



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: _____



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: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
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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> _____ <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Pickrell Drilling Company, Inc.
Well Name	Matson Estate 3
Doc ID	1120124

Tops

Name	Top	Datum
Heebner	3020	-1567
Lansing	3244	-1791
Kansas City	3536	-2083
Stark	3685	-2232
B/KC	3780	-2327
Cherokee	3941	-2488
Miss Lime	4091	-2638
Miss Chert	4109	-2656

ALLIED CEMENTING CO., LLC. 32725

Federal Tax I.D.# 20-5975804

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

SERVICE POINT:
Medicine Lodge KS

DATE <i>02-14-13</i>	SEC <i>31</i>	TWP <i>29s</i>	RANGE <i>06w</i>	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
LEASE <i>Matson Estate</i>	WELL# <i>5</i>	LOCATION <i>Rago Jet, 3g, 1w, 1/4g, v/pnto</i>	COUNTY <i>Kingman</i>	STATE <i>KS</i>			
OLD OR NEW (Circle one)					*2.03	1.03	

CONTRACTOR *Pickrell* OWNER *Pickrell*

TYPE OF JOB *Rotary Plug*

HOLE SIZE *7 7/8* T.D.

CASING SIZE *8 3/4* DEPTH *207'*

TUBING SIZE DEPTH

DRILL PIPE *4 1/2* DEPTH *1050'*

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. —

PERFS.

DISPLACEMENT *Fresh H₂O & Drilling Mud*

CEMENT

AMOUNT ORDERED *180sx 60:40:4% gel*

COMMON	<i>A</i>	<i>108</i>	<i>sx @ 17.90</i>	<i>1933.20</i>
POZMIX		<i>72</i>	<i>sx @ 9.35</i>	<i>673.20</i>
GEL		<i>6</i>	<i>sx @ 23.40</i>	<i>140.40</i>
CHLORIDE				
ASC				

EQUIPMENT

PUMP TRUCK	CEMENTER <i>D. Feljo</i>	<i>1</i>
# <i>548-545</i>	HELPER <i>J. Heard</i>	<i>3</i>
BULK TRUCK		
# <i>561-553</i>	DRIVER <i>J. O'Hara</i>	<i>3</i>
BULK TRUCK		
#	DRIVER	

REMARKS:

See Job -

HANDLING *190* *at* *2.48* *471.20*

MILEAGE *8.49 / 35 / 2.60* *773.20*

TOTAL *3996.20*

Pumped 180sx 60:40:4% gel cement

Circled at Swaha Plug

THX ☺

SERVICE

DEPTH OF JOB	<i>1050'</i>	
PUMP TRUCK CHARGE	<i>2249.84</i>	
EXTRA FOOTAGE	@	
MILEAGE <i>35</i>	@ <i>7.70</i>	<i>269.50</i>
MANIFOLD	@ <i>NA</i>	<i>NA</i>
<i>Light Blue</i>	@ <i>35</i>	@ <i>4.40</i> <i>154.00</i>
	@	
	@	

CHARGE TO: *Pickrell*

STREET

CITY STATE ZIP

TOTAL *2673.34*

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

PLUG & FLOAT EQUIPMENT

	@	
	@	
	@	
	@	
	@	

PRINTED NAME *MIKE KORN*

SIGNATURE *Mike Korn*

TOTAL

SALES TAX (if Any) *193.64*

TOTAL CHARGES *6664.54*

DISCOUNT *1332.91* IF PAID IN 30 DAYS

(Net) 5331.63

ALLIED OIL & GAS SERVICES, LLC 059721

Federal Tax I.D.# 20-5975804

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

SERVICE POINT:
Medicine Lodge KS

DATE <u>07/06/13</u>	SEC <u>31</u>	TWP. <u>29S</u>	RANGE <u>6W</u>	CALLED OUT	ON LOCATION	JOB START	JOB FINISH <u>8:30 PM</u>
LEASE <u>Madison Fld</u> WELL# <u>3</u>		LOCATION <u>Rago Sect, 3 East, 1 North,</u>			COUNTY <u>Kingman</u>	STATE <u>KS</u>	
OLD OR <u>NEW</u> (Circle one)		<u>4 East, North into past Bridge</u>			<u>2.01</u> <u>7.05</u>		

CONTRACTOR Pickrell OWNER Pickrell Drilling

TYPE OF JOB Surface
 HOLE SIZE 12 3/4 T.D. 220
 CEMENT AMOUNT ORDERED 225 sq Class A + 3% cc + 2% Gel
 CASING SIZE 8 5/8 DEPTH 219
 TUBING SIZE DEPTH
 DRILL PIPE DEPTH
 TOOL DEPTH

PRES. MAX 350 MINIMUM
 MEAS. LINE SHOE JOINT
 CEMENT LEFT IN CSG. 20
 PERFS.
 DISPLACEMENT 12 3/4 BBL Fresh H₂O

EQUIPMENT

PUMP TRUCK CEMENTER <u>Jason Thimmesch</u>	
# <u>548/545</u> HELPER <u>Sike Heard</u>	<u>3</u>
BULK TRUCK	
# <u>364</u> DRIVER <u>Justin Bower</u>	<u>2</u>
BULK TRUCK	
#	DRIVER

REMARKS:
Did Circ Cement

COMMON <u>Class A 225 sq @ 17.96</u>	<u>4027.50</u>
POZMIX @	
GEL <u>5 sq @ 23.40</u>	<u>117</u>
CHLORIDE <u>.8 sq @ 64</u>	<u>512</u>
ASC @	
HANDLING <u>243.3 cu ft @ 2.48</u>	<u>603.38</u>
MILEAGE <u>11.6 tank 75 mix @ 2.10</u>	<u>1055.6</u>
TOTAL <u>6315.48</u>	

SERVICE

DEPTH OF JOB <u>219</u>	
PUMP TRUCK CHARGE	<u>1512.25</u>
EXTRA FOOTAGE @	
MILEAGE <u>35 mi @ 7.70</u>	<u>269.50</u>
MANIFOLD @	
LV <u>35 mi @ 4.40</u>	<u>154</u>
TOTAL <u>1935.75</u>	

