



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1194172
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

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

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

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

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

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

County: _____ Permit #: _____

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

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

1194172

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

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

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

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
--	---

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

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

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

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

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

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

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	American Warrior, Inc.
Well Name	Palkowitsh 1-2
Doc ID	1194172

All Electric Logs Run

Induction
Porosity
micro
sonic

Form	ACO1 - Well Completion
Operator	American Warrior, Inc.
Well Name	Palkowitsh 1-2
Doc ID	1194172

Tops

Name	Top	Datum
Heebner	4011	-905
Toronto	4028'	-922
Lansing	4058'	-952
B/KC	4470'	-1364
Marmaton	4504'	-1398
Pawnee	4586'	-1480
Ft.Scott	4614'	-1508
Johnson	4709'	-1603
Mississippian	4862'	-1677

ALLIED OIL & GAS SERVICES, LLC 062214

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:
Caddy, KS

DATE <u>2-12-14</u>	SEC. <u>2</u>	TWP. <u>18</u>	RANGE <u>34</u>	CALLED OUT	ON LOCATION	JOB START <u>10:00 PM</u>	JOB FINISH <u>10:30 PM</u>
LEASE <u>Parkinson</u>	WELL # <u>1-2</u>	LOCATION <u>Scott City W 10 Eagle Rd 3.11</u>			COUNTY <u>Scott</u>	STATE <u>KS</u>	
OLD OR (NEW) (Circle one) <u>W Intro</u>							

CONTRACTOR <u>Duba #4</u>	OWNER <u>Same</u>
TYPE OF JOB: <u>Surface</u>	
HOLE SIZE <u>12 1/4</u>	T.D. <u>309</u>
CASING SIZE <u>8 5/8</u>	DEPTH <u>309</u>
TUBING SIZE	DEPTH
DRILL PIPE	DEPTH
TOOL	DEPTH
PRES. MAX	MINIMUM
MEAS. LINE	SHOE JOINT
CEMENT LEFT IN CSG. <u>15'</u>	
PERFS.	
DISPLACEMENT <u>18 1/2</u>	

CEMENT	
AMOUNT ORDERED <u>185.000 COM 3% CC</u>	
<u>290 gal</u>	

COMMON	<u>185.000 @ 17.90</u>	<u>3311.50</u>
POZMIX	@	
GEL	<u>3.000 @ 23.50</u>	<u>70.50</u>
CHLORIDE	<u>5.000 @ 64.00</u>	<u>320.00</u>
ASC	@	

EQUIPMENT

PUMP TRUCK	CEMENTER <u>9200</u>
# <u>428</u>	HELPER <u>Wayne</u>
BULK TRUCK	
# <u>373+308</u>	DRIVER <u>Brandon</u>
BULK TRUCK	
#	DRIVER

HANDLING <u>2000.00</u>	@ <u>2.48</u>	<u>496.00</u>
MILEAGE <u>8.7 @ 55 x 2.00</u>		<u>124.50</u>
		TOTAL <u>5451.50</u>

REMARKS:
rigged up mixed 185.000
com 3% cc 290 gal
released plug & displaced
down with water
shut in
Commented on casing
by Andy [unclear]
Robb [unclear]

SERVICE

DEPTH OF JOB	<u>309'</u>
PUMP TRUCK CHARGE	<u>157.75</u>
EXTRA FOOTAGE	@
MILEAGE <u>MIL V 55</u>	@ <u>4.40</u> <u>242.00</u>
MANIFOLD <u>Head</u>	@ <u>275.00</u>
<u>M:HV: 5.5</u>	@ <u>7.20</u> <u>423.50</u>

CHARGE TO: American Warrior

STREET _____

CITY _____ STATE _____ ZIP _____

TOTAL 2463.25

PLUG & FLOAT EQUIPMENT

	@	
<u>1 - 8 5/8 Wooden Plug</u>	@	<u>107.64</u>
	@	

TOTAL 107.64

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.

SALES TAX (If Any) _____

TOTAL CHARGES 8,002.69

DISCOUNT 1,973.76 IF PAID IN 30 DAYS

6,028.92 Net.

PRINTED NAME Rich Wheeler

SIGNATURE Rich Wheeler



CHARGE TO: American Warrior
 ADDRESS:
 CITY, STATE, ZIP CODE:

TICKET 25869

PAGE 1 OF 2

SERVICE LOCATIONS
 1. New City KS WELL/PROJECT NO. 1-2 LEASE Polkowitz COUNTY/PARISH Scott STATE KS CITY Modoc DATE 23 Feb 14 OWNER
 2. TICKET TYPE SERVICE SALES CONTRACTOR RIG NAME/NO. SHIPPED VIA CT DELIVERED TO Location ORDER NO.
 3. WELL TYPE oil WELL CATEGORY Development JOB PURPOSE cement long string WELL PERMIT NO. WELL LOCATION 2-18-34
 4. REFERRAL LOCATION INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		U/M		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575		1			MILEAGE	70	mi			6.00	420.00
578		1			Pump Charge	1	ea			1500	1500.00
402		1			Centralizer	52	in	9	ea	70.00	630.00
403		1			Cement Basket	52	in	2	ea	300.00	600.00
404		1			Port Collar	52	in	1	ea	2900.00	2900.00
406		1			Latch down plug & baffle	52	in	1	ea	275.00	275.00
407		1			insert float shoe w/ AUTO FILL	52	in	1	ea	375.00	375.00
419		1			Rotating head rental	52	in	1	ea	200.00	200.00

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.
 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS
 X
 DATE SIGNED TIME SIGNED A.M. P.M.
2630

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

SURVEY AGREE UN-DECIDED DIS-AGREE
 OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?
 WE UNDERSTOOD AND MET YOUR NEEDS?
 OUR SERVICE WAS PERFORMED WITHOUT DELAY?
 WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?
 ARE YOU SATISFIED WITH OUR SERVICE?
 YES NO
 CUSTOMER DID NOT WISH TO RESPOND

6900
 PAGE TOTAL 1 6890.00
 2 5872.88
 subtotal 12772.88
 Scott TAX 8.15% 803.71
 TOTAL 13576.59

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

SWIFT OPERATOR Albin APPROVAL

Thank You!



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

TICKET CONTINUATION

TICKET No. 25869

CUSTOMER American Warrior WELL Palkowitch 1-2 DATE 23 Feb 14 PAGE 21 OF 2

PRICE REFERENCE	SECONDARY REFERENCE / PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	QTY.		UNIT		PRICE	AMOUNT	
		LOC	ACCT.	DF			QTY.	UM	QTY.	UM			
325		1				STANDARD cement (Foot-2)	175	sk			14.50	2537.50	
284		1				Calseal	800	lb	8	sk	35.00	280.00	
283		1				Salt	900	lb			0.20	180.00	
292		1				Malad-322	125	lb			8.00	1000.00	
276		1				Floccale	50	lb			2.50	125.00	
290		1				Draie	2	gal			42.00	84.00	
281		1				Mud Flush	50	gal			1.25	625.00	
271		1				KCL Liquid	2	gal			25.00	50.00	
581		1				SERVICE CHARGE	175				2.00	350.00	
583		1				MILEAGE CHARGE	18325	TOTAL WEIGHT	70	LOADED MILES	641.36	TON MILES	641.38

CONTINUATION TOTAL 5847.88

JOB LOG

SWIFT Services, Inc.

DATE 23 Feb 41 PAGE NO.

