



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
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API No. 15 - _____

Spot Description: _____

_____-_____-_____- Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite: _____

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

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



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

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

INSTRUCTIONS: Show important tops 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
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> 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 Bbls.	Gas Mcf	Water Bbls.	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	R. P. Nixon Operations, Inc
Well Name	Keough 8
Doc ID	1153392

All Electric Logs Run

Microresistivity Log
Dual Receiver Cement Bond Log
Radiation Guard Log
Computer Processed Interpretation

Form	ACO1 - Well Completion
Operator	R. P. Nixon Operations, Inc
Well Name	Keough 8
Doc ID	1153392

Tops

Name	Top	Datum
Anhydrite	1420	+762
B-Anhydrite	1454	+728
Topeka	3216	-1034
Heebner Shale	3305	-1323
Toronto	3528	-1346
LKC	3545	-1363
BKC	3803	-1621
Marmaton	3859	-1677
Arbuckle	3920	-1738



DRILL STEM TEST REPORT

Prepared For: **R P Nixon Operations Inc**

207 W 12th St
Hays KS 67601-3898

ATTN: Herb Deines

Keough #8

15-16s-20w Rush,KS

Start Date: 2013.04.15 @ 18:00:00

End Date: 2013.04.16 @ 01:56:00

Job Ticket #: 53603 DST #: 1

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

Printed: 2013.04.23 @ 09:07:56



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

R P Nixon Operations Inc

15-16s-20w Rush, KS

207 W 12th St
Hays KS 67601-3898

Keough #8

Job Ticket: 53603

DST#: 1

ATTN: Herb Deines

Test Start: 2013.04.15 @ 18:00:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:08:20

Time Test Ended: 01:56:00

Test Type: Conventional Straddle (Initial)

Tester: Jim Svaty

Unit No: 41

Interval: 3902.00 ft (KB) To 3938.00 ft (KB) (TVD)

Reference Elevations: 2182.00 ft (KB)

Total Depth: 3974.00 ft (KB) (TVD)

2177.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6752 Inside

Press @ Run Depth: 122.75 psig @ 3903.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.15

End Date:

2013.04.16

Last Calib.:

2013.04.16

Start Time: 18:00:01

End Time:

01:55:10

Time On Btm:

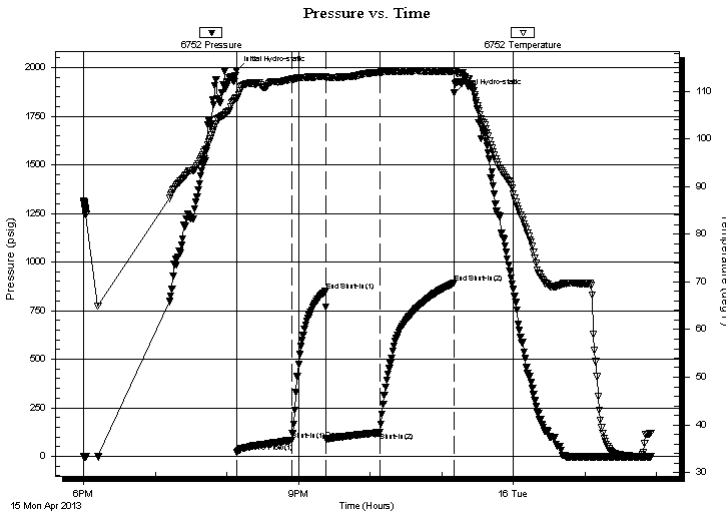
2013.04.15 @ 20:08:00

Time Off Btm:

2013.04.15 @ 23:10:20

TEST COMMENT: 45-IFP- Surging Surface Blow in 14 min. Building to 6 1/2"
30-ISIP- No Blow
45-FFP- Surging Surface Blow in 5 min. Building to 4 1/2"
60-FSIP- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1985.53	108.68	Initial Hydro-static
1	22.58	108.46	Open To Flow (1)
47	83.50	112.48	Shut-In(1)
75	852.41	113.04	End Shut-In(1)
76	90.00	112.90	Open To Flow (2)
120	122.75	113.97	Shut-In(2)
182	890.44	114.19	End Shut-In(2)
183	1868.02	114.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
33.00	CO 100%	0.24
32.00	MWCO 15%m 15%w 70%o	0.24
62.00	WOCM 20%w 30%o 50%m	0.46
124.00	OMCW 5%o 35%m 60%w	0.91

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

R P Nixon Operations Inc

15-16s-20w Rush, KS

207 W 12th St
Hays KS 67601-3898

Keough #8

Job Ticket: 53603

DST#: 1

ATTN: Herb Deines

Test Start: 2013.04.15 @ 18:00:00

GENERAL INFORMATION:

Formation: **Arbuckle**

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Test Type: Conventional Straddle (Initial)

Tester: Jim Svaty

Unit No: 41

Interval: 3902.00 ft (KB) To 3938.00 ft (KB) (TVD)

Reference Elevations: 2182.00 ft (KB)

Total Depth: 3974.00 ft (KB) (TVD)

2177.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8322 Outside

Press @ Run Depth: psig @ 3903.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.15 End Date: 2013.04.16

Last Calib.: 2013.04.16

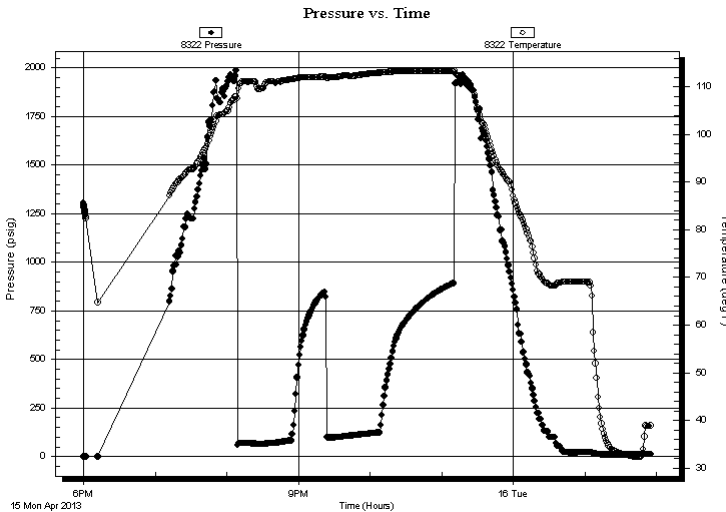
Start Time: 18:00:01 End Time: 01:55:20

Time On Btm:

Time Off Btm:

TEST COMMENT: 45-IFP- Surging Surface Blow in 14 min. Building to 6 1/2"
30-ISIP- No Blow
45-FFP- Surging Surface Blow in 5 min. Building to 4 1/2"
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PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
33.00	CO 100%	0.24
32.00	MWCO 15%m 15%w 70%o	0.24
62.00	WOCM 20%w 30%o 50%m	0.46
124.00	OMCW 5%o 35%m 60%w	0.91

