

M. Bradford Rine

Consulting Geologist, Licensed and Certified

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

Well Name: Jean #1-8 - Murfin Drilling Company, Inc.
 Location: C-SE-SE, Section 08-01S-37W
 License Number: API: 15-023-21376-00-00
 Spud Date: January 04, 2014
 Surface Coordinates: 660' FSL & 660' FEL, of Section
 Bottom Hole Coordinates: Vertical Wellbore
 Region: Cheyenne County, Kansas
 Drilling Completed: January 14, 2014
 Field: Wildcat
 Production Casing Set

Ground Elevation (ft): 3206 Ft. K.B. Elevation (ft): 3219 Ft.
 Logged Interval (ft): 3505 Ft. To: 4770 Ft. Total Depth (ft): RTD 4770 Ft. LTD 4767 Ft.
 Formation: Cherokee at Total Depth
 Type of Drilling Fluid: Chemical

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

Operator

Company: Murfin Drilling Company, Inc.
 Address: 250 North Water, Suite #300
 Wichita, Kansas 67202

Geologist

Name: M. Bradford Rine
 Company: Consulting Geologist, Kansas Lic. #204, Wyo #189, AAPG Cert. #2647
 Address: 100 South Main, Suite #415
 Wichita, Kansas 67202

Remarks

Based on sample observations, drill stem test results, and electric log evaluation, it was the decision of the Operator, to set production casing on the "Jean #1-8", on January 14, 2014.

Respectfully submitted,
 M. Bradford Rine, Geologist

Formations	Murfin Drilling Co., Inc.			Murfin (Well A)		Well A
	Sample	E-Log	Datum	E-Log	Datum	
	Jean #1-8			Jones "A" #1-17		
	660' FSL & 660' FEL			1050' FNL & 2310' FEL		
	Sec. 08-01S-37W			Sec. 17-01S-37W		
	3219 Ft. KB			3149 Ft. KB		
Anhydrite	3172	3168	51	3110	39	12
B/Anhydrite	3203	3201	18	3142	7	11
Neva	3627	3623	-404	3560	-411	7
Red Eagle	3692	3686	-467	3624	-475	8
Foraker	3739	3732	-513	3671	-522	9
Topeka	3960	3956	-737	3894	-745	8
Oread	4099	4092	-873	4031	-882	9
Lansing	4176	4171	-952	4108	-959	7
Stark Sh	4398	4392	-1173	4329	-1180	7
B/Kansas City	4456	4449	-1230	4385	-1236	6
Marmaton	4493	4488	-1269	4426	-1277	8
Pawnee	4576	4570	-1351	4503	-1354	3
Lwr Pawnee	4609	4605	-1386	4536	-1387	1
Ft. Scott	4643	4638	-1419	4573	-1424	5
Cherokee Sh	4665	4657	-1438	4592	-1443	5
Mississippi	NR			NR		
Total Depth	4770	4767	-1548	4680	-1531	-17

