

# LITHOLOGY STRIP LOG

## WellSight Systems

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

Well Name: #2-5 Heft  
Location: 660' FNL & 710' FEL, Sec. 5-T28S-R18W, Kiowa Co., KS.  
Licence Number: 15-097-21688-0000  
Spud Date: 3/18/2011  
Surface Coordinates: 660' FNL & 710' FEL, Sec. 5-T28S-R18W  
Region: Einsel Field Ext.  
Drilling Completed: 3/27/2011

Bottom Hole Same as above  
Coordinates:  
Ground Elevation (ft): 2208' K.B. Elevation (ft): 2217'  
Logged Interval (ft): 3400' To: 4863' Total Depth (ft): 4863'  
Formation: Kinderhook at Total Depth  
Type of Drilling Fluid: Freshwater/Gel to 3370'; Chemical Gel 3370' to 4863'.

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### OPERATOR

Company: Strata Exploration, Inc.  
Address: P.O. Box 401  
Fairfield, IL. 62837-0401

### 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(Lansing 'A') 4218' - 4236' Test Times 15"-45"-45"-90"**

**IFP Strong Blow BOB/8 Sec., FFP Fair to Strong Blow BOB/45 Min., No Gas to Surface, no Blowback on SI's; REC: 410' Gas in Pipe, 25' Drlg. Mud, no oil, no Water; IFP 19-27#, ISIP 216, FFP 24-39#, FSIP 308#, IHP 2072#, FHP 2003#, BHT 110 Deg. F.**

**DST #2(Mississippi Chert) 4792' - 4822' Test Times 11"-126" IFP Strong Blow BOB/Immed. Gas to Surface in 4 Min - no Gauge available; Flowed Oil to Surface in 10 Min. Shut in tool. Unloaded oil and gas - Drop Bar - Reverse Circulate/Transfer Oil into Tanker truck; REC: 4624' CGO(25%G, 75%O), 124' GHOCM(10%G, 30%O, 60%M), No Water; IFP 1055 - 1215#, ISIP 1489#, no FFP or FSIP; IHP 2410#, FHP 2359#, BHT 130 Deg. F.**

**DST #3(Mississippi Chert) 4822' - 4837' Test Times 15"-30"-15"-30" (NOTE: Slowly losing fluid during the test) IFP Strong Blow BOB/38 Sec., Gas To Surface 14 Min. into ISI; FFP GTS throughout - no Gauge available; REC: 2842' Total Fluid: 315' CGO(30%G, 70%O), 196' OSpkdSaltyM, 315' SOCW, 2006' SW, CI Est. 68,000, Mud 2800; IFP 375-773#, ISIP 1498#, FFP 792-1108#, FSIP 1498#, IHP 2341#, FHP 2312#, BHT 129 Deg. F.**

### Comments

**3/18/11 MIRU Sterling Drilling Co. Rig #4, Spud at 1:45 PM.; 3/19/11 TD. 525' - WOC; 3/20/11 Drilling at 1800; 3/21/11 Drilling at 2900'; 3/22/11 Drilling at 3530'; 3/23/11 Drilling at 4100'; 3/24/11 TD. 4236' - TIH after DST #1; 3/25/11 Drilling at 4610'; 3/26/11 TD. 4822' - DST #2; 3/27/11 TD. 4837' - TOH w/DST #3; reached TD. at 2:35 PM; 3/28/11 RTD. 4863', LTD. 4860' - CCH for LDDP.**

**Set 8 5/8"(23#) Surface Casing at 523' w/400 sx/(Basic Energy Services). Cement Did Circulate. PD. 2:30 AM. 3/19/11.**


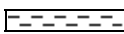
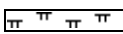
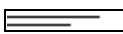
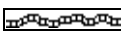






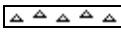



**Surveys: 0.75 Degree at 525'(Surface Casing); 0.5 Deg. at 4236'(DST #1); 0.5 Deg. at 4822'(DST #2).**

**Pipe Strap at 4236'(DST #1): Strap 0.70' Short to the Board, no correction made to the Board.**

**After review of the Halliburton LOGS, DST data, structural position and positive shows of commercial amounts of hydrocarbons, the operator elected to set new 5 1/2"(15.5#) Production Casing for completion in the Mississippi Chert.**

**LOG TOPS:**

### ROCK TYPES

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

### ACCESSORIES

- MINERAL**
- Anhy
  - Arggrn
  - Arg
  - Bent
  - Bit
  - Breclfrag
  - Calc
  - Carb
  - Chtdk
  - Chtlt
  - Dol
  - Feldspar
  - Ferrpel
  - Ferr
  - Glau

- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff

- FOSSIL**
- Algae
  - Amph
  - Belm
  - Bioclst
  - Brach
  - Bryozoa
  - Cephal
  - Coral
  - Crin
  - Echin
  - Fish
  - Foram
  - Fossil
  - Gastro
  - Oolite

- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

- STRINGER**
- Anhy
  - Arg
  - Bent
  - Coal
  - Dol
  - Gyp
  - Ls
  - Mrst

- Siltstrg
- Ssstrg

- TEXTURE**
- Boundst
  - Chalky
  - Cryxln
  - Earthy
  - Finexln
  - Grainst
  - Lithogr
  - Microxln
  - Mudst
  - Packst
  - Wackest

### OTHER SYMBOLS

- POROSITY**
- Earthy
  - Fenest
  - Fracture
  - Inter
  - Moldic
  - Organic
  - Pinpoint

