



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

Well Name: LEONARD KOEHN # 1-25 (NE)
Location: SE-SW-NW-NE 1/4 of SEC. 25 - 27 S.-30 W.
License Number: A.P.I. #15-069-20,468-00-00
Spud Date: 04/05/2014
Surface Coordinates: 1261' FNL & 2128' FEL

Region: GRAY CO., KS.
Drilling Completed: 04/16/2014

**Bottom Hole
Coordinates:**
Ground Elevation (ft): 2760' **K.B. Elevation (ft):** 2771'
Logged Interval (ft): SURFACE To: 5442' **Total Depth (ft):** 5442'
Formation: MISSISSIPPIAN "SALEM (SPERGEN)"
Type of Drilling Fluid: CHEMICAL/POLYMER/GEL. & MUD DISPLACEMENT @ 2954'.
Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Falcon Exploration, Inc.; KCC LIC. NO. # 5316
Address: 125 North Market Street, Ste. #1252
Wichita, Kansas 67202

GEOLOGIST

Name: David P. Williams, P. G.
Company: DW Energy, LLC (DWE)
Address: 312 North Broadview Street
Wichita, Kansas 67208

CASING & DEVIATION SURVEY'S

Surface Casing: Spud at 11:00 pm on 04/05/14. Drilled 12-1/4" to 1896'. Ran 44 joints of new 24#, 8-5/8" casing. Tallied 1873'. Set at 1890' KB . Welded straps on GS & bottom 3 joints, then tack welded all collars. Float insert in 1st collar. Cemented with 460 sks A-Con; 3% CC, 2% WCA; 1/4# PF. Tailed with 150 sks Class C, 2% CC; 1/4# PF. Cement did circulate to pit. Plug down at 5:30 pm on 04/08/14. Basic Energy Cementing ticket #05692. Centralizers (6) 2-8-16-27-36-39. Baskets (3) 126'-1448'-1660'.

Deviation Survey's: @ 1896' = 1 degree; @ 3510' = 3/4 degree; @ 4805' = 3/4 degree; @ 5440' = 1/2 degree.

Plugging Data: Received plugging orders 04/15/14 from (Nathan Willis). Heavy mud in hole. Bottom plug at 1920' with 50 sks. 2nd plug at 850' w/ 40 sks, top plug at 60' w/20 sks. Total of 110 sks of 60/40 POZ with 4% Gel in hole. Plugged RH w/30 sks, MH w/20 sks. Plugging complete at 1:15 am on 04/17/14. Basic Energy Services Cementing ticket #04634. Sterling reported to KCC (Michelle Pennington) on 04/17/14.

DSTs

~~DST #1~~ Interval: 3430'-3510'. Times: 5"-90"-60"-120".

Blow: IF= VSB Build/1.5"; FF= Weak Build/10.5".

Recovery: 30' Mud.

Pressures: IH=1597#; FH=1594#; IF=7-12#; FF=15-25#; ISIP= 648#; FSIP=487#; Temp.=101 degrees F..

~~DST # 2~~ Interval: 4754'- 4805". Times: 5"-90"-17"-30".

Blow: IF V. Weak Surface= 1/4" Inc. to 1/2". FF= No Blow-Flushed Tool (Had Good Surge) & No Blow.

Recovery: 30' M;

Pressures: IH= 2274#; FH=2274#; IF=8-14#; FF=18-33#; ISIP= 1398#; FSIP=1253#; Temp.=117 degrees F.

~~DST # 3~~ Interval: 5102'- 5168'. Times:5"-90"-70"-90".

Blow: IF=Weak Surface/1/4"; FF= No Blow-Flushed Tool/10" (Had Good Surge) & Weak Surface Blow/1/4".

Recovery: 65' M;

Pressures: IH=2458#; FH =2452#; IF=8-12#; FF=14-44#; ISIP=1443#; FSIP=1350#; Temp.=120 degrees F.


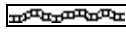
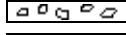
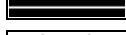
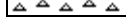
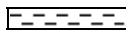









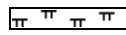

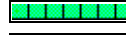
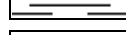
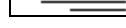
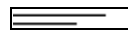


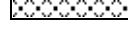
Comments

After review of all geologic samples as examined, structural correlation to offsetting prior drilled wells, combined with the fluid and pressures results from the drill stem test taken and electric log analysis, it was determined by all parties that this well appears to be non-commercial and should be plugged and abandoned.

































































Respectfully submitted,

David P. Williams, P.G

ROCK TYPES

 Anhy  Bent  Brec  Carb sh  Cht	 Clyst  Coal  Congl  Dol  Grn sh	 Gry shale  Gyp  Igne  Lmst  Meta	 Mrlst  Red shale  Salt  Shale  Shcol	 Shgy  Sltst  Ss  Till
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ACCESSORIES

MINERAL  Anhy  Arggrn  Arg  Bent  Bit  Brecfrag  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  Fuss  Gastro  Oolite  Oomold  Ostra  Pelec	 Pellet  Pisolite  Plant  Strom STRINGER  Anhy  Arg  Bent  Coal  Dol  Grysh  Gyp  Ls  Mrst  Sltstrg  Ssstrg	TEXTURE  Boundst  Chalky  Cryxln  Earthy  Finexln  Grainst  Lithogr  Microxln  Mudst  Packst  Wackest
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OTHER SYMBOLS

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

- [V] Vuggy
SORTING
 [W] Well
 [M] Moderate
 [P] Poor

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

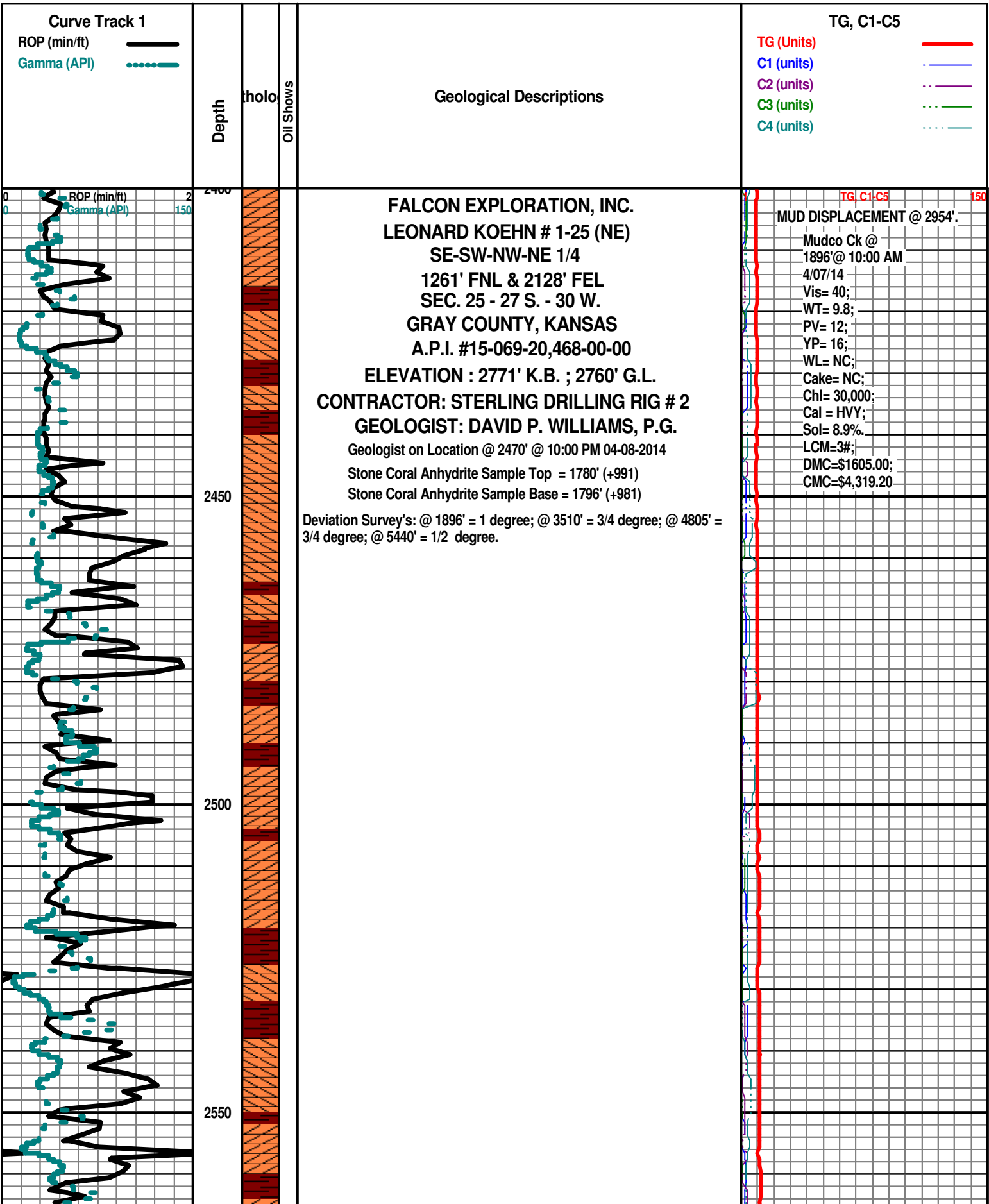
- [●] Even
 [◐] Spotted
 [◑] Ques
 [◒] Dead

[■] Dst_alt

- EVENT**
 [▽] Rft
 [▲] Sidewall

- OIL SHOW**
 [⊗] Gas show

- INTERVAL**
 [■] Core
 [■] Dst



START (KELLY DOWN) 31' SAMPLE EXAMINATION AT 2670".

Anhy/Gyp Gry Poor Sample Sh Red-Gry Soft-Fissil No Odor No Flor No Stn NS

2600

ROP (min/ft) 2
Gamma Ray 150

TG C1-C5 150

CHASE GROUP 2624' (+ 147)

Dolo Wht-Crm Fxln Fair-Med Sucrosic Por w/ Sm-Med Vug Leaching w/ Fair-Good Show Gas Faint Scatt Flor (Pale-Lt Grn) tr No Odor No Stn NS

GAS KICK = 38 UNITS.

