo (gsy on brk), even brn stn, str odor

LS: crm-tan, vfxln, dense, chalky, NS

LS: crm-tan, vfxln, sl oolic, dense, chalky, NS

LS: as above

LS: crm-tan-gry, vfxln, sl oolic, dense, chalky, NS

LS: as above

SH: blk, carb-gry-brn

LS: tan-brn, vfxln, mottled, dense, NS

SH: gry-grn

HEEBNER 3802 (-981)

TORONTO 3819 (-998)

LANSING 3836 (-1015)

DST #1 3908-3940 (LKC "E-F")

30:30:45

IF: Wk blow built to 2-1/4", no return

FF: Wk blow built to 1-1/4", no return

Recovery: 53' GIP, 10' GMCO (3%G, 85%O, 12%M), 15' WCM (2%W, 98%M),

61' GWCM (2%G, 18%W, 80%M),

61' GOWCM (4%G, 4%O, 18%W, 74%M)

IHP: 1942 FHP: 1805

IFP: 25-76 ISIP: 1131

FFP: 80-97 FSIP: 1123

BHT - 111 F

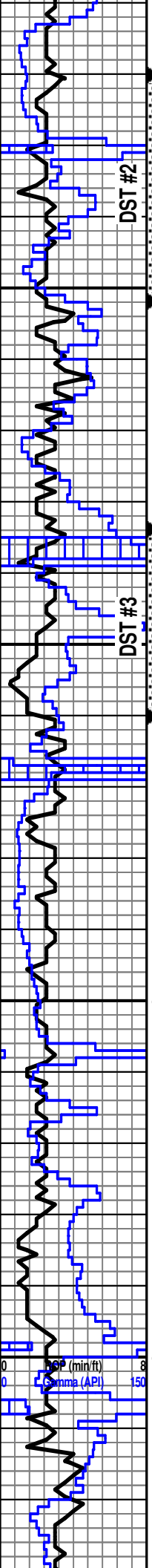
Oil Gravity - 35

Water Chlorides - 36,000 ppm

Strap @ 3940' - 0.05' short to board

Survey @ 3940' - 3/4 degree

MUNCIE CREEK 3998 (-1177)



SH: gry-grn

LS: wht-tan-gry, vfxln, dense, sl chalky, NS

LS: wht-tan, fxlN, sl foss, mostly dense, rare ft inxln por, sssfo on brk, spotty brn stn, fr odor

SH: gry-blk-grn-mar

SH: as above

LS: crm-tan, fxlN, oolic, fr-gd vug por, fsfb, even sat stn, str odor

SH: grn-blk-gry-brn-red

LS: wht-tan-gry, vfxln, dense, sl chalky, NS

SH: gry-grn-brn

LS: wht-crm, fxlN, oolic in pt, pr-fr ppt por (mostly dense), vssfo, spotty stn, fr odor

LS: crm-gry, vfxln, dense, chalky, NS

LS: tan-gry, vfxln, dense, NS

SH: blk, carb

LS: crm-gry, vfxln, dense, NS

SH: gry-grn-brn

LS: crm-tan, fxlN, oolic, fr vug por, fsfb, even sat stn, fr odor

LS: crm-brn-gry, vfxln, sl chalky, dense, nsfb, minor edge stn, sl odor

SH: blk, carb

SH: gry-grn-mar

LS: crm-tan-gry, vfxln, dense, sl chalky, NS

LS: as above

SH: gry-blk-grn-mar

LS: crm-brn, vfxln, dense, chalky, NS

LS & SH: as above

SH: gry-blk-grn-mar

LS: crm-tan-gry, vfxln, dense, NS

SH: gry-grn-blk-mar

LS: crm-tan, vfxln, sl foss, oolitic in pt, dense, NS

LS: as above

DST #2 4020-4052 (LKC "H & I")
 30:30:30:30
 IF: 1/4" blow fell to surface blow, no return
 FF: No blow, no return
 Recovery: 5' OCM (1% O, 99% M)
 IHP: 2010 FHP: 1868
 IFP: 21-25 ISIP: 38
 FFP: 25-25 FSIP: 31
 BHT - 107 F

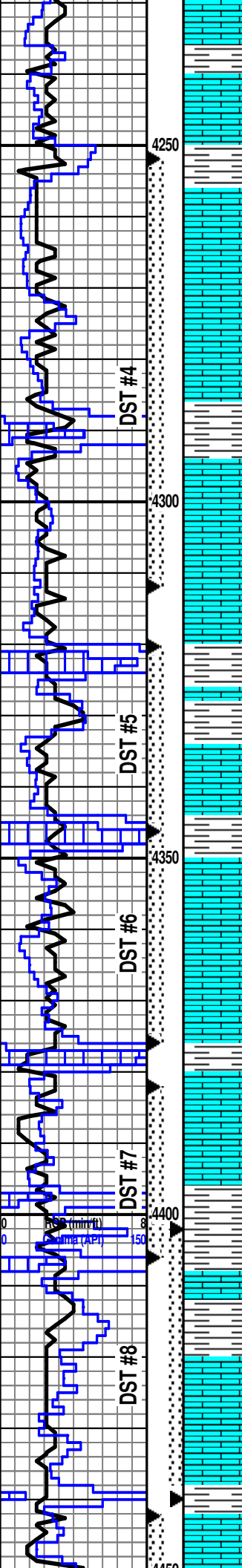
STARK 4087 (-1266)

DST #3 4084-4110 (LKC "K")
 30:30:30:30
 IF: Wk blow built to 1", no return
 FF: Wk surf blow, no return
 Recovery: 63' GIP, 1' Oil, 61' OGCM (2% G, 2% O, 95% M), 61' WGM (3% G, 1% W, 96% M)
 IHP: 2031 FHP: 1855
 IFP: 24-52 ISIP: 1132
 FFP: 56-79 FSIP: 1109
 BHT - 107 F

HUSHPUCKNEY 4124 (-1303)

BKC 4159 (-1338)

0 150
 P (min/ft)
 Gamma (API)



SH: mar-grn-gry-red

LS: crm-tan-gry, vfxln, oolitic in pt, dense, NS

SH: blk-gry-grn-red

① LS: crm-tan, f-vfxln, oolitic in pt, nsfo, rare spotty live stn, no odor

① LS: crm-tan, fxl, oolitic-oolic, vssfo, spotty live stn, fr odor

LS: crm-tan-gry, vfxln, oolitic in pt,

LS: as above

SH: blk, carb

● LS & CHT: crm-tan, fxl, sl chalky, sucrosic & oolic, gd inxln & vug por, gsfo, even sat stn, str odor (chert lite blue, vitreous, sharp)

LS & CHT: as above

① LS: tan-brn-gry, vfxln, dense, chalky, nsfo, minor spotty stn, v sl odor

SH: blk, carb

● LS: crm-tan-gry, fxl, oolitic, fr-gd ppt & vug por, fsfo, even sat stn, str odor

● LS: as above

LS: tan-brn, vfxln, oolitic, dense, NS

SH: blk, carb

① LS: tan-gry, fxl, foss, oolic in pt, fr ppt & vug por, much dense, fsfo, spotty stn, gd odor

① LS: as above w/ssfo, spotty stn, sl odor

SH: blk, carb

● LS: crm-tan-gry, f-vfxln, oolic-oolitic, sl chalky, fr-gd ppt/vug por, gsfo, even stn, str odor

● LS: as above

SH: blk-gry-grn

LS: tan-brn, vfxln, dense, NS

① LS: crm-tan, fxl, sl foss, mostly dense, ssfo, fr inxln por, spotty stn, fr odor

● LS: crm-tan-brn, fxl, oolic in pt, fr-gd ppt & vug por, fsfo, even stn, str odor

SH: grn-gry-yel-red

① LS: tan-brn, fxl, fr ppt por, minor vug por, ssfo, spotty stn, gd odor

DST #4 4252-4312 (Altamont-Pawnee)

45:45:45:60

IF: BOB in 17-1/2 min, no return

FF: BOB in 35-1/2 min, no return

Recovery: 453' MCW

IHP: 2157 FHP: 1926

IFP: 31-149 ISIP: 1140

FFP: 154-228 FSIP: 1142

BHT - 114 F

Chlorides - 24,000 ppm

PAWNEE 4294 (-1473)

DST #5 4320-4346 (MYRICK STATION)

30:30:30:30

IF: Wk surface blow, no return

FF: No blow, no return

Recovery: 5' OCM (2% O, 98% M)

IHP: 2200 FHP: 2021

IFP: 24-27 ISIP: 51

FFP: 26-8 FSIP: 39

BHT - 108 F

MYRICK STATION 4331 (-1510)

FT SCOTT 4350 (-1529)

DST #6 4346-4376 (FT SCOTT)

15:15:15:15

Wk surface blow died in 4 min, no return

No blow, flushed, died, no return

Recovery: 2' Mud w/oil spots

IHP: 2150 FHP: 2082

IFP: 22-23 ISIP: 27

FFP: 23-23 FSIP: 26

BHT - 108 F

CHEROKEE 4377 (-1556)

DST #7 4438-4406 (Cherokee Lime)

30:30:30:30

IF: Wk blow built to 3/4", no return

FF: No blow, no return

Recovery: 8' Mud w/oil spots

IHP: 2177 FHP: 2065

IFP: 26-32 ISIP: 780

FFP: 36-40 FSIP: 308

BHT - 112 F

JOHNSON 4415 (-1594)

DST #8 4402-4440 (Johnson Zone)

30:30:30:30

IF: Wk surface blow died in 24 min, no return

FF: No blow, no return

Recovery: 5' Mud

IHP: 2213 FHP: 016

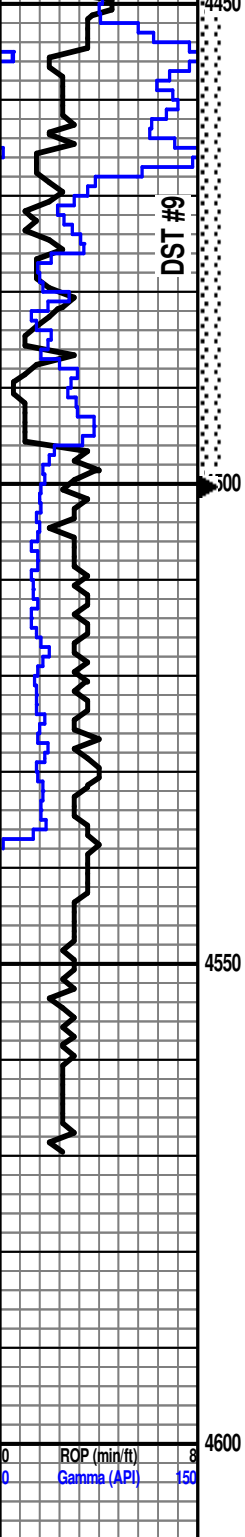
IFP: 28-31 ISIP: 108

FFP: 30-32 FSIP: 64

BHT - 107 F

MORROW SH

4451 (-1620)



4450

SH: gry-grn-olive-brn-red-blk w/interbedded sst

SH: as above

- SST: clr-tan, f-mgr, prly std, sub-rd, friable to firm clusters, gsfo (gsy), even sat stn, str odor
- Interbedded shales & sst: as above, w/gsfo, stn & odor
- Interbedded shales & sst: as above, w/gsfo, stn & odor
- SST: clr-tan, f-mgr, prly std, sub-rd, friable to firm clusters, gsfo (gsy), even sat stn, str odor

500

LS: wht-tan, vfxln, oolitic & sandy, dense, sl chalky, NS

LS: as above

LS: as above

LS: tan-gry, vfxln, sandy & oolitic in pt, dense, NS

LS: crm-gry, vfxln, oolitic, dense, NS

LS: as above w/minor cht

LS: as above

RTD - 4570'

LTD - 4572'

4550

4600

ROP (min/ft) 8

Gamma (API) 150

4451 (-1630)

DST #9 4442-4500 (Morrow Sst)
 30:45:30:60
 IF: BOB in 4 min, return BOB in 7 min
 FF: BOB in 4 min, return BOB in 5 min
MORROW SST 4466 (-1645)
 Recovery: 252' MCO (10% M, 30% G, 60 %O),
 189' Gsy Oil (30% G, 70% O), 252' Muddy Oil
 (90% O, 10% M), 189' Muddy Gsy Oil
 (10% M, 40% O, 50% G), 262' Oil (Grav - 31),
 2.669' GIP
 IHP: 2209 FHP: 2136
 IFP: 223-283 ISIP: 981
 FFP: 287-393 FSIP: 918
 BHT - 124 F

MISSISSIPPIAN 4496 (-1675)

5-1/2" Production casing set @ 4568',
 cemented by Swift w/175 sacks of DA-2. A
 DV tool was set @ 2247' w/270 sacks of
 FMD



DRILL STEM TEST REPORT

Prepared For: **Pioneer Resources**

80 Windmill Dr
Phillipsburg KS 67661

ATTN: Steve Murphy

Knopp #4

13-14s-32w Logan,KS

Start Date: 2012.05.10 @ 09:22:00

End Date: 2012.05.10 @ 15:39:09

Job Ticket #: 45877 DST #: 1

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

Printed: 2012.05.17 @ 15:36:56



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Pioneer Resources
80 Windmill Dr
Phillipsburg KS 67661
ATTN: Steve Murphy

13-14s-32w Logan,KS
Knopp #4
Job Ticket: 45877 **DST#: 1**
Test Start: 2012.05.10 @ 09:22:00

GENERAL INFORMATION:

Formation: **LKC " E - F "**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 11:22:55
Time Test Ended: 15:39:09
Interval: **3908.00 ft (KB) To 3940.00 ft (KB) (TVD)**
Total Depth: 3940.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Will MacLean
Unit No: 40
Reference Elevations: 2821.00 ft (KB)
2816.00 ft (CF)
KB to GR/CF: 5.00 ft

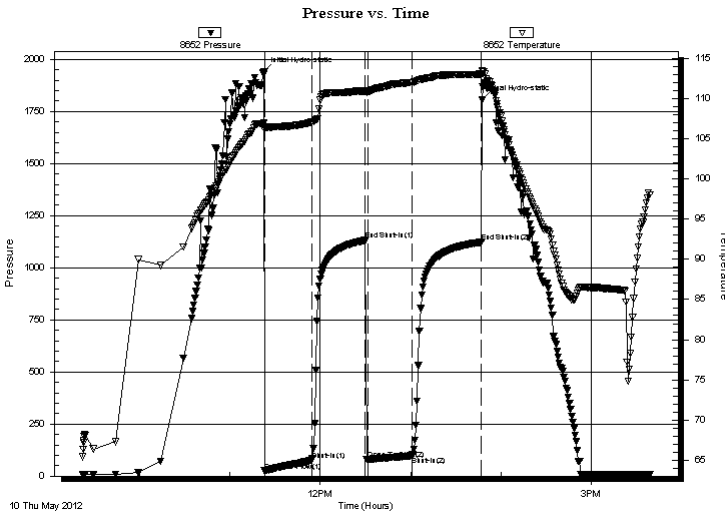
Serial #: 8652

Inside

Press @ Run Depth: 97.55 psig @ 3909.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2012.05.10 End Date: 2012.05.10 Last Calib.: 2012.05.10
Start Time: 09:22:00 End Time: 15:39:09 Time On Btm: 2012.05.10 @ 11:22:40
Time Off Btm: 2012.05.10 @ 13:47:39

TEST COMMENT: IF- Weak Surface Blow Built to 2 1/4"
IS- No Blow
FF- Weak Surface Blow Built to 1 1/4"
FS- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1942.86	106.93	Initial Hydro-static
1	25.09	106.17	Open To Flow (1)
32	76.18	107.08	Shut-In(1)
68	1131.85	110.96	End Shut-In(1)
69	80.66	110.88	Open To Flow (2)
99	97.55	112.02	Shut-In(2)
145	1123.19	113.03	End Shut-In(2)
145	1805.04	113.52	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
61.00	GOWCM 4%g 4%oil 18%w 74%m	0.30
61.00	GWCM 2%g 18%w 80%m	0.30
15.00	WCM 2%w 98%m	0.20
10.00	GMCO 3%g 12%m 85%oil	0.14
0.00	53' of GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 45877

DST#: 1

ATTN: Steve Murphy

Test Start: 2012.05.10 @ 09:22:00

Tool Information

Drill Pipe:	Length: 3783.00 ft	Diameter: 3.80 inches	Volume: 53.07 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 26000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 14000.00 lb
			<u>Total Volume: 53.67 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	3908.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	32.00 ft			
Tool Length:	59.00 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			3882.00	
Shut In Tool	5.00			3887.00	
Hydraulic tool	5.00			3892.00	
Jars	5.00			3897.00	
Safety Joint	2.00			3899.00	
Packer	5.00			3904.00	27.00 Bottom Of Top Packer
Packer	4.00			3908.00	
Stubb	1.00			3909.00	
Recorder	0.00	8652	Inside	3909.00	
Recorder	0.00	8322	Outside	3909.00	
Perforations	28.00			3937.00	
Bullnose	3.00			3940.00	32.00 Bottom Packers & Anchor

Total Tool Length: 59.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 45877

DST#: 1

ATTN: Steve Murphy

Test Start: 2012.05.10 @ 09:22:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

35 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

36000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.27 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
61.00	GOWCM 4%g 4%oil 18%w 74%m	0.300
61.00	GWCM 2%g 18%w 80%m	0.300
15.00	WCM 2%w 98%m	0.201
10.00	GMCO 3%g 12%m 85%oil	0.140
0.00	53' of GIP	0.000

Total Length: 147.00 ft Total Volume: 0.941 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