PLUG & FLOAT EQUIPMENT

NA

	@	
	@	
	@	
	@	
	@	
TOTAL		

SALES TAX (If Any) 328.28

TOTAL CHARGES 8251.23

DISCOUNT 20% Nov. 24 IF PAID IN 30 DAYS

Net 6600.99

CHARGE TO: Pickrell

STREET _____

CITY _____ STATE _____ ZIP _____

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

PRINTED NAME Mike Kern

SIGNATURE Mike Kern



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Pickrell Drlg. Co. Inc.
 100 S. Main Ste. 505
 Wichita, KS 67202-3738
 ATTN: Bob Stolzle

31-29s-6w. Kingman Co.
Matson Estates #3
 Job Ticket: 50856 **DST#: 1**
 Test Start: 2013.02.12 @ 17:24:42

GENERAL INFORMATION:

Formation: **Miss. Osage. Chert**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 19:52:57
 Time Test Ended: 04:19:12
 Interval: **4111.00 ft (KB) To 4125.00 ft (KB) (TVD)**
 Total Depth: 4125.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ryan Reynolds
 Unit No: 48
 Reference Elevations: 1453.00 ft (KB)
 1443.00 ft (CF)
 KB to GR/CF: 10.00 ft

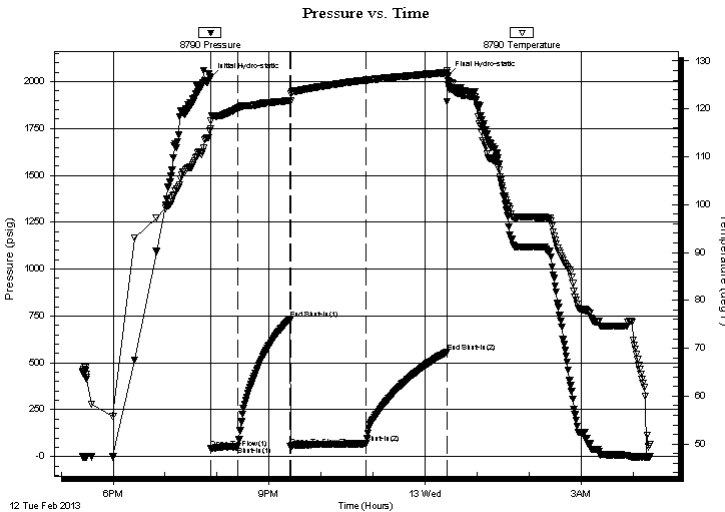
Serial #: 8790

Inside

Press @ Run Depth: 69.18 psig @ 4112.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.02.12 End Date: 2013.02.13 Last Calib.: 2013.02.13
 Start Time: 17:24:47 End Time: 04:19:12 Time On Btm: 2013.02.12 @ 19:52:27
 Time Off Btm: 2013.02.13 @ 00:26:12

TEST COMMENT: IF: Strong blow . BOB 10min. No GTS.
 IS: Weak Surf . Blow
 FF: Strong Blow . BOB 8min. No GTS.
 FS: No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2022.61	115.85	Initial Hydro-static
1	43.92	117.42	Open To Flow (1)
32	53.18	120.18	Shut-In(1)
92	733.99	121.77	End Shut-In(1)
92	53.96	121.67	Open To Flow (2)
180	69.18	126.03	Shut-In(2)
273	559.05	127.56	End Shut-In(2)
274	2034.04	126.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Drig mud 100%mud	0.10
60.00	SLI OCM Trc%oil, 99%mud	0.30

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pickrell Drlg. Co. Inc.

31-29s.-6w. Kingman Co.

100 S. Main Ste. 505
Wichita, KS 67202-3738

Matson Estates #3

Job Ticket: 50856

DST#: 1

ATTN: Bob Stolzle

Test Start: 2013.02.12 @ 17:24:42

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:

6000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
20.00	Drlg mud 100%mud	0.098
60.00	SLI OCM Trc%oil, 99%mud	0.295

Total Length: 80.00 ft Total Volume: 0.393 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8790

