

M. Bradford Rine

Consulting Geologist, Licensed and Certified

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

Well Name: Patricia #2-16 - Murfin Drilling Company, Inc.
 Location: C - NW - NW, Section 16-01S-37W
 License Number: API: 15-023-21377-00-00 Region: Cheyenne County, Kansas
 Spud Date: January 17, 2014 Drilling Completed: January 26, 2014
 Surface Coordinates: 660' FNL & 660' FWL, Mostly: Wildcat
 Bottom Hole Coordinates: of Section Vertical Wellbore Production Casing Set

Ground Elevation (ft): 3251 Ft. K.B. Elevation (ft): 3264 Ft.
 Logged Interval (ft): 3570 Ft. To: 4850 Ft. Total Depth (ft): RTD 4850 Ft. LTD 4845 Ft.
 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

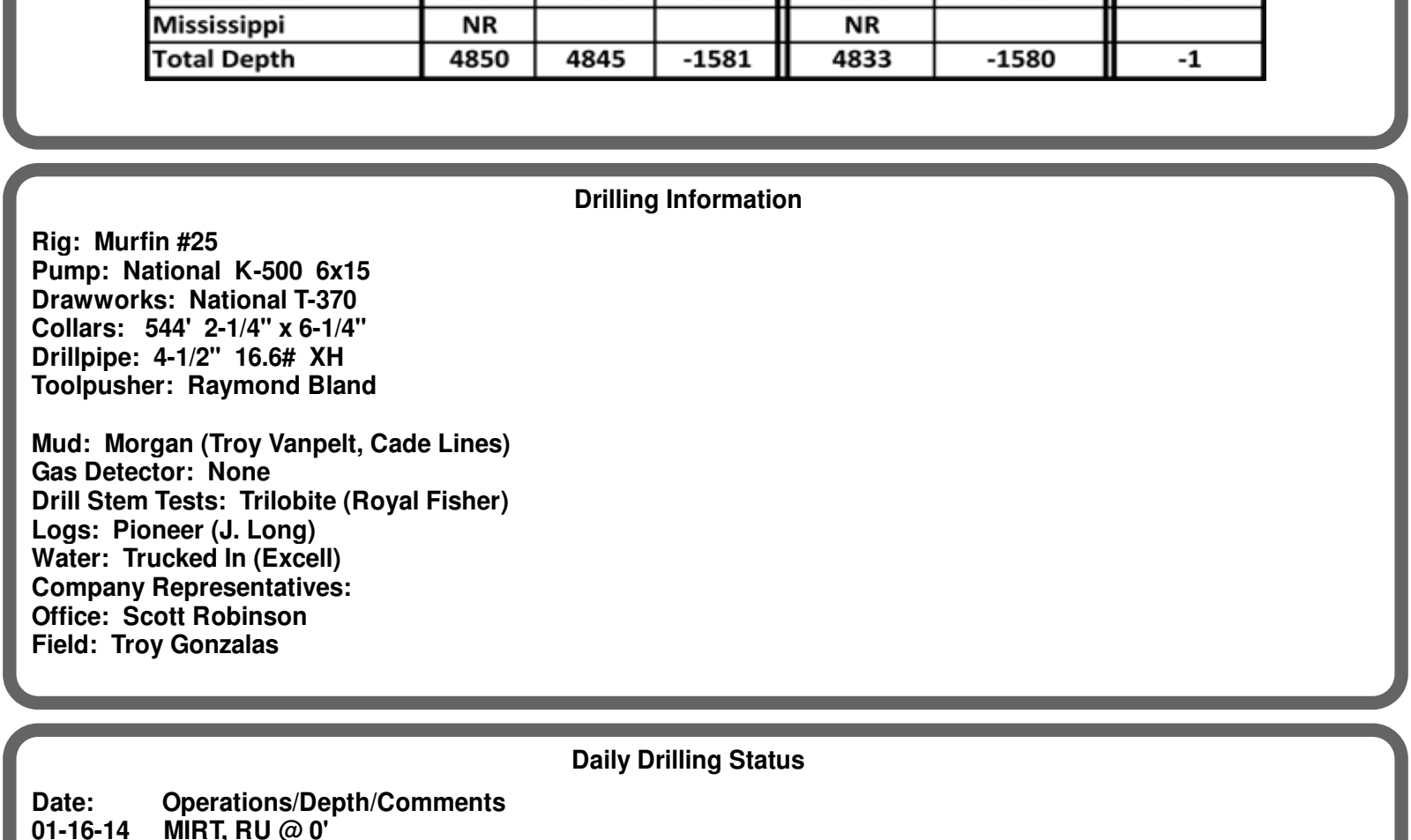
Geologist

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, drllc stem test results, and electric log evaluation, it was the decision of the Operator, to set production casing on the "Patricia #2-16", on January 26, 2014.

Respectfully submitted,
 M. Bradford Rine



Murfin Drilling Co., Inc.		Murfin (Well A)				
Patricia #2-16		Jones "B" #1-9				
660' FNL & 660' FWL		710' FSL & 710' FWL				
Sec. 16-01S-37W		Sec. 09-01S-37W		Well A		
3264 Ft. KB		3253 Ft. KB				
Formations	Sample	E-Log	Datum	E-Log	Datum	Comp.
Anhydrite	3213	3212	52	3208	45	7
B/Anhydrite	3248	3245	19	3240	13	6
Neva	3668	3666	-402	3658	-405	3
Red Eagle	3730	3729	-465	3722	-469	4
Foraker	3780	3777	-513	3769	-516	3
Topeka	4005	4001	-737	3996	-743	6
Oread	4140	4136	-872	4127	-874	2
Lansing	4223	4216	-952	4213	-960	8
Stark Sh	4440	4435	-1171	4428	-1175	4
B/Kansas City	4498	4489	-1225	4483	-1230	5
Marmaton	4540	4532	-1268	4523	-1270	2
Pawnee	4620	4612	-1348	4605	-1352	4
Lwr Pawnee	4648	4641	-1377	4634	-1381	4
Cherokee Sh	4686	4678	-1414	4676	-1423	9
Mississippi	4704	4695	-1431	4690	-1437	6
Mississippi	NR			NR		
Total Depth	4850	4845	-1581	4833	-1580	-1

Rig: Murfin #25
Pump: National K-500 6x15
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 Vanpelt, Cade Lines)
Gas Detector: None
Drill Stem Tests: Tribolite (Royal Fisher)
Logs: Pioneer (J. Long)
Water: Trucked In (Excell)
Company Representatives:
Office: Scott Robinson
Field: Troy Gonzales

Daily Drilling Status

Date: Operations/Depth/Comments
 01-16-14 MIRT, RU @ 0'
 01-17-14 Finish RU & Spud @ 0'
 01-18-14 Drilling @ 435'
 01-19-14 Drilling @ 2301'
 01-20-14 Bit Trip @ 3503'
 01-21-14 TIH with DST #1 @ 3800'
 01-22-14 Drilling @ 4125'
 01-23-14 TIH after DST 2 @ 4300'
 01-24-14 TIH after DST 3 @ 4450'
 01-25-14 TOOH with DST 4 @ 4645'
 01-26-14 Logging @ 4850'
 01-27-14 Ran casing, PD 3:30 am

Casing Record, Bit Record, Deviation Surveys

CASING:
 Conductor: None
 Surface: Ran 5 jts 8-5/8" 23#, set @ 231'. (Allied) Cemented with 170 sx Common, 3%CC. Cement did circulate.