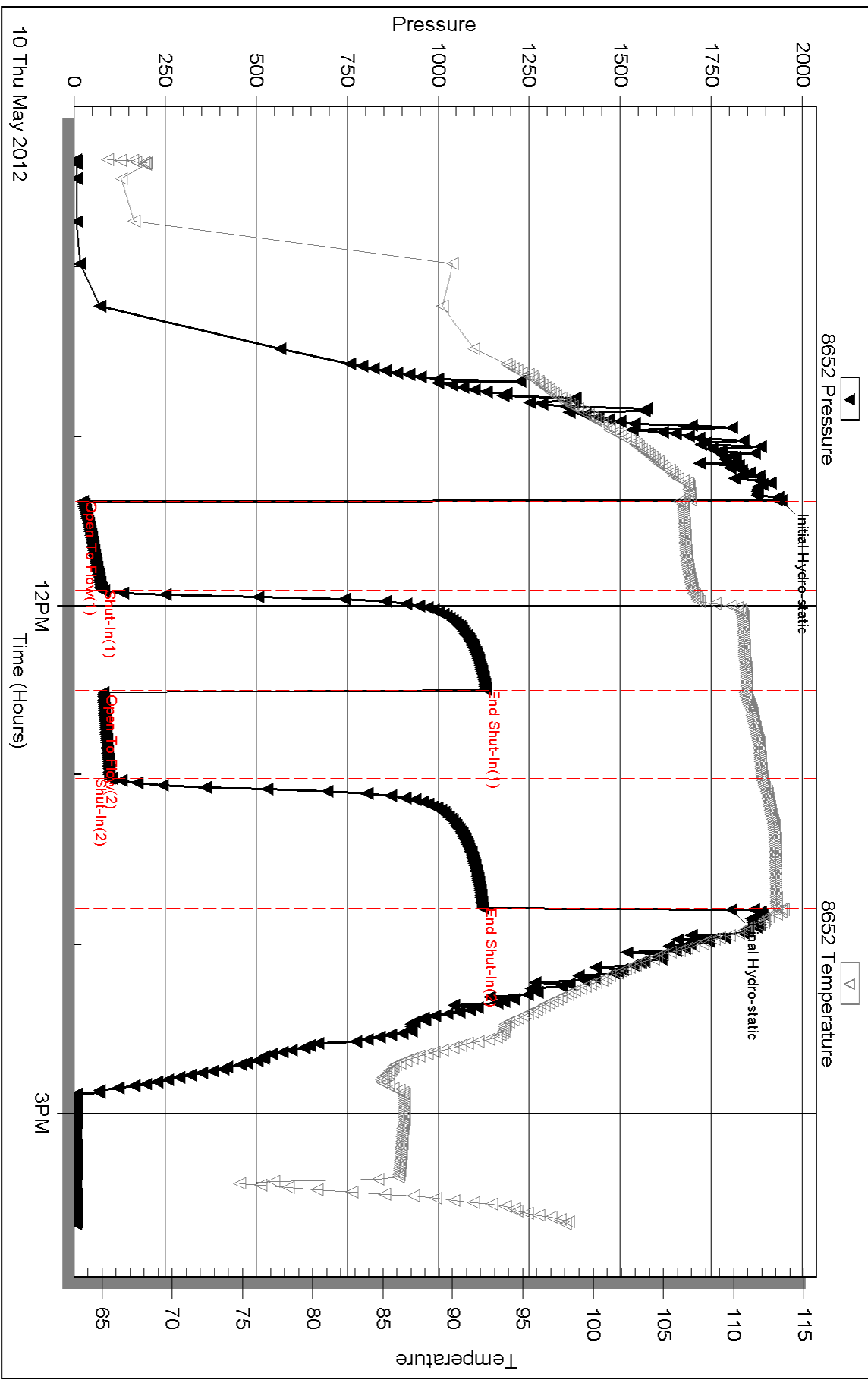
Laboratory Name:

Laboratory Location:

Recovery Comments: API is 38 @ 93f = 35

RW is .142 @ 93f = 36000

Pressure vs. Time

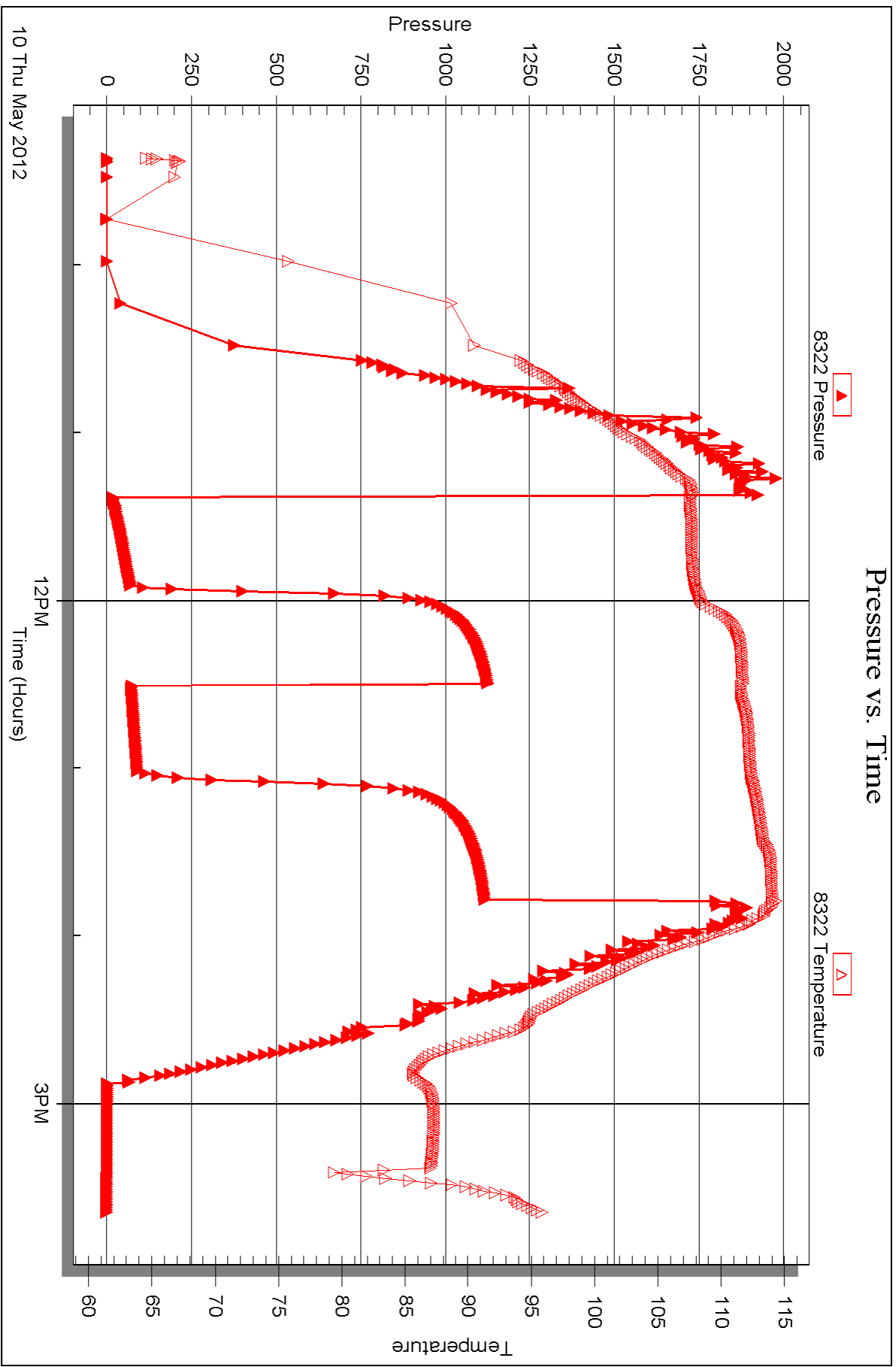


Serial #: 8322

Outside Pioneer Resources

Knopp #4

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Pioneer Resources**

80 Windmill Dr
Phillipsburg KS 67661

ATTN: Steve Murphy

Knopp #4

13-14s-32w Logan,KS

Start Date: 2012.05.11 @ 04:34:00

End Date: 2012.05.11 @ 10:02:54

Job Ticket #: 45878 DST #: 2

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

Printed: 2012.05.17 @ 15:35:35



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Pioneer Resources
80 Windmill Dr
Phillipsburg KS 67661
ATTN: Steve Murphy

13-14s-32w Logan,KS

Knopp #4

Job Ticket: 45878

DST#: 2

Test Start: 2012.05.11 @ 04:34:00

GENERAL INFORMATION:

Formation: **LKC "I"**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 06:21:25

Time Test Ended: 10:02:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 40

Interval: 4020.00 ft (KB) To 4052.00 ft (KB) (TVD)

Total Depth: 4052.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2821.00 ft (KB)

2816.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8652

Inside

Press @ Run Depth: 25.68 psig @ 4021.00 ft (KB)

Start Date: 2012.05.11

End Date:

2012.05.11

Start Time: 04:34:00

End Time:

10:02:54

Capacity: 8000.00 psig

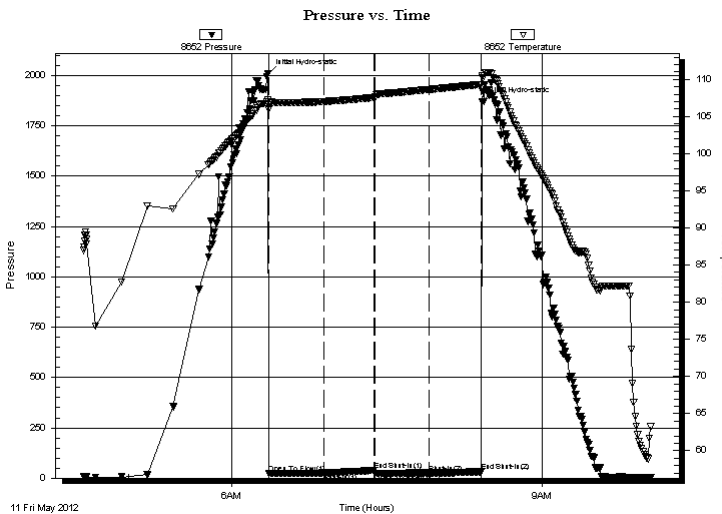
Last Calib.: 2012.05.11

Time On Btm: 2012.05.11 @ 06:21:10

Time Off Btm: 2012.05.11 @ 08:25:10

TEST COMMENT: IF- 1/4" Blow Died Back to Weak Surface Blow
IS- No Blow
FF- No Blow
FS- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2010.78	107.25	Initial Hydro-static
1	21.80	105.93	Open To Flow (1)
32	25.45	107.01	Shut-In(1)
62	38.75	107.57	End Shut-In(1)
62	25.02	107.63	Open To Flow (2)
93	25.68	108.63	Shut-In(2)
124	31.70	109.32	End Shut-In(2)
124	1868.79	110.53	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OCM 1%oil 99%m	0.02

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Pioneer Resources
80 Windmill Dr
Phillipsburg KS 67661
ATTN: Steve Murphy

13-14s-32w Logan,KS
Knopp #4
Job Ticket: 45878 **DST#: 2**
Test Start: 2012.05.11 @ 04:34:00

Tool Information

Drill Pipe:	Length: 3879.00 ft	Diameter: 3.80 inches	Volume: 54.41 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 18000.00 lb
		Total Volume: 55.01 bbl		Tool Chased ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4020.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	32.00 ft			
Tool Length:	59.00 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			3994.00	
Shut In Tool	5.00			3999.00	
Hydraulic tool	5.00			4004.00	
Jars	5.00			4009.00	
Safety Joint	2.00			4011.00	
Packer	5.00			4016.00	27.00 Bottom Of Top Packer
Packer	4.00			4020.00	
Stubb	1.00			4021.00	
Recorder	0.00	8652	Inside	4021.00	
Recorder	0.00	8322	Outside	4021.00	
Perforations	28.00			4049.00	
Bullnose	3.00			4052.00	32.00 Bottom Packers & Anchor

Total Tool Length: 59.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 45878

DST#: 2

ATTN: Steve Murphy

Test Start: 2012.05.11 @ 04:34:00

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.24 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	OCM 1%oil 99%m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

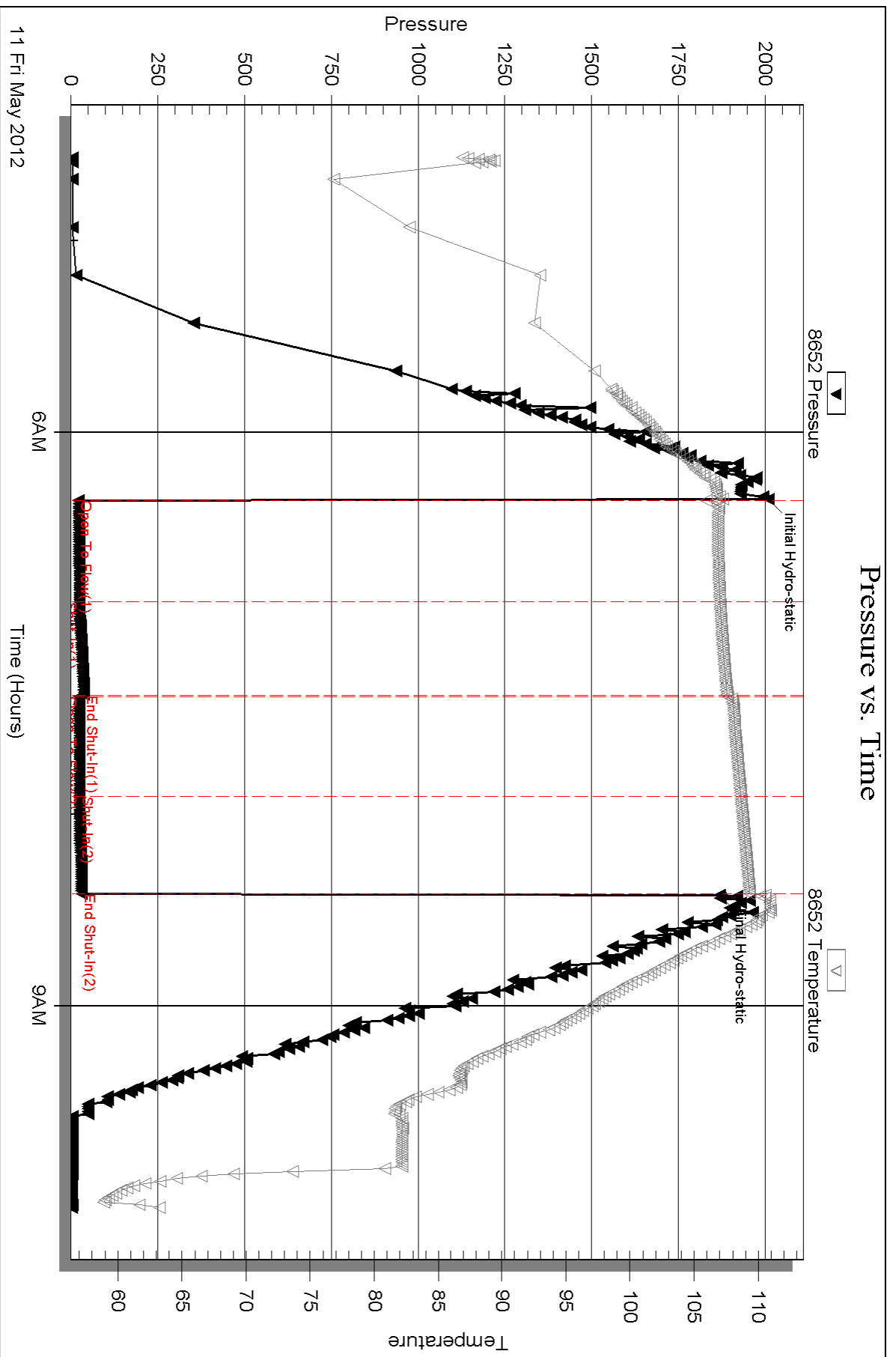
Num Gas Bombs: 0

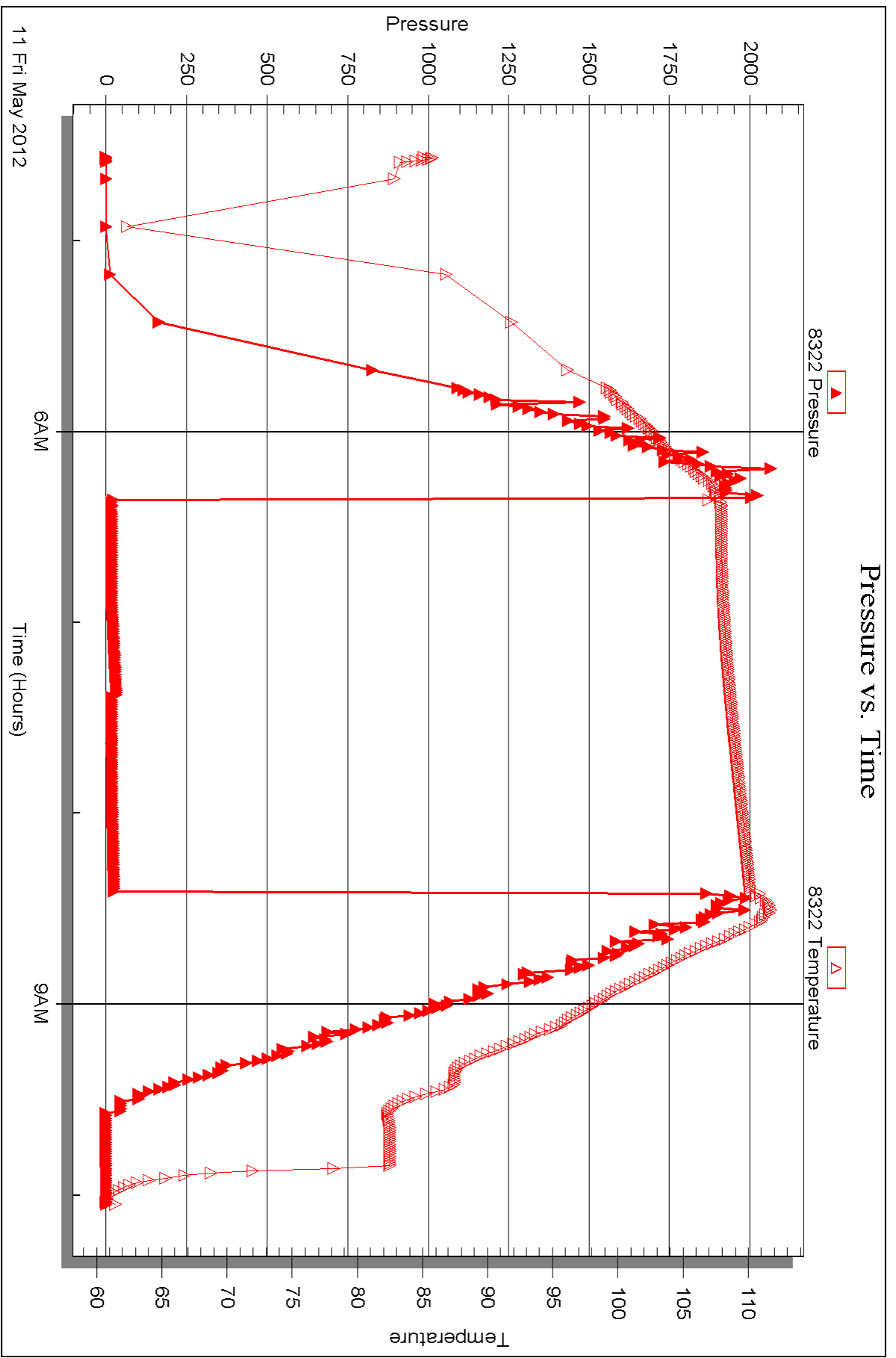
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Pioneer Resources**

