



Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops and base 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. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

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 Electric Log Submitted Electronically <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i> 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				

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: Yes No

Date of First, Resumed Production, SWD or ENHR. _____ Producing Method: Flowing Pumping Gas Lift Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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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> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Hess Oil Company
Well Name	Sheila 1
Doc ID	1152773

Tops

Name	Top	Datum
Anhydrite	2436	+375
Base Anhydrite	2471	+340
Topeka	3677	-866
Heebner	3896	-1085
Toronto	3919	-1108
Lansing	3938	-1127
Base Kansas City	4179	-1368
Pawnee	4303	-1492
Fort Scott	4404	-1593
Cherokee Shale	4432	-1621
Mississippi	4507	-1696

ALLIED OIL & GAS SERVICES, LLC 060253

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:
Oakley, KS

DATE <u>5-8-13</u>	SEC <u>15</u>	TWP <u>9</u>	RANGE <u>28</u>	CALLED OUT	ON LOCATION <u>4:30 am</u>	JOB START <u>9:00 am</u>	JOB FINISH <u>10:00 am</u>
LEASE <u>Shelta</u>	WELL # <u>1</u>	LOCATION <u>Granfield East I-70 Exit</u>			COUNTY <u>Shedden</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one) <u>NEW</u>				<u>12 1/2 N, 1/2 E, 5 into</u>			

CONTRACTOR Mallard
 TYPE OF JOB PTA
 HOLE SIZE 7 7/8 T.D. 4520'
 CASING SIZE _____ DEPTH _____
 TUBING SIZE _____ DEPTH _____
 DRILL PIPE 4 1/2 DEPTH 2450'
 TOOL _____ DEPTH _____
 PRES. MAX _____ MINIMUM _____
 MEAS. LINE _____ SHOE JOINT _____
 CEMENT LEFT IN CSO. _____
 PERFS. _____
 DISPLACEMENT _____

OWNER same
 CEMENT AMOUNT ORDERED 220 sks 69/40 4 Regal
1/4 # flo seal

COMMON	<u>132 cum</u>	@	<u>17.90</u>	<u>2362.80</u>
POZMIX	<u>88 pos</u>	@	<u>9.35</u>	<u>822.80</u>
GEL	<u>8 gal</u>	@	<u>23.40</u>	<u>187.20</u>
CHLORIDE		@		
ASC		@		
<u>flo seal</u>	<u>35 #</u>	@	<u>2.97</u>	<u>163.85</u>
		@		
		@		
		@		
		@		
		@		
		@		
HANDLING	<u>23628 ft³</u>	@	<u>2.48</u>	<u>585.97</u>
MILEAGE	<u>2.87 hrs x 35 x 2.60</u>			<u>898.17</u>

TOTAL 5020.27

REMARKS:

Mix 85 sks 2450'
Mix 100 sks 1530'
Mix 40 sks 330'
Mix 10 sks w/ plug 40'
Plug Mt - 15 sks
Plug R/H - 30 sks

Thank you

CHARGE TO: Hess Oil Co
 STREET _____
 CITY _____ STATE _____ ZIP _____

SERVICE

DEPTH OF JOB	<u>2405'</u>			
PUMP TRUCK CHARGE				<u>2483.59</u>
EXTRA FOOTAGE		@		
MILEAGE <u>MTW</u>	<u>35</u>	@	<u>7.70</u>	<u>269.50</u>
MANIFOLD		@		
<u>MLU</u>	<u>35</u>	@	<u>2.70</u>	<u>154.00</u>
		@		

TOTAL 2707.09

PLUG & FLOAT EQUIPMENT

<u>wooden plug</u>		@		<u>102.64</u>
		@		
		@		
		@		
		@		

TOTAL 102.64

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 Mark Elsen
 SIGNATURE Mark D. Elsen

SALES TAX (If Any) _____
 TOTAL CHARGES 8,035.02
 DISCOUNT 2,008.75 IF PAID IN 30 DAYS
6,026.26 Net.

H · E · S · S



O · I · L

C · O

Scale 1:240 Imperial

Well Name:	Sheila #1	
Surface Location:	S2/S2/S2/N2	
Bottom Location:	same	
API:	15-179-21329	
License Number:		
Spud Date:	4/29/2013	Time: 1:10 PM
Region:	Sheridan	
Drilling Completed:	5/8/2013	Time: 12:10 AM
Surface Coordinates:	2401 ft. FNL & 2672 ft. FWL	
Bottom Hole Coordinates:		
Ground Elevation:	2806.00ft	
K.B. Elevation:	2811.00ft	
Logged Interval:	3200.00ft	To: 4520.00ft
Total Depth:	4520.00ft	
Formation:	Lansing-Kansas City	
Drilling Fluid Type:	Chemical Mud	

OPERATOR

Company:	Hess Oil Company		
Address:	P.O. Box 1009 McPherson, KS 67460		
Contact Geologist:	James C Hess		
Contact Phone Nbr:			
Well Name:	Sheila #1		
Location:	S2/S2/S2/N2	API:	15-179-21329
Pool:	Sec 15 T9S R28W	Field:	Wildcat
State:	Kansas	Country:	U.S.A.

ELEVATIONS

K.B. Elevation:	2811.00ft	Ground Elevation:	2806.00ft
K.B. to Ground:	5.00ft		

SURFACE CO-ORDINATES

Well Type:	Vertical		
Longitude:	W100 25' 58.289"	Latitude:	N39 16' 17.690"
N/S Co-ord:	2401 ft. FNL		
E/W Co-ord:	2672 ft. FWL		

TOTAL DEPTH

Measurement Type:	Measurement Depth:	TVD:
RTD	4520.00	0.00

LOGGED BY

Company:
Address: 225 N. Market, Suite 300
Wichita, KS 67202

Phone Nbr: (620) 953-2066
Logged By: Geologist

Name: Seth L. Evenson

NOTES

DST #1	DST #2	DST #3	DST #4
3872'-3965'	3972'-4020'	4020'-4170'	4411'-4451'
30-30-30-30	45-45-45-45	45-45-45-45	30-30-30-30
IHP=1868#	IHP=1931#	IHP=1993#	IHP=2198#
IFP=40#-335#	IFP=16#-28#	IFP=31#-292#	IFP=19#-20#
ISIP=1156#	ISIP=435#	ISIP=1177#	ISIP=30#
FFP=342#-526#	FFP=32#-43#	FFP=296#-468#	FFP=20#-21#
FSIP=1148#	FSIP=506#	FSIP=1175#	FSIP=26#
FHP=1844#	FHP=1903#	FHP=1983#	FHP=2172#
Rec: 190' WCM (40% W) 189' MCW (60% W) 189' MCW (80% W) 427' W w/SCM OIL IN TOOL	Rec: 60' M w/OIL SPTS IN TOOL	Rec: 429' MW (60% W) 616' W w/SSG	Rec: 15' M

