

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
Spud Date: 08/12/2014
Surface Coordinates: LAT 38.7015972
LONG -101.1387310
Bottom Hole Vertical hole
Coordinates: 1 Degree deviation
Ground Elevation (ft):3064'
Logged Interval (ft):3600' **To:** RTD
Formation: Mississippian at RTD
Type of Drilling Fluid:Chemical

Region: Logan County
Drilling Completed:08/24/2012

K.B. Elevation (ft): 3073'
Total Depth (ft):4800

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)



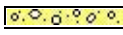


2nd Open: V Wk surf Blw blt to 3.5" (No BB)

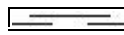

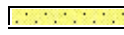


IFP: 10-41# ISIP: 1185# FFP: 43-69# FSIP: 1106#




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

F

G

O

O

P

P

P

P

P

P

P

P

Fossil

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

MINERAL

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

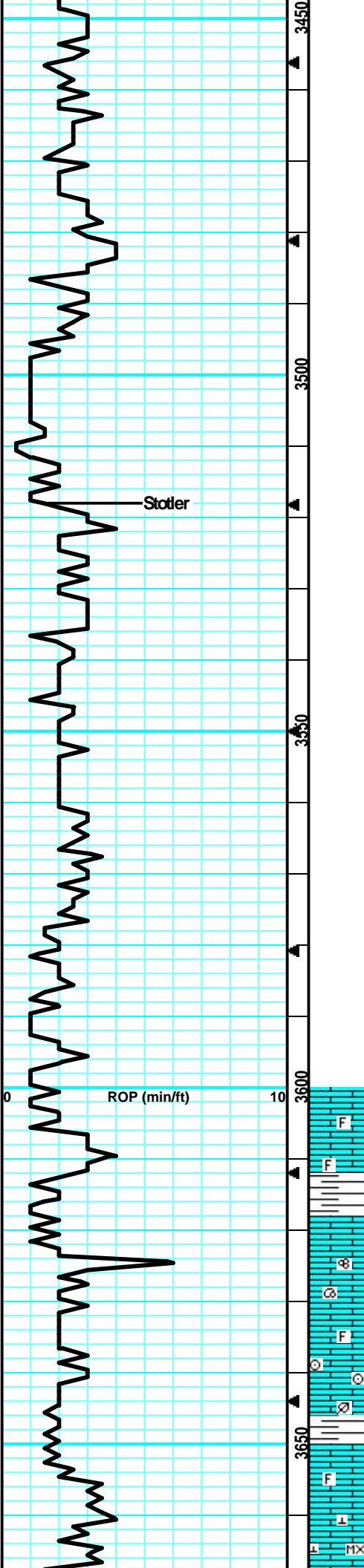
S

Silty

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			Morning Report Depth/Activity	Mud-Co Check #1 @ 0' 08/11/14
				08/12/2014, Spud	Survey @257' = 1/2 Degree
				08/13/14, drill @ 820'	
				08/14/14, drill @ 2400'	Anhydrite @ 2386' (+687)
				08/15/14, drill @ 3132'	
				08/16/14, drill @ 3644' (DST #1)	
				08/17/14, drill @ 3922' (DST #2)	
				08/18/14, drill @ 3957' (DST #3)	
				08/19/14, drill @ 4051' (DST #4)	B/Anhydrite @ 2406' (+667)
				08/20/14, drill @ 4170' (DST #5)	
				08/21/14, drill @ 4280' (DST #6)	
				08/22/14, drill @ 4382' (DST #7)	
				08/23/14, drill @ 4472'	Mud-Co Check #2 @ 2584' 08/14/14
				08/24/14, drill @ 4705'	wt vis pH 9.6 30 7.0 Filt chlr LCM NC 65K 1#
				ROP Data begin @ 3400' on 08/15/2014	
0	10				Mud-Co Check #3 @ 3196' 08/15/14
					wt vis pH 9.3 31 7.0 Filt chlr LCM NC 52K 1#



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.