Drilling Information

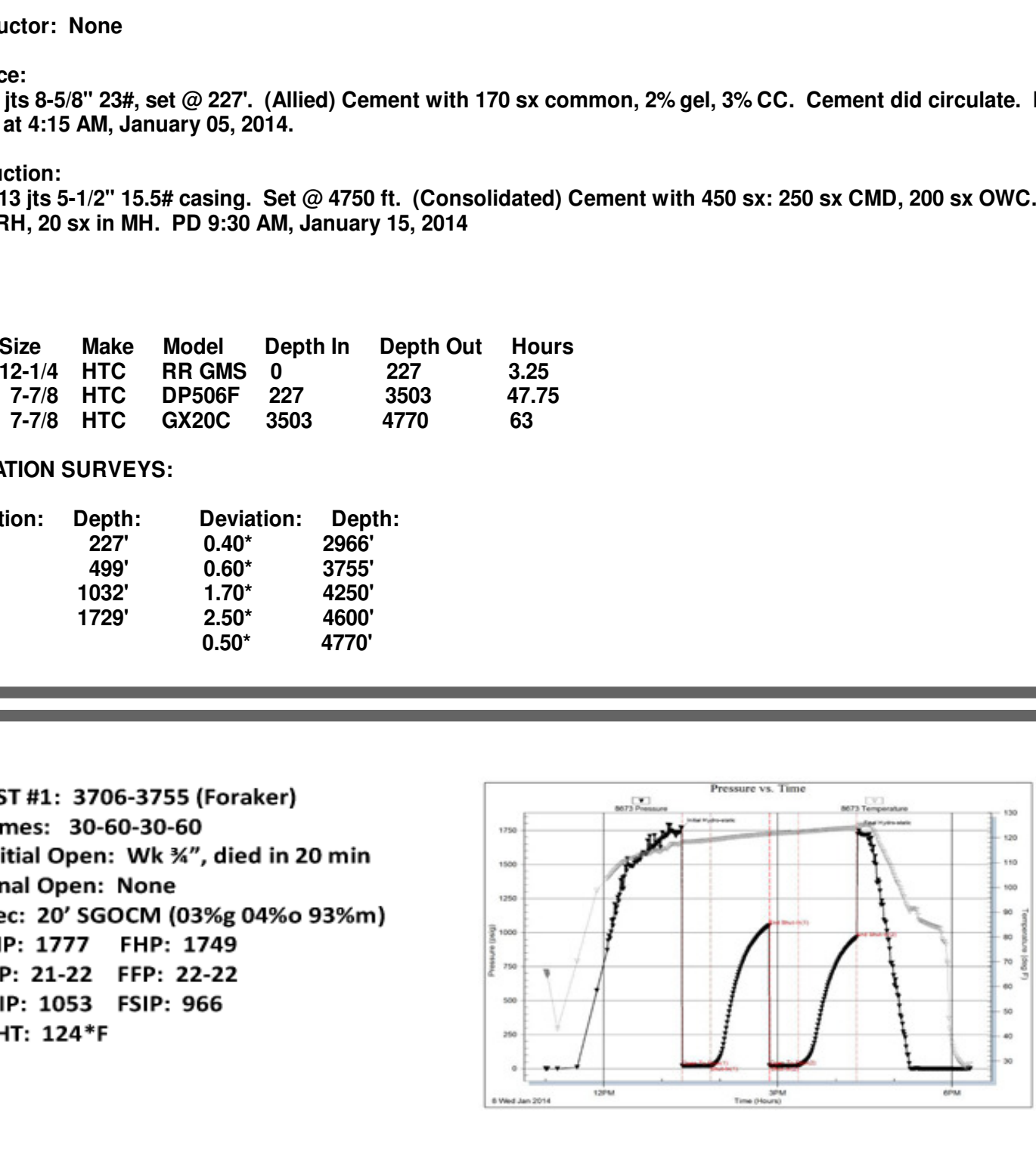
Rig: Murfin #25
 Pump: National K-500 6 x 15
 Drawworks: National T-370
 Collars: 544' 2-1/4 x 6-1/4
 Drillpipe: 4-1/2" 16.6# XH
 Toolpusher: Raymond Bland

Mud: Morgan (Troy Van Felt, Cade Lines, David Lines)
 Gas Detector: None
 Drill Stem Tests: Trilobite (James Winder, Chuck Kreutzer)
 Logs: Pioneer (D. Kerr)
 Water: Trucked in (Excel)
 Company Representatives:
 Office: Scott Robinson
 Field: Buck Salas

Daily Drilling Status

Date: Operations/Depth/Comments
 01-04-14 MIRT, RU, Spud at 10 PM
 01-05-14 WOC @ 227'
 01-06-14 Drilling @ 1514'
 01-07-14 Drilling @ 3040'
 01-08-14 CFS @ 3755'
 01-09-14 Drilling @ 3875'
 01-10-14 Trip for DST 2 @ 4250'
 01-11-14 On Bottom with DST 3 @ 4350'
 01-12-14 Trip for DST 5 @ 4400'
 01-13-14 Trip for DST 6 @ 4600'
 01-14-14 Drilling @ 4760'

"Jean #1-8" Murfin Drilling Company, Inc. Section 08-01S-37W, Cheyenne County, Kansas



Casing Record, Bit Record, Deviation Surveys

CASING:
 Conductor: None
 Surface: Ran 5 jts 8-5/8" 23#, set @ 227'. (Allied) Cement with 170 sx common, 2% gel, 3% CC. Cement did circulate. Plug down at 4:15 AM, January 05, 2014.
 Production: Ran 113 jts 5-1/2" 15.5# casing. Set @ 4750 ft. (Consolidated) Cement with 450 sx: 250 sx CMD, 200 sx OWC. 30 sx in RH, 20 sx in MH. PD 9:30 AM, January 15, 2014