ROCK TYPES

	Anhyprim		Lmst fw<7		Shgy		Chtcongl
	Coal		Mrlstcalc		Shcol		
	Congl		Mrlstdol		Slst		

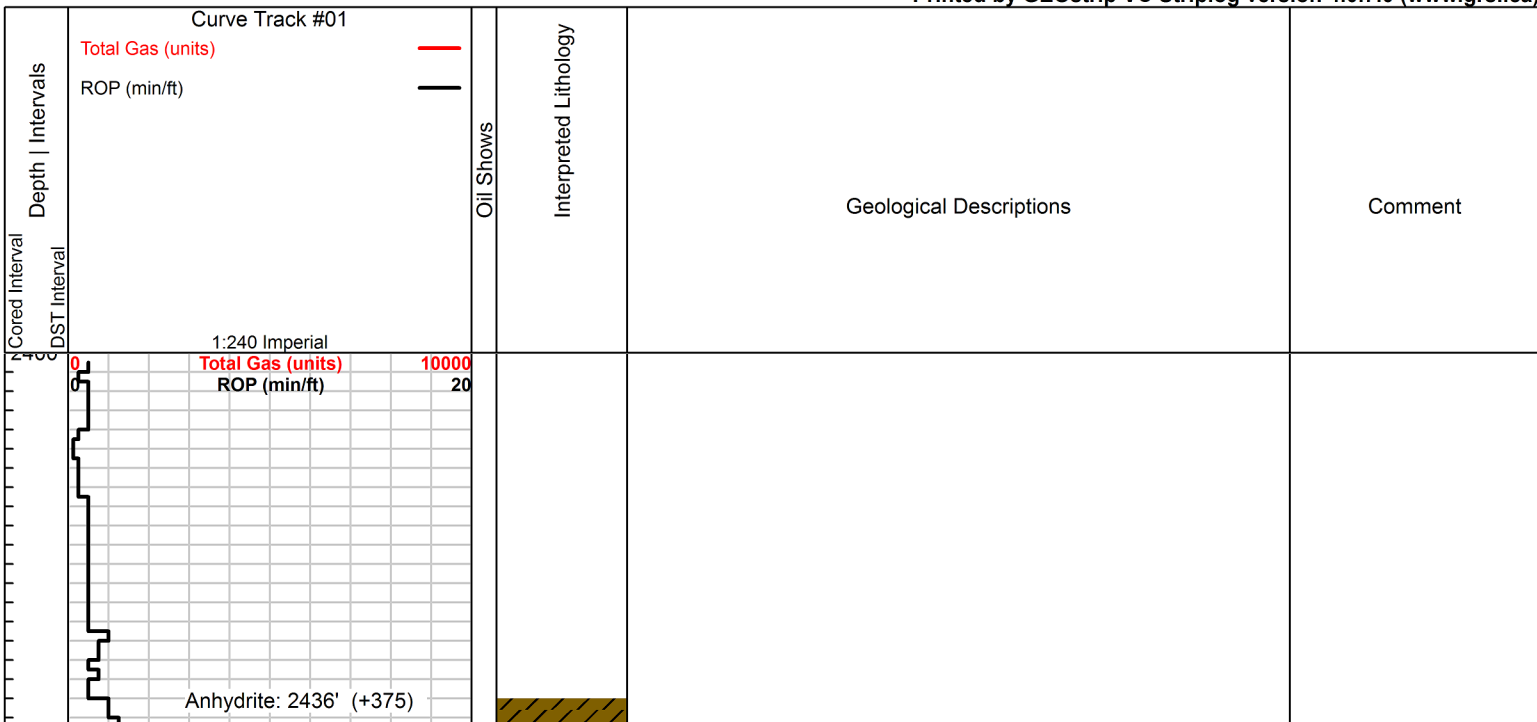
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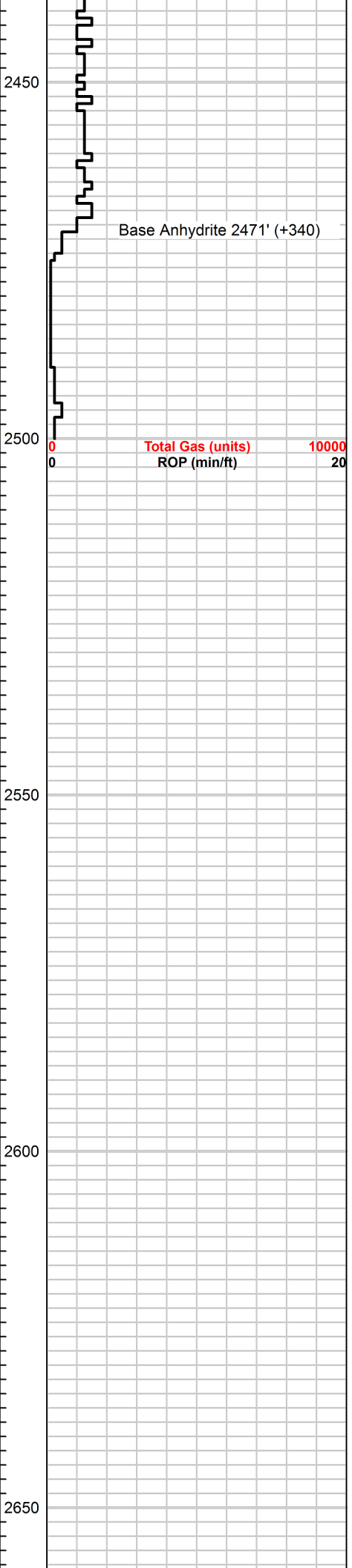
MINERAL	STRINGER
△ Chert White	● Sandstone
	— Shale

OTHER SYMBOLS

OIL SHOWS	INTERVALS
● Even Stn	■ Core
● Spotted Stn 50 - 75 %	· DST
● Spotted Stn 25 - 50 %	
○ Spotted Stn 1 - 25 %	
○ Questionable Stn	
D Dead Oil Stn	
■ Fluorescence	

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)