- Vuggy
- SORTING**
- Well
  - Moderate
  - Poor

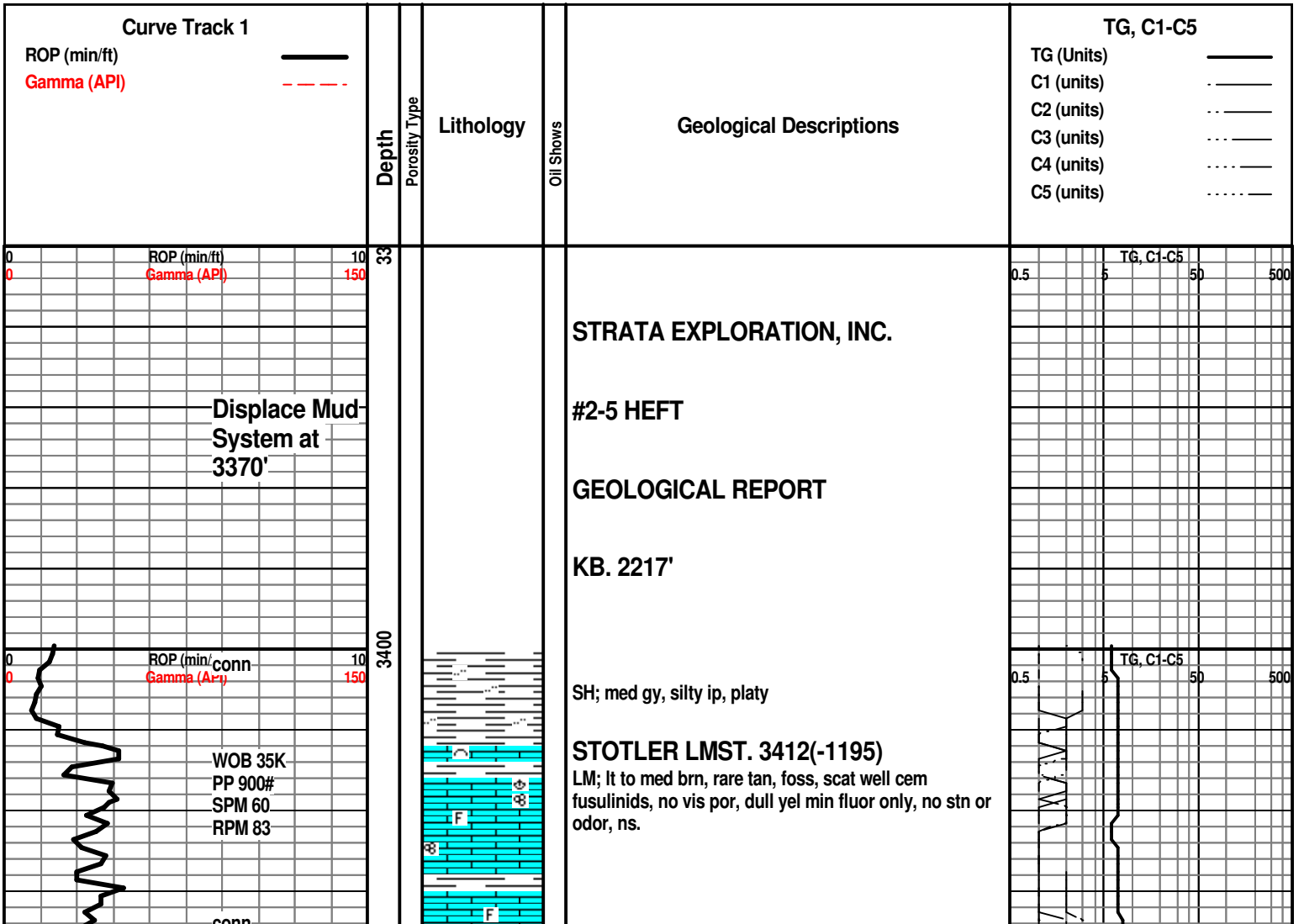
- ROUNDING**
- Rounded
  - Subrnd
  - Subang
  - Angular

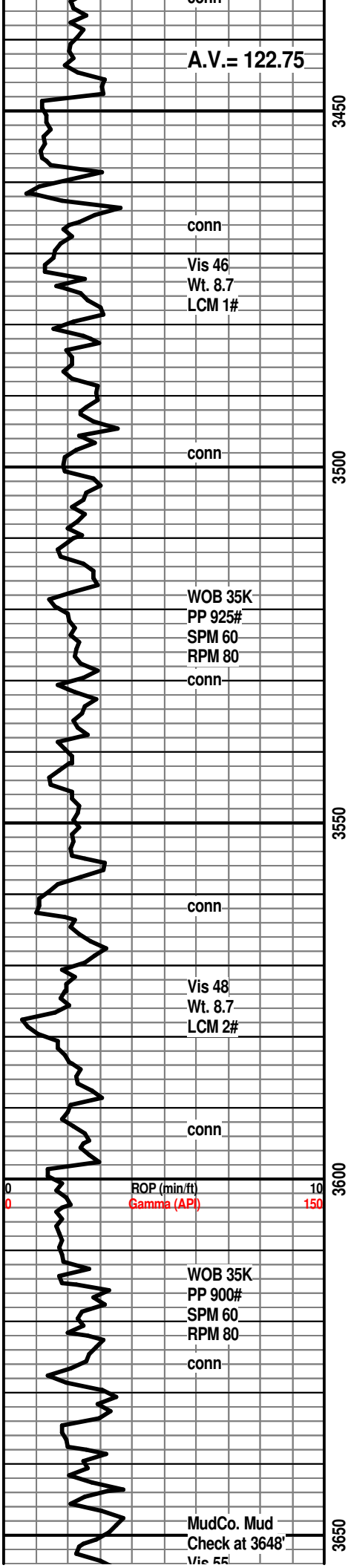
- OIL SHOW**
- Even

- Spotted
- Ques
- Dead

- INTERVAL**
- Core
  - Dst

- EVENT**
- Rft
  - Sidewall





A.V. = 122.75

conn  
Vis 46  
Wt. 8.7  
LCM 1#

conn

WOB 35K  
PP 925#  
SPM 60  
RPM 80  
conn

conn

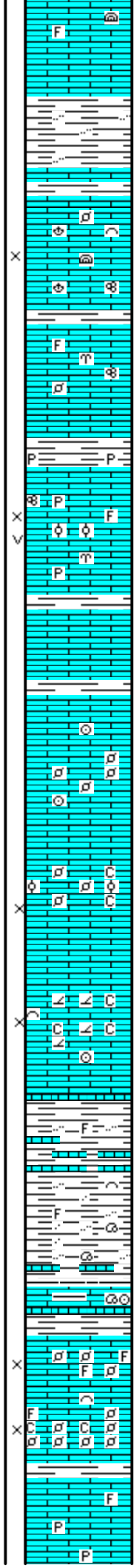
Vis 48  
Wt. 8.7  
LCM 2#

conn

ROP (min/ft) 10  
Gamma (API) 150

WOB 35K  
PP 900#  
SPM 60  
RPM 80  
conn

MudCo. Mud  
Check at 3648'  
Vis 55



LM; tan to lt brn, most blocky, dense, foss ip, scat dull yel min fluor, no stn or odor, ns.

SH; med gy to grn, fiss, flakey ip, most smooth, occ silty - mica ip.

