



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1231360
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: _____

1231360

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
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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				

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: <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 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> _____	PRODUCTION INTERVAL: _____ _____
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#1 Baker 31D

335' FSL & 1950' FEL

5' N & 30' E of S/2 SW SE Section 31-15S-34W

Logan County, Kansas

API# 15-109-21325-0000

Elevation: 3064' GL, 3073' KB

Sample Tops			Ref. Well
Anhydrite	2386'	+687	-1
B/Anhydrite	2404'	+669	+1
Stotler	3518'	-445	-4
Heebner	3884'	-811	-9
Toronto	3899'	-826	-8
Lansing	3931'	-858	-8
Muncie Shale	4105'	1032	-10
Stark Shale	4199'	-1126	-8
Hush	4246'	-1173	-8
BKC	4283'	-1210	-4
Marmaton	4310'	-1237	-6
Altamont	4346'	-1273	-8
Pawnee	4434'	-1361	-11
Myrick	4461'	-1388	-6
Fort Scott	4477'	-1404	-7
Cherokee Shale	4504'	-1431	-5
Johnson	4582'	-1509	-4
Mississippian	4687'	-1614	-26
RTD	4800'	-1727	



CONSOLIDATED
Oil Well Services, LLC

270855

TICKET NUMBER 46663

LOCATION Oakley Ks

FOREMAN Jerry R

Miles

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT
CEMENT

Ks

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
9-2-14	7173	Baker 31.D	31	15	34	Logan
CUSTOMER			TRUCK #		DRIVER	
MAILING ADDRESS			TRUCK #		DRIVER	
CITY			TRUCK #		DRIVER	
STATE			TRUCK #		DRIVER	
ZIP CODE			TRUCK #		DRIVER	

JOB TYPE Port Color HOLE SIZE _____ HOLE DEPTH _____ CASING SIZE & WEIGHT _____
 CASING DEPTH _____ DRILL PIPE _____ TUBING 2 7/8 OTHER P.O. @ 2354
 SLURRY WEIGHT _____ SLURRY VOL _____ WATER gal/sk _____ CEMENT LEFT in CASING _____
 DISPLACEMENT 12 1/2 DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Safely meeting & rig up on well head to test 1000# to be injection rate 4 bbl/min @ 500# mix - 325 sks 60/40 poe mix to logal 1/4" flo seal presk with 450# cottonseed hulls displaced with 12 1/2 bbl H₂O & shut down close tool & test to 1000# hold run 10jts & reverse clean with 35 bbl pull tubing & pressure casing to 500# & shut in

Cement did circulate approx 35sk to prt 500# LIFT PRESSURE @ 4 BPM.
Thank you Jerry & crew.

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
54016	1	PUMP CHARGE	1785 ⁰⁰	1785 ⁰⁰
5406	35	MILEAGE	5.25	183 ⁷⁵
5407A	14	ton mileage delivery	122	857 ⁵⁰
1131	325 sks	60/40 poe mix	15 ⁸⁶	5154 ⁵⁰
1186	1677 ⁰⁰	gel	27	45279 ⁰⁰
1107	82 ⁰⁰	flaseal	292	24034 ⁰⁰
1105	450	cottonseed hulls	58	26100 ⁰⁰
			subtotal	8938 ⁰⁰
			less 10% disc	8044 ²⁰
			subtotal	8044 ²⁰
			SALES TAX	420.00
			ESTIMATED TOTAL	8465.00

Ravin 9737

AUTHORIZATION [Signature] TITLE _____ DATE 9-2-14

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.

49.90 05210



CONSOLIDATED
Oil Well Services, LLC

270711

TICKET NUMBER 47672

LOCATION Oakley, Ks

FOREMAN Damen

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT
CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
8/25/14	7173	Baker 31D #1	31	15	34	Logan
CUSTOMER Ritchie Exploration			Ks.			
MAILING ADDRESS			TRUCK #	DRIVER	TRUCK #	DRIVER
CITY			5 to Gold	731		
STATE			Rd 5w	693		
ZIP CODE			25			
			15 W to			
			290 1/2 S			
			WYS into			
				Collin		

JOB TYPE Production HOLE SIZE 7 7/8 HOLE DEPTH 4801 CASING SIZE & WEIGHT 5 1/2 x 15.5
 CASING DEPTH 4795 DRILL PIPE _____ TUBING _____ OTHER Port Collar 2354 55
 SLURRY WEIGHT 14.2 SLURRY VOL 1899 WATER gal/sk _____ CEMENT LEFT in CASING Shoe Joint 21'
 DISPLACEMENT 113.62 DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Safety Meeting Rig up on Vel #4 Run Casing + Float Equipment Turbos Shoe Joint
4, 12, 15, 18, 20, 54, 56. Baskets 19, 55, 74, 93 Port Collar 55 Circulate 1 hr. Pump 5 water
mix 500 gal mud flush Pump 5 water mix 30 sks To Plug Rathole + 20 sks in Mouse hole
mix 200 sks in casing of OWC. 5# Kolseal .25% CDT .26 + .14# CAF-38 Washup Pump
+ Lines Release Plug + Displace with 113.62 bbl water Land plug 2100# Lift 1200#
Float Did Hold Rig Down @ 4:15 PM

Thanks Damen + Crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5401C	1	PUMP CHARGE	\$ 3175.00	\$ 3175.00
5406	4.5	MILEAGE	\$ 5.25	\$ 236.25
5407A	11.75	Ton Mileage Delivery	\$ 1.75	\$ 925.31
1126	250 SKS	OWC	\$ 23.70	\$ 5925.00
1110A	1250 #	Kolseal	\$.56	\$ 700.00
1137	63 #	C.D.T. - 26	\$ 10.20	\$ 642.60
1146	35 #	CAF - 38	\$ 10.20	\$ 357.00
1144G	500 gal	Mud Flush	\$ 1.00	\$ 500.00
4159	1	5 1/2 AFU Float Shoe (w)	\$ 433.75	\$ 433.75
4454	1	5 1/2 Latch Down Plug Ass't (w)	\$ 567.00	\$ 567.00
4136	9	5 1/2 Turbolizers (w)	\$ 75.75	\$ 681.75
4104	4	5 1/2 Baskets (w)	\$ 290.00	\$ 1160.00
4285	1	5 1/2 Port Collar (C) SR# 1406368	\$ 2178.75	\$ 2178.75
			SubTotal	\$ 17482.41
			Less 10%	\$ 1748.24
			SubTotal	\$ 15734.17
			SALES TAX	900.00
			ESTIMATED TOTAL	16639.24

Ravin 3737

AUTHORIZATION [Signature] TITLE _____ DATE 8-25-14

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.

ALLIED OIL & GAS SERVICES, LLC 063373

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:
Oakley, KS

DATE <u>8/12/14</u>	SEG <u>31</u>	TWP. <u>15</u>	RANGE <u>34</u>	CALLED OUT	ON LOCATION	JOB START <u>2:00</u>	JOB FINISH <u>2:30</u>
LEASE <u>Palmer 310</u> WELL # <u>1</u>		LOCATION <u>Pen 3W 10 ground</u>		COUNTY <u>Wagon</u>	STATE <u>KS</u>		
OLD OR NEW (Circle one) <u>NEW</u>		CROSS W INTO SOE Tank but they on west side					
CONTRACTOR <u>Val</u>				OWNER <u>Suma</u>			
TYPE OF JOB <u>Surface</u>							

HOLE SIZE <u>12 1/4</u>	T.D. <u>257</u>
CASING SIZE <u>2 5/8</u>	DEPTH <u>257</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>15-41</u>	

CEMENT AMOUNT ORDERED <u>170 can 370 C.C.</u>	
COMMON <u>170</u>	@ <u>17.90</u> <u>3043.00</u>
POZMIX	@
GEL	@ <u>5.50</u> <u>160.00</u>
CHLORIDE <u>479</u>	@ <u>1.10</u> <u>526.20</u>
ASC	@
Material total @ <u>3,729.90</u>	
<u>(795.98/20%)</u>	
HANDLING <u>183</u>	@ <u>2.48</u> <u>455.82</u>
MILEAGE <u>235</u>	@ <u>1.95</u> <u>468.25</u>
TOTAL	

