



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

**Well Name:** JANTZ #2-30(SW)  
**Location:** S2 - NW - SW - SW 1/4 of SEC. 30 - 28 S. - 30 W.  
**License Number:** A.P.I. # 15-069-20418-00-00  
**Spud Date:** 11/30/2012  
**Surface Coordinates:** 700' FSL & 330' FWL

**Region:** Gray Co., KS.  
**Drilling Completed:** 12/11/2012

**Bottom Hole  
Coordinates:**  
**Ground Elevation (ft):** 2831'                      **K.B. Elevation (ft):** 2844'  
**Logged Interval (ft):** SF. CSG    **To:** 5520'            **Total Depth (ft):** 5520'  
**Formation:** MISSISSIPPIAN SALEM (SPERGEN)  
**Type of Drilling Fluid:** CHEMICAL/POLYMER/GEL MUD

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

**OPERATOR**

**Company:** FALCON EXPLORATION, INC.  
**Address:** 125 North Market Street, Ste. #1252  
Wichita, Kansas 67202

**GEOLOGIST**

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

**Casing & Deviation**

Spud at 11:00 pm on 11/30/12. Drilled 12-1/4" to 1875'. Ran 44 joints of new 24#, 8-5/8" casing. Tallied 1851'. Set at 1870' KB . Welded straps on GS & bottom 3 joints, then tack welded all collars. Float insert in 1st collar. Centralizers (3) 1,4 & 39. Baskets (3) 1,38 & 40. Cemented with 450 sks Class A, 3% CC, 2% Salt, 2% Gyp, 1/4# FS. Tailed with 150 sks Class C; 2% CC, 1/4# FS. Cement did circulate to surface. Plug down at 9:00 AM on 12/02/12. Allied Cementing.Ticket #52634.

**Deviation Survey's Taken:** @ 1875' = 1 degree; @ 4676' = 2 degrees; @ 5145' = 1/4 degree; @ 5396' = 1 degree; @ 5520' = 3/4 degree.

## DSTs

**DST # 1 4630'-4676'.** Times: 5"- 60"- 60"- 120"; Blow: IF= Weak 1/4"; FF= Weak 1/2" Building to 2". Recovery: 80' G.I.P. & 40' SOCM (< 1% O & 99% M). Tool Spl.= 2% O & 98% M. Pressures: IH = 2245#; FH=2231#; IF= 9-13#; FF= 16-25#; ISIP= 1286#; FSIP= 978#; Temp= 1135 degrees F.


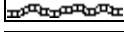
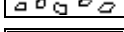
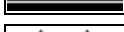

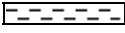









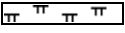


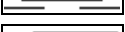

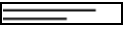

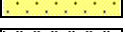
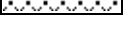
**DST # 2 5116'-5145'.** Times: 5"- 60"- 40"- 60"; Blow: IF= Weak 1/4"; FF= Weak 1/4" & Died (Flushed Tool) - No Help. Recovery: 10' M (100% M). Pressures: IH = 2446#; FH= 2443#; IF= 10-12#; FF= 13-19#; ISIP= 1336#; FSIP= 167#; Temp= 117 Degrees F.

**DST # 3 5128'-5190'.** Times: 5"- 60"- 40"- 60"; Blow: IF= Weak 1/4"; FF= Weak 1/4" & Died (Flushed Tool) - No Help. Recovery: < 45' GIP; 15' M (100% M). Pressures: IH = 2441#; FH= 2438#; IF= 13-18#; FF= 21-35#; ISIP= 739#; FSIP= 86#; Temp= 116 degrees F.










































































**DST # 4 5366'-5396'.** Times: 5"- 90"- 90"- 180"; Blow: IF= Weak 1/4" Inc to 1 1/2"; FF= Weak 1/4" Inc BOB/11". Recovery: 800' GIP; TF= 160': 10' CO (100% O).; 30' GCOM (10% G, 40% O, 50% M.); 60' GCHOCM (15% G, 25% O, 60% M.); 60' GCOWCM (16% G, 14% O, 14% W, 56% M.). Pressures: IH = 2579#; FH=2577#; IF=12-26#; FF= 35-83#; ISIP =1507#; FSIP =1469#; Temp =122 degrees F. CHL=16000 Ppm. RW=.48 @ 44 degrees F.

## Comments


























### ROCK TYPES

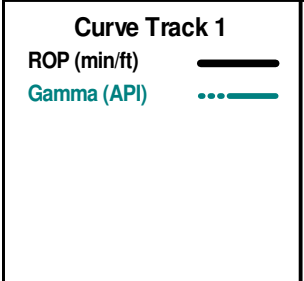
 Anhy  Bent  Brec  Carb sh  Cht	 Clyst  Coal  Congl  Dol  Grn sh	 Gry shale  Gyp  Igne  Lmst  Meta	 Mrlst  Red shale  Salt  Shale  Shcol	 Shgy  Sltst  Ss  Till
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### ACCESSORIES

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

### OTHER SYMBOLS

<b>POROSITY</b>  Earthy  Fenest  Fracture  Inter  Moldic  Organic  Pinpoint	 Vuggy <b>SORTING</b>  Well  Moderate  Poor	<b>ROUNDING</b>  Rounded  Subrnd  Subang  Angular <b>OIL SHOW</b>  Gas show	 Even  Spotted  Ques  Dead <b>INTERVAL</b>  Core  Straddle test tail pipe	 Dst_alt  Dst <b>EVENT</b>  Rft  Sidewall
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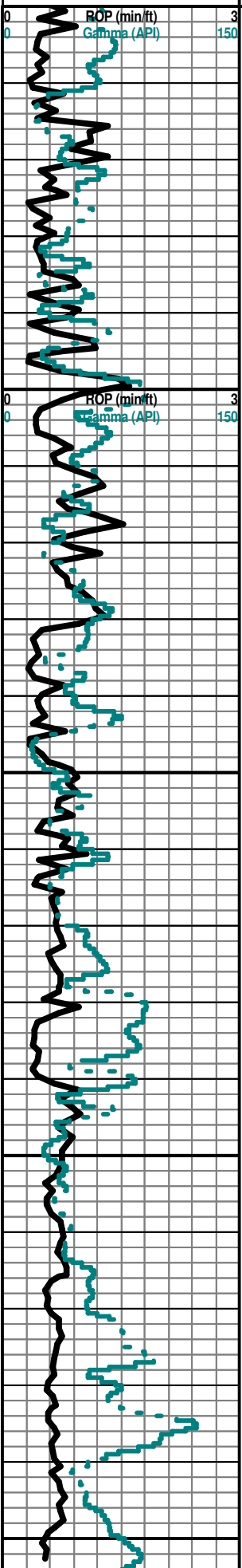
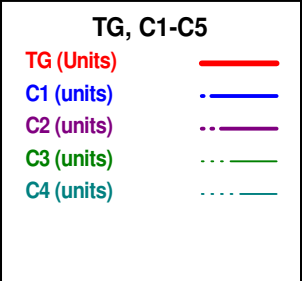


Depth

Lithology

Oil Shows

Geological Descriptions



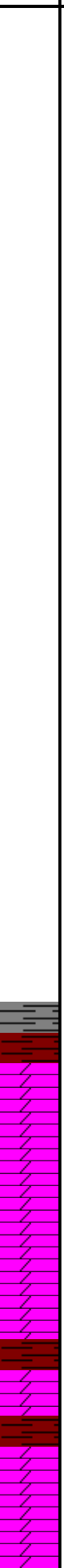
2500

2600

2650

2700

2750



**FALCON EXPLORATION, INC.**  
**JANTZ #2-30(SW)**  
**700' FSL & 330' FWL (S2 - NW - SW - SW 1/4)**  
**SEC. 30 - 28 S. - 30 W.**  
**GRAY COUNTY, KANSAS**  
**A.P.I. #15-069-20418-00-00**  
**ELEVATION : 2844' K.B. ; 2831' G.L.**  
**CONTRACTOR: STERLING DRILLING RIG # 5**  
**GEOLOGIST: DAVID P. WILLIAMS, P.G.**  
 Geologist: David P. Williams on location @ 2:45 PM 12-03-12 @ 2560'

Stone Coral Anhydrite Sample Top = 1825' (+1019); Base = 1843' (+ 1001)  
 Stone Coral Anhydrite E. Log Top = 1820' (+1024); Base = 1840' (+1004 )

Deviation Survey's Taken: @ 1875' = 1 degree; @ 4676' = 2 degrees; @ 5145' = 1/4 degree; @ 5396' = 1 degree; @ 5520' = 3/4 degree.

Note: All samples have been lagged to depth by calculated time.