2650

KRIDER 2654' (+ 121)

Dolo Wht-Crm Fxln Fair-Med Sucrosic Por w/ Sm-Med Vug Leaching w/ Fair-Good Show Gas Faint Scatt Flor (Pale-Lt Grn) tr No Odor No Stn NS

GAS KICK = 55 UNITS.

2700

WINFIELD 2708' (+63)

Dolo Wht-Crm Fxln Fair-Med Sucrosic Por w/ Sm-Med Vug Leaching w/ Fair-Good SG Scat Flor (Pale-Lt Grn) No Odor No Stn NS

GAS KICK = 64 UNITS.

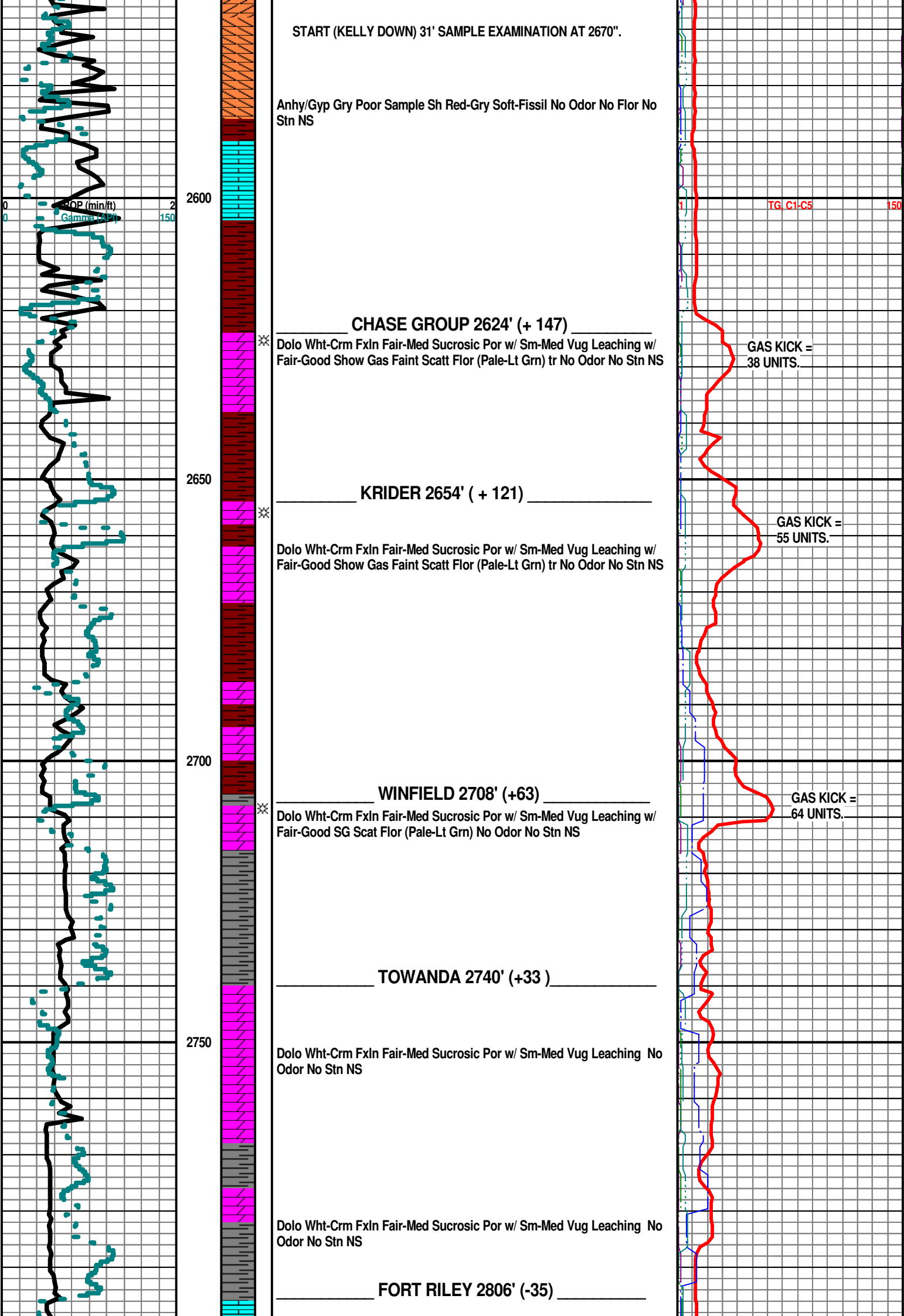
2750

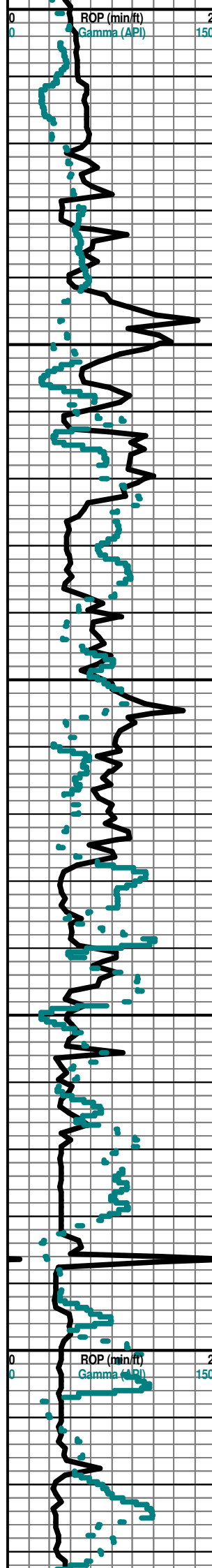
TOWANDA 2740' (+33)

Dolo Wht-Crm Fxln Fair-Med Sucrosic Por w/ Sm-Med Vug Leaching No Odor No Stn NS

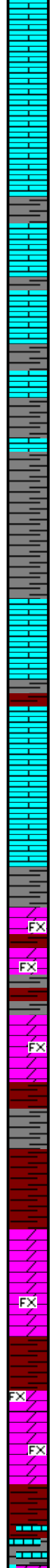
Dolo Wht-Crm Fxln Fair-Med Sucrosic Por w/ Sm-Med Vug Leaching No Odor No Stn NS

FORT RILEY 2806' (-35)





2800
2850
2900
2950
3000



Ls/Dolo Wht-Crm Fxln Fair-Med Sucrosic Por w/ Sm-Med Vug Leaching
No Odor No Stn NS

Ls/Dolo Wht-Crm Fxln Fair-Med Sucrosic Por w/ Sm-Med Vug Leaching
No Odor No Stn NS

Ls/Dolo Wht-Crm Fxln Fair-Med Sucrosic Por w/ Sm-Med Vug Leaching
No Odor No Stn NS

FX

FX

Dolo Wht-Crm Fxln Fair-Med Sucrosic Por w/ Sm-Med Vug Leaching No
Odor No Stn NS

WREFORD 2982' (-211)

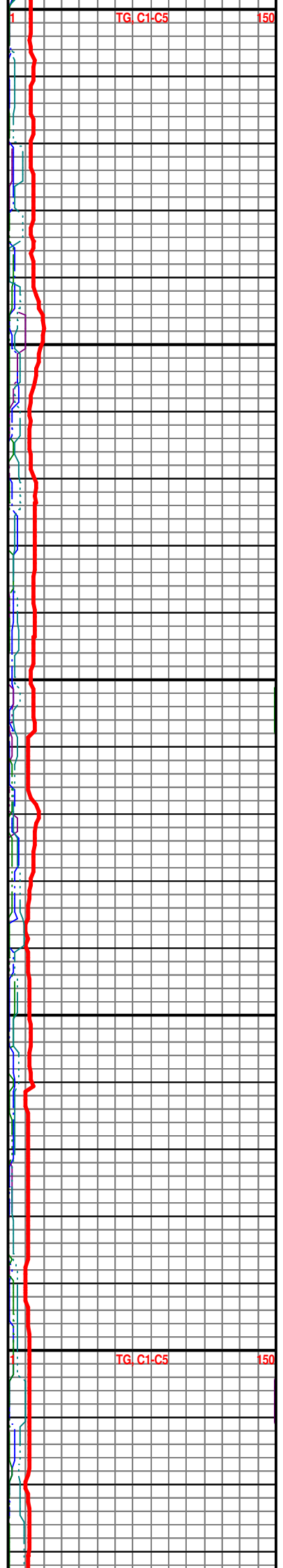
Dolo Wht-Crm Fxln Fair-Med Sucrosic Por w/ Sm-Med Vug Leaching No
Odor No Stn NS

BADER 3007' (-236)

FX

FX

COTTONWOOD 3032' (- 261)

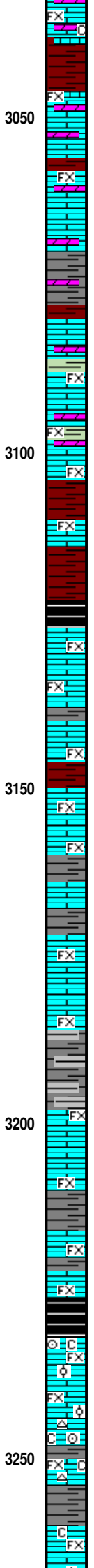
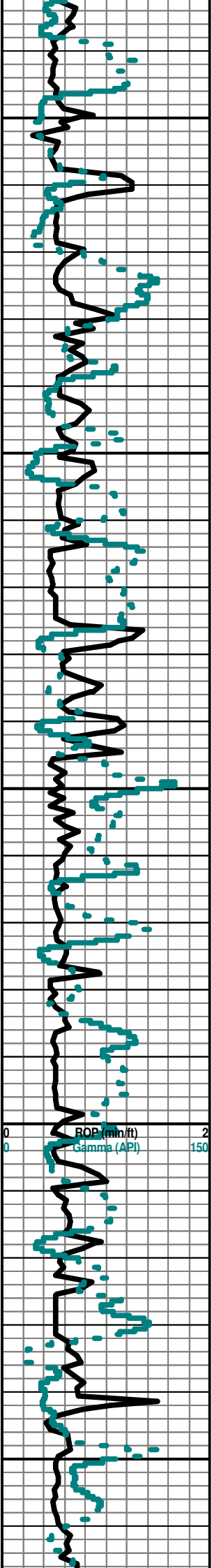