EQUIPMENT

PUMP TRUCK CEMENTER <u>Alan Ryan</u>
<u>123-281</u> HELPER <u>Kevin Ryan</u>
BULK TRUCK
<u>888</u> DRIVER <u>Amoro (TWS)</u>
BULK TRUCK
DRIVER

REMARKS:
Have Cap, Cement, Mix Cement
Displace Cement, Shut in
Cement ASD accumulate
Thank you Alan, Kevin, Amoro

CHARGE TO: Artale Exp

STREET _____

CITY _____ STATE _____ ZIP _____

SERVICE

DEPTH OF JOB	
PUMP TRUCK CHARGE	<u>1512.25</u>
EXTRA FOOTAGE	@
MILEAGE <u>55</u>	@ <u>7.70</u> <u>423.50</u>
MANIFOLD	@
<u>side vehicle 55</u>	@ <u>4.40</u> <u>242.00</u>
<u>(780.52/20%)</u>	
TOTAL <u>3,902.61</u>	

PLUG & FLOAT EQUIPMENT

	@	
	@	
	@	
	@	
	@	
TOTAL		

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 _____

SIGNATURE RAM

SALES TAX (If Any) _____

TOTAL CHARGES 7,632.51

DISCOUNT 1,526.50 (20%) IF PAID IN 30 DAYS

6,106.00 Net.

John Goldsmith Wellsite Service

Cell and Home Phone:
316-640-0236

427 Roosevelt St.
Cheney, KS 67025

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

Well Name: #1 Baker 31D
Location: 335' FSL, 1950' FEL, SECTION 31-15S-34W, S2/SW/SE
License Number: API: 15-109-21325 **Region: Logan County**
Spud Date: 08/12/2014 **Drilling Completed: 08/24/2012**
Surface Coordinates: LAT 38.7015972
LONG -101.1387310
Bottom Hole Vertical hole
Coordinates: 1 Degree deviation
Ground Elevation (ft): 3064' **K.B. Elevation (ft): 3073'**
Logged Interval (ft): 3600' To: RTD **Total Depth (ft): 4800**
Formation: Mississippian at RTD
Type of Drilling Fluid: Chemical

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

OPERATOR

Company: Ritchie Exploration, Inc.
Address: P.O. Box 783188
Wichita, KS 67278-3188
(316) 691-9500

GEOLOGIST

Name: John Goldsmith
Company: John Goldsmith Wellsite Service
Address: 427 Roosevelt St
Cheney, KS 67025
(316) 640-0236

COMMENTS

Contractor: VAL Energy Rig #4
Pusher: Angel Ramirez
Surface Casing: 6 joints of 8 5/8" set at 253'
Production Casing: 5.5" Production Casing was installed.
Mud by: MudCo Service
DST's by: Diamond Testing
Logs by: Nabors Completion & Production Services Co. (DIL, CN-CD)
RTD=4800'
LTD=4801'

FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Stottler	3518'	-445	3520'	-447
Heebner Shale	3884'	-811	3886'	-813
Toronto	3900'	-827	3902'	-829
Lansing	3929'	-856	3930'	-857
Muncie Creek Shale	4108'	-1035	4108'	-1035
Stark Shale	4200'	-1127	4201'	-1128
Hushpuckney Shale	4246'	-1173	4247'	-1174
Base of KC	4288'	-1215	4289'	-1216
Marmaton	4310'	-1237	4312'	-1239
Altamont	4347'	-1274	4349'	-1276
Pawnee	4428'	-1355	4430'	-1357
Myrick Station	4460'	-1387	4464'	-1391
Ft Scott	4474'	-1401	4478'	-1405
Cherokee Shale	4504'	-1431	4506'	-1433
Johnson Zone	4582'	-1509	4584'	-1511
Morrow	4636'	-1563	4638'	-1565
Mississippian	4687'	-1614	4688'	-1615
RTD	4800'	-1727		
LTD			4801'	-1728

DSTs

DST #1 3877'-3922' "Toronto" 8/16/2014 30-45-45-60

1st Open: Wk surf blw, blt to 9.5" (No BB)

2nd Open: V Wk surf blw, blt to BOB in 42.5" (No BB)

IFP: 8-65# ISIP: 862# FFP: 68-129# FSIP: 853#

Hyd: 1775-1774#

280' Total Fluid, 1' CO, 29' WMCO (49% Oil, 26% Wtr), 125' HWCM (45% Wtr, Trc Oil), 125' SMCW (88% Wtr).

DST #2 3922'-3950' "Lansing A" 8/17/2014 30-45-30-45

1st Open: 1" blw, blt to BOB in 6" (No BB)

2nd Open: Wk surf blw, blt to BOB in 8" (No BB)

IFP: 23-244# ISIP: 1092# FFP: 250-394# FSIP: 1080#

Hyd: 1821-1818#

940' Total Fluid, 55' SMWCO (76% Oil, 19% Wtr), 885' SOMCW (11% Oil, 79% Wtr).

DST #3 3952'-3976' "Lansing C" 8/18/2014 30-45-45-60

1st Open: Wk surf blw, blt to 1" (No BB)

2nd Open: V Wk surf blw blt to 3/4" (No BB)

IFP: 31-37# ISIP: 427# FFP: 39-43# FSIP: 417#

Hyd: 1905-1877#

90' Total Fluid, 5' CO, 20' OCM (25% Oil), 65' SOCM (5% Oil).

DST #4 4011'-4051' "Lansing E/F" 8/19/2014 30-30-45-60

1st Open: 7" Blw blt to BOB in 30' (No BB)

2nd Open: V Wk surf blw blt to 2" (No BB)

IFP: 672-1145# ISIP: 1152# FFP: 1148-1155# FSIP: 1157#

Hyd: 1866-1862#

2595' Total Fluid, 200' SWCM (5% Wtr, Tr Oil), 315' HMCW (56% Wtr, Tr Oil), 1450' SMCW (95% Wtr, Tr Oil), 630' Wtr.

DST #5 4138'-4170' "Lansing I" 8/20/2014 30-45-45-60

1st Open: Wk surf Blw blt to 3" (No BB)

2nd Open: V Wk surf blw blt to 3" (No BB)

IFP: 13-28# ISIP: 1097# FFP: 31-40# FSIP: 1073#

Hyd: 2007-1095#

100' Total Fluid, 65' SMCO (98% Oil), 35' HOCM (42% Oil).

DST #6 4168'-4280' "Lansing J/K/L" 8/21/2014 30-45-30-60

1st Open: 1/2" Blw blt BOB in 6" (No BB)

2nd Open: Wk surf blw blt to BOB in 7.5" (No BB)

IFP: 34-276# ISIP: 1231# FFP: 289-467# FSIP: 1233#

Hyd: 1986-1982#

1015' Total Fluid, 195' Mud (Tr of Oil), 190' WCM (20% Wtr, Tr of Oil), 630' MCW (61% Wtr, Tr of Oil).

DST #7 4350'-4405' "Altamont" 8/22/2014 30-45-45-60

1st Open: Wk surf Blw blt to 4.75" (No BB)



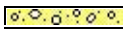


2nd Open: V Wk surf Blw blt to 3.5" (No BB)

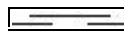

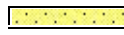


IFP: 10-41# ISIP: 1185# FFP: 43-69# FSIP: 1106#






Hyd: 2002-2002#

135' Total Fluid, 10' HMCW (53% Wtr, Tr of Oil), 125' HMCW (60% Wtr).

