



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

Well Name: JAMES KOEHN #2-31 (NW)
Location: SE-SE-SE-NW 1/4 SEC. 31 - 28 S. - 30 W.
License Number: A.P.I. #15-069-20424-00-00
Spud Date: 01/04/2013
Surface Coordinates: 2540' FNL & 2540' FWL

Region: GRAY CO., KS.
Drilling Completed: 01/12/2013

Bottom Hole
Coordinates:
Ground Elevation (ft): 2820' K.B. Elevation (ft): 2833'
Logged Interval (ft): 1869' To: 5473' Total Depth (ft): 5473'
Formation: MISSISSIPPIAN "ST. LOUIS"
Type of Drilling Fluid: CHEMICAL/POLYMER/GEL MUD

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 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 12:45 AM on 01/04/2013 . Drilled 12-1/4" to 1875'. Ran 44 joints of new 24#, 8-5/8" casing. Tallied 1855'. Set at 1870' KB . Welded straps on GS & bottom 3 joints, then tack welded all collars. Float insert in 1st collar. Centralizers (3) 1,41. Baskets (3) 1,40 & 42. 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 1:00 AM on 01/06/13. Allied Cementing.

Deviation Survey's Taken: @ 1875' = 1 degree; @ 5114' = 2 degrees; @ 5421' = 2 degrees; @ 5470' = 1 1/2 degrees.

DSTs

DST # 1 5386' - 5421'. Times:5"-90"-32"-0". Blow: IF= V. Weak; FF= No Blow & Flushed Tool (w/No Help) & Blow Died. Recovery: 5' Mud; (Tool Spl:Spotty Oil 100% Mud).
Pressures: IH = 2567#; FH= 2565#; IF= 7-14#; FF= 10-13#; ISIP= 1417#; FSIP= None. Temp= 122 degrees F..

