

LITHOLOGY STRIP LOG

WellSight Systems

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

Well Name: Forsyth 'B' #2-17
Location: 2300' FSL & 900' FEL, Sec. 17-T32S-R12W, Barber Co., KS.
Licence Number: 15-007-24123-00-00
Spud Date: 1/9/2014
Surface Coordinates: 2300' FSL & 900' FEL, Sec. 17-T32S-R12W
Region: Medicine Lodge North
Drilling Completed: 1/20/2014

Bottom Hole Same as above
Coordinates:
Ground Elevation (ft): 1591' K.B. Elevation (ft): 1600'
Logged Interval (ft): 3150' To: 4890' Total Depth (ft): 4890'
Formation: Arbuckle at Total Depth
Type of Drilling Fluid: Freshwater/Gel to 3089'; Chemical Gel 3089' to 4890'

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OPERATOR

Company: Herman L. Loeb, LLC.
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GEOLOGIST

Name: Jon D. Christensen
Company: Consulting Petroleum Geologist
Address: 9002 W. Silver Hollow St.
Wichita, KS. 67205-8856

Cores

None Taken

DSTs

DST #1(Snyderville Sand/Toronto) 3634' - 3682'(Corrected Depths to Log) Test Times 15"-45"-30"-60" IFP Weak Blow built to 1", FFP Weak Surface Blow throughout, no Blowback on SI's; REC: 5' Drlg. Mud, no shows of oil or gas; IFP 12-12#, ISIP 85#, FFP 13-14#, FSIP 48#, IHP 1773#, FHP 1702#, BHT 106 Deg. F.

DST #2("Upper" Miss. Chert) 4359' - 4384'(Corrected Depths to Log) Test Times 15"-45"-30"-60" IFP Weak 1" Blow, FFP Weak 0.25" Blow, no Blowback on SI's; REC: 10' Drlg. Mud, no shows of oil or gas; IPF 13-19#, ISIP 58#, FFP 17-22#, FSIP 49#, IHP 2181#, FHP 2156#, BHT 117 Deg. F.

DST #3("Lower" Miss. Chert) 4384' - 4424'(Corrected Depths to Log) Test Times 15"-45"-30"-60" IFP Weak 1" Blow, FFP Weak 1.5" Blow, no Blowback on SI's; REC: 10' Drlg. Mud, no shows of oil or gas; IFP 17-26#, ISIP 70#, FFP 22-24#, FSIP 66#, IHP 2220#, FHP 2196#, BHT 115 Deg. F.

DST #4(Basal Miss. Chert) 4483' - 4511'(Corrected Depths to Log) Test Times 15"-45"-30"-60" IFP Weak 0.5" Blow, FFP Weak 1" Blow, no Blowback on SI's; REC: 20' SL Oil Specked Mud, no gas, no water; IFP 14-20#, ISIP 86#, FFP 20-22#, FSIP 67#, IHP 2235#, FHP 2268#, BHT 119 Deg. F.

Comments

1/9/14 MIRU Sterling Drilling Rig #4, Spud at 5:30 PM; 1/10/14 TD. 265' - WOC; 1/11/14 Drilling at 1178'; 1/12/14 TD. 2160' -Circ. for Plugged Bit; 1/13/14 Drilling at 2565'; 1/14/14 Drilling at 3395'; 1/15/14 TD. 3680' - TOH with DST #1; 1/16/14 Drilling at 4204'; 1/17/14 TD. 4380' - TIH after DST #2; 1/18/14 TD. 4420' - Rig Repairs; 1/19/14 TD. 4508' - DST #4; 1/20/14 Drilling at 4704' - reached TD. 4890' at PM.; 1/21/14 RTD. 4890', LTD. 4894' - Logging(Nabors, Co.),

Set new 13 3/8"(55#) Surface Casing at 262' with 300 sacks cement(Quality Cementing). Cement did Circulate. PD. 5:45 AM. 1/10/14.

Set new 5 1/2"(15.5#) Production Casing at 4880' with 200 sacks of "Loeb Blend" cement(Basic Energy Services). PD. 3:45 AM. on 1/22/14.

Surveys: 0.75 Deg. at 265'(Surface Casing); 0.50 Deg. at 1146'(Wireline Survey); 0.50 Deg. at 2160'(Bit Trip); 1.25 Deg. at 3249'(Wireline Survey); 0.50 Deg. at 3680'(DST #1); 0.50 Deg. at 4380'(DST #2); 0.75 Deg. at 4890'(RTD).


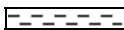

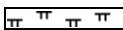

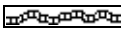




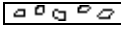


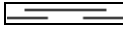

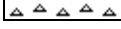


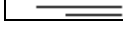

Pipe Strap at 3680'(DST #1): Strap 0.15' Long to the Board, no correction made to the Board.

After review of the Nabors Co. Logs, structural position and positive indications of commercial amounts of hydrocarbons, the operator elected to set new 5 1/2" Production Casing for completion in the Miss. Chert section. Prior to Abandonment, the Simpson Sand should be perforated and tested from 4787' - 4790'(log depths).








































































LOG TOPS: Howard 3166(-1566), Elgin Sand 3556(-1956), Heebner Shale 3660(-2060), Snyderville Sand 3672(-2072), Toronto 3680(-2080), Lower Douglas Sand 3812(-2212), Brown Lmst. 3824(-2224), Lansing 3829(-2229), K.C. Drum 4062(-2462), Stark Shale 4192(-2592), Base Kansas City 4284(-2684), Marmaton 4292(-2692), Miss. Chert 4354(-2754), Kinderhook Shale 4546(-2946), Woodford Shale 4614(-3014), Viola 4646(-3046), Simpson Shale 4756(-3156), Simpson Sand 4770(-3170), Arbuckle 4856(-3256).

NOTE: This log was shifted downward by 2' to 4' for correlation purposes with the Nabors Co. Logs.

ROCK TYPES

 Anhy	 Clyst	 Gyp	 Mrlst	 Shgy
 Bent	 Coal	 Igne	 Salt	 Sltst
 Brec	 Congl	 Lmst	 Shale	 Ss
 Cht	 Dol	 Meta	 Shcol	 Till

ACCESSORIES

MINERAL		FOSSIL	
 Anhy	 Gyp	 Algae	 Ostra
 Arggrn	 Hvymin	 Amph	 Pelec
 Arg	 Kaol	 Belm	 Pellet
 Bent	 Marl	 Bioclst	 Pisolite
 Bit	 Minxl	 Brach	 Plant
 Brecfrag	 Nodule	 Bryozoa	 Strom
 Calc	 Phos	 Cephal	
 Carb	 Pyr	 Coral	STRINGER
 Chtdk	 Salt	 Crin	 Anhy
 Chtlt	 Sandy	 Echin	 Arg
 Dol	 Silt	 Fish	 Bent
 Feldspar	 Sil	 Foram	 Coal
 Ferrpel	 Sulphur	 Fossil	 Dol
 Ferr	 Tuff	 Gastro	 Gyp
 Glau		 Oolite	 Ls
			 Mrst
			TEXTURE
			 Sltstrg
			 Ssstrg
			 Boundst
			 Chalky
			 Cryxln
			 Earthy
			 Finexln
			 Grainst
			 Lithogr
			 Microxln
			 Mudst
			 Packst
			 Wackest

