



DRILLING COMPANY, INC.
WICHITA, KANSAS

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

Well Name: Tjaden "C" #4
Location: 1980' FSL, 660' FWL, Sec 18-T30S-R07W, Kingman County, Kansas
License Number: API: 15-095-22288 Region: Spivey-Grabs-Basil Field
Spud Date: 09/19/2014 Drilling Completed: 09/27/2014
Surface Coordinates: Lat: 37.4335259
Long: -98.1330522
Bottom Hole Vertical hole.
Coordinates:
Ground Elevation (ft): 1476' K.B. Elevation (ft): 1486'
Logged Interval (ft): 3040' To: RTD Total Depth (ft): 4740'
Formation: Arbuckle at RTD.
Type of Drilling Fluid: Chemical.

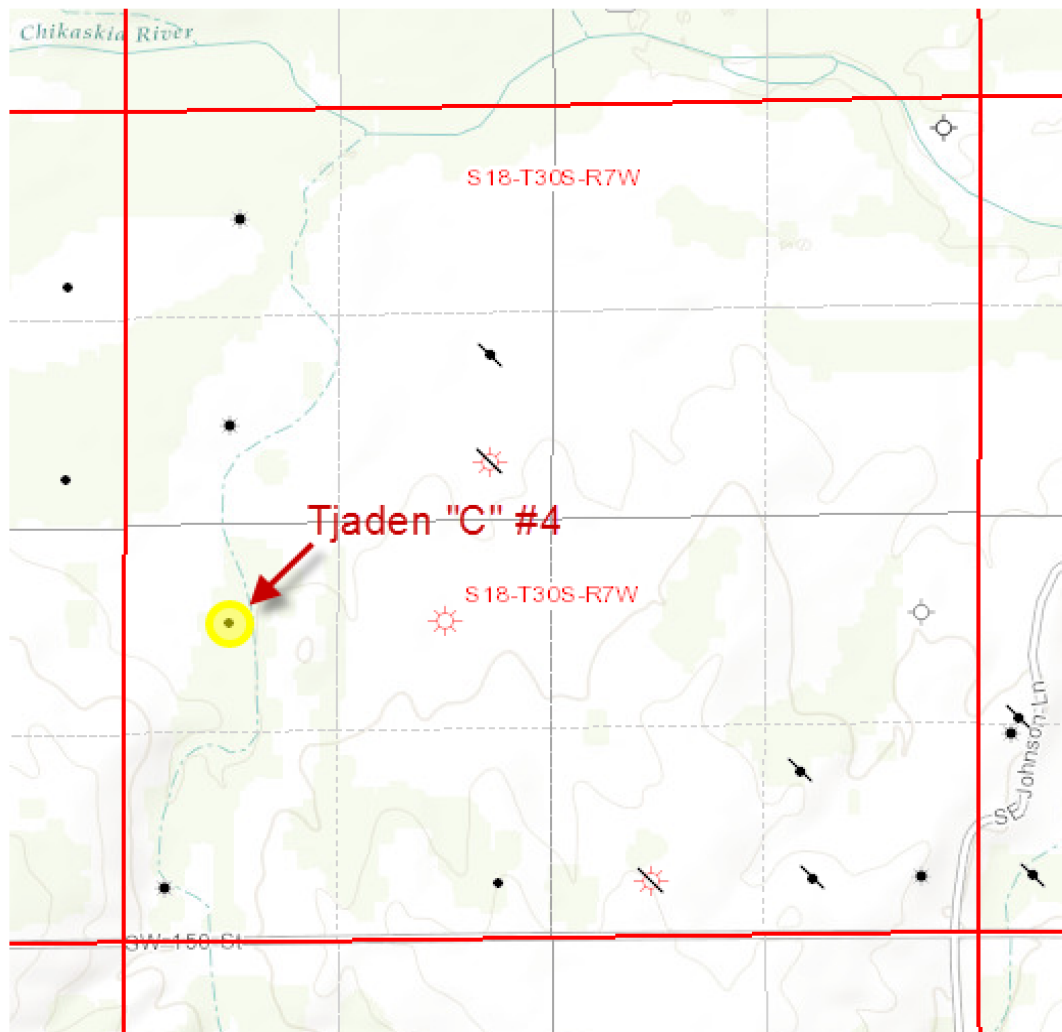
Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Mull Drilling Company, Inc.
Address: 1700 N. Waterfront Parkway, Bldg 1200
Wichita, KS 67206-6636
316-264-6366

GEOLOGIST

Name: Kent R. Matson
Company: Matson Geological Services, LLC
Address: 33300 W. 15th Street S.
Garden Plain, Kansas 67050
316-644-1975



COMMENTS

Mull Company Geologist: Ernie Morrison: 316-264-6366.

Drilling Contractor: Pickrell Drilling Company, Inc. Rig #1.

Tool Pusher: Mike Kern: 620-786-7133.

Surface Casing: 8 5/8" set at 223' (KB) w/150sx cement.

Production Casing: based on field observations of drill cuttings and electric log review the well will be used as a salt water disposal well, casing (5.5") was installed to RTD @ 4740.

Mud by: Mud-Co/Service Mud, Inc. - Brad Bortz: 620-793-2421.

DST's by: no DSTs were conducted.






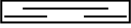



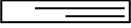




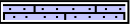











Logs by: Tucker (CNL/CDL w/PE, Micro, Sonic, DI). Conducted @ 4285'.

RTD= 4740', -3254'.

FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Heebner	3323'	-1637	3121'	-1635
Lansing	3336'	-1860	3335'	-1859
Stark	3778'	-2292	3778'	-2292
Base/KC	3881'	-2395	3880'	-2394
Cherokee	4024'	-2538	4023'	-2537
Mississippian	4140'	-2654	4138'	-2652
RTD	4285'	-2799		
LTD			4283'	-2797
Kinderhook	4416'	-2930	NA	
Woodford	4493'	-3007	NA	
Viola	4522'	-3036	NA	
Simpson	4568'	-3082	NA	
Arbuckle	4687'	-3201	NA	
RTD	4740'	-3254		
LTD			NA	

ROCK TYPES

	Anhy		Salt		Dol		Sitysh
	Cht		Shale		Dtd		Sdy dolo
	Coal		Shcol		Gry sh		Silty dolo
	Congl		Shgy		Sandylms		Shy dolo
	Dol		Sltst		Shale		Shaly ls
	Gyp		Ss		Sltstn		
	Lmst		Carb sh		Shlyslts		

ACCESSORIES

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite



- Plant
- Strom
- Fuss
- Oomold

MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breclfrag
- Calc
- Carb
- Chtdk
- Chtlit
- Dol
- Feldspar
- Ferrpel
- Ferr

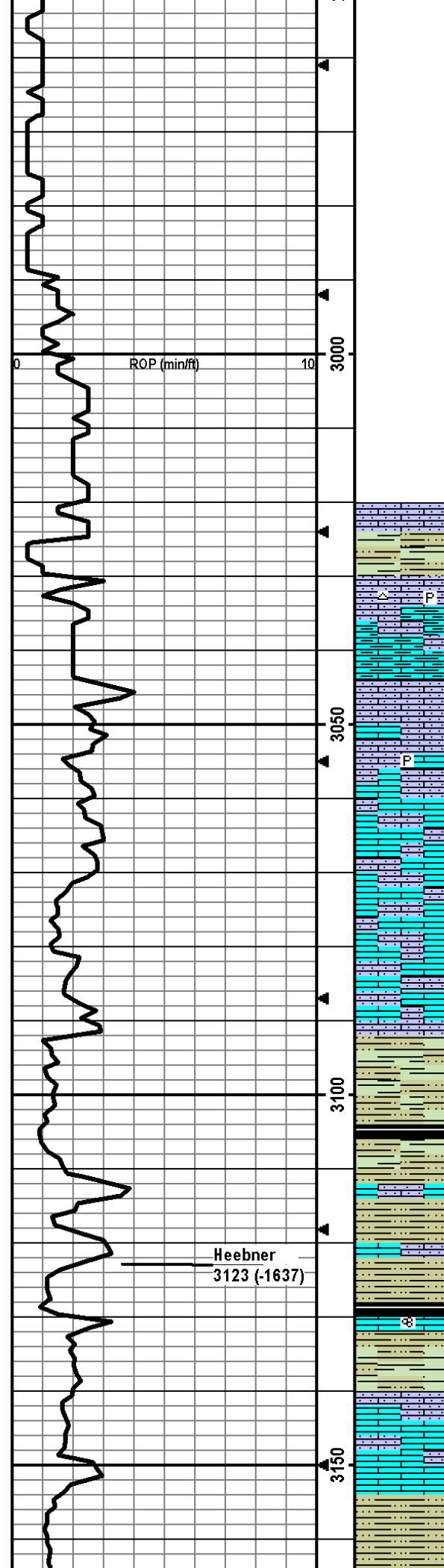


- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Sity

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbs
- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

rop ROP (min/ft)		Depth	Lithology	CFS Point	Oil Shows	Geological Descriptions	Remarks
0	10	28				Morning Report Depth/Activity. 09/19/2014, Spud. 09/20, drill @ 183'. 09/21, drill @ 895'. 09/22, drill @ 2047'. 09/23, drill @ 2866'. 09/24, drill @ 3595'. 09/25, bit trip @ 4087'. 09/26, e-logging @ 4285'. 09/27, drill @ 4689'; TD @ 4740'.	MudCo Check #1 @ 0' 09/18/14 10:00am; predrilling recommendations. MudCo Check #2 @ 225' 09/20/14 05:45pm; cont. predrilling recommendations. MudCo Check #3 @ 2182' 09/22/14 08:30am wt vis pH chl 9.6 29 7.0 108,000 Filt LCM n/c 0 Bit trip @ 2866', switched from PDC bit to tri-cone bit. MudCo Check #4 @ 2921' 09/23/14 08:30am wt vis pH chl 8.9 42 11.0 3000 Filt LCM 9.2 trc
ROP (min/ft)		2900					
2950							
					ROP data begins @ 2900'.		



Drill cutting samples at 10' intervals start at 3040'.

LS: crm/lt brn, micro-fn xtal, vry silty/sndy, some ppt-fn in-xtal por, no odor, ns.

SH: brn/med-dk gry, some vry silty, slt carb, firm, fissile.

LS: lt brn/dk gry-brn, micro-fn xtal, foss frags, some silty/snd, some gry-brn chert, slt pyritc, some arg, min frac por, nos odor, ns.

LS: lt-med brn, micro-fn xtal, min foss frags, silty/sndy, some pyritic, min frac por, no odor, ns.

LS: crm/lt-med brn, micro-med xtal, foss frags, some silty/sndy, some pyritic, min frac por, no odor, ns.

LS: crm/lt-dk brn, micro-fn xtal, some foss frags, some silty/sndy, min frac por, no odor, ns.

LS: crm/lt brn, micro-fn xtal, min foss frags, some vry silty/sndy, min ppt in-xtal/frac por, no odor, ns.

LS: crm/lt-med brn, micro-med xtal, foss frags, some vry silty/sndy, min frac por, no odor, ns.

SH: lt-dk gry/brn, some vry silty, slt carb, min pyritic, firm, fissile.

SH: dk gry/blk, some silty, slt carb, firm, fissile.

LS: lt-dk brn, micro-fn xtal, some silty, some crush easily, some foss frags, min frac por, no odor, ns.

SH: lt-dk gry/brn-dk brn, some silty, slt carb, firm, fissile.

LS: lt-dk brn/brnsh gry, micro-fn xtal, some vry silty, foss frags, min frac por, no odor, ns.