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

R P Nixon Operations Inc

15-16s-20w Rush, KS

207 W 12th St
Hays KS 67601-3898

Keough #8

Job Ticket: 53603

DST#: 1

ATTN: Herb Deines

Test Start: 2013.04.15 @ 18:00:00

Tool Information

Drill Pipe:	Length: 3435.00 ft	Diameter: 3.80 inches	Volume: 48.18 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 467.00 ft	Diameter: 2.75 inches	Volume: 3.43 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 51.61 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3902.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	3938.00 ft			
Interval between Packers:	36.00 ft			
Tool Length:	92.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3887.00	
Hydraulic tool	5.00			3892.00	
Packer	5.00			3897.00	20.00 Bottom Of Top Packer
Packer	5.00			3902.00	
Stubb	1.00			3903.00	
Recorder	0.00	6752	Inside	3903.00	
Recorder	0.00	8322	Outside	3903.00	
Perforations	31.00			3934.00	
Blank Off Sub	1.00			3935.00	
Blank Spacing	3.00			3938.00	36.00 Tool Interval
Packer	1.00			3939.00	
Stubb	1.00			3940.00	
Perforations	2.00			3942.00	
Change Over Sub	1.00			3943.00	
Recorder	0.00	8734	Below	3943.00	
Blank Spacing	31.00			3974.00	36.00 Bottom Packers & Anchor
Total Tool Length:	92.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

R P Nixon Operations Inc

15-16s-20w Rush, KS

207 W 12th St
Hays KS 67601-3898

Keough #8

Job Ticket: 53603

DST#: 1

ATTN: Herb Deines

Test Start: 2013.04.15 @ 18:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

41 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

32000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
33.00	CO 100%	0.242
32.00	MWCO 15%m 15%w 70%o	0.235
62.00	WOCM 20%w 30%o 50%m	0.455
124.00	OMCW 5%o 35%m 60%w	0.911