LM; tan to off wh, buff, f to med xln, scat poor to fair interxln por, occ foss - scat fusulinids, dull yel min fluor, no stn, no gas kick, ns.

LM; lt to med brn, hd, most dense, scat foss mat, blocky, no vis por, no stn or odor, ns.

SH; med gy to brn, firm, platy, occ pyr

LM; lt to med gy, gy brn, hd, occ well cem foss mat, pyr ip, trc poor interpart and small vug por, dull yel min fluor, no stn or odor, ns.

LM; off wh, tan to buff, foss to finely pelletal, fair to poor interpart por, lt yel min fluor, no stn or odor, no gas kick, ns.

LM; off wh, wh, foss, some v. soft pelletal lmst w/chalky mtx, fair to gd interpart por, lt to med yel min fluor, no stn or odor, ns.

LM; wh to off wh, fxln to sucrosic text, partly dolom gd interxln por, scat foss mat ip, occ soft chalky mtx, no stn or odor, med yel min fluor, ns.

SH; med gy grn, lmy ip, v. firm

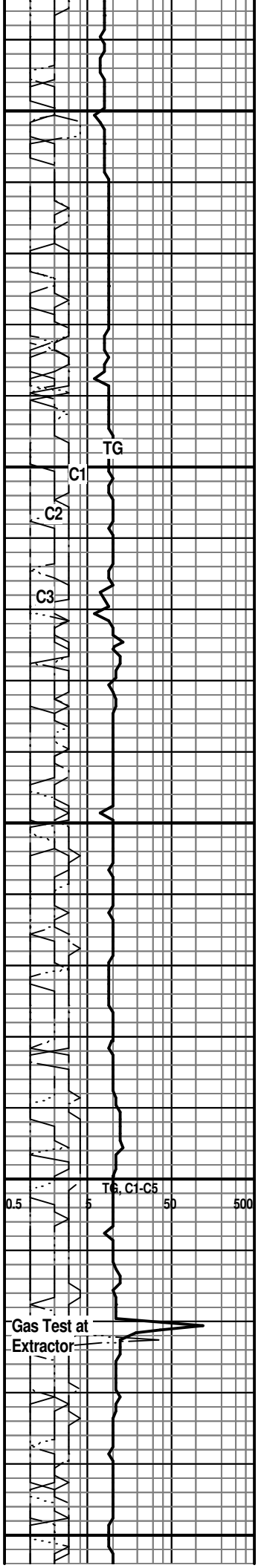
SH; med to dk gy, firm, silty to occ sandy, mica ip, foss

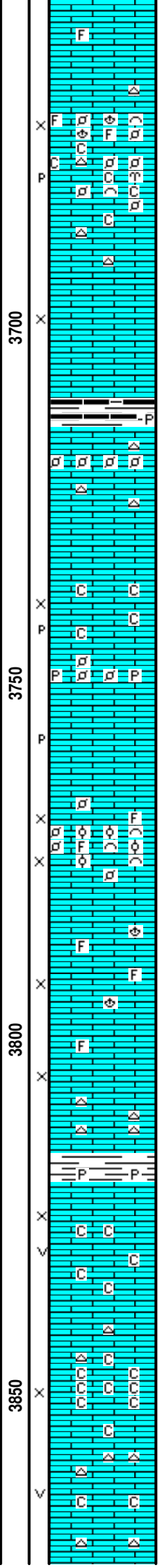
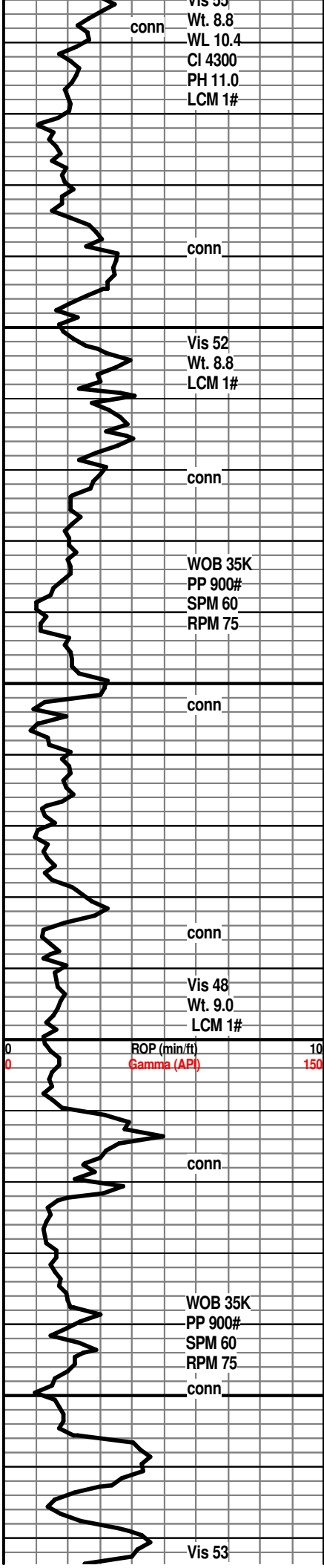
**HOWARD 3615(-1398)**

LM; med gy brn, argil, blocky, foss ip, tite

LM; tan to lt brn, off wh, foss ip, scat cse foss frags, finely pelletal ip, minor soft chalky mtx, poor to fair interpart por, dull yel min fluor, no vis stn, no odor, ns.

LM; wh to off wh, tan, most dense, scat foss mat, rarely





pyr, no vis por, ns.

LM; tan to cream, buff, highly foss - abnt frags, gd interpart & p-p por, minor chalky mtx, lt yel min fluor, no stn or odor, rare gy foss cht, ns.

LM; lt brn, gran to med xln, gd interxln por, lt to occ med yel fluor, no stn or odor, no gas kick, ns.

SH; dk gy, occ blk, fiss to flakey, trc pyr  
**TOPEKA 3714(-1497)**

LM; tan to lt brn, foss ip, most well cem - small pellets, scat off wh cht, no vis por, no stn or odor, ns.

LM; lt to med brn, tan, f to med xln, some gran text, fair interxln w/p-p por, interbdd soft chalky mtx ip, dull yel min fluor, no stn or odor, ns.

LM; lt brn, highly foss, much foss hash, scat pellets and oolites, gd interpart por, dull yel fluor, no stn, no gas kick, ns.

LM; off wh, tan to lt brn, most fxl, rare foss hash, scat sucrosic text lmst, gd interxln por, no stn or odor, ns.