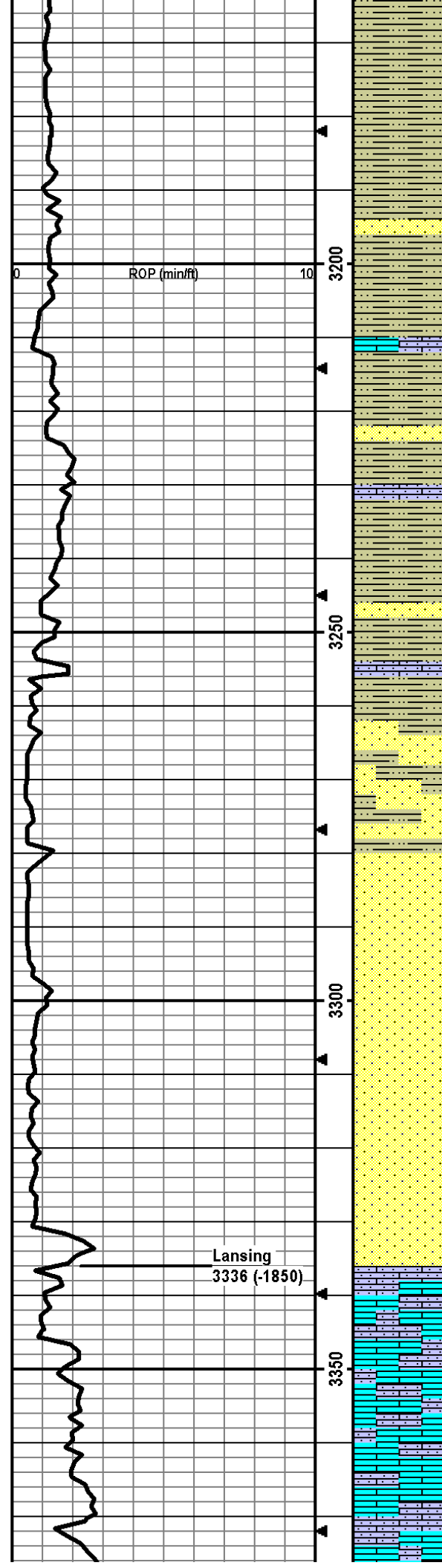
SH: lt green-gry/lt-dk gry/blk, some silty, slt carb, firm, fissile.

LS: lt-dk brn, micro-med xtal, foss frags/fusln, some slt silty/sndy, min frac por, no odor, ns.

SH: med-dk gry, some silty/sndy, slt carb, firm fissile.

LS: crm/lt-med brn, micro-med xtal, foss frags, some silty, min frac por, no odor, ns.

SH: brn/lt-dk gry/blk, some silty, slt carb, firm, fissile, no odor, ns.



SH: same as above, no odor, ns.

SH: same as above w/some brn/red brn, no odor, ns.

SH: brn/red brn/lt green-gry/lt-dk gry, some silty, slt carb, firm, fissile, no odor, ns.

SH: same as above w/some lt gry SS: vf-f, sr-wr, pred qtz, hard, friable, no odor, ns.

SH: same as above, no odor, ns..

LS: crm/lt-med brn, micro-fn xtal, foss frags, some silty/sndy, some crushes easily, min ppt in-xtal por, no odor, ns.

SH: lt-dk gry/dk brn, silty/sndy, slt carb, firm, fissile, no odor, ns.

SH: as above; some SS: lt gry, vf-f, sr-wr, pred qtz, hard, friable, no odor, ns.

LS: crm/brn/dk gry-brn, micro-med xtal, foss frags, silty sndy, min frac por, no odor, ns.

SH: lt-dk gry/dk brn, silty, slt carb, firm, fissile, no odor, ns.

SH: med-dk gry, vry silty, soft-firm, slt carb, fissile; some SS: lt gry, vf-f, sr-wr, pred qtz, friable, no odor, ns.

LS: crm/lt-med brn, micro-fn xtal, min foss frags, vry silty, some frac por, no odor, ns.

SH: lt-dk gry, vry silty/sndy, carb, firm, fissile, no odor, ns.

SH/SS mix: SH: med-dk gry, silty/sndy, slt carb, firm, fissile; SS: lt-med gry, vf-f, sr-wr, pred qtz, hard, friable, no odor, ns.

SH/SS mix as above, no odor, ns

SS: lt gry, vf-f w/some med, sr-wr, hard, friable, pred qtz, slt carb, no odor, ns.

SS: as above, no odor, ns.

SS: as above, no odor, ns.

SS: as above, no odor, ns.

SS: lt gry, vf-f, sr-wr, hard, friable, pred qtz, slt carb, no odor, ns.

SS: as above, vry hard, carb cement, non-friable, no odor, ns.

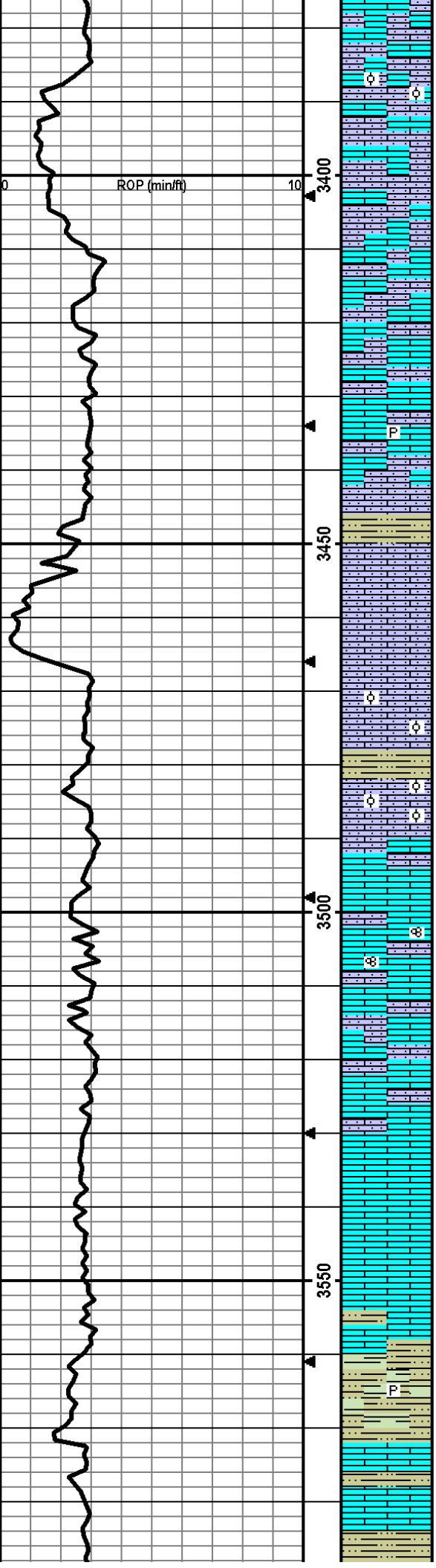
LS: lt-dk brn, micro-fn xtal, some foss frags, some silty/sndy, some frac por, no odor, ns.