Comments

ROCK TYPES

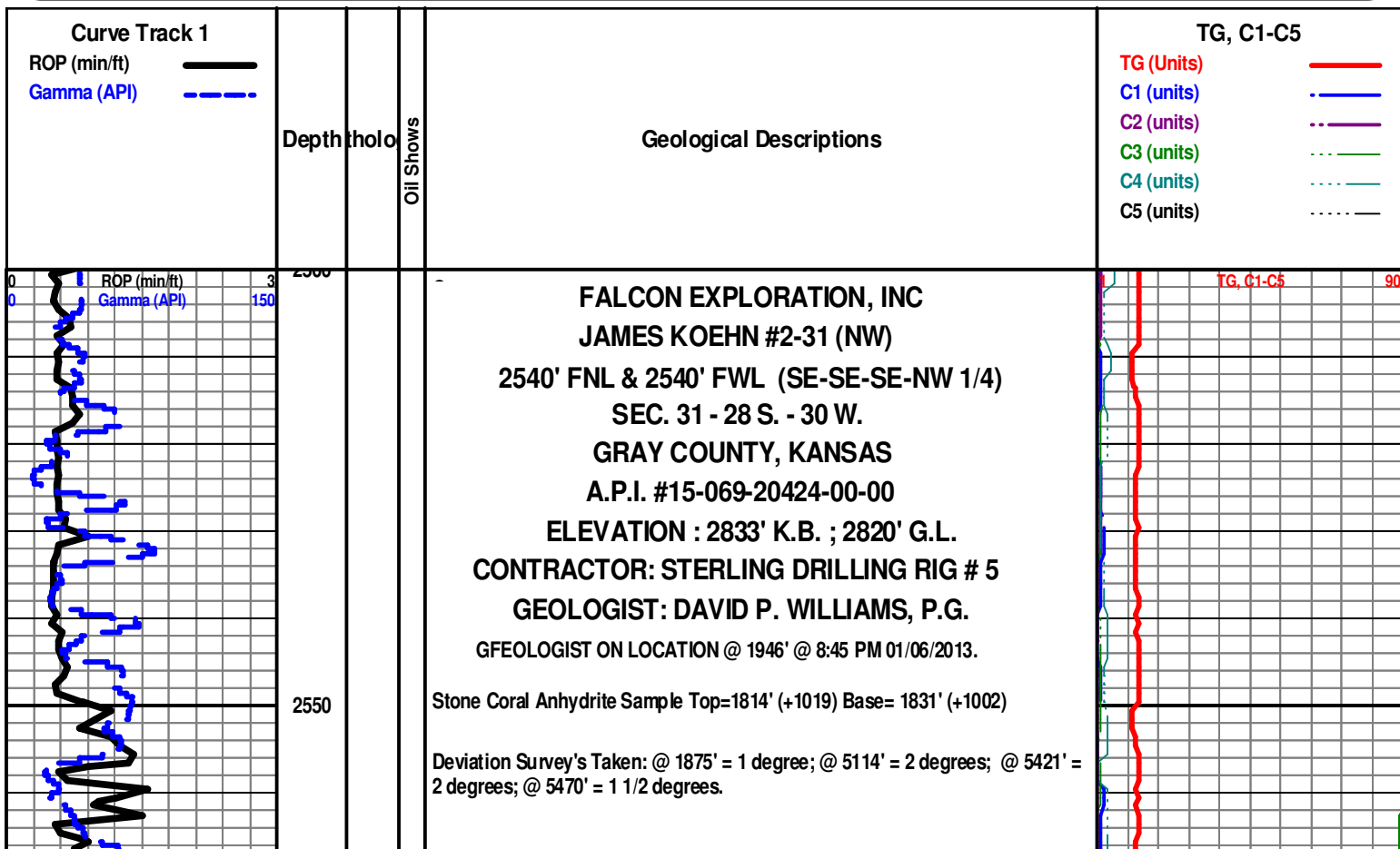
	Anhy		Clyst		Gry shale		Mrlst		Shgy
	Bent		Coal		Gyp		Red shale		Sltst
	Brec		Congl		Igne		Salt		Ss
	Carb sh		Dol		Lmst		Shale		Till
	Cht		Grn sh		Meta		Shcol		

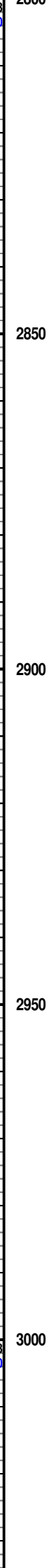
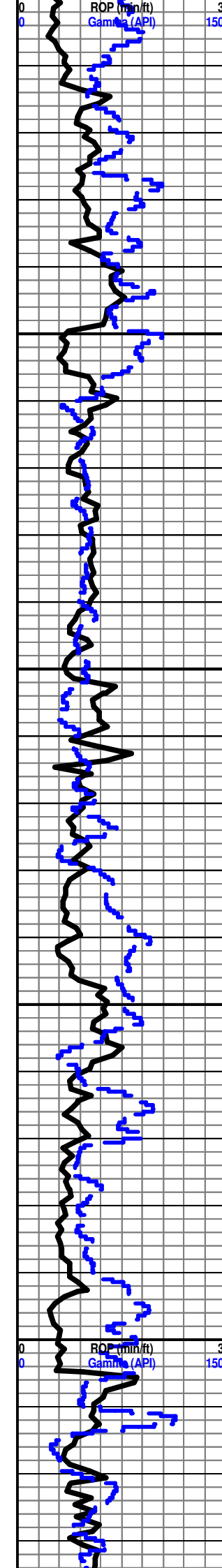
ACCESSORIES

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

OTHER SYMBOLS

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





TOWANDA 2807' (+ 26)

Dolo Wht-Crm-Gry FxIn Dns Micrite Sh Red-Gry Soft-Fissil Anhy/Gyp AA No Odor No Flor No Stn NS

FORT RILEY 2856' (- 23)

Dolo Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil Anhy/Gyp AA No Odor No Flor No Stn NS