Total Length: 251.00 ft

Total Volume: 1.843 bbl

Num Fluid Samples: 0

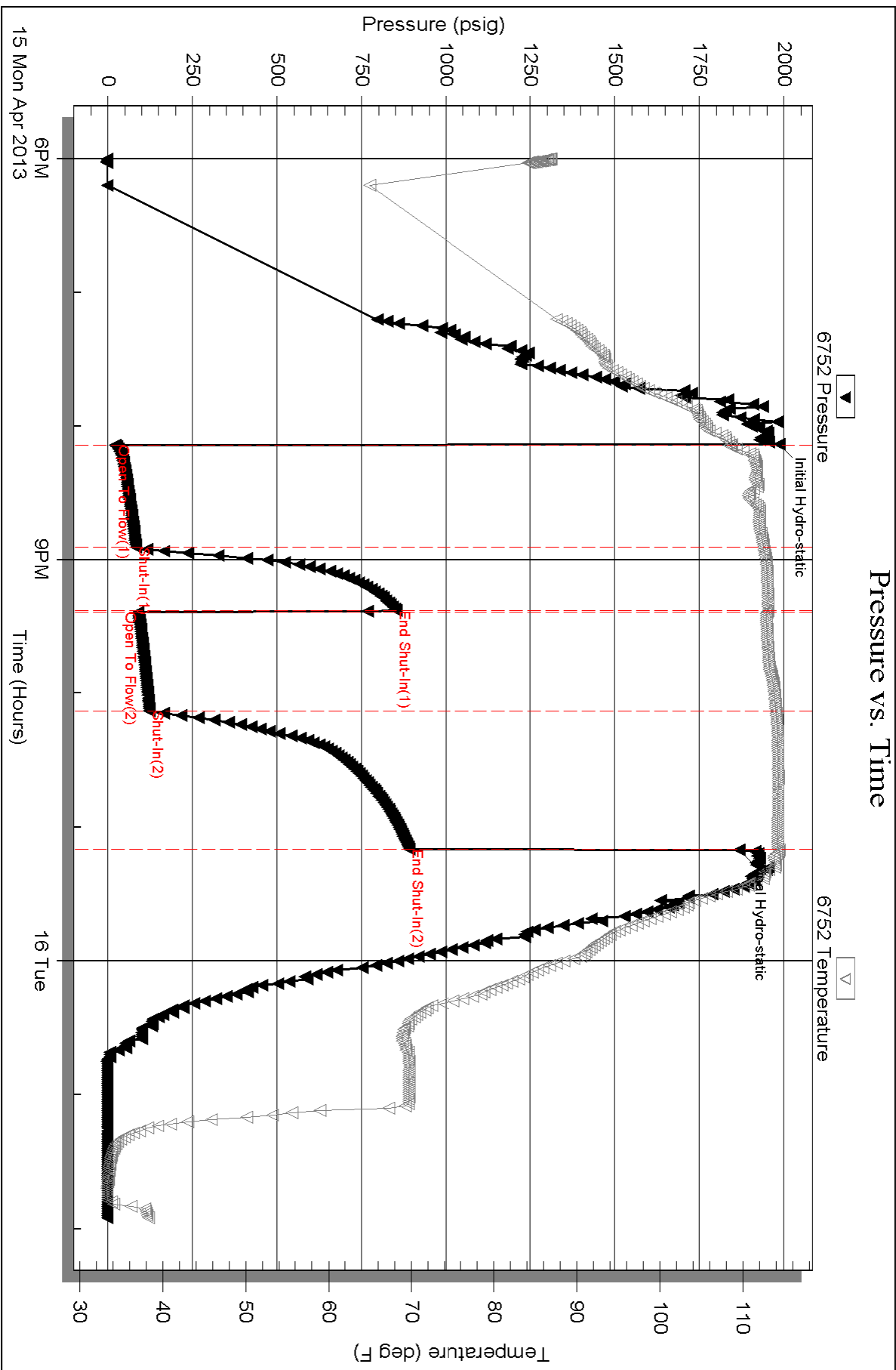
Num Gas Bombs: 0

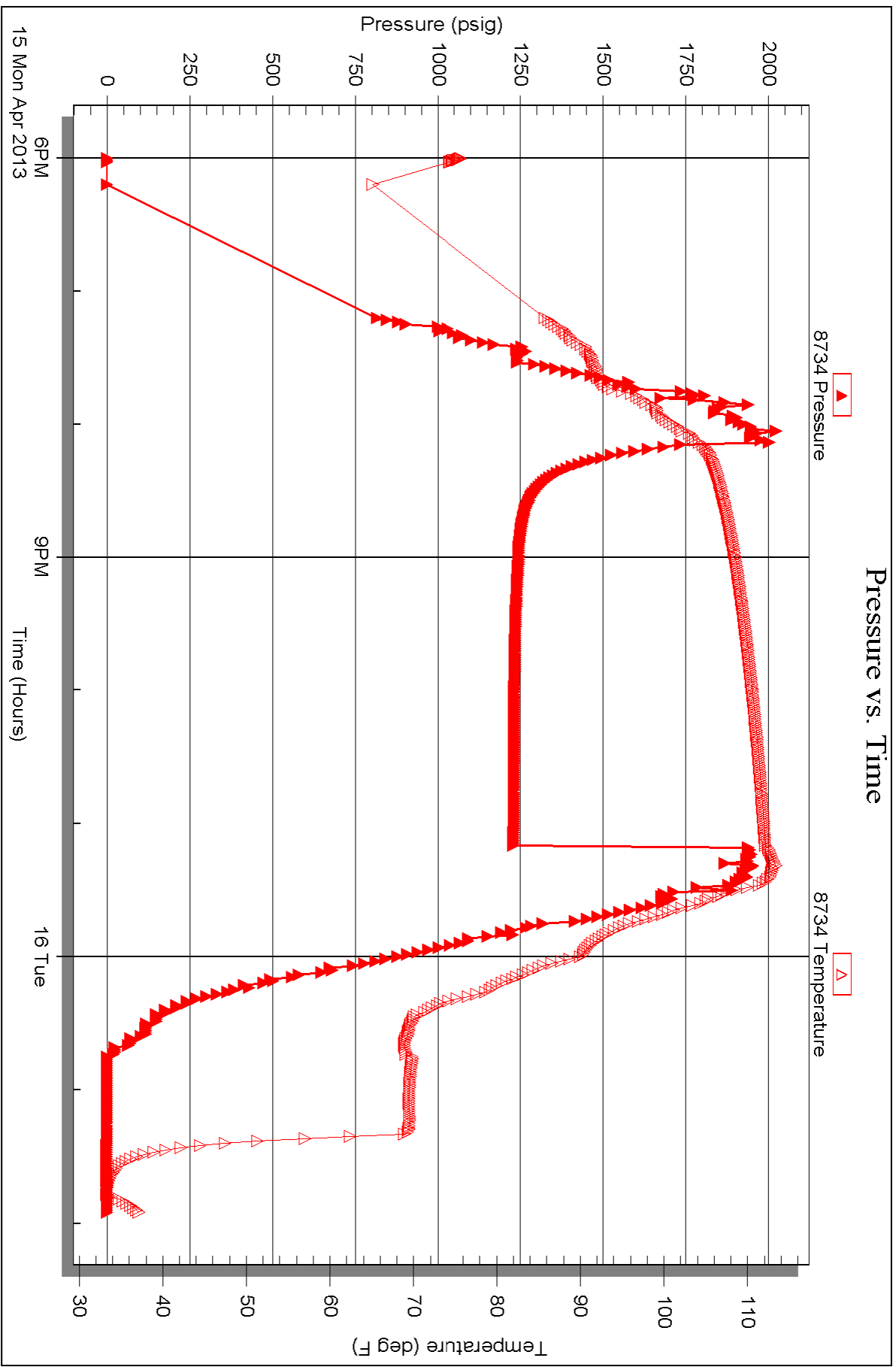
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .420 @ 36



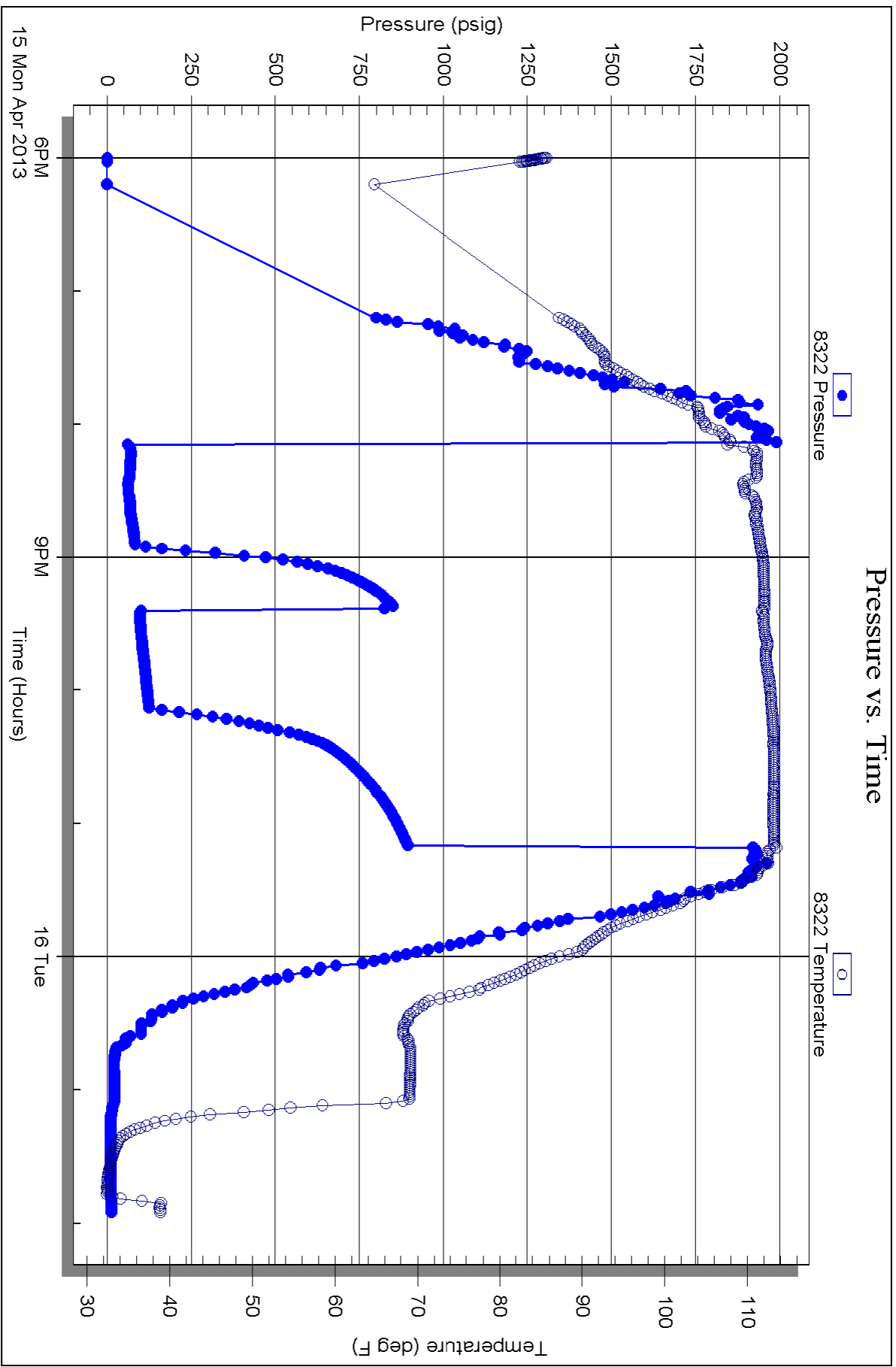


Serial #: 8322

Outside R P Nixon Operations Inc

Keough #8

DST Test Number: 1





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53603

4/10

Well Name & No. Keough # 8 Test No. 1 Date 4-15-13
 Company R.P. Nixon Operations Inc. Elevation 2182 KB 2187 GL
 Address 207 West 12th St. Hays Ks. 67601-3898
 Co. Rep / Geo. Herb Deines Rig Shields
 Location: Sec. 15 Twp. 16^s Rge. 20^w Co. Rush State Ks.