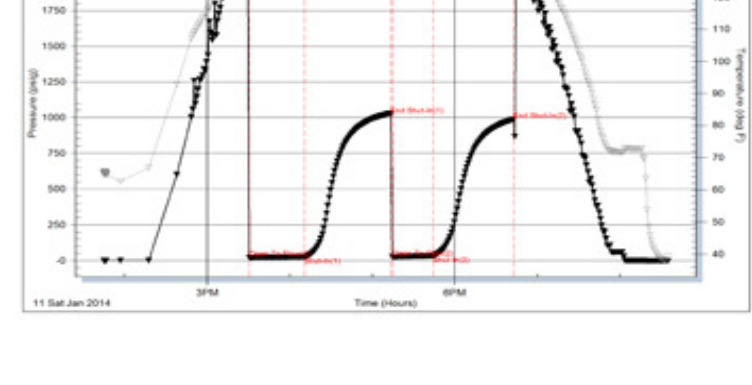
BITS:

No.	Size	Make	Model	Depth In	Depth Out	Hours
1	12-1/4	HTC	RR GMS	0	227	3.25
2	7-7/8	HTC	DP506F	227	3503	47.75
3	7-7/8	HTC	GX20C	3503	4770	63

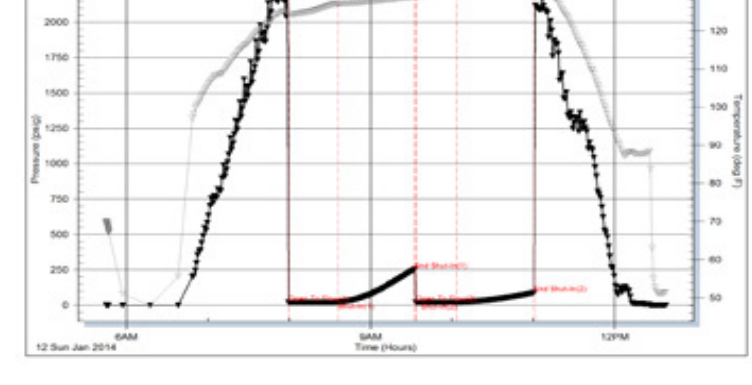
DEVIATION SURVEYS:

Deviation:	Depth:	Deviation:	Depth:
1.00"	227'	0.40"	2966'
8.00"	499'	0.60"	3755'
8.00"	1032'	1.70"	4250'
1.20"	1729'	2.50"	4600'
		0.50"	4770'

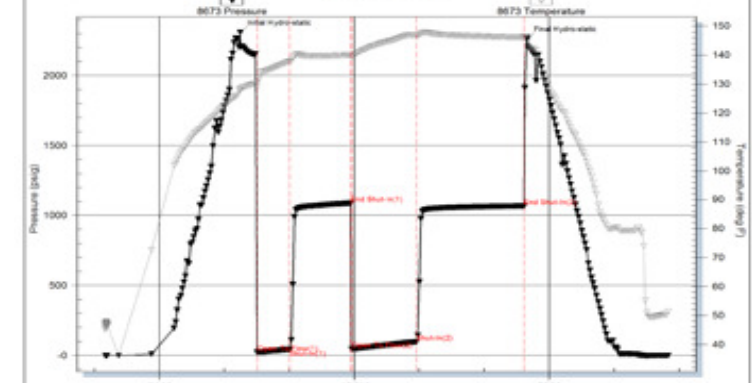
DST #1: 3706-3755 (Foraker)
 Times: 30-60-30-60
 Initial Open: Wk 3/4", died in 20 min
 Final Open: None
 Rec: 20' SGOCM (03%g 04%o 93%sm)
 IHP: 1777 FHP: 1749
 ISIP: 22-25 FFP: 22-22
 ISIP: 1053 FSIP: 966
 BHT: 124°F