GAS KICK= 40 UNITS

Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

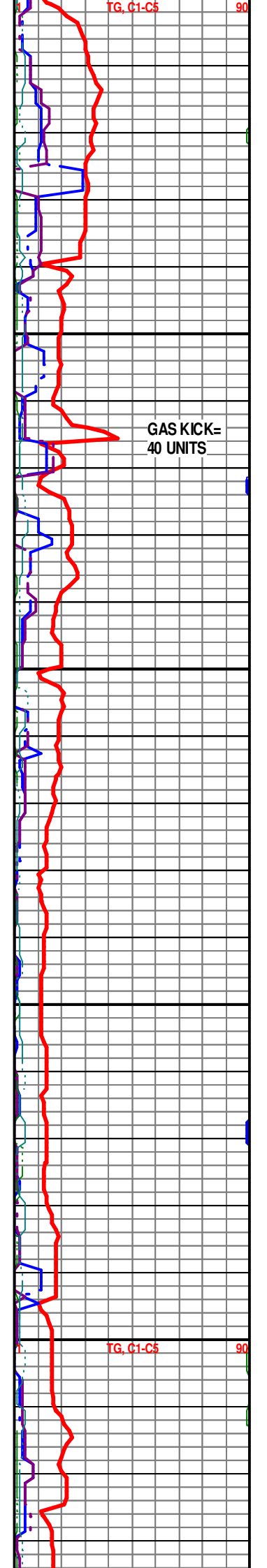
MUD DISPLACEMENT @ 2915'

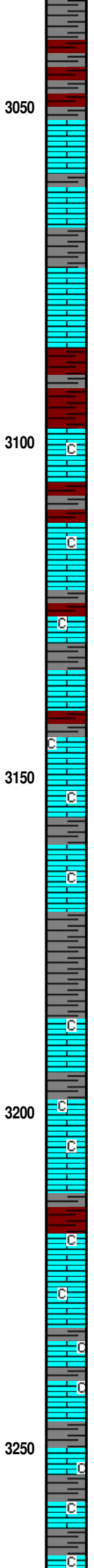
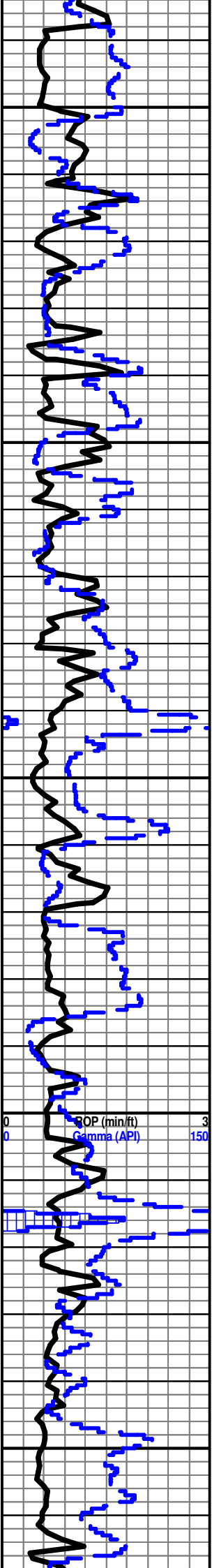
Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS





Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Dns Micrite Chalky Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

COTTONWOOD 3144' (-311)