TG, C1-C5

TG, C1-C5

150

150



Ls Crm-Wht FxIn Dns Micrite Dolo Tan FxIn Dns Micrite Chalky Abd Sh
Red-Maroon No Odor No Stn No Flor NS

3050

Ls Crm-Wht FxIn Dns Micrite Dolo Tan FxIn Dns Micrite Chalky Abd Sh
Red-Maroon No Odor No Stn No Flor NS

Ls Crm-Wht FxIn Dns Micrite Dolo Tan FxIn Dns Micrite Chalky Abd Sh
Red-Maroon No Odor No Stn No Flor NS

3100

NEVA 3126' (- 355)

Ls Wht FxIn Tr Poor Gran IxIn Por Micrite Dns Sh Abd Red- Gry- Grn
Fissil No Odor No Stn No Flor NS

3150

RED EAGLE 3154' (- 383')

Ls Wht FxIn Tr Poor Gran IxIn Por Micrite Dns Sh Abd Red- Gry- Grn
Fissil No Odor No Stn No Flor NS

3200

Ls Wht-Crm-Gry FxIn Tr Poor IxIn-Igran Por Chalk Abd Sh Blk
Carb-Red-Gry- Fissil Dec No Odor No Stn NS

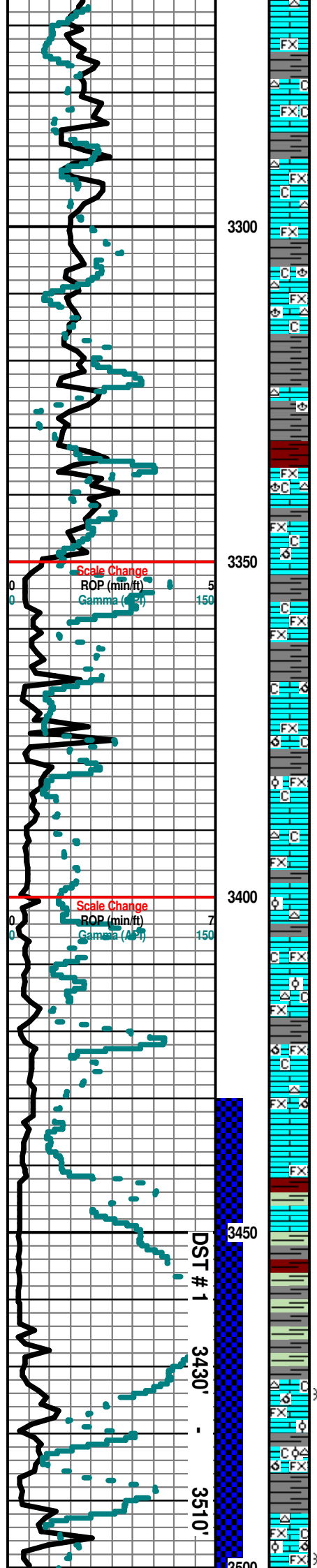
BASE COUNCIL GROVE 3196' (-425)

3250

Ls Wht-Crm-Gry FxIn Tr Poor IxIn-Igran Por Grad Tr Fair OOL Por
(w/Small OOids in pl) Poor-Fair Dissolu Poor-Fair Develop Cht Wht Op Vit
Shp Fos (Crin) Chalk Abd Sh Red-Gry-Grn Soft-Fissil Dec No Odor No Stn
NS

FORAKER 3282' (- 465)





Ls Wht-Crm-Tan Fxln Tr Poor Ixln Por Cht Wht-Peach Translu- Op Vit Shp Chalk Abd Sh Maroon (w/Pyr Includ)-Gry-Grn Soft-Fissil Dec No Odor No Stn NS

ADMIRE GROUP 3336' (- 565)

Ls Wht-Crm-Gry Fxln Tr Poor Ixln-Igran Por Cht Wht-Peach Translu- Op Vit Shp Fos (Brach) Chalk Sh Red-Gry-Grn Soft-Fissil No Odor No Stn NS

Ls Crm Fxln Poor OOM Por w/OOL in pl Poor-No Dissolu Poor Devel Mostly Chalky Cht GrySH Gry- Char Soft No Odor Sli Tr Min Flor AA No Stn NS

Ls Wht-Crm-Gry Fxln Tr Poor Ixln Dns Micrite grad Poor OOM Por (w/Small OOL in pl) Cht Wht-Peach-Amber Translu-Op Vit Shp Fos (Fuss) Chalk Sh Char-Gry-Grn Soft-Fissil No Odor ? Min Flor No Stn NS

START 20' SAMPLE EXAMINATION AT 3470'.

ROOT SHALE 3442' (-671')

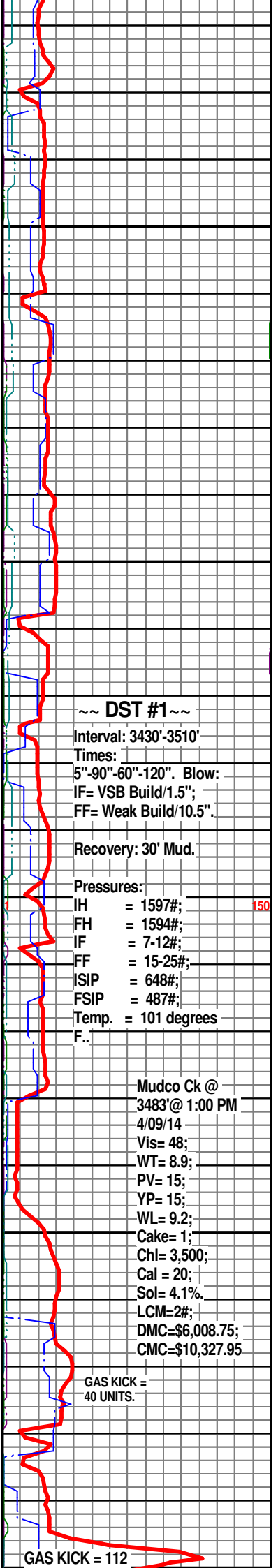
Sh Red- Gry-Char Abd Soft AA (Wash Red) Ls Crm AA Tr Poor OOM Por Poor Dis Poor Devel Chalk No Odor Sli Tr Min Flor AA No Stn NS

STOTLER 3474' (- 703)

Ls Crm Fxln Poor Ixln Por Micritic Grad Fair-Med OOM Por (w/Small OOids in pl) Fair Leaching Fair Develop Chalk Cht Wht Op Shp Vit Sh Tr Red-Char-Gry Soft-Fissil Tr Scatt ? Flor (> 20% of Tray) No Odor No Stn NS

30" CFS @ 3510' Ls Crm Fxln Poor Ixln Por Micritic Grad Fair-Med OOM Por (w/Small OOids in pl) Fair Leaching Fair Develop Fair Dissolu Poor Develop Chalk Scat Flor (Lt Grn > 30% of Tray) Sh Red-Char-Gry No Odor No Stn NS

60" CFS @ 3510' Ls Crm Fxln Poor Ixln Por Micritic Grad Fair-Med OOM



~ ~ DST #1 ~ ~
 Interval: 3430'-3510'
 Times:
 5"-90"-60"-120". Blow:
 IF= VSB Build/1.5";
 FF= Weak Build/10.5".

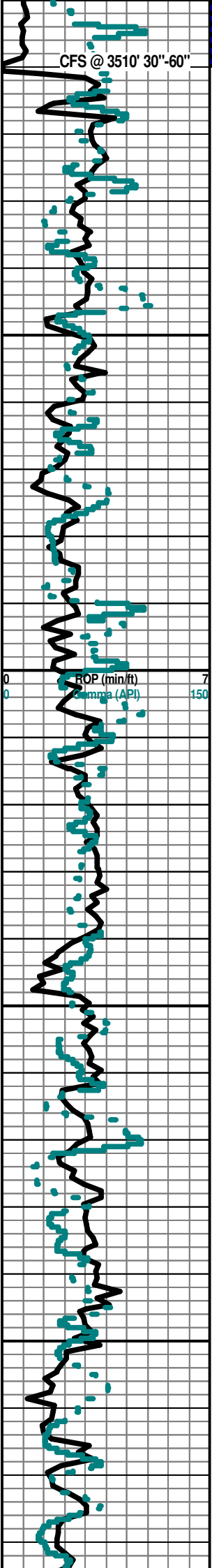
Recovery: 30' Mud.

Pressures:
 IH = 1597#;
 FH = 1594#;
 IF = 7-12#;
 FF = 15-25#;
 ISIP = 648#;
 FSIP = 487#;
 Temp. = 101 degrees
 F..

Mudco Ck @
 3483' @ 1:00 PM
 4/09/14
 Vis= 48;
 WT= 8.9;
 PV= 15;
 YP= 15;
 WL= 9.2;
 Cake= 1;
 Chl= 3,500;
 Cal = 20;
 Sol= 4.1%
 LCM=2#;
 DMC=\$6,008.75;
 CMC=\$10,327.95

GAS KICK = 40 UNITS.