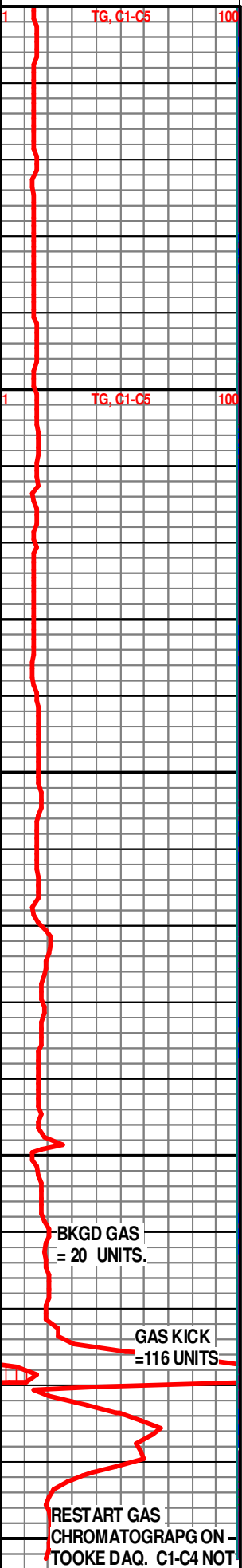
Poor Spl. Sh Red-Char V Abd Anhy/Gyp AA No Odor No Stn No Flor NS

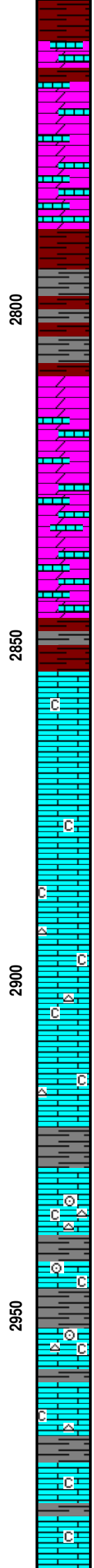
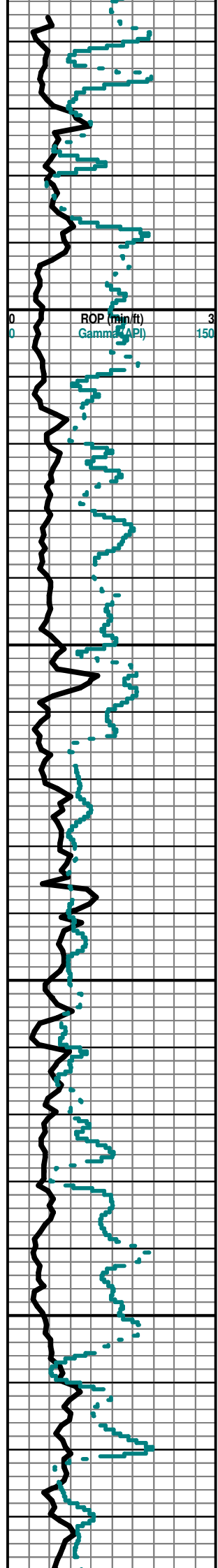
Poor Spl. Sh Red-Char V Abd Anhy/Gyp AA No Odor No Stn No Flor NS

**CHASE GROUP 2688' (+ 156)**

Poor Spl. Sh Red-Char V Abd Dolo/Ls Crm FxIn Micrite Anhy/Gyp AA No Odor No Stn No Flor NS

Poor Spl. Sh Red-Char V Abd Dolo/ Ls Crm FxIn Micrite Anhy/Gyp AA No Odor No Stn No Flor NS





**WINFIELD 2760' (+84)**

Poor Spl. Sh Gry-Red Soft Poor Spl (Wash Red V Abd) Dolo/Ls Cm-Gry Poor IxIn Por Dns Micrite Chalky No Odor No Stn No Flor NS

Poor Spl. Sh Gry-Red Soft Poor Spl (Wash Red V Abd) Dolo/Ls Cm-Gry Poor IxIn Por Dns Micrite Chalky No Odor No Stn No Flor NS

**TOWANDA 2810' (+34)**

Poor Spl. Sh Gry-Red Soft Poor Spl (Wash Red V Abd) Dolo/Ls Cm-Gry Poor IxIn Por Dns Micrite Chalky No Odor No Stn No Flor NS

**FORT RILEY 2864' (- 20)**

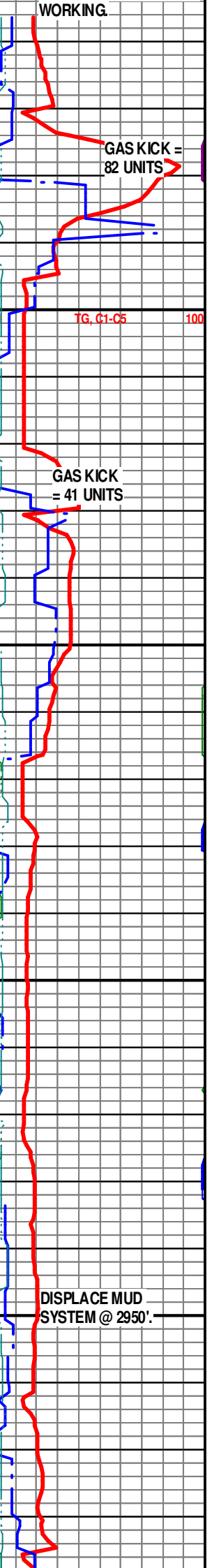
Poor Spl. Sh Gry-Red Soft Poor Spl (Wash Red V Abd) Ls Cm-Gry Poor IxIn Por Dns Micrite Chalky No Odor No Stn No Flor NS

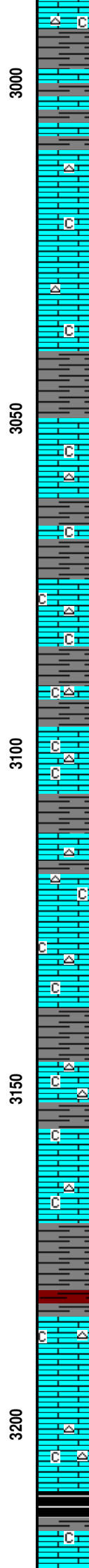
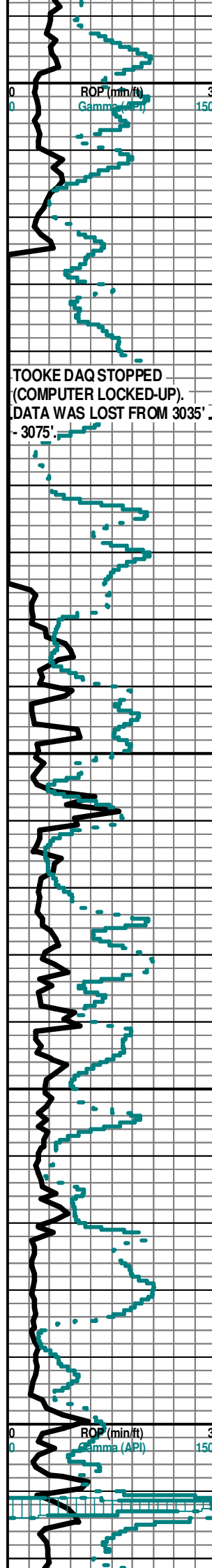
Poor Spl. Sh Gry-Red Soft Poor Spl (Wash Red V Abd) Ls Cm-Gry Poor IxIn Por Dns Micrite Chalky No Odor No Stn No Flor NS

Ls Cm-Gry F-MxIn Poor-Fair IxIn Por Tr Granular Grad Poor Dns Micrite Cht Gry (w/Brn Inclus) Fos (Crin) Chalky Sh Gry-Red Soft No Odor No Stn No Flor NS

Ls Cm-Gry F-MxIn Poor-Fair IxIn Por Tr Granular Grad Poor Dns Micrite Cht Gry (w/Brn Inclus) Fos (Crin) Chalky Sh Gry-Red Soft No Odor No Stn No Flor NS

Ls Cm-Gry F-MxIn Poor-Fair IxIn Por Tr Granular Grad Poor Dns Micrite Cht Wht Op Shp Vit Chalky Abd Sh Gry-Red Soft No Odor No Stn No Flor NS





Ls Cm-Wht FxIn Poor IxIn Por Dns Micrite Cht Wht Op Shp Vit Chalky V Abd  
"Gummy" Sh Gry-Red Soft No Odor No Stn No Flor NS

Ls Cm-Wht FxIn Poor IxIn Por Dns Micrite Cht Wht Op Shp Vit Chalky V Abd  
"Gummy" Sh Gry-Red Soft No Odor No Stn No Flor NS

Ls Cm-Wht FxIn Poor IxIn Por Dns Micrite Cht Wht Op Shp Vit Chalky Dec Sh  
Gry-Red Soft No Odor No Stn No Flor NS

Ls Cm-Wht-Gry FxIn Poor IxIn Por Dns Micrite Chalky Dec Sh Gry- Red- Maroon  
Soft No Odor No Stn No Flor NS

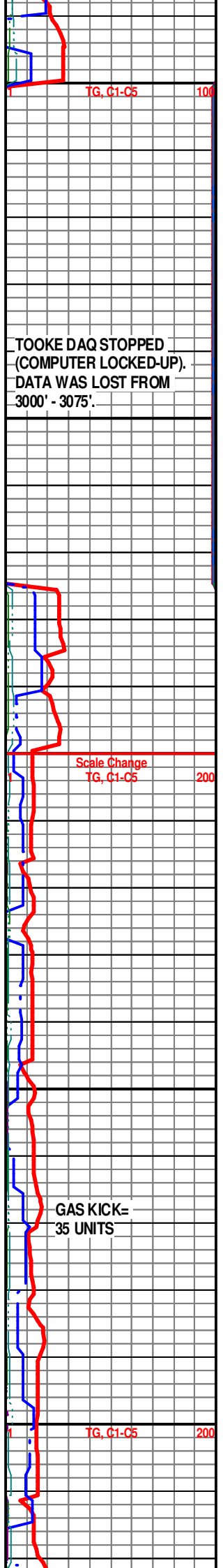
**COTTONWOOD 3146' (-302)**

Ls Cm-Wht-Gry FxIn Poor IxIn Por Dns Micrite Cht Gry Op Shp Vit Chalky Sh  
Gry-Red-Maroon Soft No Odor No Stn No Flor NS

**NEVA 3184' (-340)**

Ls Cm-Wht-Gry FxIn Poor IxIn Por Dns Micrite Cht Gry Op Shp Vit Chalky Sh  
Gry-Red-Maroon Soft (Wash Red) No Odor No Stn No Flor NS

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



TG, C1-C5

100

TOOKE DAQ STOPPED  
(COMPUTER LOCKED-UP).  
DATA WAS LOST FROM  
3000' - 3075'.