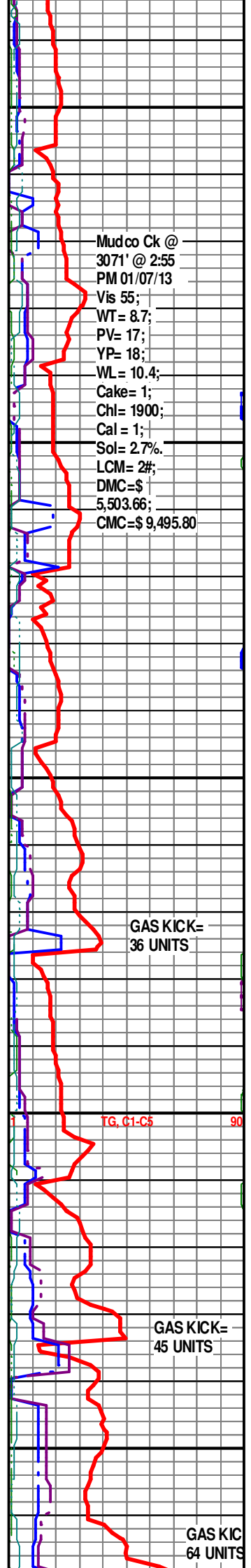
Ls Wht-Crm-Gry FxIn Poor Pin-Pt IxIn Por Chalky Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

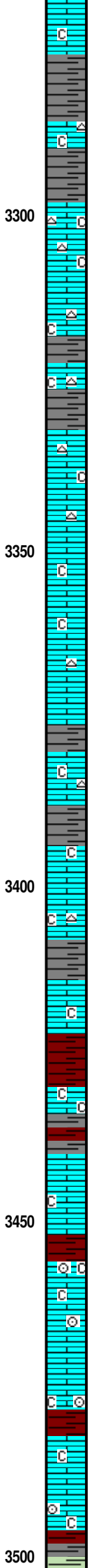
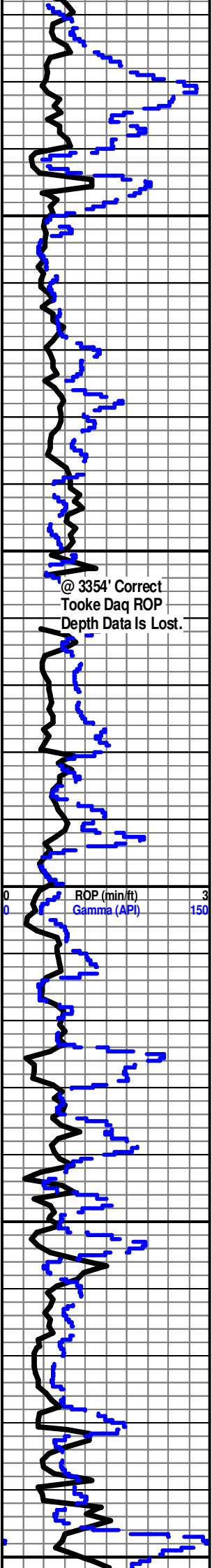
NEVA 3186' (- 353)

Ls Wht-Crm-Gry FxIn Poor Pin-Pt IxIn Por Chalky Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Poor Pin-Pt IxIn Por Chalky Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry FxIn Poor Pin-Pt IxIn Por Chalky Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS





Ls Wht-Crm-Gry FxIn Poor Pin-Pt IxIn Por Cht Wht (w/Fos (Spic Includ) Chalky
Sh Red-Maroon-Gry Soft-Fissil No Odor No Flor No Stn NS

FORAKER 3298' (- 465)

Ls Wht-Crm-Gry FxIn Poor IxIn 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

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

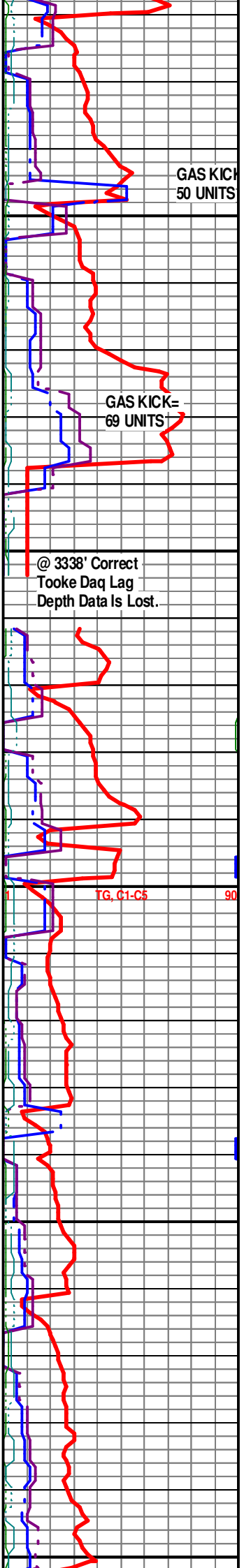
Ls Crm-Wht-Gry FxIn Poor IxIn Por Dns Micrite Cht Wht-Clear Transp - Op Shp
Vit Chalk Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn No Flor
NS