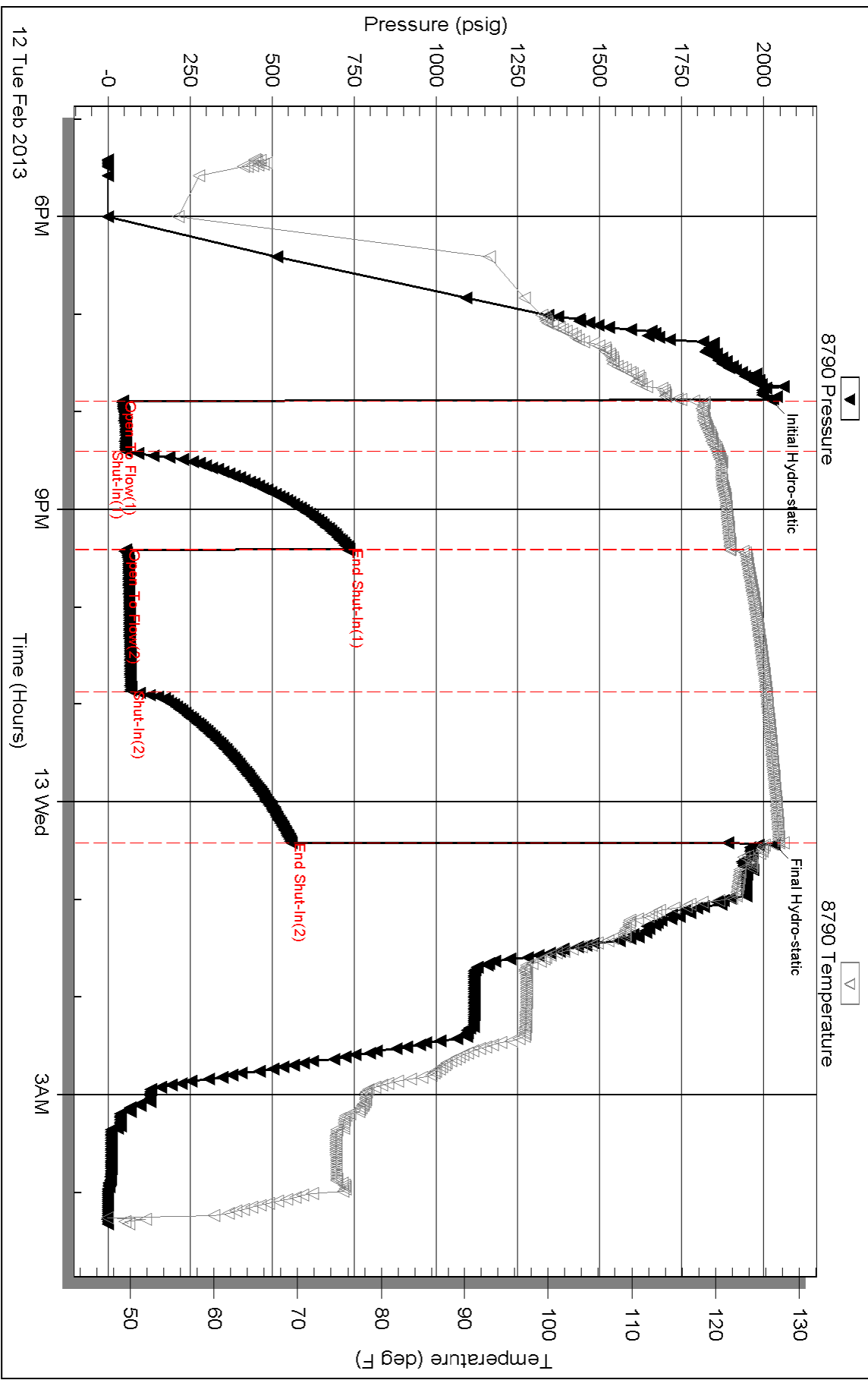
Inside

Pickrell Drig. Co. Inc.

Watson Estates #3

DST Test Number: 1

Pressure vs. Time



ROBERT STOLZLE

CONSULTING PETROLEUM GEOLOGIST

6211 S. 201st ST, W. Edmond, OK 73032 - 0240 (918) 704 - 2400
 AAPG Cert # 3214

DRILLING TIME AND SAMPLE LOG

OPERATOR: **Pickrell Drilling Co. Inc.**
 LEASE: **Matson Estate** WELL NO.: **3**
 FIELD: **Spivey-Grabs-Bassi 1**
 LOCATION: **SE 1/4 SW 1/4**
 SEC.: **31** TWP: **29S** RANGE: **6W**
 COUNTY: **Kingman** STATE: **KS**
 API NO.: **15-095-22269-00-00**

CONTRACTOR: **Pickrell Drilling Co. Rig #1**
 COMMENCED: **February 6, 2013** COMPLETED: **2/14/13**
 ROTARY TOTAL DEPTH: **4220'** LOG TOTAL DEPTH: **4220'**
 GEOLOGICAL SUPERVISION FROM: **2900'** to: **T.D.**
 MUD-UP DEPTH: **2932'** MUD TYPE: **Chemical/Polymer**

FORMATION	SURF		LOG		STRUCTURAL CORRELATION
	TOP	BASE	TOP	BASE	
Haebner Shale	3022(-1569)	3019(-1566)	4'		
Douglas Shale	3043(-1590)	3047(-1594)	4'		
Lansing Group	3248(-1795)	3248(-1795)	4'		
KS City Group	3544(-2091)	3536(-2083)	4'10"		
Stark Shale	3688(-2235)	3685(-2232)	4'		
Base KS City Grp.	3785(-2332)	3780(-2327)	4'		
Altamont ls.	3836(-2383)	3830(-2377)	4'		
Palmer ls.	3896(-2443)	3891(-2438)	4'11"		
Miss. Osage fm.	4112(-2659)	4109(-2656)	-19'		
Total Depth	4220	4220			

ELEVATIONS
 KB **1453'**
 GL **1443'**
 Measurements are all from KB

CASING RECORD
 GRADE: **New 8 5/8"**
23# @ 217' w/ 2255X
 PRODUCTION:
None - P.A.

WIRELINE SERVICES
Tucker Energy
Services: Comp.
Nation P&L Density
Phased Induction
and Micro logs
Ward run

LOCATION MAP

LOG SECTION				
#3 Matson Est.				

31

Reference Well for Structural Comparison: **Wells #10 East SW 1/4 Sec 16 T29S R6W**
 Comments and Recommendations: **Geolograph malfunctioning, repaired at T.D.**
Samplest 50% shale cavings throughout.

DST # **1** ZONE: **Mississippian Osage Chert**
 INTERVAL: **4111' - 4125'**

DST # **1** **8790** Chert
 Interval: **4111'-25'** Depth: **4112'**

Pressures:	Time	Press.	RECOVERY
1. Initial Hydrostatic		2023 psi	840' Gas in Pipe
2. Initial Flow: Start	0	44 psi	20' Mud
3. Initial Flow: End	30	53 psi	60' v. sli. Dil cut Mud
4. Initial Shut-in: End	60	734 psi	(1% O.I.)
5. Final Flow: Start	0	54 psi	Blow Desc.
6. Final Flow: End	90	69 psi	I.F. - BOB 10 MIN.
7. Final Shut-in: End	90	559 psi	I.S.I. - WK Surf. Blow
8. Final Hydrostatic		2034 psi	F.F. - BOB 8 MIN.
			F.S.I. - No Blow

BHT: **128°F**
 Rv: _____



ABBREVIATIONS USED

ROCK TYPES: Ls - Limestone
 FABRIC: F.n.grn - Finegrained
 MODIFIERS: Gd - Good

Sandstone
 Siltstone
 Conglomerate
 Chert
 Quartzite
 Granite
 Dolomite
 Chalk

vfg - very fine grained
 Med - Medium
 Co - coarse
 Det - Detrital
 Fos - Fossiliferous
 Cr - Crystalline
 Mxln - Microcrystalline
 Ool - Oolitic
 Ool - Oolitic
 Ool - Oolitic
 Mat - Matrix

pr - Poor
 ex - excellent
 v - very
 w - well
 tr - trace
 occ - occasional
 vis - visible
 N - no
 gran - granular
 intergran - intergranular
 pp - pinpoint
 dd - dead
 gey - gassy