CUSTOMER American Warrior WELL NO. 1-2 LEASE Palkowitsh JOB TYPE cement long string TICKET NO. 25869

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								175sk EA-2 cement w/ 3/4" floccle 1/8 jets 5 1/2" x 15.5" casing - 4978' TD=5000' shoejt 419' Bckt 4, 58 Poot collar #55. 2440' Contractor 1, 2, 3, 5, 7, 9, 11, 14, 57
	0209							on loc TRK 114
	0215							start 5 1/2" x 15.5" casing in well
	0440							Drop ball - circulate - ROTATE
	0502	3 3/4	12				700	Pump 500 gal mud flush
		3 3/4	20				700	Pump 20 bbl KCL flush
			7					Plug RH 30sk
	0515	3 3/4	35				700	MIX EA-2 cement 145sk @ 15.3 bpm
	0528							Drop latch down plug wash out pump & line
	0535	6					700	Displace plug
		6	110				700	
	0600	6	118				1400	Land plug
	0605							Release pressure to truck - dried up wash truck Rack up
	0630							job complete Thru DARK, Flint & Blaine



CHARGE TO: American Warrior
 ADDRESS: _____
 CITY, STATE, ZIP CODE: _____

TICKET 26027

PAGE 1 OF 1

SERVICE LOCATIONS: 1. Ness City KS
 WELL/PROJECT NO.: 1-2 LEASE: Palkowitsh COUNTY/PARISH: Scott STATE: KS CITY: Madoc DATE: 4 Mar 14 OWNER: _____
 2. TICKET TYPE: SERVICE SALES CONTRACTOR: CO Tools RIG NAME/NO.: 1 SHIPPED: ET DELIVERED TO: location ORDER NO.: _____
 3. WELL TYPE: o.7 WELL CATEGORY: Development JOB PURPOSE: Cement port collar WELL PERMIT NO.: _____ WELL LOCATION: 2-18-34
 4. REFERRAL LOCATION: _____ INVOICE INSTRUCTIONS: _____

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UNIT PRICE		AMOUNT
		LOC	ACCT	DF		QTY.	UM	QTY.	UM	
575		1			MILEAGE TRK 114	70	mi	6.00		420.00
576 D		1			Pump Charge	1	hr	15.00		1500.00
330		1			SMD cement	210	sk	18.50		3885.00
27b		1			Flouck	50	sk	2.50		125.00
29c		1			D-AIR	3	gal	42.00		126.00
581		1			service charge	27.5	hr	2.00		550.00
58.3		1			Drayage	2732.5	lb	956.38	T/M	956.38
104		1			port collar Tool Rental	1	hr	250.00		250.00

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MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

X
 DATE SIGNED: _____ TIME SIGNED: _____ A.M. P.M.

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

SURVEY	AGREE	UN-DECIDED	DIS-AGREE
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?			
WE UNDERSTOOD AND MET YOUR NEEDS?			
OUR SERVICE WAS PERFORMED WITHOUT DELAY?			
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?			
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES <input type="checkbox"/> NO		
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND			

PAGE TOTAL	7812.38
TOTAL	8169.84

Scott TAX 8.15% -357.46

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

SWIFT OPERATOR: BCG

APPROVAL: _____

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE MR 14 PAGE NO.

CUSTOMER American Warrior WELL NO. 1-2 LEASE Palkowitsh JOB TYPE Cement part collar TICKET NO. 26027

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								275sk SMD cement w/ 1/4" # Floale 2 3/8 x 5 1/2 Post Collar 2490
	1030							on loc TRK 114 Running tubing
	1220					1000	1000	test to 1000psi - held open part collar
	1235	3 3/4	2			275		inj rate - 3 3/4 @ 275
	1240	3 3/4				300		Mix SMD cement @ 11.2ppg - fluid to surface -
		3 3/4	17			300		
	1320	3 3/4	116			600		- cement to surface - (210 sk mix @ 11.2ppg 15 tap it)
		3 3/4	8			600		Displace w/ 8 bbl H ₂ O
	1325							close part collar
	1330							test to 1000psi - held Run 4 joints
	1337		30					Reverse hole clean - 2 cement plugs -
								undo truck pull tool.
								Rack up
	1430							job complete Plunks Blain, Flint, & Isaac



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

American Warrior

2-18s-34w Scott Co KS

3118 Cummings Rd.
P.O. Box 399
Garden City KS 67846
ATTN: Jeremy Schwartz

Palkowitsh 1 2

Job Ticket: 56747

DST#: 1

Test Start: 2014.02.19 @ 04:28:15

GENERAL INFORMATION:

Formation: **Marmaton-Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:56:30

Time Test Ended: 12:42:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Mike Roberts

Unit No: 65

Interval: 4460.00 ft (KB) To 4615.00 ft (KB) (TVD)

Reference Elevations: 3102.00 ft (KB)

Total Depth: 4615.00 ft (KB) (TVD)

3097.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8846

Inside

Press@RunDepth: 201.10 psig @ 4466.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.02.19

End Date:

2014.02.19

Last Calib.:

2014.02.19

Start Time: 04:28:15

End Time:

12:42:45

Time On Btm:

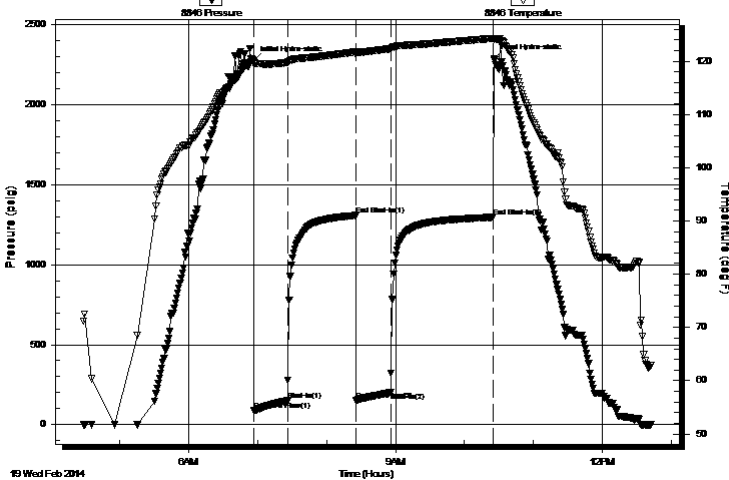
2014.02.19 @ 06:56:15

Time Off Btm:

2014.02.19 @ 10:26:00

TEST COMMENT: IF: Built to 1/2" blow
IS: No return blow
FF: Built to 1" blow
FS: No return blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2274.11	120.02	Initial Hydro-static
1	88.34	119.45	Open To Flow (1)
30	150.04	119.76	Shut-In(1)
90	1308.88	121.73	End Shut-In(1)
90	153.31	121.24	Open To Flow (2)
120	201.10	122.34	Shut-In(2)
209	1297.70	124.28	End Shut-In(2)
210	2285.47	124.22	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	ocm 30% m 70% o	0.87
124.00	ocm 20% o 80% m	1.74
62.00	w com 5% w 25% o 75% m	0.87

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

American Warrior

2-18s-34w Scott Co KS

3118 Cummings Rd.
P.O. Box 399
Garden City KS 67846
ATTN: Jeremy Schwartz

Palkowitsh 1 2

Job Ticket: 56747

DST#: 1

Test Start: 2014.02.19 @ 04:28:15

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 10.00 lb/gal

Viscosity: 65.00 sec/qt

Water Loss: 7.97 in³

Resistivity: 0.00 ohm.m

Salinity: 5000.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

0 deg API

Water Salinity: 0 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	ocm 30% m 70% o	0.870
124.00	ocm 20% o 80% m	1.739
62.00	w com 5% w 25% o 75% m	0.870