80 Windmill Dr
Phillipsburg KS 67661

ATTN: Steve Murphy

Knopp #4

13-14s-32w Logan,KS

Start Date: 2012.05.11 @ 19:04:00

End Date: 2012.05.12 @ 00:36:54

Job Ticket #: 45879 DST #: 3

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

Printed: 2012.05.17 @ 15:34:23



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Pioneer Resources
 80 Windmill Dr
 Phillipsburg KS 67661
 ATTN: Steve Murphy

13-14s-32w Logan,KS
Knopp #4
 Job Ticket: 45879 **DST#: 3**
 Test Start: 2012.05.11 @ 19:04:00

GENERAL INFORMATION:

Formation: **LKC " K "**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 20:40:40
 Time Test Ended: 00:36:54
 Interval: **4084.00 ft (KB) To 4110.00 ft (KB) (TVD)**
 Total Depth: 4110.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Will MacLean
 Unit No: 40
 Reference Elevations: 2821.00 ft (KB)
 2816.00 ft (CF)
 KB to GR/CF: 5.00 ft

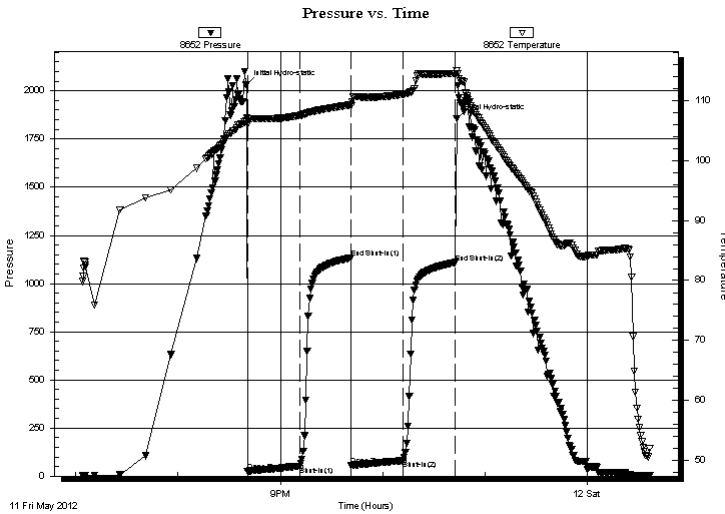
Serial #: 8652

Inside

Press @ Run Depth: 79.73 psig @ 4087.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.05.11 End Date: 2012.05.12 Last Calib.: 2012.05.12
 Start Time: 19:04:00 End Time: 00:36:54 Time On Btm: 2012.05.11 @ 20:40:25
 Time Off Btm: 2012.05.11 @ 22:43:25

TEST COMMENT: IF- Weak Surface Blow Built to 1"
 IS- No Blow
 FF- Weak Surface Blow
 FS- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2031.31	107.09	Initial Hydro-static
1	24.73	106.08	Open To Flow (1)
31	52.24	107.51	Shut-In(1)
61	1132.12	109.30	End Shut-In(1)
62	56.77	109.14	Open To Flow (2)
92	79.73	111.01	Shut-In(2)
123	1109.12	114.51	End Shut-In(2)
123	1855.46	115.03	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
61.00	WGM 1%w 3%g 96%m Skim of Oil on	0.30
61.00	OGCM 2%oil 3%g 95%m	0.30
1.00	Oil	0.00
0.00	63' of GIP	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

Pioneer Resources
80 Windmill Dr
Phillipsburg KS 67661
ATTN: Steve Murphy

13-14s-32w Logan,KS
Knopp #4
Job Ticket: 45879 **DST#: 3**
Test Start: 2012.05.11 @ 19:04:00

Tool Information

Drill Pipe:	Length: 3944.00 ft	Diameter: 3.80 inches	Volume: 55.32 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	24000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	4000.00 lb
			<u>Total Volume: 55.92 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial	54000.00 lb
Depth to Top Packer:	4084.00 ft			Final	54000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	26.00 ft				
Tool Length:	53.00 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			4058.00	
Shut In Tool	5.00			4063.00	
Hydraulic tool	5.00			4068.00	
Jars	5.00			4073.00	
Safety Joint	2.00			4075.00	
Packer	5.00			4080.00	27.00 Bottom Of Top Packer
Packer	4.00			4084.00	
Stubb	1.00			4085.00	
Perforations	2.00			4087.00	
Recorder	0.00	8652	Inside	4087.00	
Recorder	0.00	8322	Outside	4087.00	
Perforations	20.00			4107.00	
Bullnose	3.00			4110.00	26.00 Bottom Packers & Anchor

Total Tool Length: 53.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 45879

DST#: 3

ATTN: Steve Murphy

Test Start: 2012.05.11 @ 19:04:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.12 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
61.00	WGM 1%w 3%g 96%m Skim of Oil on Top	0.300
61.00	OGCM 2%oil 3%g 95%m	0.300
1.00	Oil	0.005
0.00	63' of GIP	0.000

Total Length: 123.00 ft

Total Volume: 0.605 bbl

Num Fluid Samples: 0

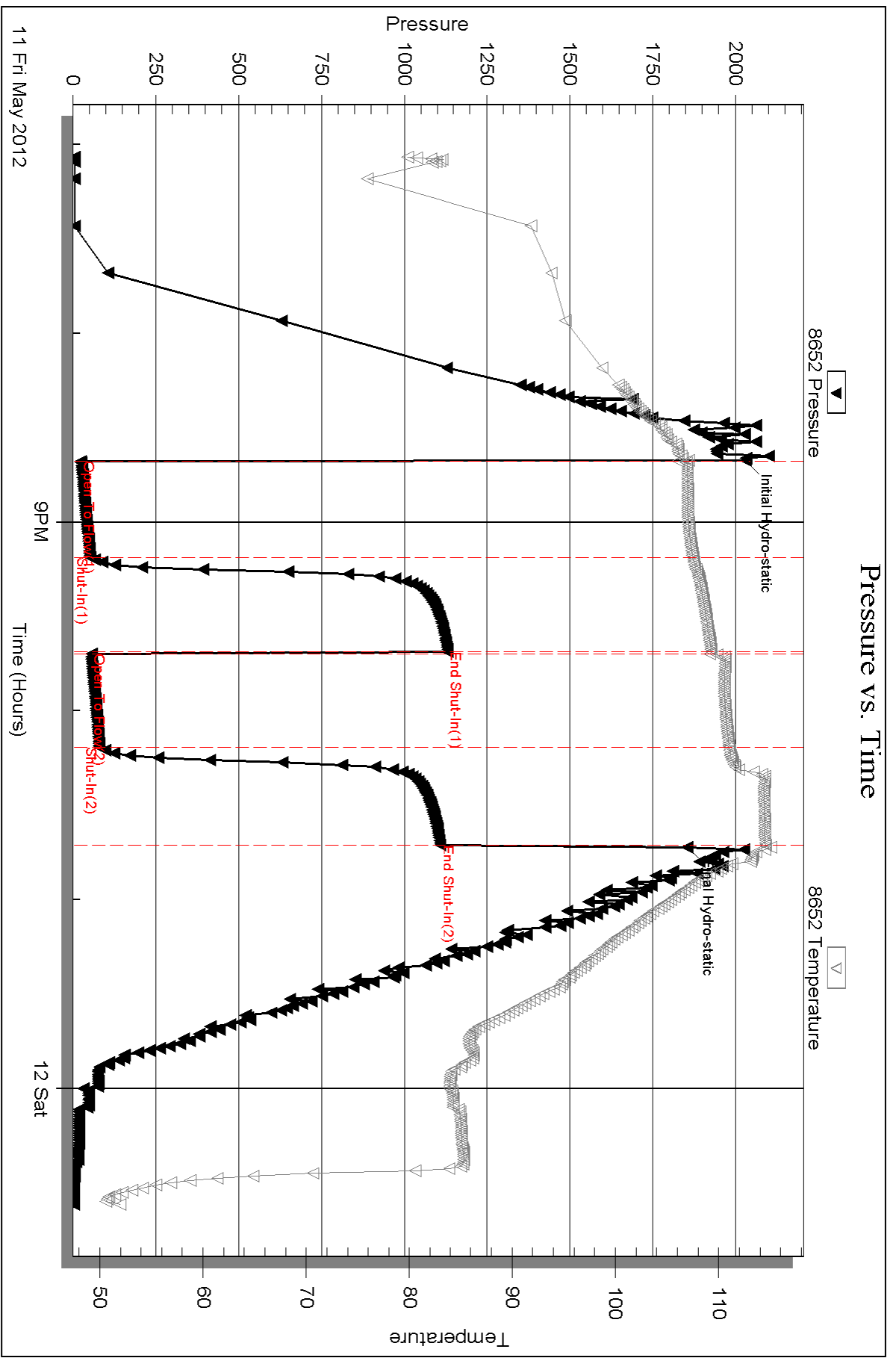
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

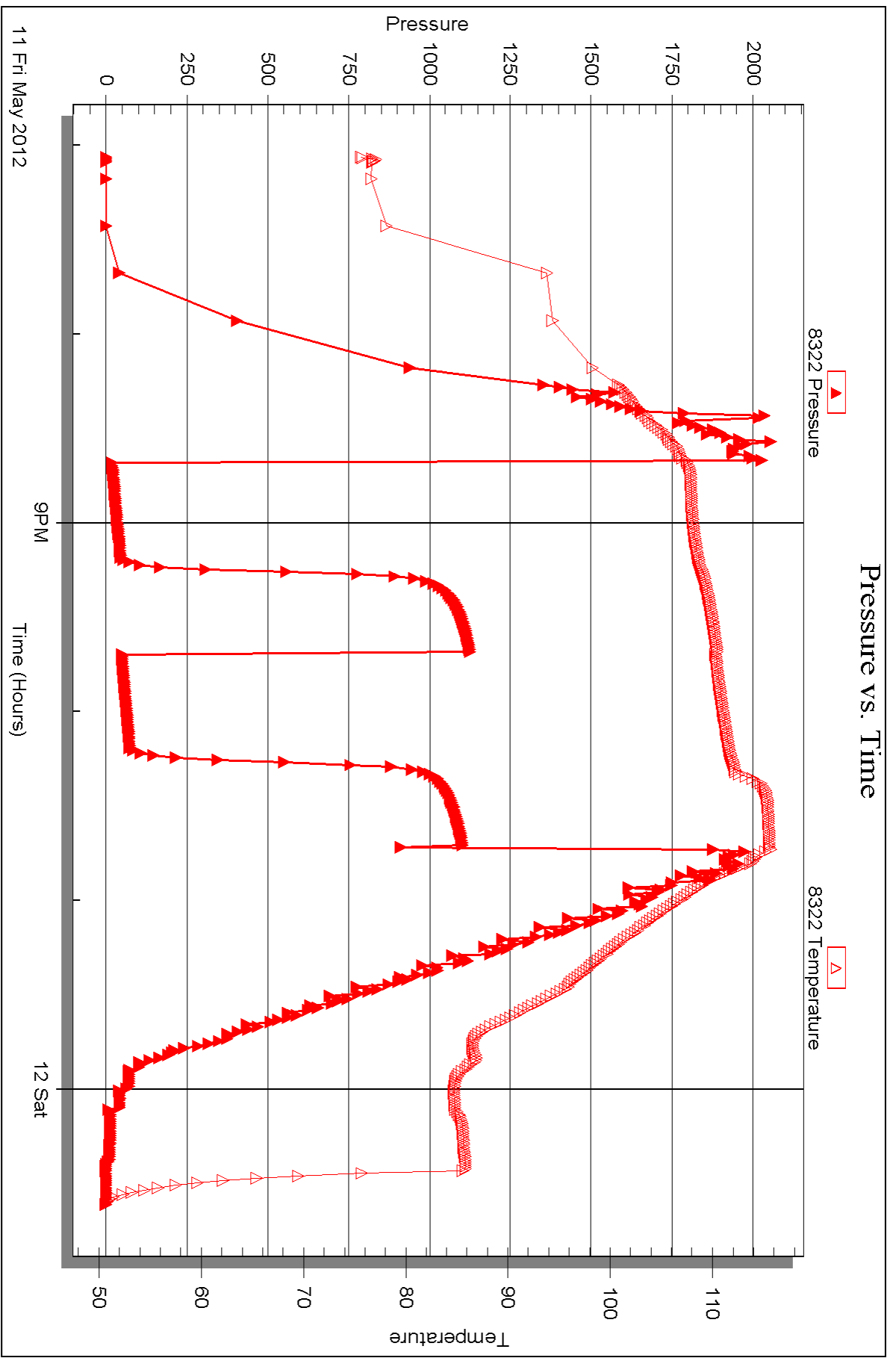


Serial #: 8322

Outside Pioneer Resources

Knopp #4

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Pioneer Resources**

80 Windmill Dr
Phillipsburg KS 67661

ATTN: Steve Murphy

Knopp #4

13-14s-32w Logan,KS

Start Date: 2012.05.12 @ 17:10:00

End Date: 2012.05.13 @ 00:30:39

Job Ticket #: 45880 DST #: 4

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

Printed: 2012.05.17 @ 15:32:11



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Pioneer Resources
80 Windmill Dr
Phillipsburg KS 67661
ATTN: Steve Murphy

13-14s-32w Logan,KS

Knopp #4

Job Ticket: 45880

DST#: 4

Test Start: 2012.05.12 @ 17:10:00

GENERAL INFORMATION:

Formation: **Altamont / Pawnee**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 18:57:40

Time Test Ended: 00:30:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 40

Interval: 4252.00 ft (KB) To 4312.00 ft (KB) (TVD)

Total Depth: 4312.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2821.00 ft (KB)

2816.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8652

Inside

Press @ Run Depth: 228.17 psig @ 4253.00 ft (KB)

Start Date: 2012.05.12

End Date:

2012.05.13

Start Time: 17:10:00

End Time:

00:30:39

Capacity: 8000.00 psig

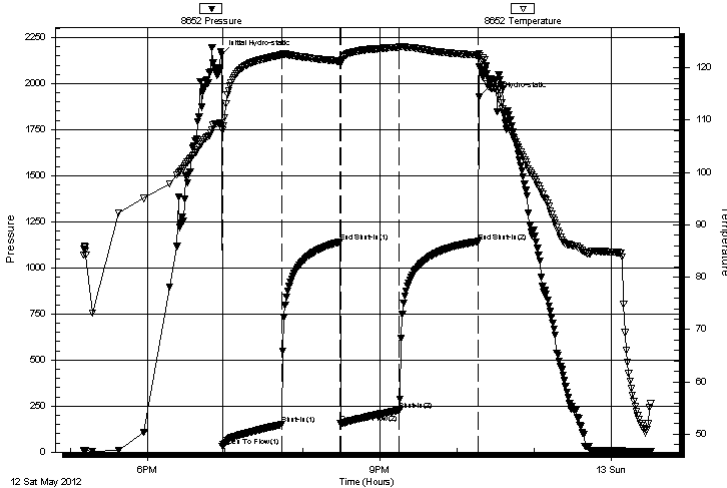
Last Calib.: 2012.05.13

Time On Btm: 2012.05.12 @ 18:57:25

Time Off Btm: 2012.05.12 @ 22:17:24

TEST COMMENT: IF- Surface Blow Built to BOB in 17 1/2 min
IS- No Blow
FF- Surface Blow Built to BOB in 35 1/2 min
FS- No Blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2157.73	109.40	Initial Hydro-static
1	31.83	108.04	Open To Flow (1)
47	149.62	122.44	Shut-In(1)
92	1140.07	121.25	End Shut-In(1)
93	154.40	120.91	Open To Flow (2)
138	228.17	123.94	Shut-In(2)
200	1142.82	122.41	End Shut-In(2)
200	1926.85	122.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
123.00	MCW 5%m 95%w	0.60
252.00	MCW 8%m 92%w	3.53
78.00	MCW 33%m 67%w	1.09

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Pioneer Resources
 80 Windmill Dr
 Phillipsburg KS 67661
 ATTN: Steve Murphy

13-14s-32w Logan, KS
Knopp #4
 Job Ticket: 45880 **DST#: 4**
 Test Start: 2012.05.12 @ 17:10:00

GENERAL INFORMATION:

Formation: **Altamont / Pawnee**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 18:57:40

Time Test Ended: 00:30:39

Interval: 4252.00 ft (KB) To 4312.00 ft (KB) (TVD)

Total Depth: 4312.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 40

Reference Elevations: 2821.00 ft (KB)

2816.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8322 Outside

Press @ Run Depth: psig @ 4253.00 ft (KB)

Start Date: 2012.05.12 End Date: 2012.05.13

Capacity: 8000.00 psig

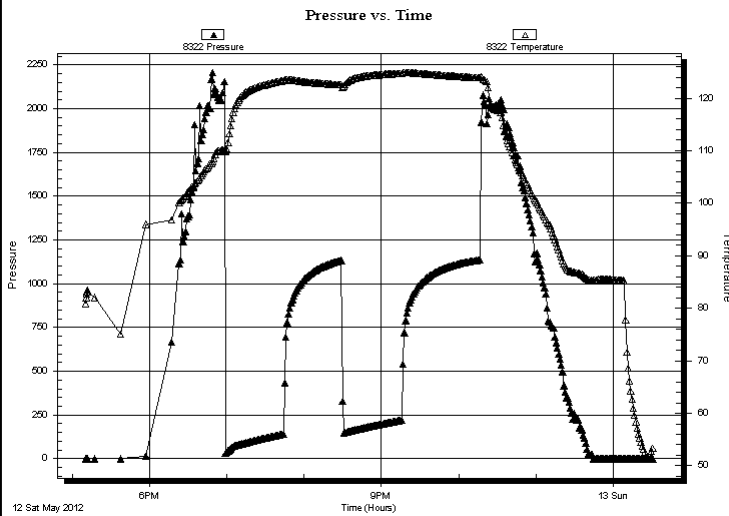
Last Calib.: 2012.05.13

Start Time: 17:10:05 End Time: 00:30:59

Time On Btm:

Time Off Btm:

TEST COMMENT: IF- Surface Blow Built to BOB in 17 1/2 min
 IS- No Blow
 FF- Surface Blow Built to BOB in 35 1/2 min
 FS- No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
123.00	MCW 5% <i>m</i> 95% <i>w</i>	0.60
252.00	MCW 8% <i>m</i> 92% <i>w</i>	3.53
78.00	MCW 33% <i>m</i> 67% <i>w</i>	1.09

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Pioneer Resources
80 Windmill Dr
Phillipsburg KS 67661
ATTN: Steve Murphy

13-14s-32w Logan,KS
Knopp #4
Job Ticket: 45880 **DST#: 4**
Test Start: 2012.05.12 @ 17:10:00

Tool Information

Drill Pipe:	Length: 4128.00 ft	Diameter: 3.80 inches	Volume: 57.90 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 12000.00 lb
			<u>Total Volume: 58.50 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	4252.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	87.00 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			4226.00	
Shut In Tool	5.00			4231.00	
Hydraulic tool	5.00			4236.00	
Jars	5.00			4241.00	
Safety Joint	2.00			4243.00	
Packer	5.00			4248.00	27.00 Bottom Of Top Packer
Packer	4.00			4252.00	
Stubb	1.00			4253.00	
Recorder	0.00	8652	Inside	4253.00	
Recorder	0.00	8322	Outside	4253.00	
Perforations	20.00			4273.00	
Change Over Sub	1.00			4274.00	
Drill Pipe	31.00			4305.00	
Change Over Sub	1.00			4306.00	
Perforations	3.00			4309.00	
Bullnose	3.00			4312.00	60.00 Bottom Packers & Anchor
Total Tool Length:	87.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 45880

DST#: 4

ATTN: Steve Murphy

Test Start: 2012.05.12 @ 17:10:00

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:

24000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.30 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2900.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
123.00	MCW 5%m 95%w	0.605
252.00	MCW 8%m 92%w	3.535
78.00	MCW 33%m 67%w	1.094

Total Length: 453.00 ft Total Volume: 5.234 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW is .346 @ 56f = 24000

Serial #: 8652

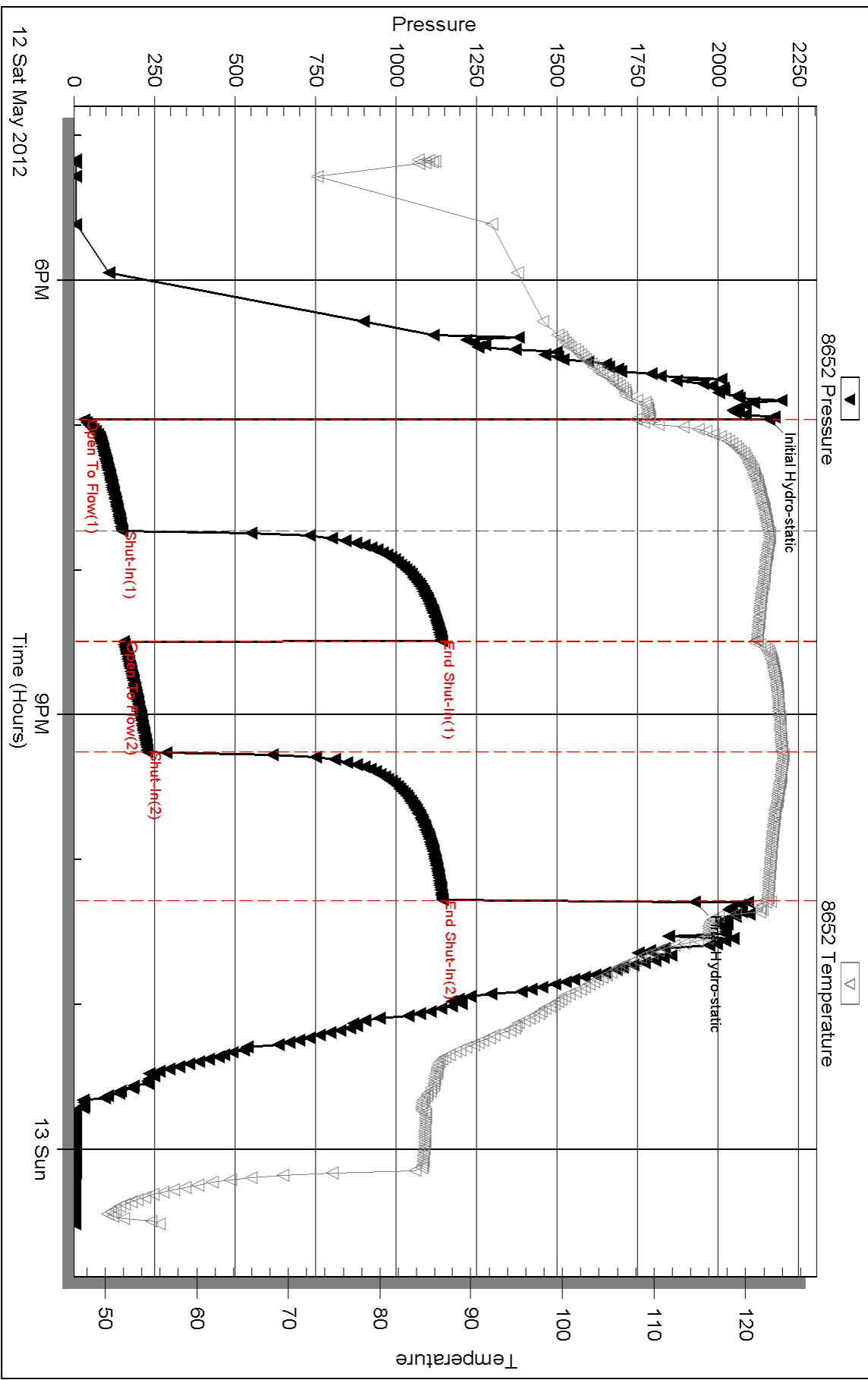
Inside

Pioneer Resources

Knopp #4

DST Test Number: 4

Pressure vs. Time

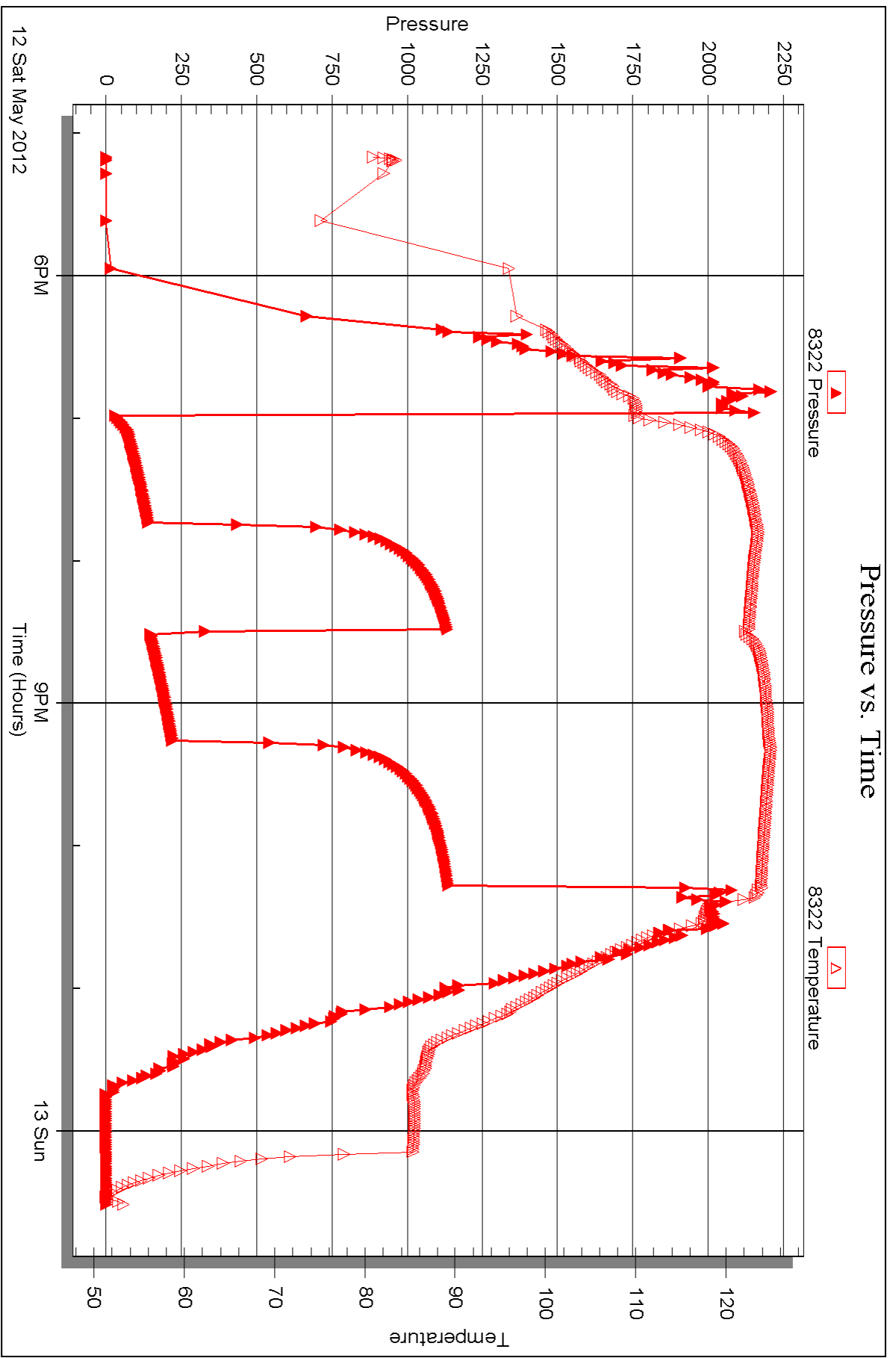


Serial #: 8322

Outside Pioneer Resources

Knopp #4

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Pioneer Resources**

80 Windmill Dr
Phillipsburg KS 67661

ATTN: Steve Murphy

Knopp #4

13-14s-32w Logan,KS

Start Date: 2012.05.13 @ 08:08:00

End Date: 2012.05.13 @ 13:39:24

Job Ticket #: 45881 DST #: 5

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

Printed: 2012.05.17 @ 15:31:13



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Pioneer Resources
 80 Windmill Dr
 Phillipsburg KS 67661
 ATTN: Steve Murphy

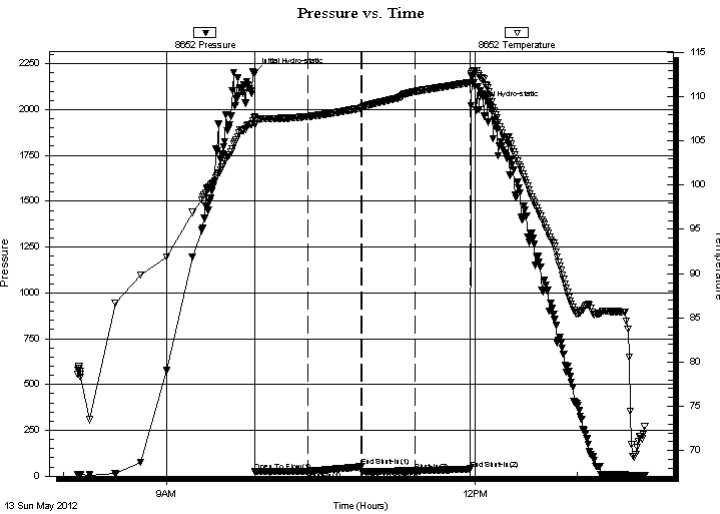
13-14s-32w Logan,KS
Knopp #4
 Job Ticket: 45881 **DST#: 5**
 Test Start: 2012.05.13 @ 08:08:00

GENERAL INFORMATION:

Formation: **Myric Station**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 09:51:40
 Time Test Ended: 13:39:24
 Interval: **4320.00 ft (KB) To 4346.00 ft (KB) (TVD)**
 Total Depth: 4346.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Will MacLean
 Unit No: 40
 Reference Elevations: 2821.00 ft (KB)
 2816.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8652 Inside
 Press @ Run Depth: 28.42 psig @ 4323.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.05.13 End Date: 2012.05.13 Last Calib.: 2012.05.13
 Start Time: 08:08:00 End Time: 13:39:24 Time On Btm: 2012.05.13 @ 09:51:25
 Time Off Btm: 2012.05.13 @ 11:57:40

TEST COMMENT: IF- Weak Surface Blow
 IS- No Blow
 FF- No Blow
 FS- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2200.84	107.70	Initial Hydro-static
1	24.09	106.88	Open To Flow (1)
32	27.08	107.76	Shut-In(1)
62	51.29	108.71	End Shut-In(1)
63	26.91	108.78	Open To Flow (2)
94	28.42	110.58	Shut-In(2)
126	39.06	111.61	End Shut-In(2)
127	2021.61	112.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OCM 2%oil 98% m	0.02

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Pioneer Resources
 80 Windmill Dr
 Phillipsburg KS 67661
 ATTN: Steve Murphy

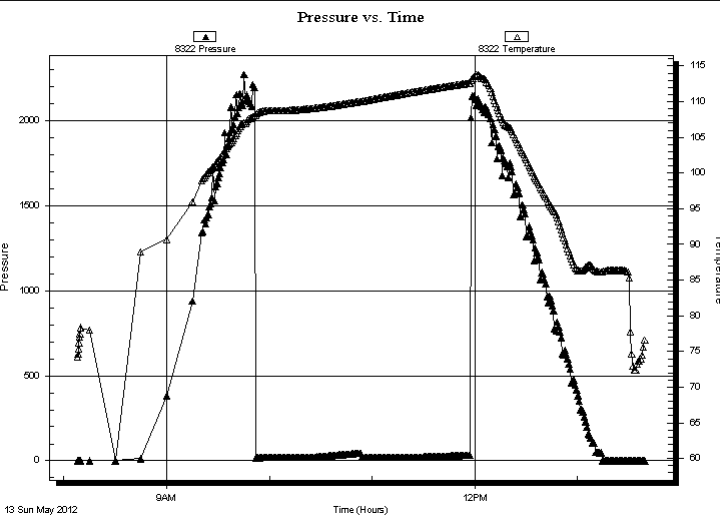
13-14s-32w Logan,KS
Knopp #4
 Job Ticket: 45881 **DST#: 5**
 Test Start: 2012.05.13 @ 08:08:00

GENERAL INFORMATION:

Formation: **Myric Station**
 Deviated: No Whipstock: 0.00 ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 09:51:40 Tester: Will MacLean
 Time Test Ended: 13:39:24 Unit No: 40
Interval: 4320.00 ft (KB) To 4346.00 ft (KB) (TVD) Reference Elevations: 2821.00 ft (KB)
 Total Depth: 4346.00 ft (KB) (TVD) 2816.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 5.00 ft

Serial #: 8322 Outside
 Press @ Run Depth: psig @ 4323.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.05.13 End Date: 2012.05.13 Last Calib.: 2012.05.13
 Start Time: 08:08:05 End Time: 13:39:44 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF- Weak Surface Blow
 IS- No Blow
 FF- No Blow
 FS- No Blow



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

Recovery		
Length (ft)	Description	Volume (bbl)
5.00	OCM 2%oil 98% m	0.02

* Recovery from multiple tests

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 45881

DST#: 5

ATTN: Steve Murphy

Test Start: 2012.05.13 @ 08:08:00

Tool Information

Drill Pipe:	Length: 4191.00 ft	Diameter: 3.80 inches	Volume: 58.79 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	24000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	6000.00 lb
			<u>Total Volume: 59.39 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial	54000.00 lb
Depth to Top Packer:	4320.00 ft			Final	54000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	26.00 ft				
Tool Length:	53.00 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			4294.00	
Shut In Tool	5.00			4299.00	
Hydraulic tool	5.00			4304.00	
Jars	5.00			4309.00	
Safety Joint	2.00			4311.00	
Packer	5.00			4316.00	27.00 Bottom Of Top Packer
Packer	4.00			4320.00	
Stubb	1.00			4321.00	
Perforations	2.00			4323.00	
Recorder	0.00	8652	Inside	4323.00	
Recorder	0.00	8322	Outside	4323.00	
Perforations	20.00			4343.00	
Bullnose	3.00			4346.00	26.00 Bottom Packers & Anchor

Total Tool Length: 53.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 45881

DST#: 5

ATTN: Steve Murphy

Test Start: 2012.05.13 @ 08:08:00

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: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.31 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2900.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	OCM 2%oil 98%m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

