

LITHOLOGY STRIP LOG

WellSight Systems

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

Well Name: Clark #8
Location: 1686' FNL & 1980' FEL, Sec. 2-T31S-R2W, Sumner Co., KS.
Licence Number: 15-191-22767-0000 Region: Moyer NW
Spud Date: 1/9/2015 Drilling Completed: 1/14/2015
Surface Coordinates: 1686' FNL & 1980' FEL, Sec. 2-T31S-R3W

Bottom Hole Same as Above
Coordinates:
Ground Elevation (ft): 1290' K.B. Elevation (ft): 1299'
Logged Interval (ft): 2000' To: 3400' Total Depth (ft): 3400'
Formation: Kansas City at Total Depth
Type of Drilling Fluid: Freshwater/Gel to 2280'; Chemical Gel 2280' to 3400'
Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

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GEOLOGIST

Name: Jon D. Christensen
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Cores

None Taken

DSTs

DST #1(Kansas City Swope) 3284' - 3324'(Corrected Depths to Log) Test Times 15"-45"-30"-60" IFP Weak Blow built to 1.25", FFP Weak Blow built to 0.75"; no Blowback on SI's; REC: 55' MSW w/oil specks(CI 74,000, Mud 4500); IFP 15-24#, ISIP 959#, FFP 29-39#, FSIP 974#, IHP 1658#, FHP 1628#, BHT 113 Deg. F.

Comments

1/9/15 MIRU Sterling Drilling Co. Rig #4; 1/10/15 Spud at 1:15 AM., TD. 262' - CCH; 1/11/15 Drilling at 951'; 1/12/15 Drilling at 2205'; 1/13/15 Drilling at 3230'; 1/14/15 RTD. 3400' - TOH for Logs(Nabors); 1/15/15 RTD. 3400', LTD. 3398' - Production Casing set.

Set new 8 5/8"(24#) Surface Casing at 259' KB. with 250 sacks cement(Basic Energy Services). Cement did Circulate. PD. at 10:45 AM. on 1/10/15.

Set new 5 1/2"(15.5#) Production Casing at 3396' with 250 sx. of "Loeb Blend" cement(Basic Energy Services). PD. at 1:30 AM. 1/15/15.

Surveys: 1.50 Deg. at 262'(Surface Casing); 0.50 Deg. at 3325'(DST #1).

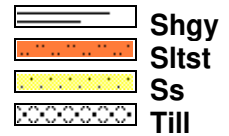
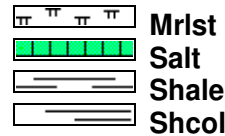
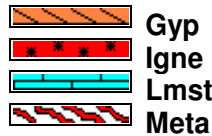
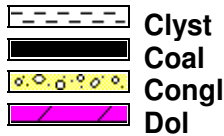
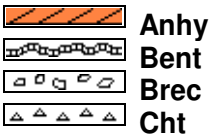
Pipe Strap at 3325'(DST #1): Strap 0.77' Long to the Board, no Correction made to the Board.

After review of the Nabors Logs and DST data, the operator elected to set new 5 1/2" Production Casing for completion in the Kansas City Swope zone.

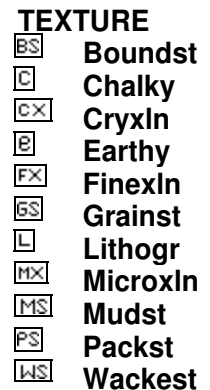
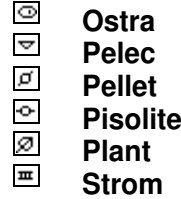
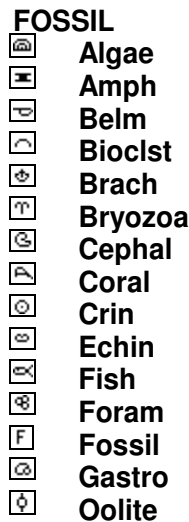
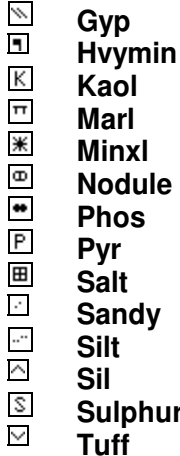
NOTE: This log was shifted upward by 1' to 3' for correlation purposes with the Nabors openhole Logs.