GAS KICK = 112



Por (w/Small OOids in pl) Fair Leaching Fair Develop Chalk Cht Wht Op Shp Vit Sh Tr Red-Char-Gry Soft-Fissil Med Flor (> 60% of Tray) No Odor No Stn NS

START 20' WET SAMPLE EXAMPLE EXAMINATION @ 3540'

TARKIO 3516' (-745)

Ls Wht-Gry FxIn w/Fair IxIn Por Grad Fair Pin-Pt OOL Por ? Frac Por Chalk Wht Soft Sh Char-Gry-Aqua-Maroon Soft-Fissil ? Scat Min Flor No Odor NS

Ls Wht-Crm FxIn Dns Micrite Grad Poor IxIn Por (w/Small OOids in pl) Cht Wht-Gry Translu-Op Shp Vitl Chalk Pyr Mass Sh Char- Gry-Aqua-Maroon Fissil No Flor No Odor No Stn NS

Ls Wht-Crm FxIn Dns Micrite Grad Poor IxIn Por Cht Wht Op Shp Vitl Chalk Sh Char-Gry-Aqua-Maroon Fissil No Flor No Odor No Stn NS

Ls Wht-Crm FxIn Dns Micrite Cht Wht Op Shp Vitl Chalk Sh Char- Gry-Aqua-Maroon Fissil No Flor No Odor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Cht Wht Op Shp Vitl Chalk Sh Char-Gry- Aqua-Maroon Fissil No Flor No Odor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Cht Wht Op Shp Vitl Chalk Sh Char-Gry- Aqua-Maroon Fissil No Flor No Odor No Stn NS

Ls Wht-Gry FxIn Poor IxIn Micritic Por Chalk Wht Soft Sh Char- Gry Fissil ? Scat Min Flor (Lt Grn) No Odor NS

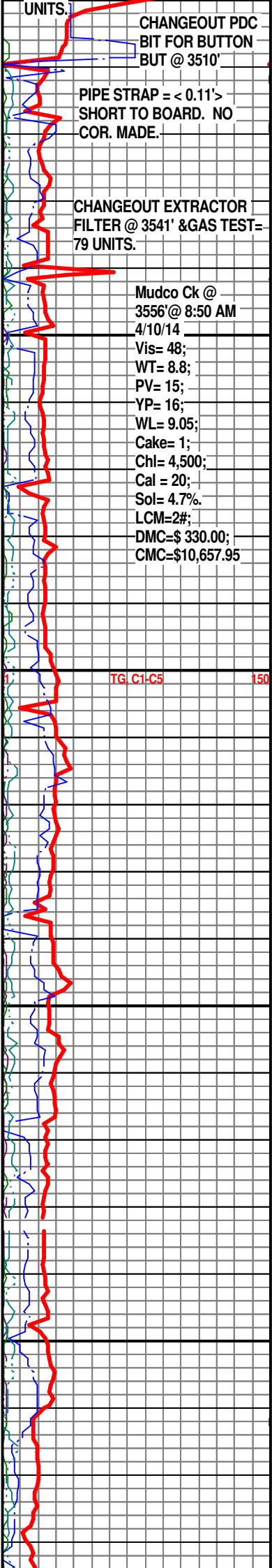
BERN 3654' (- 883)

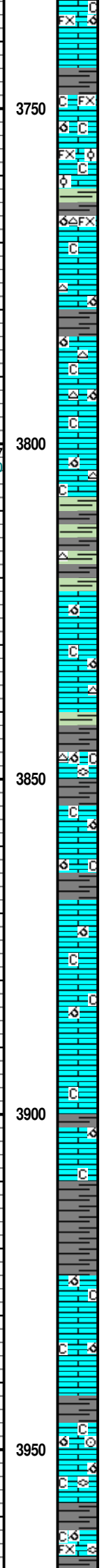
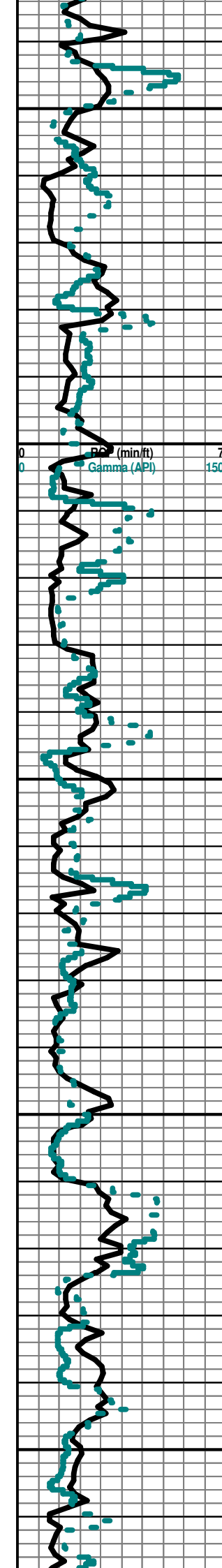
Ls Wht-Crm-Gry FxIn Tr/Poor IxIn Por Mostly Micritic Dsn Barren Cht Gry-Wht Transl-Op Shp Vit Chalk Sh Gry-Char Soft No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Poor IxIn Por Mostly Micritic Dsn Barren w/Tr Cht Wht Op Shp Vit Chalk Sh Char-Gry Soft No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Tr/Poor IxIn Por Mostly Micritic Dsn Barren Grad Poor Pin-Pt IxIn Por Chalk Cht Wht-Tan Transl-Op Shp Vit Sh Char-Red Soft No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Poor IxIn Por Mostly Micritic Dsn Barren Grad Poor





OOL/OOM Por Poor Dissolu Chalk Sh Char-Red Sort No Flor No Stn NS

TOPEKA 3748' (- 977)

Ls Wht-Crm FxIn Poor IxIn Por Mostly Micritic Dsn Barren Grad Poor OOL/OOM Por Poor Dissolu Chalk Wht Soft Cht Wht Op Shp Vit Sh Gry-Grn Fissil Soft No Odor No Flor No Stn NS

Ls Crm-Wht-Gry FxIn Poor-Fair IxIn Por Dns Micritic (w/Fos (Fuss) Grad Fair OOM Por (w/Small OOL in p) Poor Dissolu Poor Develop Cht Gry Op Shp Vit Chalk V Abd Sh Char-Gry No Flor No Odor No Stn NS

Ls Crm-Wht-Gry FxIn Poor-Fair IxIn Por Dns Micritic (w/Fos (Fuss) Grad Fair OOM Por (w/Small OOL in p) Poor Dissolu Poor Develop Cht Gry Op Shp Vit Chalk V Abd Sh Char-Gry No Flor No Odor No Stn NS

Ls Crm-Wht-Gry FxIn Poor-Fair IxIn Por Dns Micritic (w/Fos (Fuss) Grad Fair OOM Por (w/Small OOL in p) Poor Dissolu Poor Develop Cht Gry Op Shp Vit Chalk V Abd Sh Char-Gry No Flor No Odor No Stn NS

Ls Wht FxIn Fair-Med IxIn Gran Por Grad Fair-Med OOM Por (w/Poor-Fair Dis Poor Devel) Chalk Sh Red-Grn-Char Fissil Scat ? Min Flor (Dull Wht-Grn) No Odor NS

Ls Wht FxIn Fair-Med IxIn Gran Por Grad Fair-Med OOM Por (w/Poor-Fair Dis Poor Devel) Chalk Sh Red-Grn-Char Fissil Scat ? Min Flor (Dull Wht-Grn) No Odor NS

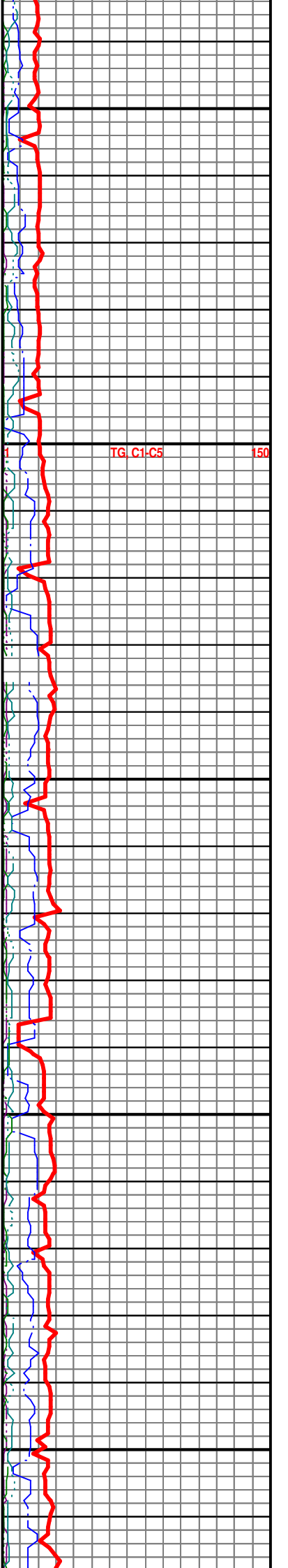
Ls Wht FxIn Fair-Med IxIn Gran Por Grad Fair-Med OOM Por (w/Poor-Fair Dis Poor Devel) Chalk Sh Red-Grn-Char Fissil Scat ? Min Flor (Dull Wht-Grn) No Odor NS

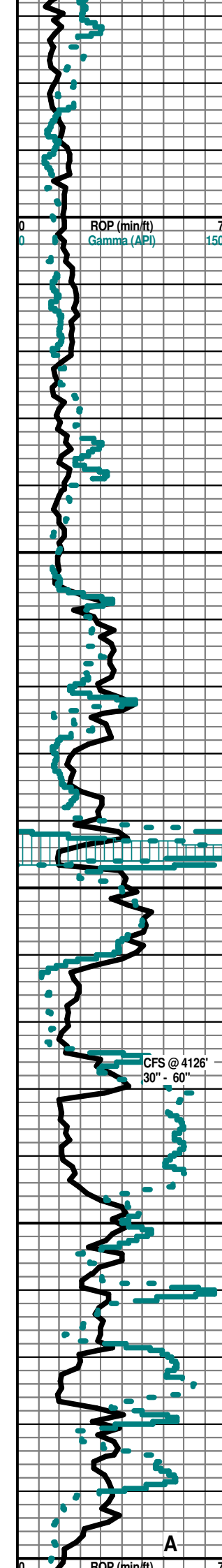
LeCOMPTON 3924' (- 1153)

Ls Wht FxIn Fair-Med IxIn Gran Por Grad Fair-Med OOM Por (w/Poor-Fair Dis Poor Devel) Chalk Sh Red-Grn-Char Fissil Scat ? Min Flor (Dull Wht-Grn) No Odor NS

