

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

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

Gas DH EOR

OG GSW

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 EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

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 Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

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

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

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

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

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

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

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

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

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

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Shelby Resources LLC
Well Name	PAWNEE CATTLE CO. 1-9
Doc ID	1426279

All Electric Logs Run

Dual Induction
Compensated Nuutron
Micro
Sonic

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. 1112

Date	9-28-18	Sec.	9	Twp.	22	Range	16	County	Pawnee	State	Ks	On Location		Finish	8:00PM	
Lease	Pawnee Cattle Co.							Well No.	1-9	Owner	Larned - 1/25 to K-19, IE to 100th Ave					
Contractor	Sterling		#4		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	Surface				Charge To		Shelby Resources									
Hole Size	12 1/4"		T.D.		1032'		Street									
Csg.	8 5/8"		Depth		1028'		City									
Tbg. Size			Depth				State									
Tool			Depth				The above was done to satisfaction and supervision of owner agent or contractor.									
Cement Left in Csg.	42'		Shoe Joint		42'		Cement Amount Ordered 450 60%no 4%cc 2% Gel									
Meas Line			Displace		63 BLS		1/2 # Flo-seal									
EQUIPMENT													Common			270
Pumptrk	16	No.	Cementer	David		Poz. Mix		180								
Bulktrk	19	No.	Driver	Tony		Gel.		9								
Bulktrk	P.U.	No.	Driver	Rick		Calcium		20								
JOB SERVICES & REMARKS													Hulls			
Remarks:	Cement did Circulate												Salt			
Rat Hole													Flowseal			225#
Mouse Hole													Kol-Seal			
Centralizers													Mud CLR 48			
Baskets													CFL-117 or CD110 CAF 38			
D/V or Port Collar													Sand			
													Handling			479
													Mileage			
FLOAT EQUIPMENT													Guide Shoe			1 weld-on
Quality Oilwell Cementing													Centralizer			Rubber plug
Cementing													Baskets			Baffle plate
Quality Oilwell Cementing													AFU Inserts			
Quality Oilwell Cementing													Float Shoe			
Quality Oilwell Cementing													Latch Down			
Quality Oilwell Cementing													Pumptrk Charge			Long Surface
Quality Oilwell Cementing													Mileage			76
Quality Oilwell Cementing													Tax			
Quality Oilwell Cementing													Discount			
Quality Oilwell Cementing													Total Charge			

X Signature *James D. Salway*

Customer <i>Shelby Resource</i>	Lease No.	Date <i>10-3-18</i>
Lease <i>Pawnee cattle company</i>	Well # <i>1-9</i>	
Field Order # <i>17931</i>	Station <i>Pratt Kansas</i>	Casing
Type Job <i>PTA 2-42</i>	Formation <i>ar buckle</i>	Depth <i>3905</i>
		County <i>Pawnee</i>
		State <i>KS</i>
		Legal Description <i>9-225-16w</i>

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP
Depth	Depth <i>3905</i>	From	To	Pre Pad	Max		5 Min.
Volume	Volume	From	To	Pad	Min		10 Min.
Max Press	Max Press	From	To	Frac	Avg		15 Min.
Well Connection	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth	Packer Depth	From	To	Flush	Gas Volume		Total Load

Customer Representative	Station Manager	Treater
Service Units <i>76868 77656 86774 14959 21010</i>		
Driver Names <i>Fennic Mike Mike BOSE BOSE</i>		