LOG TOPS: Topeka 2006(-707), Heebner Shale 2538(-1239), Toronto 2554(-1255), Iatan 2849(-1550), Stalnaker Sand 2898(-1599), Kansas City 3161(-1862), Stark Shale 3289(-1990), Swope 3310(-2011), Hertha 3336(-2037).

ROCK TYPES



ACCESSORIES



OTHER SYMBOLS

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

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

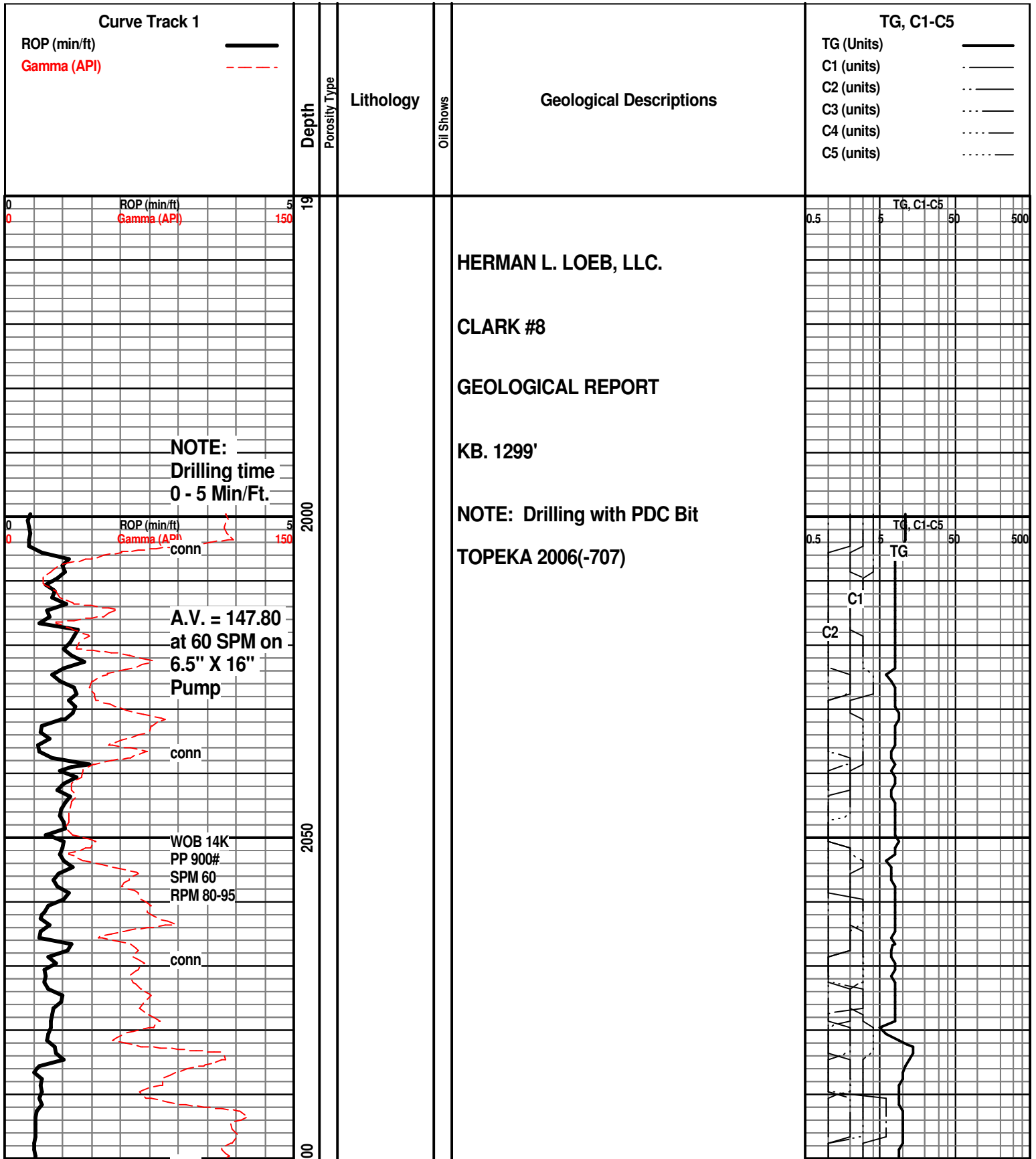
- ROUNDING**
- Rounded
 - Subrnd
 - Subang
 - Angular