OTHER SYMBOLS

POROSITY

- [E] Earthy
- [B] Fenest
- [F] Fracture
- [X] Inter
- [I] Moldic
- [O] Organic
- [P] Pinpoint

[V] Vuggy

SORTING

- [W] Well
- [M] Moderate
- [P] Poor

ROUNDING

- [R] Rounded
- [r] Subrnd
- [a] Subang
- [A] Angular

OIL SHOW

[•] Even

[•] Spotted

[O] Ques

[D] Dead

INTERVAL

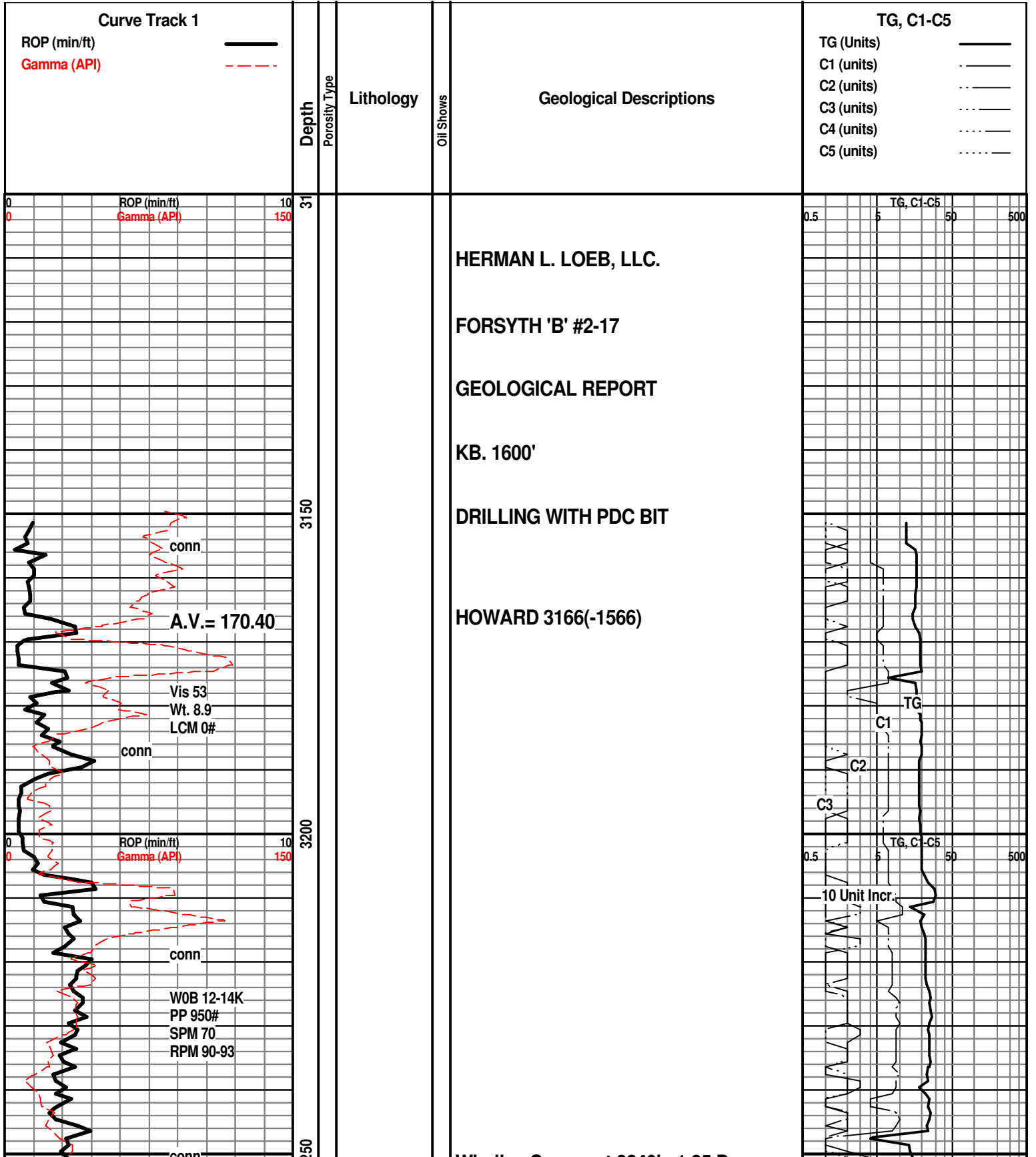
[■] Core

[□] Dst

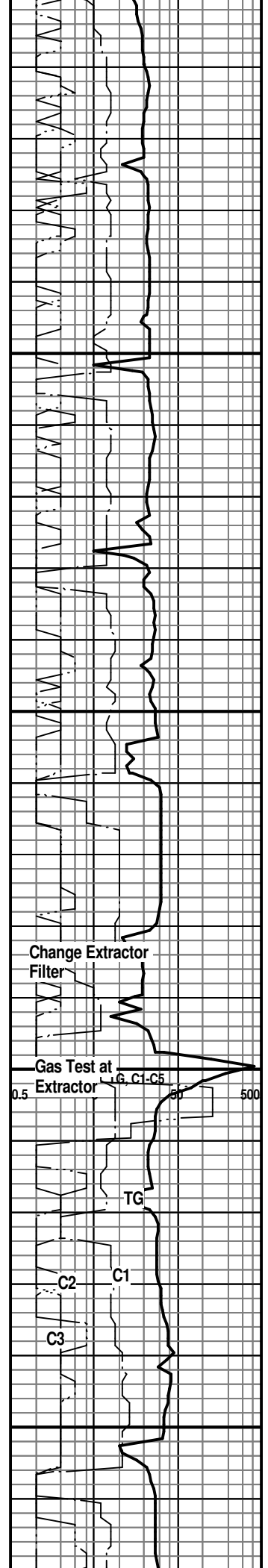
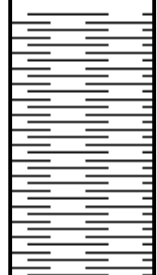
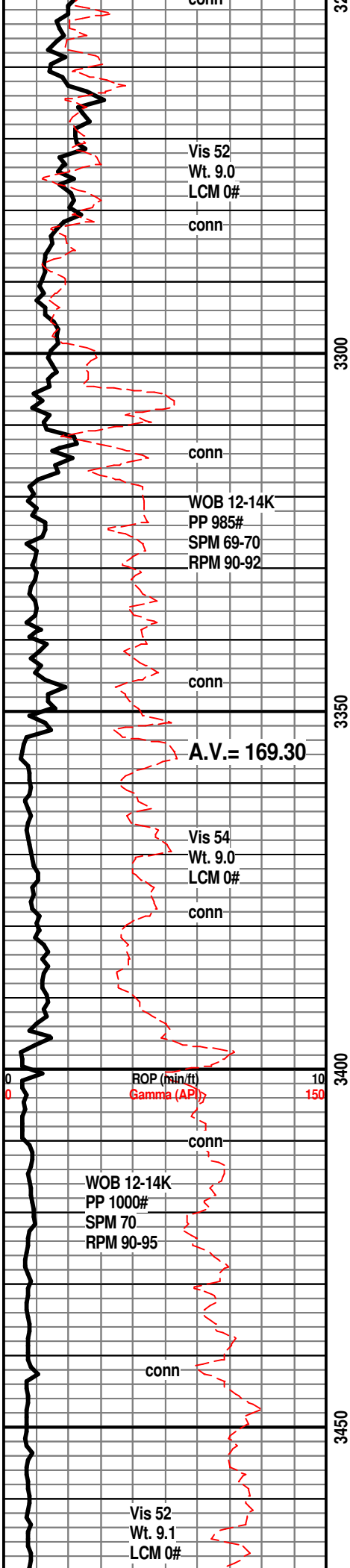
EVENT