Total Length: 248.00 ft Total Volume: 3.479 bbl

Num Fluid Samples: 0

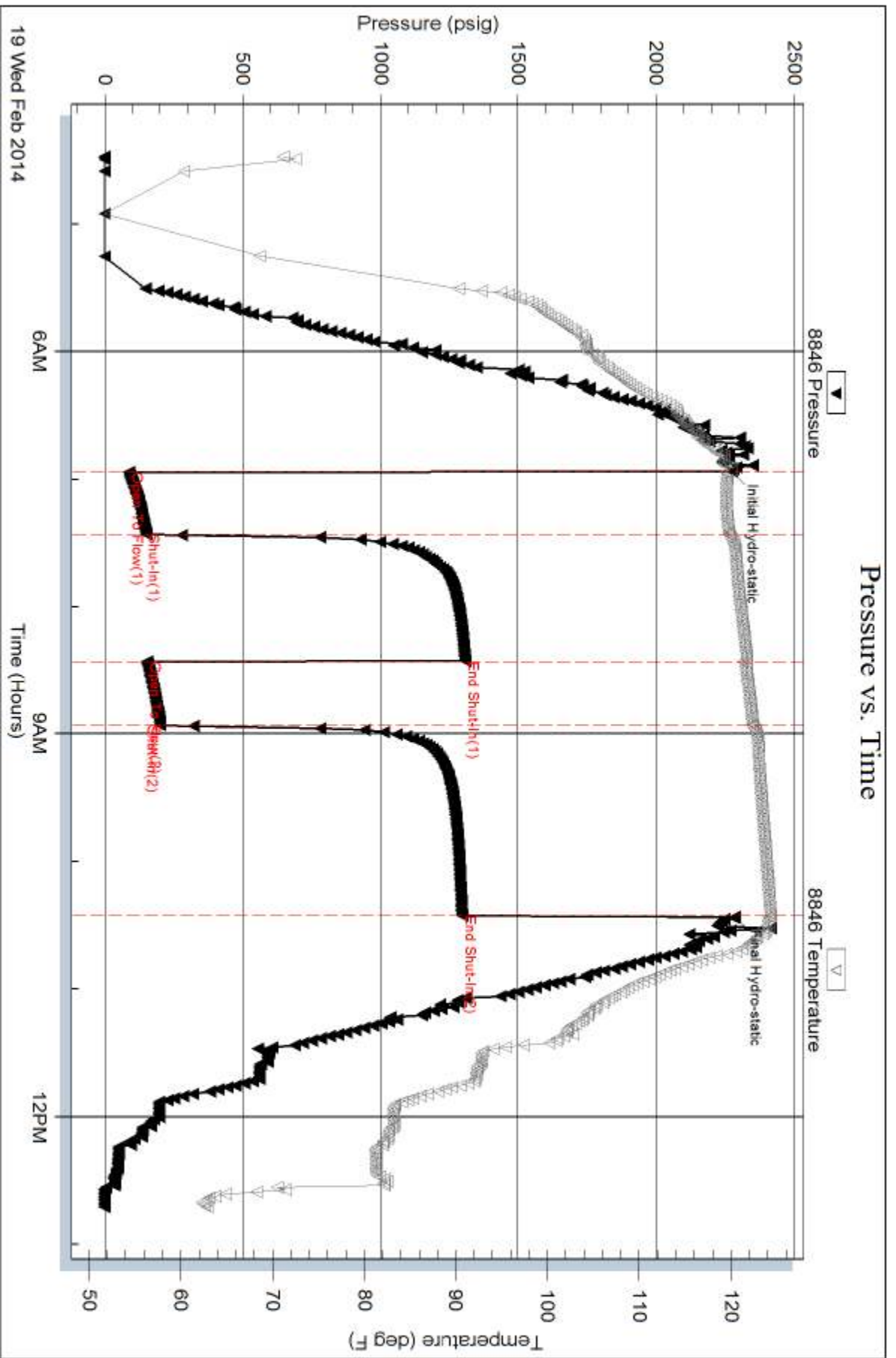
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



Scale 1:240 Imperial

Well Name: Palkowitsh #1-2
Surface Location: 970' FNL _1296' FEL Sec 2-18S-34W
Bottom Location:
API: 15-171-21028-00-00
License Number:
Spud Date: 2/12/2014 Time: 15:00
Region: Scott County
Drilling Completed: 2/22/2014 Time: 08:48
Surface Coordinates:
Bottom Hole Coordinates:
Ground Elevation: 3097.00ft
K.B. Elevation: 3106.00ft
Logged Interval: To: 5000.00ft
Total Depth: 5000.00ft
Formation: Mississippian
Drilling Fluid Type: Chemical/Fresh Water Gel

OPERATOR

Company: American Warrior
Address: 3118 Cummings Rd
Garden City, KS

Contact Geologist: Kevin Wiles
Contact Phone Nbr: 620-275-2963 x 306
Well Name: Palkowitsh #1-2
Location: 970' FNL _1296' FEL Sec 2-18S-34W API: 15-171-21028-00-00
Pool: Field: Wildcat
State: Kansas Country: USA

LOGGED BY



Company: Shelby Resources, LLC
Address: 445 UNION BLVD. Suite 208
LAKEWOOD, CO. 80228

Phone Nbr: 203-671-6034
Logged By: Geologist Name: Jeremy Schwartz

NOTES

The American Warrior Palkowitsh #1-2 was drilled to a total depth of 5000', bottoming in the Mississippian.

Three DST's were conducted in the Marmaton/Pawnee, Cherokee, and Johnson zones. The DST reports can be found at the top of this log.

Due to the DST results, sample shows, and log analysis it was determined to set 5 1/2" production casing and further test the Marmaton through perforations and stimulation. It should also be noted that log analysis of the Lansing "J" warrants testing before well abandonment. The dry samples were saved and will be available for further review at the Kansas Geological Society Well Sample Library, located in Wichita, KS.

Respectfully Submitted,
Jeremy Schwartz/Macklin Armstrong
Geologists

CONTRACTOR

Contractor: Duke Drilling Co.
Rig #: 4
Rig Type: mud rotary
Spud Date: 2/12/2014 Time: 15:00
TD Date: 2/22/2014 Time: 08:48
Rig Release: Time:

ELEVATIONS

K.B. Elevation: 3106.00ft
K.B. to Ground: 9.00ft

Ground Elevation: 3097.00ft

American Warrior

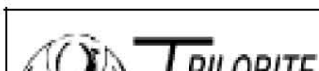
Daily Drilling Report

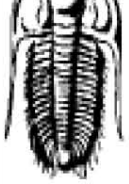
DATE	7:00 AM DEPTH	REMARKS
02/17/2014	3950'	Geologist Jeremy Schwartz on location @ 0530hrs, ~3920', DRLG ahead through Heebner, Toronto, Lansing, Muncie Creek, Lansing "H", Stark Shale, Hushpuckney,
02/18/2014	4420'	DRLG ahead through Base KC, Marmaton, CFS @ 4540', Resume DRLG, CFS @ 4576', Resume DRLG, CFS @ 4615', Short trip, strap out, drop survey, Conduct DST #1 across Marmaton/Pawnee formations
02/19/2014	4615'	Successful test, CTCH 1hour, DRLG ahead through Ft. Scott, Cherokee, CFS @ 4700', Conduct DST #2 in Cherokee,
02/20/2014	4700'	Successful test, CTCH 1hour, DRLG Ahead through Johnson, CFS @ 4795',
02/21/2014	4795'	Conduct DST #3 in Johnson, DRLG ahead, CFS @ 4824', Geologist Mac Armstrong on location ~ 1745hrs, DRLG ahead through Morrow, CFS @ 4850', CFS @ 4867', CFS @ 4880', DRLG ahead through Mississippian,
02/22/2014		Geologist Jeremy Schwartz off location @ 0030hrs, DRLG ahead through Mississippian to TD @ 5000', Conduct Logging Operations