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
<i>1430</i>					<i>Arrive on location, safety meeting</i>
<i>1500</i>					<i>Rig up gear, start</i>
<i>2155</i>	<i>270</i>		<i>20</i>	<i>5</i>	<i>Pump H2O spacer</i>
<i>2204</i>	<i>260</i>		<i>12.7</i>	<i>4.5</i>	<i>mix 50st 60/40 Puz @ 13.8ppg @ 3905'</i>
<i>2207</i>	<i>70</i>		<i>7</i>	<i>4.5</i>	<i>Pump H2O behind</i>
<i>2209</i>	<i>180</i>		<i>4.5</i>	<i>8</i>	<i>Pump WBM displacement</i>
<i>0012</i>	<i>110</i>		<i>15</i>	<i>4.5</i>	<i>Pump H2O Ahead</i>
<i>0019</i>	<i>160</i>		<i>12.7</i>	<i>4</i>	<i>mix 50st 60/40 Puz @ 13.8ppg @ 1050'</i>
<i>0022</i>	<i>70</i>		<i>11.8</i>	<i>4</i>	<i>Pump H2O behind</i>
<i>0050</i>	<i>100</i>		<i>5</i>	<i>4.5</i>	<i>Pump H2O Ahead</i>
<i>0054</i>	<i>100</i>		<i>10</i>	<i>4</i>	<i>mix 40st 60/40 Puz @ 13.8ppg @ 570'</i>
<i>0057</i>	<i>80</i>		<i>5.6</i>	<i>3.5</i>	<i>Pump H2O behind</i>
<i>0112</i>	<i>110</i>		<i>5</i>	<i>5</i>	<i>Pump H2O Ahead</i>
<i>0116</i>	<i>80</i>		<i>12.7</i>	<i>4</i>	<i>mix 50st 60/40 Puz @ 13.8ppg @ 300'</i>
<i>0120</i>	<i>40</i>		<i>1</i>	<i>3</i>	<i>Pump H2O behind</i>
<i>0147</i>	<i>50</i>		<i>5</i>	<i>3</i>	<i>mix 20st 60/40 Puz @ 13.8ppg @ 60'</i>
<i>0155</i>	<i>50</i>		<i>7.5</i>	<i>3</i>	<i>mix 30st 60/40 Puz @ 13.8ppg Rot Hole</i>
<i>0200</i>	<i>50</i>		<i>5</i>	<i>3</i>	<i>mix 20st 60/40 Puz @ 13.8ppg Mousse Hole</i>
<i>0220</i>					<i>Rig down leave location</i>
					<i>1st Plug 3905' - Hoc-210.96 Toc-3699.04'</i>
	<i>4th Plug 306'</i>	<i>Hoc-198.43</i>	<i>Toc-101.57'</i>		<i>2nd Plug 1050' - Hoc-200.12 Toc-849.88</i>
	<i>5th Plug 60'</i>	<i>Hoc-60'</i>	<i>Toc-51.14</i>		<i>3rd Plug 570' - Hoc-156.25' Toc-413.75'</i>



Scale 1:240 Imperial

Well Name: Pawnee Cattle Co. #1-9
 Surface Location: 1285' FNL, 1830' FEL, Sec. 9-T22s-R16w
 Bottom Location:
 API: 15-145-21839-00-00
 License Number:
 Spud Date: 9/27/2018 Time: 7:30 PM
 Region: Pawnee County
 Drilling Completed: 10/2/2018 Time: 8:00 AM
 Surface Coordinates:
 Bottom Hole Coordinates:
 Ground Elevation: 2016.00ft
 K.B. Elevation: 2027.00ft
 Logged Interval: 3100.00ft To: 3975.00ft
 Total Depth: 3975.00ft
 Formation: Conglomerate
 Drilling Fluid Type: Chemical/Fresh Water Gel

OPERATOR

Company: Shelby Resources, LLC
 Address: 13949 W Colfax Ave., Bldg 1, Ste 120
 Lakewood, CO 80401
 Contact Geologist: Janine Sturdavant
 Contact Phone Nbr: 303-907-2209 / 720-274-4682
 Well Name: Pawnee Cattle Co. #1-9
 Location: 1285' FNL, 1830' FEL, Sec. 9-T22s-R16w
 API: 15-145-21839-00-00
 Pool:
 State: Kansas Field: Wildcat
 Country: USA

LOGGED BY



Company: Shelby Resources, LLC
 Address: 13949 W Colfax Ave., Bldg 1, Ste 120
 Lakewood, CO 80401
 Phone Nbr: 203-671-6034
 Logged By: Geologist Name: Jeremy Schwartz

NOTES

The Shelby Resources, LLC Pawnee Cattle Co. #1-9 was drilled to a total depth of 3975', bottoming in the Arbuckle. A TookeDaq gas detector was employed in the drilling of said well.

No DST's were conducted during the drilling of this well.

Due to lack of sample shows, gas kicks, and log analysis it was determined by all parties involved to plug and abandon the well. 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
Geologist

CONTRACTOR

Contractor: Sterling Drilling Co
 Rig #: 4

Rig Type: mud rotary
 Spud Date: 9/27/2018
 TD Date: 10/2/2018
 Rig Release:

Time: 7:30 PM
 Time: 8:00 AM
 Time:

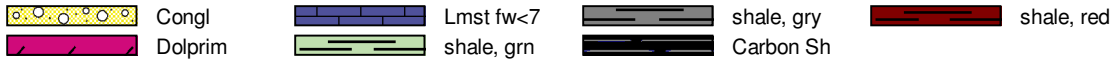
ELEVATIONS

K.B. Elevation: 2027.00ft Ground Elevation: 2016.00ft
 K.B. to Ground: 11.00ft

DATE	DEPTH	ACTIVITY
Monday, October 01, 2018	3560'	Geologist Jeremy Schwartz on location @ 0115hrs, ~3560', drlg ahead through Lansing,
	3800'	CFS @ 3611', resume drlg ahead through Lansing, BKC, CFS @ 3800', CTCH 1hr,
		drop survey, strap out for Bit Trip, successful bit trip, CTCH 1hr, resume drlg ahead
Tuesday, October 02, 2018	3863'	through BKC, Conglomerate, CFS @ 3863', resume drlg,
	3920'	CFS @ 3912', resume drlg, CFS @ 3920', resume drlg ahead to TD of 3975'
	3975'	TD of 3975' reached @ 0800hrs, CTCH 1hr, trip out of hole to conduct logging operations
		logging operations complete @ 1350hrs
		Geologist Jeremy Schwartz off location @ 1500hrs

		D&A					D&A					D&A													
		Vaughn Drilling Inc.					SHELBY RESOURCES, LLC					CARL TODD DRILLING													
		Reed #1 (Sample Tops)					BUSTER #1-3					REED #1													
		Pawnee Cattle Co. #1-9					NW-NE-NE Sec. 9-T225-R16W					NE-NE-NW-SW 3-225-16W					C-NW-NW-NE 9-225-16W								
		2027		2018			1999			2003															
		LOG TOPS		SAMPLE TOPS			COMP. CARD		LOG		SMPL.		COMP. CARD		LOG		SMPL.		COMP. CARD		LOG		SMPL.		
FORMATION	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	
ANHYDRITE TOP	1014	1013	1013	1014	1004	1014	-	1	+	0	995	1004	+	9	+	10	987	1016	-	3	-	2			
BASE	1036	991	1038	989	1028	990	+	1	-	1	1016	983	+	8	+	6	1010	993	-	2	-	4			
TOPEKA	3162	-1135	3164	-1137					3137	-1138	+	3	+	1											
HEEBNER SHALE	3431	-1404	3431	-1404	3423	-1405	+	1	+	1	3403	-1404	+	0	+	0	3418	-1415	+	11	+	11			
TORONTO	3452	-1425	3452	-1425					3424	-1425	+	0	+	0											
DOUGLAS SHALE	3467	-1440	3468	-1441					3437	-1438	-	2	-	3											
BROWN LIME	3541	-1514	3542	-1515	3532	-1514	+	0	-	1	3510	-1511	-	3	-	4	3531	-1528	+	14	+	13			
LKC	3550	-1523	3552	-1525	3542	-1524	+	1	-	1	3518	-1519	-	4	-	6	3536	-1533	+	10	+	8			
LKC G POROSITY	3640	-1613	3642	-1615					3607	-1608	-	5	-	7	3628	-1625	+	12	+	10					
STARK SHALE	3740	-1713	3742	-1715					3711	-1712	-	1	-	3	3728	-1725	+	12	+	10					
BKC	3797	-1770	3794	-1767					3763	-1764	-	6	-	3	3781	-1778	+	8	+	11					
CONG. SAND	NP		NP						3829	-1830															
ARBuckle	3906	-1879	3905	-1878	3894	-1876	-	3	-	2	3879	-1880	+	1	+	2	3919	-1916	+	37	+	38			
RTD			3975	-1948	3902	-1884			-	64	3970	-1971			+	23	3928	-1925			-	23			
LTD	3975	-1948							3966	3966							3921	-1918	-	30					