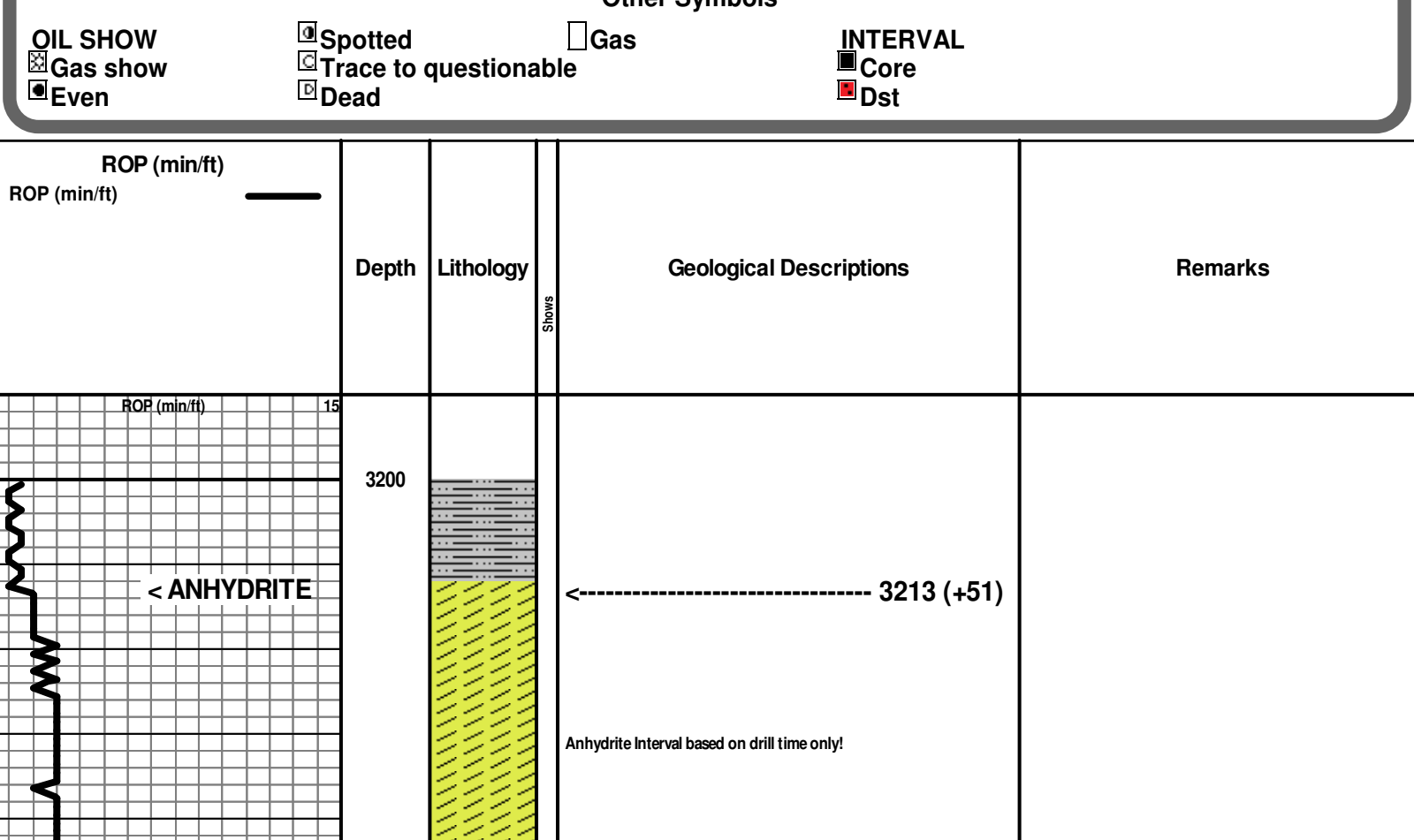
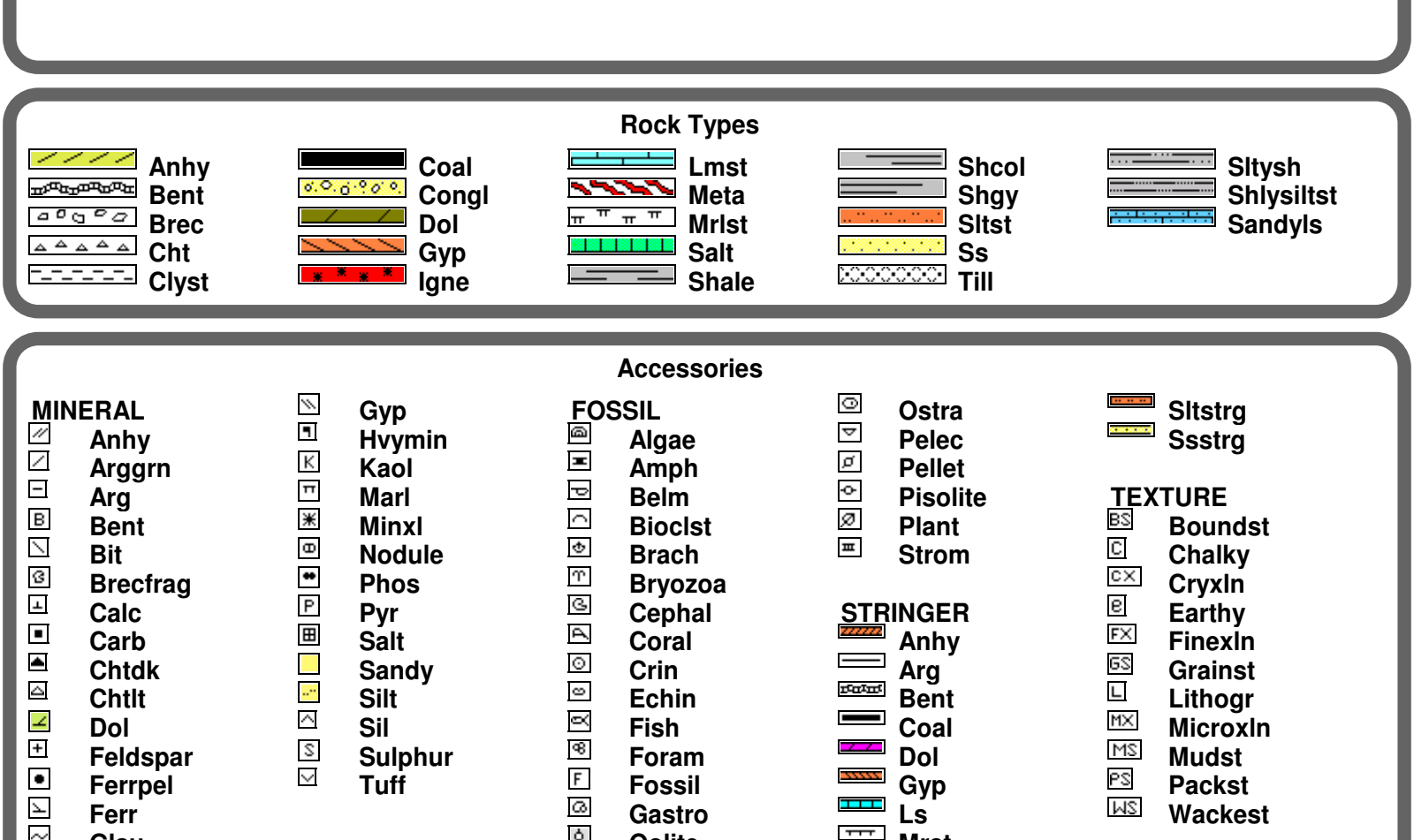
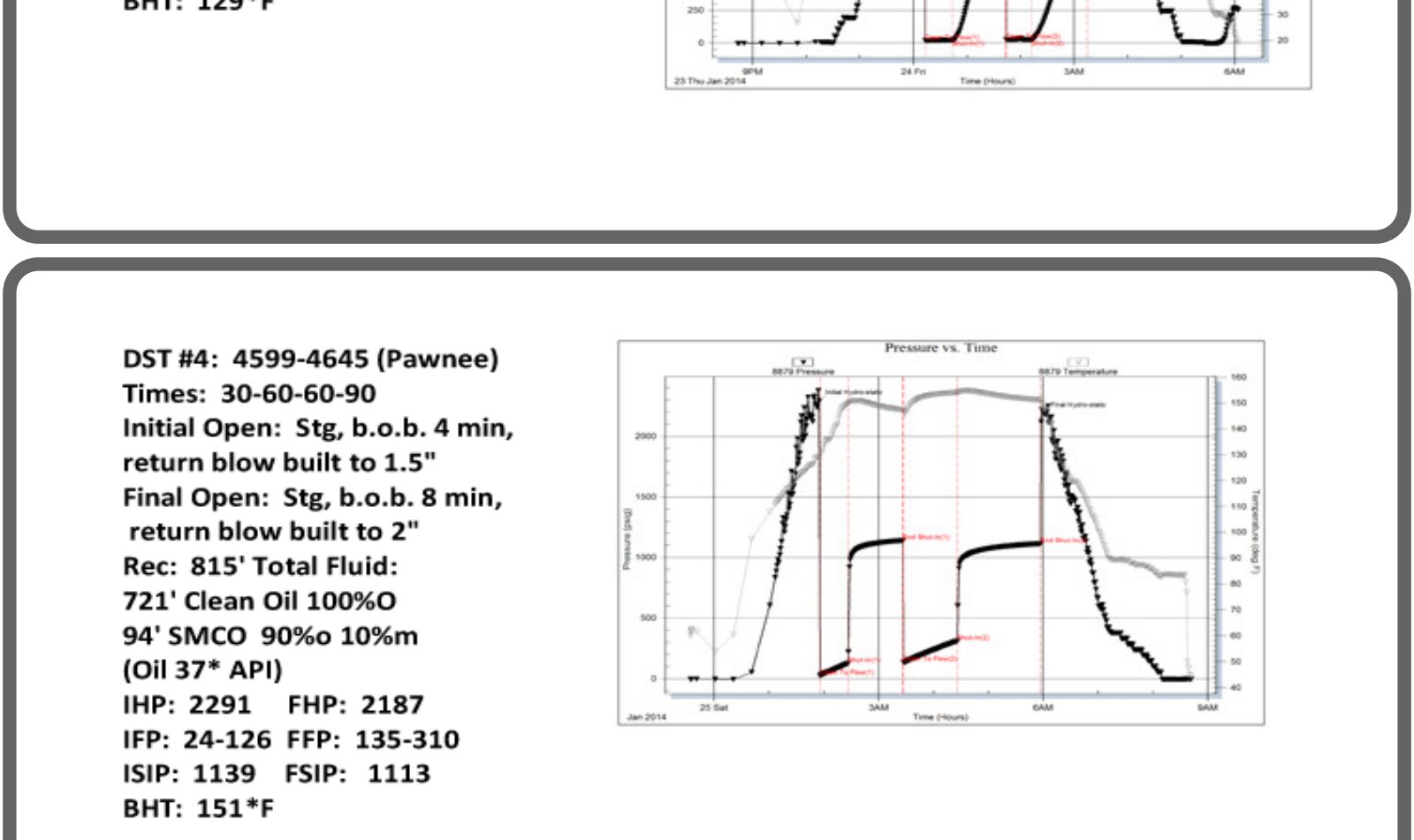
Production:
 Ran 115jts of 15.5# 5 1/2" prod csg, set @ 4840'. (Consolidated) Cement w/450sxs (200OWC, 250CMD). PD @ 11:30PM 1/26. No circ. Rotated 4limes & lost circ. Hole stayed full. 30sxs RH, 20sxs MH. RH @ 3:30AM 1/27/14.