[▽] Rft

[▲] Sidewall

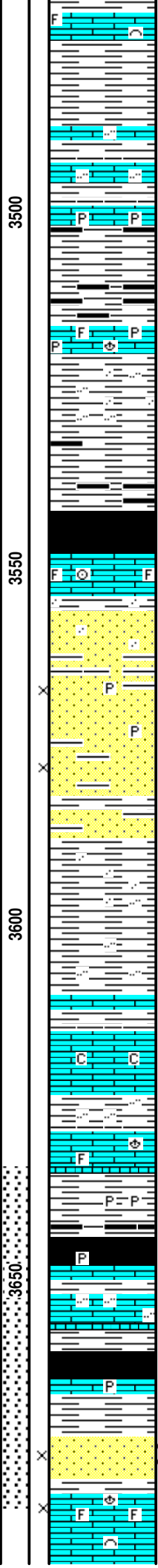
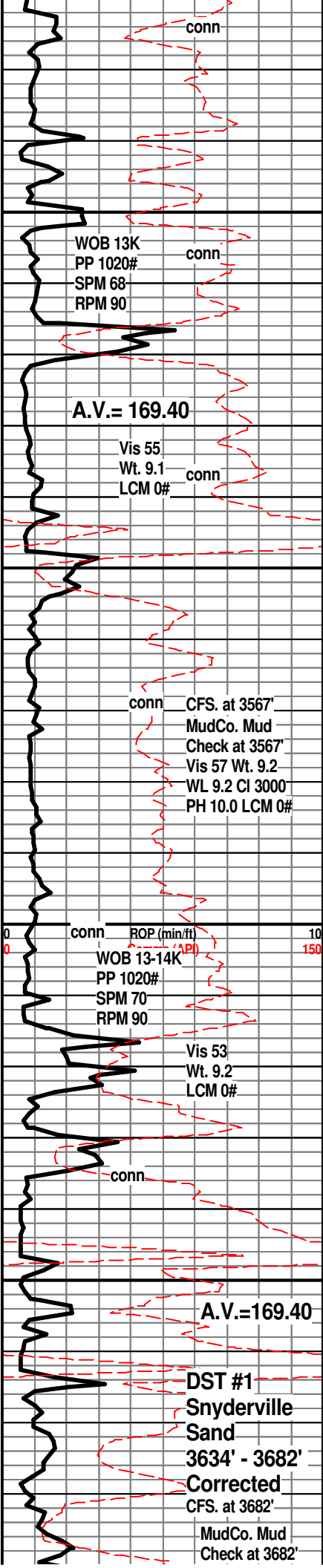


Wireline Survey at 3249' = 1.25 Degree deviation



SH; med to dk gy, platy, rarely silty

20' Wet and Dry Samples at 3460'



LM; med to dk brn, hd, micritic, occ foss

SH; med to dk gy, platy

LM; med to dk brn, some gritty text - silty ip, most dense

LM; med to dk gy, gy brn, dense, pyr ip.

SH; dk gy - blk, carb ip, platy

LM; med brn, dense, foss ip, hd, scat pyr

SH; med gy, silty to occ sandy, soft ip.

SH/COAL; dk brn, blk, carb ip, trc gas bubbles

SH/COAL; blk, v. dk brn, carb, gassy ip.

LM; lt to med brn/gy brn, foss, occ cse xln, most well cem, dull yel fluor, no stn or odor, ns.

ELGIN SAND 3556(-1956)

SS; lt gy, most f gr qtz, clusters, argil ip, mica, poor to gd intergran por, subrnd gr, rare pyr, no fluor, no stn or odor, no gas kick

SS; lt gy, vf to fgr qtz, clusters, fri ip, fair to occ gd intergran por, interbdd v. mica-argil ss, grading into sandy sh, no fluor, ns.

SH; lt gy, silty to occ sandy, platy

LM; med to dk brn, hd, micritic, blocky, interbdd tan/lt brn fxl n partly chalky lmst, no vis por, ns.

SH; med gy, gy grn, silty ip.

LM; lt to med brn, tan, foss ip, most well cem, dull yel min fluor, ns.

SH; dk gy - blk, platy, scat pyr, trc gas, soft ip.

LM; med to dk brn, hd, foss ip, trc gritty text lmst, no vis por, no fluor, ns.

HEEBNER SHALE 3660(-2060)

SH; blk, carb, soft to blocky, trc gas

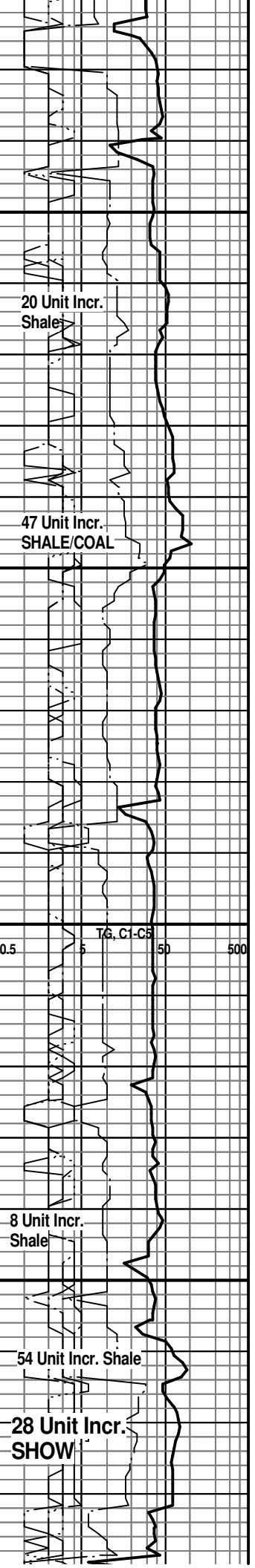
SNYDERVILLE SAND 3672(-2072)