LS: crm/lt-med brn, micro-med xtal, foss frags, some silty/sndy, min ppt-fn in-xtal por, no odor, ns.

LS: crm/lt-med brn, micro-fn xtal, foss frags, some silty/sndy, some chalky, some ppt in-xtal por, no odor, ns.

LS: crm/lt brn/lt gry, micro-med xtal, foss frags, some silty, some chalky, min ppt in-xtal por, no odor, ns.

LS: crm/lt-med brn/lt gry, micro-med xtal, foss frags, some silty, min chalkv. some crushes easilv. min frac por. no odor, ns.



LS: crm/lt-dk brn/lt gry, micro-med xtal, foss frags w/some abund ool pcs, some vry silty/sndy, some chalky, some fn-crs in-xtal por, no odor, ns.

LS: crm/lt brn/lt gry, micro-fn xtal, foss frags, some silty, some chalky, crushes easily, min frac por, no odor, ns.

LS: lt-med brn/lt gry, micro-med xtal, foss frags, some vry silty/sndy, some crushes easily, some frac por, no odor, ns.

LS: crm/lt brn/lt gry, micro-fn xtal, foss frags, some vry silty/sndy, some chalky, min frac por, no odor, ns.

LS: crm/lt-med brn/lt gry, micro-med xtal, foss frags, some vry silty/sndy, min chalky, min frac por, no odor, ns.

LS: crm/lt-med brn, micro-med xtal, foss frags, some silty/sndy, some pyritic, min frac por, no odor, ns.

SH: med-dk gry, some vry silty, firm, fissile, no odor, ns.

LS: crm/lt brn/lt gry, micro-med xtal, foss frags, silty/sndy, crushes easily, some frac por, no odor, ns. some SH: med-dk gry, some silty, slt carb, firm, fissile, no odor, ns.

LS: same as above, no odor, ns.

LS: crm/lt gry/lt brn, micro-med xtal, foss frags w/some abund ool pcs, silty/sndy, no vis por, no odor, ns.

SH: med-dk gry, silty, slt carb, firm, fissile, no odor, ns.

LS: crm/lt-med brn, micro-med xtal, foss frags w/some abund ool pcs, silty, min chalky, no vis por, no odor, ns.

LS: lt-med brn/lt gry, micro-med xtal, min foss frags, some vry silty/sndy, no vis por, no odor, ns.

LS: lt-med brn/lt gry-brn, micro-med xtal, some foss frags/fusln, some silty/sndy, min frac por, no odor, ns.

LS: crm/lt-med brn, micro-med xtal, some foss frags, some silty/sndy, some frac por, no odor, ns.

LS: same as above, no odor, ns.

LS: lt-med brn, micro-fn xtal, min foss frags, min frac por, no odor, ns.

LS: lt-med brn w/some gry mottling, some foss frags, min frac por, no odor, ns.

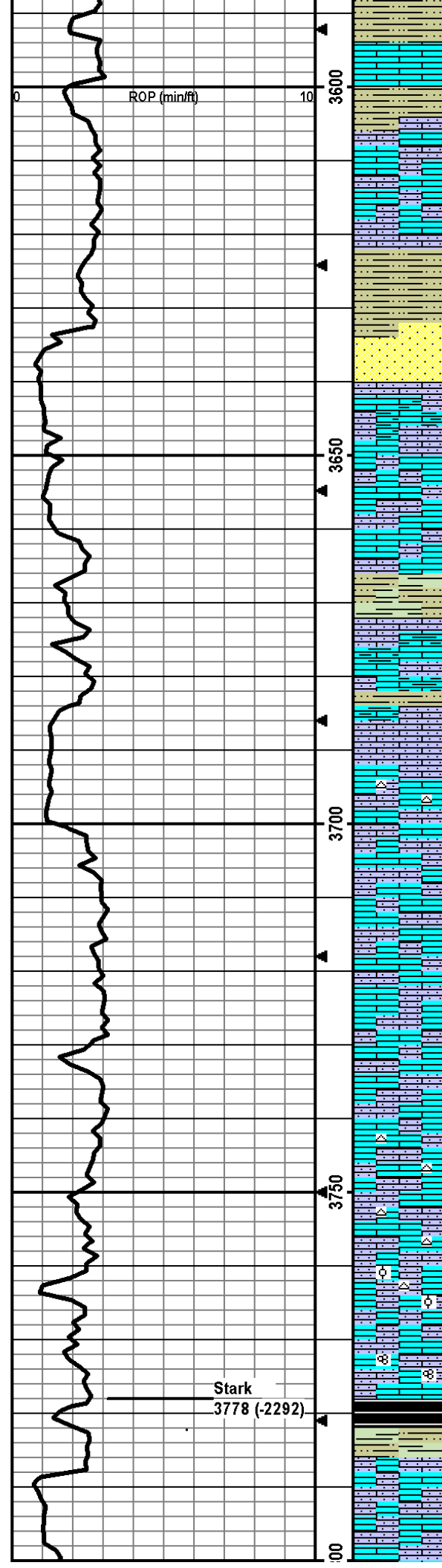
LS: as above w/abund med-dk gry silty SH, no odor, ns.

SH: lt-dk gry, some silty, some slt carb, min pyritic, firm, fissile, no odor, ns.

LS: lt-dk brn, micro-med xtal, foss frags/fusln, no vis por, no odor, ns. SH: lt-dk gry, some silty, slt carb, firm, fissile.

LS: crm/lt-med brn, micro-med xtal, foss frags, some silty/sndy, min ppt-fn in-xtal/frac por, no odor, ns.