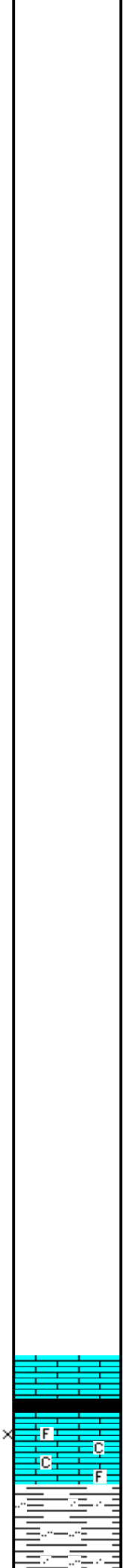
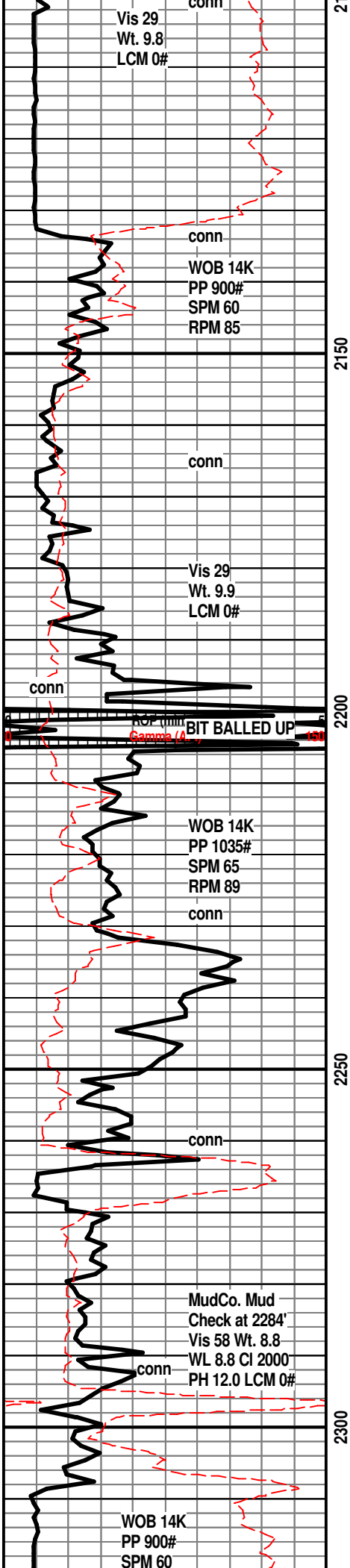
- Spotted
- Ques
- Dead

- EVENT**
- Rft
 - Sidewall

- INTERVAL**
- Core
 - Dst

- OIL SHOW**
- Even



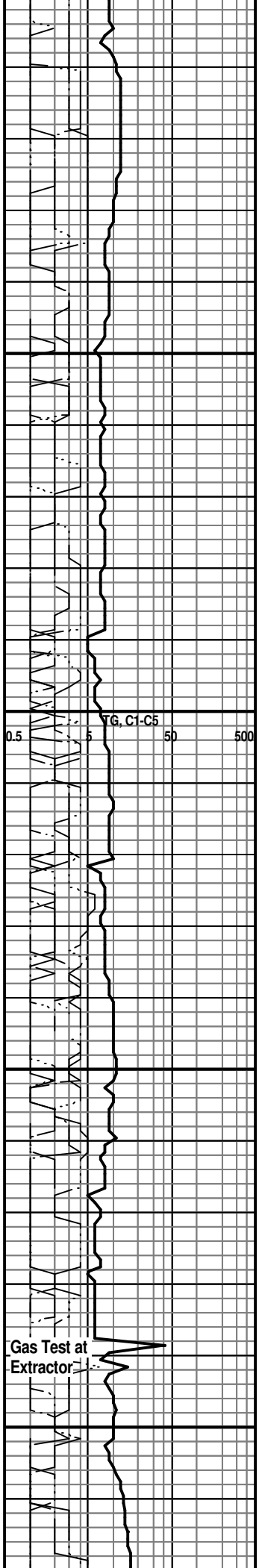


DISPLACE MUD SYSTEM at 2280'

20' Wet and Dry Samples at 2300'

LM; tan to lt brn, off wh, foss ip, scat chalky mtx, occ lt yel fluor, trc poor interpart/interxln por, no stn, ns.