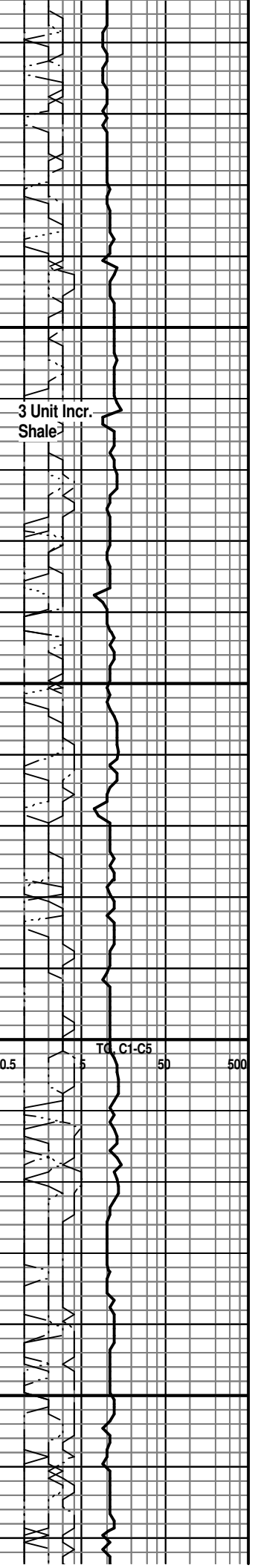
LM; tan to lt brn, hd, blocky, occ gy cht, tite

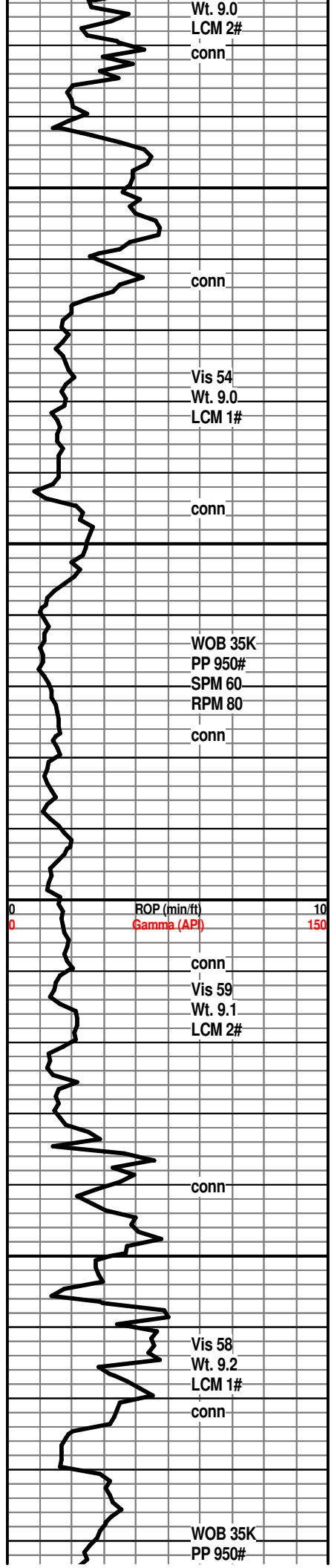
SH; med gy to grn, fiss, occ pyr

LM; lt brn, f to med xln, scat cse spar calc xtals, occ vug and interxln por, minor chalky mtx, scat lt to med yel min fluor, no stn or odor, ns.

LM; wh to off wh, fxl, abnt soft chalky mtx, scat fair interxln por, lt to dull yel min fluor, no stn, no gas kick, ns.

LM; wh to off wh, f to med xln, scat gd vug por in some, minor chalky mtx, dull yel min fluor, ns.





Wt. 9.0  
LCM 2#  
conn

conn

Vis 54  
Wt. 9.0  
LCM 1#

conn

WOB 35K  
PP 950#  
SPM 60  
RPM 80

conn

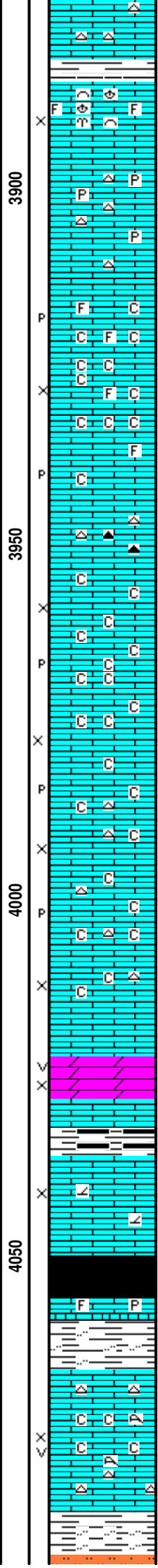
ROP (min/ft) 10  
Gamma (API) 150

conn  
Vis 59  
Wt. 9.1  
LCM 2#

conn

Vis 58  
Wt. 9.2  
LCM 1#  
conn

WOB 35K  
PP 950#



SH; med grn to gy grn, platy to splintery

LM; tan to off wh, rare lt gy, foss w/some foss hash, cse foss frags, fair interpart por, no stn or odor, no fluor, ns.

LM; lt gy to lt brn, most dense, blocky, interbdd gy to off wh cht, no vis por, minor pyr, no stn or odor, ns.

LM; wh to off wh, rare lt gy, foss to fxln, poor to fair p-p and interxln por, much soft chalky mtx, dull yel min fluor, no stn or odor, ns.

LM; tan to lt blue gy, dense, interbdd gy to blue gy cht, hd

LM; tan to wh, off wh, f to med xln, scat cse opaque spar calc xtals, pred soft chalky mtx, fair to poor vis interxln w/scat p-p por, dull yel min fluor only, no stn or odor, ns.

LM; tan to buff, rare lt brn, off wh, f to med xln, cherty ip, abnt soft chalk and chalky mtx, fair p-p and interxln por, lt yel min fluor, no stn or odor, ns.

DOL; lt brn, sucrosic, fair interxln por, trc vug por, lt yel min fluor, no stn or odor, ns.

SH; dk gy, trc blk, fiss

LM; tan to lt brn, fxln, trc sucrosic text - partly dolomitic, rarely foss, poor vis interxln por, dull yel min fluor, much dense, ns.