Interval Tested 3902-3938 Zone Tested Arbuckle
 Anchor Length 36 Drill Pipe Run 3435 Mud Wt. 9.2
 Top Packer Depth 3902 Drill Collars Run 0 Vis 58
 Bottom Packer Depth 3938 Wt. Pipe Run 467 WL 7.6
 Total Depth 3974 Chlorides 5000 ppm System LCM 2

Blow Description IFP - Surging Surface Blow in 14 min. Building to 6 1/2 in.
ISIP - No Blow
FFP - Surging Surface Blow in 5 min. Building to 4 1/2 in.
FSIP - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>33</u>	<u>CO</u>	<u>100</u>			
<u>32</u>	<u>MWCO</u>	<u>70</u>	<u>15</u>	<u>15</u>	
<u>62</u>	<u>WOCM</u>	<u>30</u>	<u>20</u>	<u>50</u>	
<u>124</u>	<u>OMCW</u>	<u>5</u>	<u>60</u>	<u>35</u>	

Rec Total 251 BHT 114 Gravity 41 API RW .420 @ 36 ° F Chlorides 32000 ppm

(A) Initial Hydrostatic 1985 Test 1150 T-On Location 15:47
 (B) First Initial Flow 22 Jars T-Started 18:00
 (C) First Final Flow 83 Safety Joint T-Open 20:09
 (D) Initial Shut-In 852 Circ Sub T-Pulled 23:09
 (E) Second Initial Flow 90 Hourly Standby T-Out 01:56

(F) Second Final Flow 122 Mileage 63 RT 97.65
 (G) Final Shut-In 890 Sampler
 (H) Final Hydrostatic 1868 Straddle 600

Shale Packer Ruined Shale Packer
 Extra Packer Ruined Packer
 Extra Recorder Extra Copies

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

Day Standby Total 1847.65
 Accessibility MP/DST Disc't
 Sub Total 1847.65

Approved By _____ Our Representative [Signature]

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

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 6695

Date	Sec.	Twp.	Range	County	State	On Location	Finish
4.16.13	15	16	20	Rush	KS		1:45p.m.

Location Liebhenthal 12w to 1300 1/2 v Finto

Lease Keough Well No. 8 Owner

Contractor Shields To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Type Job Production String Charge To R.P. Nixon

Hole Size 7 7/8 T.D. 3975 Street

Csg. 5 1/2 Depth 3971 City State

Tbg. Size Depth City State

Tool Port Collar #66 Depth 1421 The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. 20' Shoe Joint 20' Cement Amount Ordered 175 com 10% salt + 5% Gilsontite

Meas Line Displace 9481 500gal mud clear

EQUIPMENT Common 175

Pumptrk 9 No. Cementer Craig Helper Cody Poz. Mix

Bulktrk No. Driver Cody Driver Cody Gel.

Bulktrk 14 No. Driver Doug Driver Doug Calcium

JOB SERVICES & REMARKS Hulls

Remarks: Salt 15

Rat Hole 30SK Flowseal

Mouse Hole 15SK Kol-Seal 875#

Centralizers Mud CLR 48 500 gal

Baskets CFL-117 or CD110 CAF 38

D/V or Port Collar Sand

5 1/2 csg 3971 Insert 3951 Handling 188

Est. Circulation Pump 500gal mud Mileage

Clear 10B & water spacer Plug FLOAT EQUIPMENT

Rathole + mousehole. Cement 5 1/2 with Guide Shoe

130SK. Clear lines & Displace Plug Centralizer 8 Turbalizers

Plug landed @ 130SK Held. Release Baskets 2

Pressure D/V. AFU Inserts Port collar

Float Shoe 1

Latch Down 1

Pumptrk Charge prod long string

Mileage 31

Tax

Discount

Total Charge

X Signature [Signature]

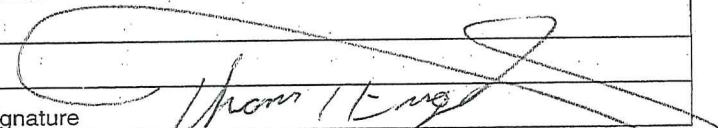
QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 6689

Date	4-10-13	Sec.	15	Twp.	16	Range	20	County	Rush	State	KS	On Location		Finish	4:30 A.M.
Lease								Location		Central 1s 12W to 13R 1/2 ENT					
Lease								Well No.		8					
Contractor								Owner		To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.					
Type Job								Charge To		R. P. Nixon					
Hole Size								T.D.		216					
Csg.								Depth		215					
Tbg. Size								Depth		City State					
Tool								Depth		The above was done to satisfaction and supervision of owner agent or contractor.					
Cement Left in Csg.								Shoe Joint		Cement Amount Ordered 150 Lbm 3/16 2/16					
Meas Line								Displace		12 1/2 BCL					
EQUIPMENT								Common 150							
Pumptrk 9 No. Cementer Helper								Poz. Mix							
Bulktrk No. Driver								Gel. 3							
Bulktrk 1 No. Driver								Calcium 5							
JOB SERVICES & REMARKS								Hulls							
Remarks:								Salt							
Rat Hole								Flowseal							
Mouse Hole								Kol-Seal							
Centralizers								Mud CLR 48							
Baskets								CFL-117 or CD110 CAF 38							
D/V or Port Collar								Sand							
8 5/8 on bottom. Est. Circulation.								Handling 158							
Mix 150 Lbm Displace								Mileage							
Cement Circulated!								FLOAT EQUIPMENT							
								Guide Shoe							
								Centralizer 8 5/8 surge							
								Baskets							
								AFU Inserts							
								Float Shoe							
								Latch Down							
								Pumptrk Charge Surface							
								Mileage 31							
Signature: 								Tax							
								Discount							
								Total Charge							

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

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

No. 7992

Cell 785-324-1041

Date	7-26-13	Sec.	Twp.	Range	County	State	On Location	Finish
					Rush	KS		3:00pm.