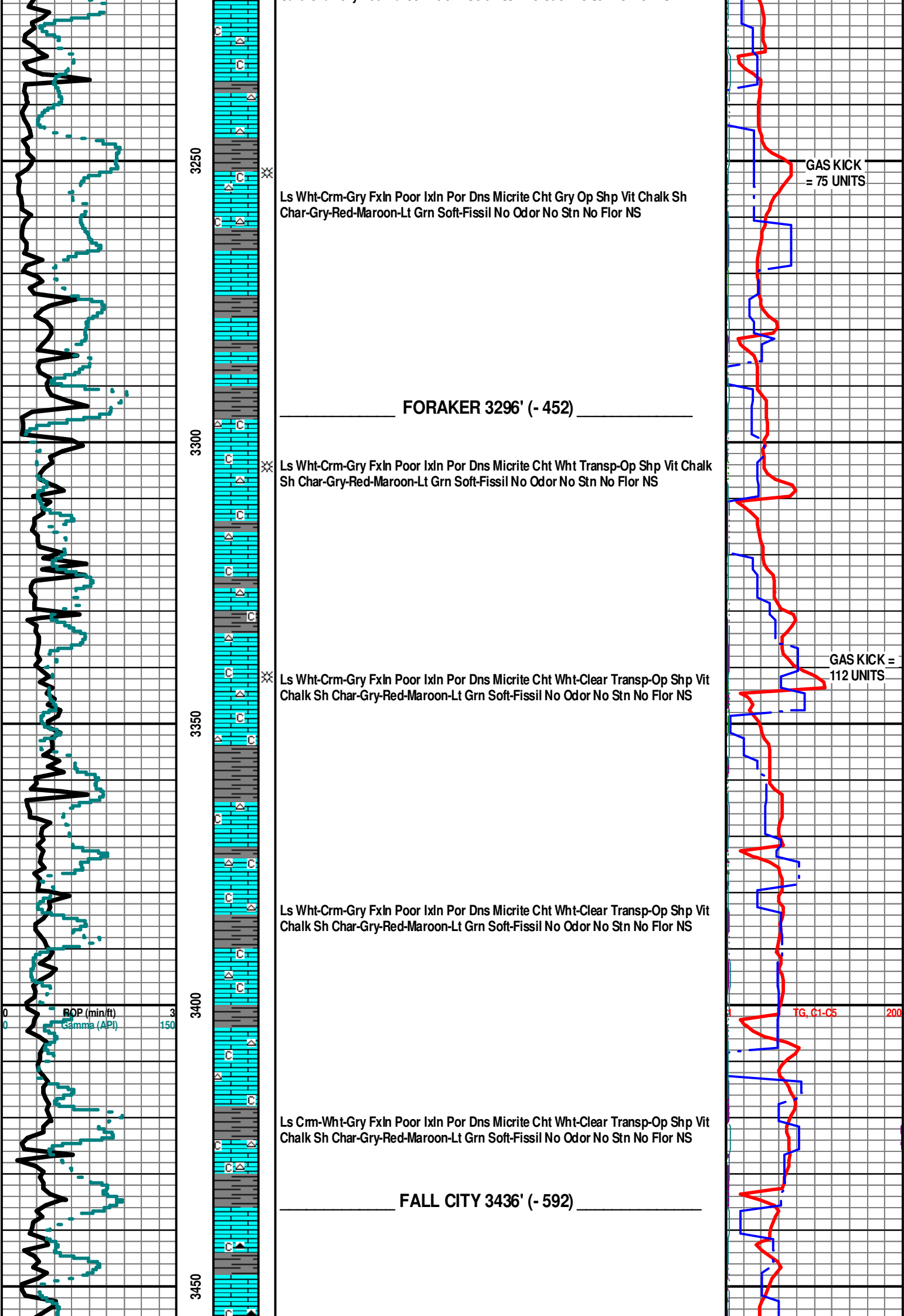
Scale Change  
TG, C1-C5

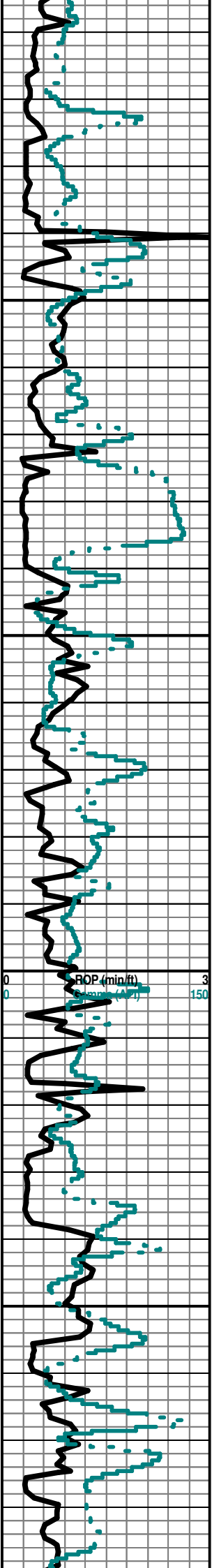
200

GAS KICK=  
35 UNITS

TG, C1-C5

200





Ls Wht-Crm-Gry Fxln Poor Ixln Por Dns Micrite Cht Gry-Wht-Blk Transp- Op Shp Vit Chalk Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry Fxln Poor Ixln Por Dns Micrite Cht Wht Transp-Op Shp Vit Chalk Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn No Flor NS

ROOT SHALE 3523' (- 679)

STOTLER 3536' (- 692)

Ls Wht-Crm Fxln Poor Ixln Por Dns Micrite Cht Wht-Gry Transp-Op Shp Vit Chalk Fos (Crin, Fuss) Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor Ixln Por Dns Micrite Cht Wht-Gry Transp-Op Shp Vit Chalk Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn No Flor NS

TARKIO 3599' (- 755)

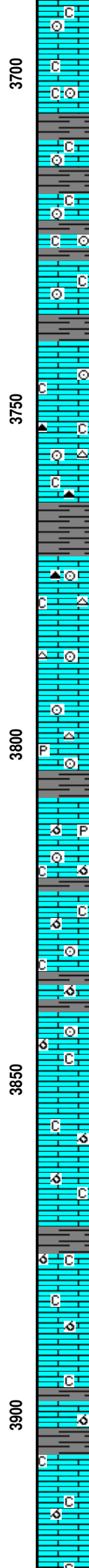
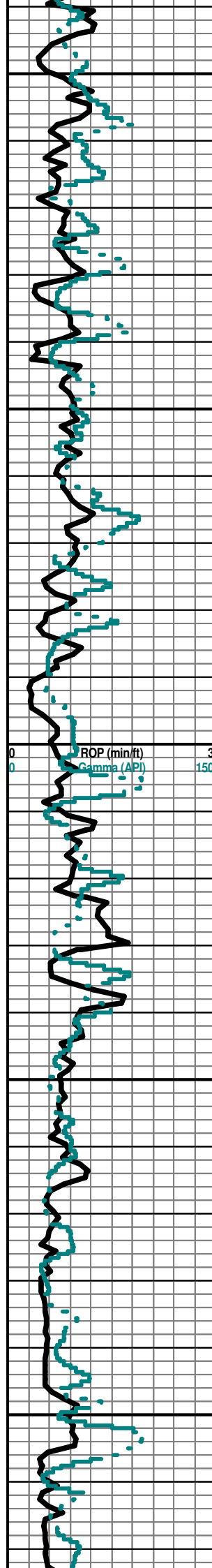
Ls Wht-Crm Fxln Poor Ixln Por Dns Micrite Grad Fair Pin-Pt Ixln Por Cht Wht-Gry Transp-Op Shp Vit Chalk Fos (Crin) Sh Char-Gry- Red- Maroon-Lt Grn Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor Ixln Por Dns Micrite Cht Wht-Gry Transp-Op Shp Vit Chalk Fos (Crin) Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn No Flor NS

BERN 3686' (- 842)