Ls Wht-Gry AA FxIn Fair-Med IxIn Gran Por Grad Fair-Med OOM Por (w/Poor-Fair Dissolu & Poor Develop) Fos (Crin) Chalk Sh Char Fissil Scat ? Min Flor (Dull Wht-Grn) No Odor NS

Ls Wht-Gry AA FxIn Fair-Med IxIn Gran Por Grad Fair-Med OOM Por (w/Poor-Fair Dissolu & Poor Develop) Fos (Crin) Chalk Sh Char Fissil





Scat ? Min Flor (Dull Wht-Grn) No Odor NS

Ls Wht-Gry AA FxIn Fair-Med IxIn Gran Por Grad Fair-Med OOM Por (w/Poor-Fair Dissolu & Poor Develop) Fos (Crin) Chalk Sh Char Fissil Scat ? Min Flor (Dull Wht-Grn) No Odor NS

Ls Wht-Gry FxIn Fair-Med IxIn Gran Por Grad Fair-Med OOM Por (w/Poor-Fair Dissolu & Poor Develop) Fos (Fuss) Chalk Sh Char Fissil Scat ? Min Flor (Dull Wht-Grn) No Odor NS

Ls Wht-Gry FxIn Fair-Med IxIn Gran Por Grad Fair-Med OOM Por (w/Poor-Fair Dissolu Poor Develop) Fos (Fuss) Chalk Sh Char Fissil Scat ? Min Flor (Dull Wht-Grn) No Odor NS

Ls Wht-Gry FxIn Fair-Med IxIn Gran Por Grad Fair-Med OOM Por (w/Poor-Fair Dissolu Poor Develop) Fos (Fuss) Chalk Sh Char Fissil Scat ? Min Flor (Dull Wht-Grn) No Odor NS

Ls Wht-Crm-Gry FxIn Poor Gran IxIn Por Cht Wht-Gry Op Shp Vit Chalk Sh Char-Gry Soft Fissil No Odor No Stn No Flor NS

Ls Crm-Wht FxIn Gran Dec OOM Por Inc FxIn Gran Por Fair IxIn Por Abd Chalk Sh Gry Soft No Odor No Stn No Flor NS

HEEBNER 4090' (- 1319)

Sh Bk Carb Ls AA Cht Drk Gry Op Shp Vit Chalk Abd No Odor No Stn No Flor NS

30" CFS @ 4126' Ls Wht-Crm FxIn-MicroIxIn Grad Poor IxIn Por Cht Wht (w/Wht Includ) Chalk Abd Sh Blk Carb-Char-Gry Fissil No Flor No Odor NS

TORONTO 4111' (-1340')

60" CFS @ 4126' Ls Wht-Crm FxIn-MicroIxIn Grad Poor IxIn Por Cht Wht (w/Wht Includ) Chalk Abd Sh Blk Carb-Char-Gry Fissil No Flor No Odor NS

DOUGLAS 4124' (- 1353)

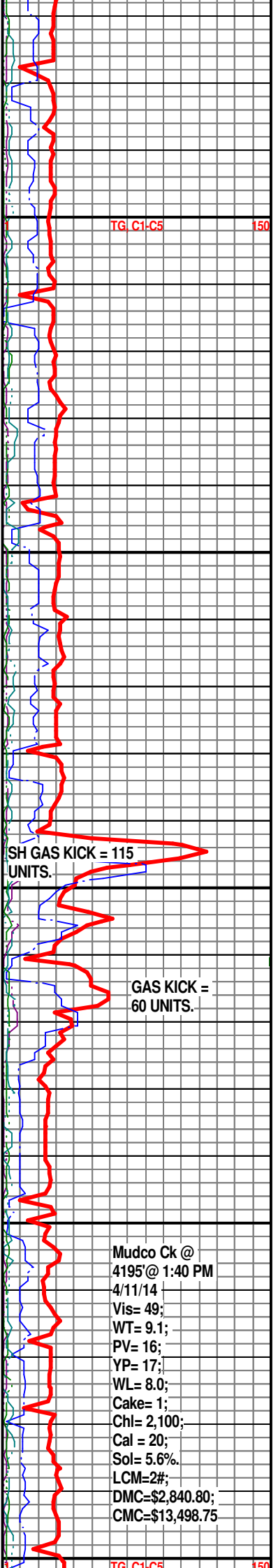
Sh Char-Gry-Blk Carb Fissil Abd Ls Crm-Lt Gry FxIn Poor IxIn Por Grad Poor OOM Por (w/Small OOids in pl) Cht Wht Op Shp Vit Chalky No Odor No Flor No Stn NS

Ls Crm-Lt Gry FxIn Poor IxIn Por Grad Poor OOM Por (w/Small OOids in pl) Cht Wht Op Shp Vit Chalky Pyr Mass Sh Char-Gry- Blk Carb Fissil No Odor No Flor No Stn NS

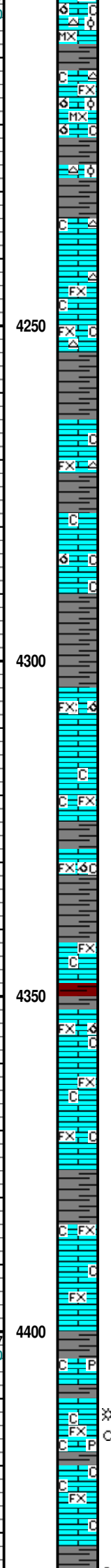
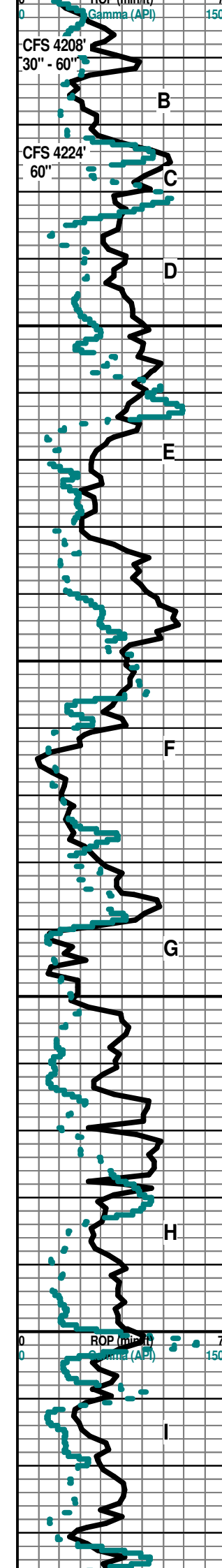
IATAN 4177' (- 1406)

LANSING 4190' (- 1419)

30" CFS @ 4208' Ls Wht MicroIxIn Dns Micrite Grad VFxIn Poor IxIn Por Cht Wht-Lt Gry Translu-Op Shp Vit Fos (Crin) Sh Char-Gry-Aqua Tr Fissil No Odor Sli ? Min Flor (> 30% of Tray) No Stn NS



Mudco Ck @
4195' @ 1:40 PM
4/11/14
Vis= 49;
WT= 9.1;
PV= 16;
YP= 17;
WL= 8.0;
Cake= 1;
Chl= 2,100;
Cal = 20;
Sol= 5.6%.
LCM=2#;
DMC=\$2,840.80;
CMC=\$13,498.75



60" CFS @ 4208' Ls Wht MicroxIn-FxIn Dns Micrite Grad FxIn-Lt Brn Poor IxIn Por Grad Poor OOM Por (w/Small OOids in pl) Cht Wht-Lt Gry Translu-Op Shp Vit Chalky Sh Char-Gry-Aqua Tr Fissil No Odor Sli ? Min Flor (> 50% of Tray) No Stn NS

60" CFS @ 4224' Ls Wht MicroxIn-FxIn Dns Micrite Grad FxIn-Lt Brn Poor IxIn Por Grad Poor OOM Por (w/Small OOids in pl) Cht Wht-Lt Gry Translu-Op Shp Vit Chalky Sh Char-Gry-Aqua Tr Fissil No Odor Sli ? Min Flor (> 60% of Tray) No Stn NS

Ls AA Crm Wht FxIn Por Poor IxIn Por Cht AA Chalk AA No Odor No Stn Sli ? Min Flor (< 20% of Tray) NS

Ls AA Crm Wht FxIn Por Poor IxIn Por Cht AA Chalk AA No Odor No Stn Sli ? Min Flor (< 20% of Tray) NS

Ls AA Crm Wht FxIn Por Poor IxIn Por Cht AA Chalk AA No Odor No Stn Sli ? Min Flor (< 20% of Tray) NS

Ls Crm FxIn Dns Micrite Grad Fair OOM Por Poor Vug Leaching Dissolu Poor Develop Poor InterOOM Por Chalky Abd No Odor Sli ? Min Flor No Stn NS

Ls Crm-Tan FxIn Good OOM Por Fair Good Vug Leaching Disslou Poor Develop Poor InterOOM Por Chalky V Abd Scat ? Min Stn (Lt Grn) No Odor No Stn NS

Ls Crm Dns FxIn Micrite Poor IxIn to no Vis Por Chalky AA Tr OOM Por AA No Odor No Stn Scat ? Min Flor NS