American Warrior

Well Comparison Sheet

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
Palkowitsh #1-2 NW SW NE NE Sec. 2-T18S-R34W 3106 KB					Parker O - Franklin #1 C NW NE Sec. 3-T18S-R34W 3120 KB				New Gulf - Brothers #1 SE SW NE SW Sec. 34-T17S-R34W 3134 KB			
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Heebner	4011	-905	4011	-905	4007	-887	-18	-18	4012	-878	-27	-27
Toronto	4030	-924	4028	-922	4024	-904	-20	-18	4030	-896	-28	-26
Lansing	4058	-952	4058	-952	4054	-934	-18	-18	4058	-924	-28	-28
Muncie Creek	4246	-1140	4244	-1138	4249	-1129	-11	-9	4247	-1113	-27	-25
Lansing "H"	4258	-1152	4255	-1149	4268	-1148	-4	-1	4261	-1127	-25	-22
Stark Shale	4348	-1242	4350	-1244	4358	-1238	-4	-6	4352	-1218	-24	-26
Hushpuckney	4391	-1285	4394	-1288	4404	-1284	-1	-4	4395	-1261	-24	-27
Base KC	4470	-1364	4470	-1364	4484	-1364	0	0	4475	-1341	-23	-23
Marmaton	4507	-1401	4504	-1398	4517	-1397	-4	-1	4508	-1374	-27	-24
Pawnee	4586	-1480	4586	-1480	4597	-1477	-3	-3	4588	-1454	-26	-26
FT Scott	4615	-1509	4614	-1508	4629	-1509	0	1	4615	-1481	-28	-27
Cherokee	4625	-1519	4623	-1517	4638	-1518	-1	1	4623	-1489	-30	-28
Johnson	4712	-1606	4709	-1603	4731	-1611	5	8	4714	-1580	-26	-23
Morrow	4785	-1679	4783	-1677	4806	-1686	7	9	4798	-1664	-15	-13
Mississippian	4864	-1758	4862	-1756	Not Reached				4854	-1720	-38	-36
Total Depth	4999	-1893	5000	-1894	4892	-1772	-121	-122	4950	-1816	-77	-78





TRILOBITE TESTING, INC.

American Warrior
3118 Cummings Rd.
P.O. Box 399
Garden City KS 67846
ATTN: Jeremy Schwartz

2-18s-34w Scott Co KS

Palkowitsh 1 2

Job Ticket: 56747 **DST#: 1**

Test Start: 2014.02.19 @ 04:28:15

GENERAL INFORMATION:

Formation: **Marmaton-Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:56:30

Time Test Ended: 12:42:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Mike Roberts

Unit No: 65

Interval: **4460.00 ft (KB) To 4615.00 ft (KB) (TVD)**

Reference Elevations: 3102.00 ft (KB)

Total Depth: 4615.00 ft (KB) (TVD)

3097.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8846

Inside

Press@RunDepth: 201.10 psig @ 4466.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.02.19

End Date: 2014.02.19

Last Calib.: 2014.02.19

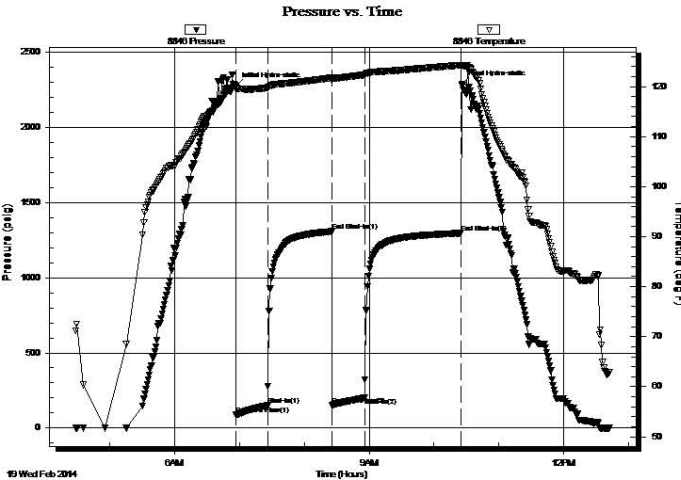
Start Time: 04:28:15

End Time: 12:42:45

Time On Btm: 2014.02.19 @ 06:56:15

Time Off Btm: 2014.02.19 @ 10:26:00

TEST COMMENT: IF: Built to 1/2" blow
IS: No return blow
FF: Built to 1" blow
FS: No return blow



PRESSURE SUMMARY

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	2274.11	120.02	Initial Hydro-static
1	88.34	119.45	Open To Flow (1)
30	150.04	119.76	Shut-In(1)
90	1308.88	121.73	End Shut-In(1)
90	153.31	121.24	Open To Flow (2)
120	201.10	122.34	Shut-In(2)
209	1297.70	124.28	End Shut-In(2)
210	2285.47	124.22	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	ocm 30% m 70% o	0.87
124.00	ocm 20% o 80% m	1.74
62.00	w com 5% w 25% o 75% m	0.87

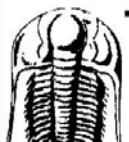
Gas Rates

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

Trilobite Testing, Inc

Ref. No: 56747

Printed: 2014.02.19 @ 13:22:13



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

American Warrior
3118 Cummings Rd.
P.O. Box 399

2-18s-34w Scott Co KS

Palkowitsh 1 2

Job Ticket: 56748

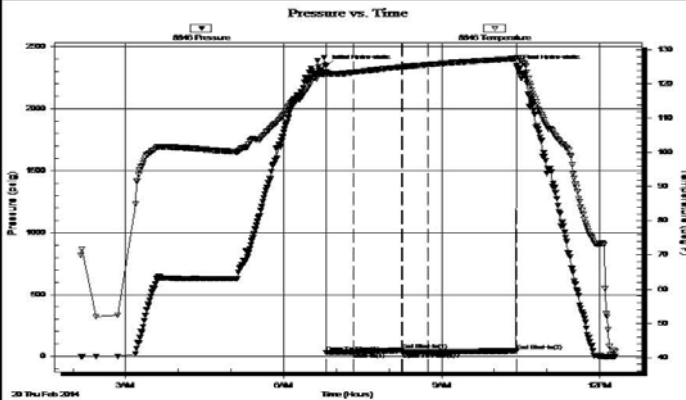
DST#: 2

GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:48:45
 Time Test Ended: 12:18:00
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Interval: **4640.00 ft (KB) To 4700.00 ft (KB) (TVD)**
 Total Depth: 4640.00 ft (KB) (TVD)
 Reference Elevations: 3102.00 ft (KB)
 3097.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 5.00 ft

Serial #: 8846 **Inside**
 Press@RunDepth: 37.51 psig @ 4645.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.20 End Date: 2014.02.20 Last Calib.: 2014.02.20
 Start Time: 02:09:15 End Time: 12:18:00 Time On Btm: 2014.02.20 @ 06:48:30
 Time Off Btm: 2014.02.20 @ 10:25:45

TEST COMMENT: IF: Built to weak surface blow that died in 20 min.
 IS: No return blow
 FF: No blow
 FS: No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2348.27	123.55	Initial Hydro-static
1	34.70	123.02	Open To Flow (1)
31	36.00	123.43	Shut-In(1)
86	51.21	125.03	End Shut-In(1)
87	35.46	125.03	Open To Flow (2)
116	37.51	125.72	Shut-In(2)
217	44.74	127.50	End Shut-In(2)
218	2348.42	127.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud with oil spots 100% m	0.07

* Recovery from multiple tests

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 56748

Printed: 2014.02.20 @ 12:58:14



DRILL STEM TEST REPORT

American Warrior
 3118 Cummings Rd.
 P.O. Box 399
 Garden City KS 67846
 ATTN: Jeremy Schwartz

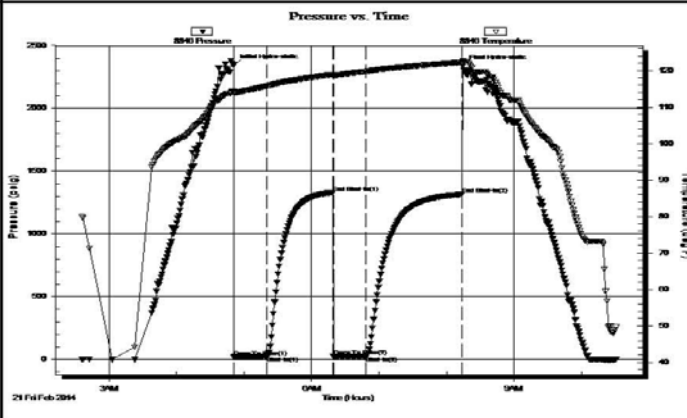
2-18s-34w Scott Co KS
Palkowitsh 1 2
 Job Ticket: 56749 **DST#: 3**
 Test Start: 2014.02.21 @ 02:36:15