SH; lt to med gy, silty to occ sandy, mica ip, platy



RPM 85-90

conn

2350

conn

Vis 55
Wt. 8.7
LCM 0#

conn

A.V.= 149.60
at 60 SPM

2400

ROP (min/ft)
Gamma (API)

WOB 14-15K
PP 880#
SPM 60
RPM 90

conn

conn

2450

Vis 52
Wt. 8.8
LCM 0#

conn

WOB 14K
PP 925#
SPM 60
RPM 88-90

2500

conn



SLTST; lt to med gy, firm, sandy w/interbdd vf gr mica ss, ns.

SH; lt to med gy, silty to sandy, mica ip, platy

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

SH; lt gy, silty to sandy w/interbdd ss strngs.

SS; lt gy, rare clr, f to occ med gr qtz, fri clusters, trc galu, rarely mica, gd intergran por, subrng - subang gr, no fluor, no stn or odor, ns.

SS; lt gy, most med gr, subang gr, gd intergran por, scat mica, occ lmy frags w/scat carb mat, no fluor, ns.

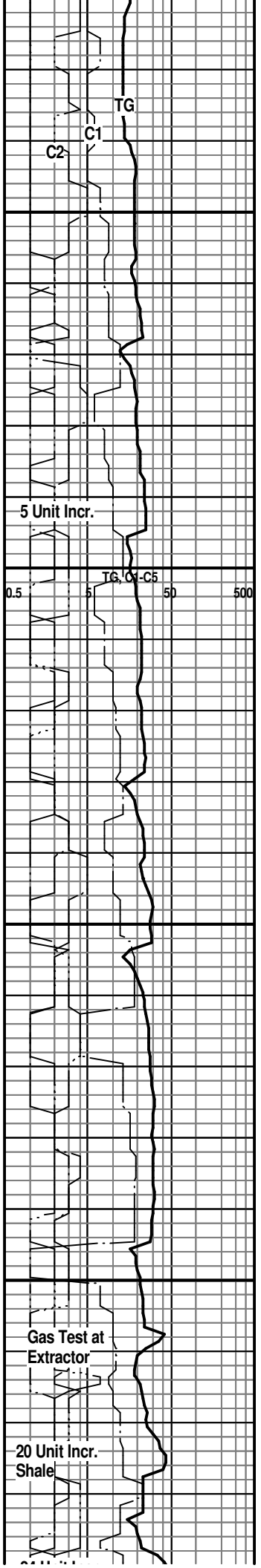
SH; med gy, sandy ip., interbdd hd med brn ss strngs.

LM; med brn, blocky, dense, tite

SH; dk gy - blk, platy, carb ip.

LM; tan to med brn, foss ip, most dense - blocky, no vis por, no fluor, tite

HFFRNER SHAI F 2538(-1239)



Gas Test at Extractor

20 Unit Incr. Shale

HELDREN SHALE 2554(-1255)

SH; blk, carb ip, platy, faint gas odor

LM; med brn, dense, v. hd

SH; med gy, rare gy grn, smooth

TORONTO 2554(-1255)

LM; off wh, buff, lt gy, f to occ med xln, scat chalky mtz, rare poor interxln por, lt yel min fluor, no vis stn, no odor, interbdd dense micrite, ns.

SH; med to dk gy, occ blk, platy, rarely silty

SS; lt gy, wh, f gr qtz, mica ip, fair por, ns.

LM; tan to lt brn, buff, f to med xln, scat fair interxln por, minor soft chalky mtz, dull yel/golden yel fluor, no vis stn, no odor, ns.

SH; med gy, platy, sandy ip.

SS; lt gy, vf to f gr qtz, clusters, some fri w/fair intergran por, no fluor, ns.