Ls Crm-Grv Fxln Poor Ixln Por Dns Micrite Grad Poor Pin-Pt Por Chalk V Abd Fos

TG, C1-C5 200



(Crin) Sh Char-Gry-Lt Grn Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor Ixln Por Dns Micrite Grad Poor Pin-Pt Por Chalk V Abd Fos  
(Crin) Sh Char-Gry-Lt Grn-Red Soft-Fissil No Odor No Stn No Flor NS

Ls Cmm-Gry Fxln Poor Ixln Por Dns Micrite Grad Poor Pin-Pt Por Cht Drk Gry-Lt  
Gry Op Shp Vit Chalk Fos (Crin) Sh Char-Gry-Lt Grn Soft-Fissil No Odor No Stn No  
Flor NS

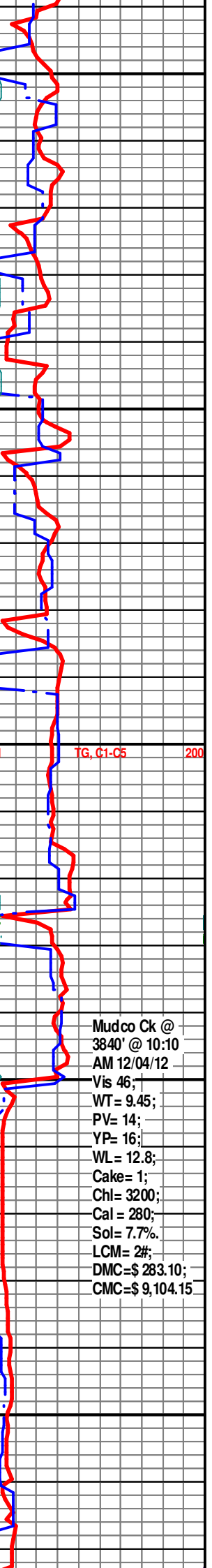
**TOPEKA 3808' (- 964)**

Ls Wht-Crm-Gry Fxln Poor Ixln Por Mostly Micritic Dsn Barren Grad Poor OOM Por  
Poor Leaching Poor-No Dussolu Chalk Wht Fos (Crin in Pyr) Sh Char-Grn Fissil  
Soft No Odor No Flor No Stn NS

Ls Wht-Crm-Gry Fxln Poor Ixln Por Mostly Micritic Dsn Barren Grad Poor OOM Por  
Poor Leaching Poor-No Dussolu Chalk Wht Fos (Crin) Sh Char-Grn Fissil Soft No  
Odor No Flor No Stn NS

Ls Wht-Crm-Gry Fxln Poor Ixln Por Mostly Micritic Dsn Barren Grad Poor OOM Por  
Poor Leaching Poor-No Dussolu Chalk Wht Sh Char-Grn Fissil Soft No Odor No  
Flor No Stn NS

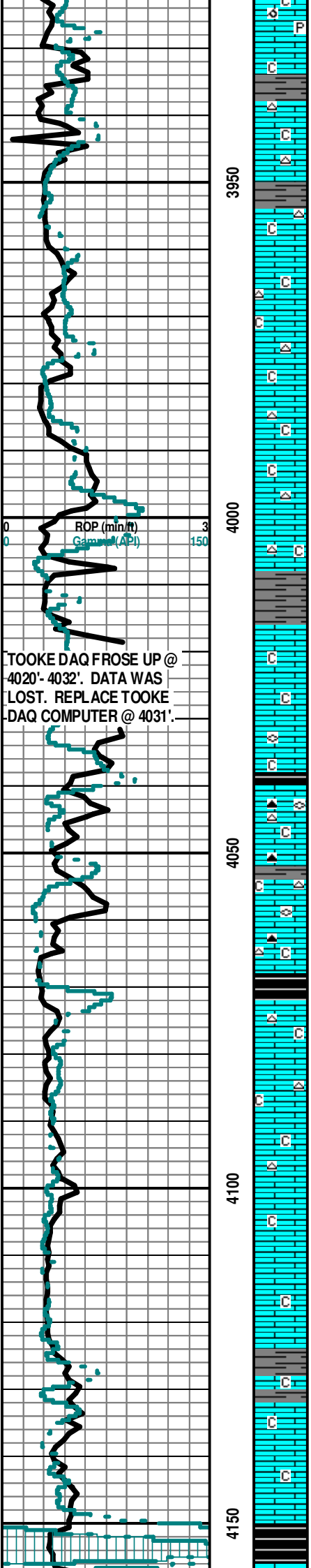
Ls Wht-Crm-Gry Fxln Poor Ixln Por Mostly Micritic Dsn Barren Grad Poor OOM Por



TG, C1-C5 200

Mudco Ck @  
3840' @ 10:10  
AM 12/04/12  
Vis 46;  
WT= 9.45;  
PV= 14;  
YP= 16;  
WL= 12.8;  
Cake= 1;  
Chl= 3200;  
Cal = 280;  
Sol= 7.7%.  
LCM= 2#;  
DMC=\$ 283.10;  
CMC=\$ 9,104.15





Poor Leaching Poor-No Dussolu Chalk Wht Fos (Crin in Pyr) Sh Char-Grn Fissil Soft No Odor No Flor No Stn NS

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

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

**LeCOMPTON 4017' (- 1173)**

Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Chalk V Abd Fos (Fuss) Sh Gry-Char Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Cht Wht- Gry - Drk Blk Op Shp Vit Chalk Abd Fos (Fuss) Sh Blk Carb-Gry-Char Soft-Fissil No Odor No Flor No Stn NS

**QUEEN HILL 4018' (- 1274)**

**OREAD 4022' (- 1276)**

Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Cht Wht- Gry - Drk Blk Op Shp Vit Chalk Abd Sh Gry-Char-Lt Grn Soft-Fissil No Odor No Flor No Stn NS

**PLATTSMOUTH 4128' (- 1284)**

Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Chalk AA Sh Gry-Char-Lt Grn Soft-Fissil No Odor No Flor No Stn NS

**HEEBNER 4150' (- 1306)**

TOOKE DAQ CHROMATOGRAPH NOT WORKING @ 3918'

TG, C1-C5 200

TOOKE DAQ COMPUTER FROZE UP @ 3994'- 4017'. DATA LOST.

TOOKE DAQ COMPUTER FROZE UP @ 4020'- 4032'. DATA LOST. REPLACE TOOKE DAQ COMPUTER @ 4031'.

RE-BOOT TOOKE DAQ CHROMATOGRAPH @ 4088'.

SH GAS KICK = 143 UNITS.

Sh Bk Carb- Gry-Char-Lt Grn Soft-Fissil Ls Wht-Crm-Gry Fxln Dns Micrite Grad  
Poor Pin-Pt Ixln Por Chalk AA No Odor No Flor No Stn NS

TORONTO 4166' (- 1322)

DOUGLAS 4194' (- 1350)

Ls Cm-Wht-Gry Fxln Dns Micrite Poor Ixln Por AA Chalk Wht Soft Abd Sh  
Char-Gry-Grn Soft-Fissil No Odor No Stn No Flor NS

Ls Cm-Wht-Gry Fxln Dns Micrite Poor Ixln Por AA Chalk Wht Soft Abd Sh  
Char-Gry-Grn Soft-Fissil No Odor No Stn No Flor NS

IATAN (BROWN LIME) 4250' (- 1406)

LANSING 4258' (- 1414)

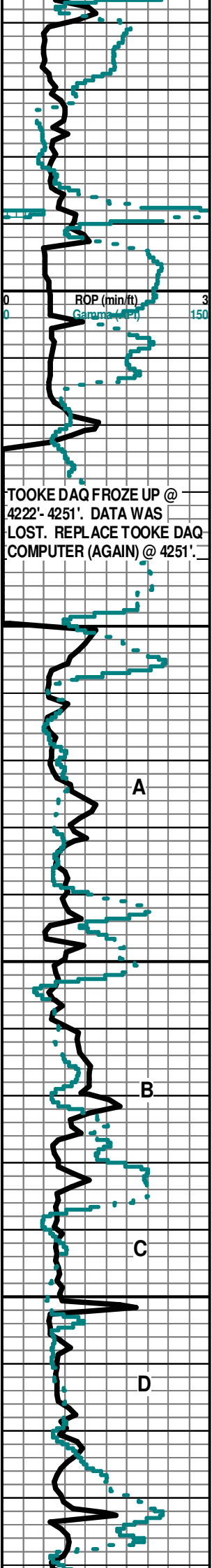
Ls Cm-Wht-Gry Fxln Dns Micrite Poor Ixln Por Chalk Wht Soft Abd Sh  
Char-Gry-Grn Soft-Fissil No Odor No Stn No Flor NS

Ls Wht Microxln-Fxln Micritic Fair Stn Flor (Lt Grn-Wht of Spl through Tray 10%)  
Cht Wht-Gry-Amber Translu-Op Shp Vit V Abd Chalk Wht Soft Sh Char-Gry-Grn  
Fissil No Odor Fair Scat ? Min Flor ? Stn NS