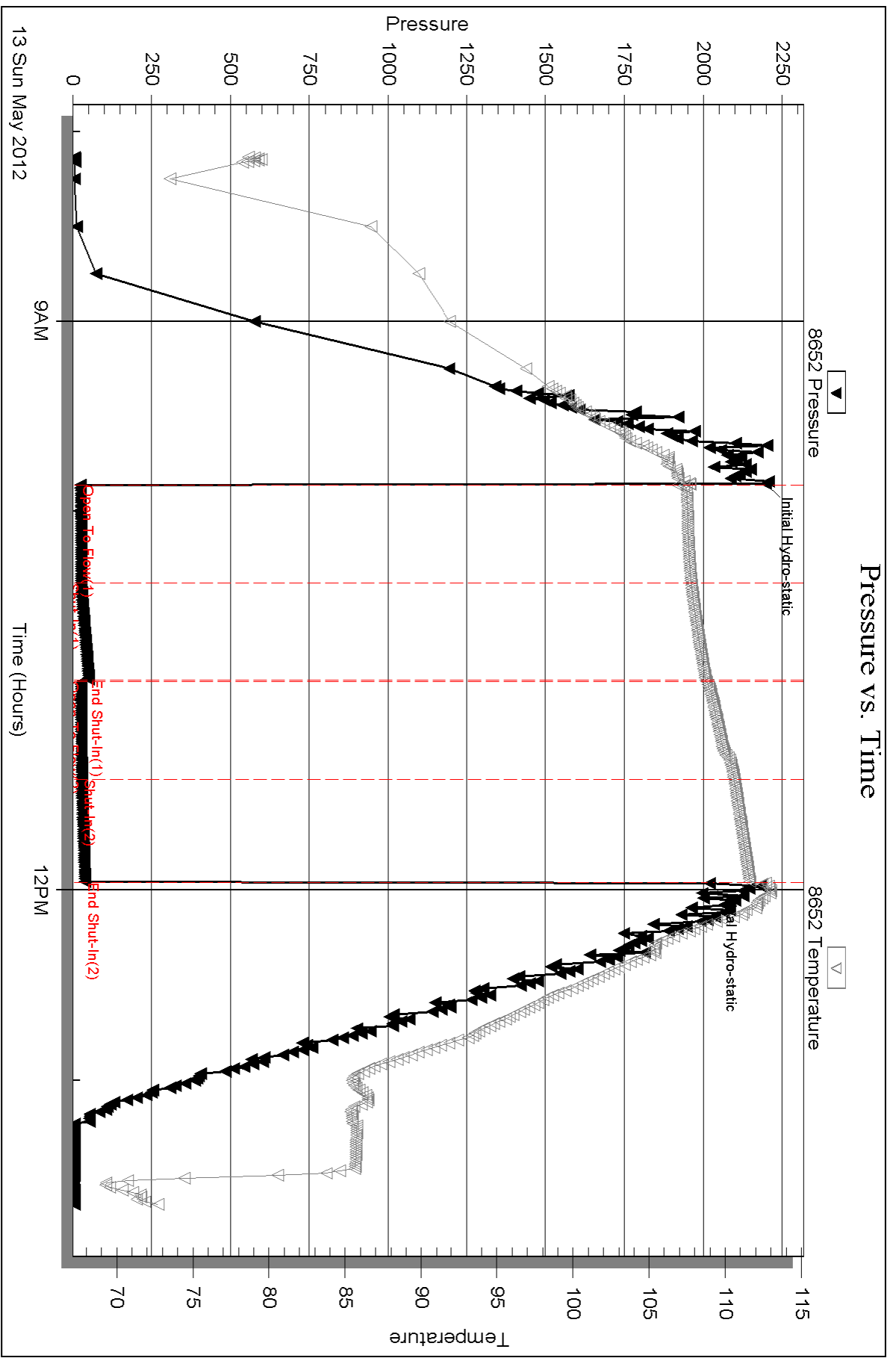
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

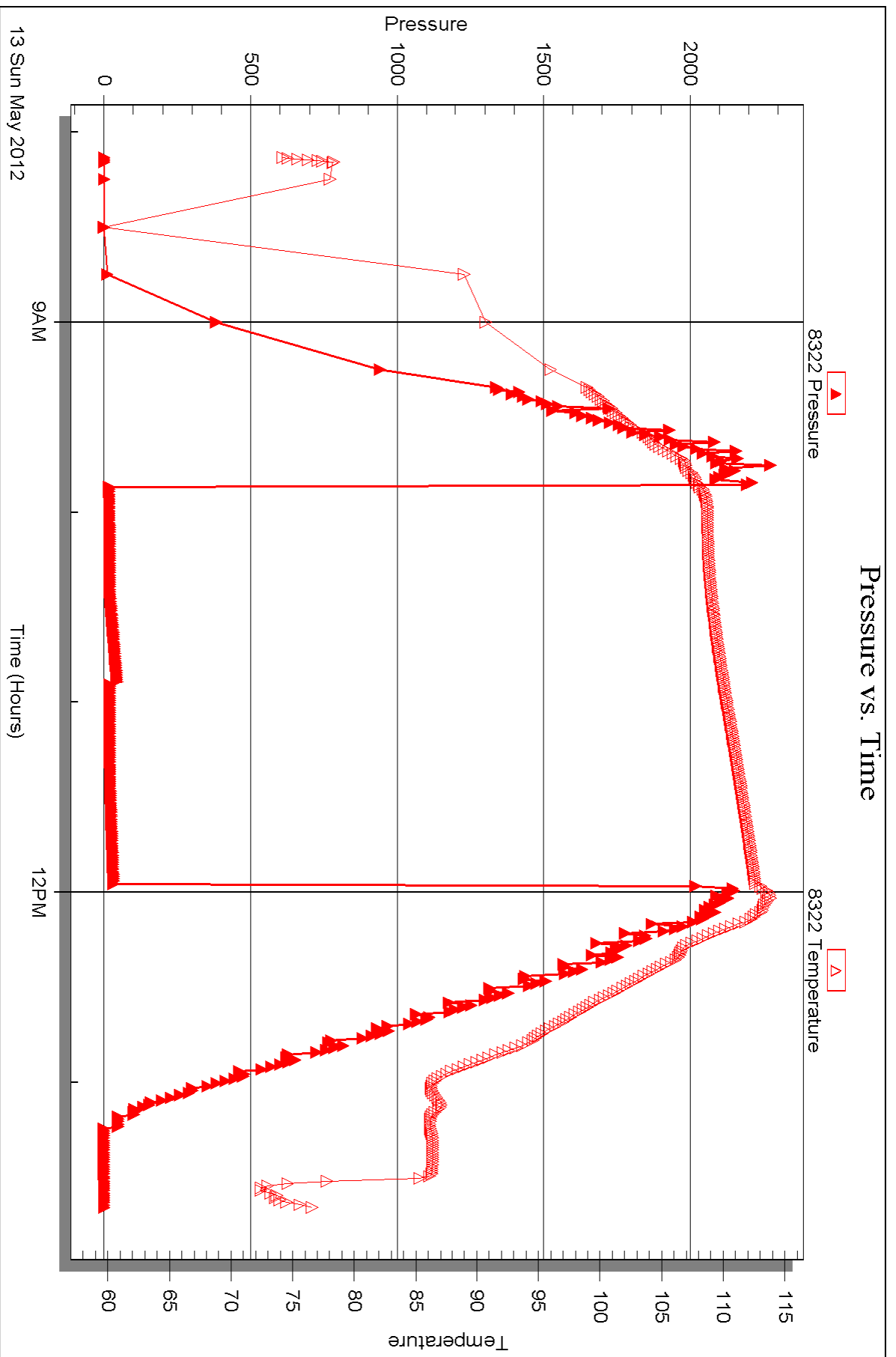


Serial #: 8322

Outside Pioneer Resources

Knopp #4

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 45881

Printed: 2012.05.17 @ 15:31:16



DRILL STEM TEST REPORT

Prepared For: **Pioneer Resources**

80 Windmill Dr
Phillipsburg KS 67661

ATTN: Steve Murphy

Knopp #4

13-14s-32w Logan,KS

Start Date: 2012.05.13 @ 20:28:00

End Date: 2012.05.14 @ 01:00:54

Job Ticket #: 45882 DST #: 6

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

Printed: 2012.05.17 @ 15:30:24



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Pioneer Resources
80 Windmill Dr
Phillipsburg KS 67661
ATTN: Steve Murphy

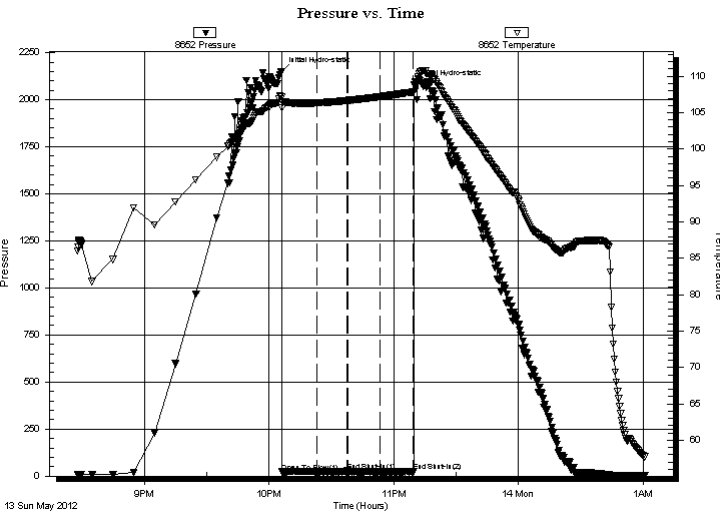
13-14s-32w Logan,KS
Knopp #4
Job Ticket: 45882 **DST#: 6**
Test Start: 2012.05.13 @ 20:28:00

GENERAL INFORMATION:

Formation: **Ft. Scott**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 22:06:25
 Time Test Ended: 01:00:54
 Interval: **4346.00 ft (KB) To 4376.00 ft (KB) (TVD)**
 Total Depth: 4376.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Will MacLean
 Unit No: 40
 Reference Elevations: 2821.00 ft (KB)
 2816.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8652 Inside
 Press @ Run Depth: 23.60 psig @ 4348.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.05.13 End Date: 2012.05.14 Last Calib.: 2012.05.14
 Start Time: 20:28:00 End Time: 01:00:54 Time On Btm: 2012.05.13 @ 22:06:10
 Time Off Btm: 2012.05.13 @ 23:09:55

TEST COMMENT: IF- Weak Surface Blow Died in 4 min Flushed Tool in Second Open
 IS- No Blow
 FF- No Blow
 FS- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2150.33	107.11	Initial Hydro-static
1	22.39	105.65	Open To Flow (1)
17	23.60	106.34	Shut-In(1)
32	27.17	106.67	End Shut-In(1)
32	23.97	106.67	Open To Flow (2)
47	23.60	107.19	Shut-In(2)
64	26.10	107.84	End Shut-In(2)
64	2082.34	108.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	100% mud with Few Oil Spots	0.01

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Pioneer Resources
80 Windmill Dr
Phillipsburg KS 67661
ATTN: Steve Murphy

13-14s-32w Logan,KS
Knopp #4
Job Ticket: 45882 **DST#: 6**
Test Start: 2012.05.13 @ 20:28:00

Tool Information

Drill Pipe:	Length: 4222.00 ft	Diameter: 3.80 inches	Volume: 59.22 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	28000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	16000.00 lb
			<u>Total Volume: 59.82 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	4346.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	30.00 ft				
Tool Length:	57.00 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			4320.00	
Shut In Tool	5.00			4325.00	
Hydraulic tool	5.00			4330.00	
Jars	5.00			4335.00	
Safety Joint	2.00			4337.00	
Packer	5.00			4342.00	27.00 Bottom Of Top Packer
Packer	4.00			4346.00	
Stubb	1.00			4347.00	
Perforations	1.00			4348.00	
Recorder	0.00	8652	Inside	4348.00	
Recorder	0.00	8322	Outside	4348.00	
Perforations	25.00			4373.00	
Bullnose	3.00			4376.00	30.00 Bottom Packers & Anchor

Total Tool Length: 57.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 45882

DST#: 6

ATTN: Steve Murphy

Test Start: 2012.05.13 @ 20:28:00

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: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.94 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	100% mud with Few Oil Spots	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

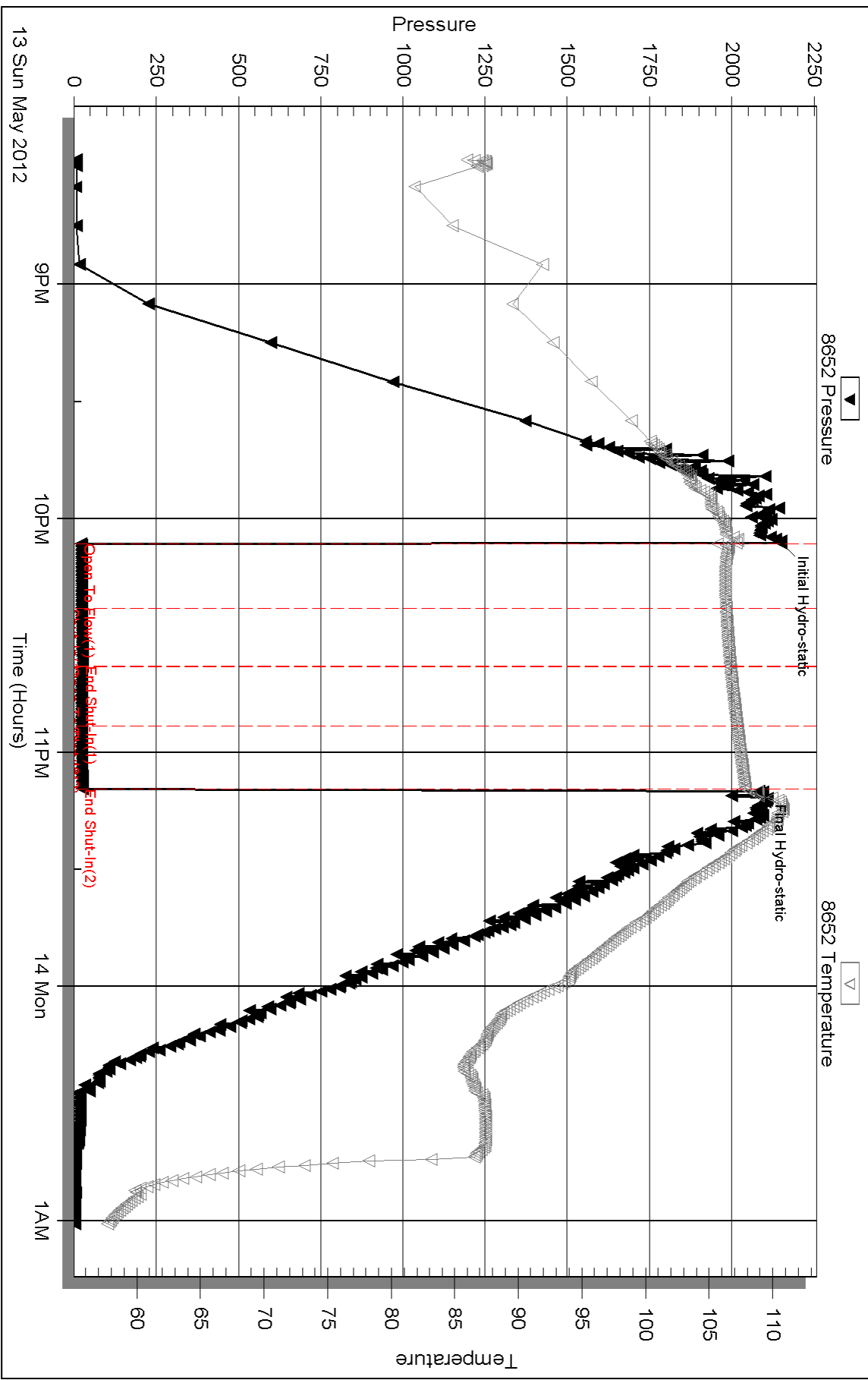
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

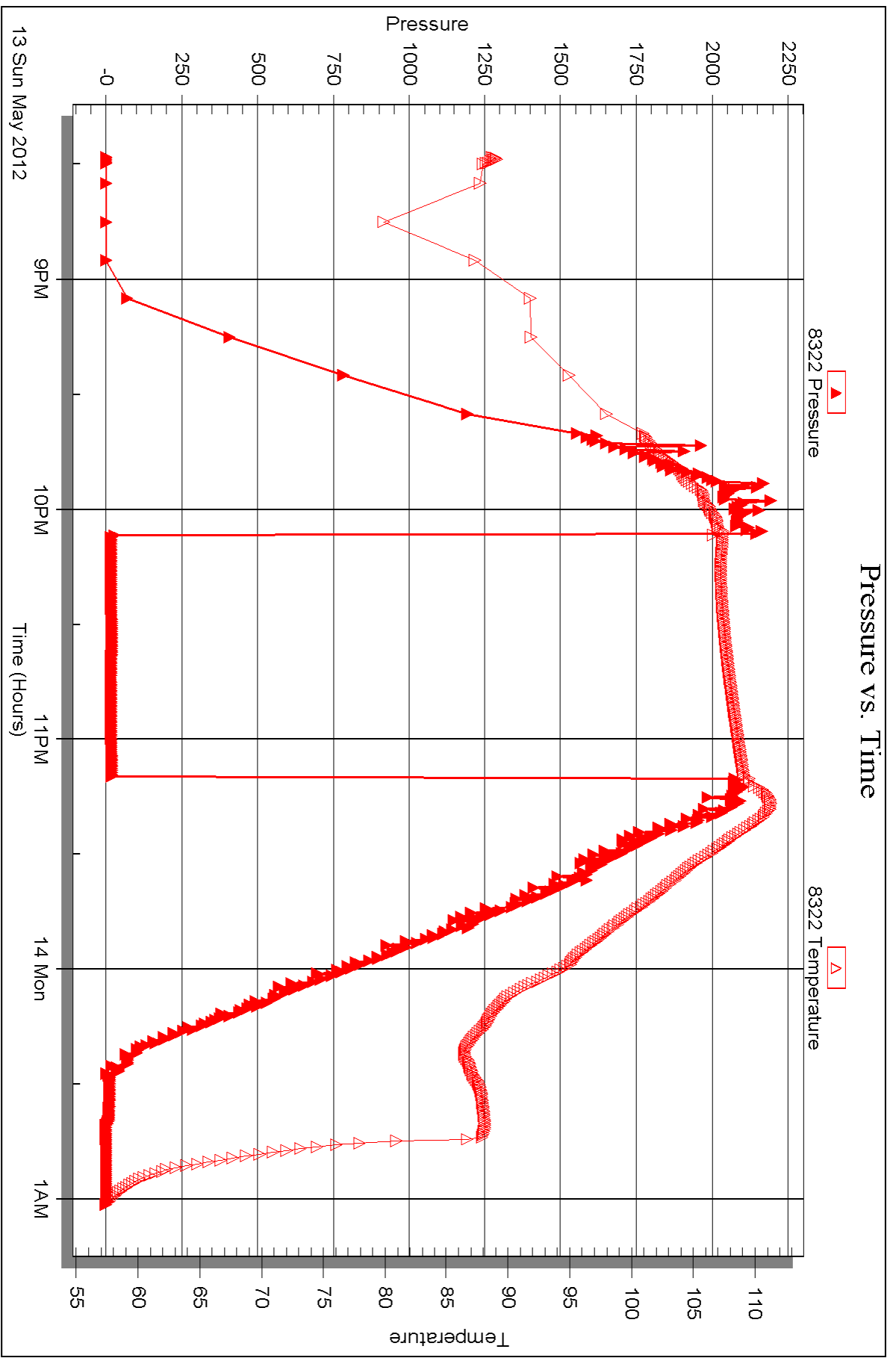


Serial #: 8322

Outside Pioneer Resources

Knopp #4

DST Test Number: 6





DRILL STEM TEST REPORT

Prepared For: **Pioneer Resources**

80 Windmill Dr
Phillipsburg KS 67661

ATTN: Steve Murphy

Knopp #4

13-14s-32w Logan,KS

Start Date: 2012.05.14 @ 07:56:00

End Date: 2012.05.14 @ 13:31:39

Job Ticket #: 45883 DST #: 7

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

Printed: 2012.05.17 @ 15:25:25



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Pioneer Resources
 80 Windmill Dr
 Phillipsburg KS 67661
 ATTN: Steve Murphy