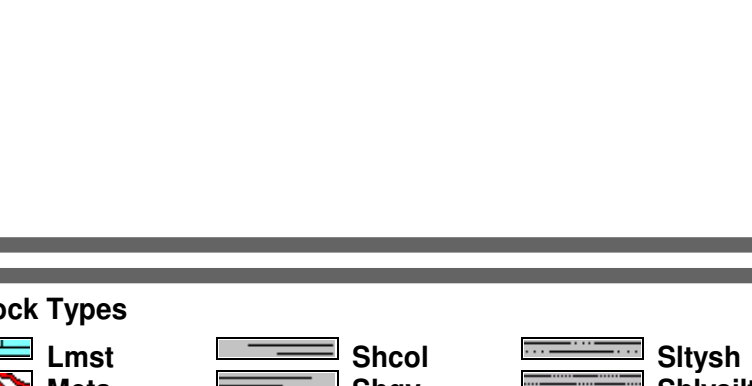
DST #2: 4124-4250 (Lansing A,B,D)
 Times: 30-60-30-60
 Initial Open: Wk surf blow throughout
 Final Open: None
 Rec: 40' MCO 70%o 30%sm
 IHP: 2100 FHP: 1992
 ISIP: 22-25 FFP: 28-36
 ISIP: 1025 FSIP: 985
 BHT: 129°F



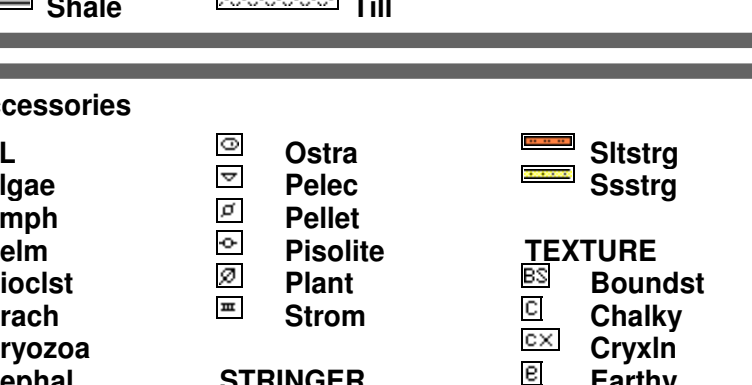
DST #3: 4242-4350 (Lansing G, H, I)
 Times: 30-60-30-60
 Misrun: Hydraulic Tool Failed



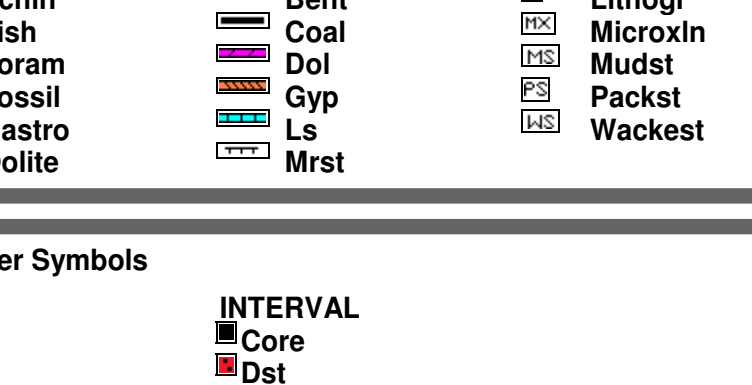
DST #4: 4241-4350 (Lansing G, H, I)
 Times: 30-60-30-60
 Initial Open: Wk surf, throughout
 Final Open: None
 Rec: 30' MCO 80%o 20%sm
 IHP: 2195 FHP: 2265
 ISIP: 22-25 FFP: 25-33
 ISIP: 1022 FSIP: 987
 BHT: 135°F



DST #5: 4337-4400 (Lansing I,J)
 Times: 30-60-30-60
 Initial Open: Wk surf, died 20 min
 Final Open: None
 Rec: 05' mud
 IHP: 2267 FHP: 2221
 ISIP: 18-21 FFP: 19-18
 ISIP: 152 FSIP: 88
 BHT: 132°F



DST #6: 4548-4600 (Pawnee)
 Times: 30-60-60-90
 Initial Open: Stg, b.o.b. 20 min
 Final Open: Stg, b.o.b. 15 min
 Rec: 282' Total Fluid & 182' gip
 25' GCO 20%g 80%o
 30' GOCM 10%g 40%o 50%sm
 IHP: 2306 FHP: 2260
 ISIP: 22-42 FFP: 45-97
 ISIP: 1086 FSIP: 1066
 BHT: 146°F