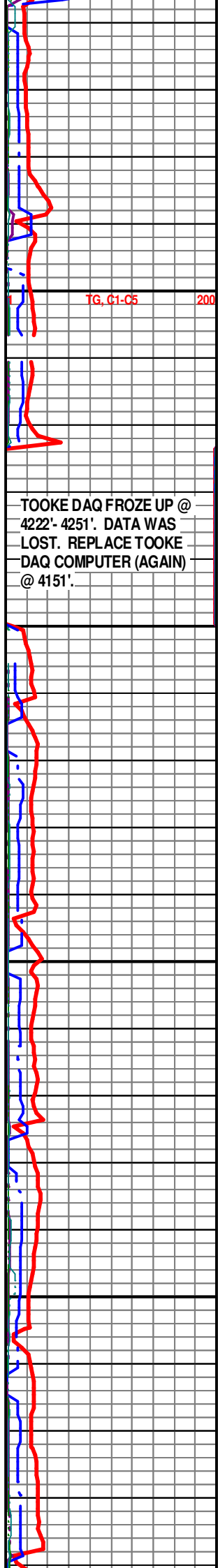
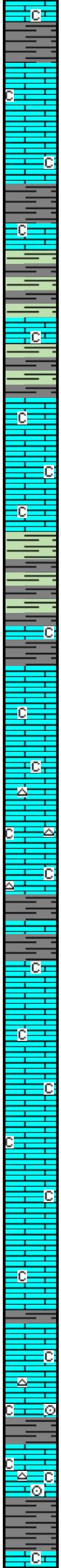
Ls Cm-Gry Microxln-Fxln Poor Ixln Por Grad Micritic Chalk Wht Soft Sh Char-Gry  
Fissil No Odor No Stn ? Sli Min Flor Dec AA NS

Ls Cm-Tan-Gry Microxln-Fxln Poor Ixln Por Grad Micritic Chalk Wht Soft V Abd  
Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor Dec AA NS

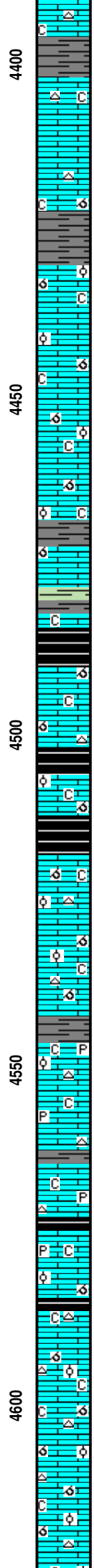
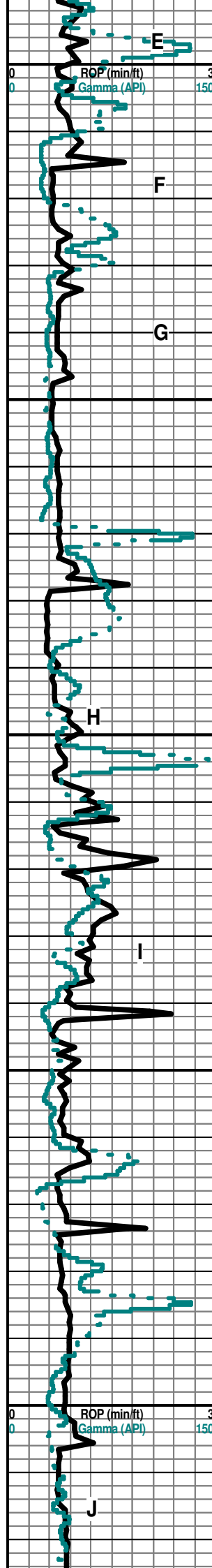
Ls Cm-Gry Microxln-Fxln Poor Ixln Por Grad Micritic Cht Tan-Gry Op Shp Vit  
Chalk Wht Soft Fos (Crin) Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor No  
Odor No Stn ? Sli Min NS



4200  
4250  
4300  
4350



TG, C1-C5 200



Ls Gry-Crm MicroIn-FxIn Poor IxIn Por Grad Micritic Cht Wht-Gry Op Shp Vit  
Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn Tr ? Min Flor NS

Ls Wht-Crm-Tan OOM Por w/OOL (Small-Med Ooids w/Ctr's Fill w/? Drk-Gry  
Calcite? Includ) in pl Poor Inter-OOM/OOL Por Poor Develop Poor Leaching (w/Pyr  
Includ) Cht Wht Op Shp Vit Sh Char-Gry-Maroon Fissil No Odor No Flor No Stn NS

Ls Cm-Gry FxIn Poor IxIn Por Micritic Barren Dns (w/Pyr Includ) Chalky Sh Gry-  
Grn- Aqua Fissil No Odor No Stn No Flor NS

**MUNCIE CREEK 4484' (- 1640)**

Ls Cm-Tan FxIn Micritic Grad Fair-Med OOM (w/OOL in pl) Por Fair Dissolu Fair  
Develop Fair Leaching Barren Chalk Abd Cht Wht Op Shp Vit Sh Char-Gry-Blk  
Carb Tr Fissil No Odor No Flor No Stn NS

Ls Cm-Tan FxIn Micritic Grad Fair-Med Pin-Py IxIn Por Grad Poor-Fair OOM  
(w/Med-Lg OOids in pl) Por Poor-Fair Dissolu Poor-Fair Develop Poor- Fair  
Leaching Barren Pyr Mass Chalk Abd Cht Wht-Drk Gry Op Shp Vit Sh Char-Gry-Blk  
Carb Tr Fissil No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Micritic (w/Pyr Includ Chalk Abd Cht Wht-Drk Gry (w/ Fos Includ)  
Op Shp Vit Sh Char-Gry-Grn-Blk Carb Tr Fissil No Odor No Flor No Stn NS

Ls Wht-Crm FxIn Micritic Grad Poor OOM Por (w/Med OOids in pl) Some OOids  
(Some Single & Free) Poor Dissolu Poor Develop Poor Leaching Chalk Abd Cht  
Gry Op Shp Vit Sh Char-Gry-Blk Tr Carb Fissil No Odor Sli ? Min Flor No Stn NS

TG, C1-C5 200

Scale Change  
TG, C1-C5 800

Mudco Ck @  
4575'@ 12:00 PM  
12/05/12  
Vis= 49;  
WT= 9.25;  
PV= 15;  
YP= 16;  
WL= 8.8;  
Cake= 1;  
Chl= 2500;  
Cal = 60;  
Sol= 6.3%.  
LCM= 2#;  
DMC=\$ 4645.30;  
CMC=\$ 13749.45

DST # 1 4630'-4676'. Times: 5" - 60" - 120"; Blow: IF= Weak 1/4"; FF= Weak 1/2" Building to 2". Recovery: 80' G.I.P. & 40' SOCM (< 1% O & 99% M). Tool Spl.= 2% O & 98% M. Pressures: IH= 2245#; FH=2231#; IF= 9-13#; FF= 16-25#; ISIP= 1286#; FSIP= 978#; Temp= 1135 degrees F.

**STARK SHALE 4642' (- 1798)**

Sh Blk Carb Fissil ? Poor-Fair Frac Por Tr Ls AA Chalk AA Faint Odor No Flor VGSG in Sh

**KANSAS CITY "SWOPE" (K) 4654' (-1805)**

30" CFS @ 4676' Sh Blk Carb (w/Frac Por) Abd Fissil w/Streaming VGSG (in Wtr Under Heat) Ls Wht-Crm FxIn Pin-Pt Por Poor-Fair IxIn Por Grad Fair-Med OOM Por (w/Single Med-Lg Free OOids (8-10) in pl) Med Dissolu (w/SSG) Poor-Fair InterOOM/OOL Por Leaching Chalk AA Fair Odor Sli ? Flor Stn (10% of Spl) GSSG in Sh

60" CFS @ 4676' Ls Wht-Crm Fair Med OOM Por (w/OOL in pl) Med Dissolu Poor Med Leaching (w/Single Free (6-8 Free Ooids) Chalk Faint-Fair Odor Scatt Flor Stn (10% of Spl) SSG

Start 20' Samples Taken @ 4700'

Ls Crm-Tan FxIn Dns Micritic Barren Chalky Sh Gry-Blk Carb Fissil AA No Odor No Flor No Stn NS

Ls Wht-Crm-Tan FxIn Poor-Fair OOM Por (w/OOL in pl) Poor-Fair Dissolu Poor-Fair Develop Poor-Fair Vug Leaching No Vis InterOOM Por Grad Micritic Cht Wht Op Shp Vit Chalky Sh Blk-Carb (w/SG) Grad Char-Gry-Aqua-Red Soft- Fissil No Odor No Flor No Stn NS

Ls Tan-Gry FxIn Dns Micritic Barren Grad Poor OOM Por AA Fos (Brach) Chalky Sh Blk-Carb - Gry Fissil Abd No Odor No Flor No Stn NS

Ls Tan-Gry FxIn Dns Micritic Barren Grad Poor OOM Por AA Cht Gry Op Shp Vit Chalky Sh Blk-Carb - Gry-Red-Maroon Fissil Abd No Odor No Flor No Stn NS