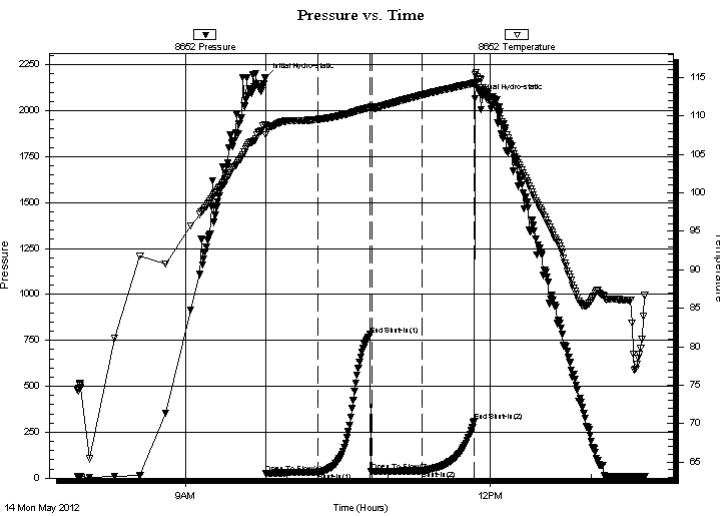
13-14s-32w Logan,KS
Knopp #4
 Job Ticket: 45883 **DST#: 7**
 Test Start: 2012.05.14 @ 07:56:00

GENERAL INFORMATION:

Formation: **Cherokee Lime**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 09:47:25
 Time Test Ended: 13:31:39
 Interval: **4382.00 ft (KB) To 4406.00 ft (KB) (TVD)**
 Total Depth: 4406.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Will MacLean
 Unit No: 40
 Reference Elevations: 2821.00 ft (KB)
 2816.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8652 Inside
 Press @ Run Depth: 40.38 psig @ 4383.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.05.14 End Date: 2012.05.14 Last Calib.: 2012.05.14
 Start Time: 07:56:00 End Time: 13:31:39 Time On Btm: 2012.05.14 @ 09:47:10
 Time Off Btm: 2012.05.14 @ 11:51:10

TEST COMMENT: IF- Weak Surface Blow Built to 3/4
 IS- No Blow
 FF- No Blow
 FS- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2177.96	108.89	Initial Hydro-static
1	26.02	107.57	Open To Flow (1)
31	32.84	109.53	Shut-In(1)
62	780.76	111.07	End Shut-In(1)
63	36.22	111.02	Open To Flow (2)
93	40.38	112.70	Shut-In(2)
124	308.86	114.26	End Shut-In(2)
124	2065.15	115.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
8.00	100% m with Oil Spots	0.04

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 45883

DST#: 7

ATTN: Steve Murphy

Test Start: 2012.05.14 @ 07:56:00

Tool Information

Drill Pipe:	Length: 4254.00 ft	Diameter: 3.80 inches	Volume: 59.67 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 12000.00 lb
			<u>Total Volume: 60.27 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4382.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	51.00 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			4356.00	
Shut In Tool	5.00			4361.00	
Hydraulic tool	5.00			4366.00	
Jars	5.00			4371.00	
Safety Joint	2.00			4373.00	
Packer	5.00			4378.00	27.00 Bottom Of Top Packer
Packer	4.00			4382.00	
Stubb	1.00			4383.00	
Recorder	0.00	8652	Inside	4383.00	
Recorder	0.00	8322	Outside	4383.00	
Perforations	20.00			4403.00	
Bullnose	3.00			4406.00	24.00 Bottom Packers & Anchor

Total Tool Length: 51.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 45883

DST#: 7

ATTN: Steve Murphy

Test Start: 2012.05.14 @ 07:56:00

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: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.93 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
8.00	100% m with Oil Spots	0.039

Total Length: 8.00 ft Total Volume: 0.039 bbl

Num Fluid Samples: 0

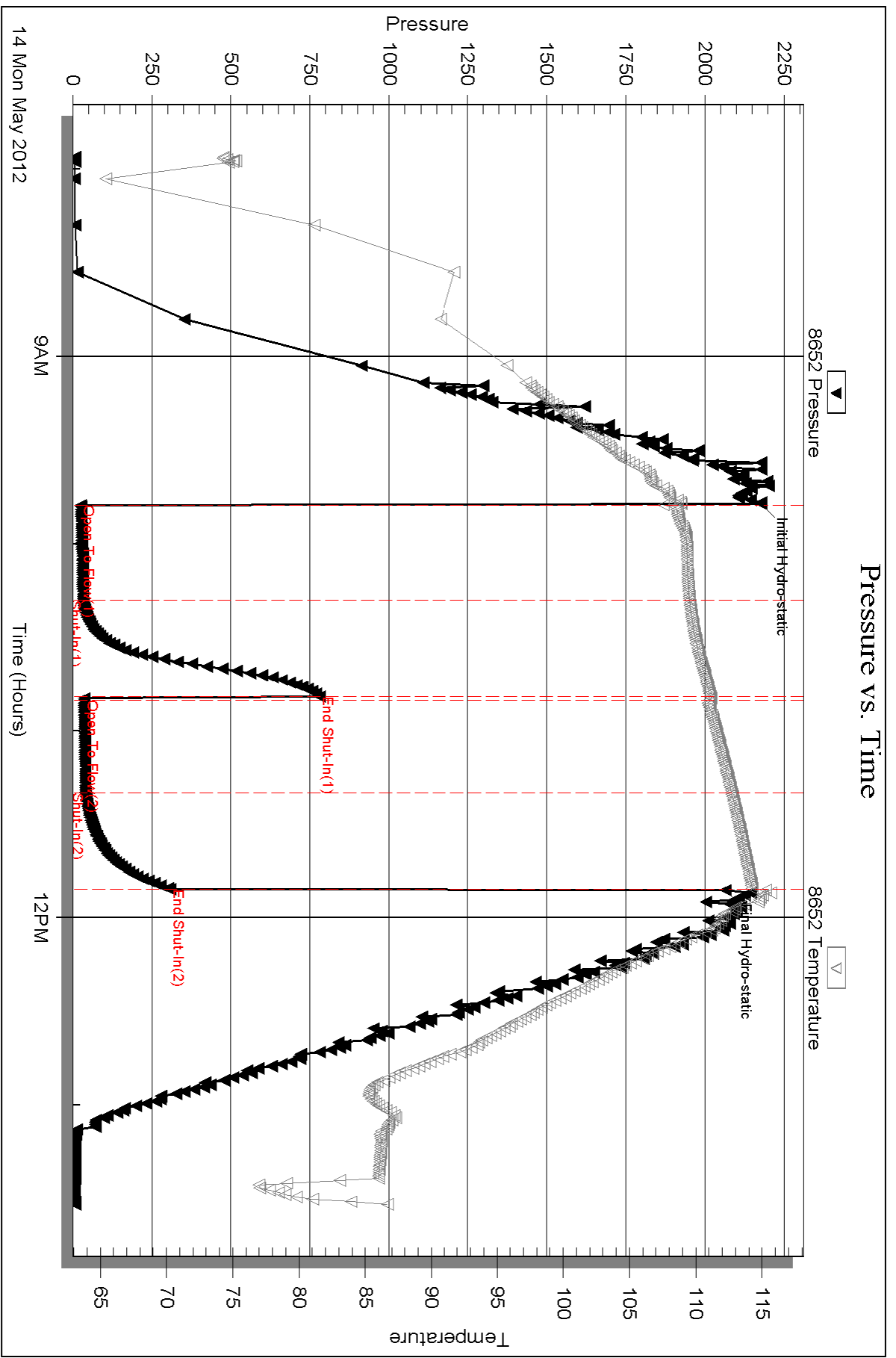
Num Gas Bombs: 0

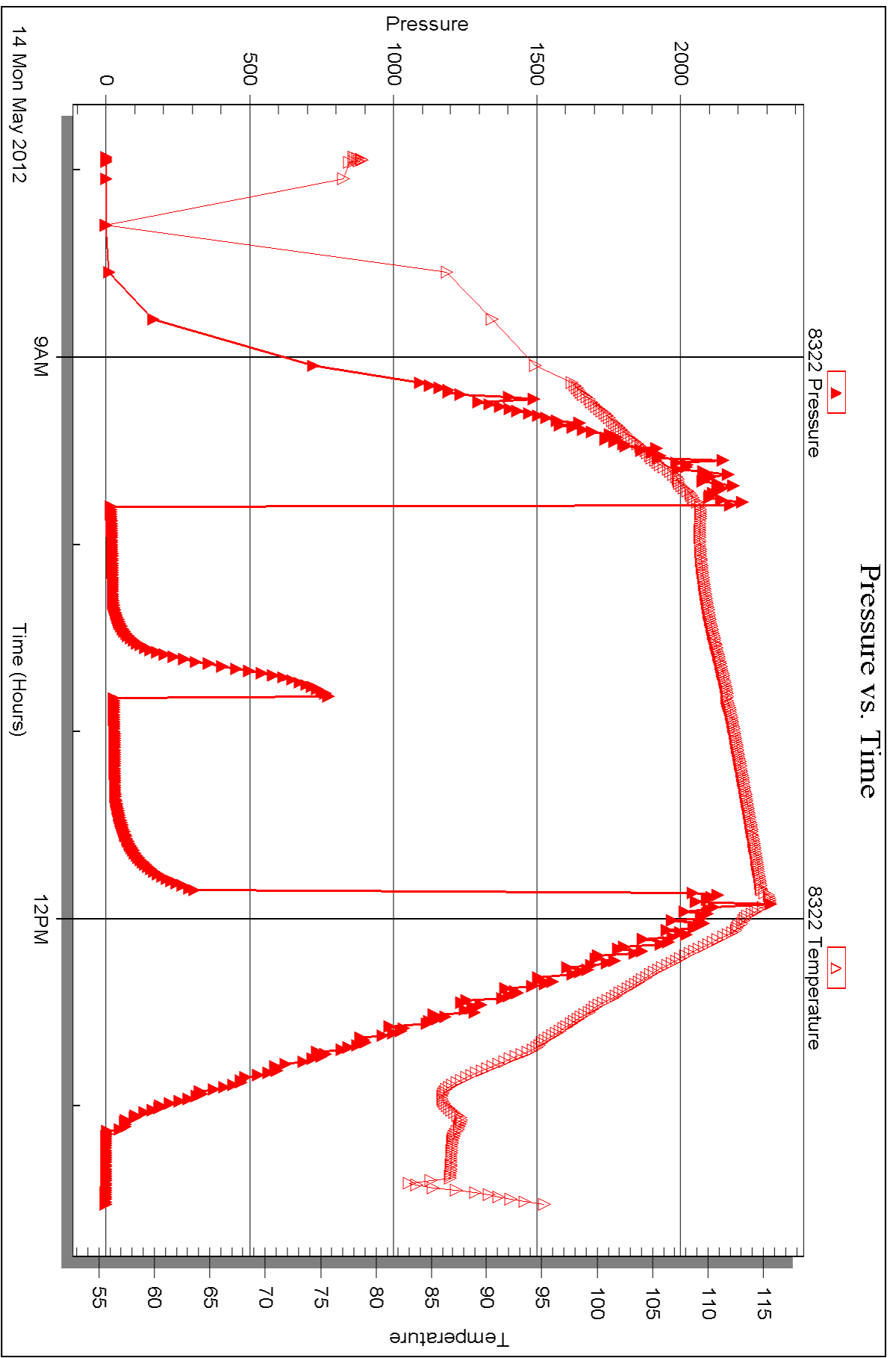
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Pioneer Resources**

80 Windmill Dr
Phillipsburg KS 67661

ATTN: Steve Murphy

Knopp #4

13-14s-32w Logan,KS

Start Date: 2012.05.14 @ 20:34:05

End Date: 2012.05.15 @ 03:15:44

Job Ticket #: 45884 DST #: 8

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

Printed: 2012.05.17 @ 15:17:35



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Pioneer Resources
80 Windmill Dr
Phillipsburg KS 67661
ATTN: Steve Murphy

13-14s-32w Logan,KS

Knopp #4

Job Ticket: 45884

DST#: 8

Test Start: 2012.05.14 @ 20:34:05

GENERAL INFORMATION:

Formation: **Johnson**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 22:23:30
 Time Test Ended: 03:15:44
 Interval: **4402.00 ft (KB) To 4440.00 ft (KB) (TVD)**
 Total Depth: 4440.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Will MacLean
 Unit No: 40
 Reference Elevations: 2821.00 ft (KB)
 2816.00 ft (CF)
 KB to GR/CF: 5.00 ft

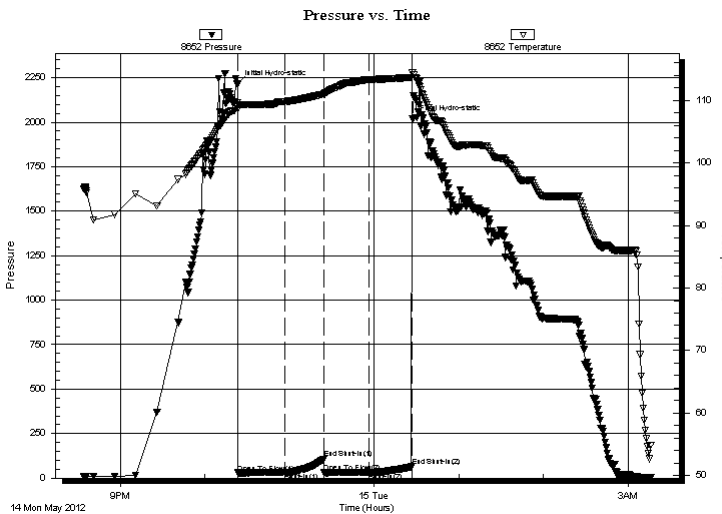
Serial #: 8652

Inside

Press @ Run Depth: 32.62 psig @ 4405.00 ft (KB)
 Start Date: 2012.05.14 End Date: 2012.05.15
 Start Time: 20:34:05 End Time: 03:15:44
 Capacity: 8000.00 psig
 Last Calib.: 2012.05.15
 Time On Btm: 2012.05.14 @ 22:23:15
 Time Off Btm: 2012.05.15 @ 00:27:00

TEST COMMENT: IF- Weak Surface Blow Died in 24 min
 IS- No Blow
 FF- No Blow
 FS- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2213.72	109.62	Initial Hydro-static
1	28.97	108.77	Open To Flow (1)
33	31.31	109.83	Shut-In(1)
61	108.68	110.97	End Shut-In(1)
62	30.34	110.93	Open To Flow (2)
93	32.62	113.34	Shut-In(2)
124	64.06	113.74	End Shut-In(2)
124	2016.37	114.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud 100%	0.02

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Pioneer Resources
80 Windmill Dr
Phillipsburg KS 67661
ATTN: Steve Murphy

13-14s-32w Logan,KS
Knopp #4
Job Ticket: 45884 **DST#: 8**
Test Start: 2012.05.14 @ 20:34:05

Tool Information

Drill Pipe:	Length: 4255.00 ft	Diameter: 3.80 inches	Volume: 59.69 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 10000.00 lb
			<u>Total Volume: 60.29 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4402.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	38.00 ft			
Tool Length:	65.00 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			4376.00	
Shut In Tool	5.00			4381.00	
Hydraulic tool	5.00			4386.00	
Jars	5.00			4391.00	
Safety Joint	2.00			4393.00	
Packer	5.00			4398.00	27.00 Bottom Of Top Packer
Packer	4.00			4402.00	
Stubb	1.00			4403.00	
Perforations	2.00			4405.00	
Recorder	0.00	8652	Inside	4405.00	
Recorder	0.00	8322	Outside	4405.00	
Perforations	32.00			4437.00	
Bullnose	3.00			4440.00	38.00 Bottom Packers & Anchor

Total Tool Length: 65.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 45884

DST#: 8

ATTN: Steve Murphy

Test Start: 2012.05.14 @ 20:34:05

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.77 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud 100%	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 #: 8652