Location *Liebert hel 11 W to 1300 1/2 N Ein to*

Lease	<i>KEOUGH</i>	Well No.	<i>8</i>	Owner	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Contractor	<i>Express</i>			Charge To	<i>R.P. Nixon</i>
Type Job	<i>Port Collar</i>			Street	
Hole Size	<i>7/8</i>	T.D.		City	State
Csg.	<i>5 1/2</i>	Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Tbg. Size	<i>2"</i>	Depth		Cement Amount Ordered	<i>250 QM/C 1476/6</i>
Tool	<i>Port Collar</i>	Depth	<i>1415</i>		
Cement Left in Csg.		Shoe Joint			

Meas Line	Displace	<i>4RL</i>	USED	<i>150SK</i>
EQUIPMENT			Common	<i>150</i>
Pumptrk	No.	Cement Helper	Poz. Mix	
		<i>Gary Matt</i>		
Bulktrk	No.	Driver	Gel.	
Bulktrk	No.	Driver	Calcium	
		<i>Clayton</i>		

JOB SERVICES & REMARKS

Remarks:	Hulls
Rat Hole	Salt
Mouse Hole	Flowseal <i>62#</i>
Centralizers	Kol-Seal
Baskets	Mud CLR 48
D/V or Port Collar	CFL-117 or CD110 CAF 38
	Sand
	Handling <i>250</i>
	Mileage

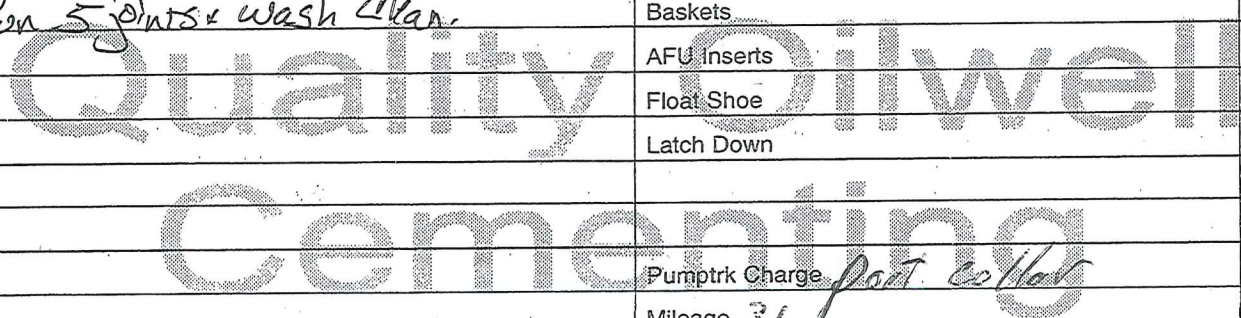
*Test to 800# open tool & Pump 20BL
Mud & ES+ Circulation. Mixed 150SK+
Displace.
Cement Circulated!
Close Tool Test to 800# Hld.
Run 5 joints & wash clean.*

FLOAT EQUIPMENT

Guide Shoe
Centralizer
Baskets
AFU Inserts
Float Shoe
Latch Down

Pumptrk Charge *port collar*
Mileage *31*

Signature	<i>Duane Acklerberg</i>	Tax	
		Discount	
		Total Charge	



OPERATOR

Company: R.P. NIXON OPERATIONS, INC.
 Address: 207 W12TH STREET
 HAYS, KANSAS 67601

Contact Geologist: DAN NIXON
 Contact Phone Nbr: 785-628-3834
 Well Name: KEOUGH # 8
 Location: NW SE NE SW Sec 15-16s-20w API: 15-165-22,018-00-00
 Pool: IN FIELD Field: KEOUGH
 State: KANSAS Country: USA

Scale 1:240 Imperial

Well Name: KEOUGH # 8
 Surface Location: NW SE NE SW Sec 15-16s-20w
 Bottom Location:
 API: 15-165-22,018-00-00
 License Number: 5252
 Spud Date: 4/9/2013 Time: 6:45 PM
 Region: RUSH COUNTY
 Drilling Completed: 4/15/2013 Time: 10:17 AM
 Surface Coordinates: 1660' FSL & 2280' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 2177.00ft
 K.B. Elevation: 2182.00ft
 Logged Interval: 3100.00ft To: 3975.00ft
 Total Depth: 3975.00ft
 Formation: ARBUCKLE
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: Latitude:
 N/S Co-ord: 1660' FSL
 E/W Co-ord: 2280' FWL

LOGGED BY

Company: SOLUTIONS CONSULTING, INC
 Address: 108 W 35TH
 HAYS, KS 67601

Phone Nbr: (785) 639-1337
 Logged By: Geologist Name: HERB DEINES

CONTRACTOR

Contractor: SHIELDS OIL PRODUCERS INC
 Rig #: 1
 Rig Type: MUD ROTARY
 Spud Date: 4/9/2013 Time: 6:45 PM
 TD Date: 4/15/2013 Time: 10:17 AM
 Rig Release: 4/16/2013 Time: 10:00 AM

ELEVATIONS

K.B. Elevation: 2182.00ft Ground Elevation: 2177.00ft
 K.B. to Ground: 5.00ft

NOTES

PRODUCTION CASING WAS RAN TO FURTHER TEST AND DEVELOP THE ARBUCKLE BASED ON GOOD STRUCTURE.