2700

2750

2800

2850

0	Total Gas (units)	10000
0	ROP (min/ft)	20

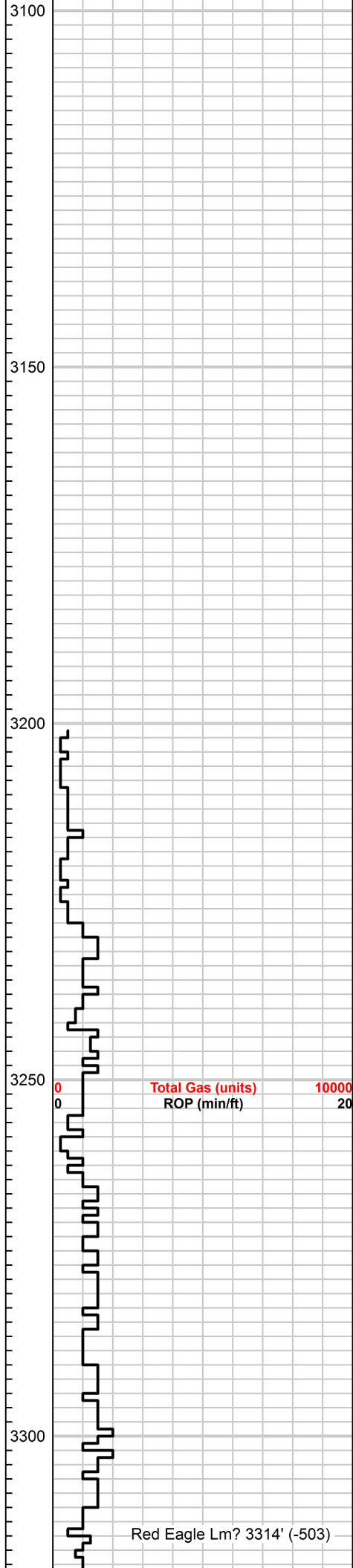
2900

2950

3000

3050

0	Total Gas (units)	10000
0	ROP (min/ft)	20



Total Gas (units)
ROP (min/ft)

Red Eagle Lm? 3314' (-503)



Vari-colored shale. Trc SS off wht, fn-med, sub rnd well srtd qtz grains, well cmntd, some speckled drk green glauconitic grains.

Trc lms, vfn xtln, tan highly silicified, vry hrd res, no vis allochems, no vis por. Mstly vari-colored shale & silty/sndy shale as abv.

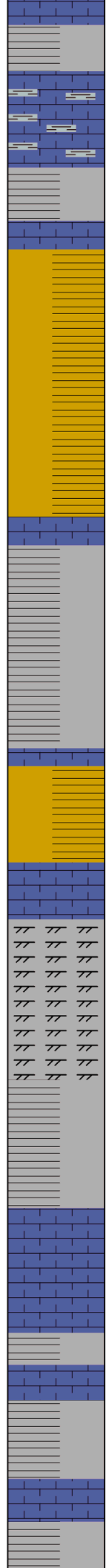
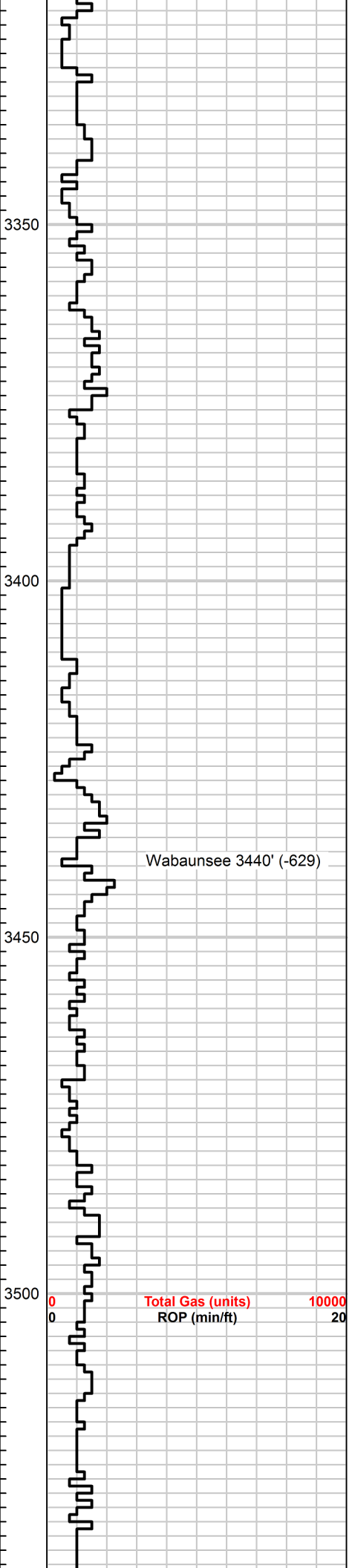
Vry sndy shale/vry shaley SS. reddish-brwn to brwn-marroon, vfn grained, sft/brtl-friable, pr-no vis por. Trc tan med xtln lms no vis por & trc wht friable, sli glauc SS as abv.

Lms, tan, amber, lt gry, fn-med xtln, hrd res, highly silicified. Cln xtln matrix, pr-no vis por. Much shale as abv.

Lms as abv, some sli shaley, much brite, red platy-rnded smooth shale in sample.

Lms, fn-med xtln, silicified, tan, ambr to lt gry, med-hrd res, xtlns, non-rhombic, no vis allochems, vry slw, wk effervescence, no vis por. Mstly vari-colored shales.

Begin 20 foot samples



Shale, gry, fissile-shrddy, some lms, hrd, silicified & xtln as abv, trc sli shaley to shaley xtln lms.

Shale vry lt gry & lt blu gry, sft, waxy, some silty drk gry shale & hrd drk brwn-gry silty, shaley, lms. Mstly mix of lms & vari-colored shales from abv.

Shale, brt red, prpl & brt olive grn. Trc chrt, off-wht, shrp frsh, semi-translucent.

Vari-colored shale, brt red, gry-lt gry-grn, prpl, olive, some sli sndy, red brwn shale. Trc lms tan, sli sndy, no vis por & trc shaley xtln lms 1 pc, shrp, frsh, jasper.

Shale, lt gry, vry sft, sli mshy, some drkr gry, trc blu gry shale. Also lt gry lmy shale to shaley lms no vis por. Trc gry sndy shale.

Wabaunsee 3440' (-629)

Shale, gry as abv & much brt red, some prpl & lt gry blu, grn. Increase in lms crm-tan vfn xtln, highly silicified, hrd res, no vis por. Also trc xtln pyrite.

Shaley dolo, lt gry, vfn xtln, hrd res, non-allochemical, no vis por, some sli dolomitic, lt gry shale, trc chrt, shrp, off-wht to lt gry.

Shaley dolomite, lt gry, no vis por, as abv. Trc chrt as abv.

Lms, lt gry, micro xtln, sli-vry shaley, fr-abndt, drk gry ooids, med-hrd res, no vis por. Some lmy gry shale. Trc gry, shrp chrt & trc red, shrp, chrt, Jasper.

Lms, lt gry, vfn-fn xtln, shaley, med-hrd res, no vis por. Trc chrt, much gry, lmy shale & some drkr gry sli shaley micro-vfn xtln lms.

Lms, lt gry, vfn-med xtln, abndt fossils, med res, some sli chlky to shaley, no vis por. Also much crn shale.

0 Total Gas (units) 10000
0 ROP (min/ft) 20

shale, pr-no vis por. Also much gry shale.