GENERAL INFORMATION:

Formation: **Johnson**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:51:15
 Time Test Ended: 10:30:45
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Interval: **4720.00 ft (KB) To 4795.00 ft (KB) (TVD)**
 Total Depth: 4795.00 ft (KB) (TVD)
 Reference Elevations: 3106.00 ft (KB)
 3101.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 5.00 ft

Serial #: 8846 **Inside**
 Press@RunDepth: 27.02 psig @ 4725.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.21 End Date: 2014.02.21 Last Calib.: 2014.02.21
 Start Time: 02:36:15 End Time: 10:30:45 Time On Btm: 2014.02.21 @ 04:51:00
 Time Off Btm: 2014.02.21 @ 08:14:15

TEST COMMENT: IF: Built to 1/2" blow
 IS: No return blow
 FF: No blow
 FS: No return blow



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2344.76	114.37	Initial Hydro-static
1	22.08	113.86	Open To Flow (1)
30	24.74	115.76	Shut-In(1)
88	1331.05	118.91	End Shut-In(1)
89	23.98	118.22	Open To Flow (2)
117	27.02	119.71	Shut-In(2)
203	1316.17	122.25	End Shut-In(2)
204	2336.02	122.72	Final Hydro-static

Length (ft)	Description	Volume (bbl)
20.00	mud 100% m	0.28

* Recovery from multiple tests

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

Trilobite Testing, Inc

Ref. No: 56749

Printed: 2014.02.21 @ 10:45:25

ROCK TYPES

	Lmst fw<7		shale, gm		Carbon Sh		Shcol
	Lmst fw>7		shale, gry		shale, red		Ss

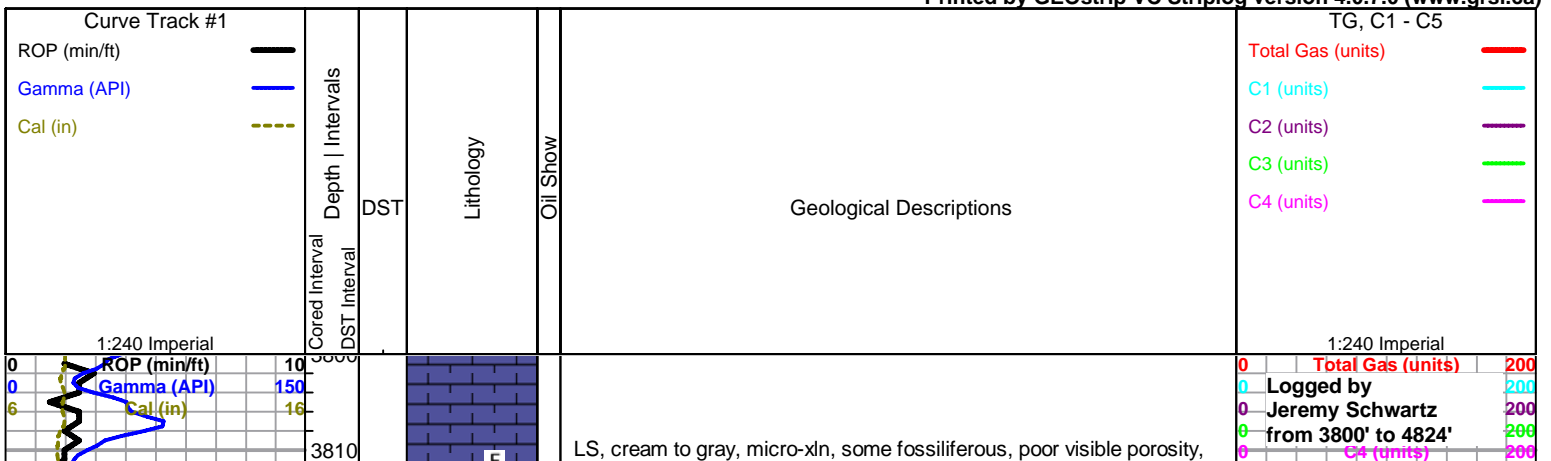
ACCESSORIES

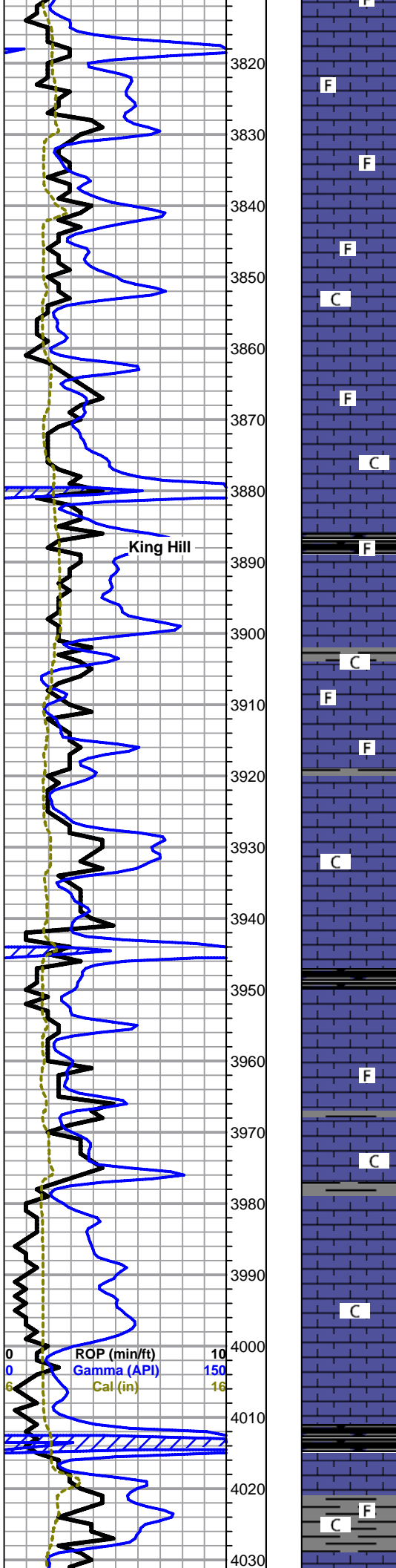
FOSSIL	STRINGER	TEXTURE
F Fossils < 20%	~ Chert	C Chalky
♣ Pellets	■ Siltstone	

OTHER SYMBOLS

Oil Show	DST
● Good Show	■ DST Int
● Fair Show	■ DST alt
● Poor show	
○ Spotted or Trace	
○ Questionable Stn	
○ Dead Oil Stn	
■ Fluorescence	
* Gas	

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)





also with some scattered red shale, no shows or odor

As above

LS, cream to gray, micro-xln, some fossiliferous, poor visible porosity, no shows or odor

As above

LS, cream to gray, micro-xln, some fossiliferous, poor visible porosity, slightly chalky, no shows or odor

LS, cream to gray with some gray mottled, micro-xln, some scattered with slightly re-crystalized edges, poor visible porosity, no shows or odor

LS, as above, some very scattered fossiliferous, slightly chalky, no shows or odor

As above, also with some scattered gray and black shale, mostly soft and waxy, some blocky and dense, no shows or odor

King Hill

LS, mostly cream with some gray, micro-xln, some with slight edge re-crystalization, some scattered fossiliferous, dense with poor visible porosity, no shows or odor

LS, mostly cream with some scattered gray and trace brown, micro-xln, mostly dense with poor visible porosity, no shows or odor