ROCK TYPES

	Anhy
	Cht
	Congl
	Dol
	Lmst

	Shale
	Sltst
	Ss
	Carb sh
	Dol

	Gry sh
	Sandylms
	Sltstn
	Shlyslts
	SltysH

	Sdy dolo
	Silty dolo
	Shy dolo
	Shaly ls

ACCESSORIES

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Foram

-
-
-
-
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-
-

- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomold

MINERAL

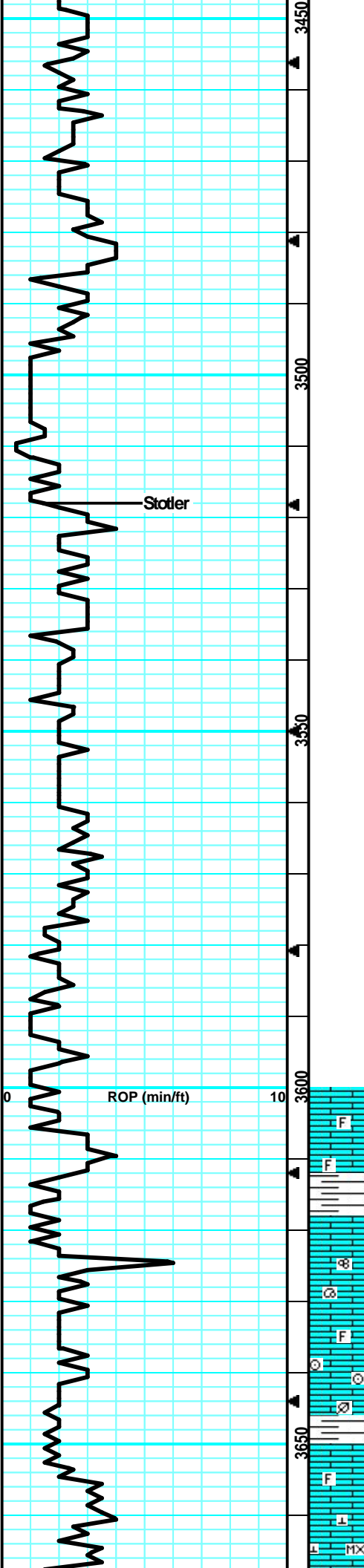
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferr
- Glau
- Nodule
- Phos
- Pyr

- Slty

STRINGER

- Dol
- Ls
- Sltstrg
- Ssstrg
- Carbsh
- Dol
- Grysh
- Sandylms
- Sltstn

ROP (min/ft)	Depth	Lithology	Oil Shows	Geological Descriptions	Remarks
ROP (min/ft)					
0 10	0 10			Morning Report Depth/Activity	Mud-Co Check #1 @ 0' 08/11/14
				<p>08/12/2014, Spud</p> <p>08/13/14, drill @ 820'</p> <p>08/14/14, drill @ 2400'</p> <p>08/15/14, drill @ 3132'</p> <p>08/16/14, drill @ 3644' (DST #1)</p> <p>08/17/14, drill @ 3922' (DST #2)</p> <p>08/18/14, drill @ 3957' (DST #3)</p> <p>08/19/14, drill @ 4051' (DST #4)</p> <p>08/20/14, drill @ 4170' (DST #5)</p> <p>08/21/14, drill @ 4280' (DST #6)</p> <p>08/22/14, drill @ 4382' (DST #7)</p> <p>08/23/14, drill @ 4472'</p> <p>08/24/14, drill @ 4705'</p>	Anhydrite @ 2386' (+687)
	2400	Anhydrite			B/Anhydrite @ 2406' (+667)
					<p>Mud-Co Check #2 @ 2584' 08/14/14</p> <p>wt vis pH</p> <p>9.6 30 7.0</p> <p>Filt chlr LCM</p> <p>NC 65K 1#</p>
0 10	3400			ROP Data begin @ 3400' on 08/15/2014	Mud-Co Check #3 @ 3196' 08/15/14
					<p>wt vis pH</p> <p>9.3 31 7.0</p> <p>Filt chlr LCM</p> <p>NC 52K 1#</p>



Mud Displacement @ 3500'

Stotler @ 3518' (-445)

Sample began @ 3600' on 08/15/2014

LS: gry/tan, slight mott, fn xln, many foss w/ brach/fuss, many brittle, tr-nvp, svrl SH: gry/brn/blk, silty, sm soft, sm carb, no cup odr, ns.

LS: gry/tan, slight mott in prt, fn xln, many foss frags/brach, brittle, sub-chlky, tr-nvp, svrl SH: no cup odr, ns.

LS: gry/lt tan, slight mott in prt, fn xln, fw foss frags, mostly brittle, sub-chlky in prt, tr-nvp, fw SH: gry/blk, silty, fw carb, no cup odr, ns.

LS: gry/lt tan, slight mott, fn xln, prt foss frags, sub-chlky in prt, brittle, tr-nvp, fw SH: gry/brn, silty, soft, no cup odr, ns.

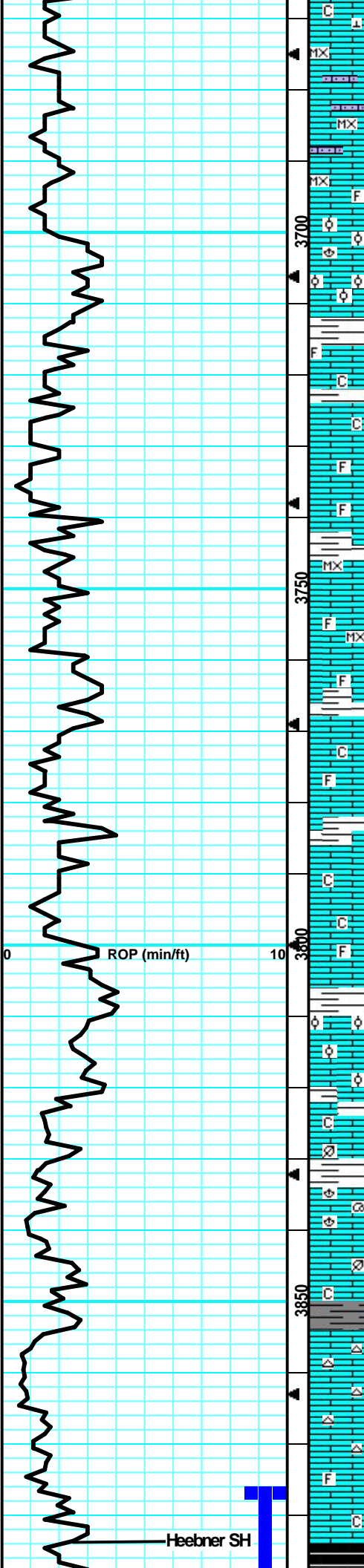
LS: gry/lt tan, slight mott, fn xln, foss in prt for/gast, sub-chlky in prt, brittle, tr-nvp, fw SH: gry, silty, soft, no cup odr, ns.

LS: gry/lt tan, slight mott in prt, fn xln, sm foss frags, mostly brittle, sub-chlky in prt, tr-nvp, fw SH: gry, silty, soft, no cup odr, ns.

LS: gry/lt tan, mott in prt, fn xln, foss in sm crin/frags, sm brittle, sm sub-chlky, tr-nvp, fw SH: gry/slvr, silty, soft, no cup odr, ns.

LS: lt tan/lt gry, fn xln, v fw foss in prt, brittle, sub-chlky in prt, tr-nvp, fw SH: gry, silty, soft, no cup odr, ns.

LS: lt tan/lt gry, micro-fn xln, mostly brittle, sub-chlky in prt, fw lrg calc nod, tr-nvp, fw pcs pur chlk, fw SH: gry/grn, silty,



no cup odr, ns.

LS: lt tan/lt gry, micro-fn xln, mostly brittle, fw gritty like, chlky in prt, tr-ppt intxln por in fw, fw pcs pur chlk, fw SH: lt gry, silty, soft, no cup odr, ns.

LS: lt tan, micro-fn xln, brittle, gritty/sucrosic like, fw Chert inclus, chlky in prt, tr-ppt intxln por in sm, fw pcs pur chlk, no cup odr, ns.

LS: lt tan, micro-fn xln, fw foss frags, mostly brittle, sub-chlky in prt, tr-ppt intxln por in fw, fw pcs pur chlk, no cup odr, ns.

LS: lt tan, fn xln, sm foss brach, many ool, brittle, sub-chlky in prt, tr-pr intool por in fw, fw pcs pur chlk, no cup odr, ns.

LS: lt tan, fn xln, v fw foss frags, many brittle, sub-chlky in prt, tr-nvp, fw pcs pur chlk, no cup odr, ns.

LS: lt tan/gry, slight mott in prt, fn xln, sm dense, sm brittle, sub-chlky in prt, tr-nvp, fw pcs pur chlk, fw SH: lt gry, silty, soft, no cup odr, ns.