3550

Shaley lms, lt gry, often w/yell-grn/yellow brwn stn, vfn-fn xtl, med-hrd res, abndtly fossiliferous, no vis por. Also some oolitic.

Heward 3580' (-796)

Shaley lms & lmy shale crm-gry, vfn-fn xtl, few are fossiliferous, all no vis por. med-hrd res.

3600

Lmy shale & shaley lms gry, med-hrd res, vfn xtl, no vis por. Increase in gry shale, also trc of gry vfn grained, shaley SS/sndy shale. All no vis por.

Lms, crm, micro-vfn xtl, brtl to med res, sli chlky, no vis por. Only trc of fossils. Much gry shale & gry lmy shale as abv. Trc black carbonaceous shale.

3650

Lms crm-lt gry, vfn-fn xtl, med res, few to no allochems, trc-pr pinpoint, intr xtl por. Mstly pr matrix por.

Lms crm, vfn-fn xtl, sli chlky, med res, pr-no vis por. A few brtl pcs, still pr vis por. Some pcs sli fossiliferous.

Topeka 3677' (-866)

Lms crm, micro-vry fn xtl, often chlky, few to no allochems, brtl-med res, pr-no vis por.

3700

Lms, crm-lt gry, micro-vfn xtl, brtl-med res, no allochems no vis por. Some off-wht, sft, chlk, no vis por.

3700'-10': Lms, gry, vfn-fn xtl, med-hrd res, no vis por. A few pcs sli foss.

3710'-20': Lms, lt gry-gry, vfn-fn xtl, med-hrd res, no vis por, some sli shaley. A few large pcs platy shale.

Deer Creek Lm 3730' (-919)

3720'-30' Lms, crm-lt gry, vfn-fn xtl, med-hrd res, pr-no vis por, few to no allochems.

3730'-40': Lms, crm-lt gry similar to abv, sli more fossiliferous, med-hrd res, no vis por.

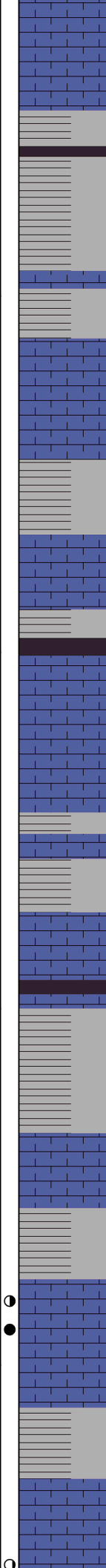
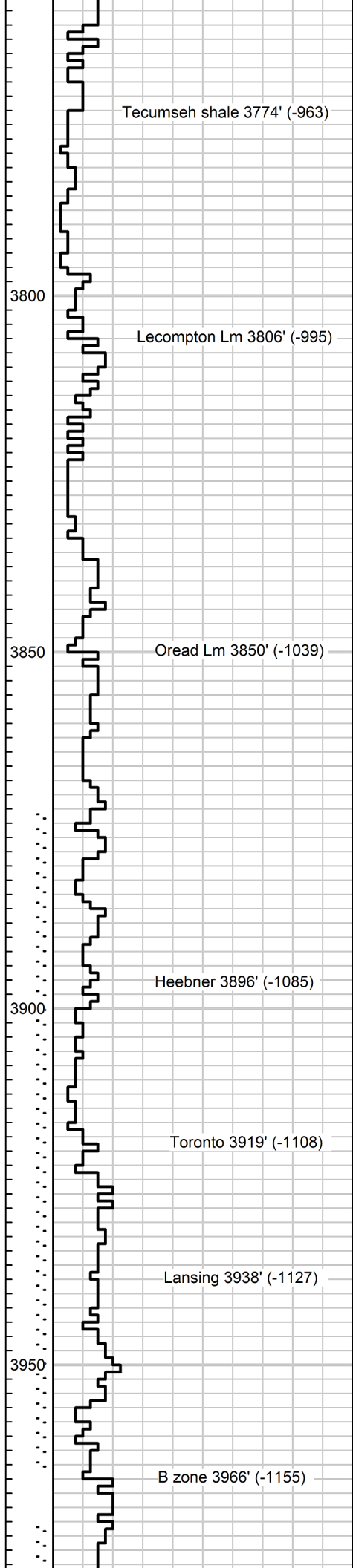
3740'-50': Lms, crm-tan, vfn-fn xtl, med-hrd res, trc sli yellowish, gry, med xtl, lms, all no vis por. Trc fossiliferous pcs.

3750

Total Gas (units) 10000
ROP (min/ft) 20

3750'-60': Even mix lms, crm-lt gry, vfn xtl, pr-no vis por, hrd res & much shale, drk gry, re-brwn, brt red, prpl, some shaley lt prpl lms, trc brt red semi-translucent chert. shrp & frsh.

Switch to 10 foot samples @ 3700'.



3760'-70': Sndy, lmy shale, gry, med-hrd res, abndt, vfn grains, tite, gry, clay matrix. Grades into shale, sndy, lms. No vis por.

3770'-80': Lms, tan-lt brwn, fn-med xtln, hrd tite & chlky, off wht, sft, no vis por. much gry shale, brt red etc. Some sft & mshy.

3780'-90': Lms, crm, vfn-fn xtln, med-hrd res, pr-no vis por. Some sli silicified.

3790'-3800': No sample

3800'-10': Lms, crm-tan, fn xtln, hrd res, no allochems, no vis por.

3810'-20': Lms, crm-tan, vfn-fn xtln, sft-hrd res, some sli chlky sft, non-allochemical, no vis por.

3820'-30': Lms, gry, fn-med xtln, sft-med res, often shaley, no vis por. Much blk carb shale, blk & brtl.

3830'-40': Lms, crm-tan, micro-vfn xtln, some sli chlky, also much lms, gry, fn-med xtln, shaley, sli foss, tan, micro xtln foss lms. Some SS, gry, vfn grained, shaley, brtl-semi fri, all pr-no vis por.

3840'-50': Lms, tan, fn-med xtln, all xtln matrix. Hrd, pr-no vis por, no allochems, to sli chlky, pr-no vis por, trc allochems.

3850'-60': Lms, crm, vfn-fn xtln, mst tite xtln matrix, much oolitic w/off-wht mud matrix, no vis por. Med-hrd res.

3860'-70': Lms, crm, vfn-fn xtln, hrd res, some chlky, sli foss, trc ool lms Also, shale, gry, red, marroon. Trc blk carb, blk, shale. Mstly, crm fn xtln lms as abv.

3870'-80': Lms, lt ry, micro-vfn xtln, med-hrd res, sli chlky/shaley, no vis por. mstly crm, vfn xtln, tite lms as abv.

3880'-90': Lms crm, some gry, sli foss, all vfn-fn xtln, med-hrd res, pr-no vis por, trc crm sli oolitic lms.