Rock Types

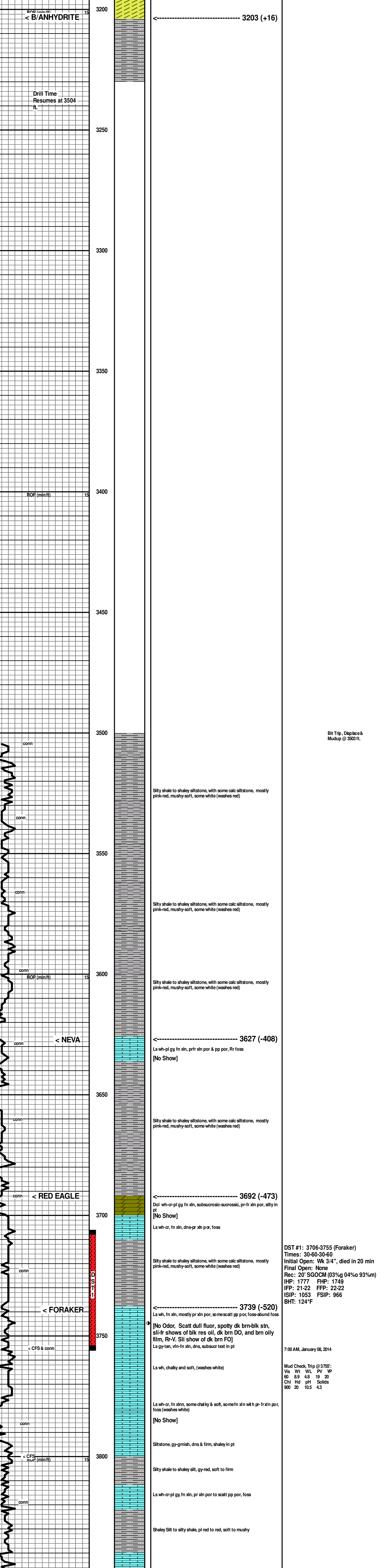
Anhy	Bent	Brec	Cht	Clyst	Coal	Congl	Dol	Gyp	Igne	Lmst	Meta	Mrlst	Salt	Shale	Shcol	Shgy	Siltst	Ss	Till	Sltsh	Shlyst	Sandlys
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Accessories

<input type="checkbox"/> MINERAL	<input type="checkbox"/> Gyp	<input type="checkbox"/> FOSSIL	<input type="checkbox"/> Ostra	<input type="checkbox"/> Siltstrg
<input type="checkbox"/> Anhy	<input type="checkbox"/> Hvymin	<input type="checkbox"/> Algae	<input type="checkbox"/> Pellec	<input type="checkbox"/> Ssstrg
<input type="checkbox"/> Arggrm	<input type="checkbox"/> Kaol	<input type="checkbox"/> Amph	<input type="checkbox"/> Pellet	
<input type="checkbox"/> Arg	<input type="checkbox"/> Marl	<input type="checkbox"/> Belm	<input type="checkbox"/> Pisolite	
<input type="checkbox"/> Bent	<input type="checkbox"/> Minxl	<input type="checkbox"/> Bioclst	<input type="checkbox"/> Plant	TEXTURE
<input type="checkbox"/> Bit	<input type="checkbox"/> Nodule	<input type="checkbox"/> Brach	<input type="checkbox"/> Strom	<input type="checkbox"/> Boundst
<input type="checkbox"/> Brefracg	<input type="checkbox"/> Phos	<input type="checkbox"/> Bryozoa		<input type="checkbox"/> Chalky
<input type="checkbox"/> Calc	<input type="checkbox"/> Pyr	<input type="checkbox"/> Cephal	STRINGER	<input type="checkbox"/> Cryxln
<input type="checkbox"/> Carb	<input type="checkbox"/> Salt	<input type="checkbox"/> Coral	<input type="checkbox"/> Anhy	<input type="checkbox"/> Earthy
<input type="checkbox"/> Chtdtk	<input type="checkbox"/> Sandy	<input type="checkbox"/> Crin	<input type="checkbox"/> Arg	<input type="checkbox"/> Firaxln
<input type="checkbox"/> Chtlk	<input type="checkbox"/> Silt	<input type="checkbox"/> Echin	<input type="checkbox"/> Bent	<input type="checkbox"/> Grainst
<input type="checkbox"/> Dol	<input type="checkbox"/> Sil	<input type="checkbox"/> Fish	<input type="checkbox"/> Coal	<input type="checkbox"/> Lithogr
<input type="checkbox"/> Feldspar	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Foram	<input type="checkbox"/> Dol	<input type="checkbox"/> Microxln
<input type="checkbox"/> Ferrp	<input type="checkbox"/> Tuff	<input type="checkbox"/> Fossil	<input type="checkbox"/> Gyp	<input type="checkbox"/> Mudst
<input type="checkbox"/> Glau		<input type="checkbox"/> Gastro	<input type="checkbox"/> Ls	<input type="checkbox"/> Packst
		<input type="checkbox"/> Oolite	<input type="checkbox"/> Mrst	<input type="checkbox"/> Wackest