SH; lt to med gy, smooth, occ silty to sandy

SH; pred med gy, silty to sandy, occ mica

SH; med gy, platy, occ silty

24 Unit incr.
Shale

Recycle

0.5 5 50 500
TG, C1-C5

2550
2600
2650
2700
2750

conn

A.V. = 149.85
at 60 SPM

conn

Vis 50
Wt. 8.7
LCM 0#

ROP (min/ft)
Gamma (API)

conn

WOB 13-14K
PP 985#
SPM 60
RPM 89

conn

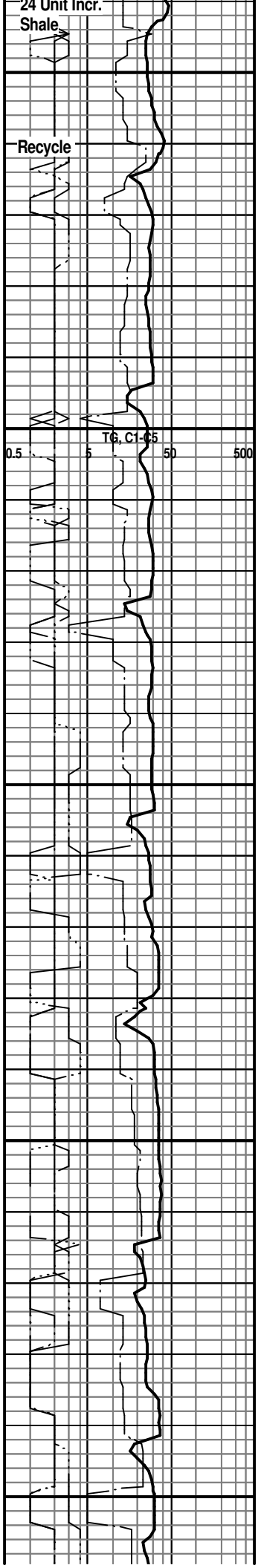
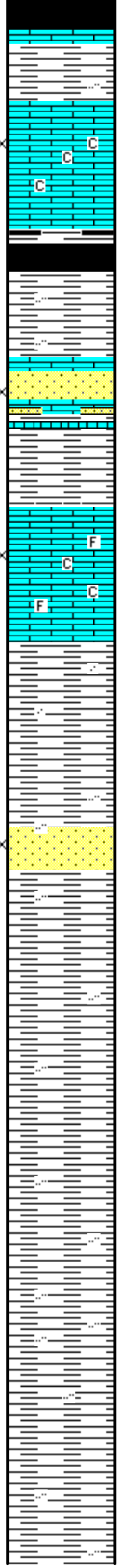
Vis 50
Wt. 8.7
LCM 0#

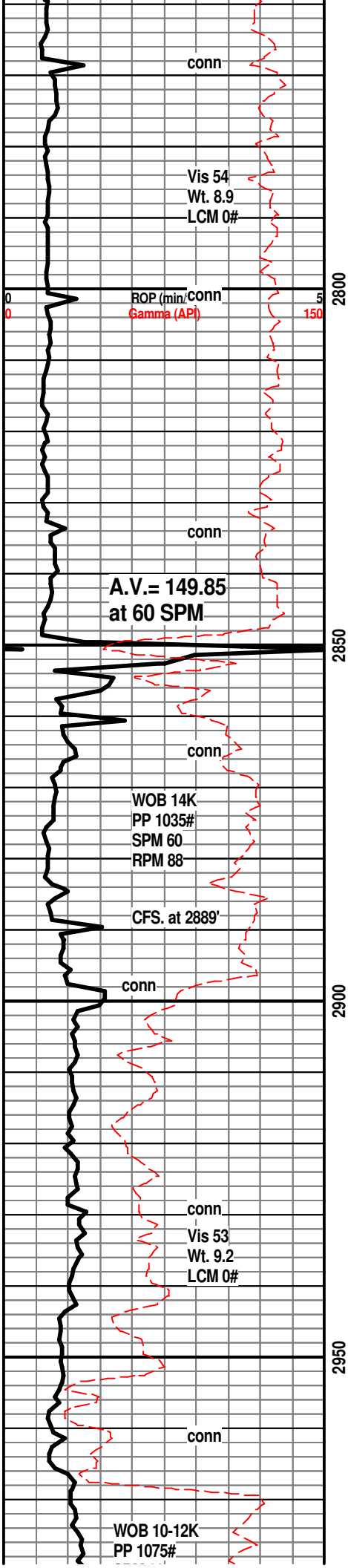
conn

conn

WOB 14-15K
PP 1020#
SPM 60
RPM 90

conn





SH; med gy, rare lt gy, silty ip.