3890'-3900': Lms crm-lt gry vfn-fn xtln, med-hrd res, pr-no vis por. some wht to off-wht, sft-med res, chlky, trc vari-colored shales.

3900'-10': Lms, lt gry, micro-vfn xtln, hrd res, pr-no vis por. Much crm lms as abv. trc blk & vari-colored shales.

3910'-20': Lms, crm-lt gry, fn xtln, med-hrd res, pr-no vis por, some gry, lmy shale & shaley lms.

3920'-30': Lms, lt gry, fn xtln, sli shaley, med res, pr-no vis por. also some blk, sli carb shale, somewhat blocky.

3930'-40': Mstly trsh, vari-colored shales & gry-crm tite lms. Trc of lt gry, fn-med xtln ool lms, hrd, no vis por, drk gry lrg ooids.

3940'-50': Lms, off-wht-tan, vfn xtln, some sli chlky. Fr scat dead stn, in pnpnt intr xtln por. Trc lv blk stn & trc blk FO. 1 pc. Fr scat dull yell fluor, in pnpnt vugs. Non oomoldic. Gd fst strming cut, fr-gd bloom. fr-well sat, brtl-med res, pr overall por. No odor.

3950'-60': Lms, off-wht to crm, vfn xtln, brtl-med res, pr-no matrix por. Only a few pcs w/scat spty, pnpnt blk stn as abv. Trc blk lv stn & trc blk to drk brwn FO. fr-gd strming cut & bloom as abv. Mst pcs no show. No odor.

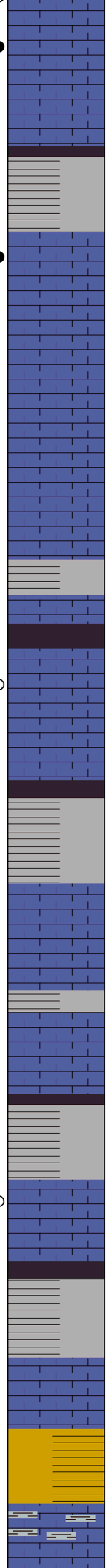
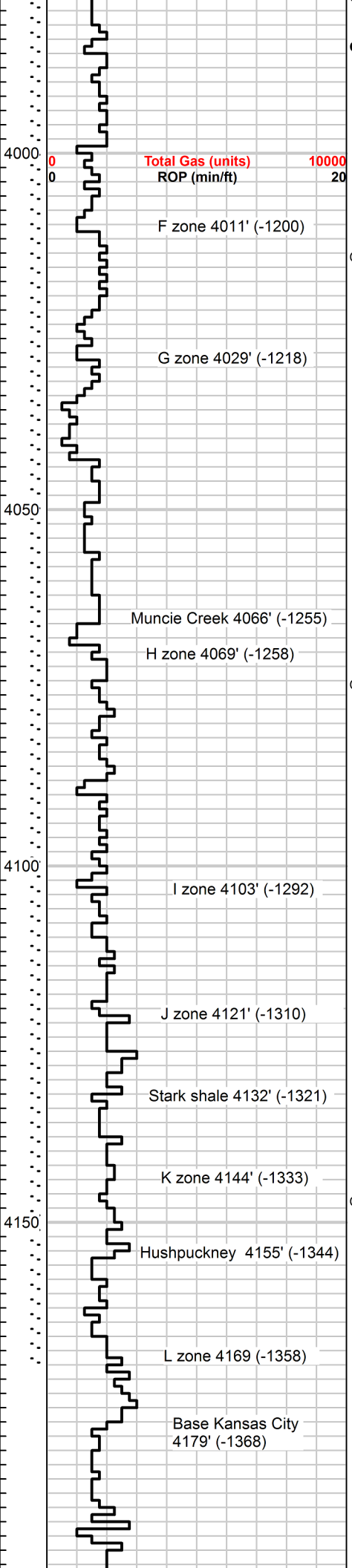
3960'-70': Shale, gry, brt red, marroon, lt grn. Also lms, lt gry, fn xtln, tite, only trc stn in pcs from abv. Trc lt gry abndtly ool lms, no vis por.

3970'-80': Lms, crm, vfn xtln, med-hrd res, no vis allochems, no vis porosity. Much vari-colored shale.

CFS @ 3930' 20 min: Shale, blk, sli carb, blk, sft-crsp. Mstly lms, gry-gry brwn, fn xtln, hrd tite. Trc brt red & gry blk shale.

CFS @ 3930' 40 min: Lms gry brwn-brwn, fn xtln, hrd res, sli foss, no vis por. Trc highly ool lms, no vis por. Trc pyrite, some shale as abv.

CFS @ 3965' 20 min: Much off-wht, sft, chlky & lms crm-lt gry, abndt rnd ooids, mst pr-no vis por, brtl-med res. A few pcs gry, non-ool lms w/lv stn in deep scat vugs. Trc FO on brk. gd fst strming cut & bloom, vry fnt dull



CFS @ 3985'

3980'-90': Vari-colored shales, gry, red, purple, maroon.

3990'-4000': Lms crm-lt gry, vfn-fn xtl, some oolitic, some sli chlky w/trc ooids. fr-gd scat blk stn & pr-fr uneven sat FSFO in a few pcs upon brk. Sli odor. Shw in scat pnprnt intr xtl vugs, fr-gd yell-wht uneven fluor, gd fst strming cut & bloom.

4000'-10': Lms gry, vfn-fn xtl, brtl-med res, fr-gd intr xtl por, fr-gd blk lv stn & sat in intr xtl por. SSFO, fr odor, fr-gd uneven, yell-grn fluor, gd fst strming cut & bloom. Sample contains abndt lms crm-tan, vfn xtl, tite, no show & abndt chrt, off-wht, shrp & frsh. Pcs w/shw poss btr sat than abv.

4010'-20': Lms, crm-lt gry, vfn-fn xtl, brtl-med res, gd spty lv stn, gd even sat, GSFO on brk. Fr even, dull fluor, gd thick, fst strming to boiling cut, exclnt bloom. Gd-vry gd sat in about 30-40% pcs gd show, fr odor.

4020'-30': Lms, crm-lt gry, micro-vfn xtl, mstly no vis por. Trc sli chlky, off wht to gry lms w/scat blk stn, trc FO, much vari-colored shale & some micro xtl, 2ndry calcitic lms.

4030'-40': Lms, crm-some lt gry, vfn xtl, also off-wht, med xtl, mst no vis por. A few pcs off-wht, chlky, w/vry sprse, pr edge stn, trc cut in a few pcs. May be from uphole?

4040'-50': Lms, crm-tan, crs xtl, calcitic, entirely crs intr grwn calcite xtls. Med-hrd res, pr vis, intr xtl por. Sprse, scat dead asphaltic stn in a few pcs, vry wk trc spty fluor, wk-fr cut in a few pcs. SSFO in a couple small, vfn xtl, lms pcs w/pr vis por.