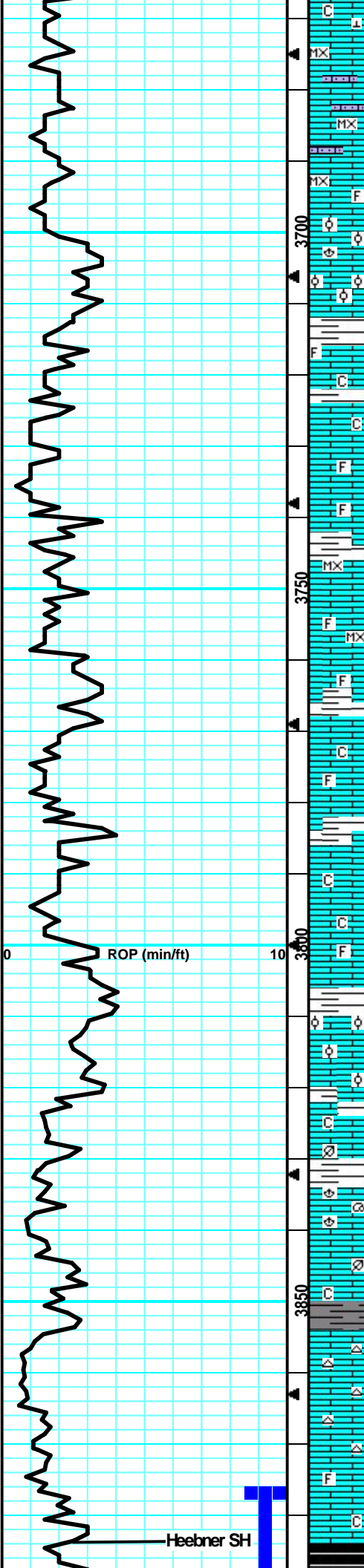
LS: gry/lt tan, slight mott, fn xln, foss in prt for/gast, sub-chlky in prt, brittle, tr-nvp, fw SH: gry, silty, soft, no cup odr, ns.

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.

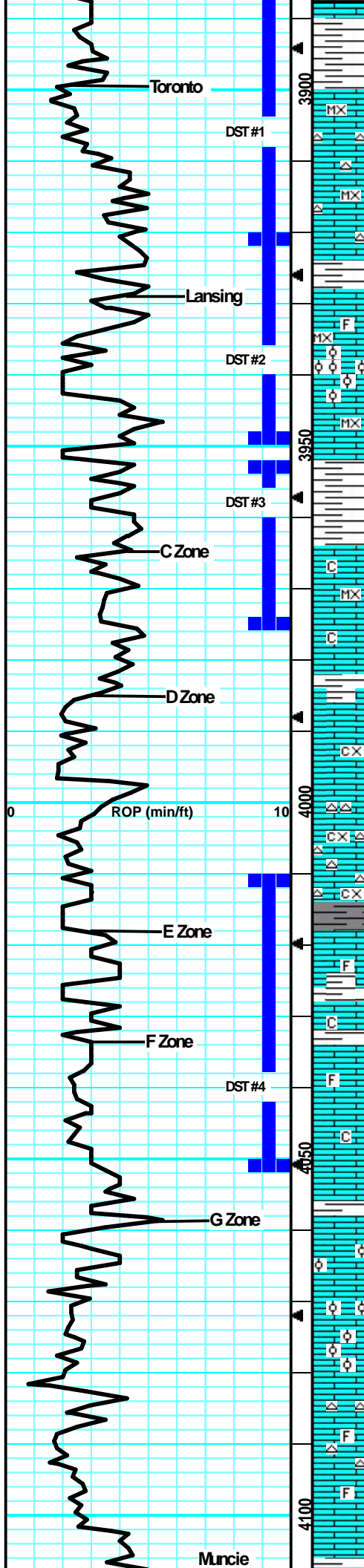
LS: tan/lt gry, fn xln, v fw foss frags, sm dense, many brittle, tr-nvp, fw pcs pur chlk, fw SH: gry/blk, silty, soft, fw

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")

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.

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.

CFS @ 4010' (30"/60")

LS: tan/lt tan, micro-fn, fw ool, many dense, sm brittle, scat fr intxn por/slight vuggy, drk hvy stns in por, fr sfo on brk, dul yel fluor, strm cut, gd cup odr.

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 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.

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/slight vuggy por, sm sphr oil cling to rx chp, ssfo on brk, faint cup odr.

CFS @ 4051' (30"/60")

Mud-Co Check #7 @ 3922' 08/19/14
 wt vis pH
 9.0 68 10.5
 Filt chr LCM
 11.2 12K 2#

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.

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: 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.

Muncie Creek @ 4108' (-1035)

LS: tan/lt tan, slght 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, slght 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.