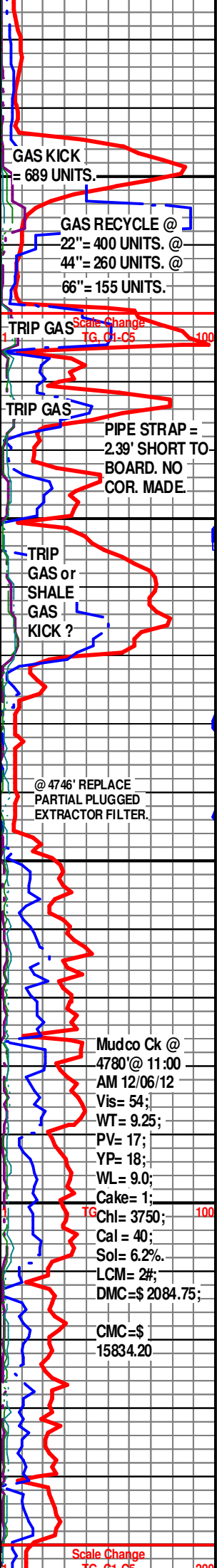
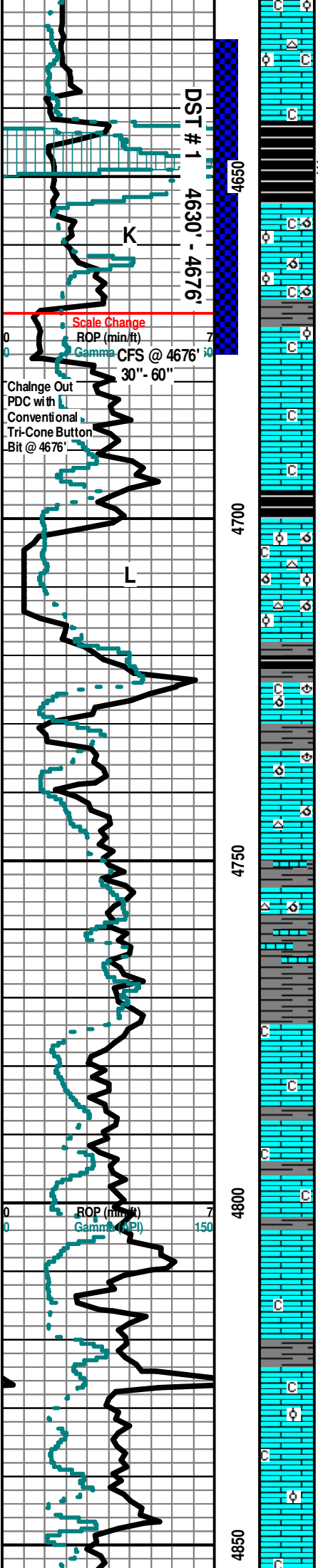
**MARMATON 4774' (- 1930)**

Ls Wht-Crm FxIn Poor IxIn Por Micritic Dns Barren Chalk Wht Soft Sh Char-Gry Fissil AA No Odor No Flor No Stn NS

Ls Crm-Wht-Gry FxIn Poor IxIn Por Micritic Dns Barren Chalk Wht Soft Sh Gry Fissil No Odor No Flor No Stn NS

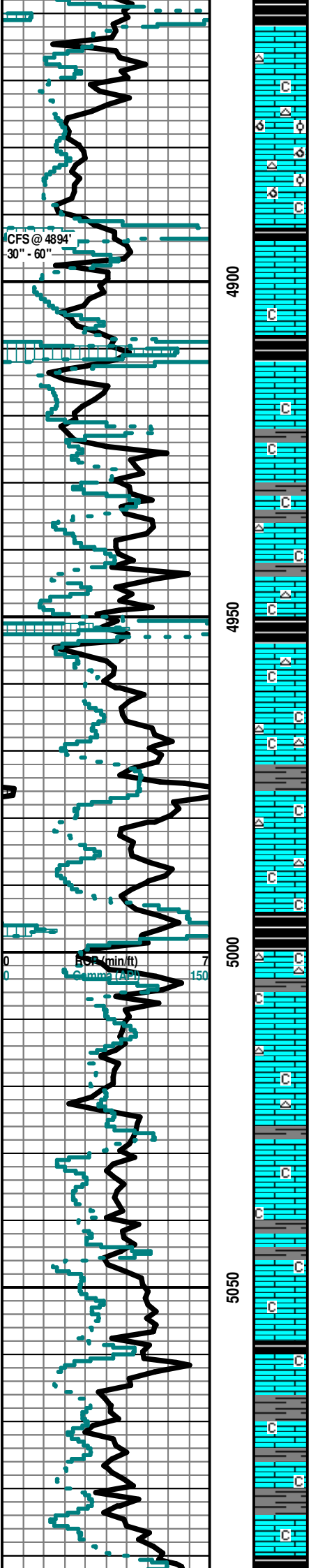
Sh Char-Gry-Red-Maroon Fissil Ls Gry-Crm FxIn Poor IxIn Por Micritic Dns Barren Chalky Wht Soft Abd No Odor No Flor No Stn NS

Ls Crm-Wht FxIn Poor IxIn Por Micritic Dns Barren Grad Poor-Fair OOL Por w/OOL in PI Poor Dissolu Poor-Fair Leaching Chalk Wht Soft Sh Gry Fissil No Odor No Flor No Stn NS



Mudco Ck @  
4780' @ 11:00  
AM 12/06/12  
Vis= 54;  
WT= 9.25;  
PV= 17;  
YP= 18;  
WL= 9.0;  
Cake= 1;  
Chl= 3750;  
Cal= 40;  
Sol= 6.2%  
LCM= 2#;  
DMC=\$ 2084.75;  
CMC=\$  
15834.20

Scale Change  
TG, C1-C5  
200



**PAWNEE 4862' (- 2018)**

30" CFS @ 4894' Ls Cm-Tan-Wht Fxln Poor Ixln Por Micritic Dns Barren Grad  
 Sucrosic Good Ixln Por (1 Pc) Cht Wht-Sli Org Op Shp Vit Chalk Wht Abd Soft Sh  
 Char-Gry-Lt Grn Fissil No Odor ? Scat Min Flor No Stn NS

60" CFS @ 4894' Ls Cm-Tan-Wht Fxln Poor Ixln Por Micritic Dns Barren Grad  
 Med-Good OOM (Small-Med Vug) Por (w/Med sized OOids in pl) Poor InterOOM  
 Por Fair-Med Dissolu Fair-Med Leaching (6 Pcs) Chalky Wht Soft Sh  
 Gry-Char-Red-Maroon-Lt Aqua Soft-Fissil No Odor Flor No Stn NS

**LABETTE 4892' (- 2048)**

**CHEROKEE 4908' (- 2064)**

Ls Gry-Crm-Wht Fxln Poor Ixln Por Micritic Dns Barren Drad Poor OOM Por  
 (w/OOL in pl) Poor InterOOM Por Poor Develop Poor Leaching Chalk Wht Soft Sh  
 Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Ls Cm-Wht Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht Amber Op  
 Shp Vit Sh Char-Gry Fissil No Odor No Flor No Stn NS

**SECOND CHEROKEE SHALE 4950' (- 2106)**

Ls Cm-Wht Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht - Amber Op  
 Shp Vit Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Ls Cm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht-Amber  
 Op Shp Vit Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

**THIRD CHEROKEE SHALE 4994' (- 2150)**

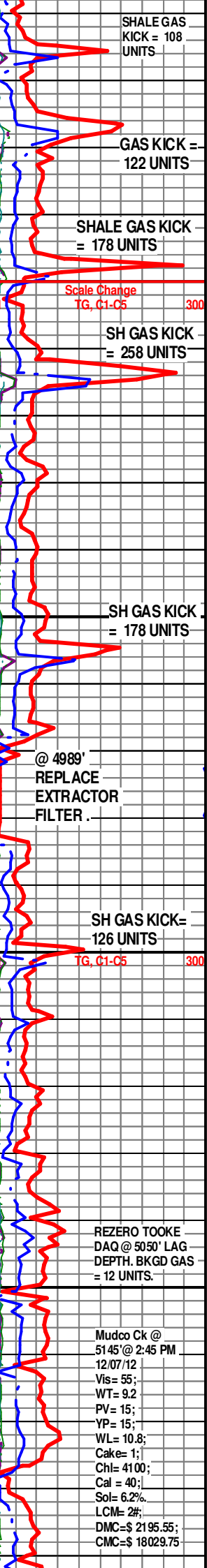
Ls Cm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht-Amber  
 Op Shp Vit Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

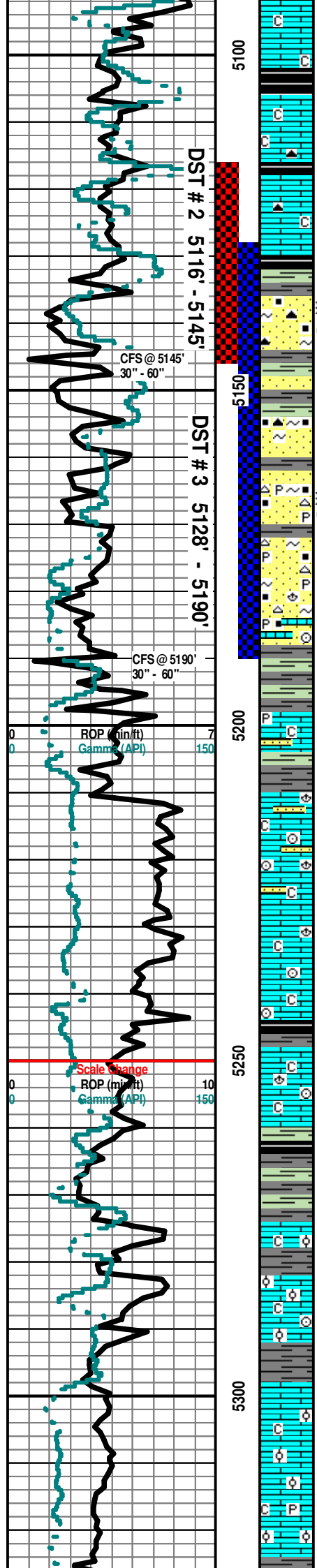
Ls Cm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht-Amber  
 Op Shp Vit Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Ls Cm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht-Wht  
 Amber-Gry Op Shp Vit Sh Char-Gry-Tr Blk Carb Fissil No Odor No Flor No Stn NS