4050'-60': Lms, tan-lt brwn, vfn-fn xtl, some tan-crm, abndtly ool, pr vis por. Mst non-allochemical, foss, hrd no vis por. 1 pc vfn xtl, tan lms w/sli edge stn, fr even fluor, gd strming cut, gd bloom. A few pcs w/scat stn, no intr xtl por & trc cut. No odor. Lms off-wht, tite SSFO on sqz, from 1 or 2 pnprnt vugs, no intr xtl por. Vry pr shw overall.

4060'-70': Lms mix, off-wht, chlky, crm vfn xtl, some abndtly ool, w/shallow oomldic vugs. Pr overall por, no shw, some lt brwn, fn xtl, tite, dnse. Sample has pr por in mst all pcs. Trc lv blk stn in a few pcs.

4070'-80': Lms, crm, micro-fn xtl, med-hrd res, few to no allochems, pr-no vis por. Some pcs sli chlky, some chrt, shrp & frsh, off-wht to crm. A few pcs lms w/trc blk stn.

4080'-90': Lms crm-tan vfn-fn xtl, hrd res, pr-no vis por. Some sli chlky, all non-allochemical. A couple pcs w/trc lv stn in vry pr intr xtl por.

4090'-4100': Lms, crm-lt gry, vfn-med xtl, hrd res, few to no allochems, pr-no vis por. Some sli chlky, also chrt, lt gry, shrp & frsh, fossiliferous.

4100'-10': Lms lt gry, micro xtl, hrd res, non-allochemical, no vis por. Chrt, wht, shrp & frsh.

4110'-20': Lms, gry, fn xtl, med-res, non-allochemical, tite, pr-no vis por, trc sli ool & foss pcs, pr-no vis por.

4120'-30': Vari-colored shale, gry, lt grn, blu-grn, prpl, blk & brwn red shale. Also gry shaley lms, also some ool, tite tan, vfn xtl lms, no vis por.

4130'-40': Vari-colored shale, increase from abv. Shaley lms, some tan, vfn-micro xtl lms, oolitic, no vis porosity. Hrd res.

4140'-50': Lms, crm-lt gry, sli grn tint, mst micro-vfn xtl, med-hrd res, some sli foss, no vis por. Much vari-colored shale as abv.

4150'-60': 1 pc lt gry spicular chert w/gd blk lv stn & trc FO on brk, a few other trc pcs tite lms w/wk shw stn. Much vari-colored shale. Hole slough or Stark?

4160'-70': Lms, lt gry-gry, fn-med xtl, mud-chlky matrix, ool, non-oomldic, non vuggular. Med res, pr-no vis por. rough bmpy text, ratty looking. Also vari-colored shale.

4170'-80': Vari-colored, shale, red, gry-grn, magenta, maroon, drk gry, blk. Trc, lt grn, vfn grained, sndy shale. A few pcs, colored shaley lms, hrd res, no vis por.

4180'-90': Vari-colored shale, gry, drk grn, maroon, red, prpl, drk gry. some hrd, shaley colored lms, no vis por.

4190'-4200': Lms, lt gry-gry, fn xtl, shaley, mottled w/strk maroon shale. Much lms, lt gry-tan. Micro-med xtl, trc foss, trc chrt inclns. Hrd res, no vis por. 1 pc lms gry, w/abndnt small rnd ooids, fr blk dead stn, non-vuggular, pr-no vis por, hrd res, fnt trc cut, no bloom.

fluor. no odor.
CFS @ 3965' 40 min: Lms, crm, ool, brtl-med res, mst pr-no vis por. A couple pcs w/vry sprs oomldc vugs, FSFO on brk, pr-fr vjvrv pr
CFS @ 3965' 60 min: Lms, crm, micro-vfn xtl, abndtly ool, no vis por. Possible trc dead stn, hrd res. Much vari-colored shale. I nst shw
CFS @ 3985' 20 min: Lms, crm, micro-vfn xtl, hrd tite, no vis por. A few small chips chlky lms w/vry pr scat stn, no cut. Drplts brwn FO floating in tray.

CFS @ 3985' 40 min: Lms, off-wht-crm, micro-vfn xtl, hrd res, trc ool pcs, pr-no vis por. Vry rare, spty, dead surfc stn in a few pcs. 1 pc w/wk-fr dying cut, vry wk bloom
CFS @ 3985' 60 min: Increase in vari-colored shale, much tite, crm, lms as abv, vry wk shw.

CFS @ 4020' 20 min: Lms, crm-lt gry, vfn-fn xtl, mstly tite, no vis por. About 15-20% pcs, lt gry-tan, 2ndry calc xtls, fr-gd vuggular pr, fr-gd even stn & sat, FSFO, blk FO on brk, some sli gassy. Thick boiling cut, exclnt blm, vry well sat. Sli odr.
CFS @ 4020' 60 min: Lms, mstly crm, vfn xtl, hrd tite, pr-no vis por, some pcs spty uneven drk brwn stn, a few w/trc FO on brk. Only 5% pcs are 2ndry xtl lms w/lrg deep vugs as abv. These pcs have SSFO, some vry hrd, bleed gsy FO on sqz. Mst gd, brt uneven yell fluor. Gd thick, fst strming cut, gd bloom. Fr odor. Losing show.

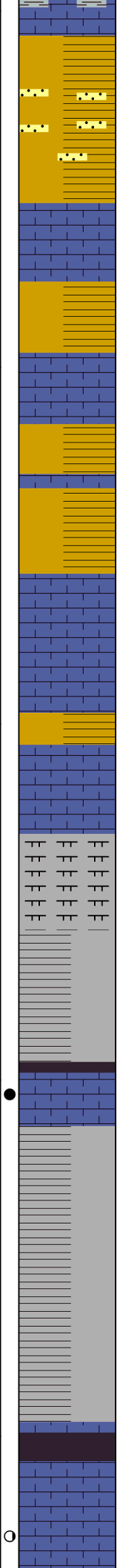
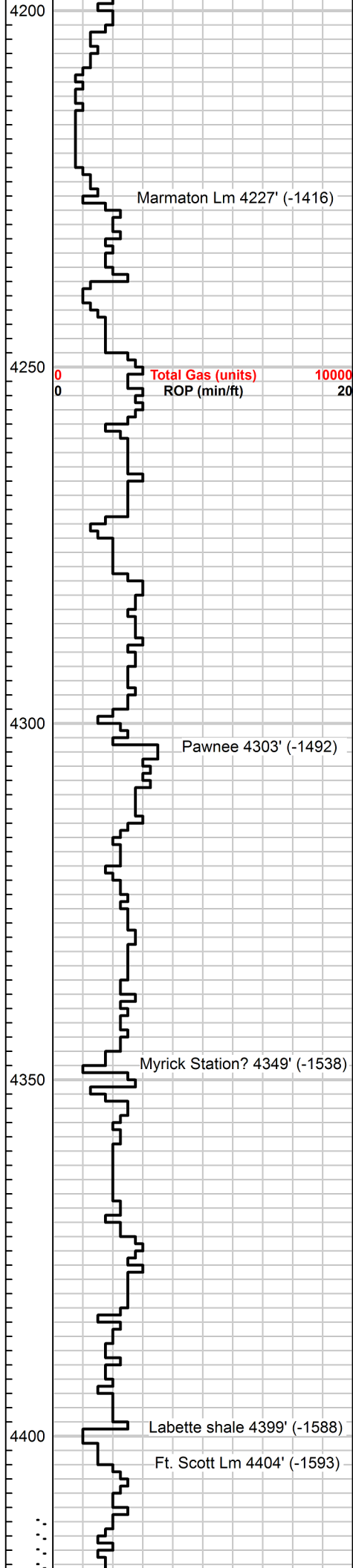
CFS @ 4071'