SH; lt to med gy, platy, occ silty to sandy

IATAN 2849(-1550)

LM; med brn, v. hd, rare foss

UPPER STALNAKER SS. 2854(-1555)

SS; lt gy, vf to f gr qtz, poor to fair intergran por, trc dull yel fluor, questionable gas bubbles, no vis stn or odor, trc hd pyr ss

SH; lt to med gy, silty to sandy, interbdd sltst.

SH; lt gy, silty to occ sandy, platy

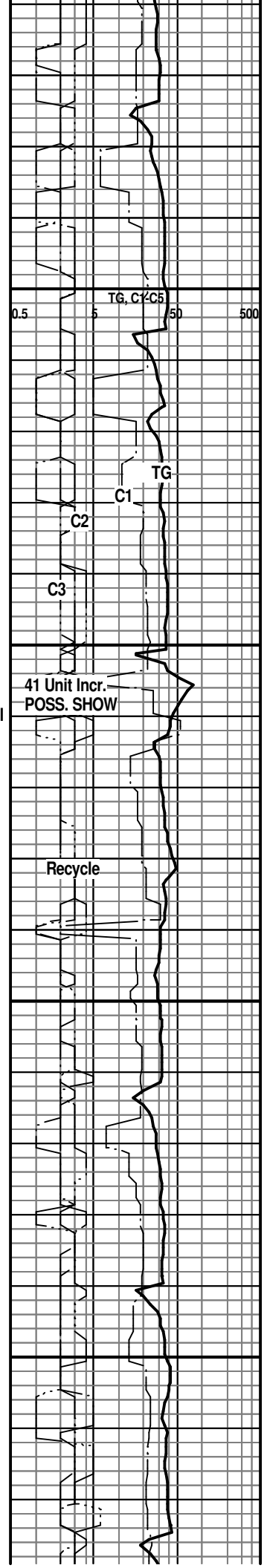
STALNAKER SAND 2898(-1599)

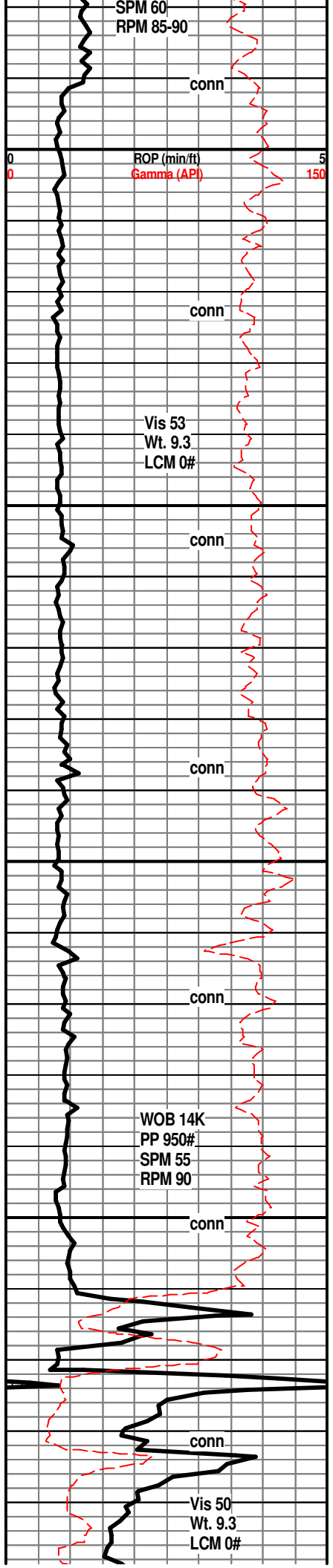
SS; lt gy, occ clr, pred f gr qtz, clusters, some well cem - other fri, fair to gd intergran por, occ mica, subang - subrnd gr, no fluor, no stn or odor, no gas kick

SS; lt gy, occ clr, qtz, f to med gr, subrng - subang, most w/gd intergran por, clusters, no fluor, no stn or odor, trc hd pyr ss, barren, ns.

SS; lt brn, lt gy brn, f - med gr, clusters, gd intergran por, ns.