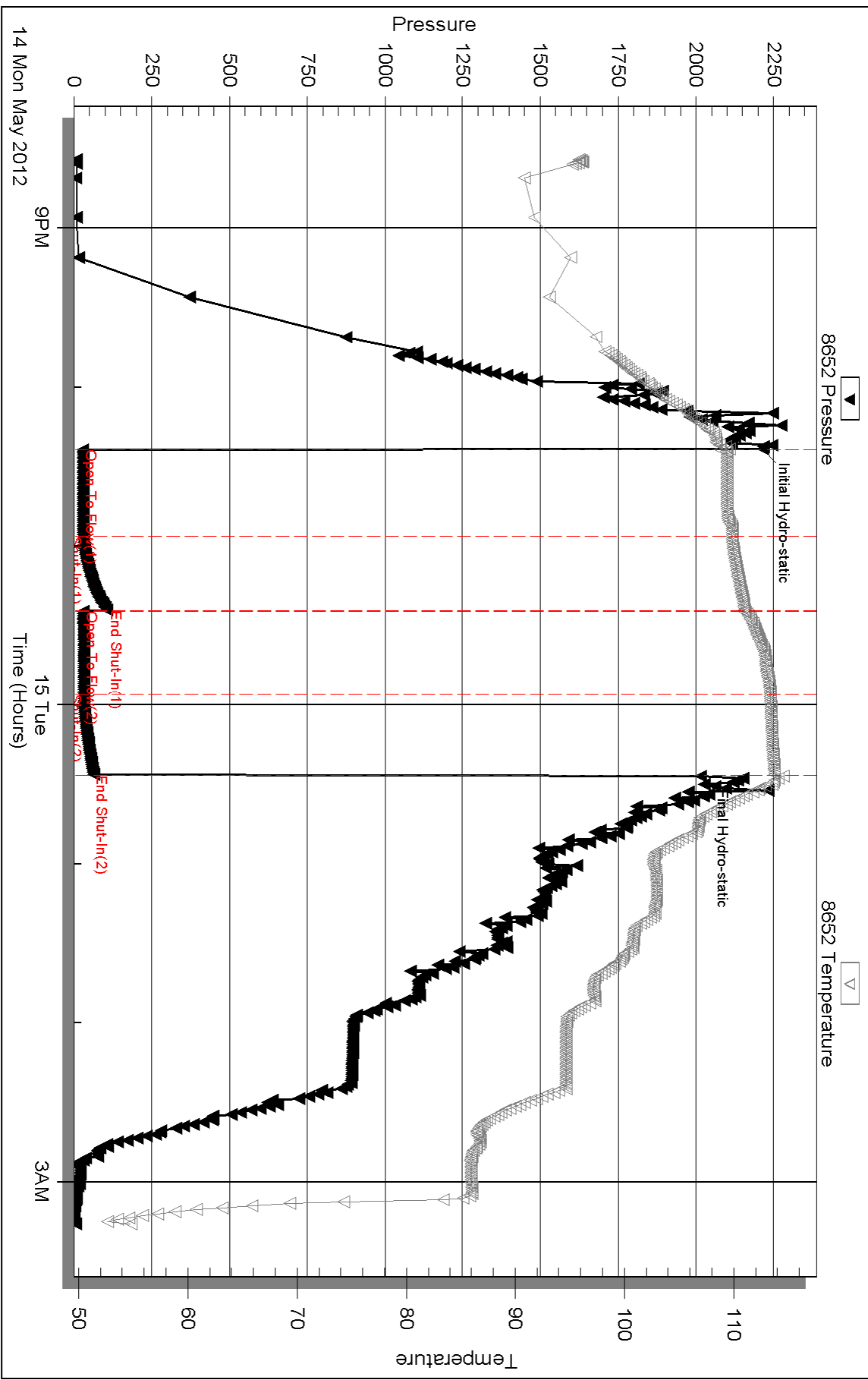
Inside

Pioneer Resources

Knopp #4

DST Test Number: 8

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 45884

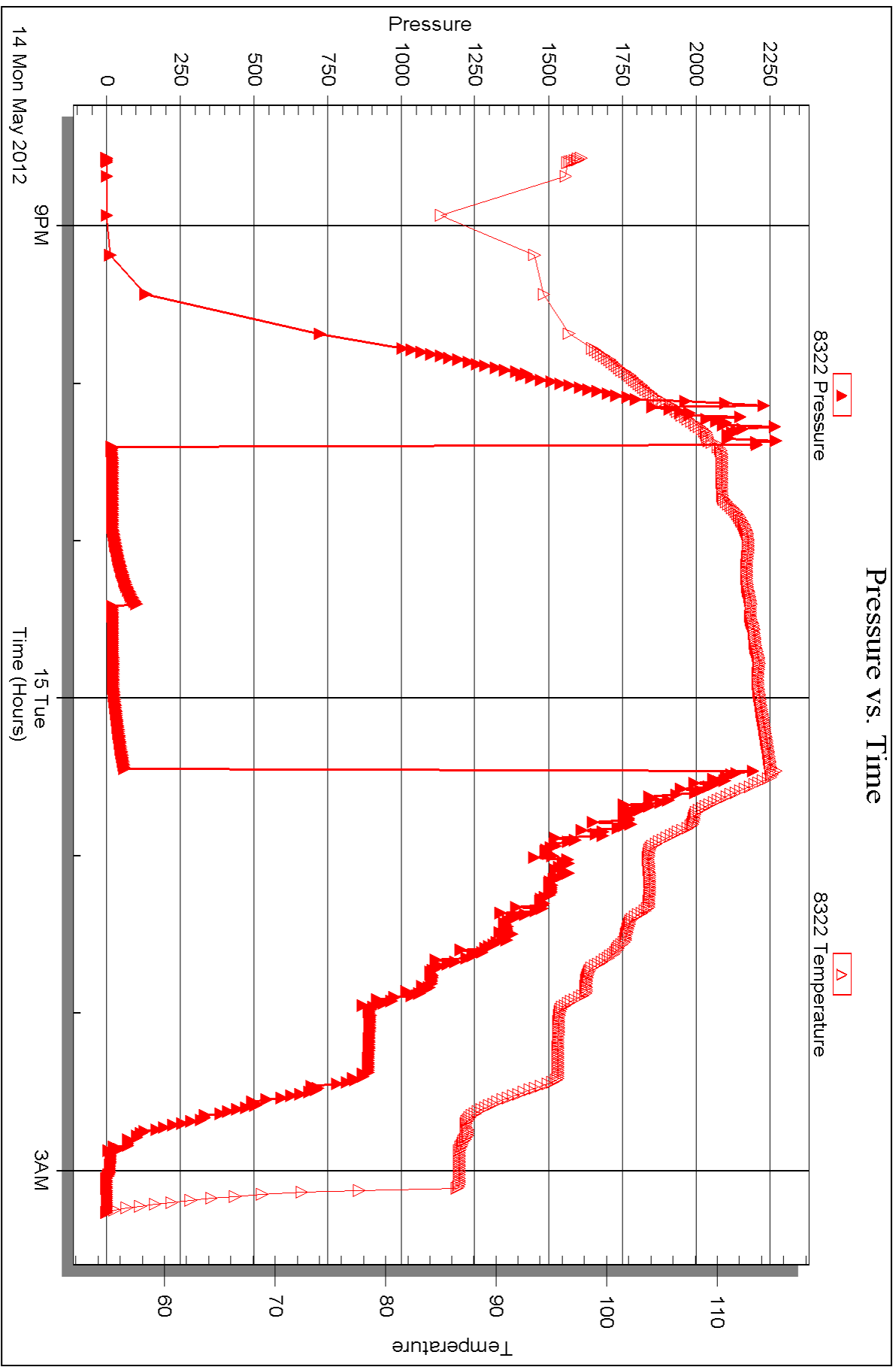
Printed: 2012.05.17 @ 15:17:37

Serial #: 8322

Outside Pioneer Resources

Knopp #4

DST Test Number: 8





DRILL STEM TEST REPORT

Prepared For: **Pioneer Resources**

80 Windmill Dr
Phillipsburg KS 67661

ATTN: Steve Murphy

Knopp #4

13-14s-32w Logan,KS

Start Date: 2012.05.15 @ 12:40:02

End Date: 2012.05.15 @ 20:40:30

Job Ticket #: 46588 DST #: 9

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

Printed: 2012.05.17 @ 15:16:20

Pioneer Resources
13-14s-32w Logan,KS
Knopp #4
DST # 9
morrow sst
2012.05.15



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Pioneer Resources
 80 Windmill Dr
 Phillipsburg KS 67661
 ATTN: Steve Murphy

13-14s-32w Logan,KS
Knopp #4
 Job Ticket: 46588 **DST#: 9**
 Test Start: 2012.05.15 @ 12:40:02

GENERAL INFORMATION:

Formation: **morrow sst**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 14:38:40
 Time Test Ended: 20:40:30
 Interval: **4442.00 ft (KB) To 4500.00 ft (KB) (TVD)**
 Total Depth: 4500.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Cole Archibald
 Unit No: 40
 Reference Elevations: 2821.00 ft (KB)
 2816.00 ft (CF)
 KB to GR/CF: 5.00 ft

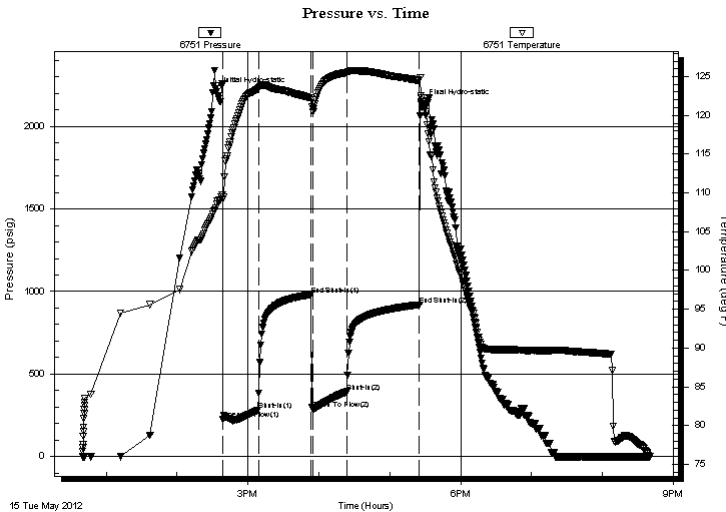
Serial #: 6751

Inside

Press @ Run Depth: 392.81 psig @ 4443.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.05.15 End Date: 2012.05.15 Last Calib.: 2012.05.15
 Start Time: 12:40:00 End Time: 20:40:28 Time On Btm: 2012.05.15 @ 14:33:18
 Time Off Btm: 2012.05.15 @ 17:26:48

TEST COMMENT: IF- BOB 4 min
 IS- BOB 7 min
 FF- BOB 4 min
 FS- BOB 5 min

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2209.22	108.63	Initial Hydro-static
6	223.28	109.28	Open To Flow (1)
36	282.70	123.42	Shut-In(1)
81	981.23	122.23	End Shut-In(1)
82	286.93	120.52	Open To Flow (2)
111	392.81	125.51	Shut-In(2)
172	917.90	124.52	End Shut-In(2)
174	2136.00	122.31	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
252.00	MGO 10 m 30 g 60 o	2.41
189.00	GO 30 G 70 o	2.65
252.00	mco 90 o 10 m	3.53
189.00	mog 10 m 40 o 50 g	2.65
262.00	o 100 o	3.68
0.00	2669 gip	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

Pioneer Resources
80 Windmill Dr
Phillipsburg KS 67661
ATTN: Steve Murphy

13-14s-32w Logan,KS
Knopp #4
Job Ticket: 46588 **DST#: 9**
Test Start: 2012.05.15 @ 12:40:02

Tool Information

Drill Pipe:	Length: 4317.00 ft	Diameter: 3.80 inches	Volume: 60.56 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 67000.00 lb
			<u>Total Volume: 61.16 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4442.00 ft			Final 65000.00 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
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Change Over Sub	1.00			4416.00	
Shut In Tool	5.00			4421.00	
Hydraulic tool	5.00			4426.00	
Jars	5.00			4431.00	
Safety Joint	2.00			4433.00	
Packer	5.00			4438.00	27.00 Bottom Of Top Packer
Packer	4.00			4442.00	
Stubb	1.00			4443.00	
Recorder	0.00	6751	Inside	4443.00	
Recorder	0.00	8018	Outside	4443.00	
Perforations	20.00			4463.00	
Change Over Sub	1.00			4464.00	
Drill Pipe	32.00			4496.00	
Change Over Sub	1.00			4497.00	
Bullnose	3.00			4500.00	58.00 Bottom Packers & Anchor

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources

13-14s-32w Logan,KS

80 Windmill Dr
Phillipsburg KS 67661

Knopp #4

Job Ticket: 46588

DST#: 9

ATTN: Steve Murphy

Test Start: 2012.05.15 @ 12:40:02

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

31 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 66.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.77 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
252.00	MGO 10 m 30 g 60 o	2.414
189.00	GO 30 G 70 o	2.651
252.00	mco 90 o 10 m	3.535
189.00	mog 10 m 40 o 50 g	2.651
262.00	o 100 o	3.675
0.00	2669 gip	0.000

Total Length: 1144.00 ft

Total Volume: 14.926 bbl

Num Fluid Samples: 0

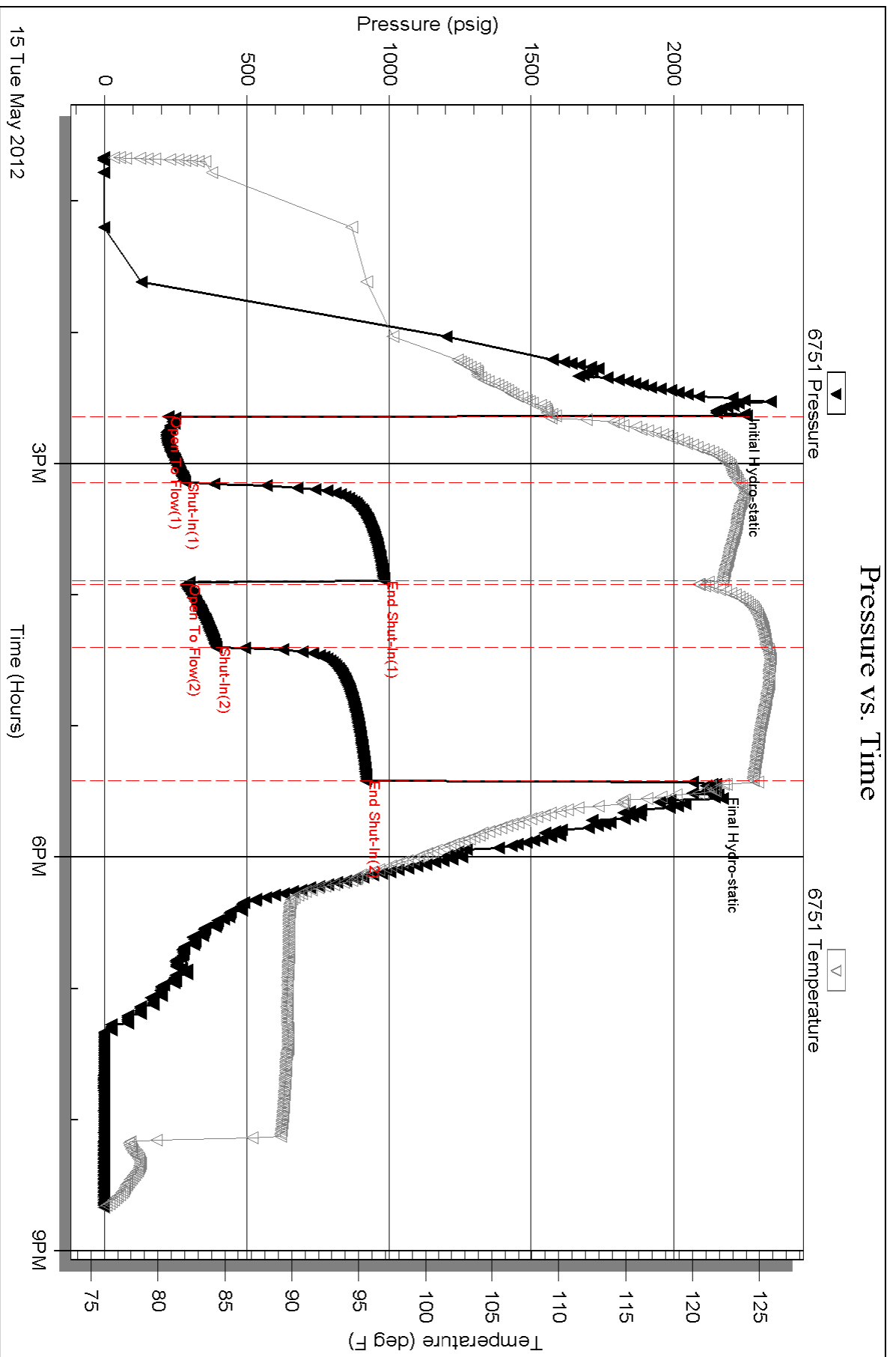
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

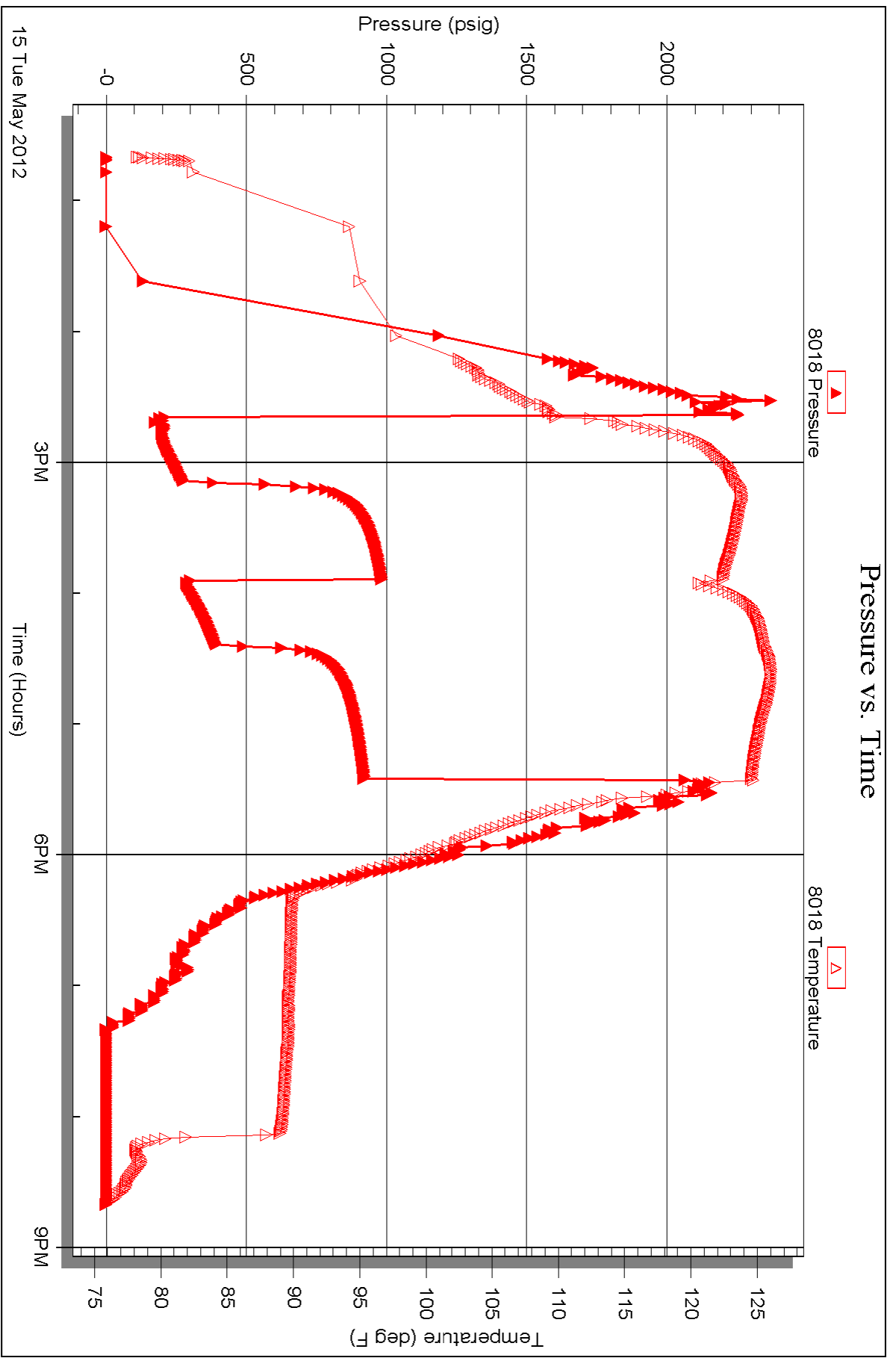


Serial #: 8018

Outside Pioneer Resources

Knopp #4

DST Test Number: 9





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 45877

Well Name & No. Knapp #4 Test No. DST #1 Date 5-10-12
 Company Pioneer Resources Elevation 2821 KB 2816 GL
 Address 80 Windmill Dr. Phillipsburg KS 67061
 Co. Rep / Geo. Steve Murphy Rig WW Rig #2
 Location: Sec. 13 Twp. 14s Rge. 32W Co. Logan State KS