BITS:

No.	Size	HTC	Model	Depth In	Depth Out	Hours
1	12-1/4	HTC	GMS rr	0	231	4
2	7-7/8	HTC	DP506	231	3503	43.5
3	7-7/8	HTC	GX20C	3503	4850	

DEVIATION SURVEYS:

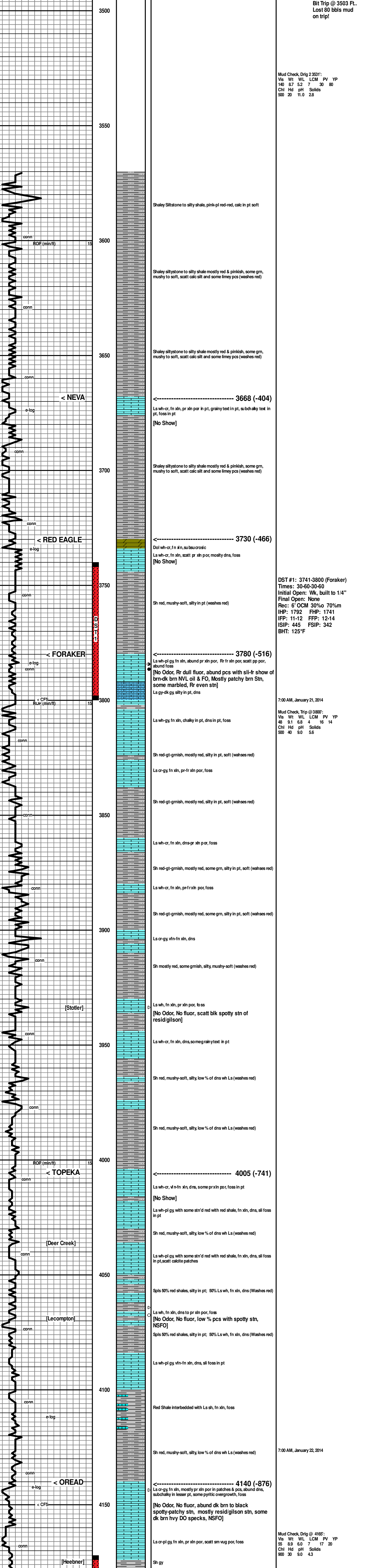
Deviation:	Depth:	Deviation:	Depth:
0.40"	231'	0.60"	2777'
0.80"	746'	0.50"	3503'
0.90"	1255'	1.10"	4300'
1.60"	1762'	6.00"	4850'
0.10"	2270'		