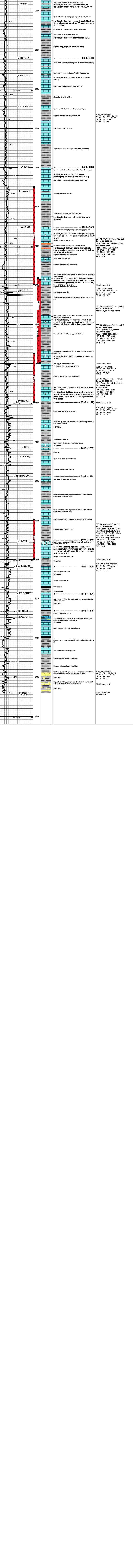
Other Symbols

<input type="checkbox"/> OIL SHOW	<input type="checkbox"/> Spotted	<input type="checkbox"/> Gas	<input type="checkbox"/> INTERVAL
<input type="checkbox"/> Gas show	<input type="checkbox"/> Ques		<input type="checkbox"/> Core
<input type="checkbox"/> Even	<input type="checkbox"/> Dead		<input type="checkbox"/> Dst



DST #1: 3706-3755 (Foraker)
 Times: 30-60-30-60
 Initial Open: Wk 3/4", died in 20 min
 Final Open: None
 Rec: 20' SGOCM (03%g 04%o 93%sm)
 IHP: 1777 FHP: 1749
 ISIP: 22-22 FFP: 22-22
 ISIP: 1053 FSIP: 966
 BHT: 124°F
 7:00 AM, January 08, 2014

Mud Check, Trip @ 3755'
 Vis: 1749
 Wt: 8.8
 PV: 19.2
 Chl: 18
 Hd: 20
 pH: 3.6
 Solids: 43
 900 20 10.5 4.3



[< Stoller]

3900

conn

[< Deer Creek]

ROF (min/ft)

conn

[< Leocompton]

conn

4050

conn

< TOPEKA

conn

[< Heebner]

conn

4150

conn

< OREAD

conn

[< Heebner]

conn

4200

conn

< LANSING

conn

[< Heebner]

conn

4250

conn

< STARK SH

conn

4300

conn

< BKC

conn

[< Lenapah]

conn

4400

conn

< MARMATON

conn

[< Verdigris]

conn

4450

conn

< PAWNEE

conn

[< Verdigris]

conn

4500

conn

< PAWNEE

conn

[< Verdigris]

conn

4550

conn

< PAWNEE

conn

[< Verdigris]

conn

4600

conn

< Lwr PAWNEE

conn

[< Verdigris]

conn

4650

conn

< FT. SCOTT

conn

[< Verdigris]

conn

4700

conn

< CHEROKEE

conn

[< Verdigris]

conn

4750

conn

< CHEROKEE

conn

[< Verdigris]

conn

4800

conn

< CHEROKEE

conn

[< Verdigris]

conn

RTD 4770 FL
LTD 4767 FL

ROF (min/ft)