COLOR:

Wh - White
 Crm - Cream
 Clr - Clear
 Rd - Red
 Grn - Green
 Gry - Grey
 Blk - Black
 Mot - Mottled

HARDNESS:

Sft - Soft
 M.Sft - Moderately soft
 Hrd - Hard
 V.Hrd - Very hard

OTHER TERMS:

Fl - Fluorescence (of oil)
 min Fl - mineral fluorescence
 pyr - pyritic
 glau - glauconitic
 carb - carbonaceous
 str - stain (of oil)
 cut - oil cut
 AA - as above
 G - porosity
 NGFOC - no stain, fluorescence, odor, or cut (of oil)
 sppl - sample
 perm - permeability
 F.O. - free oil
 vug - vugular
 tr - trace
 w - well

TEXTURE:

Dns - Dense
 Cly - Clayey
 Fri - Friable
 Earth - Earthy
 Hack - Hackly
 Fiso - Fissile
 Vit - Vitreous
 Vug - Vugular
 Mic - Micritic

OIL SHOWS

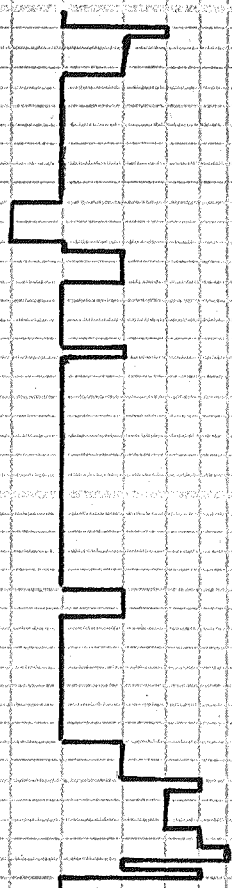
- Weak Oil Show
- Fair Oil Show
- Good Oil Show
- Excellent Oil Show

Rate of Penetration
in minutes per foot

1/2 1 2 3 4 5 6 7 8 9 10

2800

2850



Start 1 foot drilling time
at 2800'

Start 10' wet and dry

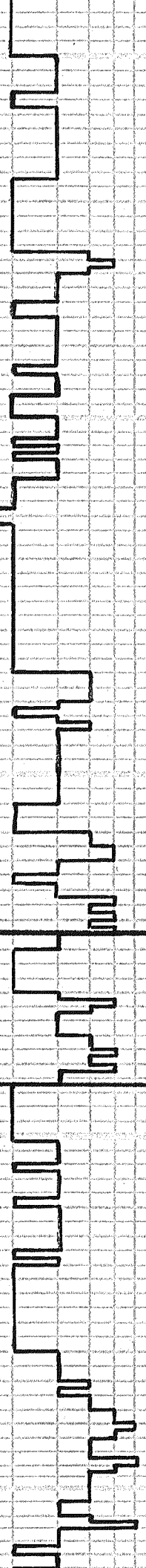
2900

2950

3000

3050

3100



Samples at 2900'

sh: lt. gry-gry, sft, earthy
 Ls: crm, hrd - sft, chiky,
 occ. foss. NΦ NSFOC
 V. fine grained samples
 Ls: A.A. NΦ NSFOC

Start Displacing
 Native Mud System
 At 2908'

sh: A.A., tr. sandy - sily.
 sh: lt. gry-gry, m. sft - sft,
 dns, tr. sily, earthy.
 Ls: wh - crm, sft, chiky - hrd.
 dns, occ. foss. NΦ NSFOC

Finish Displacing
 at 2932'

Ls: crm - tan, hrd, dns, vfg -
 mxln, tr. foss, tr. sandy,
 NΦ NSFOC
 Ls: crm - tan, hrd - m. sft, dns,
 vfg - mxln, tr. chiky, tr. sandy,
 occ. foss., w/pr - tr. moldic
 Φ NSFOC
 Ls: crm - tan, hrd, dns, fn, xln,
 - mxln, mic, tr. foss, tr. sandy,
 occ. sh. stnd. NΦ NSFOC

Ls: A.A. sli: fn. grnd, mod.
 sh. stnd. NΦ NSFOC

Ls: crm - tan, tr. gry, hrd, dns -
 sft, chiky, fn, xln - mxln,
 foss, tr. sh. stnd. NΦ NSFOC

Ls: A.A., tr. chit. tr. pr. vug. Φ
 NSFOC
 sh: dk. gry, m. sft - m. hrd, dns,
 earthy
 sh: A.A., tr. carb.
 Ls: crm - tan, hrd, dns, fn, xln,
 foss - v. foss. NΦ NSFOC

Ls: A.A. NΦ NSFOC

sh: dk. gry, - blk, m. hrd, dns,
 earthy, carb.
 sh: A.A.
 Ls: crm - brn, hrd, dns, fn, xln,
 - mxln, foss, tr. sh. stnd.
 NΦ NSFOC

Ls: A.A. fn, xln, tr. v. xln,
 NΦ NSFOC

Hechmer Shale
 (-1569')

sh: blk, m. hrd, dns, carb,
 earthy
 sh: A.A. occ. lt. gry
 Ls: crm - tan - gry, fn - vfg, xln,
 foss - v. foss. NΦ NSFOC

Ls: A.A., tr. v. pr. pp. vug. moldic Φ
 NSFOC

Douglas Shale
 (-1590')

sh: dk. gry, - gry, m. hrd - m. sft,
 earthy
 sh: dk. gry, m. hrd, dns, earthy
 occ. carb.
 Ls: tan - brn, hrd, dns, foss -
 v. foss, fn - vfg, xln. NΦ NSFOC
 Ls: A.A. tr. pr. moldic vug. Φ NSFOC
 sh: gry - dk. gry, m. hrd, dns,
 earthy - hackly

sh: dk. gry, m. hrd - sft, dns,
 earthy - hackly.
 tr. Ls: w/pr. vug. Φ A.A. NSFOC

sh: A.A.
 ss: wh, hrd, dns, fn. grnd, mod -
 w. sft, sub ang. sub rno, w. carb.
 No vis. Φ, sh. pellets NSFOC
 sh: gry, m. sft, dns, earthy
 ss: A.A., tr. str. pr. vis. Φ
 NSFOC

ss: A.A., occ. calc - v. sandy Ls.
 NΦ NSFOC
 sh: lt. gry - gry, m. sft, dns, occ.
 sily, mica, earthy
 sh: A.A. occ. sandy - sily