OPEN HOLE LOGGING BY PIONEER ENERGY SERVICES: RADIATION GUARD LOG, MICRORESISTIVITY LOG

OPEN HOLE DRILL STEM TESTING BY TRILOBITE TESTING INC: ONE (1) STRADDLE TEST

FORMATION TOPS SUMMARY AND CHRONOLOGY OF DAILY ACTIVITY

Keough # 8

1660' FSL & 2280' FWL, SW/4

Sec. 15-16s-20w

2177' GL 2182' KB

Keough # 7

SE NE NW SW

Sec. 15-16s-20w

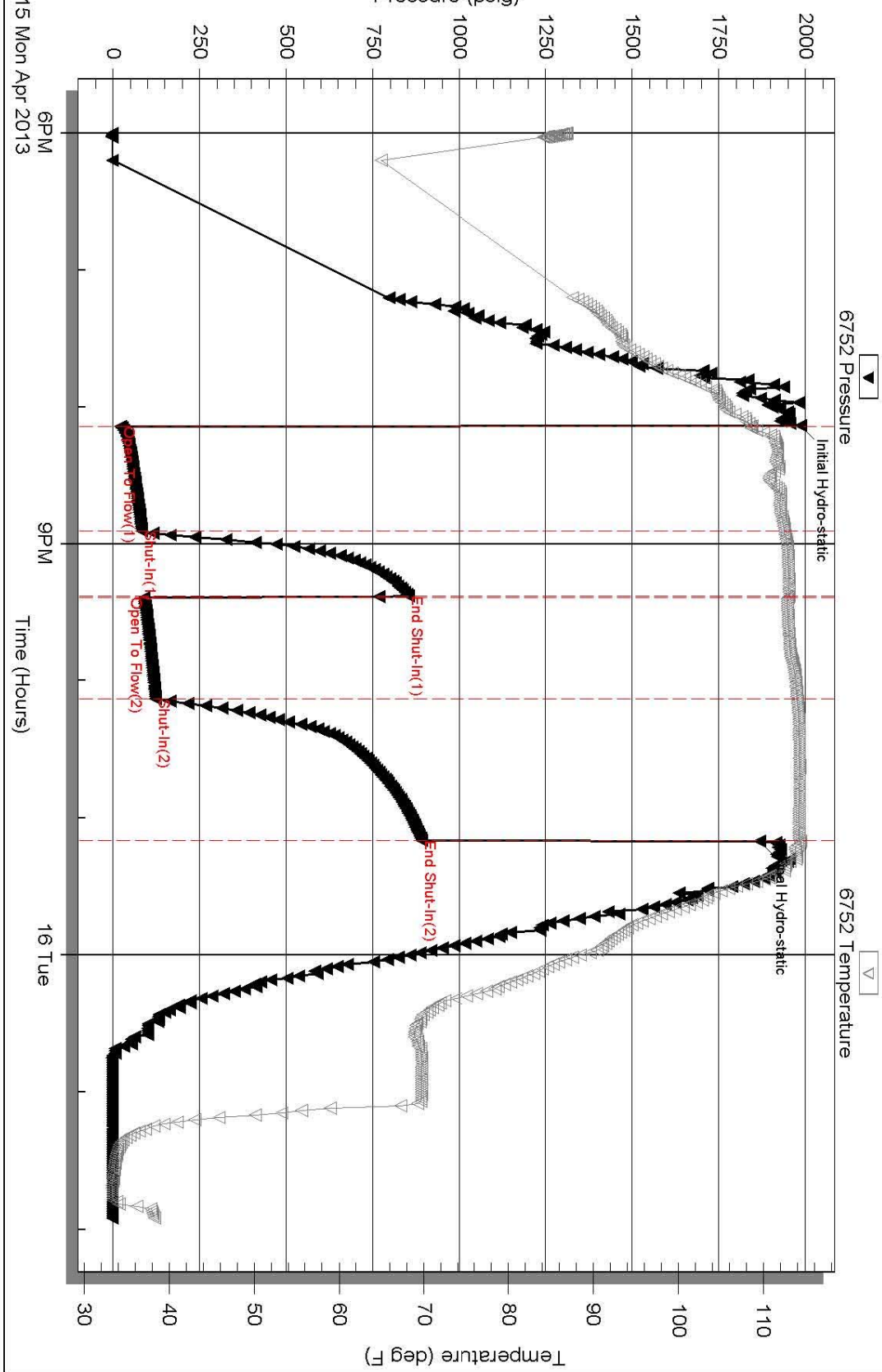
Reference Well

<u>FORMATION</u>	<u>SAMPLE TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1420+ 762	1415+ 767	+763
B-Anhydrite	1454+ 728	1450+ 732	+727
Topeka	3216-1034	3212-1030	-1032
Heebner Shale	3305-1323	3498-1316	-1314
Toronto	3528-1346	3578-1336	-1338
LKC	3545-1363	3538-1356	-1356
BKC	3803-1621	3798-1616	-1612
Marmaton		3859-1677	-1678
Arbuckle	3920-1738	3916-1734	-1745
RTD	3975-1793		
LTD		3973-1791	

SUMMARY OF DAILY ACTIVITY

4-09-13	RU, spud 6:45 pm
4-10-13	213', set 8 5/8" surface casing to 213' w/ 150 sacks Common, 2%gel, 3%CC, plg dn 4:30AM, slope survey 1 degree, WOC 8 hrs.
4-11-13	885', drilling
4-12-13	2127', drilling
4-13-13	2930', drilling
4-14-13	3580', drilling
4-15-13	3925', drilling, RTD @ 3975' at 10:17AM, logs, start DST # 1 3902' to 3938' Arbuckle straddle test, Slope 1 degree.
4-16-13	3975', finish DST # 1, run and cement production casing

Pressure vs. Time



DST # 1 CHART FOR BOTTOM PACKER-PACKER HELD

	DRILL STEM TEST REPORT	
	RP Nixon Operations Inc	15 16s 20w Rush
	207 W 12th St	Keough # 8



GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: 2182.00 ft (KB)
Time Tool Opened: 20:08:20
Time Test Ended: 01:56:00

Test Type: Conventional Straddle (Initial)
Tester: Jim Svaty
Unit No: 41

Interval: **3902.00 ft (KB) To 3938.00 ft (KB) (TVD)**
Total Depth: 3974.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

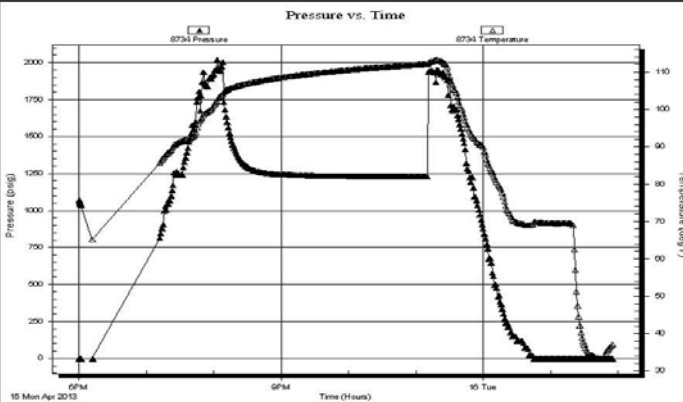
Reference Elevations: 2182.00 ft (KB)
2177.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: **8734** Below (Straddle)

Press@RunDepth: psig @ 3943.00 ft (KB)
Start Date: 2013.04.15 End Date: 2013.04.16
Start Time: 18:00:01 End Time: 01:55:20

Capacity: 8000.00 psig
Last Calib.: 2013.04.16
Time On Btm:
Time Off Btm:

TEST COMMENT: 45-IFP- Surging Surface Blow in 14 min. Building to 6 1/2 in.
30-ISIP- No Blow
45-FFP- Surging Surface Blow in 5 min. Building to 4 1/2 in.
60-FSIP- No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
33.00	CO 100%	0.24
32.00	MWCO 15%m 15%w 70%o	0.24
62.00	WOCM 20%w 30%o 50%m	0.46
124.00	OMCV 5%o 35%m 60%w	0.91

Gas Rates

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

ROCK TYPES

Clystgy	Lmst fw<7	shale, gry	Dol Lime
Clystcol	Lmst fw>7	Carbon Sh	Lscongl
Dolprim	shale, grn	shale, red	CglSandy