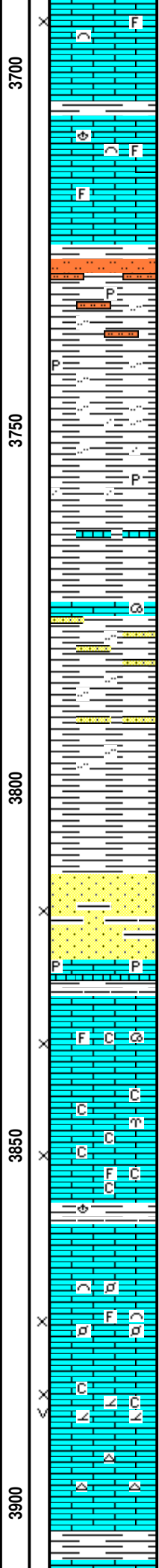
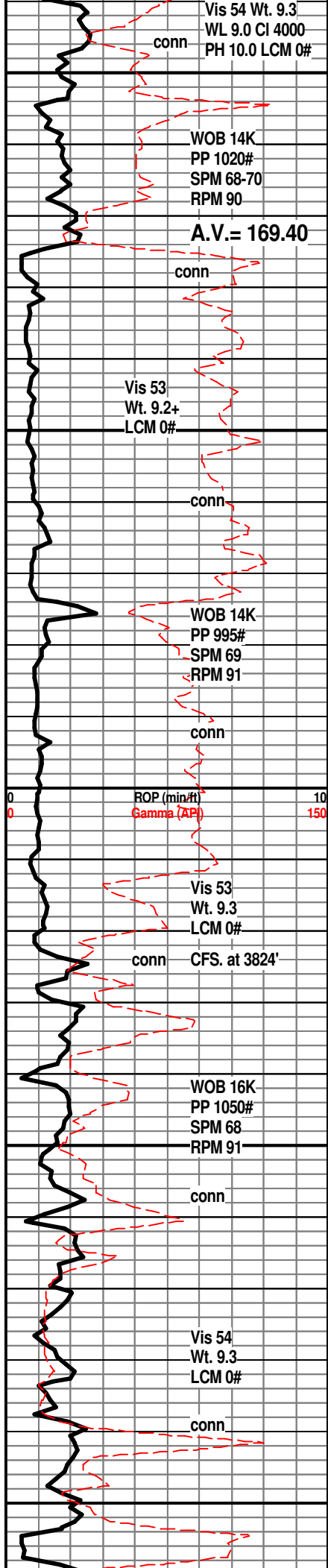
SS; lt gy, lt brn(oil stn), pred. vf gr qtz, clusters, few clusters w/spotted lt brn oil stn, few gas bubbles, SSFO, v. faint odor, instant cut when crushed(10-15% of sample with show)

TORONTO 3680(-2080)

DST #1: Snyderville SS. 3634' - 3682'

LM; tan to lt brn, foss, scat poor interpart por, lt yel min





fluor only, no vis stn, no odor, ns.

LM; tan to buff, cream, foss ip, trc poor interpart por, occ cse spar calc, med/brite yel min fluor, no stn or odor, no gas kick

LM; off wh, buff, lt gy, foss ip, most dense, blocky, v. dull yel to no fluor, no vis por, ns.

DOUGLAS SHALE 3724(-2124)

SH; lt to med gy, silty w/interbdd mica sltst, occ pyr

SH; med gy, platy, silty to occ sandy, rare pyr

LM; med brn, gy brn, dense, foss ip.

SH; med gy, silty to occ sandy, interbdd lt gy vf gr qtz ss strngs, tite

LOWER DOUGLAS SS 3812(-2212)

SS; lt/med gy, vf. to f gr qtz, clusters, abnt mica, fair/gd intergran por, fri, no fluor, no vis oil stn, no odor, no sample shows, some argil

BROWN LMST. 3824(-2224)

LANSING 'A' 3829(-2229)

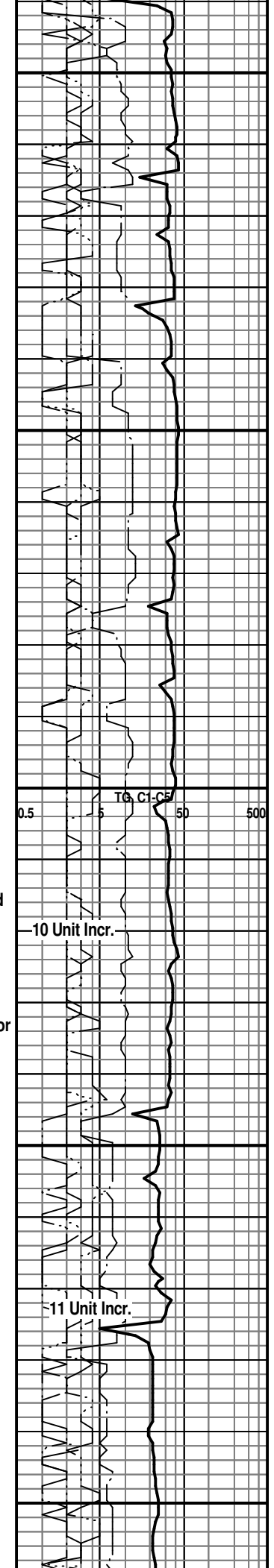
LM; off wh, tan, buff, f to med xln ip, scat foss mat, poor interxln por, dull to lt yel min fluor, ns.

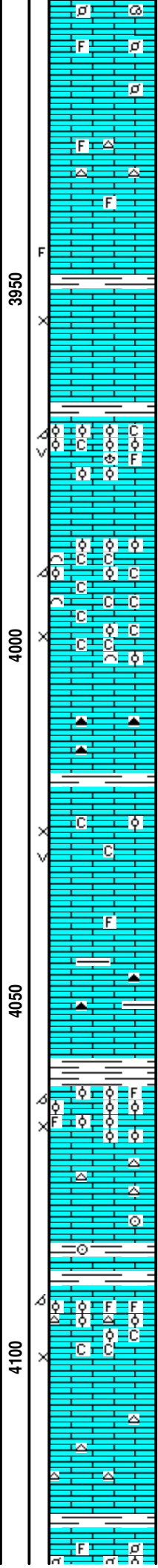
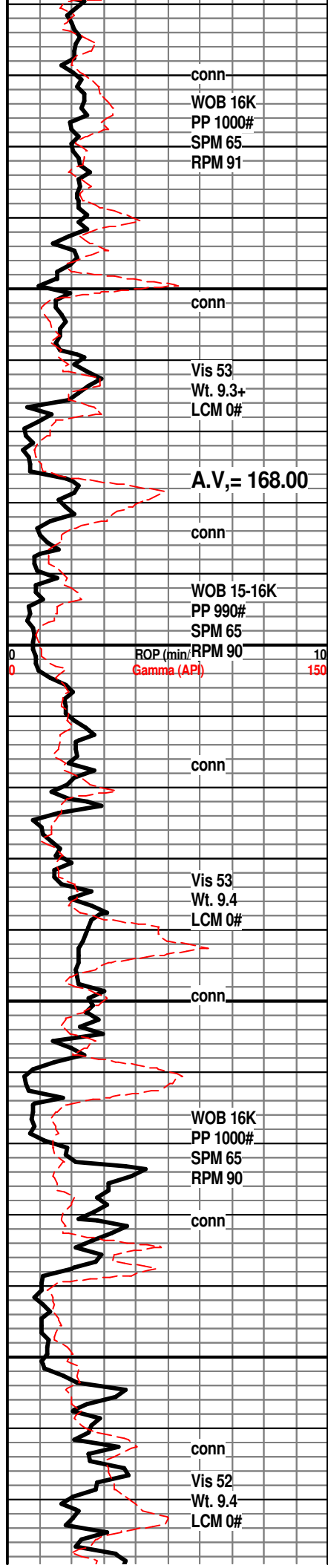
LM; off wh, lt gy, tan, f to med xln w/occ foss mat, interbdd soft chalk and chalky mtx, dull yel min fluor, no vis stn, no odor, ns.