LS: lt tan/lt gry, slight mott in prt, fn xln, fw foss frags, many brittle, fw sub-chlky, tr-nvp, fw SH: lt gry, silty, soft, no cup odr, ns.

LS: lt tan, micro-fn xln, fw foss frags, mostly brittle, sub-chlky in prt, fw flakey like, tr-nvp, fw SH: gry/brn, silty, no cup odr, ns.

LS: lt tan, micro-fn xln, fw foss frags, brittle, sub-chlky, tr-nvp, fw pcs pur chlk, fw SH: gry, silty, soft, no cup odr, ns.

LS: tan/lt tan, slight mott in prt, fn xln, v fw foss frags, many brittle, sm dense, sub-chlky in prt, tr-nvp, fw pcs pur chlk, no cup odr, ns.

LS: tan/lt tan, slight mott in prt, fn xln, fw foss frags, sm dense, sm brittle, sub-chlky, tr-nvp, fw pcs pur chlk, no cup odr, ns.

LS: tan/lt tan/lt gry, fn xln, mostly dense, fw brittle, sm hard, tr-nvp, fw SH: gry/drk gry, silty, med crush, no cup odr, ns.

LS: tan/lt tan, fn xln, mostly dense, fw brittle, sub-chlky in prt, tr-nvp, fw SH: gry, silty, sm soft, no cup odr, ns.

LS: tan/lt tan, fn xln, sm foss, mostly dense, sm brittle, fw hard, tr-nvp, 1 pcs w/ pr intxln por, gd sho fo, no cup odr.

LS: lt tan/lt gry, fn xln, sm sml ool in prt, brittle, sm chlky, tr-pr intool por, in sm, 2-3 pcs w/ fr sfo, faint cup odr, dul yel fluo, strm cut resid.

LS: lt tan/lt gry, fn xln, mostly brittle, sm dense, sub-chlky in sm prt, tr-nvp, fw pcs pur chlk, no cup odr, ns.

LS: lt gry/lt tan, fn xln, sm dense, many brittle, sub-chlky in prt, tr-nvp, svrl pcs pur chlk, no cup odr, ns.

LS: tan/lt gry, mott, fn xln, foss w/ brach/gast/plnt frags, mostly dense, sm firm, tr-nvp, fw SH: gry/blk, silty, fw carb, no cup odr, ns.

LS: lt tan/lt gry, fn xln, foss in prt, many dense, sm brittle, sub-chlky in prt, tr-nvp, 1-2 pcs w/ drk brn ptchy stns, dul yel fluo, strm cut, vssfo, fw SH: gry/drk gry, silty, no cup odr.

LS: tan/lt tan, fn xln, sm dense, mostly brittle, sub-chlky in prt, pr-fr intxln por in sm, 2-3 pcs w/ drk brn stns, dul yel fluo, strm cut, sso on brk, no cup odr, svrl Chert: wht/opaque, sharp, no cup odr, ns.

LS: tan/lt tan, fn xln, mostly dense, sm brittle, 1-2 pcs w/ sho as described above, many more dense, fw SH: gry/gm, silty, soft, no cup odr.

LS: tan/lt tan, fn xln, foss in prt, fn xln, sm dense, many brittle, chlky in prt, tr-nvp, fw pcs pur chlk, v fw SH: gry/blk, silty, soft, fw carb, no cup odr, ns.

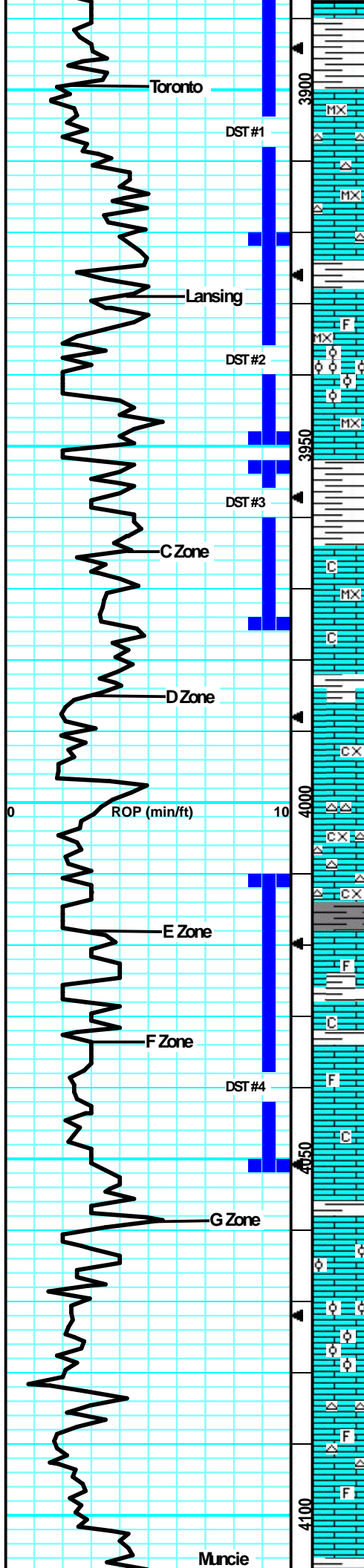
LS: tan/lt gry, fn xln, v fw foss frags, sm dense, many brittle, tr-nvp, fw pcs pur chlk, fw SH: gry/blk, silty, soft, fw

Mud-Co Check #4 @
3713' 08/16/14
wt vis pH
8.8 45 11.0
Filt chlr LCM
7.2 3K 2#

CFS @ 3825'
(20"/40")

DST#1 3877-3922' "Toronto"
8/16/2014 30-45-45-60
1st Open: Wk surf blw, bit to 9.5" (No BB)
2nd Open: V Wk surf blw, bit to BOB in 42.5" (No BB)
IFP: 8-65# ISIP: 862# FFP: 68-129#
FSIP: 853#
Hyd: 1775-1774#
280' Total Fluid, 1' CO, 29' WCMCO (49% Oil, 26% Wtr), 125' HWCW (45% Wtr, Trc Oil), 125' SMCW (88% Wtr).

Heebner @ 3884' (-811)



carb, no cup odr, ns.
 LS: tan, fn xln, mostly dense, sm brittle, scat hvy drk brn stns, scat fr intxn por w/ rare vugs, scat dul yel fluor, strm cut, ssfo, fr-gd cup odr, svrl SH: gry/brn/grn, silty.

Toronto @ 3900' (-827)

Survey @3922' = 1/2 Degree
 Pipe Strap was 1.21' Short to the board @ 3922'.
 Mud-Co Check #5 @ 3922' 08/17/14
 wt vis pH
 8.9 48 11.0
 CFS @ 3922' (30"/60")
 Filt chr LCM
 7.2 4.5K 2#

LS: tan/lt tan, micro-fn xln, sm dense, fw brittle, sm hard, fr intxn w/ scat vug por, dul scat lght brn stns, dul yel fluor, strm cut, ssfo on brk, gd cup odr, fw Chert: wht/opaque, sharp.

Lansing @ 3929' (-856)

DST #2 3922'-3950' "Lansing A"
 8/17/2014 30-45-30-45
 1st Open: 1" blw, blt to BOB in 6" (No BB)
 2nd Open: Wk surf blw, blt to BOB in 8" (No BB)
 IFP: 23-244# ISIP: 1092# FFP: 250-394# FSIP: 1080#
 Hyd: 1821-1818#
 940' Total Fluid, 55' SWMCO (76% Oil, 19% Wtr), 885' SOMCW (11% Oil, 79% Wtr).

LS: lt tan/crm, micro-fn xln, mostly dense, fw brittle, sub-chlky in prt, 1-2 pcs w/ scat patchy light brn stns, dul yel fluor, strm cut, vssfo, svrl pcs Chert: wht/opaque, sharp.

CFS @ 3976' (30"/60")

DST #3 3952'-3976' "Lansing C"
 8/18/2014 30-45-45-60
 1st Open: Wk surf blw, blt to 1" (No BB)
 2nd Open: VWk surf blw blt to 3/4" (No BB)
 IFP: 31-37# ISIP: 427# FFP: 39-43#
 FSIP: 417#
 Hyd: 1905-1877#
 90' Total Fluid, 5' CO, 20' OCM (25% Oil), 65' SOCM (5% Oil).