SH: med-dk gry/lt green-grn, some vry silty/sndy, some pyritic



cm med dk gry/lt green gry, some vry silty/sndy, some pyrac, firm, fissile, no odor, ns.

LS: lt-med brn, micro-med xtal, some foss frags, no vis por, no odor, ns.

SH: lt green-gry/lt-dk gry/red brn, some silty/sndy, slt carb, firm, fissile.

LS: crm/lt-med brn/lt gry, micro-med xtal, min foss frags, some silty, no vis por, no odor, ns.

SH: lt green-gry/med-dk gry/red brn, some silty, slt carb, firm, fissile, no odor, ns.

SS: lt gry, vf-f, sr-wr, arg, hard, friable, no odor, ns.

LS: lt gry/lt gry-brn, micro-fn xtal, min foss frags, some vry silty/sndy, arg, no vis por, no odor, ns.

LS: lt-med brn/lt gry, micro-med xtal, min foss frags, some vry silty/sndy, no vis por, no odor, ns.

LS: as above w/some chalky, no odor, ns.

SH: lt-dk gry, slt silty, slt carb, firm, fissile, no odor, ns.

LS: crm/lt brn/lt gry, micro-med xtal, foss frags/brac, some vry silty/sndy, some arg, some crushes easily, min in-xtal por, no odor, ns.

SH: red brn/med-dk gry, some silty, carb, firm, fissile, no odor, ns.

LS: crm/lt brn/lt gry, micro-med xtal, foss frags, some silty/sndy, some wht/lt brn chert, some frac por, no odor, ns.

LS: crm/lt brn/lt gry, micro-fn xtal, foss frags, some vry silty/sndy, some chalky, some crushes easily, some frac por, no odor, ns.

LS: lt-med brn/lt gry, micro-fn xtal, foss frags, some vry silty, min frac por, no odor, ns.

LS: same as above, no odor, ns.

LS: crm/lt-med brn, micro-fn xtal, min foss frags, some silty/sndy, no vis por, no odor, ns.

LS: same as above w/min crm chert, no odor, ns.

LS: crm/lt-dk brn, micro-med xtal, some foss frags, min crm/lt brn chert, some frac por, no odor, ns.

LS: crm/lt-med brn/gry/gry-brn, micro-med xtal, foss frags/ool, some vry silty/sndy, min wht chert, some frac por, no odor, ns.

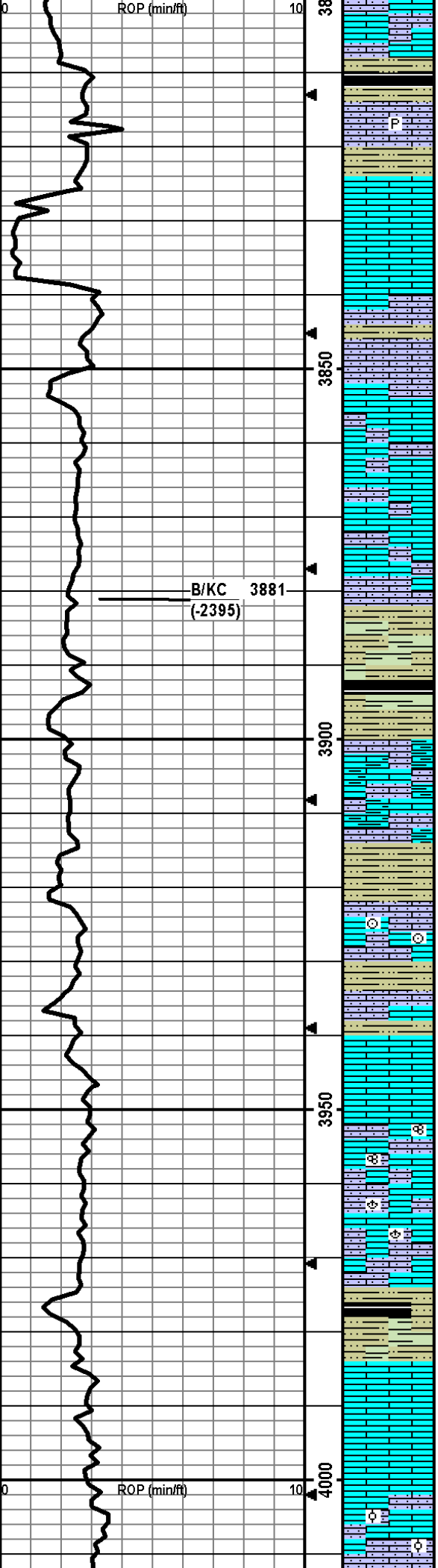
LS: crm/lt-med brn/lt gry, micro-med xtal, foss frags/fusln, some silty/sndy, some frac por, no odor, ns.

SH: med-dk gry/blk, some carb, some silty, soft-firm, fissile, no odor, ns.

LS: crm/lt gry/lt-med brn, micro-med xtal, foss frags, some silty, min frac por, no odor, ns.

MudCo Check #5 @3648'
 09/24/14 08:00am
 wt vis pH chl
 9.5 45 10.0 5000
 Filt LCM
 10 0

ROP (min/ft)



LS: gry/lt-med brn, micro-fn xtal, min foss frags, some silty, min frac por, no odor, ns.

SH: lt green-gry/lt-dk gry/blk/red brn, some carb, some silty, firm, fissile, no odor, ns.

LS: crm/med-dk brn, micro-med xtal, some foss frags, some vry silty, some pyritic, some frac por, no odor, ns.

SH: med-dk gry/blk/red brn/lt green-gry, some silty, some carb, soft-firm, fissile, no odor, ns.

LS: crm/lt-med brn, micro-med xtal, min foss frags, no vis por, no odor, ns.

LS: crm/lt-med brn/lt gry, micro-med xtal w/2ndry xtal, min foss frags, min ppt in-xtal/frac por, no odor, ns.

LS: lt-med brn/gry, micro-med xtal, min foss frags, some silty, min frac por, no odor, ns.

SH: med-dk gry/min red brn, slt carb, some silty, firm, fissile, no odor, ns.

LS: lt-med brn, micro-med xtal, foss frags, some silty, min frac por, no odor, ns.