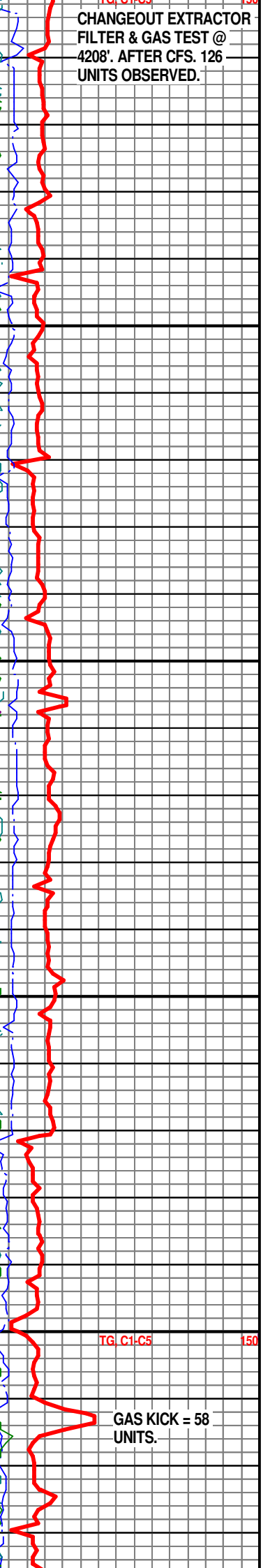
Sh Gry-Grn-Maroon Soft-Fissil Ls Crm-Gry FxIn Dns Micrite Poor IxIn Por Grad Poor OOM Por AA Cht Wht Op Shp Vit Chalk No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Dns Micrite Poor IxIn Por Cht Wht Op Shp Vit Chalk Sh Gry-Grn-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Dns Micrite Poor IxIn Por Cht Wht-Lt Gry (w/Small Wht OOid Inclus) Op Shp Vit Chalk Sh Gry-Grn-Maroon Soft-Fissil No Odor No Stn No Flor NS

Chalk Wht V Abd "Gummy" Ls Crm-Tan FxIn Poor IxIn Por Grad Dns Micrite (w/Pyr Inclus) Grad VFXIn Tan (w/Drk Blk ?Gillsonitic Residue (w/ VSSG (1 Pc) Cht AA Med-Good Odor Good Flor in Chalk Sh Char-Gry-Maroon AA ? Min Flor (In Chalk) ? Show

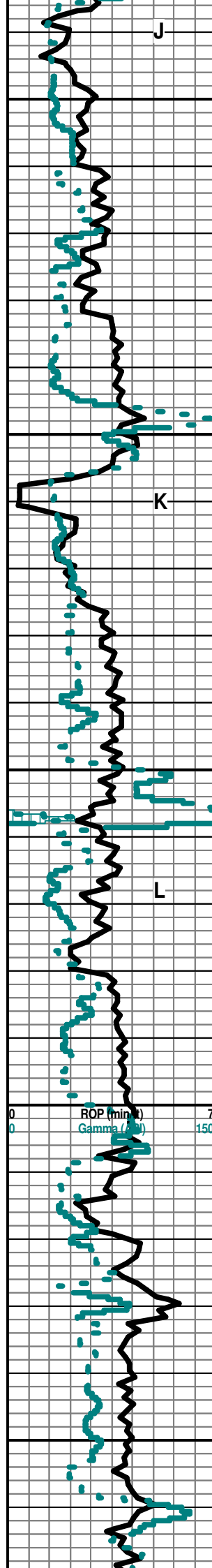
Chalk Wht V Abd "Gummy" AA Ls Crm-Tan FxIn Poor IxIn Por Grad Dns Micrite (w/Pyr Inclus) Cht AA Med-Good Odor Good Flor in Chalk Sh



CHANGEOUT EXTRACTOR FILTER & GAS TEST @ 4208'. AFTER CFS. 126 UNITS OBSERVED.

TG, C1-C5 150

GAS KICK = 58 UNITS.



Char-Gry-Maroon AA ? Min Flor (in Chalk) ? Show

Ls Crm Fxkn Dns Micrite Chalky Barren Chalk Abd No Odor Scatt ? Min Flor (in Chalk) No Odor No Stn NS

Ls Crm Fxkn Dns Micrite Chalky Barren Chalk Abd No Odor Scatt ? Min Flor (in Chalk) No Odor No Stn NS

Ls Crm Fxkn Dns Micrite Chalky Barren Chalk Abd No Odor Scatt ? Min Flor (in Chalk) No Odor No Stn NS

STARK SHALE 4496' (- 1725)

KANSAS CITY "SWOPE" (K) 4506' (- 1735)

Sh Blk Carb-Gry-Aqua-Maroon Fissil Ls Wht-Crm-Tan Fxln Poor Ixln Por Grad Poor OOM Por Poor Dissolu Poor InterOOM Por Cht Wht-Lt Gry Translu-Op Shp Vit Chalky No Flor No Stn No Odor NS

Ls Wht-Crm-Tan Fxln (w/Good OOM Por Fair InterOOM Por Med-Good Leaching Med-Good Develop Barren Cht Wht-Lt Gry Translu-Op Shp Vit Chalky Sh Blk Carb-Gry-Aqua-Maroon Fissil No Odor No Flor No Stn NS

HUSHPUCKNEY 4550' (- 1779)

Sh Blk Carb Fissi -Gry Soft "Gummy" Abd Ls AA Dns Fxln Micrite Tr Cht Gry AA Chalky No Flour No Stn No Odor NS

KANSAS CITY "HERTHA (L)" 4558' (- 1787)

Ls Crm-Gry Fxln Micrite Grad Poor OOM por (w/Fair-Poor Vug Leaching (w/Pyr Inclus) Chalky No Flor No Stn No Odor NS

Ls Crm-Gry Fxln Micrite Grad Poor OOM por (w/Fair-Poor Vug Leaching (w/Pyr Inclus) Chalky No Flor No Stn No Odor NS

Sh Char-Gry V Abd Fissil Ls Crm Wht Fxln Dns Dec Chalky No Odor No Flor No Stn NS

Ls Crm-Gry Fxln Micrite Grad Poor OOM por (w/Fair-Poor Vug Leaching (w/Pyr Inclus) Chalky No Flor No Stn No Odor NS

Ls Wht Fxln Dns Micrite Grad Fxln w/ Poor Pin-Pt Por Tr Sli Vug Leaching Grad OOM Por Cht Drk Gry Op Shp Vit Sh Char Gry Fissil AA No Odor No HC Stn ? Min. Flour Chalky NS

Mudco Ck @
4496' @ 8:40 PM
4/12/14
Vis= 45;
WT= 9.35;
PV= 14;
YP= 15;
WL= 9.2;
Cake= 1;
Chl= 4,200;
Cal = 20;
Sol= 6.9%.
LCM=2#;
DMC=\$ 1,082.15;
CMC=\$14,580.90

SH GAS KICK
= 50 UNITS.

SH GAS KICK
= 47 UNITS.

TG, C1-C5 150

MARMATON 4674' (- 1903)

Ls Wht Fxln Dns Micrite Grad Fxln w/ Poor Pin-Pt Por Tr Sli Vug Leaching Grad OOM Por Cht Drk Gry Op Shp Vit Sh Char Gry Fissil AA No Odor No HC Stn ? Min. Flour Chalky NS

Ls Wht Fxln Dns Micrite Grad Fxln w/ Poor Pin-Pt Por Tr Sli Vug Leaching Grad OOM Por Cht Drk Gry Op Shp Vit Sh Char Gry Fissil AA No Odor No HC Stn ? Min. Flour Chalky NS

Ls Wht Fxln Dns Micrite Grad Fxln w/ Poor Pin-Pt Por Tr Sli Vug Leaching Grad OOM Por Cht Drk Gry Op Shp Vit Sh Char Gry Fissil AA No Odor No HC Stn ? Min. Flour Chalky NS

Ls Tan-Lt Brn Microxln Dns Micrite Barren Cht Wht-Tan Op Shp Vit Fos (Crin Abd, Pelec) Chalky Sh Blk Carb-Char-Drab Grn Fissil No Odor No Stn No Flor NS

PAWNEE 4760' (- 1989)

Ls Crm-Tan-Lt Gry Fxln Dns Micrite Grad Poor Pin-Pt Ixln Por Barren Grad Poor OOL Por (w/OOL in pl) Poor Dissolu Poor Leaching Cht Wht-Lt Tan-Lt Gry Op Shp Vit Chalky Sh Blk Carb-Char-Drab Grn Fissil No Odor No Stn No Flor NS

30" CFS @ 4805' Ls Crm-Tan Fxln Dns Micrite Grad Poor Pin-Pt Ixln Por Barren Cht Wht-Lt Tan Op Shp Vit Fos (Fuss) Chalky Sh Blk Carb-Char-Drab Grn Fissil No Odor No Stn No Flor NS

FORT SCOTT 4788' (- 2017)

60" CFS @ 4805' Ls Crm-Tan Fxln Dns Micrite Grad Poor Pin-Pt Ixln Por Barren Cht Wht-Lt Tan Op Shp Vit Fos (Fuss) Chalky Sh Blk Carb-Char-Drab Grn Fissil No Odor No Stn No Flor NS
 NS" CFS @ 4805' Ls Crm-Tan Fxln Dns Micrite Grad Poor Pin-Pt Ixln Por Barren Cht Wht-Lt Tan Op Shp Vit Fos (Fuss) Chalky Sh Blk Carb-Char-Drab Grn Fissil No Odor No Stn No Flor NS

CHEROKEE 4802' (- 2031)

Ls Wht Fxln Dns Micrite Barren Cht Wht Op Shp Vit Fos (Bry) Chalk Sh Blk Carb-Char-Drab Grn Fissil No Odor No Flor No Stn NS

Sh Blk Carb-Char-Drab Grn Fissil Ls Wht Fxln Dns Micrite Barren Cht Wht Op Shp Vit Chalk No Odor No Flor No Stn NS

Ls Wht-Crm-Tan Microxln- Fxln Dns Micrite Barren Cht Wht Op Shp Vit Fos (Crin, Brach) Chalk Sh Blk Carb-Char-Drab Grn Fissil No Odor No Flor No Stn NS

Sh Blk Carb-Char-Drab Grn Fissil Ls Gry-Tan Fxln Dns Micrite Barren Chalk No Odor No Flor No Stn NS

Ls Wht-Crm-Tan Fxln Dns Micrite Barren Cht Wht-Lt Gry Op Shp Vit Chalk Sh Blk Carb-Char Fissil No Odor No Flor No Stn NS

~DST # 2~

Interval: 4754'- 4805"
 Times: 5"-90"-17"-30"
 Blow: IF V. Weak Surface= 1/4" Inc./ 1/2"; FF= No
 Blow-Flushed Tool (Had Good Surge) & No Blow.
 Recovery: 30' M;
 Pressures:
 IH = 2274#;
 FH = 2274#;
 IF = 8-14#;
 FF = 18-33#;
 ISIP = 1398#;
 FSIP = 1253#;
 Temp. = 117 degrees F.