**HEEBNER SHALE 4050(-1833)**

SH; blk, carb ip, trc gas

LM; med brn, foss ip, hd, pyr

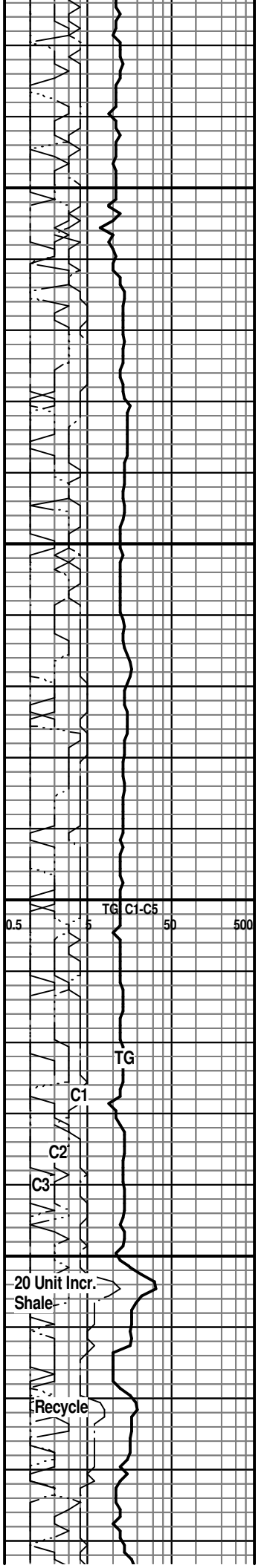
SH; grn, gy grn, silty ip.

**TORONTO 4066(-1849)**

LM; tan to off wh, f to med xln ip, foss ip(corals), soft chalky mtx, fair to gd interxln w/occ vug por, lt yel min fluor, no stn or odor, interbdd off wh to lt gy cht, ns.

**DOUGLAS SHALE 4086(-1869)**

SH; lt to med gy, fiss, silty ip, firm, interbdd sltst.



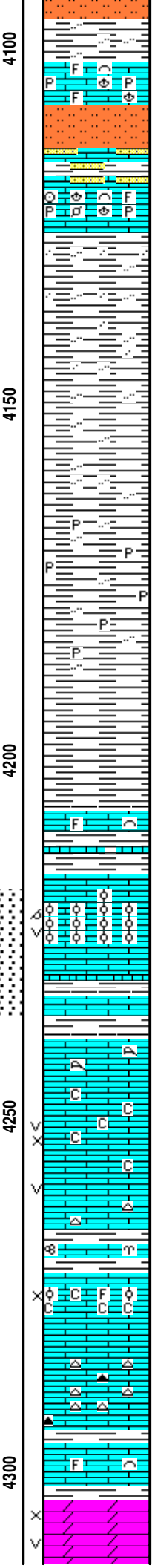
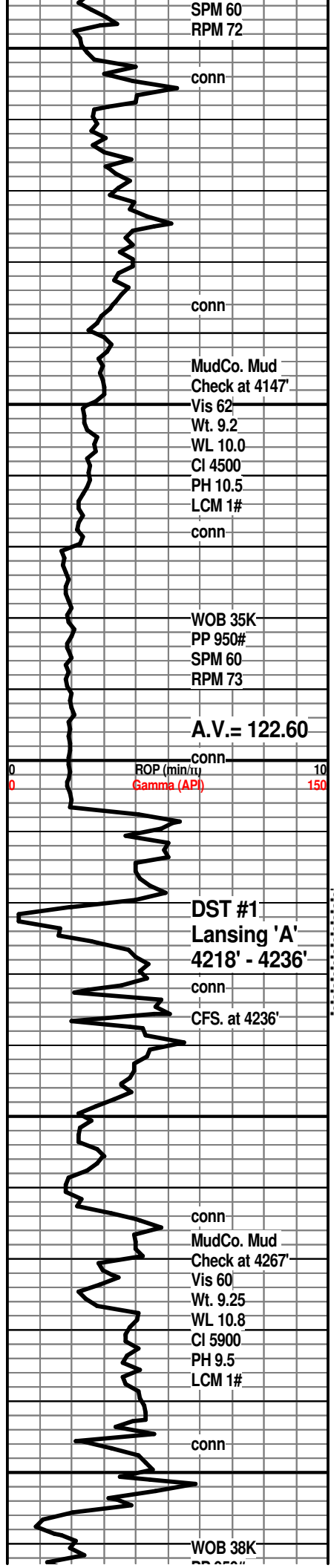
TG C1-C5 50 500

TG C1

C2  
C3

20 Unit Incr. Shale

Recycle



LM; med to dk brn, highly foss, some dense - pyr ip, well cem foss mat, dull yel fluor, ns.

SLTST; lt gy, firm

LM; med to dk brn, gy brn, hd, foss, sandy w/interbdd hd pyr sandy lmst, tite

SH; lt to med gy, silty to sandy, firm

SH; lt to med gy, silty, firm, platy

SH; lt gy, occ med gy, dissem pyr, fiss to flakey

SH; lt to med gy, fiss, v. soft - sticky - gumbo ip, flakey

**BROWN LMST. 4207(-1990)**  
LM; med brn, hd, micritic, occ foss, tite

**LANSING 'A' 4216(-1999)**  
LM; tan to lt brn, foss-oolitic, well dev. med to lrg oomoldic and occ vug por, some rextalized, sev. gas bubbles vis, med yel fluor, v. faint odor, trc spotted lt brn oil stn, weak/no cut, gas show

**DST #1: Lansing 'A' 4218' - 4236'**

**LANSING 'B' 4239(-2022)**  
LM; wh to off wh, foss ip, scat corals, well cem, poor/no vis por, dull yel min fluor only, ns.

LM; off wh, lt gy, med to cse xln ip, soft chalky mtx, scat lrg poorly interconn vug por, dull yel min fluor, no stn or odor, no gas kick, barren, ns.