LS: lt-dk brn/gry, micro-med xtal, foss frags, some silty, min frac por, no odor, ns.

LS: crm/gry/lt-dk brn, micro-med xtal, foss frags, some silty, min frac por, no odor, ns.

SH: lt-dk gry/brn/red brn, some carb, some silty, firm, fissile, no odor, ns.

SH: lt-dk gry/blk/lt green-gry/brn/red brn, some carb, some silty, firm, fissile, no odor, ns.

LS: wht/lt gry/dk gry/brn, micro-med xtal, min foss frags, some silty/sndy, some arg, some frac por, no odor, ns.

SH: med-dk gry/dk maroon brn/red brn/orange brn, some silty, carb, firm, fissile, no odor, ns.

LS: gry/brn, micro-med, foss frags/crin, some silty, min frac por, no odor, ns.

SH: brn/red brn/med-dk gry/lt green-gry, some carb, some silty, firm, fissile, no odor, ns.

LS: crm/lt-med brn, micro-med xtal, foss frags, no vis por, no odor, ns.

LS: crm/lt-med brn, micro-med xtal, foss frags/fusln, some silty/sndy, no odor, ns.

LS: crm/med-dk brn, micro-med xtal, foss frags/brac, some silty/sndy, some chalky, no odor, ns.

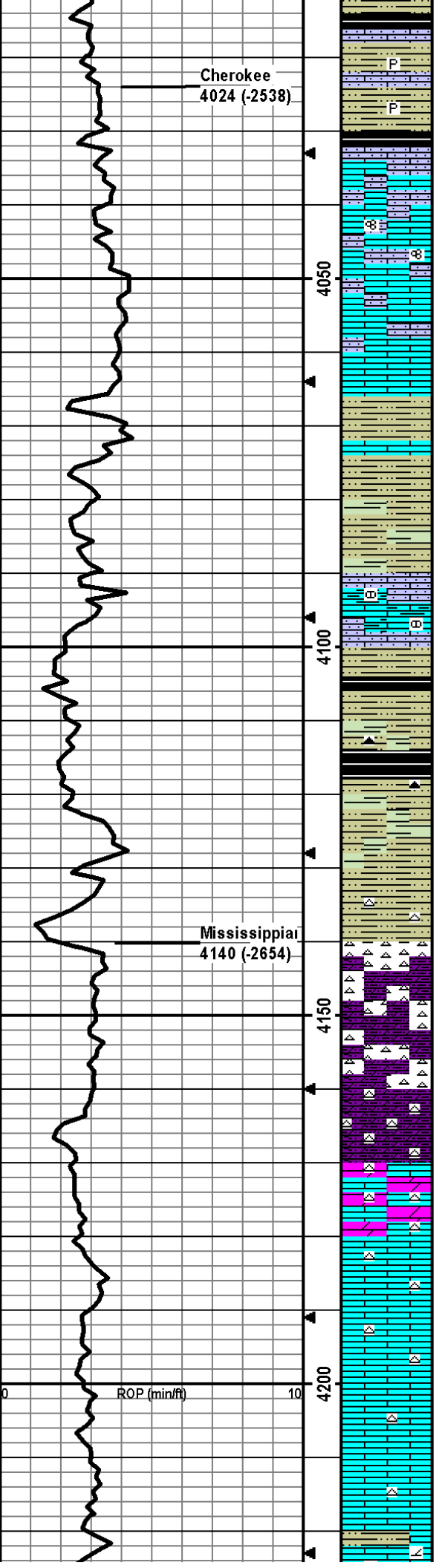
SH: med-dk gry/green-gry, slt carb, silty, firm, fissile, no odor, ns.

LS: crm/lt brn, micro-med xtal, foss frags, min frac por, no odor, ns.

LS: crm/lt-dk brn, micro-med xtal, foss frags w/some ool, some silty, min frac por, no odor, ns.

B/KC 3881 (-2395)

ROP (min/ft)



SH: med-dk gry/blk, vry silty, carb, sord-frm, fissile; LS: crm/lt-med brn, micro-med xtal, foss frags, frac por; no odor, ns.

SH: med-dk gry/dk brn, vry silty, carb, pyritic, firm, fissile; LS: dk brn, micro-med xtal, min foss frags, no vis por; no odor, ns.

LS: crm/lt-dk brn, micro-med xtal, foss frags, some vry sndy, some frac por, no odor, ns.

LS: crm/lt-med brn, micro-med xtal, foss frags/fusln, some vry sndy, no vis por, no odor, ns.

LS: crm/lt-med brn/gry, micro-med xtal, foss frags, some sndy, no vis por, no odor, ns.

LS: crm/lt-med gry brn, micro-med xtal, foss frags, some silty/sndy, some chalky, no vis por, no odor, ns.

SH: med-dk gry/red brn, carb, silty, firm, fissile, no odor, ns.

Sample not collected at 4080'-4090'; assume SH w/thin LS.

SH: med-dk gry/mustard yel/maroon/red brn, carb, some silty, firm, fissile, no odor, ns.

LS: crm/gry/dk brn, micro-med xtal, foss frags, some vry silty/sndy, some arg, some nodules. no vis por, no odor ns.

SH: med-dk gry/min maroon/mustard yel, carb, silty, firm, fissile, no odor, ns.

SH: lt-dk gry/blk/maroon/mustard yel/lt green-gry, carb, some silty, min blk chert, firm, fissile, no odor, ns.

SH: lt-dk gry/maroon/mustard yel/lt green-gry, carb, some silty, firm, fissile, no odor, ns.

SH: lt-dk gry/red brn/maroon/mustard yel/green-gry, carb, some silty, some wht/crm chert, firm, fissile, no odor, ns.

Chert: wht/crm/lt brn, opaque, ppt in-xtal and frac por, 7 pcs w/brn oil staining or fo, yel flor/cut, slt crush odor, sfo

Chert as above w/some Dolo: wht/crm, fn-med xtal, grainy, silty, easily crushed, ppt in-xtal por; 2 chert pcs w/brn oil staining or fo, yel flor/cut, no odor, sfo.

Chert and Dolo as above; one pce of chert w/brn oil staining, yel flor/cut, no odor, sso.