Ls Gry-Crm-Wht FxIn Grad Micritic Por Chalky Sh Char-Gry Fissil No Odor No
Stn No Flor NS

FALL CITY 3440' (- 607)

Ls Wht-Crm-Gry FxIn-MxIn Grad Pin-Pt Por Fair-Med IxIn Por Cht Gry Op Shp
Vit Fos (Crin) Chalky Sh Char-Gry Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry FxIn-MxIn Grad Pin-Pt Por Fair-Med IxIn Por Cht Gry Op Shp
Vit Fos (Crin) Chalky Sh Char-Gry Fissil No Odor No Stn No Flor NS



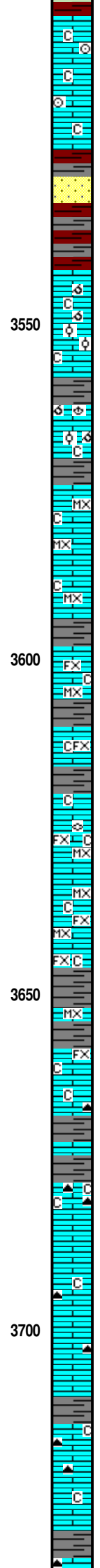
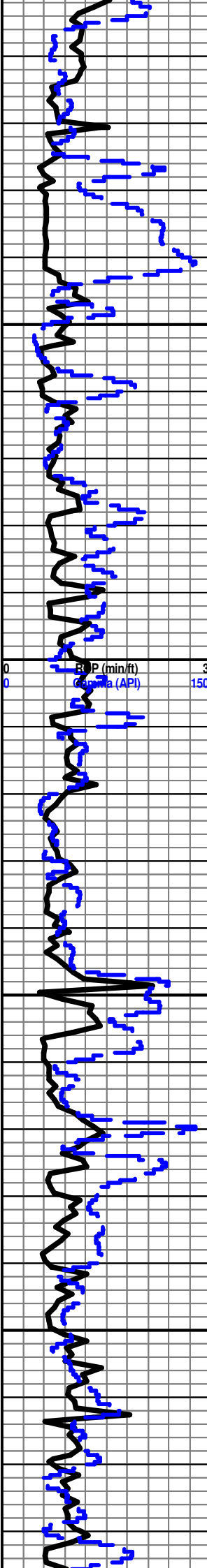
@ 3354' Correct
Tooke Daq ROP
Depth Data Is Lost.

@ 3338' Correct
Tooke Daq Lag
Depth Data Is Lost.

GAS KICK=
69 UNITS

GAS KICK
50 UNITS

TG, C1-C5 90



ROOT SHALE 3524' (- 691)
 Sh Red-Gry Fissil-Soft V Abd (Spl Wash Red) LS Crm-Gry FxIn Micritic AA Poor
 IxIn Por No Odor No Stn ? Min Flor AA NS