ROCK TYPES



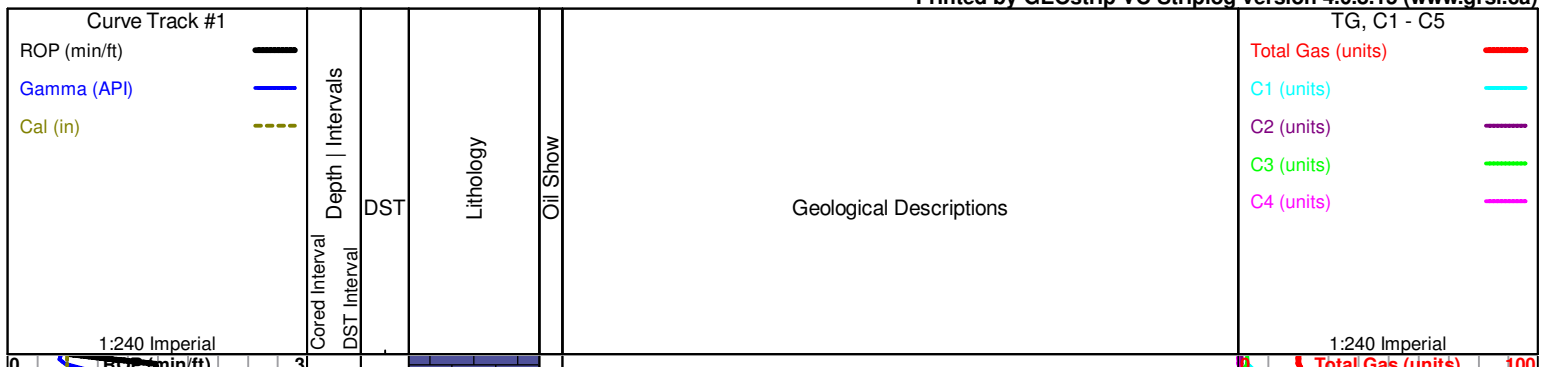
ACCESSORIES

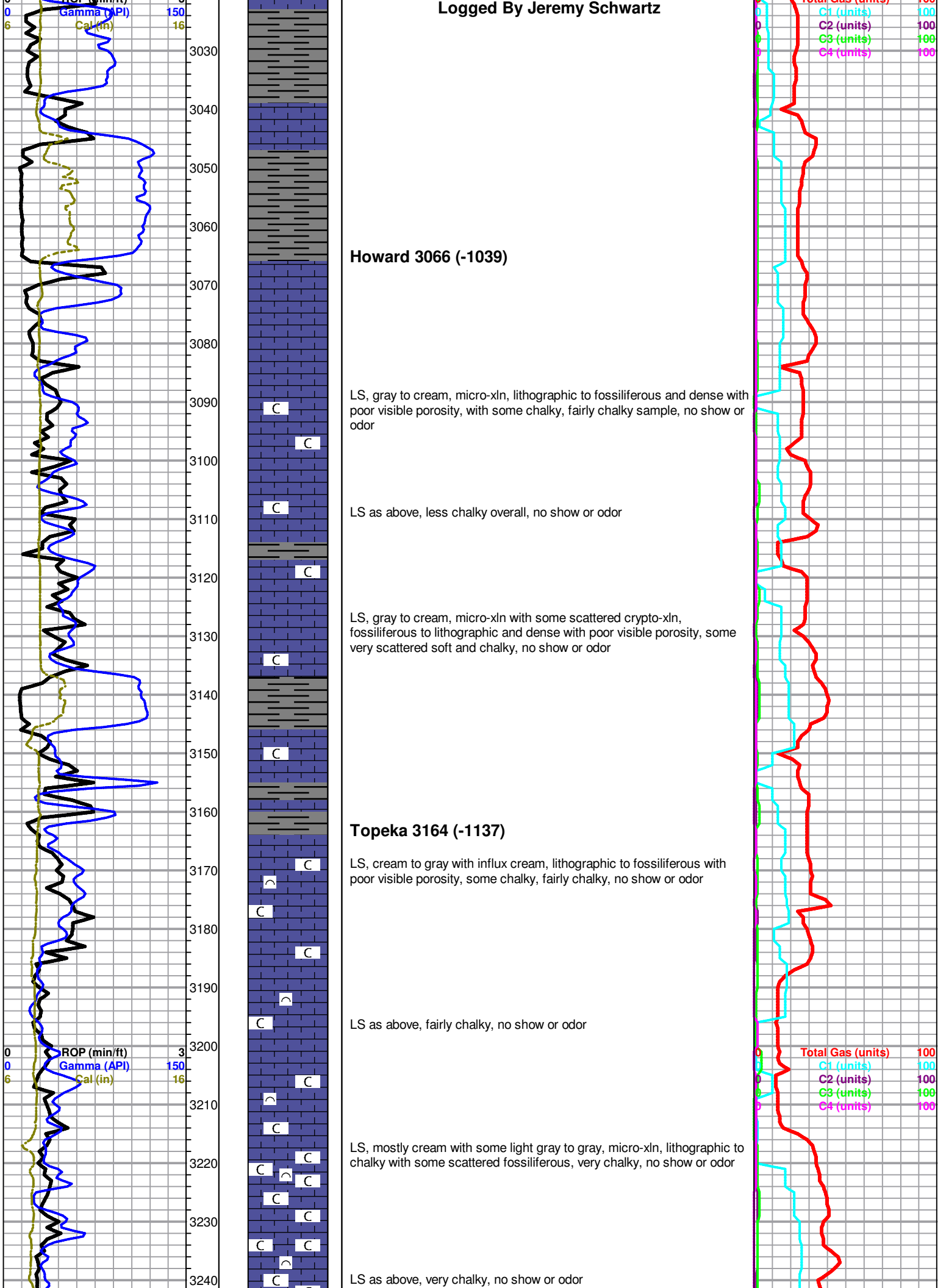
- MINERAL**
 ▲ Chert, dark
- FOSSIL**
 ○ Bioclastic or Fragmental
 ☼ Oomoldic
- STRINGER**
 ■ Limestone
 ● Sandstone
 ● Siltstone
 — green shale
- TEXTURE**
 C Chalky