As above, slightly chalky, no shows or odor

LS, mostly cream with some scattered gray, micro-xln, some scattered fossiliferous, mostly dense with poor visible porosity, no shows or odor

LS, cream to tan, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, slightly chalky sample, no shows or odor

LS as above, also with trace black shale

LS, cream to tan with some light gray, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, also with some very scattered black shale, no shows or odor

LS, cream, micro-xln, some scattered fossiliferous, mostly hard and dense with poor visible porosity, no shows or odor

LS, cream, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, slightly chalky sample, no shows or odor

As above

LS, cream, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, slightly chalky sample, no shows or odor

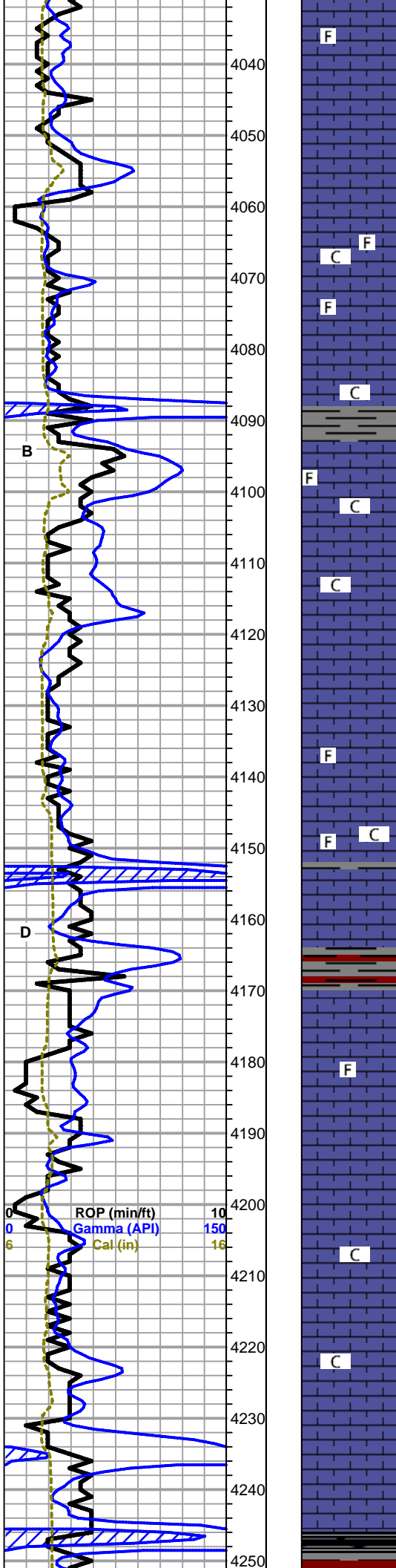
Heebner 4011 (-905)

Shale, black carbonaceous, soft and waxy

Toronto 4030 (-924)

LS, cream with some scattered light gray, micro-xln, some scattered

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200



LS, cream with some scattered light gray, micro-xln, some scattered slightly fossiliferous, hard and dense with poor visible porosity, also with some soft and chalky, slightly chalky sample, no shows or odor

LS, cream to light gray with some scattered off-white, micro-xln, some scattered slightly fossiliferous, overall poor visible porosity, no shows or odor

Lansing 4058 (-946)

LS, cream to gray with some scattered white to off-white, micro-xln, some slightly fossiliferous, poor visible porosity, slightly chalky, no shows or odor

LS, mostly cream to tan with some scattered gray and off-white, micro-xln, some slightly fossiliferous, mostly hard and dense with poor visible porosity, also with some very scattered white to tan and opaque chert, one piece oolitic, no shows or odor

LS as above, cherts appear to be dropping out, slightly chalky, no shows or odor

LS, cream to tan, micro-xln, trace very slightly sub-oomoldic, dense with poor to no visible oomold porosity, also with some scattered gray fossiliferous, dense with poor visible porosity, slightly chalky, no shows or odor

LS, cream, micro-xln, some scattered sub-oolitic to sub-oomoldic with poor visible oomold porosity, dense, also with some soft and chalky, no shows or odor

LS as above, mix of soft and chalky and hard and dense, trace sub-oolitic to sub-oomoldic, also with some scattered gray shale, no shows or odor

LS, cream to white, micro-xln, mostly lithographic, some scattered slightly fossiliferous, no shows or odor

LS, cream with some scattered white and gray, some scattered slightly fossiliferous, mostly hard and dense with poor visible porosity, slightly chalky, no shows or odor

LS as above, also with some scattered gray and maroon shale and trace red and black, soft and waxy, no shows or odor

As above, with influx of shales, gray and maroon with trace red and black, mostly soft and waxy, no shows or odor

LS, cream with some scattered gray fossiliferous, mostly dense with poor visible porosity, some scattered re-crystallization, some soft and chalky, also with trace brown to tan/opaque chert, fresh and sharp, no shows or odor

LS, cream, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, also with some scattered gray, micro-xln, some slightly fossiliferous, no shows or odor

LS, cream, micro-xln, mostly soft and chalky, lithographic, some scattered hard and dense, poor visible porosity, also with trace brown to tan and white/opaque chert, fresh and sharp, no shows or odor

LS as above, also with some scattered cream, micro-xln, slightly re-crystallized, sub-oolitic to sub-oomoldic with poor to fair oomold porosity, barren, slightly chalky sample, no odor

LS, cream, micro-xln, some soft and chalky, some hard and dense, mostly lithographic, slightly chalky, no shows or odor

As above, with slight influx of gray and red shale, trace black

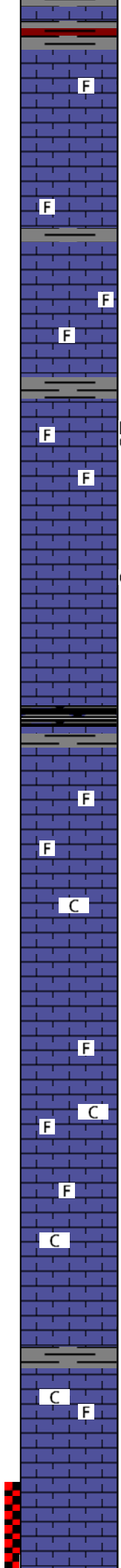
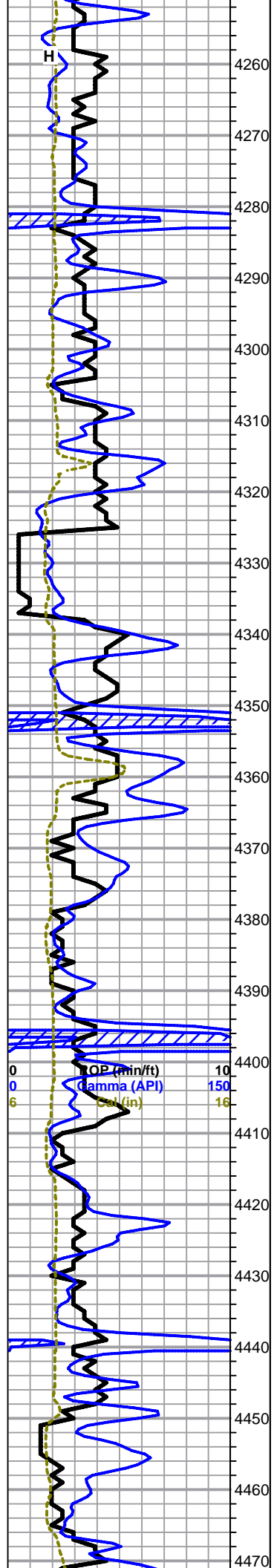
LS, cream to light gray, micro-xln, mostly hard and dense with poor visible porosity, also with some scattered gray shale with trace red, mostly soft and waxy, some scattered blocky and dense, no shows or odor

Muncie Creek 4246 (-1140)