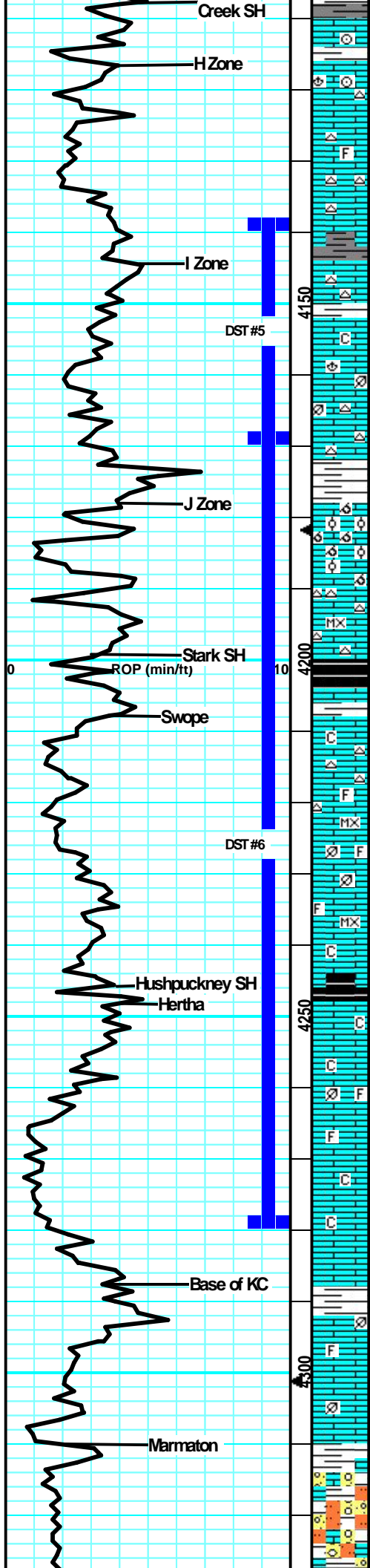
LS: lt tan/lt gry, fn xln, sm dense, sm brittle, fw grainy/gritty, fw flakey, tr-nvp, fw SH: gry/drk gry, silty, fw fissile, soft, no cup odr, ns.

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, slght 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 frags/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.

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")

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 spstd fluor, slw cut, v slight-? sfo on crush, ? cup odr.

Mud-Co Check # @ 4170' 08/20/14

wt	vis	pH
9.0	58	11.0
Filt	chl'r	LCM
11.2	9K	2#

CFS @ 4170'
(30"/60")

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.

Stark @ 4200' (-1127)

CFS @ 4198'
(30"/60")

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 spstd 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.

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")

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.

Hushpuckney @ 4246' (-1173)

Mud-Co Check #9 @ 4280' 08/21/14

wt	vis	pH
8.9	59	11.5
Filt	chl'r	LCM
10.8	13K	1#

CFS @ 4280'
(30"/60")

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.

B/KC @ 4288' (-1210)

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.

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)

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/lt tan, 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,

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.

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 spottd stn in ool, vssfo on brk, faint-? cup odr, wk spottd 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/ spottd 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-blk, 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 intxn por, scat dul yel fluor, strm cut, patchy lght brn stns,

Report # 1185# ISIP: 1185# FFP: 43-69#
BB)
IFP: 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)

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)

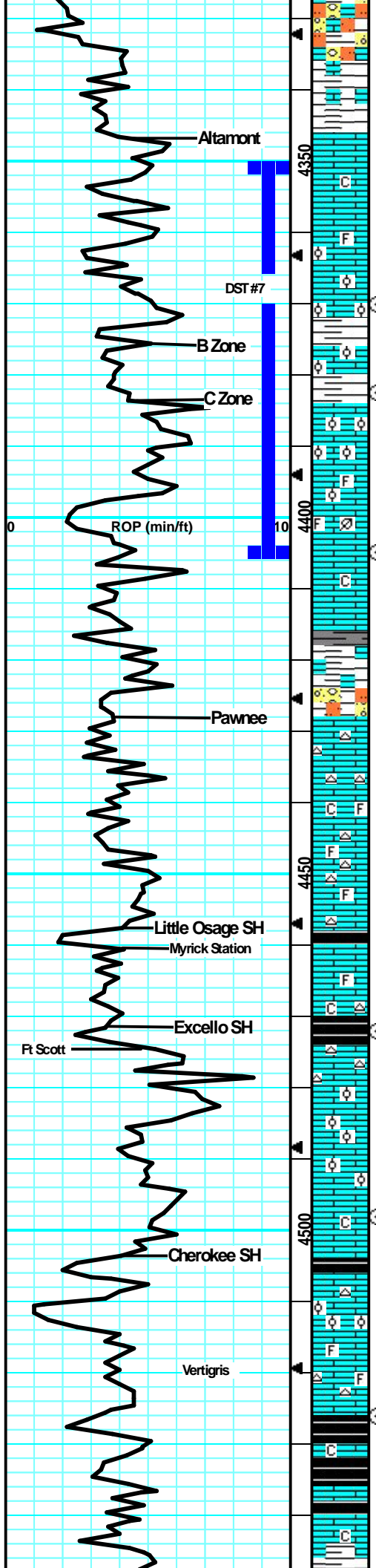
CFS @ 4472' (30"/60")