- Lithology**
- | | | | | |
|-------|-------|-------|--------|-----------|
| Anhy | Coal | Lmst | Shcol | Siltysh |
| Bent | Congl | Meta | Shly | Shiylsilt |
| Brec | Dol | Mrlst | Siltst | Sandyls |
| Cht | Gyp | Salt | Ss | |
| Clyst | Igne | Shale | Till | |

- Accessories**
- | | | |
|---------|----------|----------|
| Algae | Ostra | Siltstrg |
| Amph | Pelec | Ssstrg |
| Belm | Pellet | |
| Biolst | Pisolite | |
| Brach | Plant | |
| Bryozoa | Strom | |
| Cephal | STRINGER | |
| Coral | Anhy | |
| Crin | Arg | |
| Echin | Bent | |
| Fish | Dol | |
| Foram | Coal | |
| Fossil | Gyp | |
| Gastro | Ls | |
| Oolite | Mrst | |

- Other Symbols**
- | | | | |
|----------|-----------------------|------|----------|
| Oil Show | Spotted | Gas | INTERVAL |
| Gas Show | Trace to questionable | Core | Dst |
| Even | Dead | | |



Bit Trip @ 3503 Ft.
 Lost 80 bbls mud
 on trip!

Mud Check, Dtg @ 2321':
 Vis Wt WL LCM PV YP
 140 5.7 5.2 7 36 80
 Rec: 8' OCM 30% 70%sm
 Chl Hrd pH Solids
 900 20 11.0 28

Mud Check, Trip @ 3800':
 Vis Wt WL LCM PV YP
 85 5.9 6.0 7 17 20
 Chl Hrd pH Solids
 900 20 11.0 28

Mud Check, Dtg @ 4166':
 Vis Wt WL LCM PV YP
 85 5.9 6.0 7 17 20
 Chl Hrd pH Solids
 900 20 11.0 28

Mud Check, Trip @ 4166':
 Vis Wt WL LCM PV YP
 85 5.9 6.0 7 17 20
 Chl Hrd pH Solids
 900 20 11.0 28

Mud Check, Dtg @ 4166':
 Vis Wt WL LCM PV YP
 85 5.9 6.0 7 17 20
 Chl Hrd pH Solids
 900 20 11.0 28

Mud Check, Trip @ 4166':
 Vis Wt WL LCM PV YP
 85 5.9 6.0 7 17 20
 Chl Hrd pH Solids
 900 20 11.0 28

Mud Check, Dtg @ 4166':
 Vis Wt WL LCM PV YP
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Mud Check, Trip @ 4166':
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Mud Check, Dtg @ 4166':
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 85 5.9 6.0 7 17 20
 Chl Hrd pH Solids
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Mud Check, Trip @ 4166':
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 85 5.9 6.0 7 17 20
 Chl Hrd pH Solids
 900 20 11.0 28

Mud Check, Dtg @ 4166':
 Vis Wt WL LCM PV YP
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 Chl Hrd pH Solids
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Mud Check, Trip @ 4166':
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 900 20 11.0 28