Shale, black carbonaceous, mostly soft and waxy

Shale, mostly gray with some maroon and trace red, also with some LS

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200



Shale, mostly gray with some maroon and trace red, also with some LS, cream, micro-xln, hard and dense with poor visible porosity

4260 F LS, cream, micro-xln, some soft and chalky, some hard and dense with poor visible porosity, very scattered slightly fossiliferous, no shows or odor

4270 LS as above

4280 F

4290 F LS, cream, micro-xln, some hard and dense, some soft and brittle, also with some scattered light gray to light brown, some fossiliferous, hard and dense with poor visible porosity, slightly chalky, no shows or odor

4300 F

4310 F D LS, mostly same as above, found 2 chips cream, micro-xln, sub-oolitic with poor visible porosity, with very scattered trace dead black residual to tarry, wet black stain, very slow weak to no cut with dull fluorescence, no odor in cup

4320 F

4330 LS, cream with some scattered light gray and light brown, some fossiliferous, hard and dense with poor visible porosity, no shows or odor

4340 LS, cream, micro-xln, oomoldic, some dense, some brittle, with poor visible inter-oomold porosity, mostly barren, few chips with scattered tarry, clingy, wet black stain in oomolds, and slight black stain on edges in some, fair cut with dull fluorescence, slight show free oil in tray, poor fleeting odor in cup

Stark Shale 4348 (-1242)

4350 Shale, black carbonaceous, blocky and dense, some soft and waxy

4360 F LS, cream to gray with some brown, micro-xln, some oomoldic with poor visible oomold porosity, some fossiliferous, hard and dense with poor visible porosity, no shows or odor

4370 F

4380 C LS, cream to light gray with some scattered brown, micro-xln, mostly hard and dense with poor visible porosity, some scattered soft and chalky, slightly chalky sample, no shows or odor

4390

Hushpuckney 4391 (-1285)

4400 F Shale, black carbonaceous, soft

4410 F C LS, cream with some scattered light gray, micro-xln, some soft and chalky, some fossiliferous, hard and dense with poor visible porosity, no shows or odor

4420 F LS as above, slightly chalky sample, no shows or odor

4430 C LS, cream with some gray and brown, some fossiliferous, mostly hard and dense with poor visible porosity, some very scattered with slightly re-crystallized edges, some soft and chalky, no shows or odor

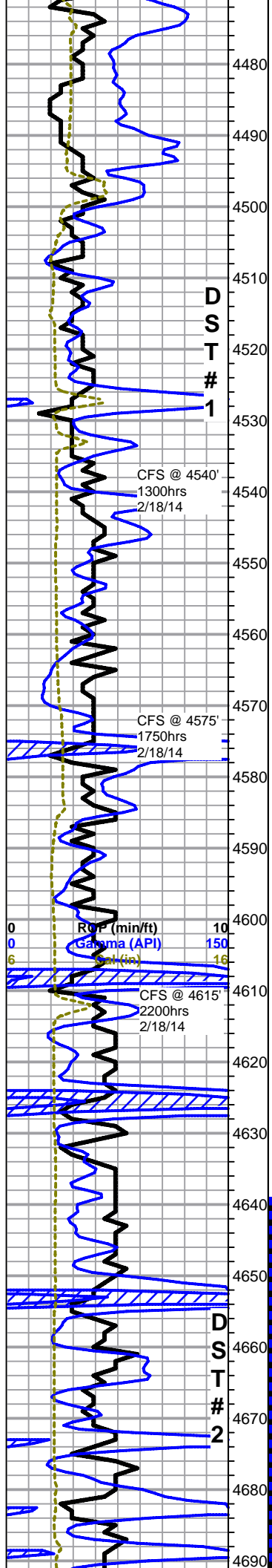
4440 As above, with trace white to opaque chert, fresh and sharp, no shows or odor

4450 C F LS, cream with some gray and brown, some slightly fossiliferous, mostly hard and dense with poor visible porosity, some soft and chalky, slightly chalky sample, no shows or odor

4460 LS as above, also with some scattered gray and maroon shale

Base KC 4470 (-1364)

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200



LS, mix of cream, gray, and brown, mostly hard and dense with poor visible porosity, some soft and chalky, also with gray and maroon shale as above with trace red, no shows or odor

Mixed LS and shales as above, also with influx of gray siltstone, no shows or odor

Mixed LS, shales, and siltstone as above, with slight influx of cream to tan LS, micro-crypto xln, some slightly fossiliferous, mostly hard and dense with some scattered soft and chalky, no shows or odor

Marmaton 4507 (-1401)

LS, cream to tan, micro-xln, mostly hard and dense, barren, few chips sub-oolitic with very scattered brown to black inter-oolite staining and slight visible inter-oolite porosity, also with some scattered shale as above, no odor in cup

LS, cream to tan with some scattered light brown, micro-xln, some scattered sub-oolitic to oolitic and some fossiliferous, mostly hard and dense with poor visible porosity, found one chip cream, hard and dense with several small vugs, and slightly vuggy edge porosity with brown to black stain in vugs and partly in matrix as well, very slow cut with dull fluorescence, NSFO, no odor in cup

4540' 30" LS, cream, micro-xln, some sub-oolitic to oolitic, some slightly fossiliferous as well (fossil frags mixed in with oolites), mostly barren, few chips with several very scattered small edge vugs and slight brown to black stain on edge only, no fluorescence in tray, no odor

60" LS, cream to tan with some scattered light gray to brown, micro-crypto xln, mostly dense with poor visible porosity, some soft and chalky, chalky sample, no shows or odor

As above, also with trace brown to tan chert, no shows or odor

4575' 30" LS, gray, micro-xln, fossiliferous, hard and dense with poor visible porosity, no shows or odor

60" Same as above

LS, cream with some gray and brown, some fossiliferous, hard and dense with poor visible porosity, some scattered soft and chalky, also with trace tan to brown chert and abundant gray and maroon shale with trace red, no shows or odor

Pawnee 4586 (-1480)

LS, cream, micro-xln, some scattered slightly fossiliferous, mostly dense with poor visible porosity, few chips vf-xln with vf scattered pinpoint porosity, barren, no cut, no shows or odor

4615' 30" LS, cream to light gray, some scattered slightly fossiliferous, dense with poor visible porosity, few scattered chips cream, with scattered vf pinpoint porosity, barren, no cut or fluorescence, no odor in cup

4615' 60" same as above, with influx of gray shale with trace black

Fort Scott 4615 (-1509)

LS, cream, micro-xln, some scattered fossiliferous, mostly dense with poor visible porosity, some very scattered with trace vf pinpoint porosity, barren, also with abundant gray, maroon, and red shale

Cherokee Shale 4625 (-1519)

LS, cream with some light gray, micro-xln, some scattered fossiliferous, mostly lithographic, dense with poor visible porosity, no shows or odor

LS as above, with abundant gray and red shale with trace maroon, also some very scattered tan to brown chert, some fossiliferous, no shows or odor

LS, gray to cream with some brown, some fossiliferous, mostly dense with poor visible porosity, some brittle, also with some very scattered chert as above, no shows or odor