ACCESSORIES

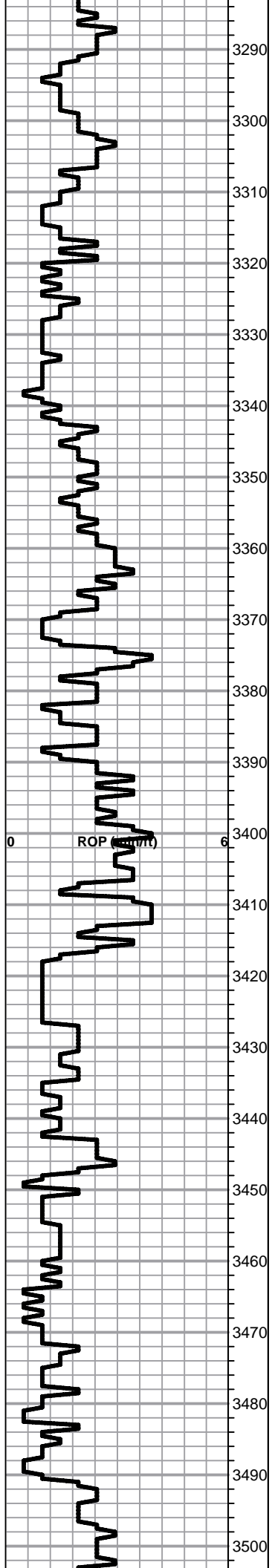
MINERAL	FOSSIL
Varicolored chert	Oomoldic
Chert White	

OTHER SYMBOLS

DST

- DST Int
- DST alt
- Core

ROP (min/ft)	Depth Intervals DST Cored Interval DST Interval	Lithology	Oil Show	Geological Descriptions
	<p>3100</p> <p>3110</p> <p>3120</p> <p>3130</p> <p>3140</p> <p>3150</p> <p>3160</p> <p>3170</p> <p>3180</p> <p>3190</p> <p>3200</p> <p>3210</p> <p>3220</p> <p>3230</p> <p>3240</p> <p>3250</p> <p>3260</p> <p>3270</p> <p>3280</p>		<p>BEGIN 1' DRILL TIME FROM 3100' TO RTD BEGIN 10' WET AND DRY SAMPLES FROM 3200' TO RTD</p> <p>ANHYDRITE TOP 1415+767 ANHYDRITE BASE 1450+732</p> <p>Lime, lt brn, fnxln</p> <p>Shale, gray, soft blocky to sticky clumps in part</p> <p>Lime, med brn, fnxln, fossiliferous <u>TOPEKA ELog 3212-1030</u></p> <p>Lime, lt-med brn, fnxln, fossiliferous-fusulinids</p> <p>Lime, lt-med brn, fnxln</p> <p>Lime, lt-med brn, fnxln, slightly fossiliferous</p> <p>Lime, lt-med brn, fnxln, slightly fossiliferous</p> <p>Lime, lt-med brn, fnxln</p> <p>Lime, crm-lt brn, granular slight bedded chalk, NS</p> <p>Lime, lt-med brn-grayish brn, fnxln, slightly fossiliferous</p> <p>Shale, lt-med gray, soft blocky</p> <p>Lime, lt-med brn, fnxln, slightly fossiliferous</p>	<p>1:240 Imperial</p> <p>8 5/8" SURFACE CASING SET TO 213' W/ 150 SXS COMMON, 2%GEL, 3%CC</p> <p>SLOPE 1 DEGREE @ 213'</p>



Lime, crm-lt brn, fnxln-granular, slightly fossiliferous, slight bedded chalk in part

Lime, crm-lt brn, fnxln-granular bedded chalk with chalky matrix in part

Lime, lt-med brn-grayish brn, fnxln, slightly fossiliferous with fusulinids

Lime, lt brn, granular, slight bedded chalk in part, slightly fossiliferous

Lime, lt-med brn, granular, slight chalk in part

Lime, lt-med brn-grayish brn, granular-fnxln, slight fossil content

Shale, black carbonaceous, soft blocky

Shale, med gray, soft blocky

Lime, lt-med brn, fnxln, chalk in part, some lithographic

Lime, lt-med brn, fnxln-granular, bedded chalk in part, NS

Lime, crm-lt brn, fnxln-granular, slight chalk in part, fusulinids

Lime, crm-lt brn, fnxln-granular, slight chalk, slightly fossiliferous,

Lime, lt-med brn, fnxln, slightly chalky

Shale, black carbonaceous, blocky w slivers in part

Lime, lt-med brn fn-vfxln

Lime, lt-med brn, fnxln-granular, slight chalk in part, slightly fossiliferous, NS

Lime, crm-lt brn, granular-fnxln, bedded chalk with sticky clumps of chalk in part

Lime, lt-med brn, granular-fnxln, slight chalk in part

Lime, lt brn, fnxln-granular, bedded chalk in part with sticky clumps of chalk

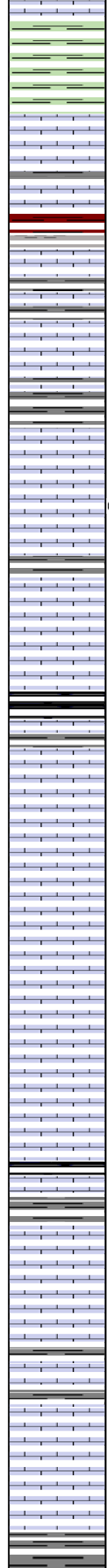
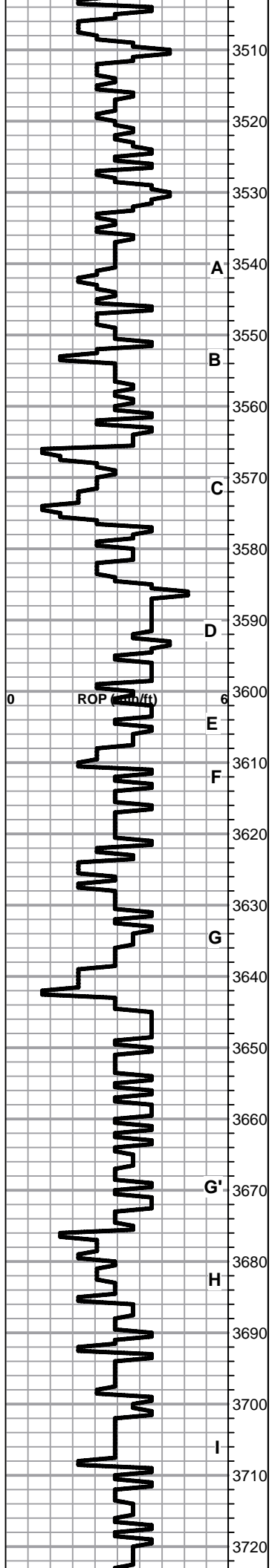
Lime, lt brn, granular, bedded chalk