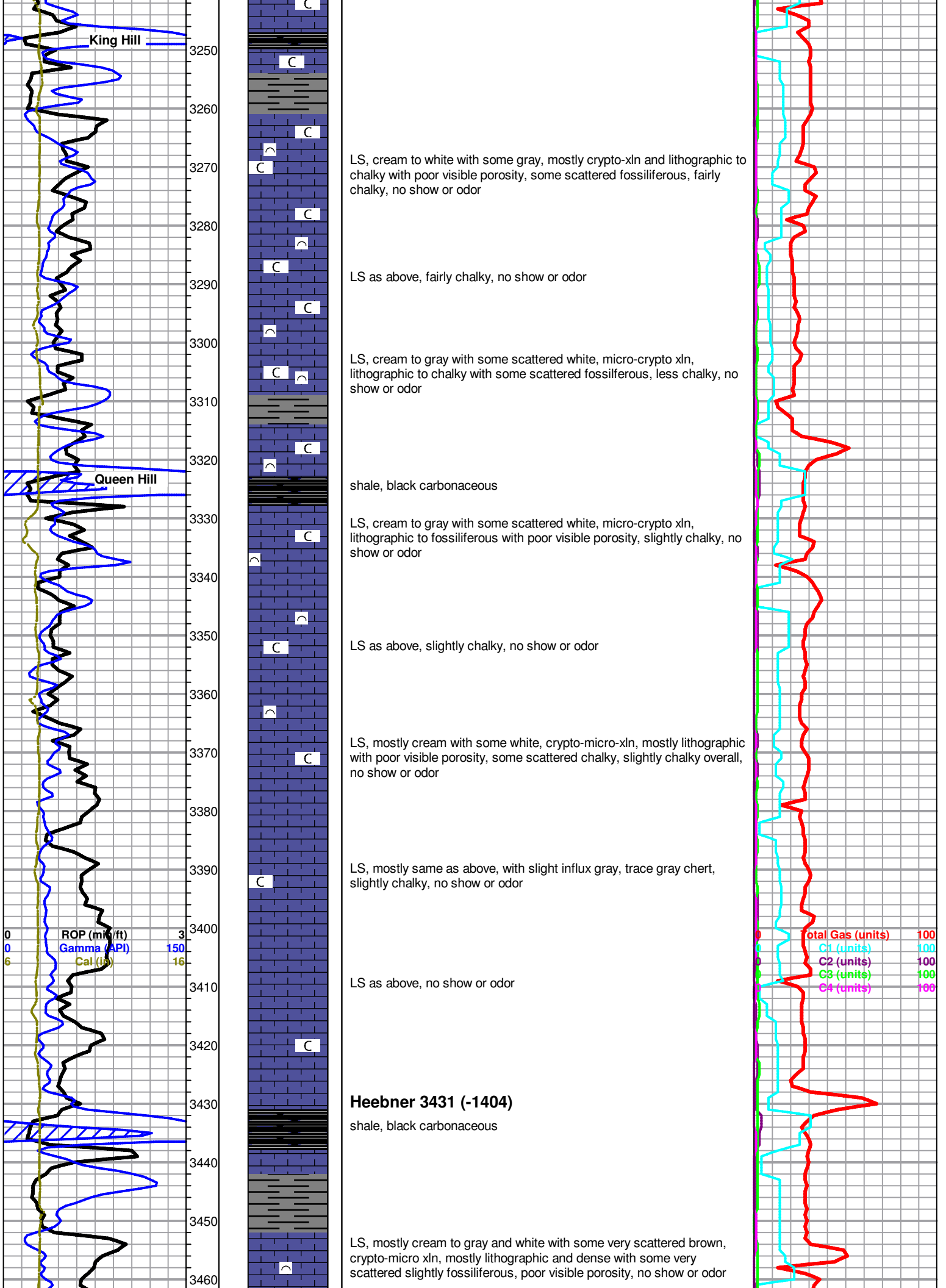
OTHER SYMBOLS

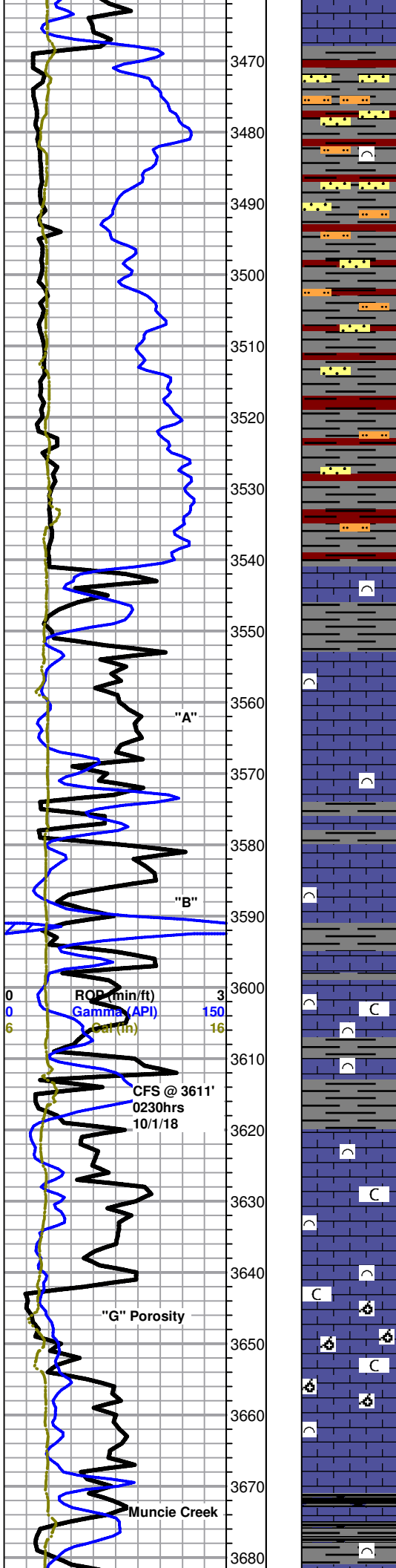
- DST**
 ■ DST Int
 ■ DST alt

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Douglas 3468 (-1441)

shale, gray and red,, some silty to sandy, some micaceous, with some SS, light gray, vf-f grained, sub-rounded to sub-angular and fairly well sorted, some well cemented, no shows or odor

shale and scattered SS as above, no show or odor

Influx gray with some red shale, soft and waxy, silty/sandy shales and SS appears to be dropping out, no show or odor

Shale as above

Brown Lime 3542 (-1515)

LS, brown to gray, micro-crypto xln, fossiliferous to lithographic and dense with no visible porosity, no show or odor

Lansing 3552 (-1525)

LS, cream to white and gray with some scattered brown, micro-crypto xln, lithographic to fossiliferous and dense with poor visible porosity, no show or odor

LS as above, no show or odor

3611' 20" LS, cream to gray with some brown, micro-xln, mostly fossiliferous and dense with poor visible porosity, few very scattered chips cream with some scattered fair pinpoint to slightly vuggy porosity with scattered very light golden brown stain around porosity only, upon break NSFO and slight to fair show gas bubbles, slow cut with bright white fluor., no odor

3611' 40 & 60" LS, cream tro gray and brown, micro-xln, mostly fossiliferous and dense with poor visible porosity, some scattered soft and chalky, NSFO, no odor

LS, cream to gray and brown with some white, micro-xln, fossiliferous and dense with poor visible porosity, some scattered soft and chalky, no show or odor

LS as above, with influx cream to white, micro-crypto xln, lithographic and dense with poor visible porosity, some slightly chalky, no show or odor

LS, cream to light gray with some scattered white, micro-xln, oomoldic and dense with poor oomold porosity, barren, with some cream crypto-xln, lithographic and dense with poor visible porosity, few very scattered small chips with scattered fair pinpoint porosity and/or one to two small vugs with brown stain around porosity only, some chalky in part, upon break SSFO in few chips, NSFO in tray, no odor