15



La wh-cr, fn xln, dms to pr xln por, chalky in pt, foss
[No Odor, No fluor, scatt spotty blk stn, NSFO]
La wh-cr, fn xln, scatt pr xln por, chalky in pt, foss-bound foss
[No Odor, No fluor, low % pcs with spotty blk-dk brn stn, of gillson resid stn, dk brn DO spots, and black Hwy bar, NSFO]
Silty shale, red-gy-gmish, mushy to soft (washes red)
La wh, fn xln, pr xln por, chalky in pt, foss
[No Odor, No fluor, scatt spotty blk stn, NSFO]
Silty shale red-gy-dk gm, soft to firm (washes red)
La wh, fn xln, pr vis xln por, chalky, foss-bound foss (washes white)
La wh-cr-pl-gy, fn xln, mostly dms, Rr patch of pp por, foss
[No Odor, No fluor, Rr patch of blk tarry oil stn, NSFO]
La wh, fn xln, mostly dms, some pr xln por, foss
silty shale, red, soft to subfirm
La wh-cr-gmish, vfn-fn xln, dms, some chalky pcs
Silty shale to shaly siltstone, pinkish to red
[No Odor, No fluor, scatt blk resid/gilson stn in siltstone]
La wh-cr, vfn-fn xln, dms, foss
Silty shale, red-pink, some dk gm, mushy-soft (washes red)
La wh-cr, fn xln, dms to pr xln por, foss, subchaly-chalky in pt, foss
[No Odor, RR spotty dull floor, low % pcs with spotty brndk brn stn, mix of v sli show of brn FO & dk DO on brk]
La wh-cr, vfn-fn xln, dms, all foss
Siltstone white-gy-dk shaly in pt, calc in pt, friable
[No Odor, scatt dull floor, abund dk brn-blk stn, even to patchy, moderate shows of brn FO & dk brn DO, some blk resid stn]
Silty shale red, mushy-soft (washes red)
La wh, fn xln, dms, foss in pt
Silty shale red, mushy-soft (washes red)
La wh-cr, fn xln, mostly dms, scatt pr xln por, widely scatt pp pores & vsgs, foss in pt
[No Odor, RR v dull spotty floor, Moderate % of pcs with stn, mostly dk brn-bk Hwy DO & tarry stn with some blk resid/gilson stn, scatt dk brn NWL oil stn, trace shows of FO on brk]
Silty shale red, mushy-soft (washes red)
La wh-cr-pl-gy vfn-fn xln, dms
Silty shale to shaly, gm-pink-red, mushy-soft. Low % of dms La in sps
La wh, fn xln, mostly dms with scatt patches & pcs with pr xln por, Rr scatt gy & vsgs, foss in pt
[No Odor, RR spotty dull floor, fair amt of dk-bk resid/gilson stn, some brn-dk oil stn with sli shows of FO on brk, few pcs with fr show gassy FO on brk]
Sh mostly red to pinkish, some gy scatt silty in pt
La wh-cr-pl-gy, fn xln, mostly dms, Rr scatt patch of pr xln por with tr of pp por, foss
[No Odor, No fluor, NSFO, rr patches of spotty hvly DO stn]
La wh-cr-pl-gy, fn xln, dms, abundant foss
[Rr spots of blk tarry stn, NSFO]
Sh red, mushy-soft, silty in pt (washes red)
La wh, fn xln, mostly pr xln por with scatt patches of fr xln por and scatt pp por, foss
[No Odor, Scatt dull floor, some hvly DO, moderate amt of pcs with sli show of brn-dk brn FO, few pcs with fr show ll m-dk brn FO, spotty to patchy to Rr even dk stn]
Sh red, mostly-soft, silty in pt (washes red)
Shales & silty shales red-pl-gy-gy soft
La wh-cr-pl-gy, fn xln, dms, some sdy pcs, subchaly in pt, foss in pt, scatt calcite inclusions
[No Show]
Sh red-gy-gm, silty in pt
[No Show]
Sh red-gy
La wh-cr-tan, vfn-fn xln, dms, Rr foss
Sh red-gy mushy to soft, silty in pt
La wh to red & shaly, soft, subchaly
Sps mostly shales red & silty with moderate % of La wh fn xln, dms, some str'd with red shale
Sps mostly shales red & silty with moderate % of La wh fn xln, dms, some str'd with red shale
La wh-cr-gy vfn-fn xln, mostly dms & firm, some softer & chalky
Sh gy, calc in pt to shaly Ls, dms
[V Fnt Odor upon cup agitation, scatt dull floor, Abund spotty brn stn in interool pores, mix of sli to fr show brn NWL oil & gassy FO on brk, some even tan-H brn stn in drs]
La wh-cr-gy vfn-fn xln, dms, Rr foss
Sh gy-dk-gy
La wh-cr-gy vfn-fn xln, dms
[No Show]
La wh-cr-gy vfn-fn xln, dms
Sh black, carb
Sh gy, calc in pt
La wh-cr-tan-gy vfn-fn xln, mostly dms & firm, some sli subchaly and softer, all to ss
[No Show]
Sh blk to dk-gy-gmish gy
Sd & Sdy La wh-cr-gy, fn-fn xln, subd-anglr, pe-fr frnt, pr-gd soft, limy in pt, subquartzitic test in pt
[No Show]
La wh-cr-gy vfn-fn xln, dms, subchaly in pt
Sh mostly gy-gm, some pink-red, Rr black, mushy-soft, subally in pt
La wh-cr, fn xln, dms to chalky & soft
Sh gy-gm-yellow-red, subearthly to subfiss
Sh gy-gm-yellow-red, subearthly to subfiss
Sd wh-glassy, mostly fn gm, with calc com, some pr sort with fr-mnd gm, subd-subang, glauc, some car rd l loose grains
[No Show]
Sh purple-lavender-gy-yellow-gm, subally-subway in pt, silty to sdy in pt, loose fr-mnd-cr-d-subd quartz grains
[No Show]