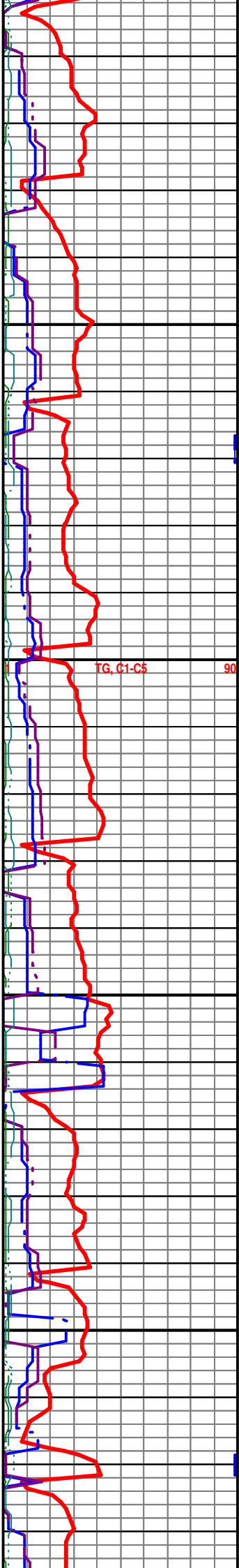
STOTLER 3543' (- 710)
 LS Wht-Crm-Gry MicroIn-FxIn IxIn Por Micritic Dsn Barren Grad Tr/Fair OOM
 Por w/OOL (Small) in pl Fair InterOOM/OOL Por Fair Leaching Fair Disolu Sh
 Grn-Red Soft Fos (Brach) Chalk Wht Abd No Odor No Flor No Stn NS

TARKIO 3598' (- 765)
 LS Gry-Wht-Crm MicroIn-FxIn IxIn Por Micritic Dsn Barren Chalk Wht V Abd
 Sh Gry-Char-Tr/Grn Soft-Fissil No Odor No Flor No Stn NS

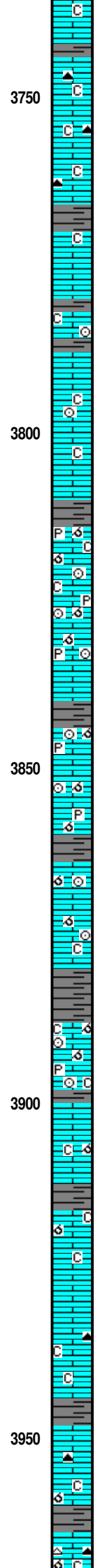
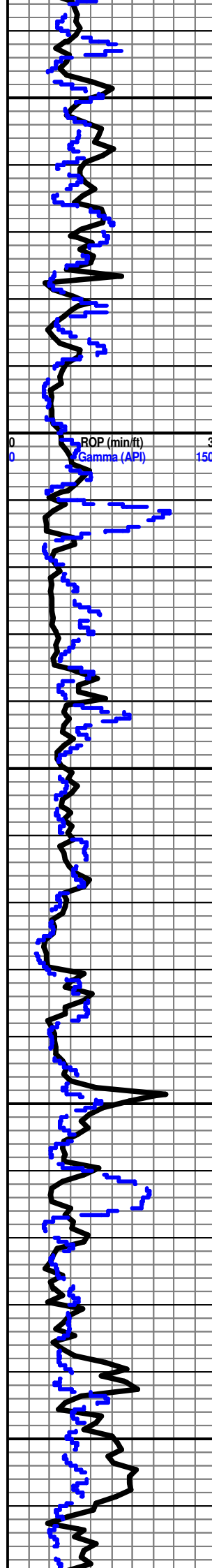
Ls Gry-Crm-Wht MicroIn-FxIn IxIn Por Micritic Dsn Barren Chalk Wht V Abd
 Cht Crm-Gry Op-Transl Shp Vit Sh Gry-Char Soft No Odor No Flor No Stn NS

BERN 3688' (- 855)
 Ls Wht-Gry FxIn IxIn Pin-Pt Por Mostly Micritic AA Dsn Barren Chalk Wht Abd
 Cht Blk Op Shp Vit Sh Gry-Char-Tr/ Blk-Carb Fissil Gry-Char Soft No Odor No
 Flor No Stn NS

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



FG, G1-C5 90



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

TOPEKA 3812' (- 979)