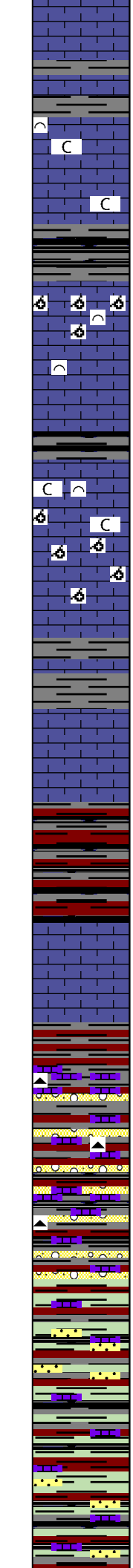
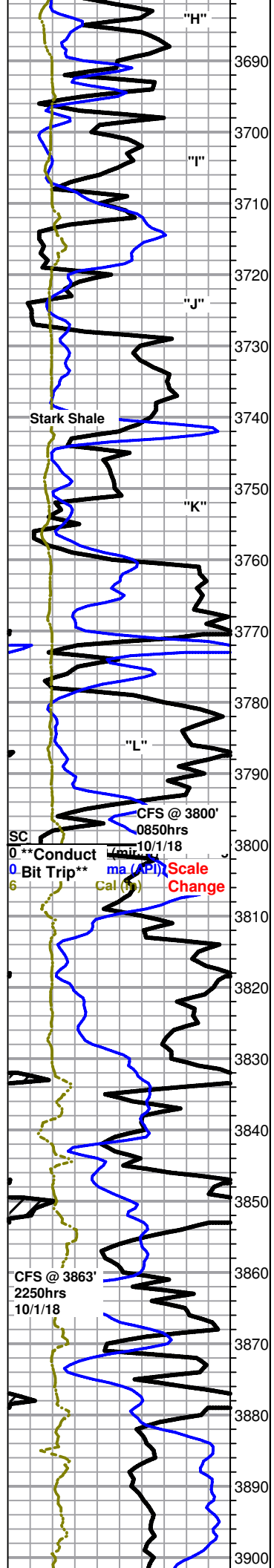
LS, cream to gray with some light brown, micro-xln, mostly lithographic and dense with poor visible porosity, some fossiliferous, no show or odor

Total Gas (units)	100
C1 (units)	100
C2 (units)	100
C3 (units)	100
C4 (units)	100

CFS @ 3611'
0230hrs
10/1/18

"G" Porosity

Muncie Creek



LS as above, no show or odor

LS, cream to gray with slight influx white, micro-xln, mostly lithographic with poor visible porosity, some fossiliferous, with some scattered oomoldic with mostly poor oomold porosity, some chips have areas of fair porosity, with some gray to dark gray/dark maroon and black shale, slightly chalky, no show, fluor., or odor

LS as above, with influx cream to light gray crypto-xln, lithographic with poor visible porosity, no show or odor

LS, mostly cream to light gray, micro-crypto xln, mostly lithographic with some scattered fossiliferous, poor visible porosity, with some scattered cream oomoldic, some with fair oomold porosity, barren, slightly chalky, no show, fluor., or odor

Mostly same as above, with slight influx cream oomoldic with fair to good oomold porosity, barren, no show, fluor., or odor

3800' 30" LS, cream to gray, micro-xln, mostly lithographic and dense with poor visible porosity, no show or odor

BKC 3794 (-1767)

3800' 60" LS as above, with influx gray and red shale with some dark gray to dark maroon and black

shale as above

LS, mostly cream to gray with some scattered white, mostly lithographic with some scattered oolitic and fossiliferous, poor visible porosity, with some scattered cream to light gray crypto-xln, lithographic with poor visible porosity, slightly chalky, no show or odor

LS as above, with influx gray to dark gray and red shale as well as some scattered gray and brown with trace white chert, trace pyrite, no show or odor

Mostly cream dense LS, lithographic with poor visible porosity, trace oolitic to oomoldic, barren, with scattered shales and cherts as above, no shows or odor

3863' 30" Mixed cream to gray lithographic to fossiliferous LS, trace chalky, mostly dense with poor visible porosity, with gray to dark gray and black with some scattered red shales and very scattered gray and orange chert, some gray and red clays, slightly chalky, light red wash in tray, no shows or odor

3863' 60" Conglomerate, clays and red wash dropped out, mostly LS with vari-colored shales as above and scattered chert, no visible SS clusters or grains, no show or odor

~3870' Cream to gray with some scattered brown LS, lithographic to fossiliferous with poor visible porosity, with vari-colored gray to dark gray, red, and green shales, trace gray to dark gray and orange chert, with some very scattered SS, gray, vf-f grained, sub-rounded and well sorted, very friable, barren, slightly chalky, no show or odor

~3880' Mostly same as above, no show or odor

~3890' Mixed LS and vari-colored shales as above, with fair influx red shale, some soft and waxy, some blocky and dense, with scattered brown to gray chert, few very scattered SS clusters, light gray, fine-grained, sub-rounded and well sorted, very friable, barren, slightly chalky, no show or odor