3150

3200

3250

3300

sh. wh. sft. sft. a. - m. ffd. dns.
tr. gnd. mod. w. sft. sft. ang.
w. crtd. pr. No Vis. ϕ NSF OC
ss. A. A. occ. VFG. occ. sft. part.
tr. mica. 1 pr. Vis. ϕ NSF OC
sh. gry. - lt. gry. m. sft. sft.
earthy

tr. ss. A. A. $\text{N}\phi$ NSF OC
sh. gry. m. sft. occ. sft. - sandy,
mica, earthy - hackly

sh. gry. - lt. gry. m. sft. dns. occ.
sft. mica, earthy

sh. lt. dk. gry. m. sft. dns. occ.
sft. mica, earthy

sh. gry. m. hrd. - m. sft. dns. -
sft. mica, earthy -
hackly

sh. lt. dk. gry. m. hrd. - m. sft. dns.
occ. sandy - sft. mica.
earthy

sh. gry. - dk. gry. m. hrd. - m. sft.
dns. sli. mod. sft. mica,
earthy

sh. dk. gry. - gry. m. hrd. dns.
occ. sft. mica, earthy

sh. lt. dk. gry. m. hrd. dns.
sft. mica, earthy -
hackly

sh. lt. dk. gry. m. hrd. dns. -
sft. - sandy, mica, earthy -
hackly

sh. gry. m. hrd. - m. sft. dns. -
sft. - sandy. tr. ls. frags. itr.
ss. stringers - VFG. mica.
 $\text{N}\phi$ NSF OC

sh. gry. - dk. gry. m. hrd. - m. sft.
dns. sft. mica, earthy

sh. gry. - dk. gry. sft. clayey -
m. hrd. dns. sft. earthy.
sandy, mica.

ls. tan. - crm. hrd. dns. VFG - mxln.
mic. tr. foss. itr. sandy.
 $\text{N}\phi$ NSF OC

ls. crm. - wh. hrd. - m. sft. dns. -
occ. foss. &ool. w/ tr. oom.
 ϕ , VFG - mxln. $\text{N}\phi$ NSF OC

ls. crm. - wh. hrd. - sft. chik. VFG
- mxln. tr. foss. &ool. w/ occ.
tr. - pr. oom. NSF OC

ls. crm. - tan. hrd. dns. VFG - mxln.
mic. tr. foss. itr. chik.
 $\text{N}\phi$ NSF OC

ls. crm. - tan. hrd. dns. VFG - mxln.
mic. occ. foss. &ool.
 $\text{N}\phi$ NSF OC

ls. crm. hrd. - m. sft. VFG mxln.
foss. &ool. w/ 90.00 m. ϕ &
tr. int. pr. ϕ NSF OC

ls. wh. crm. - gry. hrd. - sft. &
chik. tr. foss. &ool. w/ pr.
moldic. ϕ NSF OC

ls. crm. - lt. gry. hrd. dns. VFG -
mxln. mic. occ. foss. &ool.
tr. chik. $\text{N}\phi$ NSF OC

Mud Check @
3242'
M.W. 8.8 lb./gal.
Vis. 46 sec./qt.
W.L. 8.8 ml./30 min.
chl. 6,000 p.p.m.
Solids 3.2%
LCM. 0 lbs./bb1.

Lansing
Group (-1795')

3350

Ls. crm. - tan - lt. gry. hrd. dns.,
VFG - mxln. itr. mic. foss.
V. foss. NØ NSFOC

Ls. crm. - wh. hrd. dns., VFG - mxln.
mic. occ. foss +ool. w/ tr. fr.
int. part. + VUG. Ø NSFOC

Ls. A.A. tr. pr. int. part. Ø NSFOC

Sh. gry. grn. m. hrd - m. sft. dns.,
hackly

Sh. A.A.
Ls. crm. - lt. gry. hrd. dns., VFG -
mxln. itr. mic. occ. foss.
NØ NSFOC

Ls. crm., hrd. dns., VFG - mxln. itr.
textd. occ. foss. itr. sh. stnd.
NØ NSFOC

Ls. crm - gry. hrd. dns., VFG -
mxln. itr. mic. itr. chiky. occ.
foss. itr. sh. stnd. tr. textd.
NØ NSFOC

Ls. crm. - tan - gry. hrd. dns.,
VFG - mxln. itr. mic. itr. chik.
foss. NØ NSFOC

3400

Ls. crm. - tan - gry. hrd. dns., VFG -
mxln. itr. mic. itr. foss +ool. itr.
pr. oom. Ø NSFOC

Ls. crm. - brn. gry. hrd. dns., VFG -
mxln. itr. mic. itr. chiky. occ.
foss. +ool. itr. sh. stnd. NØ NSFOC

Ls. crm. - tan - gry. hrd. dns.,
VFG - mxln. itr. mic. occ. foss.
NØ NSFOC

Ls. crm - tan - dk. gry. hrd. dns.,
VFG - mxln. itr. mic. itr. chiky.
foss. +ool. det. tr. pr.
int. part. Ø sh. stnd. NSFOC
Ls. A.A. more gry. NØ NSFOC

3450

Sh. gry. m. sft. - m. hrd. dns.,
partly - hackly

Ls. crm - tan - gry. hrd - m. sft.,
VFG - mxln. itr. mic. itr. chik.
occ. foss. + sh. stnd. NØ NSFOC

Sh. A.A. NØ NSFOC

Sh. gry. - gry. grn. m. sft. dns.,
partly - hackly

Sh. A.A. occ. dk. gry.
Ls. crm., hrd. - m. sft. dns., VFG
- mxln. occ. foss. itr. pr. moldic
Ø sh. stnd. NSFOC

Sh. gry. - dk. gry. m. hrd. - sft.,
partly - hackly. itr. clayey.