LM; lt brn, buff, tan, f to med xln, scat well cem foss mat/occ foss hash w/pellets, interbdd med xln chalky lmst w/poor interxln por, dull yel fluor, no vis stn, no odor, no sample shows

LM; tan to lt brn, buff, foss ip w/some sucrosic text, partly dolomitic, chalky mtx, gd interpart w/scat vug por, lt yel min fluor, no stn, ns.

SH; med to dk gy, fiss, soft





LM; tan to buff, lt brn, fxln w/scat foss mat, most well cem, no vis por, no stn, ns.

LM; tan to lt brn, foss ip, most dense, interbdd gy to off wh cht, no vis por, no fluor, ns.

LM; tan to med brn, scat cse spar calc xtals, poss frags, med yel min fluor, no odor, ns.

LM; tan, off wh, lt brn, f to med xln w/scat spar calc xtals, fair interxln por, lt yel min fluor, no stn or odor, ns.

LM; lt brn, buff, foss - oolitic, well dev. oomoldic w/vug por, lt yel min fluor, minor chalky mtx, no stn or odor, ns.

LM; tan to buff, cream, highly foss w/scat oolitic lm, poor to fair interpart/scat moldic por, abnt soft chalk and chalky mtx, med yel min fluor, no stn or odor, no gas kick

LM; med brn, hd, blocky, scat smoky cht, tite

LM; tan to buff, gran to med xln, fair to gd interxln w/occ vug por, lt yel fluor, rare chalky mtx, no stn or odor, ns.

LM; med brn, occ dk gy brn, argil ip, hd, scat dk gy cht, tite

K.C. DRUM 'H' 4062(-2462)

LM; lt brn, tan, oolitic, small to occ med size moldic por, abnt compact "stacked" ooids w/fair interpart/moldic por, lt yel min fluor, no stn or odor, no gas kick

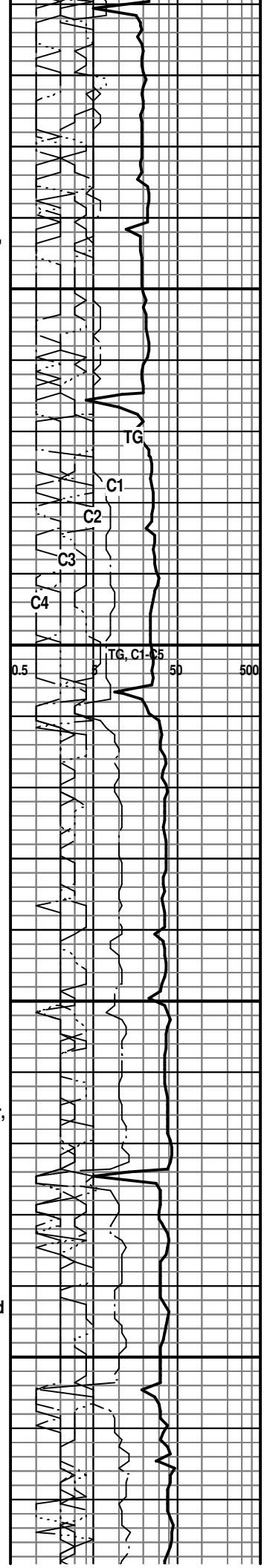
LM; dk brn, mottled text, hd, scat gy cht

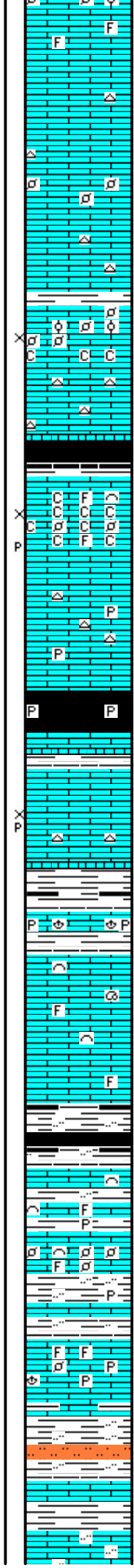
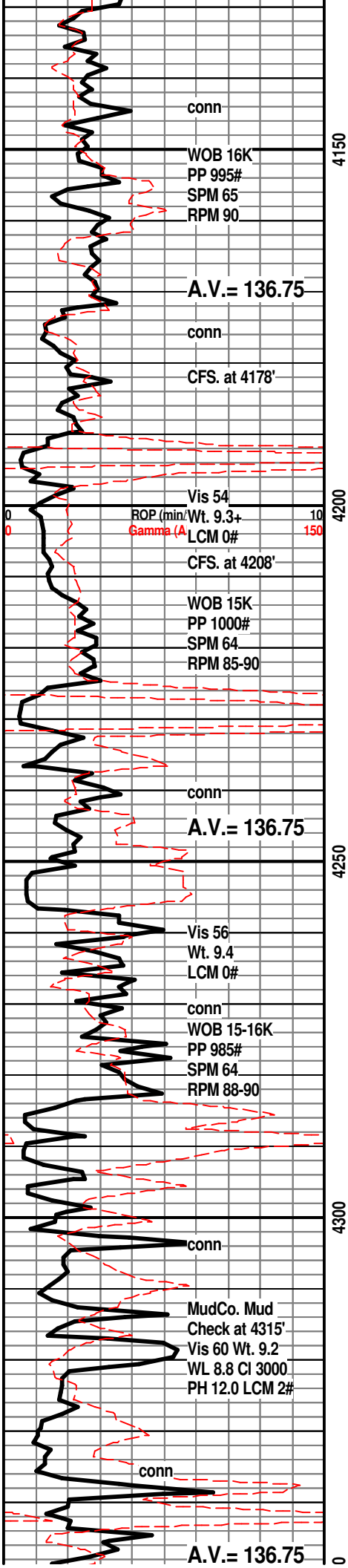
SH; dk gy, platy, foss ip.