Shale Kick

Mud-Co Mud chk
3800'
10/1/18
Vis: 48 Wt: 9.2
PV: 13 YP: 12
WL: 9.2
Cake:2/32
pH: 11.5
Ca: 30ppm
CHL: 5,000ppm
Sol: 6.8 LCM: 2
DMC: \$842.90
CMC: \$8,189.35

Survey @ 3800' = 1/2Deg 100
Strap 1.48STB 100
C3 (units) 100
C4 (units) 100

Lighter Test

well sorted, very friable, no show or odor

~3900' Mixed cream LS and vari-colored gray, red, and green shales, with few very scattered SS clusters, fine grained, sub-rounded to sub-angular, fairly well sorted with shale inclusions, well cemented and dense, no show or odor

Arbuckle 3905 (-1878)

3912' 30" Vari-colored shale and cream LS with very scattered chert as above, with few very scattered dolomite chips, cream, micro-xln, sub-sucrosic and dense with poor visible porosity, barren, fair pungent odor

3912' 60" Mostly same as above, slight influx dolomite chips as above, dense and barren, no show or odor

3920' 30" Dolomite, cream, micro-xln, sub-sucrosic to sucrosic and dense with poor visible porosity, some very scattered sub-rhombic, no show or odor

3920' 60" Mostly same as above, slight influx cream to light brown sucrosic, friable, no visible stain and NSFO upon break, with some scattered med-xln sub-rhombic dense with poor visible porosity, few chips with very scattered gilsonitic stain, NSFO in tray, no odor

~3930'~3950' Dolomite, cream, micro-xln, mostly sub-sucrosic to sucrosic and dense with poor visible porosity, slight influx med-xln sub-rhombic with few chips showing some rhombic development, barren, few very scattered chips with very scattered gilsonitic stain, NSFO or odor

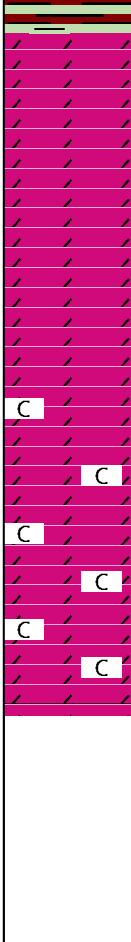
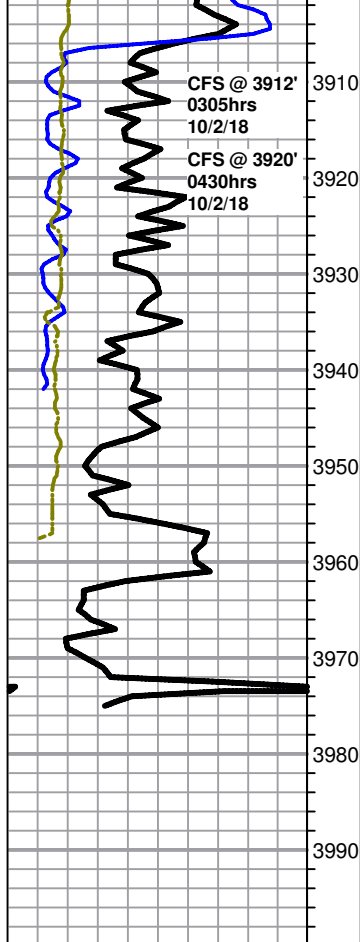
~3950' Dolomite, cream to white, mocrly sucrosic to sub-sucrosic and dense with poor visible porosity, few very scattered chips with few fairly large vugs but overall stil lvery dense, some scattered micro-xln sub-rhombic to rhombic and friable with poor visible porosity and barren, slightly chalky, no odor

~3960'-TD Dolomite as above, influx brown sucrosic to sub-sucrosic, dense with poor visible porosity, fairly chalky, no show or odor

**Mud-Co Mud chk
3975'
10/2/18
Vis: 68 Wt: 9.1
PV: 18 YP: 21
WL: 8.4
Cake:2/32
pH: 11.5
Ca: 30ppm
CHL: 5,900ppm
Sol: 5.4 LCM: Tr
DMC: \$1,455.45
CMC: \$9,644.80**

Survey @ 3975' = 1/2Deg

**Rotary TD 3975' @ 0800hrs 10/2/18
Eli Wireline Services Logging TD @ 3975'
Complete Logging Operations @ 1350hrs 10/2/18
Geologist Jeremy Schwartz off location @ hrs 10/2/18**



~3900' Mixed cream LS and vari-colored gray, red, and green shales, with few very scattered SS clusters, fine grained, sub-rounded to sub-angular, fairly well sorted with shale inclusions, well cemented and dense, no show or odor