LS/Dolo: wht/crm, micro-fn xtal, some wht/crm chert, ppt-fn in-xtal por, 7 pcs w/brn oil staining, no odor, yel flor/cut, so.

LS: wht/crm/lt green-gry, micro-fn xtal, some wht/crm chert, ppt-fn in-xtal por, 2 pcs of Dolo w/brn oil staining, no odor, yel flor/cut, so.

LS: wht/crm/gry, fn-med xtal, some wht/crm chert, no vis por, no odor, ns.

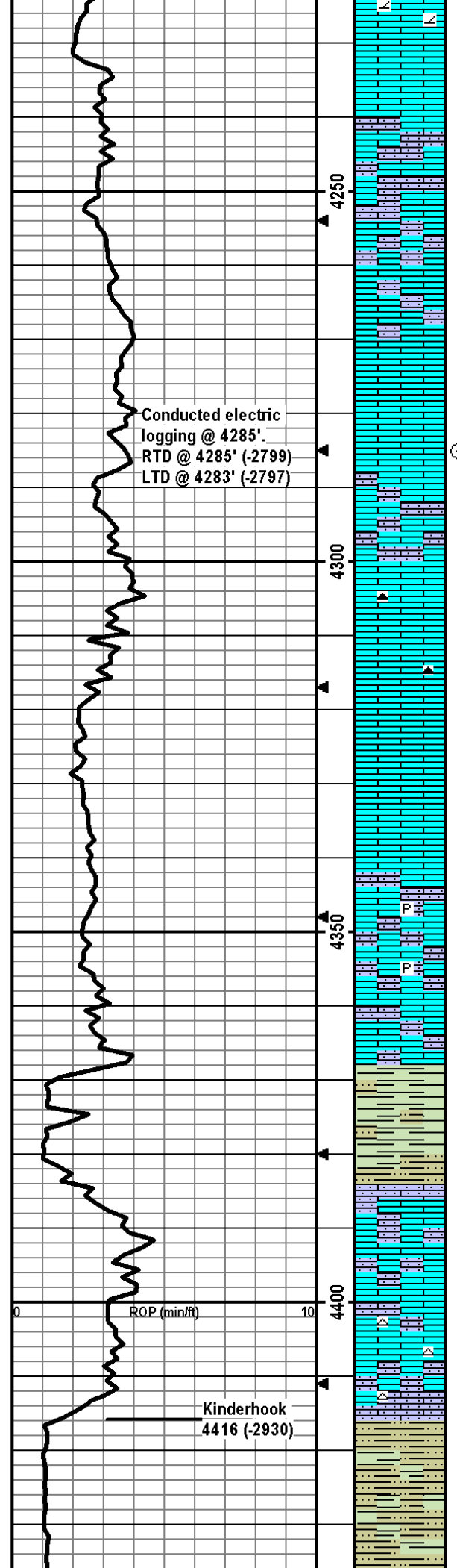
LS: crm/lt-med brn, micro-fn xtal, some crm chert, no vis por, no odor, ns.

LS: wht/gry, micro-fn xtal, some wht/crm chert, no vis por, no odor, ns.

LS: as above w/flood of lt-dk arv/red brn SH. firm. fissile: few pcs

MudCo Check #6 @ 4087'
09/25/14 09:30am
wt vis pH chl
9.6 45 9.0 3000
Filt LCM
10.8 2

Conducted bit trip @ 4087' for damaged bit.



of wht/lt brn grainy Dolo; no odor, ns.

LS: wht/lt gry, micro-fn xtal, some fn in-xtal por, no odor, ns.

LS: crm/gry/min dk brn, micro-med xtal, some ool pcs, some silty, no vis por, no odor, ns.

LS: crm/lt-med brn/gry, micro-med xtal, some ool pcs, some silty, no vis por, no odor, ns.

LS: wht/crm/lt brn, micro-fn xtal, some silty, no vis por, no odor, ns.

LS: crm/gry/med-dk brn, micro-fn xtal, some foss frags, no vis por, no odor, ns.

LS: crm/lt brn/lt gry, micro-fn xtal, some silty, no vis por, no odor, ns.

LS: crm/lt gry, micro-fn xtal, min blk chert, no vis por, no odor, ns.

LS: lt-med brn, micro-fn xtal, some foss frags, no vis por, no odor, ns.

LS: lt gry/lt brn, micro-fn xtal, some silty, some pyritic, no vis por, no odor, ns.

SH: med-dk gry, slt carb, slt silty, firm, fissile, no odor, ns.

LS: crm/lt gry/lt brn, micro-fn xtal, some foss frags, some silty/sndy, no vis por, no odor, ns.

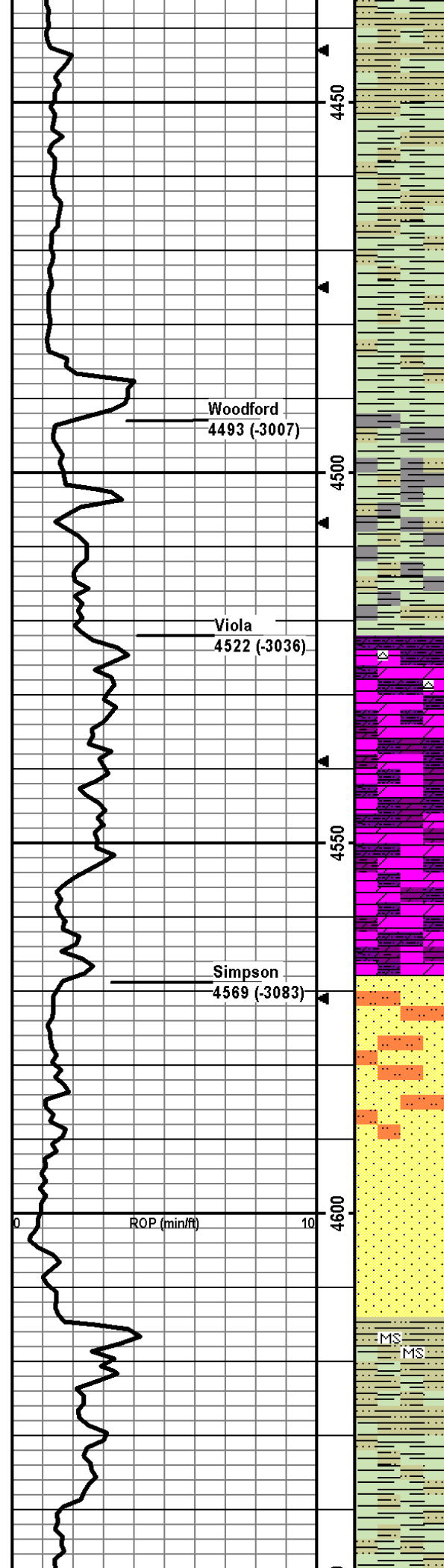
LS: as above w/some wht/crm/lt gry chert, no odor, ns.