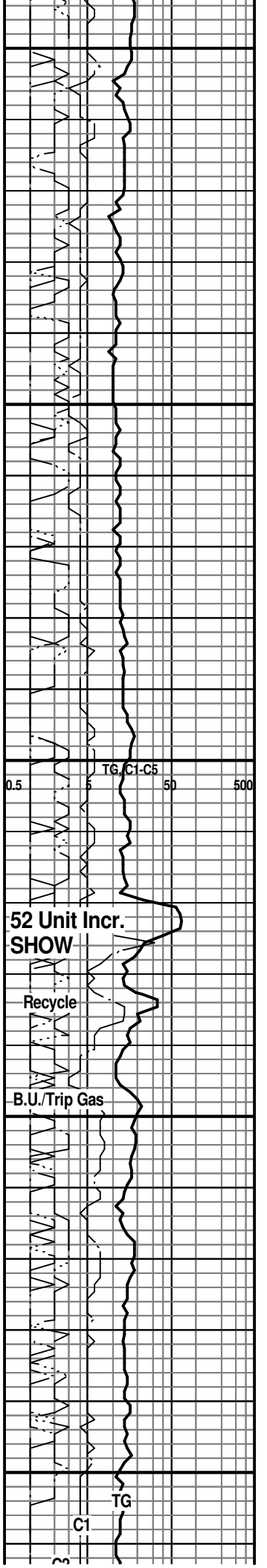
SH; grn, gy grn, fiss, interbdd hd brn foss lmst.

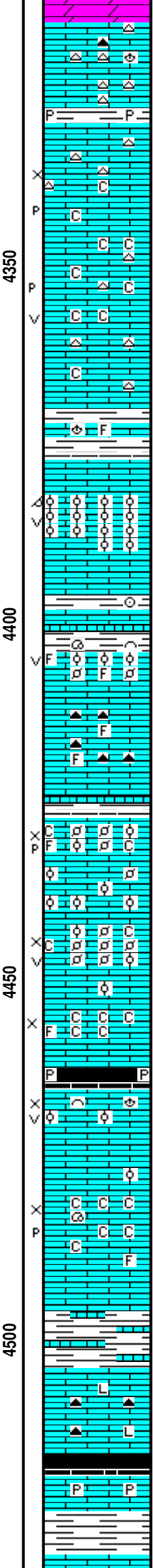
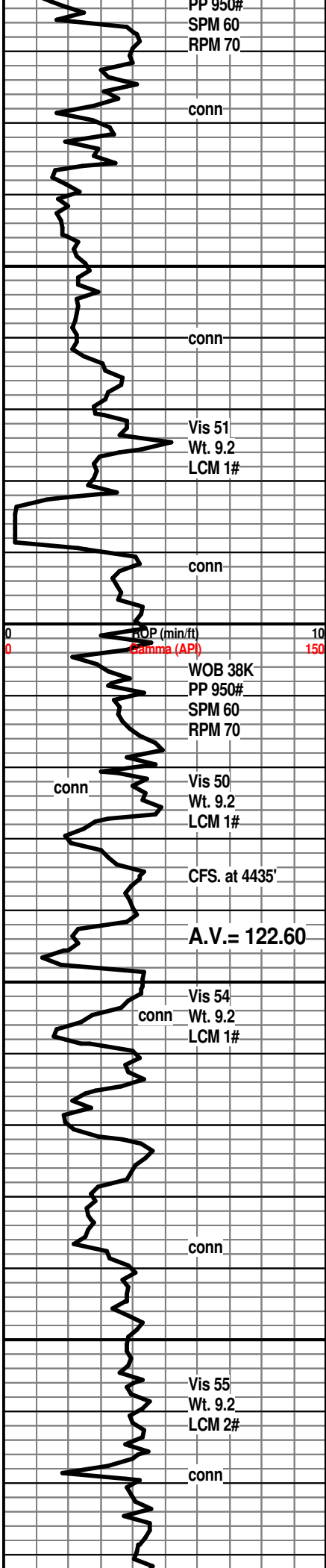
LM; off wh to tan, foss, fair interpart por, occ soft chalky mtx, dull yel min fluor, no stn or odor, ns.

LM; tan to lt brn, most dense, micritic, cherty w/gy - dk gy/smoky to tan occ foss cht, tite

LM; med to dk brn, foss, hd, blocky, tite

DOL; off wh, lt gy, tan, sucrosic to finely rhombic, gd interxln w/scat vug por, lt to med yel fluor, no stn or odor, ns.





LM; tan to lt brn, most dense, rarely foss, cherty ip, no vis por, no stn or odor, ns.

SH; med gy, fiss, occ pyr

LM; tan to cream, off wh, f to med xln, scat fair interxln w/p-p por, chalky mtx ip, most soft, dull yel min fluor, interbdd wh to off wh cht, no stn or odor, ns.

LM; tan to buff, lt gy, med to occ cse xln, spar calc xtals abnt, scat med size vug por, minor chalky mtx, occ lt gy to off wh cht, dull to lt yel min fluor, no stn odor, ns.

SH; dk gy, firm, platy

LM; med to dk brn, foss, tite

**LANS/K.C. 'H' 4377(-2160)**

LM; lt to med brn, oolitic, v. well dev. oomoldic and vug por, med yel min fluor, brittle/fri, no stn or odor, barren, ns.

LM; med brn, hd, scat gy to grn cht, tite

SH; med to dk gy, fiss, occ foss

LM; tan to lt brn, foss, finely oolitic ip, poor interpart por, rare small vug por, lt yel min fluor, no stn or odor, no gas kick, ns.

LM; tan to lt brn, foss ip, most micritic, blocky, cherty w/brn to smoky-dk gy cht, tite

**K.C. 'I' 4427(-2210)**

LM; tan to lt gy brn, foss - finely pelletal w/scat med size ooids, fair interpart and p-p por, occ chalky mtx, no stn or odor, occ spar calc, lt yel fluor, no gas kick, barren, ns.

LM; off wh, tan, finely pelletal, fair/gd interpart w/scat vug por, minor chalky - soft mtx, lt yel min fluor, no stn or odor, ns.

LM; off wh, tan, f to med xln, fair interxln por, much soft chalky mtx, dull yel min fluor, ns.

SH; blk, dk gy, fiss, pyr ip.

**K.C. 'J' DENNIS 4465(-2248)**

LM; tan to cream, lt brn, foss, fair interpart w/scat vug por, occ cse spar calc xtals, dull yel min fluor only, no stn or odor, no gas kick, ns.

LM; tan to buff, off wh, fxln, scat foss mat, soft chalky mtx, poor - fair interpart por, trc p-p por also, no stn or odor, no gas kick, ns.