Lime, lt-med brn, mostly granular, slight chalk

Lime, lt-med brn, granular-fnxln, slight chalk

HEEBNER SHALE ELog 3498-1316

Shale, black carbonaceous, fissile, blocky



Lime, med brn, fn-vfxln, hard on crush
 Shale, lime green-lt gray, forming soft mud clumps

TORONTO ELog 3518-1336

Lime, white-crm, fnxln, bedded chalk, NS

Lime, crm-lt brn, fnxln, bedded chalk, NS
 Shale, lt red wash, reddish brn, soft mud - soft blocky

LKC ELOG 3538-1356

Lime, lt grayish brn, fnxln, hard on crush
 Shale, lt-med gray, soft blocky

Lime, crm-lt brn, fnxln, bedded chalk and whtie chert

Lime, crm-lt brn, fnxln, bedded chalk, white chert

Lime, crm-lt brn, granular, fine inter xln porosity with fine pinpoint porosity, No Odor, Lt Spotty Staining, NFO

Shale, lt gray-lt green, soft blocky

Lime, lt grayish brn, fnxln, hard on crush

Lime, crm-lt brn, fnxln, bedded chalk

Shale, gray-black carbonaceous, fissile, blocky
 Lime, lt gray, fnxln, hard on crush

Lime, crm-lt-med brn, fnxln, bedded chalk NS

Lime, crm-lt-med brn, fnxln, bedded chalk, NS

Lime, crm-tan-lt brn, fnxln, granular in part, NS, bed chalk

Lime, crm-lt brn, fnxln, granular, bed chalk, NS

Lime, crm-tan, fnxln with vfxln in part, bed chalk, NS

Lime, crm-tan-lt brn, fnxln, bedded chalk

Lime, crm-lt brn-brn, fnxln
 Shale, dove gray, soft mud-soft blocky

Lime, white-crm, fnxln-granular, bedded chalk, NS

Lime, white-crm, fnxln, bedded chalk

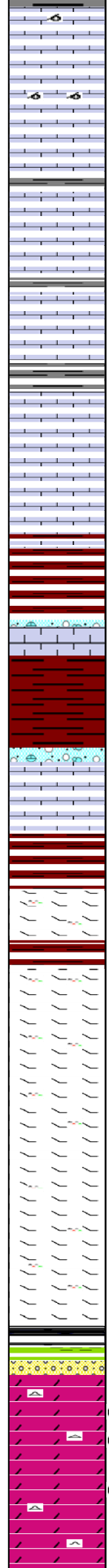
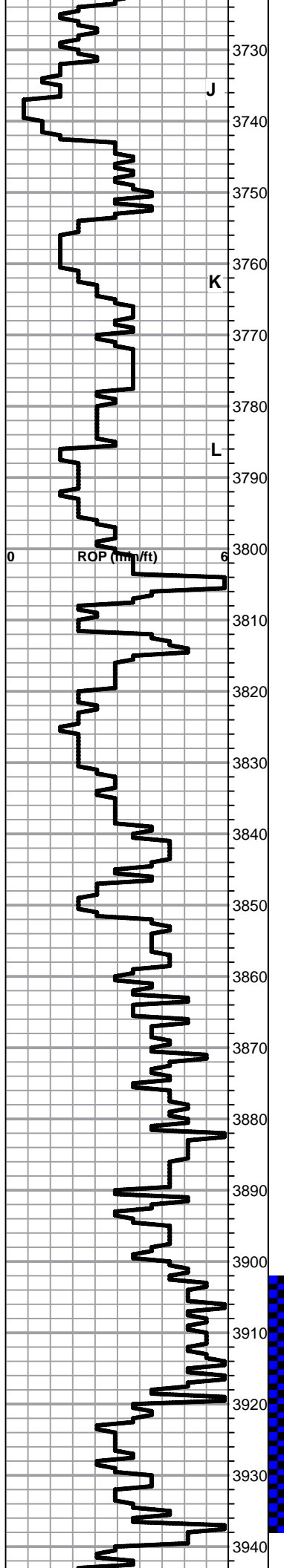
Lime, crm-tan, fnxln, soft on crush, bedded chalk, NS

Lime, crm-tan, fnxln, bedded chalk, NS

Lime, crm-tan, fnxln, bedded chalk

Shale, lt-med gray, soft mud to soft blocky

ZONE DOESN'T APPEAR WELL DEVELOPED IN THIS WELL BUT SHOULD BE PERFORATED AND TESTED IN HIGH WELLS ON LEASE BEFORE ABANDONMENT OF LEASE OR WELL



Lime, crm, fnxln-oolimoldic, slight chalk in part, NS, No Odor

Lime, crm, fnxln, slight bedded chalk, NS

Lime, crm-tan, fnxln, bedded chalky with sticky clumps in part

Lime, crm-tan-lt brn, fnxln, fine cemented oolitic zone, slight bedded chalk in pat

Lime, crm-tan-lt brn, fnxln, bedded chalk

Lime, crm-tan, granular, bedded chalk

BKC ELog 3798-1616

Shale, reddish brn, soft blocky

Shale, reddish brn soft blocky forming soft mud clumps in part

Shale, lt reddish brn, soft sticky mud clumps

Lime, crm-tan, fnxln, clastic lime in part

Shale, red, soft and sticky

Lime, pale gray, fnxln, dolomitic

PAWNEE ELog 3859-1677

Lime, crm-lt brn, fnxln, dolomitic, orange chert, fresh, sharp

Lime, tan-lt brn, fnxln, dolomitic, cherty

SHORT TRIP @ 3880'

Lime, crm-lt brn, fnxln, dolomitic, hard on crush

Lime, cr,-lt brn, fnxln, dolomitic, orange chert

Lime, crm-tan, fn-vfxln, hard on crush, dolomitic and cherty

ARBUCKLE ELog 3916-1734

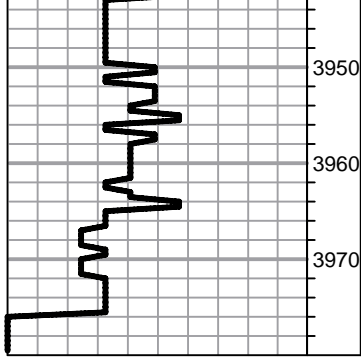
Dolomite, med brn, med-cxln lt odor, interxln porosity, lt show of gassy oil, white chert, fresh, sharp

DST # 1 STRADDLE TEST
3902' TO 3938' SEE HEADER
FOR TEST SUMMARY

Dolomite, lt-med brn, fn-cxln, granular, interxln porosity, fair odor, saturated staining.

CFS@3925'

Dolomite, crm-lt brn, fn-vfxln, lt sulfur odor



Dolomite, ivory-tan-lt brn, fn-cxln, granular, lt sulfur odor

Dolomite, ivory-crm, fn-cxln, sucrosic in part, white chert

Dolomite, crm-tan, fnxln, hard on crush

RTD 3975-1793 LTD 3973-1791

SLOPE SURVEY 1 DEGREE