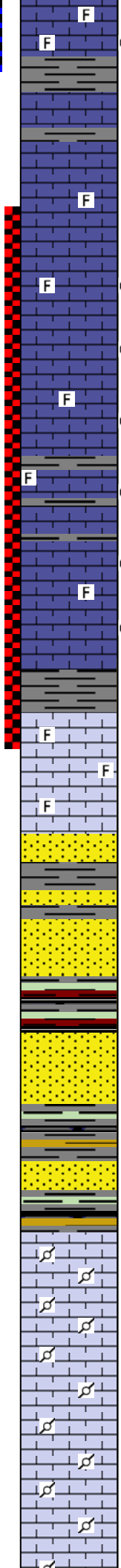
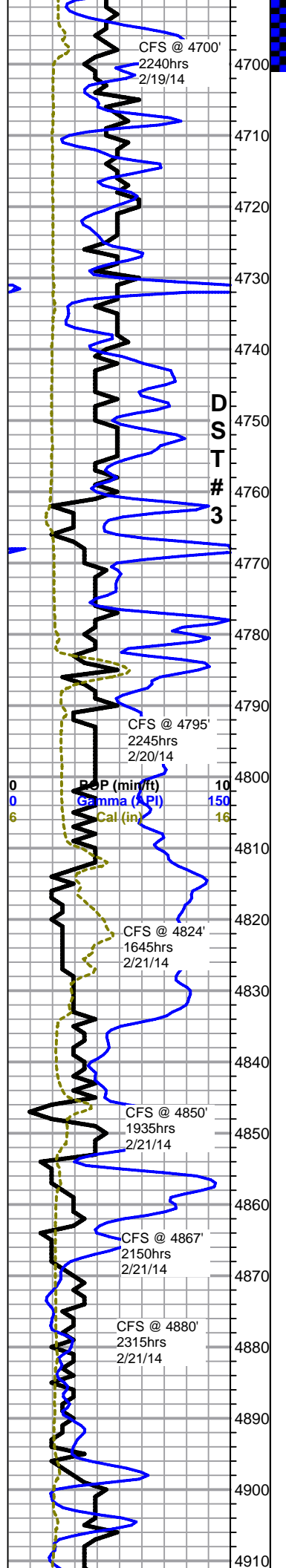
LS as above, also with some gray and black shale with trace maroon and red, slightly chalky, no shows or odor

LS, gray to cream with some brown, micro-xln, some fossiliferous, mostly hard and dense with poor visible porosity, some scattered lithographic, slightly chalky, no shows or odor

LS as above, fossiliferous, mostly hard and dense with poor visible porosity, found few chips cream, micro-xln, dense with poor visible porosity with slightly re-crystallized edges and one to two small edge vugs with tarry, wet black stain in vugs only, slow streaming cut with bright white fluorescence, NSFO, no odor in cup

LS, gray to cream with some brown, micro-xln, fossiliferous, mostly hard and dense with poor visible porosity, found one chip cream to white, soft and chalky in part, with scattered dead black stain, upon break chip falls apart and has slight show tarry, wet black stain, no odor in cup

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200



4700' 30" LS, gray to cream with some brown micro-xln, fossiliferous, hard and dense with poor visible porosity, found one chip cream, with slightly re-crystallized edge and several small edge vugs with brown stain in vugs and partly in matrix as well, slow streaming cut with dull milky white fluorescence, no odor in cup

60" LS as above, found one chip with one small vug and tarry, wet black stain in vug, slow cut from vug only with dull fluorescence, no odor in cup

Johnson 4712 (-1606)

LS, cream with some gray, micro-xln, some fossiliferous, mostly hard and dense with poor visible porosity, also with trace tan to brown chert and pyrite, no shows or odor

LS, cream, micro-xln with some very scattered crypto-xln, mostly lithographic and dense with poor visible porosity, some scattered fossiliferous, few chips with slightly re-crystallized edges, one small chip with slightly vuggy edge and very scattered vf pinpoint porosity, with brown edge stain and partly in matrix as well, slow streaming cut with milky white fluorescence, no odor in cup

LS as above, found one small chip white, micro-xln, with very small scattered edge vugs with very slight brown edge stain in and around vugs only, upon break chip shows fair to good inter-xln prosity, no odor in cup

Mostly same as above, with few chips white, micro-xln with scattered vf pinpoint porosity and scattered light golden brown to brown stain (mostly visible when chips dried out), very friable, upon break chips show poor to fair inter-xln porosity with scattered stain in matrix as above, one chip more dense with fair to good visible pinpoint porosity and few scattered small vugs and saturated brown stain, fair to good streaming cut with bright white fluorescence, SSFO in tray, poor fleeting odor in cup

LS, cream, micro-xln, some fossiliferous, mostly dense with poor visible porosity, few very scattered chips dense with scattered vf pinpoint porosity and one to two small vugs with scattered light brown stain, upon break chips have increase in odor with fair to good show free oil and mostly saturated to saturated matrix, poor fleeting odor in cup

Morrow 4785 (-1679)

Shale, gray to dark gray

LS, cream, micro-xln, some fossiliferous, mostly dense with poor visible porosity

LS as above

LS as above

Sandstone white to light gray, fine grained sub angular tightly cemented

Shale, gray, dark gray

Sandstone as above

Shale, gray, dark gray

Sandstone, white to light gray, fine grained sub angular tightly cemented

Sandstone, white to light gray, fine grained sub angular, tightly cemented

Shale, gray, gray green, red, and black

Sandstone, light gray to light green fine grained sub angular tightly cemented slightly glauconitic nsfo

Sandstone, white to light gray, medium grained, sub angular to sub rounded slightly friable to tightly cemented nsfo

Shale, gray, dark gray, gray green, black, and some yellow

Sandstone, white to light gray fine to medium grained sub angular to sub rounded slightly glauconitic slightly friable to tightly cemented nsfo

Shale, gray, dark gray, gray green, black, and some yellow

Mississippi 4864 (-1758)

LS, tan to light gray, meduim-xln to pelletal, medium hard no visible porosity

LS, tan to light gray, granular to pelletal, medium hard, no visible porosity

LS as above

LS, tan to gray, granular to pelletal, medium hard, no visible porosity

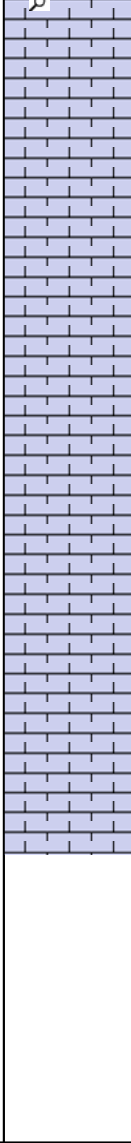
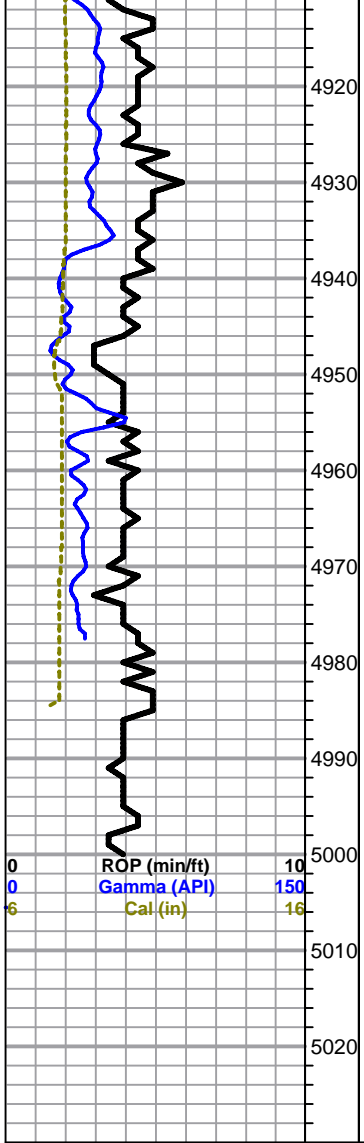
LS as above

LS, gray, granular to pelletal, dense, no visible porosity

LS as above

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200

Logged by
Macklin Armstrong
from 4824' to 4980'



LS, tan to cream, coarse grain to granular, dense, no visible porosity

LS as above

LS as above

LS, cream, medium to coarse grained, dense, no visible porosity

LS as above

LS as above

LS, cream, medium grained, dense, slightly chalky, no visible porosity

LS as above

LS, cream to light gray, medium grained, dense slightly chalky, no porosity

LS as above

LS as above

RDT 5000 (-1894)

Finished drilling at 8:48 am on 2-22-14. Circulated for log 90 minutes.

0	Total Gas (units)	200
0	C1 (units)	200
0	C2 (units)	200
0	C3 (units)	200
0	C4 (units)	200