Ls. crm., hrd - m. sft., VFG - mxln.
occ. foss. + sh. stnd. NØ NSFOC

3500

Sh. gry. - dk. gry. m. hrd. dns.,
hackly

Ls. A.A. occ. gry. NØ NSFOC

Sh. gry. - dk. gry. m. hrd. - m. sft. dns.
occ. ls. foss. frags. hackly

Sh. A.A.
Ls. crm - brn. hrd. dns., VFG -
mxln. itr. mic. occ. foss. sh.
stnd. NØ NSFOC

Sh. gry. - dk. gry. m. hrd. dns.
hack, occ. foss. frags.

occ. Ls. A.A. itr. chik. NØ NSFOC

Sh. gry. - dk. gry. sft. - m. hrd.,
partly - hackly

tr. Ls. A.A. NØ NSFOC

Sh. A.A.
Ls. crm. - gry. hrd. dns. - sft. + chik.

Kansas City Group (-2091')

3550

Ls: crm. - tan, gry, hrd, dns, VFG - mxln, itr, mic, occ. foss. + sh. std. NΦ NSFOC
 Ls: crm. - gry, hrd, dns, VFG - mxln, itr, mic, occ. foss. + sh. std. NΦ NSFOC

Ls: crm. - tan, gry, hrd, dns, VFG - mxln, itr, mic, occ. foss. + sh. std. NΦ NSFOC
 Ls: A.A., occ. dk. gry, NΦ NSFOC

Sh: dk. gry, im. hrd, dns, earthy - hackly

Sh: A.A.
 Ls: crm. - lt. gry, hrd, dns, VFG - mxln, mic, itr, chik, tr, foss. + sh. std. NΦ NSFOC

Ls: crm. - tan, hrd, dns, VFG - mxln, mic, itr, chik, tr, foss. + sh. std. NΦ NSFOC

Ls: wh. - tan, stf, chiky, hrd, dns, mic, VFG - mxln, tr, vexed, occ. foss. + sh. std. NΦ NSFOC

Ls: crm. - tan, hrd, dns, VFG - mxln, mic, occ. foss., tr, pr. Vug. Φ tr. sh. std. NSFOC

Ls: crm. - tan, hrd, dns, VFG - mxln, occ. stf, chik, tr, chd. occ. foss. - v. foss., tr, pr. Vug. Φ NSFOC

Ls: A.A., occ. gry, occ. sh. std. NΦ NSFOC

Ls: crm. - lt. gry, hrd, dns, VFG - mxln, tr, vexed, occ. chd, tr, chik, occ. foss. w/ tr. pr. Vug. Φ moldic Φ NSFOC

Ls: crm. - lt. gry, hrd, dns, VFG - mxln, mic, itr, chik, tr, foss. + sh. std. NΦ NSFOC

Ls: crm. - lt. gry, hrd, dns, VFG - mxln, mic, itr, chd, occ. stf, chik, tr, foss. + sh. std. NΦ NSFOC

Ls: A.A., tr. sandy, tr. ool. w/ gd. oom. Φ, less. chiky. NSFOC

Ls: crm. - lt. gry, hrd, dns, VFG - mxln, tr, chd, tr, chik, NΦ NSFOC

Sh: dk. gry, - bik, m. hrd, - m. stf, dns, carb. earthy - hackly

Stark Shale (-2235')

Ls: crm. - m. hrd, - stf, VFG - mxln, occ. wh. + chiky, ool. gr. NΦ NSFOC w/ gd. - ex. oom. Φ NSFOC

Ls: crm. - tan, hrd, dns, occ. stf, chiky, VFG - mxln, ool. w/ gd. oom. Φ NSFOC

Ls: crm. - tan, hrd, dns, VFG - mxln, mic, occ. foss. + ool. itr. pr. oom. Φ NSFOC

Sh: bik, m. stf, dns, carb. earthy

Ls: crm. - tan, hrd, dns, VFG - mxln, tr, foss. + ool. NΦ NSFOC

Sh: dk. gry, - bik, hrd, - m. stf, dns, carb. earthy

Ls: crm. - tan, hrd, dns, VFG - mxln, mic, itr, chd, occ. foss. occ. sh. std. NΦ NSFOC

Ls: crm. - tan, hrd, dns, VFG - mxln, mic, itr, chd, tr, sh. std, tr, foss. NΦ NSFOC

Mudcheck @ 3756'

M. W. 9.3 lb. 19al.

Vis. 51 sec. 19t.

W.L. 9.0 ml. 130 min.

chl. 6,000 p.p.m.

3600

3650

3700

3750

Solids 6.8%
L.E.M. - 0 16. 19al.

Sh. gry. - dk. gry. m. hrd. - m. sft.,
dns., hackly
Ls. crm. - tan, hrd. dns., VEG -
mxln., mic., tr. foss.
NØNSFOC
Sh. dk. gry. m. hrd. dns., hack.
Ls. crm. - tan, hrd. - m. sft. dns.,
tr. foss., VEG mxln. NØNSFOC
Sh. dk. gry. - gry. m. hrd. dns.,
earthy - hackly
tr. Ls. A.A. NØNSFOC

**Base of
Kansas City
Group (-2332')**

Sh. dk. gry. - blk., m. sft. - m. hrd., dns.
tr. carb., earthy - hackly
Sh. gry. grn - blk., m. sft. - m. hrd.,
dns., earthy - hackly, tr. carb.

Sh. A.A. - ls. frag.
Ls. tan - brn., hrd., dns., VEG mxln.
mic., abun. sh. std. tr. foss.
NØNSFOC
Ls. A.A. frags in sh. ? NØNSFOC

Sh. gry. - grn - dk. gry., m. sft. - m. hrd.
dns., earthy - hackly
Sh. A.A.
Ls. crm. - brn., hrd., dns., VEG mxln.
mic., foss., occ. pebb. surf.
sh. std. NØNSFOC
Ls. A.A. NØNSFOC

**Altamont Ls.
(-2383')**

Sh. gry. - blk., m. hrd., dns., occ.
carb., earthy - hackly
Sh. A.A., occ. sandy.
tr. ss. gry., m. sft., fr. frag. - VEG,
mod. pr. std., w. cmtd. NO VISØ
NSFOC. Ls. A.A. NØNSFOC

Ls. crm. - brn., hrd., dns., VEG mxln.
mic., occ. pebb. surf. NØNSFOC
Sh. gry. grn - dk. gry., m. sft., dns.,
earthy - hackly
Sh. gry. - dk. gry., m. hrd., dns., hack.