LS: tan/lt gry, micro-fn xln, fw foss frags, mostly dense, sm hard, fw brittle, tr-nvp, svrl SH: gry/brn, silty, sm v soft, no cup odr, ns.

CFS @ 4010' (30"/60")

DST #3 3952'-3976' "Lansing C"
 8/18/2014 30-45-45-60
 1st Open: Wk surf blw, blt to 1" (No BB)
 2nd Open: VWk surf blw blt to 3/4" (No BB)
 IFP: 31-37# ISIP: 427# FFP: 39-43#
 FSIP: 417#
 Hyd: 1905-1877#
 90' Total Fluid, 5' CO, 20' OCM (25% Oil), 65' SOCM (5% Oil).

LS: lt tan/lt gry, micro-fn xln, foss in prt, many profus ool, gd intool/vuggy por, fr sfo in por, sm sphr of oil cling to rx chp, gd sfo on brk, dul yel fluor, strm cut, gd-strg cup odr, svrl pcs/try.

Mud-Co Check #7 @ 3922' 08/19/14
 wt vis pH
 9.0 68 10.5
 CFS @ 4051' (30"/60")
 Filt chr LCM
 11.2 12K 2#

LS: tan/lt tan, micro-fn xln, mostly dense, sm brittle, fw pcs w/ scat pr intxn por, scat dul yel fluor, slw cut, faint cup odr, vssfo, svrl SH: gry/brn, silty, soft, fw pyrite.

DST #4 4011'-4051' "Lansing EF"
 8/19/2014 30-30-45-60
 1st Open: 7" Blw blt to BOB in 30' (No BB)
 2nd Open: VWk surf blw blt to 2" (No BB)
 IFP: 672-1145# ISIP: 1152# FFP: 1148-1155# FSIP: 1157#
 Hyd: 1866-1862#
 2595' Total Fluid, 200' SWMCO (5% Wtr, Tr Oil), 315' HMCW (56% Wtr, Tr Oil), 1450' SWMCO (95% Wtr, Tr Oil), 630' Wtr.

LS: tan/lt tan, fn xln, mostly dense, fw brittle, 1 pc w/ hvy lght brn stn sat rx chp, dul yel fluor, strm cut, ssfo on brk, 1-2 scat gd intxn/sght vuggy por, sm sphr oil cling to rx chp, ssfo on brk, faint cup odr.

Muncie Creek @ 4108' (-1035)

LS: tan/lt tan, micro-fn xln, mostly dense, fw brittle, sub-chlky in prt, 5-6 pcs w/ scat gd intxn por, sm slght vuggy, dul yel fluor, strm cut, ssfo, fr-gd cup odr.

LS: tan/lt tan, micro-fn xln, mostly dense, fw hrd, sm sub-chlky in prt, fw brittle, tr-nvp, svrl SH: gry/grn, silty, soft, no cup odr, ns.

LS: lt tan/lt gry, fn xln, sm dense, many brittle, fw sub-chlky, fw pcs w/ fr-gd intxn por, svrl pcs pur chl, sm patchy lght brn stns, no fluor/cut (min stns), no cup odr, ns.

LS: lt tan/lt gry, fn xln, many dense, mostly brittle, sub-chlky in prt, fw pcs w/ fr intxn por, svrl pcs pur chl, fw Chert: wht/lt gry, sharp, fw SH: brn/grn, silty, no cup odr, ns.

LS: lt tan, fn xln, mostly dense, many brittle, uniform, sub-chlky, tr-nvp, svrl pcs pur chl, fw SH: gry/grn/brn, silty, soft, no cup odr, ns.

LS: tan/lt tan, fn xln, sm dense, many brittle, sub-chlky in fw, pr ppt-intxn por is sm, scat patchy lght brn stns, scat fluor, slw cut, vssfo on brk, gd cup odr.

LS: tan/lt tan, slight mott, fn xln, fw foss, many brittle, fw dense, fw sub-chlky, fr-gd fn intxn por in 6-7 pcs, drk brn stns in por, dul yel fluor, strm cut, fw sfo on brk, gd cup odr.

LS: tan/lt tan, slight mott, fn xln, sm dense, many brittle, fw flakey like, pr-fr intxn por in sm, scat lght brn stns, dul yel fluor, wk cut, vssfo on crush in 4-5 pcs/try, gd cup odr.

LS: tan/lt gry, fn xln, sm dense, fw brittle, sm lrg calc nodul, fw flakey like, tr-nvp, sm SH: gry/grn, silty, sm soft, no cup odr, ns.

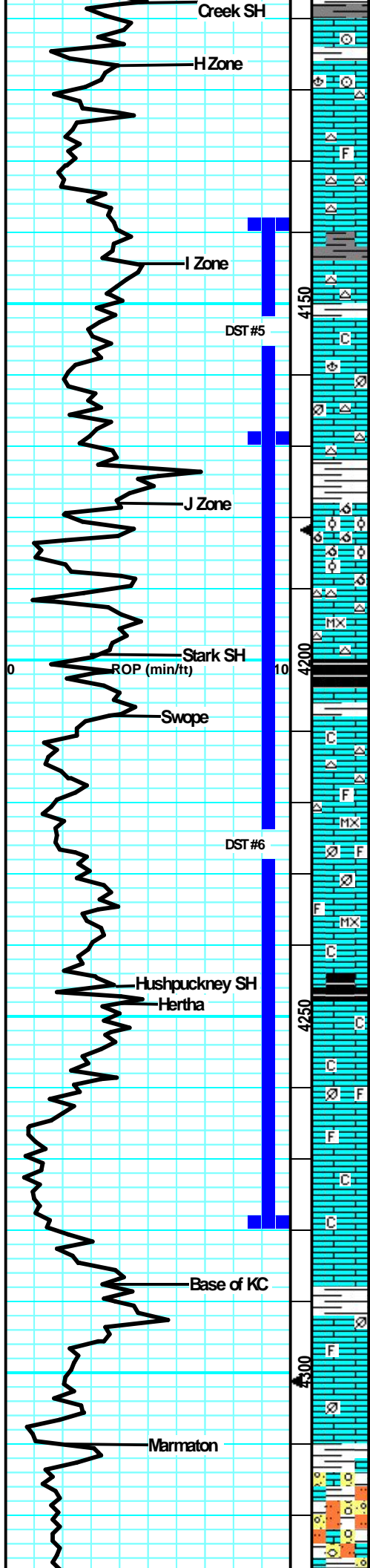
LS: lt tan/lt gry, fn xln, sm dense, sm brittle, fw grainy/gritty, fw flakey, tr-nvp, fw SH: gry/drk gry, silty, fw fissile, soft, no cup odr, ns.

LS: lt tan/lt gry, fw foss in prt, sm profus ool, fw dense, sm brittle, sub-chlky in prt, svrl pcs w/ lrg vuggy por, fw pcs pur chl, no cup odr, ns.

LS: lt tan/lt gry, fw foss frags, sm dense, many brittle, sub-chlky in prt, fw pcs pr intxn por, fw pcs pur chl, v fw Chert: wht/opaque, sharp, no cup odr, ns.

LS: tan/lt gry, fw foss frags, mostly dense, sm brittle, sub-chlky, fw pr vuggy por, svrl pcs pur chl, fw SH: gry/drk gry, silty, no cup odr, ns.

LS: lt gry/tan, slight mott, fn xln, mostly dense, fw flakey like, tr-nvp, sm SH: gry/grn/blk, silty, soft, fw carb, no cup odr, ns.



LS: gry/lt tan, mott in prt, fn xln, many foss brach/frags, sub-chlky in prt, flakey, tr-pr ppt intxln, 2 pcs lght brn stns, dul yel fluor, v sml sphr oil on brk, faint-? cup odr.

LS: tan/lt gry, fn xln, mostly dense, fw brittle, fw hard, sub-chlky, tr-nvp, fw pcs pur chlck, fw Chert: wht/semi-trans, sharp, foss, no cup odr, ns.