SH: lt-dk gry/min blk, slt carb, some vry silty, firm, fissile, no odor, ns.

MudCo Check #7 @ 4285'
 09/26/14 12:30pm
 wt vis pH chl
 9.6 46 9.5 3000
 Filt LCM
 10.4 trc

Cir 1.5 hrs at 4430' to clean/condition hole, then ran short trip and cir 1 hr, prior to conducting electric logging.

NOTE: After review of the electric log conducted at 4285' TD, it was determined that drilling would recommence until the Arbuckle formation was reached. Drilling will extend approximately 50' into the Arbuckle to facilitate completing the well for salt water disposal.



SH: med-dk gry/min blk, slt carb, some silty, firm, fissile, no odor, ns.

SH: lt-dk gry, carb, some silty, firm, fissile, no odor, ns.

SH: med-dk gry, carb, slt silty, firm, fissile, no odor, ns.

Woodford
4493 (-3007)

SH: lt-dk gry/blk, some vry carb, slt silty, firm-hard, fissile, no odor, ns.

SH: as above, no odor, ns.

Viola
4522 (-3036)

Dolo: wht/lt gry/lt brn, micro-fn xtal, some silty, some carb pcs, min wht opaque chert, no vis por, no odor, ns.

Dolo: crm/lt gry/lt brn, micro-fn xtal, some silty, some carb pcs, some arg, min frac por, no odor, ns.

4550

Dolo: same as above, no odor, ns.

Simpson
4569 (-3083)

SS: crm/lt brn/lt gry, vf-f, qtz, silty, some arg, carb matrix, hard, friable, no odor, ns.

4600

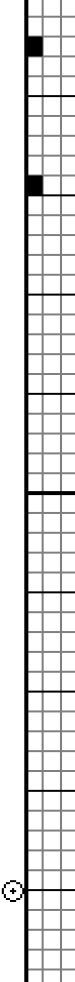
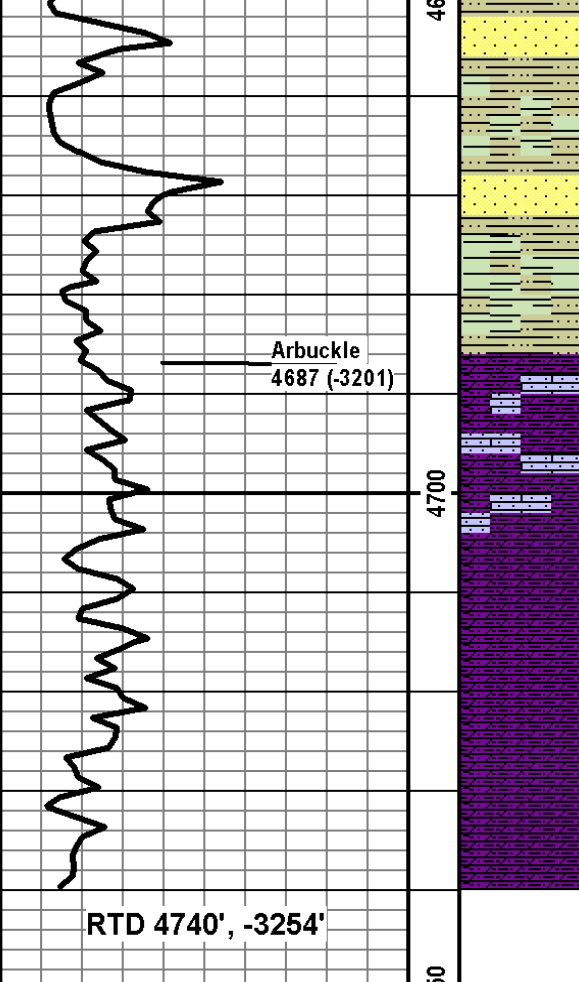
ROP (min/ft)

SS: wht/lt gry, vf-m, sr-wr, pred qtz, carb matrix, hard, friable, no odor, ns.

MS
MS

SH: lt-dk gry, some silty, some carb lamination, some mudstn, firm-hard, fissile, no odor, ns.

SH: lt-dk gry/lt green-gry, some carb, some slt silty, firm, no odor, ns.



SH: as above w/some SS: wht/lt gry, vf-m, sr-wr, pred qtz, 7 pcs w/blk tar oil, slt yel cut when crushed, no odor, sfo.

SH: lt-dk gry/brn, some silty, slt carb, firm, fissile, no odor, ns.

Dolo: wht/crm/lt brn, micro-fn xtal, silty, some w/ppt-med in-xtal por; min LS: crm/lt brn, micro-fn xtal, some foss frags, silty, no vis por; no odor, ns.

Dolo: crm/lt gry/lt brn, micro-fn xtal, silty, grainy, min frac por, no odor, ns.

Dolo: crm/lt gry/lt brn, micro-fn xtal, silty/sndy, grainy, ppt-fn in-xtal por, no odor, ns.

TD @ 4740'

MudCo Check #8 @4740'
 09/27/14 08:45am
 wt vis pH chl
 9.7 39 9.0 3000
 Filt LCM
 10.8 3

Cir 1 hr at 4740' to clean/condition hole, then ran short trip and cir 1.5 hrs, prior to coming out of hole to set casing.

RTD 4740', -3254'

Arbuckle
 4687 (-3201)

4650
 4700
 50