CFS @ 4120' 20 min: Lms gry, micro-fn xtl, no vis por. Some sli foss, hrd res, semi-smooth text, many w/sli yell-gry tint.

Kelly swivel broke down @ 4155'

CFS @ 4170' 20 min: Lms, lt gry-gry, micro-vfn xtl, hrd res, non-allochemical, no vis por. Mstly frly smooth text, some vari-colored shale, trc blk carb shale.

CFS @ 4170' 40 min: Lms, mstly gry, micro-fn xtl, med-hrd res, tite, no vis por. Trc sli foss pcs. a few pcs w/yell tint, fn xtl, rough text, no vis por. Increase in vari-colored shale, trc blk shale.



4200'-10': Shale, gry, red-brwn, marroon, drk gry, trc brt blu-grn. A few pcs brwn-yellowish tint, to drk brwn, vfn xtln tite lms, hrd res, oolitic-fossiliferous like pcs, w/stn from abv. No show.

4210'-20': Vari-colored shale like abv, red-brwn, gry, gry-grn. Some lms, lt gry, micro-vfn xtln. Non-allochemical, hrd res, no visible porosity.

4220'-30': Shale as abv, and some sndy shale/shaley SS, gry-lt yell-gry, off-wht, vry shaley/chlky matrix, no vis porosity.

4230'-40': Shale gry, prpl, red-brwn, grn, magenta. Also lms, tan-lt gry, micro-vfn xtln, hrd res, no vis porosity.

4240'-50': Shale, gry, marroon, grn, some black, trc hrd tite lms as abv, no vis porosity.

4250'-60': Lms, lt gry-tan, vfn-med xtln, brtl-med res, many oolitic, trc vfn grained, sndy lms, some pcs chlky, brtl. All pr-no vis por.

4260'-70': Shale, red-brwn, gry & drk grn-gry. Also lms, tan-lt gry, fn xtln, hrd res, non-allochemical, no vis porosity.

4270'-80': Lms lt brwn - gry, micro xtln, hrd res, no vis allochems, no vis por. much shale in sample.

4280' 90': Lms gry, fn xtln, hrd res, sli foss, gritty text, no vis por. some shaley sft lms-lmy shale.

4290'-4300': Shale marroon, gry, grn, purple, some lt gry tite vry shaley, vry fn grained SS clstrs. No vis por.

4300'-10': Lms off wht - gry, micro-vry fn xtln, tite, mstly hrd w/abndt vry small ooids, some gry chrt inclusions, a few pcs chlky matrix brit-med res, all no vis por.

4310'-20': Lms gry-tan micro-fn xtln, vry hrd res, abndtly oolitic as abv, no vis por. Increase in shales, red-brwn, gry, grn, prpl.

4320'-30': Lms gry micro-vry fn xtln, hrd res, non-allochemical, no vis por. some off wht, chlky, some gry shaley lms.

4330'-40': Lms gry vry fn-fn xtln, hrd res, non-allochemical, some sli shaley, no vis por.

4340'-50': Lms gry as abv, & shale gry to lt gry platy, w/some shaley lms. No vis por.

4350'-60': Shale gry, red-brwn earthy, prpl, some blk carb sli brtl. Much lms gry micro-vry fn xtln, hrd tite, no vis por. 1 small pc tan lms, fn xtln, w/ pr spty stn, wk-fr strming cut, fr bloom.

4360'-70': Shale gry-lt gry some lmy firm, trc wht sft chl. Some lms gry-tan-lt brwn fn-med xtln, no vis por. A few small pcs lms off wht-tan vry fn xtln, pr vis por w/pr uneven stn, fr sat trc FO in

4370'-80': 1 pc lms gry, med xtln, brtl-med res, pr inter xtln por, pr spty blk stn on surface, vry wk to no fluor, SSFO blk droplets FO from med size interxtln vugs upon brk. No odr in cup.

4380'-90': Mstly lms gry vry fn xtln tite, trc few small pcs lms off-wht to lt gry, vry fn-fn xtln, brtl, fr inter xtln por, w fr scat drk brk to blk lv stn, fr-gd brt yell-wht fluor, fr fst strming cut, fr bloom, trc FO on brk. No odor.

4390'-4400': Shale, blk, marroon, prpl, grn etc. A few pcs, lms tan micro-med xtln hrd res, some lt gry shaley, no vis por. trc SS clstrs lt gry vry fn grained, vry shaley, sft, semi-friable, pr-no intr granular por.

4400'-4410': Shale, blk, vry sli-non carbonaceous.

4410'-20': Lms gry, micro-fn xtln, mstly hrd res, no vis por. vry sli ool. sli foss. trc gast & spic foss. some sli chlky med res

inter xtln pinpnt por, gd yell grn even fluor, fr-vry gd cut brk only, fr-exclnt bloom