LM; lt brn, highly foss - partly oolitic, most small to med size oolites, fair oomoldic por, scat gy oolitic cht, interbdd gran to cse xln lmst w/partly chalky mtx, dull yel fluor, no stn or odor, no gas kick

LM; lt to med brn, hd, most micritic, scat off wh to gy cht, no vis por, ns.

SH; med gy, gy grn, platy





LM; tan to cream, lt brn, foss w/scat pellets/ooids w/scat foss hash, most well cem,

LM; tan to lt brn, foss ip, scat small pellets, much dense micrite, no vis por, v. dull yel min fluor, no stn or odor, ns.

LM; tan to lt brn, foss - finely pelletal, rare ooids, poor to fair interpart por, partly chalky mtx, no fluor, no stn or odor, no sample shows

STARK SHALE 4192(-2592)
SH; blk, carb ip, trc gas bubbles

SWOPE 4196(-2596)
LM; tan to off wh, buff, foss w/poor to fair interpart por, occ p-p por, abnt wh soft chalky and chalky mtx, dull to lt yel min fluor, no stn or odor, no gas kick

LM; tan to lt brn, hd, most micritic, scat pyr, minor off wh/gy cht, no vis por, ns.

HUSHPUCKNEY SHALE 4226(-2626)
SH; blk, carb, gassy, occ pyr, blocky

HERTHA 4232(-2632)
LM; tan to lt brn, f to med xln ip w/fair interxln and p-p por, interbdd hd lt/med brn dense micrite, scat lt yel min fluor, no stn, no apparent gas kick, occ gy spicular cht, ns.

SH; gy grn, dk gy - blk, platy

LM; dk brn, pyr, v. hd, scat well cem foss, tite

LM; tan to lt brn, foss ip, most well cem, rare gy cht, interbdd hd brn micrite, no vis por, dull yel min fluor, no stn or odor, ns.

BASE KANSAS CITY 4284(-2684)
SH; grn, gy grn, blk, pyr ip, occ silty

MARMATON 4292(-2692)
LM; lt to med brn, foss ip, thinly bdd, interbdd w/grn to gy grn fiss sh, occ pyr

LM; tan to lt brn, foss w/well cem hash/pelletal mat, lt yel min fluor, no vis stn, no odor, ns.

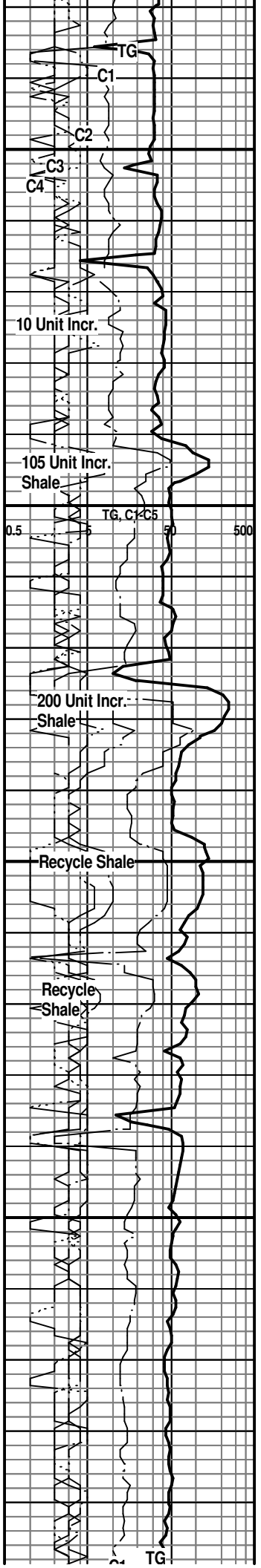
SH; grn, silty ip, platy, occ pyr

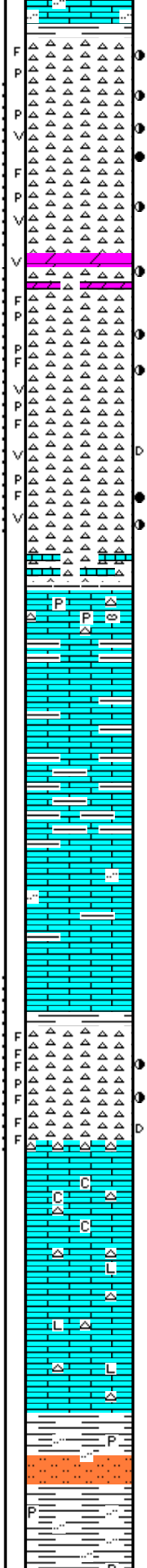
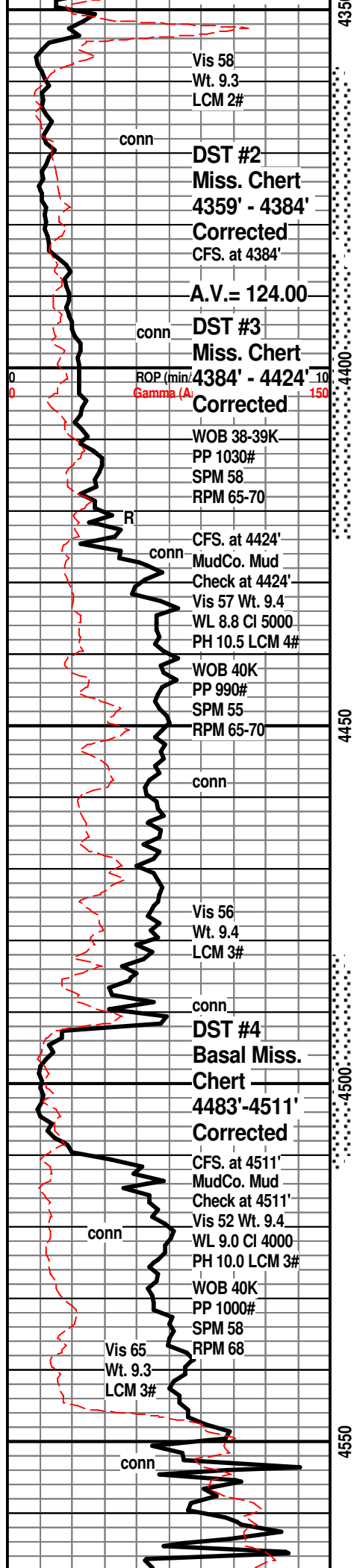
LM; tan to buff, lt brn fxln w/scat foss mat, blocky, occ pyr, no vis por, dull to lt yel fluor, no stn or odor, no gas kick, interbdd grn foss to argil lmy sh

SH; grn, gy grn, brn, silty w/interbdd sltst.

LM; tan to lt brn, rare lt gy brn, hd, micritic, tite

LM; lt to med brn, occ gritty text - silty to sandy ip, hd,





no vis por, no fluor, ns.