Ls. crm. - tan, hrd., dns., VEG mxln.
mic., tr. foss. NØNSFOC
Sh. A.A.
Ls. crm. - tan, mod. hrd., dns.,
rare foss., VEG mxln., mic.
NØNSFOC

Sh. dk. gry. - blk., m. sft., dns., carb.
earthy
Ls. crm. - tan, hrd., dns., VEG mxln.
mic., tr. foss., pebb. surf. NØNSFOC
Ls. crm. - hrd., dns., VEG mxln.,
mic., rare foss. NØNSFOC

**Pawnee Ls.
(-2443')**

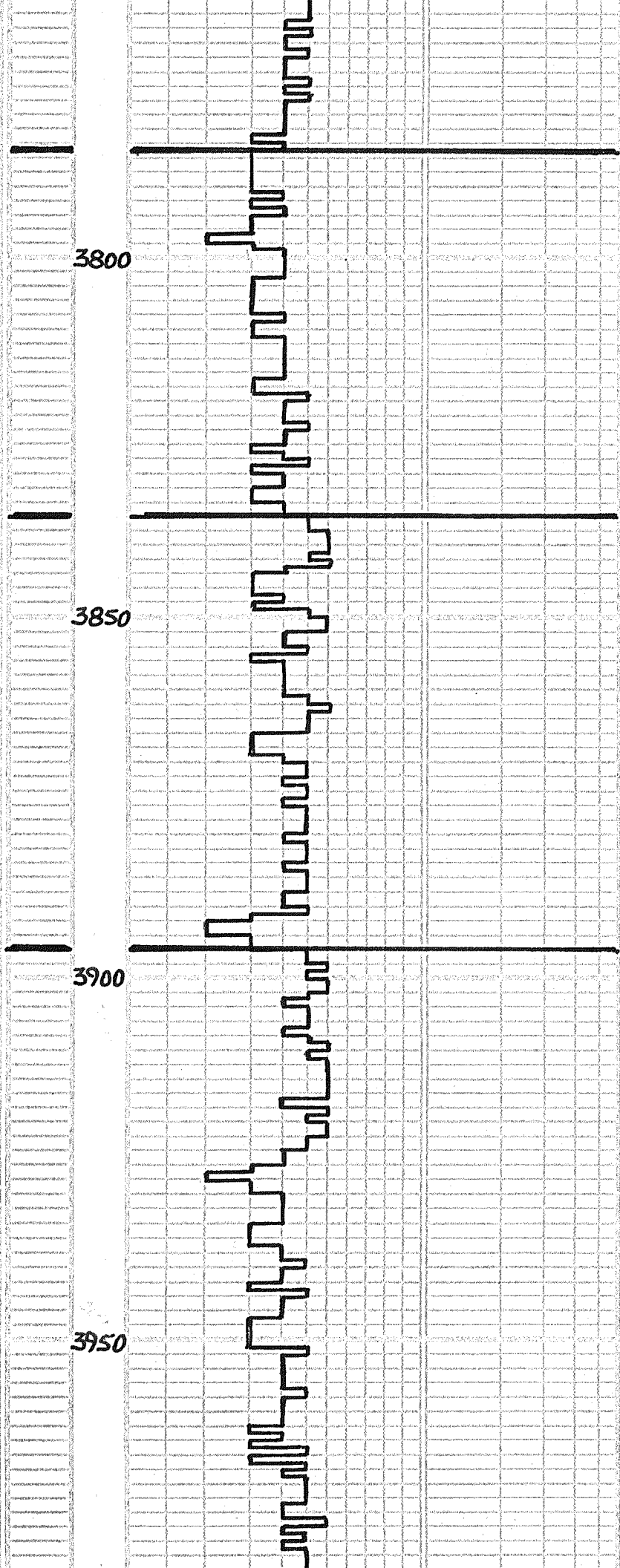
Sh. gry. - dk. gry., m. sft. - m. hrd.,
dns., hack.
Ls. crm. - tan - gry., hrd., dns., VEG
- mxln., mic., tr. foss. NØNSFOC
Sh. gry. - blk., hrd. - m. sft., dns.,
earthy - hackly, tr. carb.

Sh. A.A. tr. rd. brn., earthy.
Ls. crm. - gry., sft. chik. - hrd.,
dns., VEG mxln., mic., rare
foss., tr. sh. std. NØNSFOC
tr. Ls. A.A. NØNSFOC

Sh. gry. - blk., m. sft. - m. hrd., dns.,
tr. sily., tr. carb., earthy - hack.
Sh. A.A. carb.
Ls. crm., hrd., dns., VEG mxln.,
mic., tr. foss. + sh. std.
NØNSFOC

Sh. dk. gry. - blk., m. hrd., dns.,
earthy - hackly
Ls. crm., hrd. - sft. chik., VEG mxln.
mic., tr. foss. NØNSFOC
Ls. crm. - tan, hrd. - m. sft., dns.,
VEG mxln., mic., chik., tr.
foss., occ. sh. std. NØNSFOC

Ls. A.A. tr. sandy. NØNSFOC
Sh. gry. - blk., m. sft., occ. sandy, earthy
tr. ss. / sily. gry. sft., VEG, pr. std.
mod. - w. cmtd., NO VISØ NSFOC
Ls. crm. - dk. gry. hrd. dns., VEG