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.

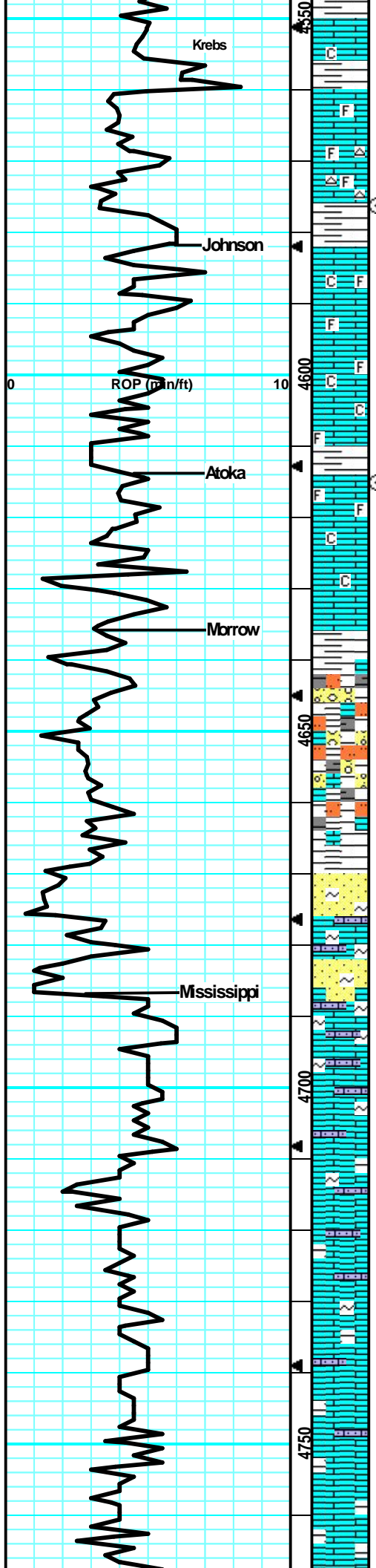
LS: lt gry/lt tan, fn xln, fw dense, mostly brittle, sub-chlky, flakey/mealy, uniform, tr-nvp, fw SH: drk gry, silty, fw fissile, no cup odr, ns.

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

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

Mississippi @ 4687' (-1614)

Samples were really Shaley...possible cavings



massive, no cup odr, ns.

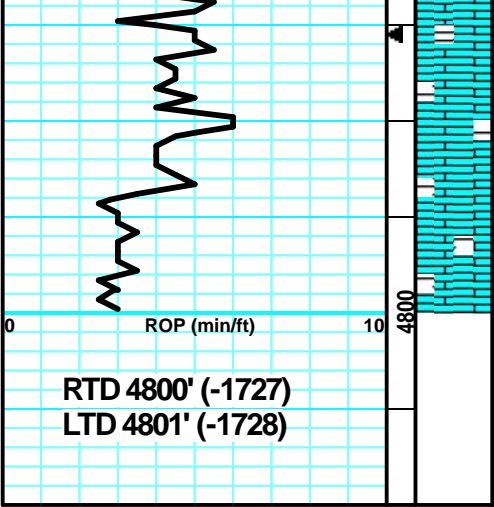
LS: tan/lt gry, fn xln, fw dense, mostly brittle, sm sandy/grainy, mostly flakey, sub-chlky, tr-nvp, fw pcs pur chlk, no cup odr, ns.

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)