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

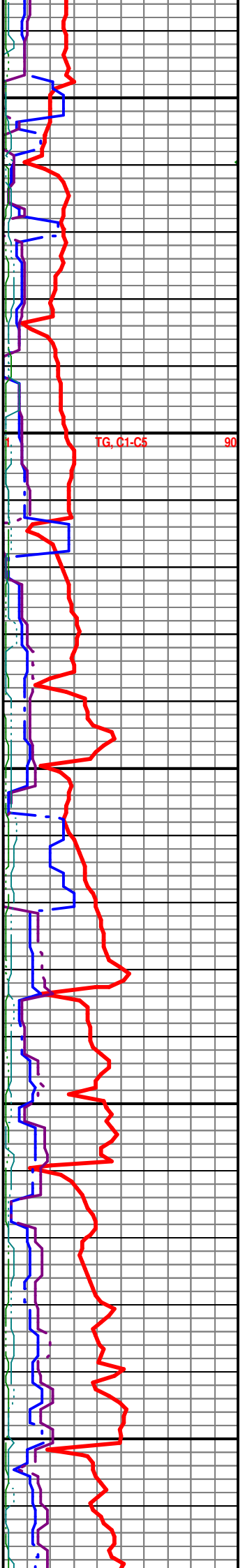
Ls Wht-Crm-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Grad Poor OOM
 Por Poor Leaching Poor-No Dussolu Chalk Wht Fos (Crin) Sh Char-Grn Fissil
 Soft No Odor No Flor No Stn NS

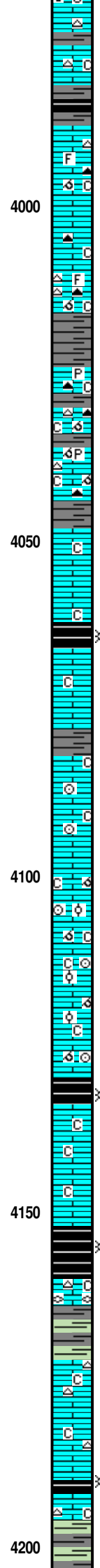
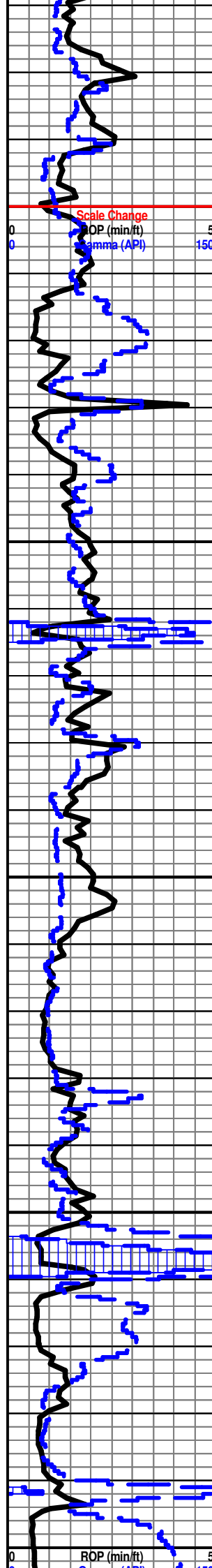
Ls Wht-Crm-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Grad Poor OOM
 Por Poor Leaching Poor-No Dussolu Chalk Wht Fos (Crin in Pyr) Sh Char-Grn
 Fissil Soft No Odor No Flor No Stn NS

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

Start 20' Samples At 4000'

LS Wht-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Grad Poor OOM Por
 Poor InterOOM Por Chalky Abd Cht Wht-Gry-Drk Gry (w/Fos Includ-Wht) Op
 Shp Vit Sh Char Fissil No Odor No Flor No Stn NS





LS Wht-Gry Fxln Poor Ixln Por Mostly Micritic Dsn Barren Grad Poor OOM Por
 Poor InterOOM Por Chalky Abd Cht Wht-Gry-Drk Gry (w/Fos Includ-Wht) Op
 Shp Vit Sh Blk Carb Char Fissil No Odor No Flor No Stn NS