Mud Check, Dtg @ 4166':
 Vis Wt WL LCM PV YP
 85 5.9 6.0 7 17 20
 Chl Hrd pH Solids
 900 20 11.0 28

Mud Check, Trip @ 4166':
 Vis Wt WL LCM PV YP
 85 5.9 6.0 7 17 20
 Chl Hrd pH Solids
 900 20 11.0 28



4223 (-959)

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, where vuggy (mod % of pcs) dk brn hvy stn, mix of hvy thick DO-NVL hvy dk oil & some dk brn hvy FO, silty gassy]

DST #2: 4173-4300 (Lansing A,B,D)
Initial Open: Wk, built to 1'2", died back to weak surf
Final Open: Wk surf thruout
Rec: 10' OCM 35% to 55% m
IHP: 2104 FHP: 2087
ISP: 23-27 FFP: 34-34
ISIP: 1229 FSIP: 1113
BHT: 133°F

4300

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

Mud Check, Drtg @ 4200:
Vls Wt WL LCM PV YP
55 82 53 7 15
28 14 52 18 26
28 14 52 18 26
1500 30 90 79

4350

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

DST #3: 4291-4450 (LKC G,H,I,J)
Times: 30-60-30-60
Initial Open: Wk, built to 1"
Final Open: Wk surf thruout
Rec: 30' OCM 100% oil spots
IHP: 2135 FHP: 2035
ISP: 23-27 FFP: 34-34
ISIP: 1229 FSIP: 826
BHT: 129°F

4400

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

Mud Check, Drtg @ 4500:
Vls Wt WL LCM PV YP
47 51 54 7 17 15
35 82 53 18 26
900 30 90 57

4450

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

DST #4: 4599-4645 (Pawnee)
Times: 30-60-60-60
Initial Open: Stg, built to 4 min, return blow built to 1.5"
Final Open: Stg, b.o.b. 8 min, return blow built to 2"
Rec: 815' Total Fluid:
721' Clean Oil 100%
94' SMO 90% to 10%
(Oil 37' API)
IHP: 2291 FHP: 2187
ISP: 24-126 FFP: 155-310
ISIP: 1139 FSIP: 1113
BHT: 151°F

4500

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

Mud Check, Drtg @ 4600:
Vls Wt WL LCM PV YP
55 82 53 7 15
28 14 52 18 26
3000 30 105 64

4550

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

DST #5: 4686 (-1422)
Initial Open: Wk, built to 1"
Final Open: Wk surf thruout
Rec: 10' OCM 35% to 55% m
IHP: 2104 FHP: 2087
ISP: 23-27 FFP: 34-34
ISIP: 1229 FSIP: 1113
BHT: 133°F

4600

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

Mud Check, Drtg @ 4600:
Vls Wt WL LCM PV YP
55 82 53 7 15
28 14 52 18 26
3000 30 105 64

4650

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

DST #6: 4704 (-1440)
Initial Open: Wk, built to 1"
Final Open: Wk surf thruout
Rec: 10' OCM 35% to 55% m
IHP: 2104 FHP: 2087
ISP: 23-27 FFP: 34-34
ISIP: 1229 FSIP: 1113
BHT: 133°F

4700

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

Mud Check, Drtg @ 4600:
Vls Wt WL LCM PV YP
55 82 53 7 15
28 14 52 18 26
3000 30 105 64

4750

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

DST #7: 4704 (-1440)
Initial Open: Wk, built to 1"
Final Open: Wk surf thruout
Rec: 10' OCM 35% to 55% m
IHP: 2104 FHP: 2087
ISP: 23-27 FFP: 34-34
ISIP: 1229 FSIP: 1113
BHT: 133°F

4800

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

Mud Check, Drtg @ 4600:
Vls Wt WL LCM PV YP
55 82 53 7 15
28 14 52 18 26
3000 30 105 64

4850

Ls wh-cr, fr sh, dms in pt, scatt patches & pcs with pr fr in por and pg pores, fr am vgs, subchaly in pt, foss (becomes dense with depth)
[No Odor, No fluor, low % pcs with patches of dk brn-black spotty stn, sil show dk hvy DO and show of dry dead flakey gollson]

RTD 4850 Ft. at 10:00 PM, January 25, 2014