SH; med to dk gy brn, lmy, v. firm

LM; med gy to med brn, dk brn, hd, litho, dense, scat dk gy to smoky cht, tite

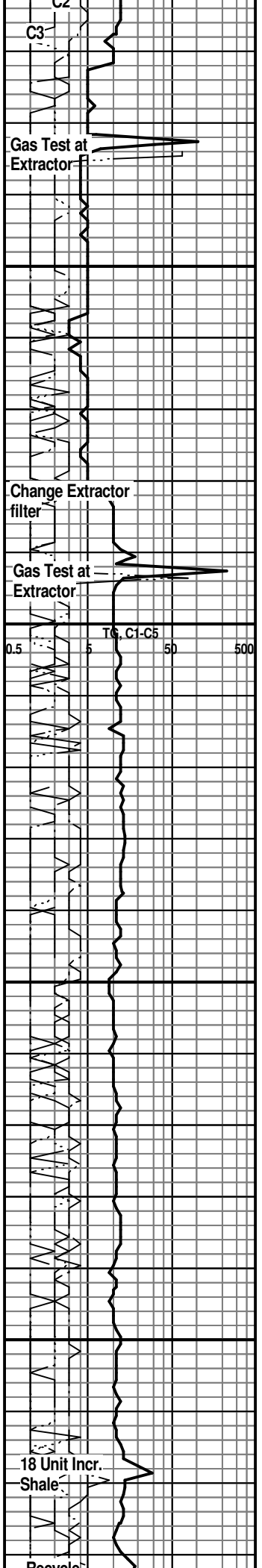
**STARK SHALE 4516(-2299)**

SH; blk, carb ip, brittle, gassy ip.

LM; med to dk gy, pyr, hd.

SH; dk gy, grn, firm

**SWOPE 4530(-2313)**





SWOP 4550(-2319)

LM; off wh, tan to buff, most dense, blocky, micritic, no vis por, no stn or odor, ns.

LM; tan to lt brn, foss, fair interpart por, scat soft chalky mtx, lt to occ med yel min fluor, no stn or gas kick, ns.

LM; med brn, gy brn, hd, blocky, micritic, tite

SH; blk, fiss, occ pyr

**HERTHA 4576(-2359)**

LM; tan to buff, f to med xln, occ foss pellets, gd vis interxln por, some soft chalky mtx, dull to lt yel min fluor, no stn or odor, barren, ns.

LM; med brn, hd, micritic, cherty ip, no vis por, scat lt yel min fluor, no stn or odor, ns.

LM; med to dk brn, hd, litho, dense, occ dk brn to smoky cht

**BASE KANSAS CITY 4608(-2391)**

LM; dk brn, v. hd, pyr ip, gritty text ip.

SH; varic: blk, grn, brn, rust red, splintery, occ foss to nodular, interbdd silty sh

**PLEASANTON 4626(-2409)**

LM; med brn, hd, sandy to gritty text, well cem, no vis por, no stn or odor, dull yel fluor, ns.

LM; tan to off wh, cream, buff, v. foss - pelletal w/well cem. oolites and pisolites, rare chalky mtx, lt yel min fluor, no stn or odor, no gas kick

SH; varic; pred blk, grn, gy, silty ip, much flakey

**MARMATON 4656(-2439)**

LM; lt gy to lt brn, pale grn tint, occ argil, hd, some nodular lmst, lt yel fluor, no stn, ns.

SH; grn, maroon, platy, interbdd hd shaly lmst.

LM; lt to med brn, most dense, interbdd pelletal to oolitic lmst, well cem, no vis por, no stn or odor, ns.

LM; tan to lt brn, buff, micritic, rarely foss, well cem, no vis por, no stn or odor, ns.

SH; dk gy, some blk, platy, w/mostly gy to brite grn waxy to fiss shales

**PAWNEE 4703(-2486)**

LM; lt to lt brn, blocky, litho ip, interbdd tan to amber cht, rarely foss, no vis por, no stn or odor, ns.

LM; tan to lt brn, micritic, blocky, no por, ns.

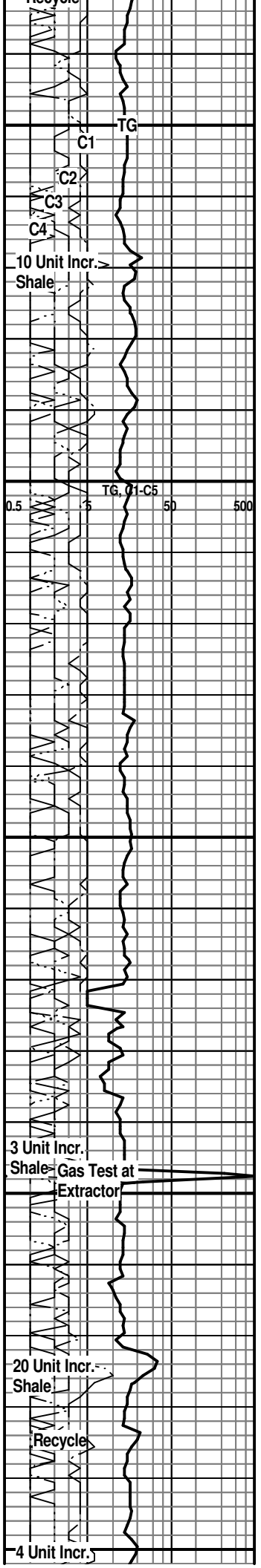
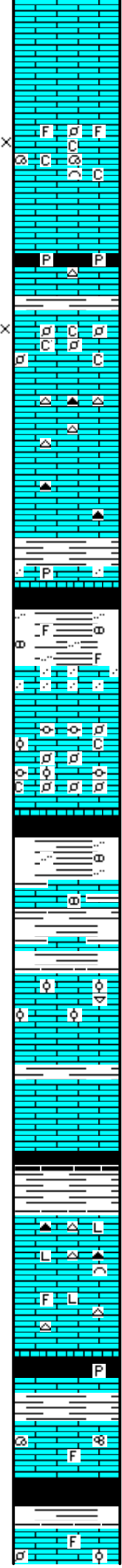
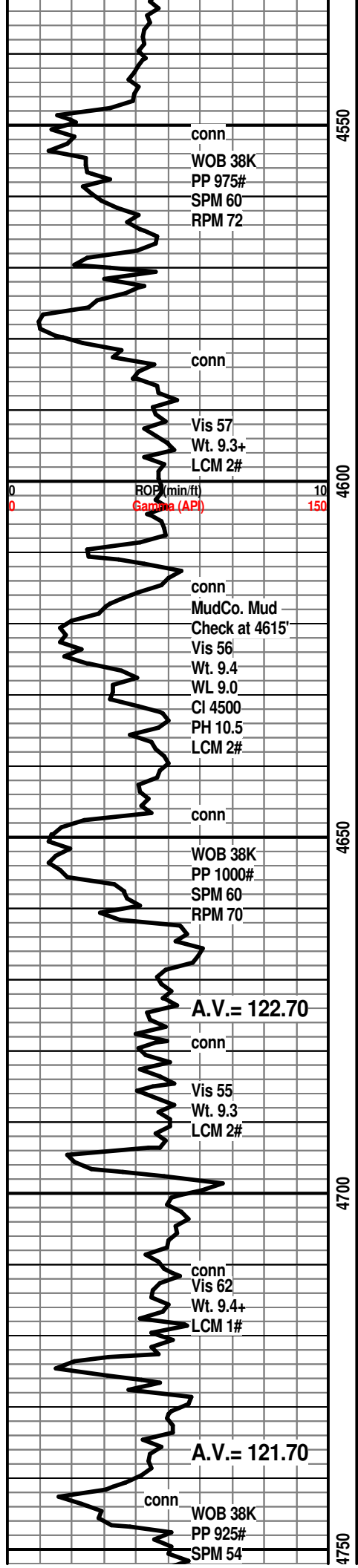
SH; blk, carb ip, gassy, trc pyr