Ls Cm-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht Amber-Gry  
 Op Shp Vit Sh Char-Gry-Tr Blk Carb Fissil No Odor No Flor No Stn NS

Ls Cm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht  
 Amber-Gry Op Shp Vit Sh Char-Gry Abd Fissil No Odor No Flor No Stn NS





Ls Crm-Wht-Tan FxIn Poor IxIn Por Micritic Dns Barren Chalk Wht Soft Cht Amber Op Shp Vit Sh Blk Carb-Grn-Gry Fissil No Odor No Flor No Stn NS

DST # 2 5116'-5145'. Times: 5"- 60"- 40"- 60"; Blow: IF= Weak 1/4"; FF= Weak 1/4" & Died (Flushed Tool)-No Help. Recovery: 10' M (100% M). Pressures: IH = 2446#; FH= 2443#; IF= 10-12#; FF= 13-19#; ISIP= 1336#; FSIP= 167#; Temp= 117 degrees F.

DST # 3 5128'-5190'. Times: 5"- 60"- 40"- 60"; Blow: IF= Weak 1/4"; FF= Weak 1/4" & Died (Flushed Tool)-No Help. Recovery: < 45' GIP; 15' M (100% M). Pressures: IH = 2441#; FH= 2438#; IF= 13-18#; FF= 21-35#; ISIP= 739#; FSIP= 86#; Temp= 116 degrees F.

**MORROW SHALE 5130' (- 2286)**

AT 5140' START 10' SAMPLES.

**MORROW SAND 5135' (- 2291)**

30" CFS @ 5145' Qts Ss Brn F-M Grn Sub Ang Clusters F -Igran Por Well-Sort Friable (w/Glacu & Lt Org Cht Inclu) Lt Cmt (CaCO3 Matrix) GSG/GSO Faint Odor Lt-Med Brn Stn Gas & Oil Do Not Flor Cht Amber Op Shp Vit Ls AA (w/Fos (Brach) Sh Blk Carb- Char-Gry-Lt Grn Fissil GSG/GSO in Qtz Ss

60" CFS @ 5145' Qts Ss Brn F-M Grn Sub Ang Clusters F -Igran Por Well-Sort Friable Inc (w/Glacu & Carb Inclu) Lt Cmt CaCO3 Matrix GSG / GSO Fair Inc Odor Lt-Med Brn Stn Gas & Oil Do Not Flor Cht AA Sh AA GSG/GSO in Qtz Ss

**2ND MORROW SAND 5155' (- 2311)**

Qts Ss Lt Brn F-M Grn Sub Ang Clusters F-Igran Por Well-Sort V Friable (w/Glacu & Carb Inclu) Lt Cmt CaCO3 Matrix No Odor Sli Brn Stn SSG & SSO AA

**3RD MORROW SAND 5162' (- 2318)**

Qts Ss Lt Brn F-M Grn Sub Ang Clusters F-Igran Por Well-Sort V Friable (w/Glacu & Carb & Gil Idonitic & Pyr Inclu) Lt Cmt CaCO3 Matrix No Odor Sli Brn Stn Cht Wht Sh Varicolored Char-Gry-Aqua-Lt Grn-Red SSG/SSO in Qtz Ss Brn AA Dec Show

Qts Ss Brn-Gry F-M Grn Sub Ang Clusters F-Igran Por Well-Sort V Friable (w/Glacu & Carb & Gil Idonitic & Pyr Inclu) Lt Cmt CaCO3 Matrix Grad Dns Inc Cmt) No Odor Sli Brn Stn Cht Wht Sh Varicolored Char-Gry-Aqua-Lt Grn-Red SSG/SSO in Qtz Ss Brn AA Dec Show

30" CFS @ 5190' Qts Ss Wht-Gry-Brn F-M Grn Sub Ang Clusters F-Igran Por Well-Sort V Friable (w/Glacu & Carb & Gil Idonitic & Pyr Inclu) Lt Cmt CaCO3 Matrix Fos (Brach) No Odor Sli Brn Stn Cht Tan AA Sh Varicolored Char-Gry-Aqua-Lt Grn-Red SSG/SSO in Qtz Ss Brn AA Dec Show

60" CFS @ 5190' Qts Ss Wht-Gry-Brn F-M Grn Sub Ang Clusters F-Igran Por Well-Sort V Friable (w/Glacu & Carb & Gil Idonitic & Pyr Inclu) Lt Cmt CaCO3 Matrix Fos (Crin) No Odor Sli Brn Stn (5 Pcs) Grad Wht Cht AA Ls Wht FxIn Dns Micrite Sh AA VSSG/VSSO in Qtz Ss Brn AA Dec Show

Ls Wht -FxIn Dns Micrite Grad Fos (Brach & Fos Inclusion) Pyr Mass Chalk Sh Char-Gry-Grn-Blk Carb Fissil Dec (Tr Only) No Odor No Flor NS in LS Qtz Ss AA w/ SG & SO (? Sluff) AA

Ls Wht -FxIn Dns Micrite Grad Fos (Brach & Fos Inclusion) Pyr Mass Chalk Sh Char-Gry-Grn-Blk Carb Fissil Dec (Tr Only) No Odor No Flor NS in LS Qtz Ss AA w/ SG & SO (? Sluff) AA

**CHESTERIAN 5211' (- 2367)**

Ls Wht -FxIn Dns Micrite Grad Fos (Brach & Fos Inclusion) Pyr Mass Chalk Sh Char-Gry-Grn-Blk Carb Fissil No Odor No Flor NS

LS AA Fos (Brach, Crin) Qtz Ss Wht AA Por V Friable Gillsonitic "Dead Oil" Residue No Odor Tr Lt Brn-Blk Stn No Flour SSG & SSO

Ls Wht-FxIn Dns Micrite Grad Chalk Fos (Brach, Crin) Sh Char- Gry- Grn- Blk Carb Fissil No Odor No Flor NS

Ls Wht-FxIn Dns Micrite (w/Pyr Includ) Chalk Fos (Crin) Sh Char- Gry- Grn- Blk Carb Fissil No Odor No Flor NS

Ls Wht-FxIn Dns Micrite Grad Chalk Fos (Brach, Crin) Sh Char- Gry- Grn- Blk Carb Fissil No Odor No Flor NS

Sh Char-Blk Carb-Gry-Grn-Aqua-Red-Maroon Fissil Ls Wht FxIn Crm-Tan Dns Micrite Barren Chalky Sh Char-Gry-Grn Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Char-Blk Carb-Gry-Grn-Aqua-Red-Maroon Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Fos (Brach) Micrite Chalky Sh Char-Blk Carb-Gry-Grn-Aqua-Red-Maroon Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Char-Blk Carb-Gry-Grn-Aqua-Red-Yell Fissil No Odor No Stn No Flor NS

**MISSISSIPPIAN "Ste. GEN" 5298' (- 2454)**

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Char - Blk Carb- Gry -Grn- Aqua- Red Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Char - Blk Carb- Gry -Grn- Aqua- Red Fissil No Odor No Stn No Flor NS

**MISSISSIPPIAN "ST. LOUIS" 5340' (- 2496)**

Mudco Ck @  
5165' @ 8:45 AM  
12/08/12  
Vis= 49;  
WT= 9.0;  
PV= 16;  
YP= 17;  
WL= 8.0;  
Cake= 1;  
Chl= 5650;  
Cal= 20;  
Sol= 4.7%  
LCM= 3#;  
DMC=\$ 484.20;  
CMC=\$ 18513.95

GAS KICK = 210 UNITS

RECYCLE GAS KICK = 250 UNITS.