Interval Tested 3908-3940 Zone Tested LKC "E4F"
 Anchor Length 32 Drill Pipe Run 3783 Mud Wt. 9.1
 Top Packer Depth 3904 Drill Collars Run 123 Vis 60
 Bottom Packer Depth 3908 Wt. Pipe Run 0 WL 8.4
 Total Depth 3940 Chlorides 3300 ppm System LCM 216

Blow Description IF - Weak Surface Blow Built to 2 1/4"
ISI - No Blow
FF - Weak Surface Blow Built to 1 1/4"
FBI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>G-MCO</u>	<u>3</u>	<u>85</u>	<u>12</u>	<u>0</u>
<u>15</u>	<u>WCM</u>			<u>2</u>	<u>98</u>
<u>61</u>	<u>GWCM</u>	<u>2</u>		<u>18</u>	<u>80</u>
<u>61</u>	<u>G-OWCM</u>	<u>4</u>	<u>4</u>	<u>18</u>	<u>74</u>
Rec	Feet of <u>53' of GJP</u>	%gas	%oil	%water	%mud

Rec Total 147 BHT 141 Gravity 35 API RW 142 @ 93 °F Chlorides 36000 ppm

(A) Initial Hydrostatic 1942 Test 1150 T-On Location 7:42
 (B) First Initial Flow 25 Jars 250 T-Started 9:22
 (C) First Final Flow 76 Safety Joint 75 T-Open 11:22
 (D) Initial Shut-In 1131 Circ Sub N/C T-Pulled 13:47
 (E) Second Initial Flow 80 Hourly Standby T-Out 15:39
 (F) Second Final Flow 97 Mileage 58 R/T 89.90 Comments API is 38@90t=35
 (G) Final Shut-In 1123 Sampler
 (H) Final Hydrostatic 1805 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies
 Extra Recorder Sub Total 0
 Day Standby Total 1564.9
 Accessibility MP/DST Disc't
 Sub Total 1564.90

Initial Open 30
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 45

Approved By Steve Murphy Our Representative Tim

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.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 45878

Well Name & No. Knopp #4 Test No. DST #2 Date 5-11-12
 Company Pioneer Resources Elevation 2821 KB 2816 GL
 Address 80 Windmill Dr. Phillipsburg KS 67661
 Co. Rep / Geo. Steve Murphy Rig WW R's #2
 Location: Sec. 13 Twp. 14s Rge. 32W Co. Logan State KS

Interval Tested 4020 - 4052 Zone Tested LKC "I"
 Anchor Length 32 Drill Pipe Run 3879 Mud Wt. 9.1
 Top Packer Depth 4016 Drill Collars Run 123 Vis 60
 Bottom Packer Depth 4020 Wt. Pipe Run 0 WL 8.4
 Total Depth 4052 Chlorides 3300 ppm System LCM 216
 Blow Description IF - 1/4" Blow Dred back to wear surface blow
ISI - No Blow
FF - No Blow
FSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>OCM</u>		<u>1</u>		<u>99</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 107 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2010</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>1:46 AM</u>
(B) First Initial Flow <u>21</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>4:34 AM</u>
(C) First Final Flow <u>25</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>6:21</u>
(D) Initial Shut-In <u>38</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>8:25</u>
(E) Second Initial Flow <u>25</u>	<input checked="" type="checkbox"/> Hourly Standby <u>2hr</u>	T-Out <u>10:02</u>
(F) Second Final Flow <u>25</u>	<input checked="" type="checkbox"/> Mileage <u>58 RIT</u> 89.90	Comments <u>Had to shut up</u>
(G) Final Shut-In <u>31</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1868</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1664.60</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1664.90</u>	

Approved By Steve Murphy

Our Representative Kim M

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.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 45879

Well Name & No. Knopp #4 Test No. DST #3 Date 5-11-12
 Company Pioneer Resources Elevation 2821 KB 2816 GL
 Address 80 Windmill Dr. Phillipsburg KS 67661
 Co. Rep / Geo. Steve Murphy Rig WW R15 #2
 Location: Sec. 13 Twp. 14s Rge. 32w Co. Logan State KS

Interval Tested 4084-4110 Zone Tested LKC "K"
 Anchor Length 26 Drill Pipe Run 3944 Mud Wt. 9.2
 Top Packer Depth 4080 Drill Collars Run 123 Vis 48
 Bottom Packer Depth 4084 Wt. Pipe Run 0 WL 7.2
 Total Depth 4110 Chlorides 2700 ppm System LCM 116

Blow Description IF - Weak Surface Blow Built to 1"
ISL - No Blow
FF - Weak Surface Blow
FSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Oil</u>		<u>100%</u>		
<u>61</u>	<u>OGCM</u>	<u>3%</u>	<u>2%</u>	<u>95%</u>	
<u>61</u>	<u>WG-M (skin of oil on top)</u>	<u>3%</u>		<u>1%</u>	<u>96%</u>
	<u>63' of GIP</u>				

Rec Total 123 BHT 107 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2031 Test 1250 T-On Location 18:42
 (B) First Initial Flow 24 Jars 250 T-Started 19:04
 (C) First Final Flow 52 Safety Joint 75 T-Open 20:40
 (D) Initial Shut-In 1132 Circ Sub T-Pulled 22:43
 (E) Second Initial Flow 56 Hourly Standby T-Out 00:36
 (F) Second Final Flow 79 Mileage 58 R/T 89.90 Comments _____
 (G) Final Shut-In 1109 Sampler _____
 (H) Final Hydrostatic 1855 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1664.90
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1664.90

Approved By _____ Our Representative William

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.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 45880

Well Name & No. Knopp #4 Test No. DST #4 Date 5-12-12
 Company Pioneer Resources Elevation 2821 KB 2816 GL
 Address 80 Windmill Dr. Phillipsburg KS 67661
 Co. Rep / Geo. Steve Murphy Rig WW Rig #2
 Location: Sec. 13 Twp. 14s Rge. 32w Co. Logan State KS

Interval Tested 4252 - 4312 Zone Tested Altamont \ Pawnee
 Anchor Length 60 Drill Pipe Run 4128 Mud Wt. 9.1
 Top Packer Depth 4248 Drill Collars Run 123 Vis 60
 Bottom Packer Depth 4252 Wt. Pipe Run 0 WL 8.4
 Total Depth 4312 Chlorides 2900 ppm System LCM 116
 Blow Description IF - Surface Blow Built to BOB in 17 1/2 min
IS1 - No Blow
FF - Surface Blow Built to BOB in 35 1/2 min
FS1 - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>78</u>	<u>MCW</u>		<u>67</u>	<u>33</u>	
<u>252</u>	<u>MCW</u>		<u>92</u>	<u>8</u>	
<u>123</u>	<u>MCW</u>		<u>95</u>	<u>5</u>	

Rec Total 453 BHT 114 Gravity API RW 346 @ 56 °F Chlorides 24000 ppm

(A) Initial Hydrostatic <u>2157</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>16:16</u>
(B) First Initial Flow <u>31</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>17:10</u>
(C) First Final Flow <u>149</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>18:57</u>
(D) Initial Shut-In <u>1140</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>22:17</u>
(E) Second Initial Flow <u>154</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>00:30</u>
(F) Second Final Flow <u>228</u>	<input checked="" type="checkbox"/> Mileage <u>58 RIT</u> 89.90	Comments _____
(G) Final Shut-In <u>1142</u>	<input type="checkbox"/> Sampler	<input type="checkbox"/> Ruined Shale Packer
(H) Final Hydrostatic <u>1926</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Packer
Initial Open <u>45</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	Sub Total <u>0</u>
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder	Total <u>1664.90</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility	
	Sub Total <u>1664.90</u>	

Approved By _____

Our Representative Rin M

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.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 45881

Well Name & No. Knopp #4 Test No. DST #5 Date 5-13-12
 Company Pioneer Resources Elevation 2821 KB 2816 GL
 Address 80 Windmill Dr. Phillipsburg KS 67661
 Co. Rep / Geo. Steve Murphy Rig WW R's #2
 Location: Sec. 13 Twp. 14s Rge. 32w Co. Logan State KS

Interval Tested 4320-4346 Zone Tested Myric Station
 Anchor Length 26 Drill Pipe Run 4191 Mud Wt. 9.1
 Top Packer Depth 4316 Drill Collars Run 123 Vis 60
 Bottom Packer Depth 4320 Wt. Pipe Run 0 WL 8.4
 Total Depth 4346 Chlorides 2900 ppm System LCM 116

Blow Description IF - Weak Surface Blow
ISI - No Blow
FF - No Blow
FSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>OCM</u>		<u>2</u>		<u>98</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 108 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2200 Test 1250 T-On Location 7:24
 (B) First Initial Flow 24 Jars 250 T-Started 8:08
 (C) First Final Flow 27 Safety Joint 75 T-Open 9:51
 (D) Initial Shut-In 51 Circ Sub _____ T-Pulled 11:57
 (E) Second Initial Flow 26 Hourly Standby _____ T-Out 13:39
 (F) Second Final Flow 28 Mileage 58 R/T 89.90 Comments _____
 (G) Final Shut-In 39 Sampler _____
 (H) Final Hydrostatic 2021 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1664.90
 Accessibility _____ MP/DST Disc't _____

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

Sub Total 1664.90

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 45882

4/10

Well Name & No. Knopp # 4 Test No. DST # 6 Date 5-13-12
 Company Pioneer Resources Elevation 2821 KB 2816 GL
 Address 80 Windmill Dr. Phillipsburg KS 67661
 Co. Rep / Geo. Steve Murphy Rig WW Rig # 2
 Location: Sec. 13 Twp. 14s Rge. 32w Co. Logan State KS

Interval Tested 4346 - 4376 Zone Tested Ft. Scott
 Anchor Length 30 Drill Pipe Run 4222 Mud Wt. 9.3
 Top Packer Depth 4342 Drill Collars Run 123 Vis 49
 Bottom Packer Depth 4346 Wt. Pipe Run 0 WL 8.0
 Total Depth 4376 Chlorides 3700 ppm System LCM 1
 Blow Description IF - Weak Surface Blow Dried in 4min
ISI - No Blow
FF - No Blow
FST - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Mud with (Few Oil 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 _____ BHT 108 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2150</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>8:20:00</u>
(B) First Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>20:28</u>
(C) First Final Flow <u>23</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>22:06</u>
(D) Initial Shut-In <u>27</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>23:09</u>
(E) Second Initial Flow <u>23</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1:00</u>
(F) Second Final Flow <u>23</u>	<input checked="" type="checkbox"/> Mileage <u>58 RIT</u> 89.90	Comments _____
(G) Final Shut-In <u>26</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2082</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>15</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>15</u>	<input type="checkbox"/> Day Standby	Total <u>1664.90</u>
Final Shut-In <u>15</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1664.90</u>	

Approved By _____ Our Representative Will Mac

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 45883

Well Name & No. Knopp #4 Test No. DST # 7 Date 5-14-12
 Company Pioneer Resources Elevation 2821 KB 2816 GL
 Address 80 Windmill Dr. Phillipsburg KS 67661
 Co. Rep / Geo. Steve Murphy Rig WW Rig #2
 Location: Sec. 13 Twp. 14s Rge. 32w Co. Logan State KS

Interval Tested 4382 - 4406 Zone Tested Cherokee Lime
 Anchor Length 24 Drill Pipe Run 4254 Mud Wt. 9.3
 Top Packer Depth 4378 Drill Collars Run 123 Vis 49
 Bottom Packer Depth 4382 Wt. Pipe Run 0 WL 8.0
 Total Depth 4406 Chlorides 3700 ppm System LCM 116
 Blow Description IF - Weak Surface Blow Bolt to 34
ISI - No Blow
FF - No Blow
FSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>8</u>	<u>Mud with Oil 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 _____ BHT 112 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2177 Test 1250 T-On Location ~~7:56~~ 6:54
 (B) First Initial Flow 26 Jars 250 T-Started 7:56
 (C) First Final Flow 32 Safety Joint 75 T-Open 9:47
 (D) Initial Shut-In 780 Circ Sub NIC T-Pulled 11:51
 (E) Second Initial Flow 36 Hourly Standby T-Out 13:31
 (F) Second Final Flow 40 Mileage 58 RIT 89.90 Comments _____
 (G) Final Shut-In 308 Sampler Ruined Shale Packer _____
 (H) Final Hydrostatic 2065 Straddle Ruined Packer _____
 Shale Packer Extra Copies _____
 Extra Packer Extra Recorder _____
 Extra Recorder Sub Total 0
 Day Standby Total 1664.90
 Accessibility MP/DST Disc't _____
 Sub Total 1664.90

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

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 45884

Well Name & No. Knopp Test No. DST #8 Date 5-14-12
 Company Pioneer Resources Elevation 2821 KB 2816 GL
 Address 80 Windmill Dr. Phillipsburg KS 67661
 Co. Rep / Geo. Steve Murphy Rig WW Rs #2
 Location: Sec. 13 Twp. 14s Rge. 32w Co. Logan State KS

Interval Tested 4402 - 4440 Zone Tested Johnson
 Anchor Length 38 Drill Pipe Run 4255 Mud Wt. 9.3
 Top Packer Depth 4398 Drill Collars Run 123 Vis 48
 Bottom Packer Depth 4402 Wt. Pipe Run 0 WL 8.8
 Total Depth 4440 Chlorides 4200 ppm System LCM 216
 Blow Description IF - Weak Surface Blow died in 24 min
ISJ - No Blow
FF - No Blow
FSJ - No Blow

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

Rec Total _____ BHT 107 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2213 Test 1250 T-On Location 20:14
 (B) First Initial Flow 28 Jars 250 T-Started 20:34
 (C) First Final Flow 31 Safety Joint 75 T-Open 22:23
 (D) Initial Shut-In 108 Circ Sub NIC T-Pulled 00:27
 (E) Second Initial Flow 30 Hourly Standby _____ T-Out 3:15
 (F) Second Final Flow 32 Mileage 58 R/T 89.90 Comments _____
 (G) Final Shut-In 64 Sampler _____
 (H) Final Hydrostatic 2016 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1664.90
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1664.90

Approved By _____ Our Representative Rich Ma
 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.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 46589

4/10

Well Name & No. Knopp #4 Test No. 9 Date 5-5-12
 Company Pioneer Resources Elevation 2821 KB 2816 GL
 Address 80 Windmill Dr Phillipsburg KS 67661
 Co. Rep / Geo. Steve Murphy Rig WW Rig #2
 Location: Sec. 13 Twp. 14s Rge. 32w Co. Logan State KS

Interval Tested 4442 - 4500 Zone Tested Morrow - SS+
 Anchor Length 58 Drill Pipe Run 4317 Mud Wt. 9.2
 Top Packer Depth 4437 Drill Collars Run 123 Vis 66
 Bottom Packer Depth 4442 Wt. Pipe Run — WL 9.8
 Total Depth 4500 Chlorides 5,000 ppm System LCM 2#
 Blow Description BOB 4 Min
BOB 7 min.
BOB 4 min
BOB 5 min

Rec	Feet of	Grav	%gas	%oil	%water	%mud
<u>262</u>	<u>0</u>	<u>26695</u>	<u>100</u>			
<u>189</u>	<u>MOG</u>	<u>50</u>	<u>40</u>		<u>10</u>	
<u>252</u>	<u>MO</u>		<u>90</u>		<u>10</u>	
<u>189</u>	<u>GO</u>	<u>30</u>	<u>20</u>			
<u>252</u>	<u>MGO</u>	<u>30</u>	<u>60</u>		<u>10</u>	

Rec Total 1144 BHT 124 Gravity 31 API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2209 Test 1250 T-On Location 12:00
 (B) First Initial Flow 223 Jars 250 T-Started 12:40
 (C) First Final Flow 283 Safety Joint 75 T-Open 14:40
 (D) Initial Shut-In 981 Circ Sub NC T-Pulled 17:25
 (E) Second Initial Flow 287 Hourly Standby T-Out 20:40
 (F) Second Final Flow 393 Mileage 56 RA 89.90 Comments
 (G) Final Shut-In 918 Sampler
 (H) Final Hydrostatic 2,136 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1664.90
 Sub Total 0
 Total 1664.90
 MP/DST Disc't

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 60

Approved By [Signature] Our Representative Cal Archill

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