MISS. CHERT 4354(-2754)
CHT; wh, opaque to transl, fresh and tripolite, frags evident w/p-p por, sev. pcs. w/med brn oil stn, SFO & gas bubbles, fair odor, med yel fluor
CHT; wh, lt/med brn(oil stained) tripolite, fair vug and p-p por, spotted to even brn stn, SFO, gas bubbles, med yel fluor, fair gassy odor, gd cut
CHT; wh/med brn, most tripolite(80% trip, 20% fresh), much even oil stn, gd odor, med/brite yel fluor, SSFO, few pcs. bleeding oil drops

DST #2: Miss. Chert 4359' - 4384'
DOL; tan, med rhombic, scat vug por, lt brn oil stn, brite yel fluor, gd cut, fair odor, cherty
CHT; wh, lt brn, spotted med brn stn, trip and fresh(est 25% trip, 75% fresh), SSFO, few gas bubbles, vis frags, occ p-p por, fair odor
CHT; wh, opaque, trip and fresh, dk brn spotted live oil stn, rare blk stn, fair odor, med/brite yel fluor, sev. pcs bldg oil/gas, frags w/occ vug por
CHT; wh, opaque, most fresh(90%), frags w/scat live and dead tar/gils, sev. pcs bleeding oil/gas, occ vug por, fair odor, med/brite yel fluor
CHT; wh, med brn, pale grn, fresh and trip, incr. oil stn, sev. gas bubbles, gd odor, SFO, scat vugs/fracs, med/brite yel fluor, gd cut, lmy ip.

DST #3: Miss. Chert 4384' - 4424'
MISSISSIPPI LMST. 4431(-2831)
LM; lt to med brn, pale grn, dense, scat pyr, occ cherty w/sponge spicules, no vis por, no fluor, ns.

NOTE: Switched to Button Bit after DST #2 and drilled to TD. with Button Bit

LM; red, red brn, occ pink, argil, dense ip, interbdd lmy sh, no fluor, no stn, ns.

LM; off wh, tan, f to med xln, hd, blocky, no vis por, no fluor, ns.

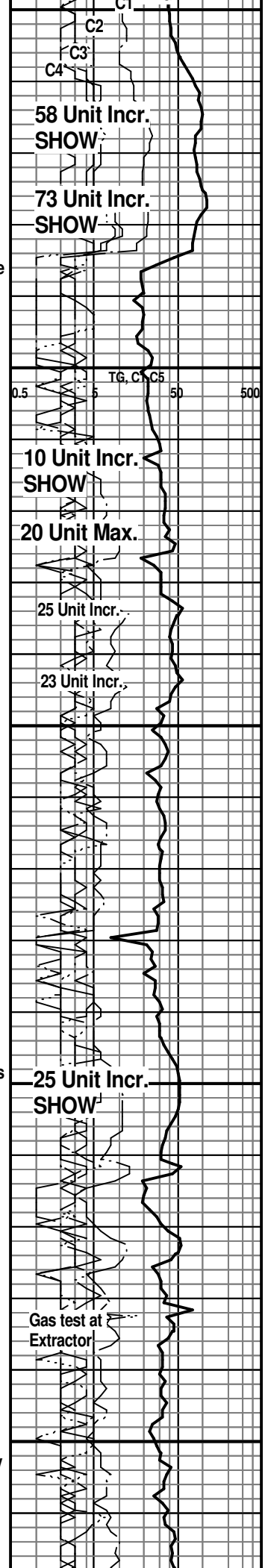
BASAL MISS. CHERT 4492(-2892)
CHT; wh, lt gy, tan, nearly all fresh cht, sev. frags w/live oil stn on few frac faces, weath edges w/p-p por/live lt brn oil stn, trc gas bubbles, lt yel fluor, some blk tar/gils also, no odor
CHT; wh, off wh, trip and fresh(15% trip), v. spotted lt brn oil stn, trc gas bubbles, frags vis, dull yel to no fluor, questionable odor

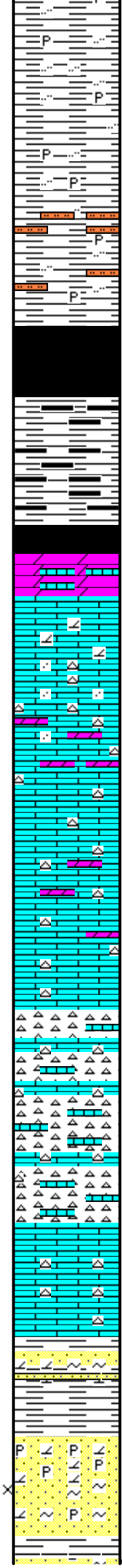
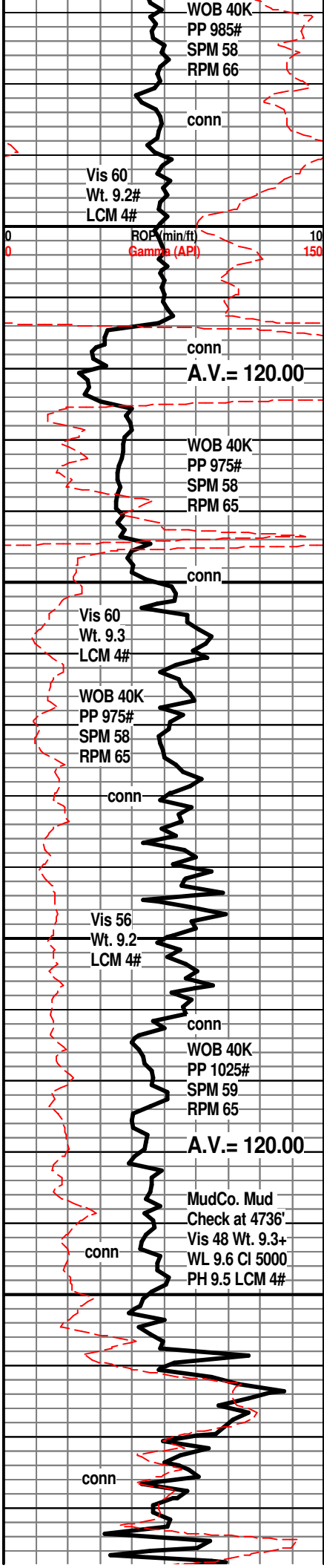
DST #4: Basal Miss. Chert 4483'-4511' Corrected Depths to Log

LM; tan to lt brn, buff, fxl'n ip, scat soft chalky mtx, no vis por, cherty ip, tite

LM; tan to med brn, dense, litho, occ wh/gy cht

KINDERHOOK SHALE 4546(-2946)
SH; med gy, gy grn, silty ip, firm, rare pyr, interbdd lt gy sltst.





SH; med gy, gy grn, silty, occ pyr

SH; med gy, occ dk gy, silty, platy, scat pyr

WOODFORD SHALE 4614(-3014)

SH; v. dk brn - blk, carb, hydrocarbon odor, occ "speckled" yel fluor, trc gas when broken

SH; dk brn, occ dk gy brn, scat carb strks, most soft

SH; v. dk brn - blk, carb, gas odor

VIOLA 4646(-3046)

LMY DOL; lt gy, cse xln, partly dolomitic, most dense - blocky, no vis por, no fluor, ns.