SLTST; lt gy, mica, interbdd vf gr qtz, tite



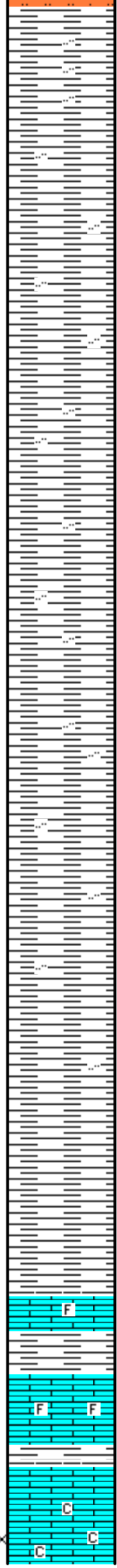


3000

3050

3100

3150



SH; med gy, most smooth, occ silty

SH; med gy, rare lt gy, platy, occ silty

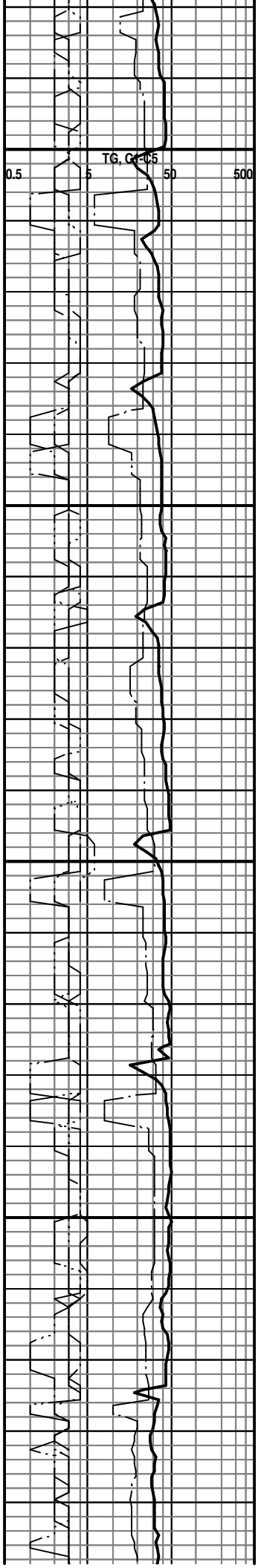
SH; med gy, platy, occ silty

SH; lt to med gy, platy, most smooth

KANSAS CITY 3161(-1862)
LM; med brn, most dense, rare well cem foss mat, no fluor, no vis por, ns.

LM; med to dk brn, foss ip, most hd, blocky, no fluor, no vis por, ns.

LM; off wh, buff, tan, fxln w/interbdd soft chalk and chalky lmst, poor vis interln por, trc oolitic lmst w/lt yel min fluor, no vis stn, no odor, no gas kick

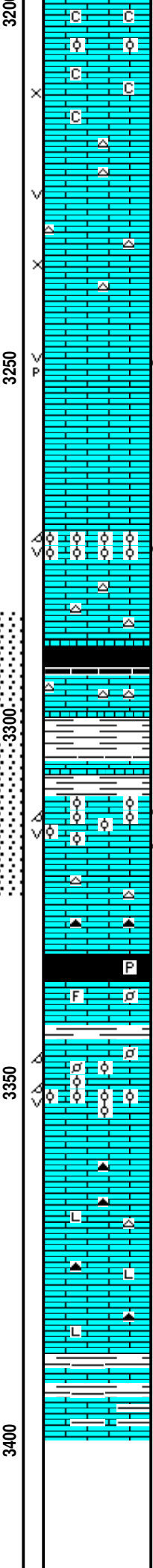
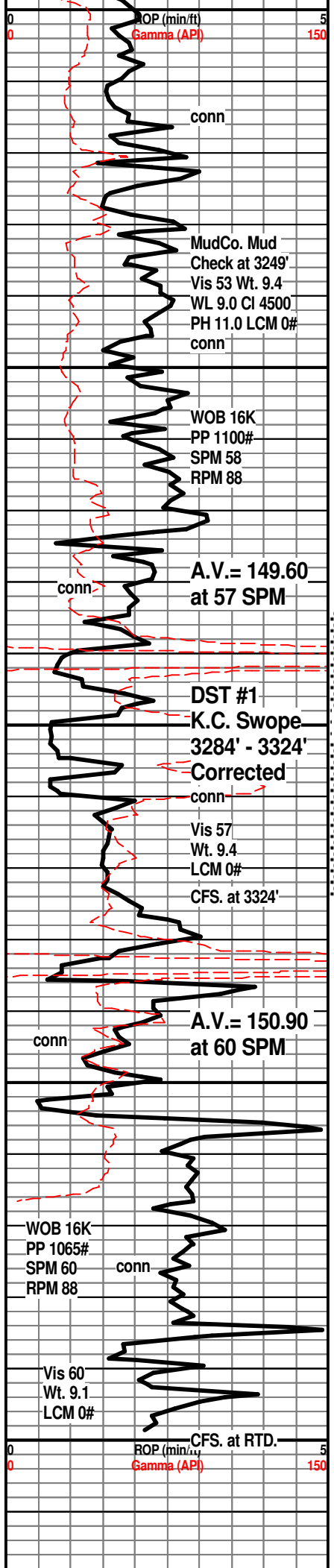