Scale Change  
TG, C1-C5  
GAS KICK= 71 UNITS

GAS KICK= 98 UNITS

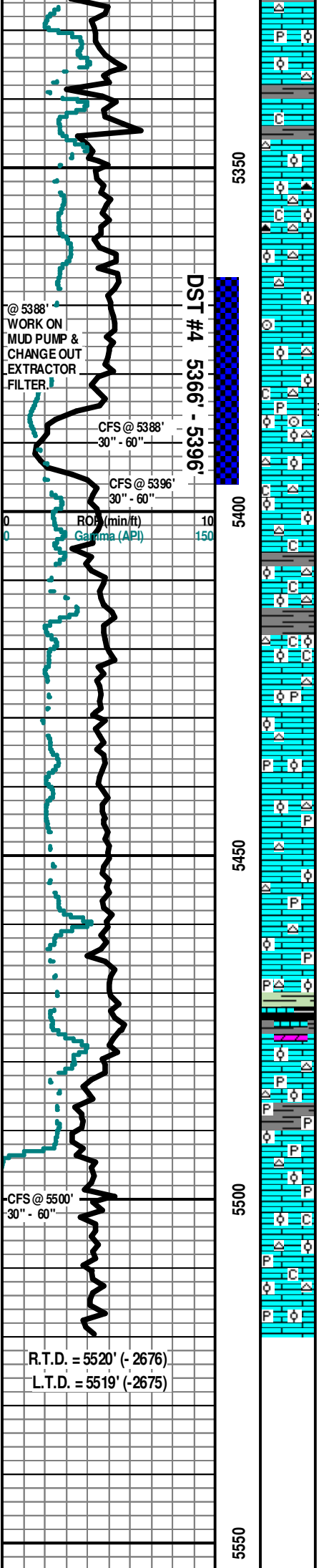
GAS KICK= 95 UNITS

GAS KICK= 100 UNITS

TG, C1-C5 200

GAS KICK= 81 UNITS

Mudco Ck @  
5321' @ 12:45 PM  
12/09/12  
Vis= 63;  
WT= 9.25;  
PV= 17;  
YP= 21;  
WL= 9.5;  
Cake= 1;  
Chl= 4000;  
Cal= 180;  
Sol= 6.2%  
LCM= 2#;  
DMC=\$ 1431.95;  
CMC=\$ 19945.90



Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Char - Blk Carb- Gry -Grn- Aqua- Red Fissil (w/Pyr Includ) V Abd No Odor No Stn No Flor NS

Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry FxIn Dns Micrite Chalky Sh Char - Blk Carb- Gry -Grn- Aqua- Red Fissil (w/Pyr Includ) V Abd No Odor No Stn No Flor NS

**ST. LOUIS UPPER "B" POROSITY 5345' (- 2501)**

Ls Wht FxIn Dns Micrite Barren Cht Clear-Yell-Org (Banded) Transl-Op Shp Vit Tr Trip Mostly Fresh Tr Drk Blk Gillsontic Stn Chalky Sh Blk-Carb- Char -Gry -Aqua Fissil No Odor No Flor No Stn-Tr Gillsonitic AA NS

Ls Wht FxIn Dns Micrite Barren Cht Clear-Yell-Org (Banded) Transl-Op Shp Vit Tr Trip Mostly Fresh Tr Drk Blk Gillsontic Stn Chalky Sh Blk-Carb-Char -Gry- Aqua Fissil No Odor No Flor No Stn-Tr Gillsonitic AA NS

30" CFS @ 5388' Poor Spl. Work On Mud Pump Water Line Frozen Sh Char- Gry-Aqua- Lt Grn Fissil (Wash) Ls AA No Odor No Flor No Stn NS

60" CFS @ 5388' Poor Spl. Work On Mud Pump Water Line Frozen AA Sh Char- Gry-Aqua- Lt Grn V Abd (Wash) Ls Wht Fair OOL Por (w/Tr Small-Med OOL in pl) (1 Pc w/Tr Scat Lt Brn Stn) Fos (Crin) S No Odor No Flor Tr Stn ? SG/SO

**ST. LOUIS LWR "B" POROSITY 5385' (- 2541)**

30" CFS @ 5396' Sh Char-Gry-Red-Aqua V Abd AA (Wash) Ls Wht Med OOL Por (w/OOL in Pl) V Friable Med-Good Inter OOL Por (w/Tr Lt Brn Stn in Pin-Pt Inter OOL Por) SSG & SSO Fos (Crin) Cht Wht Op Shp Vit Pyr Mass Chalky No Odor No Flor M-G SG & SO

60" CFS @ 5396' Sh Char-Gry-Red-Aqua V Abd AA (Wash) Ls Wht Med OOL Por (w/OOL in Pl) V Friable Med-Good Inter OOL Por Free Med-Sized Ooids in Tray (5 Pcs-) (w/Lt Brn Stn Around Ooids) Med-Good Pin-Pt Inter OOL Por Med Dissolu Med leaching SG & SO Cht Clear-Wht-Yell Op Shp Vit Fos (Crin) Pyr Mass Chalky No Odor No Flor M-G SG & SO

DST # 4 5366'-5396'. Times: 5'- 90"- 90"- 180"; Blow: IF= Weak 1/4" Inc to 1 1/2"; FF= Weak 1/4" Inc BOB/11". Recovery: 800' GIP; TF= 160': 10' CO (100% O.); 30' GCOM (10% G, 40% O, 50% M.); 60' GCHOCM (15% G, 25% O, 60% M.); 60' GCOWCM (16% G, 14% O, 14% W, 56% M.). Pressures: IH = 2579#; FH = 2577#; IF=12-26#; FF= 35-83#; ISIP=1507#; FSIP=1469#; Temp =122 degrees F. CHL.= 16000 Ppm; RW=.48 @ 44 degrees F.

Ls Wht FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med -Small Ooids AA Barren Cht Clear-Gry-Wht Translu-Op Shp Vit (Tr Spks Blk OOL Cent Includ) Chalky Sh Char-Gry-Lt Grn-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor lxn Por Micritic Dns Barren Grad Fair OOL Por (w/OOL in pl) Small Ooids Barren (w/Pyr Includ) Cht Clear-Gry-Wht-Yell-Lt Org Translu-Op Shp Vit (Tr Specks Blk OOL Center Includ) Chalky Sh Char-Gry-Lt Grn-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids AA Barren Cht Wht Translu-Op Shp Vit Sh Char-Gry (w/Pyr Includ) Blk-Carb-Red Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids AA Barren Cht Wht Translu-Op Shp Vit Sh Char-Gry (w/Pyr Includ) Blk-Carb-Aqua-Red Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids Barren Cht Wht Translu-Op Shp Vit Sh Char-Gry (w/Pyr Includ) Blk-Carb-Aqua-Red Fissil No Odor No Stn No Flor NS

Ls Wht FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids AA Barren Cht Wht Translu-Op Shp Vit Sh Blk Carb-Char-Gry (w/Pyr Includ)-Aqua Fissil No Odor No Stn No Flor NS

**SALEM (SPERGEN) 5476' (- 2632)**

Ls Wht-Crm FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids AA Barren Grad Dolo Gry FxIn Micrite (1 Pc) Cht Wht Translu-Op Shp Vit Chalky Sh Blk Carb-Char-Gry (w/Pyr Includ)-Aqua Fissil No Odor No Stn No Flor NS

30" CFS @ 5500' Ls Wht-Crm FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids Friable Barren Cht Clear-Wht Translu-Op (w/Drk Blk Includ) Shp Vit Chalky Sh Char-Gry (w/Pyr Includ)-Aqua Fissil No Odor No Stn No Flor NS

60" CFS @ 5500' Ls Wht-Crm FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids Friable Barren Cht Clear-Wht Translu-Op (w/Drk Blk Includ) Shp Vit Chalky Sh Char-Gry (w/Pyr Includ)-Aqua Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids Friable Barren Cht Clear-Wht Translu-Op (w/Drk Blk Includ) Shp Vit Chalky Sh Blk Carb-Char-Gry (w/Pyr Includ)-Aqua AA Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn Poor lxn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids Friable Barren (w/Pyr Includ) Cht Clear-Wht Translu-Op (w/Drk Blk Includ) Shp Vit Chalky Sh Blk Carb-Char-Gry (w/Pyr Includ)-Aqua AA Fissil No Odor No Stn No Flor NS

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

Geologist left Location @ 6:30 PM on 12-11-12

Mudco Ck @ 5396' @ 10:40 AM 12/10/12  
Vis= 48;  
WT= 9.15;  
PV= 15;  
YP= 16;  
WL= 7.8;  
Cake= 1;  
Chl= 4300;  
Cal = 20;  
Sol= 5.5%  
LCM= 3#;  
DMC=\$ 2640.20;  
CMC=\$ 22586.10

GAS KICK= 79 UNITS.  
RECYCLE GAS = 120 UNITS.

GAS KICK= 59 UNITS.  
RECYCLE GAS = 100 UNITS.

TRIP GAS

TRIP GAS

TRIP GAS

TRIP GAS

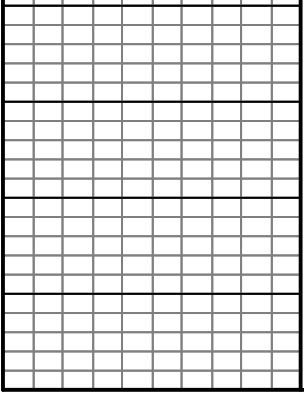
TRIP GAS

BKGD GAS = 90 UNITS

GAS KICK= 160 UNITS

Mudco Ck @ 5520' @ 11:45 AM 12/11/12  
Reserve Pit Chl= 7000 Ppm;  
Vol.= 1000 Bbls.;  
DMC=\$ 1443.65;  
CMC=\$ 24029.75

R.T.D. = 5520' (- 2676)  
L.T.D. = 5519' (-2675)



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