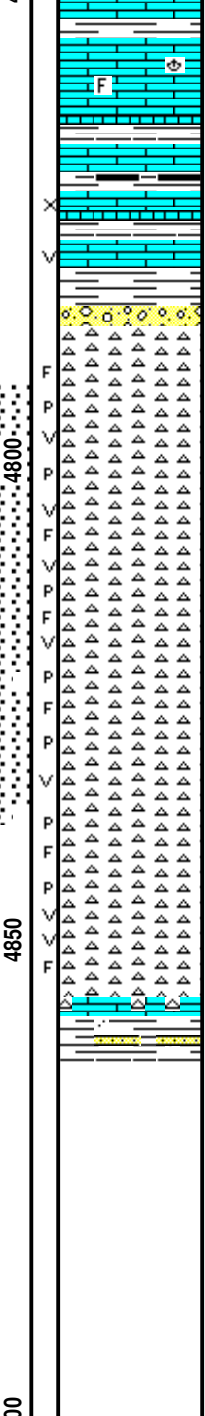
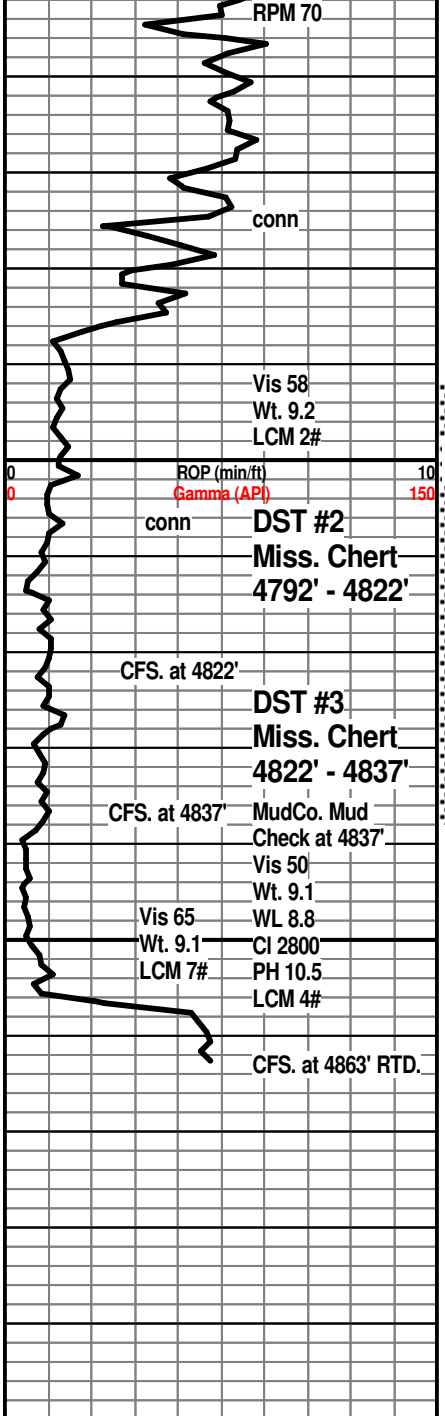
LM; tan to buff, lt brn, scat foss mat, no vis por, some micritic, no vis por, no fluor, ns.

**CHEROKEE SHALE 4740(-2523)**

SH; blk, dk gy, some brn flakey sh

LM; lt brn, tan, foss ip, scat med spar calc cmt, dull yel fluor, rare tan cht, no stn or odor, no sample shows





LM; tan to med brn, foss ip, most well cem, most dense - micritic, blocky, dull to lt yel min fluor, no stn or odor, ns.

LM; off wh, tan to cream, dense, blocky, ns.

LM; lt to med brn, fxln, fair interxln w/scat small vug por, trc dk brn live oil stn, lt yel fluor, no gas kick

**MISSISSIPPI CHERT 4786(-2569)**

CHT; wh, off wh, yel, org, most fresh, occ trip cht, scat blk dead oil stn, trc frags, lt yel fluor

CHT; wh, off wh, fresh and trip, gd amt. of trip cht - some oil saturated pcs, much live edge stn, SFO, scat vug por, gas bubbles, faint oil/gas odor, much brite yel fluor, frags w/blk tar/gilsonite

CHT; wh, off wh, opaque, fresh and trip, much gd trip cht w/even lt brn to golden brn oil stn, gd frac, p-p & occ vug por, SFO, few gas bubbles, much brite yel fluor, faint odor

**DST #2: Miss. Chert 4792' - 4822'**

CHT; wh, off wh, fresh and trip, gd amt of trip cht w/much even stn, much brite yel fluor, SSFO, faint odor, frags and gd p-p por, rare vugs, definite decr. in show in fresh cht. at base

**DST #3: Miss Chert 4822' - 4837'**

CHT; wh to off wh, most opaque, pred fresh cht, frags and vug por, some trip cht w/well dev. trip - p-p por, little to no fluor, most barren, no odor

LM; tan to lt brn, foss ip, cherty ip, tite

**KINDERHOOK SHALE 4858(-2641)**

SH; med grn, gy grn, sandy w/interbdd vf gr qtz grn ss strngs, firm

RTD. 4863' at 2:35 PM. 3/27/11

LTD. 4860'

Halliburton DIL, NEU/DEN/ Microlog