LM; lt gy, tan, lt brn, sandy/gritty text, well cem, trc lt brn sucrosic dolo, no vis por, no fluor, scat tan to dove gy cht, ns.

LM; tan to lt gy, lt brn, med to cse xln, well cem, interbdd dolomitic lmst, rare lt gy/tan fresh cht, no vis por, no fluor, ns.

CHT & CHTY LM; med gy, cse xln, very cherty w/abnt brn and gy fresh cht, blocky, some speckled cht, no vis por, no fluor, ns.

CHT; med brn, rare lt gy, fresh, blocky, hd, interbdd cherty lmst.

LM; med brn, some cse xln to micritic, hd, no vis por, cherty ip, no fluor, ns.

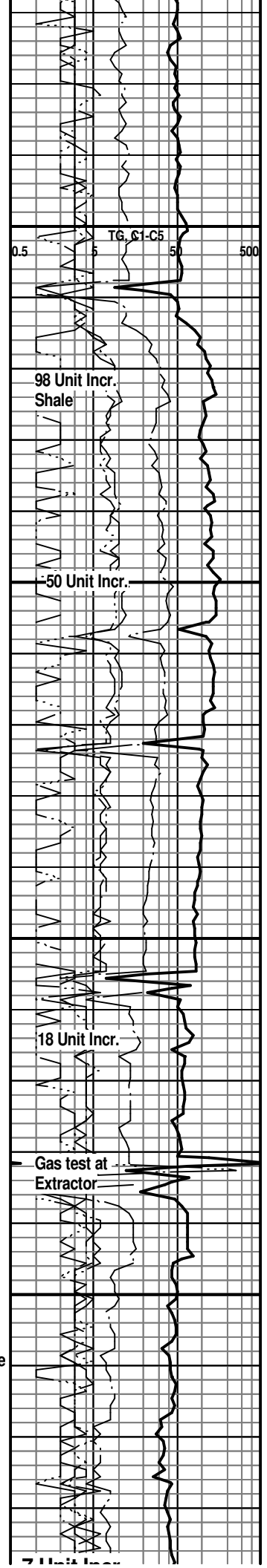
SIMPSON SHALE 4756(-3156)

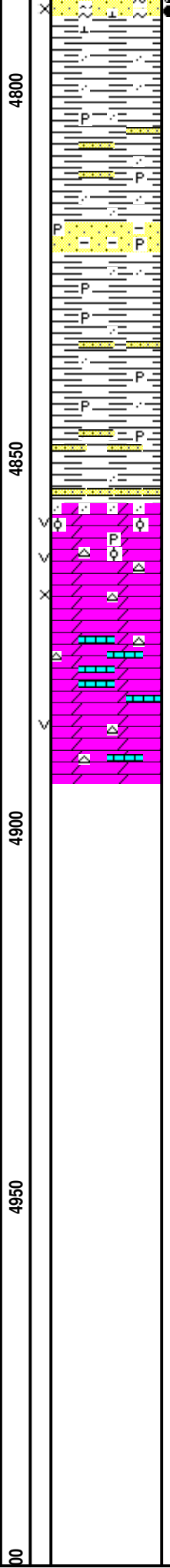
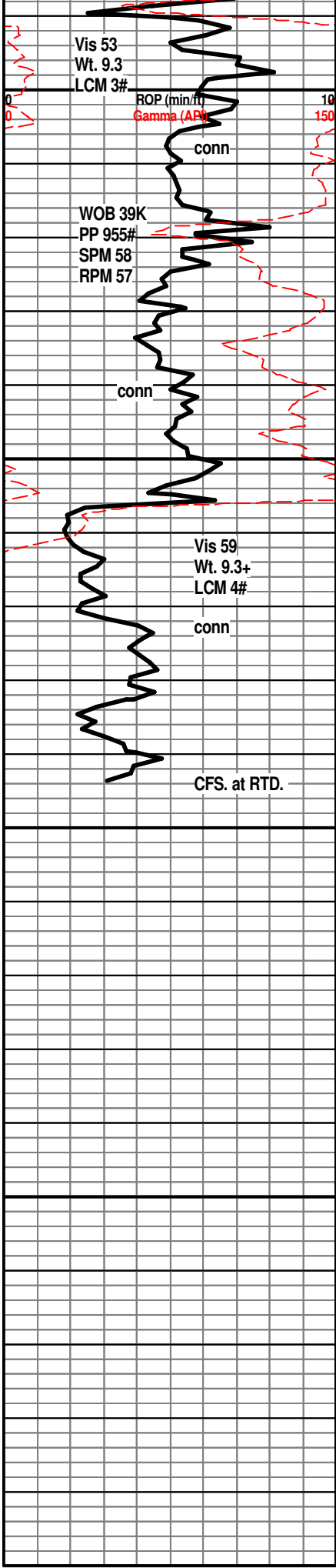
SS; lt gy, f gr qtz, dolomitic, hd, scat grn glau incl, some qtzitic, trc poor intergran por, lt yel fluor, no stn or odor, no gas kick, ns.

SIMPSON SAND 4770(-3170)

SS; clr, lt gy, f to med gr, some v. dolomitic, pyr, hd, interbdd med gr glau ss w/poor intergran por, no fluor, no stn or odor, no gas kick, ns.

SS; clr, lt brn, f to med gr qtz, clusters, some v. hd -





SS; tan, lt brn, f to med gr qtz, clusters, some v. rd
qtzitic, sev. fri clusters w/fair intergran por w/lt brn
fair to gd cut, glau ip, calc cement

SH; med grn, some sea grn, sandy ip, scat pyr, interbdd
thin gy vf to f gr qtz strngs, tite

SS; wh, med gr qtz, hd, well cem to qtzitic, pyr, tite,
scat dk gy to blk clay incl.

SH; med grn, gy grn, sandy w/rare interbdd hd ss
strngs, occ pyr

SH; grn, gy grn, some med to cse gr qtz ss
clusters/loose gr, scat dk gy/blk clay incl., rare pyr, no
fluor, no stn or odor, ns.

ARBUCKLE 4856(-3256)
DOL; tan to lt brn, sucrosic to finely rhombic, well dev.
vug por at top, scat oolitic dolo, uniform med yel min
fluor, occ sandy, no stn or odor, ns.

DOL; tan to lt brn, sucrosic to finely rhombic, some lmy
- tite, uniform med yel min fluor, trc oolitic cht, occ fair
vug por, no stn or odor, ns.

RTD. 4890' at 11:15 PM. 1/20/14

LTD. 4894'

Nabors, Co. DIL, NEU/DEN with PE,
Microlog

NOTE: This log was shifted downward
by 2' to 4' for correlation purposes with
the Nabors Co. Logs.