0.5

5

50

500



LM; tan to off wh, cream, f to occ med xln, much soft chalky mtx, poor to fair interxln por, dull yel min fluor, no vis stn, no odor, ns.

LM; off wh, lt brn, f to med xln, few pcs w/small vug por, cherty w/lt gy - tan cht, dull to lt yel fluor, no vis stn, possible faint odor, no gas kick

25 Stand Wiper Trip at 3249'
LM; tan to lt brn, fxln, scat fair p-p w/some vug por, fair odor, few pcs w/spotted lt brn oil stn, med yel fluor, no apparent gas kick, fair cut

LM; lt brn, most dense, blocky, rare lt gy cht, no vis por, no fluor, ns.

LM; lt brn, oolitic, gd oomoldic w/scat vug por, honeycomb por, lt brn even oil stn, gd odor, med golden yel fluor, SSFO, fair to gd cut, trc gas bubbles

STARK SHALE 3289(-1990)

SH; blk, carb ip, platy to blocky
LM; lt to med brn, hd, blocky, scat off wh cht, tite
SH; med gy, med gy grn, fiss

SWOPE 3310(-2011)

LM; med brn, oolitic, fair oomoldic w/scat vug por, fair odor, brite yel fluor, trc gas bubbles, SSFO, spotted/even med brn oil stn, fair/gd cut, scat cse spar calc w/edge stn also, bcm cherty

DST #1: K.C. Swope 3284' - 3324'
Corrected Depths to Log

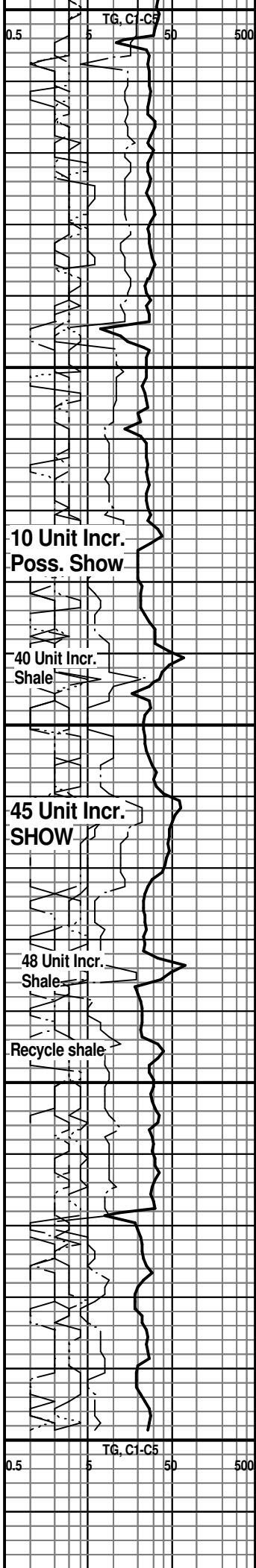
SH; blk, carb, pyr ip.
HERTHA 3336(-2037)
LM; tan to lt brn, buff, foss ip, well cem, tite

LM; lt brn, oolitic, med size molds w/small to med ooids, fair moldic por w/scat vug por, lt/med yel min fluor, no vis stn, no odor, ns.

LM; med to occ dk brn, dense, litho, rare dk gy/brn cht, tite

SH; dk gy, lmy w/interbdd dk gy brn lmst

LM; med/dk brn, argil, tite



10 Unit Incr. Poss. Show

40 Unit Incr. Shale

45 Unit Incr. SHOW

48 Unit Incr. Shale

Recycle shale

RTD. 3400' at 5:15 AM. on 1/14/15

LTD. 3398'

**Nabors Completion & Production,
Services DIL, NEU/DEN w/PE, Microlog**

3450

00