Mud Check, Drg @ 4026:
Vis: 8.0 6.4 6 17 20
Cnl: 84 pH Solids
600 40 100 4.9

Mud Check, DST 2 @ 4257:
Vis: 8.3 6.4 7 19 20
Cnl: 84 pH Solids
600 50 100 7.3

Mud Check, DST 3 @ 4297:
Vis: 8.3 6.4 7 19 20
Cnl: 84 pH Solids
1300 30 100 7.1

Mud Check, DST 4 @ 4327:
Vis: 8.3 6.0 5 10 19
Cnl: 84 pH Solids
900 20 100 7.1

Mud Check, DST 5 @ 4407:
Vis: 8.3 6.0 5 10 19
Cnl: 84 pH Solids
900 20 100 7.1

Mud Check, DST 6 @ 4607:
Vis: 8.3 6.0 5 10 19
Cnl: 84 pH Solids
900 10 105 7.1

Mud Check, CFS @ 4770:
Vis: 8.3 6.4 8 18 19
Cnl: 84 pH Solids
900 10 105 7.1

RTD 4770 FL, at 7:15 am,
January 14, 2014

DST #2: 4124-4250 (Lansing A,B,D)
Times: 30-60-30-60
Initial Open: Wk surf blow thruout
Final Open: None
Rec: 40' MCO 70% 30%
IHP: 2100 FHP: 1992
ISIP: 22-25 FFP: 28-36
ISIP: 1025 FSIP: 985
BHT: 129' F

DST #3: 4242-4350 (Lansing G,H,I)
Times: 30-60-30-60
Misure: Hydraulic Tool Failed

DST #4: 4241-4350 (Lansing G,H,I)
Times: 30-60-30-60
Initial Open: Wk surf, thruout
Final Open: None
Rec: 30' MCO 80% 20%
IHP: 2195 FHP: 2265
IFP: 22-25 FFP: 25-33
ISIP: 1022 FSIP: 987
BHT: 132' F

DST #5: 4327-4400 (Lansing I,J)
Times: 30-60-30-60
Initial Open: Wk surf, died 20 min
Final Open: None
Rec: mud
IHP: 2267 FHP: 2221
IFP: 18-21 FFP: 19-28
ISIP: 22-25 FFP: 25-33
ISIP: 1022 FSIP: 987
BHT: 132' F

DST #6: 4548-4600 (Pawnee)
Times: 30-60-60-90
Initial Open: Stg, b.o.b. 20 min
Final Open: Stg, b.o.b. 15 min
Rec: 252' Total Fluid & 182' gip
252' GCC 20% 80%
30' GOCM 10% 40% 50%
IHP: 2306 FHP: 2260
IFP: 22-42 FFP: 45-97
ISIP: 1086 FSIP: 1066
BHT: 146' F