LS: tan/lt tan, fn xln, fw foss frags, mostly brittle, fw dense, sm scat vuggy por, sub-chlky in prt, fw pcs pur chlck, svrl Chert: wht/opaque, foss, sharp, no cup odr, ns.

LS: tan/lt gry, fn xln, many dense, fw brittle, sub-chlky in prt, sm firm, tr-nvp, sm Chert: wht/opaue, foss, sharp, fw SH: gry/grn, silty, soft, no cup odr, ns.

LS: tan/lt tan, fn xln, mostly brittle, chlky in prt, fw flakey like, 2-3 pcs w/ v lght scat stns, wk sptted fluor, slw cut, v slight-? sfo on crush, ? cup odr.

LS: lt tan/lt gry, slight mott, fn xln, foss brach/frags, sm dense, sm firm, fw brittle, sub-chlky in sm, pr-fr intxln/vintfoss por, sm slight vuggy, 4-5 pcs w/ drk hvy sat stns in por, fr sfo on brk, dul yel fluor, strn cut, wk cup odr, fr odr in try afr brk.

LS: tan/lt gry, fn xln, mostly dense, fw brittle, sub-chlky in prt, tr-nvp, fw Chert: wht/opaue, sharp, sm SH: gry/grn/brn, silty, sm soft, fw waxy, no cup odr, ns.

LS: lt gry/lt tan, slight mott, fn xln, sm profus ool, mostly brittle, svrl pcs w/ fr-gd oolcast por, 1 pcs w/ salt/pepper like stns, wk fluor, 2 v smal sphr of free oil on brk, svrl Chert: wht/opaue, sharp, no cup odr.

LS: lt tan/lt gry, micro-fn xln, mostly brittle, sm dense, scat pr-fr intxln por in sm, 3-4 pcs w/ scat drk sptted stns, dul yel fluor, strn cut, vssfo on brk, faint-? cup odr.

LS: tan/gry, mott, fn xln, sm dense, svrl bittle, sm dense/hard, flakey, tr-nvp, fw brittle/chlky, tr-nvp, fw pcs pur chlck, svrl SH: gry/blk/blu/blk, silty, soft, many carb, no cup odr, ns.

LS: tan/gry, slight mott, fn xln, sm foss frags in prt, many dense, mostly brittle, chlky, tr-nvp, svrl pcs pur chlck, 1-2 pcs w/ patchy lght brn stns, wk-? fluor, slw cup on brk, vssfo on brk, no cup odr.

LS: tan/lt gry, slight mott in prt, micro-fn xln, fw foss frags, dense, brittle, chlky, mostly uniform, tr-nvp, svrl pcs pur chlck, no cup odr, ns.

LS: lt tan/lt gry, micro-fn xln, mostly dense, sm brittle, fw sub-chlky in prt, semi-uniform, tr-nvp, fw pcs pur chlck, fw SH: gry/grn, silty, no cup odr, ns.

LS: tan/gry, slight mott in prt, fn xln, many dense, sub-chlky, fw hard, flakey mealy i prt, tr-nvp, fw SH: gry/brn/blk, silty, sm carb, no cup odr, ns.

LS: tan/lt gry/ slight mott in prt, fn xln, mostly dense, fw hard, sub-chlky in prt, many flakey/mealy, tr-nvp, fw pcs pur chlck, no cup odr, ns.

LS: tan/gry, mott in prt, fn xln, fw foss frags, mostly dense, fw brittle, sub-chlky in prt, fw flakey like, tr-nvp, fw pcs pur chlck, fw SH: gry/grn, silty, soft, no cup odr, ns.

LS: tan, fn xln, mostly dense, many hard, uniform, fw sub-chlky in prt, tr-nvp, fw pcs pur chlck, no cup odr, ns.

LS: lt gry/tan, slight mott in prt, fw foss frags, mostly dense, sm brittle, sub-chlky in prt, tr-nvp, fw SH: gry/grn/brn, silty, med crush, no cup odr, ns.

LS: tan/lt tan, fn xln, fw foss frags, mostly dense, sm hard, sub-chlky in prt, tr-nvp, fw Chert: gry, foss, sharp, fw SH: drk gry, silty, med crush, no cup odr, ns.

LS: lt gry/lt tan, slight mott in prt, fw foss frags, sm dense, fw brittle, chlky in prt, tr-nvp, svrl pcs pur chlck, fw Chert: gry, foss, sharp, no cup odr, ns.

LS: tan/ltan, fn xln, fw ool, sm dense, svrl brittle, sub-chlky in prt, tr-nvp, svrl pcs pur chlck, fw SH: gry/grn, silty, soft, fw waxy, no cup odr, ns.

LS: lt tan/lt gry, fn xln, mostly dense, sm brittle, sub-chlky in prt, tr-nvp, fw SH: gry/grn, silty, soft, fw SH: str: lt brn, v soft, friable, fw SS: lt gry/grn, v fw grn, arg, friable, tr-nvp,

DST #5 4138'-4170' "Lansing I"
8/20/2014 30-45-45-60
1st Open: Wk surf Blwblt to 3" (No BB)
2nd Open: V Wk surf blwblt to 3" (No BB)
IFP: 13-28# ISIP: 1097# FFP: 31-40#
FSIP: 1073#
Hyc: 2007-1095#
100' Total Fluid, 65' SMCO (98% Oil), 35' HOCM (42% Oil).

CFS @ 4138'
(30"/60")

Mud-Co Check # @	wt	vis	pH
4170' 08/20/14	9.0	58	11.0
Filt	chl	LCM	
11.2	9K	2#	

CFS @ 4170'
(30"/60")

Stark @ 4200' (-1127)

CFS @ 4198'
(30"/60")

DST #6 4168'-4280' "Lansing J/K/L"
8/21/2014 30-45-30-60
1st Open: 1/2" Blwblt BOB in 6" (No BB)
2nd Open: Wk surf blwblt to BOB in 7.5" (No BB)
IFP: 34-276# ISIP: 1231# FFP: 289-467#
FSIP: 1233#
Hyc: 1986-1982#
1015' Total Fluid, 195' Mud (Tr of Oil), 190' WCM (20% Wtr, Tr of Oil), 630' MCW (61% Wtr, Tr of Oil).

CFS @ 4239'
(30"/60")

Hushpuckney
@ 4246' (-1173)

Mud-Co Check #9 @	wt	vis	pH
4280' 08/21/14	8.9	59	11.5
Filt	chl	LCM	
10.8	13K	1#	

CFS @ 4280'
(30"/60")

B/KC @ 4288' (-1210)

Marmaton @ 4310' (-1237)

DST #7 4350'-4405' "Altamont"
8/22/2014 30-45-45-60
1st Open: Wk surf Blwblt to 4.75" (No BB)
2nd Open: V Wk surf Blwblt to 3.5" (No BB)

no cup odr, ns.
 LS: tan/light gry, slight mott in prt, micro-fn xln, mostly dense, sm hard, sub-chlky/brittle in fw, tr-nvp, fw pcs Chert: gry/lt gry, sharp, fw SH: gry/gm, silty, no cup odr, ns.

BB
 IFF: 10-41# ISIP: 1185# FFP: 43-69#
 FSP: 1106#
 Hyd: 2002-2002#
 135' Total Fluid, 10' HMCW (53%Wtr, Tr of Oil), 125' HMCW (60%Wtr).

Altamont @ 4349' (-1274)

LS: tan/gry, slight mott in prt, fn xln, mostly dense, fw brittle, sub-chlky in prt, sm flakey like, tr-nvp, svrl pcs chl, gry-blk/bm, silty, soft, no cup odr, ns.

LS: tan/gry, fn xln, mostly dense, sm hard, fw flakey like, sm calc inclus, tr-nvp, sm SH: gry/bm, silty, soft, no cup odr, ns.

LS: lt tan/lt gry, fn xln, sm foss in prt, v ool, many brittle, sm gd intool por, 2-3 pcs w/ drk brn spitted stn in ool, vssfo on brk, faint-? cup odr, wk spitted fluor, gd cut resid on brk only, fw pcs pur chl.