2-3 pcs vry fn xtln gry lms w/trc lv stn, wk-fr strming cut, fr-gd cut on brk

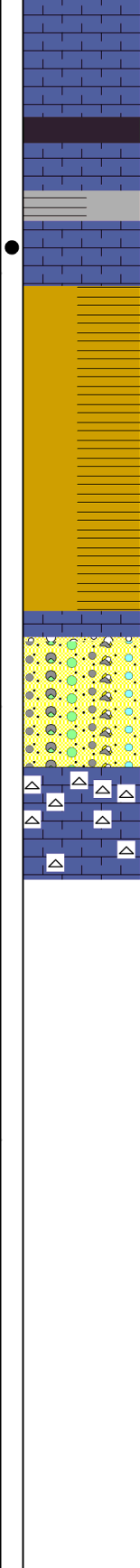
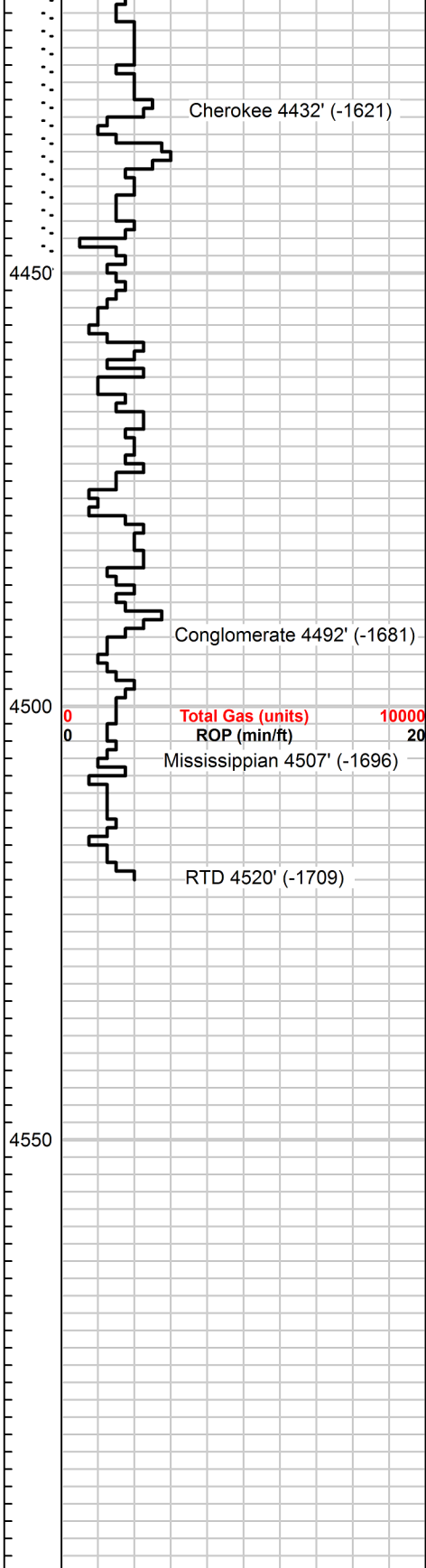
A few clstrs lt gry SS, vry fn grained sft shaley, no vis por.

CFS @ 4390' 20min: Shale blk, sft-brtl blk, sli carb. 1 pc lms w/lv stn

4390' 40min: Shale gry, blk, marroon, etc

4390' 60 min: Shale, blk, gry, red, prpl, grn.

CFS @4420' 20min: Lms, gry, tan, vry fn xtln, hrd res, sli foss, some gast foss. no vis por. off wht sli chlky med



4420'-30': Lms gry micro-vry fn xtln, hrd res trc foss, some pcs sli chlky, no vis por. 1 pc lms off wht, sli chlky, vry fn xtln, w/fr blk scat stn, wk slw strming cut, strng slw strming cut upon brk, wk bloom, gd bloom on brk.

4430'-40': Lms gry micro-fn xtln, mst hrd, some sli chlky med res, few to no allochems, pr-no vis por. A few pcs w/pr scat spty lv brwn stn, flks brwn lv stn upon crsh, a few pcs almst sucrosic crsh. Fr yell, spty to even fluor, wk-fr fst strming cut, Wk- gd bloom, gd fst strming cut upon brk in stnd pcs. NSFO, no odr.

4440'-50': Lms gry micro-fn xtln as abv, only a few pcs w/fr uneven lv stn, fr fluor, wk-fr strming cut & bloom, NSFO, no odor.gd increase in cut upon crsh.Also shale, blk carb, red marroon, gry, etc

4450'-60': Shale, red-brwn, gry, grn, marroon, prpl, waxy to earthy lstr, blk. Also blk shrdy shale.

4460'-70': Lms off-wht, gry, lt gry grn/sli glauconitic, micro-vry fn xtln, sli shaley, semi-smooth text, med-hrd res, non-allochemical, no vis por. Vari-colored shales as abv.

4470'-80': shale red-brwn, gry, marroon, grn, prpl, sli waxy, also lms lt gry, micro-vry fn xtln, hrd res, non-allochemical, no vis por.

4480'-90': Shale, gry, red-brwn, gry-grn, blu-grn, prpl. Sli sndy, vry sli pyritic.

4490'-4500': Lms off-wht to gry, tan-brwn, micro xtln, med-hrd res, some off-wht sli chlky. trc ooids a few lt gry pcs, no vis por. 1 pc dnse tan lms w/fr uneven surface stn fr-brt yell fluor, wk fst strming cut wk bloom, no vis intr xtln por.

4500'-10': Cnglmt, brt yell & red org, mshy, sli slty shale, trc brt yell chrt & lms. trc xtln calcitic lms?, off wht, fn xtln semi-sucrosic, to hrd tite sli shaley, fr-quick effervessence.

4510'-20': Chrt, shrp, frsh, brt yell, org, crm to off-wht, spicular. Some crm sli tripolitic. Vry much vari-colored shale in sample.

vis por, sh w/blk chky med res sli ool, no vis por.

4420' 40min: Lms lt gry to gry-tan, micro to fn xtln, hrd res, few to no allochems, no vis por

4420' 60min: Lms gry-tan micro-vry fn xtln, hrd res, trc foss, pelecypd, no vis por. Trc off wht vry fn grained SS clst, brtl, semi-friable chlky matrix, pr-no vis por. Increase blk carb shale.

4420' 80min; Lms gry-tan, non-allochemical, no vis por, & off wht chl, some vry lt gry/off wht micro xtln lms, no vis por. Increase in red, gry & blk shales.

CFS @ 4450' 20min: Lms gry-tan, micro-fn xtln, trc foss, mst pr-no vis por. 1 pc tan-ambr med xtln semi transclnt lms, med res, fr scat blk stn, bleeding SSFO blk FO from pinpoint intr xtln por on brk.

4450' 40min: 1 pc ambr xtln lms trc bleeding FO upon brk fr scat stn 2 pcs sli chlky, trc stn, trc cut, fr-gd cut & bloom upon crsh.

4450' 60 min: Lms crm, micro-vry fn xtln, med-hrd res, mst no vis por, a few pcs lms chlky w/sli stn & 1 pc lms ambr tite xtln, hrd res, w/SSFO on brk. trc shrp wht chrt & grn shaley lms.

CFS @ 4520' 20min: vari-colored shale, chrt, brt yell to red ornge, off-wht to crm, sli spicular, some sli weathered, brtl.

4520' 40min: Lms fn-med xtln brtl, lt gry, shaley w/spty marroon stn/tint. pr vis por. Vari-colored shale & chrt as abv. Off-wht, tan chrt w/sli yell tint oolitic. All pr-no vis por, trc clr-rose crs-vry crs qtz grains.

4520' 60min: vari-colored shale & chrt as abv. 2 pcs lms brwn vry fn xtln w/pr scat lv blk stn, trc FO on brk, gd brt yell-grn fluor, gd cut & bloom (probably from abv congl).