3800

3850

3900

3950

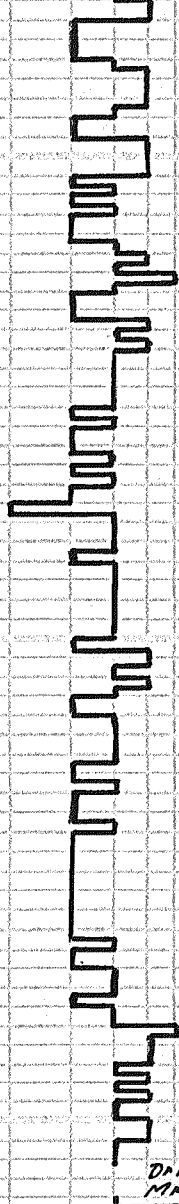
4000

4050

4100

4150

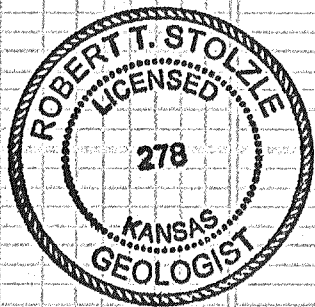
4200



Driller Added 3' to Match Board

Mississippian
Osage Fm.
chert (-2659')

sh: A.A., occ. silt.
 sh: gry. - blk., m. hrd., dns., hack-
 earthy.
 Ls: crm. - tan-gry., hrd., dns., Vfg-
 mxln., mic., tr. foss., sh. stand. NQ NSFOC
 Ls: A.A., occ. sandy NQ NSFOC
 Sh: gry. - blk., m. sft., m. hrd., dns.,
 tr. silt., earthy-hackly
 Sh: A.A., silt., sandy, hack
 Ls: crm. - tan-gry., hrd., dns., Vfg
 - mxln., mic., occ. sandy, V. sandy
 have foss. NQ NSFOC
 Sh: A.A., occ. pebb., hack, occ.
 silt., sandy.
 Ls: crm. - tan, hrd., dns., Vfg - mxln.
 mic, sh. stand. tr. foss. NQ NSFOC Mudcheck @ 4114'
 Sh: lt-dk. gry. - rd. brn. m. hrd.,
 occ. silt., sandy, earthy-hack
 tr. s. gry., hrd., dns., Vfg, sily. NQ
 NSFOC. 1 Ls: A.A. NQ NSFOC M.W. 9.3+
 Vis. 54
 W.L. 8.8
 Chl. 6,000
 Solids 6.7%
 L.C.M. 2#
 Sh: gry. - blk. - mar. - rd. brn., m. hrd.
 dns., hackly
 Ls: crm. - tan - gry., hrd., dns., occ.
 sh. stand., tr. pebb., NQ NSFOC Short Trip
 15 stands
 at 4060'
 Cg: lsh: dk. gry. - gry. gm. - rd. brn.,
 m. sft., dns., sandy, tr. Ls: foss.
 & pebb., earthy-hackly.
 Cg: lsh: dk. gry. - pass. chrvings.
 w/ gry. gm. - rd. brn., mott.
 m. sft., dns., occ. sandy, earthy
 tr. Ls: brn., hrd., dns., mic. NQ NSFOC Geograph Malfunction
 lost 3, Drig. Time OK?
 Sh: A.A., abun. splinter y sh.
 occ. mar., earthy.
 tr. Ls: wh. - crm., sft., chie. - hrd.
 dns., mic., Vfg - mxln. NQ NSFOC DST #1
 4111 - 4125'
 30-60-90-90
 Rec. 840' GIP
 20' DM.
 60' VSOCM
 Strap 4, 12' long
 Deviation 3/4°
 Cht: wh., m. hrd., sli. tip, brn. - blk.
 sft. w/ Dol. tan, hrd., Vfg xln.
 tr. Vug. φ, tr. intxln. φ, 1-zpc. Good Show
 Good Show
 Cht: + Dol. A.A., occ. tr. qd. tr. Vug.
 φ, tr. blq. ovg. tr. odor, tr. cut off.
 Ls: wh. - crm., hrd., Vfg xln., tr. pr. - fr.
 tr. Vug. φ, ? intxln. φ, tr. devit. Cht. NQ Weak Show
 Ls: A.A., tr. rd. Vug. φ, h. brn. sft.
 tr. - qd. cut off, ? intxln. φ, 1 perm. Fair - Weak Show
 occ. Cht: wh., hrd., dns., devit.
 ? tr. lt. brn. sft. wk. sh. Very Weak Show
 Ls: wh. - crm., hrd., dns., Vfg xln.,
 tr. pr. Vug. φ, tr. brn. sft., wk.
 odor, tr. wk. cut off, 1 perm. Weak Show
 tr. Cht: wh., hrd., dns., devit. NQ
 tr. Cht: A.A., 1-2 pp. mott. brn. sft.,
 wk. cut off, 1 perm. V. wk. show
 Ls: crm., hrd. - m. sft., dns., Vfg xln.,
 tr. Vfg. pp. φ, dolomitic NSFOC
 occ. Ls: A.A. w/ wk. shp. A.A.
 Cht: wh., hrd., dns., vit. - devit. trip Weak Show
 tr. mott. brn. sft., wk. odor,
 tr. - wk. cut off.
 Cht: wh., hrd., dns., occ. devit.
 NSFOC
 Ls: crm. - tan, hrd. - m. sft., Vfg xln.,
 occ. fr. A.A. tr. pr. Vug. φ NSFOC Mudcheck @ 4125'
 Ls: crm. - tan, sft., tr. A.A. - hrd.,
 dns., Vfg xln., dolo. NQ NSFOC M.W. 9.3+
 Vis. 46
 W.L. 8.8
 Cht: wh., hrd., dns., vit. - devit. NQ
 NSFOC Chl. 5,000
 Solids 6.8%
 L.C.M. 2#
 Ls: tan. m. sft. - hrd. dns., Vfg. xln.,
 dolomitic. 1 no Vug. φ ? intxln. NSFOC



CPL: wh., hrd., dns., vit., dev., t. n.p.
NSFOC
Ls.: tan, m. sft. - hrd., dol., vfg.
yln. No v.s. inty/n.p. NSFOC
Ls.: crm., sft. - hrd., id ns., vfg x n.,
No v.s. p, occ. tri A, dol., NSFOC
Ch.: wh., hrd., dns., vit., tr. dev. t.
No NSFOC

D.T.D. 4220'

L.T.D 4220'

Robert Stoffle
2/14/13