LS: lt tan/gry, slight mott, fn xln, sm v ool, fw foss frags, mostly dense, sm brittle, fw pcs w/ fr intool por, 4-5 pcs w/ spitted drk brn stns in scat por, dul yel fluor, strm cut on brk, faint-? cup odr, vssfo.

LS: gry/lt tan, fn xln, sm foss, fw ool, mostly dense, sm hard, v fw chlky/brittle, tr-nvp, fw SH: gry/bm, silty, soft, no cup odr, ns.

LS: tan/gry, slight mott in prt, fn xln, v fw foss frags, mostly dense, sm hard, fw flakey, sm sub-chlky, tr-nvp, fw pcs pur chl, no cup odr, ns.

LS: gry/tan, fn xln, sm foss/ool, fw dense, many brittle, fw sub-chlky in prt, tr-pr int xln/intfoss por in sm, fw pcs pur chl, no cup odr, ns.

LS: tan, fn xln, mostly dense, sm hard, fw flakey like, tr-nvp, v fw sub-chlky/brittle, tr-nvp, fw SH: gry/bm, silty, no cup odr, ns.

LS: gry/tan, slight mott in prt, mostly dense, sm hard, tr-nvp, abund SH: drk gry/gm-blu, silty, sm soft, fw fissile, mostly med crush, no cup odr, ns.

SH: gry/gm, silty, soft, sm waxy, abund LS: tan/gry, mott in prt, fn xln, fw foss frags, mostly dense, sm hard, many flakey/mealy, tr-nvp, no cup odr, ns.

LS: tan/lt gry, slight mott in prt, fn xln, mostly dense, many hard, sm flakey/mealy, mostly uniform, tr-nvp, sm Chert: wht/lt gry, foss, sharp, no cup odr, ns.

LS: gry/tan, mott in prt, fn xln, foss in prt, many dense, sm hard, fw sub-chlky, many flakey/mealy, tr-nvp, sm Chert: wht/gry, foss, sharp, fw SH: drk gry, silty, med crush, no cup odr, ns.

LS: tan/gry, mott, fn xln, foss in prt, sm dense, sm hard, fw chlky/brittle, tr-nvp, fw Chert: gry/wht, foss, sharp, sm SH: gry/blk, silty, soft, fw carb, no cup odr, ns.

LS: tan/gry, slight mott in prt, fn xln, v fw foss frags, mostly dense, fw brittle, sub-chlky in prt, tr-nvp, fw pcs pur chl, sm SH: gry/blk, silty, soft, many carb, no cup odr, ns.

LS: gry/tan, mott, fn xln, foss, sm v ool, dense, sm hard, fw flakey like, tr-nvp, svrl Chert: wht/gry, foss/ool, sharp, svrl SH: blk/gry/gm, silty, soft, many carb, no cup odr, ns.

LS: tan/gry, mott, fn xln, foss, sm ool, many dense, fw hard, svrl flakey/mealy, sub-chlky in prt, tr-nvp, fw SH: gry, silty, soft, no cup odr, ns.

LS: gry/tan, mott in prt, fn xln, fw foss in prt, sm dense, fw hard, svrl sub-chlky/brittle, tr-nvp, svrl pcs pur chl, fw SH: gry, silty, soft, no cup odr, ns.

LS: tan/gry, mott in prt, fn xln, sm foss, mostly dense, sm hard, fw flakey like, sm sub-chlky, tr-nvp, sm Chert: wht/gry, mott, foss, sharp, svrl SH: lt gry/blk, silty, soft, sm carb, no cup odr, ns.

LS: tan/lt tan, fn xln, sm foss frags, sm v ool, mostly brittle, fw dense, sub-chlky in a fw, pr intool por in sm, many dense/tight, no cup odr, ns.

LS: tan/gry, mott, fn xln, fw foss frags, mostly dense, sm hard, tr-nvp, fw pcs chlky/brittle, fw pcs pur chl, abund SH: gry/blk/bm, silty, sm carb, no cup odr, ns.

LS: gry/tan, mott in prt, fn xln, many dense, fw hard, sm flakey/mealy, tr-nvp, fw sub-chlky/brittle, sm SH: gry/bm/blk, silty, med crush, fw carb, no cup odr, ns.

LS: gry/lt tan, mott, fn xln, sm foss, mostly dense, sm hard, flakey/mealy, tr-nvp, sm SH: brn/blk/gry, silty, sm soft, many carb, no cup odr, ns.

LS: tan/lt tan/gry, slight mott in prt, fn xln, mostly dense, fw brittle, sm flakey, scat pr intxln por, scat dul yel fluor, strm cut, patchy lght brn stns,

CFS @ 4370'
(30"/60")

CFS @ 4382'
(30"/60")

Mud-Co Check #10 @ 4390' 08/22/14

wt	vis	pH
50	10.5	
Filt	chl	LCM
10.4	11K	1#

CFS @ 4405'
(30"/60")

Survey @ 4405' = 3/4 Degree

Pawnee @ 4428' (-1355)

Myrick Station @ 4460' (-1387)

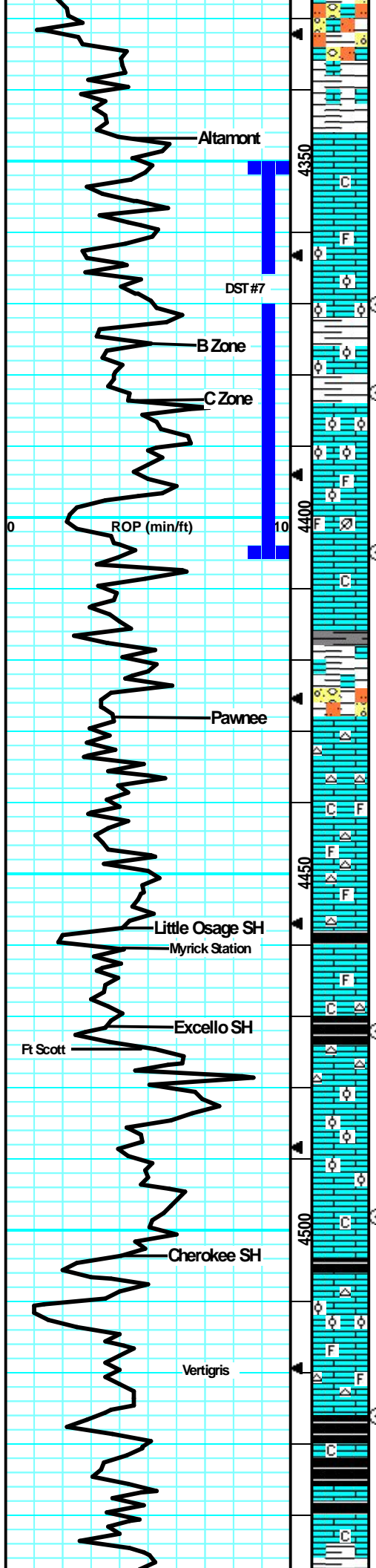
CFS @ 4472'
(30"/60")

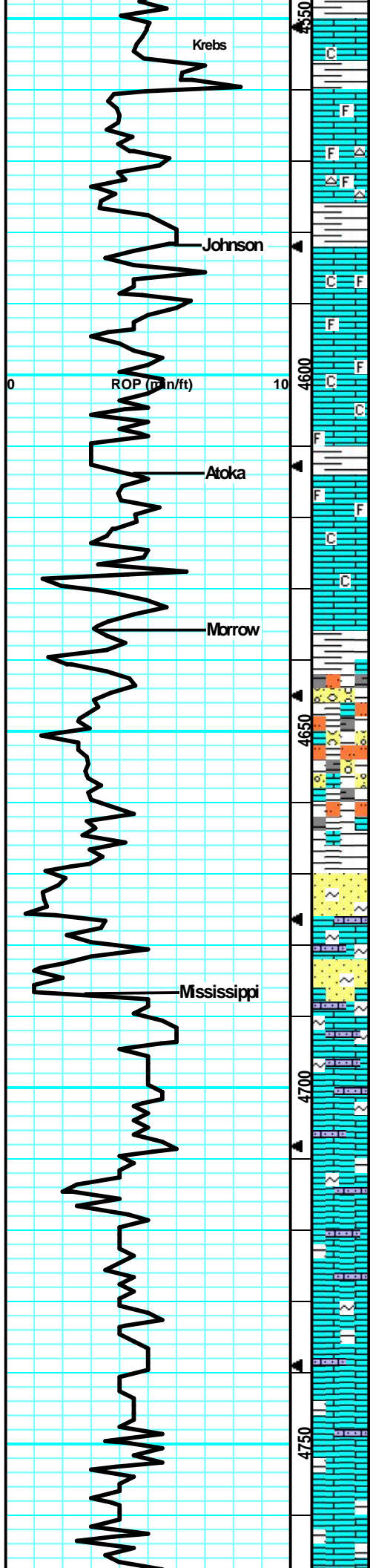
Ft Scott @ 4474' (-1401)

CFS @ 4498'
(30"/60")

Cherokee @ 4504' (-1431)

CFS @ 4526'
(30"/60")





ssfo on brki in 3-4 pcs, faint-wk cup odr.