SH GAS KICK = 66 UNITS

GAS KICK = 62 UNITS

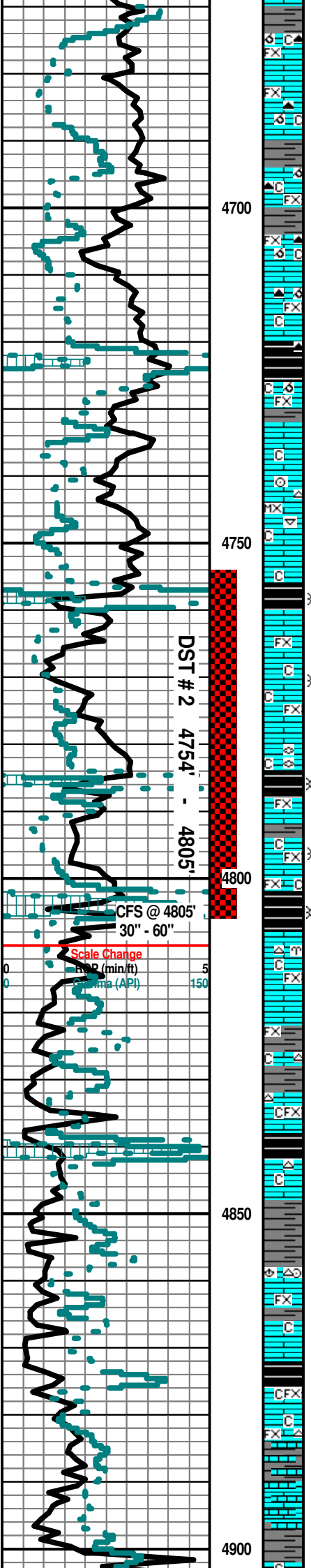
SH GAS KICK = 121 UNITS

GAS KICK = 75 UNITS

SH GAS KICK = 106 UNITS
 TGI, C1-C5 150

Mudco Ck @ 4805' @ 10:25 AM 4/13/14
 Vis= 48;
 WT= 9.1;
 PV= 15;
 YP= 15;
 WL= 8.4;
 Cake= 1;
 Chl= 1,900;
 Cal = 20;
 Sol= 5.6%.
 LCM= 2#;
 DMC=\$ 2,540.85;
 CMC=\$17,121.75

GAS KICK = 48 UNITS.



DST # 2 4754' - 4805'

CFS @ 4805' 30" - 60"

Scale Change
 30" (min/ft)
 60" (API)

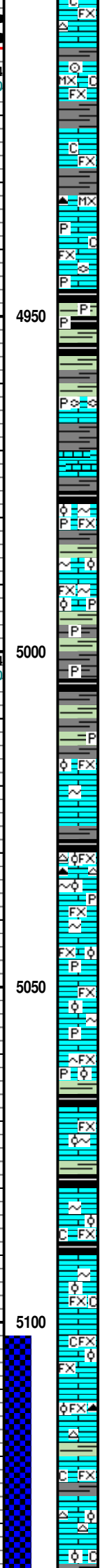
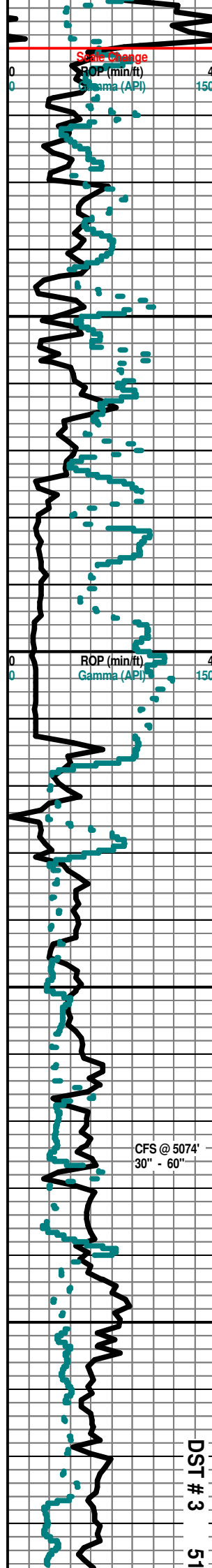
4700

4750

4800

4850

4900



Ls Wht-Crm-Tan MicroxIn-FxIn Dns Micrite Barren Cht Wht Op Shp Vit Fos (Crin) Chalk Sh Blk Carb-Char-Drab Grn Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan MicroxIn Dns Micrite Barren Cht Amber-Tan Translu Shp Vit Chalk Sh Blk Carb-Char (w/Pyr Includ) Fissil No Odor No Flor No Stn NS

MORROW SHALE 4946' (- 2175)

Sh Blk Carb-Char (w/Pyr Includ) Fissil Ls Crm-Tan MicroxIn Dns Micrite Barren Cht Amber Translu Shp Vit Fos (Fuss-w/Drk Blk Gillsonitic Stn) Chalk No Odor No Flor No Stn NS

Ls Tan FxIn Dns Micrite AA Grad Wht Poor IGran Por "Sandy Gran Por" VFgrn (w/Glacu Includ) Pyr Mass Sh Blk Carb (w/Pyr Includ) -Aqua Fissil No Odor No Flor No Stn No Odor NS

Ls Wht Poor IGran Por "Sandy Gran Por" VFgrn (w/Glacu Includ) Grad Crm-Tan FxIn Dns Micrite AA Pyr Mass Sh Blk Carb (w/Pyr Includ)-Aqua Fissil No Odor No Flor No Stn No Odor NS

MISSISSIPPIAN "Ste. GEN" 5017' (- 2246)

30" CFS @ 5074' Ls Wht Poor IGran Por "Sandy Gran Por" VFgrn (w/Glacu Includ) Grad Crm-Tan FxIn Dns Micrite AA Cht Amber- Tan AA Translu-Op Shp Vit Sh Blk Carb (w/Pyr Includ) -Aqua- Olive-Maroon Soft-Fissil No Odor No Flor No Stn No Odor NS

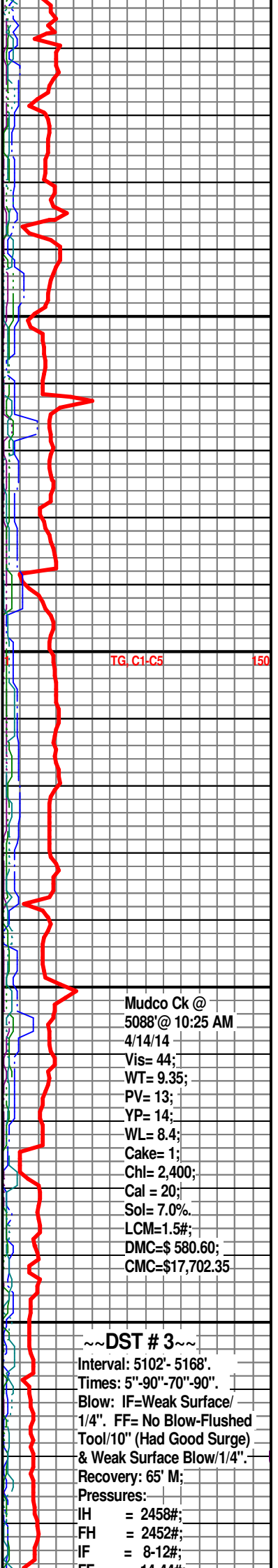
60" CFS @ 5074' Ls Wht Poor IGran Por "Sandy Gran Por" VFgrn (w/Glacu Includ) Grad Crm-Tan FxIn Dns Micrite AA Sh Blk Carb (w/Pyr Includ) -Aqua- Olive-Maroon Soft-Fissil No Odor No Flor No Stn No Odor NS

MISSISSIPPIAN "ST. LOUIS 5080' (- 2309)

Ls Wht FxIn Poor IGran Por "Sandy Gran Por" VFgrn Poor OOL Por (w/Small OOids in pl) & Glacu Includ No Dissolu Poor InterOOL Por (Lt CaCO3 Matrix) Chalk Sh Blk-Char-Aqua-Purple Fissil No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Poor IGran Por "Sandy Gran Por" VFgrn (w/Glacu Includ) Poor Fair OOL Por (w/Small OOids in pl) Cht Wht-Org Op Shp Vit Sh Char-Gry-Maroon ? Sli Odor Sli (Dull Wht) Flor NS

30" CFS @ 5168' Ls Wht-Crm FxIn Poor IGran Por "Sandy Gran Por" VFgrn Poor OOL Por (w/Small OOids in pl w/Pyr Includ & w/SSG in Wtr Under Heat) Sli Gillsonitic "Dead" Stn (Tr Only) Cht Wht On Shp Vit Sh

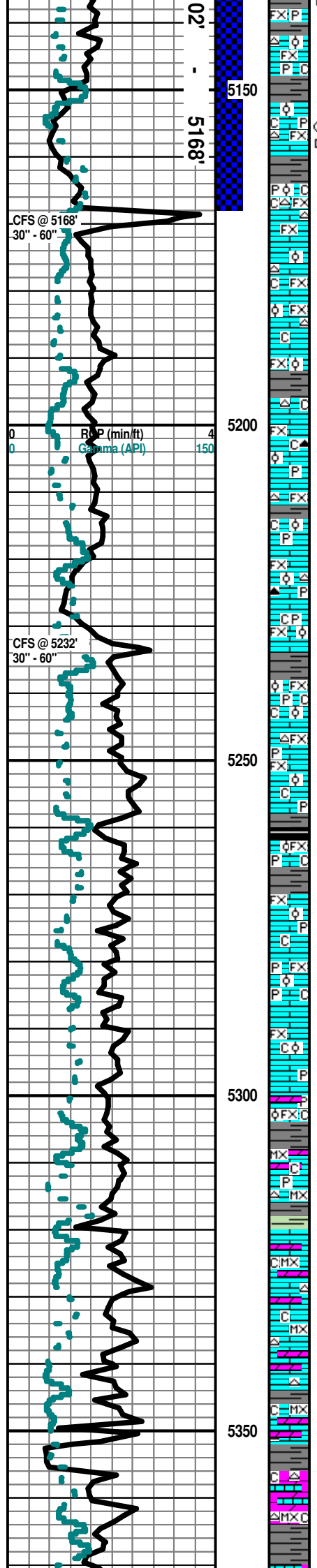


Mudco Ck @
5088' @ 10:25 AM
4/14/14
Vis= 44;
WT= 9.35;
PV= 13;
YP= 14;
WL= 8.4;
Cake= 1;
Chl= 2,400;
Cal = 20;
Sol= 7.0%
LCM=1.5#;
DMC=\$ 580.60;
CMC=\$17,702.35

~DST # 3~
Interval: 5102' - 5168'.
Times: 5"-90"-70"-90".
Blow: IF=Weak Surface/
1/4". FF= No Blow-Flushed
Tool/10" (Had Good Surge)
& Weak Surface Blow/1/4".
Recovery: 65' M;
Pressures:

IH = 2458#;
FH = 2452#;
IF = 8-12#;
FF = 11-14#

DST # 3 51



Char-Gry-Maroon ? Sli Odor Sli (Dull Wht) Flor No Stn SSG

60" CFS @ 5168' Ls Wht-Crm Fxln Poor IGran Por "Sandy Gran Por" VFgrn Poor OOL Por (w/Small OOids in pl w/Pyr Inclus) Sli Gillsonitic "Dead" Stn (Tr Only) Cht Wht Op Shp Vit Sh Char-Gry ? Sli Odor Sli (Dull Wht) Flor ? SSG

(Trip Debris) Ls Wht-Crm-Lt Gry Fxln Fair InterOOL (IGranular) Por (w/Small-Med OOids in pl) Friable Barren Cht Wht Translu-Op Shp Vit Chalk Sh-Blk Carb-Aqua-Drab Grn-Maroon-Purple Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Lt Gry Fxln Fair InterOOL (IGranular) Por (w/Small-Med OOids in pl) Friable Barren Cht Wht Translu-Op Shp Vit Chalk Sh-Blk Carb-Aqua-Drab Grn-Maroon Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Lt Gry Fxln Fair InterOOL (IGranular) Por (w/Small-Med OOids in pl) Friable Barren Cht Wht Translu-Op Shp Vit Chalk Sh-Blk Carb-Aqua-Drab Grn-Maroon Soft-Fissil No Odor No Flor No Stn NS

30" CFS @ 5232' Ls Wht-Crm-Lt Gry Fxln Fair-Med InterOOL (IGranular) Por (w/Small-Med OOids in pl) Friable Barren (w/Tr Pyr Inclus) Cht Lt Org (w/Blk Inclus) Translu Shp Vit Chalk Sh-Blk Carb-Aqua-Drab Grn-Maroon Soft-Fissil No Odor No Flor No Stn NS

60" CFS @ 5232' Ls Wht-Crm-Lt Gry Fxln Fair InterOOL (IGranular) Por (w/Small OOids in pl) Friable Barren (w/Tr Pyr Inclus) Cht Wht-Lt Gry-Lt Org (w/Blk Inclus) Translu Shp Vit Chalk Sh-Blk Carb-Aqua-Drab Grn-Maroon- Purple Soft-Fissil No Odor No Flor No Stn NS

75" CFS @ 5232' Ls Wht-Crm-Lt Gry Fxln Fair InterOOL (IGranular) Por (w/Small OOids in pl) Friable Barren (w/Tr Pyr Inclus) Cht Wht-Lt Gry-Lt Org (w/Blk Inclus) Translu Shp Vit Chalk Sh-Blk Carb-Aqua-Drab Grn-Maroon- Purple Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Lt Gry Fxln Fair-Med InterOOL (IGranular) Por (w/Small-Med-Lg OOids in pl) Friable Barren (w/Tr Pyr Inclus) (Only 2 Pcs w/Lg OOids) Poor Dissolu Poor Leaching Cht Wht Op Shp Vit Chalk Sh-Blk Carb-Aqua-Drab Grn-Maroon Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Lt Gry Fxln Fair-Med InterOOL (IGranular) Por (w/Small OOids in pl) Friable Barren (w/Tr Pyr Inclus) Cht Wht Op Shp Vit Chalk Sh-Blk Carb-Aqua-Drab Grn-Maroon Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Lt Gry Fxln Fair-Med InterOOL (IGranular) Por (w/Small OOids in pl) Friable Barren (w/Tr Pyr Inclus) Cht Wht Op Shp Vit Chalk Sh-Blk Carb-Aqua-Drab Grn-Maroon Soft-Fissil No Odor No Flor No Stn NS

Ls/Dolo Wht-Crm-Gry Fxln-Microxln Poor InterOOL (IGranular) Por (w/Small OOids in pl) Friable Barren (w/Tr Pyr Inclus) Cht Wht Op Shp Vit Chalk Sh-Blk Carb-Aqua-Drab Grn-Maroon Soft-Fissil No Odor No Flor No Stn NS

Ls/Dolo Crm-Tan Microxln Micritic Cht Wht Op Shp Vit Chalky Sh Char-Aqua Fissil No Odor No Flor Noi Stn NS

Ls/Dolo Crm-Tan Microxln Micritic Cht Wht Op Shp Vit Chalky Sh Char-Aqua Fissil No Odor No Flor Noi Stn NS

MISSISSIPPIAN SALEM 5356' (- 2585)

Dolo/Ls Crm-Tan-Gry Microxln Micritic Cht Wht Op Shp Vit Chalky Sh Char-Aqua Fissil No Odor No Flor Noi Stn NS

FF = 14-44#;
ISIP = 1443#;
FSIP = 1350#;
Temp. = 120 degrees F.

Mudco Ck @
5168' @ 8:45 AM
4/15/14
Vis= 50;
WT= 9.15;
PV= 16;
YP= 18;
WL= 7.6;
Cake= 1;
Chl= 4,600;
Cal = 20;
Sol= 5.4%
LCM= 2#;
DMC=\$ 1,163.65;
CMC=\$18,866.00

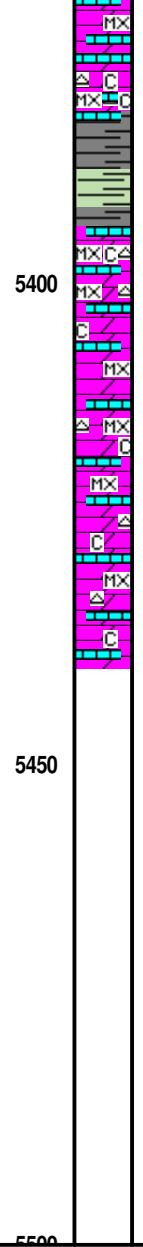
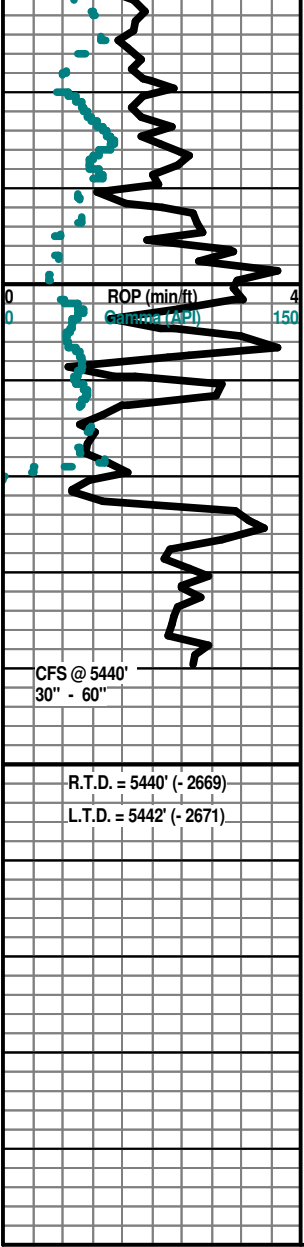
TG, C1-C5 150

GAS KICK= 29 UNITS.

BKGD GAS= 25 UNITS.

CHANGEOUT EXTRACTOR
FILTER AT 5252' (5237' LAG
DEPTH & GAS TEST = 44
UNITS OBSERVED.

Mudco Ck @
5440' @ 8:50 AM
4/16/14
Vis= 55;
WT= 9.2;



Dolo/Ls Crm-Tan-Gry MicroxIn Micritic Cht Wht Op Shp Vit Chalky Sh
Char-Aqua Fissil No Odor No Flor Noi Stn NS

Dolo/Ls Crm-Tan-Gry MicroxIn Micritic Cht Wht Op Shp Vit Chalky Sh
Char-Aqua-Drab Grn-Grn-Maroon Fissil No Odor No Flor Noi Stn NS

30" CFS @ 5440' Dolo/Ls Crm-Tan-Gry MicroxIn Micritic Cht Wht Op Shp
Vit Chalky Sh Char-Aqua-Drab Grn-Grn-Maroon Fissil No Odor No Flor
Noi Stn NS

60" CFS @ 5440' Dolo/Ls Crm-Tan-Gry MicroxIn Micritic Cht Wht Op Shp
Vit Chalky Sh Char-Aqua-Drab Grn-Grn-Maroon Fissil No Odor No Flor
Noi Stn NS

Electric Logs Run: By Pioneer Logging:
Dual Induction; Compensated Density-Neutron; Sonic;
Microresistivity & Cased Hole Gamma Ray-Nutron Logs.

Geologist left Location @ 3:00 P.M. on 4/16/2014

PV= 18;
YP= 18;
WL= 8.0;
Cake= 1;
ChI= 4,300;
Cal = 20;
Sol= 6.2%
LCM= 3#;
DMC=\$ 1,124.95;
CMC=\$19,990.95

TG.C1-C5 150

CFS @ 5440'
30" - 60"

R.T.D. = 5440' (- 2669)
L.T.D. = 5442' (- 2671)