LS: tan/lt gry, slight mott in prt, fn xln, mostly dense, sm hard, many flakey/mealy, fw sub-chlky, tr-nvp, fw SH: gry/drk gry, silty, soft, no cup odr, ns.

LS: tan/lt gry, slight mott, fn xln, fw foss frags, mostly dense, sm hard, fw flakey like, tr-pr ppt intxln por in fw pcs, 2 pcs w drk brn sat strns, dul yell fluor, strmcut, tight/dense, vssfo, no cup odr.

LS: gry/lt tan, slight mott in prt, fn xln, sm foss in prt, mostly dense, sub-chlky, fw flakey like, tr-nvp, fw pcs pur chl, fw Chert: wht/gry, foss, sharp, no cup odr, ns.

LS: gry/tan, mott, fn xln, fw foss frags, many dense, mostly chlky, brittle, flakey, tr-nvp, fw SH: gry, silty, soft, fw fissile, no cup odr, ns.

LS: gry/tan, mott, fn xln, fw foss frags, many dense, sm brittle, sub-chlky in prt, mostly flakey, tr-nvp, fw SH: gry/brn, silty, med crush, no cup odr, ns.

LS: tan/lt tan, slight mott in prt, fn xln, mostly dense, many brittle, sub-chlky in prt, fw pcs w/ pr scat intxln por, fw pcs pur chl, no cup odr, ns.

LS: gry/lt tan, slight mott in prt, fn xln, fw foss frags, mostly dense, sm chlky, fw brittle, sm hard, fw flakey like, tr-nvp, fw pcs pur chl, no cup odr, ns.

LS: gry/tan, slight mott in prt, fw xln, fw foss frags, mostly dense, sm hard, fw flakey/mealy, tr-nvp, fw SH: gry/brn, silty, sm fissile, no cup odr, ns.

LS: gry/lt tan, fn xln, mostly dense, many hard, fw pcs sub-chlky, flakey/mealy, tr-nvp, sm SH: gry/brn, silty, med crush, no cup odr, ns.

LS: tan/lt gry, slight mott in prt, fn xln, mostly dense, many hard, fw sub-chlky, sm flakey/mealy, tr-nvp, fw SH: gry, silty, med crush, no cup odr, ns.

LS: lt gry/lt tan, micro-fn xln, many dense, fw brittle, sub-chlky in prt, tr-nvp, sm SH: gry/brn/grn, silty, soft, fw fissile, no cup odr, ns.

LS: tan/lt tan, fn xln, mostly dense, sm hard, fw sub-chlky in prt, tr-nvp, fw SS: gm, fn gm, arg, friable, sm hard, glauc, tr-nvp, svrl SH: gry, silty, soft, fw muddy like, no cup odr, ns.

LS: tan/gry, mott in prt, fn xln, mostly dense, sm hard, fw flakey like, tr-nvp, fw pcs pyrite, sm SH: gry/brn, silty, med crush, fw SlStn: lt gry, v soft, muddy like, gritty, no cup odr, ns.

SS: lt gry/grn, fn gm, sub-rnd, arg, glauc, sm limey and firm, fw friable, tr-nvp, abund SH: gry/grn, silty, sm soft, fw fissile, no cup odr, ns.

SS: wht/lt gry/grn, fn gm, arg, sub-rnd, friable, friable, sm limey, fw glauc, tr-nvp, fw LS: tan/lt tan, fn xln, mostly dense, sm hard, flakey, tr-nvp, abund SH: gry/brn, silty, soft, no cup odr, ns.

SS: crm/why, fn gm, sm hard, arg, sm brittle, limey, tr-nvp, fw LS: tan/lt tan, dense, fw flakey like, tr-nvp, svrl SH: gry, silty, soft, no cup odr, ns.

LS: tan/lt tan, fn xln, mostly dense, sub-chlky, sm brittle, sm sandy/gritty, tr-nvp, fw SlStn: gry, silty, v soft, svrl SH: gry/brn, silty, fissile, fw SS: lt gry/wht, fn gm, arg, chlky, friable, limey, tr-nvp, no cup odr, ns.

LS: lt tan/crm, fn xln, mostly dense, sm sandy/gritty, brittle in sm, tr-nvp, svrl SH: gry/grn, silty, fissile, med crush, no cup odr, ns.

LS: crm/lt tan, fn xln, sandy/gritty, sm chlky, friable, brittle, tr-nvp, sm LS: tan/lt brn, fn xln, dense, hard, flakey, tr-nvp, no cup odr, ns.

LS: crm/lt tan, fn xln, sm sandy/gritty, chlky, brittle, tr-nvp, fw dense, hard, tr-nvp, fw SH: gry, silty, soft, no cup odr, ns.

LS: lt tan, fn xln, mostly sandy/gritty, uniform, sm hard, fw friable, tr-nvp, fw pcs SH: gry/brn, silty, no cup odr, ns.

LS: tan/lt tan, fn xln, mostly dense, sm sandy/gritty, sub-chlky in prt, sm flakey/mealy, tr-nvp, fw pcs pur chl, no cup odr, ns.

LS: lt gry/lt tan, fn xln, fw dense, mostly brittle, sub-chlky, flakey/mealy, uniform, tr-nvp, fw SH: drk gry, silty, fw

CFS @ 4576'
(30"/60")
Johnson @ 4582' (-1509)

CFS @ 4615'
(30"/60")
Morrow @ 4636' (-1563)

Mississippi @ 4687' (-1614)

↑-----Samples were really Shaley...possible cav'n'gs-----↓

massive, no cup odr, ns.

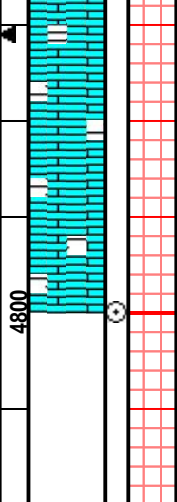
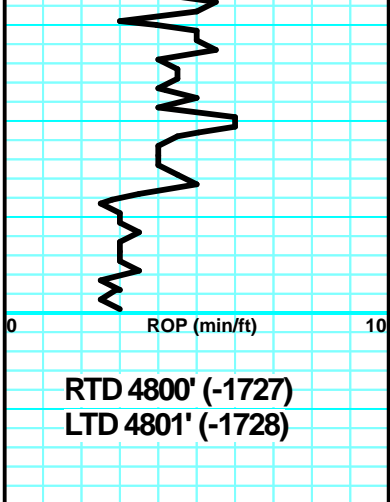
LS: tan/lt gry, fn xln, fw dense, mostly brittle, sm sandy/grainy, mostly flakey, sub-chlky, tr-nvp, fw pcs pur chlk, no cup odr, ns.

LS: tan/lt gry, slight mott in prt, fn xln, fw dense, sub-chlky, mostly brittle, fw flakey, fw grainy, tr-nvp, fw pcs pur chlk, no cup odr, ns.

LS: tan/lt tan, micro-fn xln, 1/2 try smooth, dense, tr-nvp, 1/2 try, brittle, flakey, sub-chlky, tr-nvp, fw pcs pur chlk, no cup odr, ns.

CFS @ 4800'
(30"/60")

Survey @ TD' = 1 Degree



RTD 4800' (-1727)
LTD 4801' (-1728)