LeCOMPTON 3992' (- 1159)

LS Wht-Gry Fxln Poor Ixln Por Mostly Micritic Dsn Barren Grad Poor OOM Por
 Poor InterOOM Por Chalky Abd Cht Wht-Gry-Drk Gry (w/Fos Includ-Wht) Op
 Shp Vit Sh Char Fissil No Odor No Flor No Stn NS

LS Wht-Gry Fxln Poor Ixln Por Mostly Micritic Dsn Barren Grad Poor OOM Por
 Poor InterOOM Por Chalky Abd Pry Mass Cht Wht-Gry-Drk Gry Op Shp Vit Sh
 Char Fissil No Odor No Flor No Stn NS

QUEEN HILL 4062' (- 1229)

OREAD 4066' (- 1235)

Sh Blk Carb-Char Fissil Ls Crm-Wht-Gry Fxln Dns Micrite Poor Ixln Por Chalk
 Wht No Odor No Stn No Flor NSG (?)

Ls Crm-Wht Fxln Grad Poor Ixln Por Chalk Wht Abd Fos (Crin) Sh Char Fissil
 No Odor No Flor No Stn N

Ls Crm-Wht Fxln Grad Poor Ixln Por Grad Tr/OOM Por w/ OOL (Small) in pl
 Poor Develop Poor Dissolu Poor Leaching Chalk Wht Abd Cht Blk-Tan Op Shp
 Vit Fos (Crin) Sh Char Fissil No Odor No Flor No Stn NS

Ls Crm-Wht Fxln Grad Poor Ixln Por Grad Tr/OOM Por w/ OOL (Small) in pl
 Poor Develop Poor Dissolu Poor Leaching Chalk Wht Abd Cht Blk-Tan Op Shp
 Vit Fos (Crin) Sh Char Fissil No Odor No Flor No Stn NS

PLATTSMOUTH 4134' (- 1301)

Ls Gry-Crm Fxln Dns Micrite Poor-No Vis Ixln Por Chalk Wht Soft Sh Blk
 Carb-Char-Red Fissil No Odor No Stn No Flor NS

HEEBNER 4152' (- 1319)

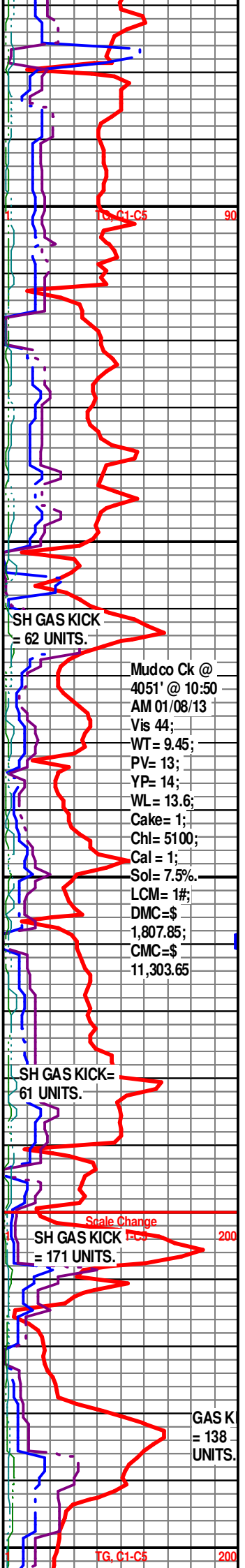
Sh Blk Carb-Char-Grn Fissil F-G SG Ls Crm Fxln Dns Micrite Poor Ixln Por
 Chalk Wht Soft Cht Wht Transl-Op Shp Vit No Odor No Stn No Flor F-MSG (in
 Sh Blk Carb)

TORONTO 4172' (- 1339)

Ls Crm Fxln Dns Micrite Poor Ixln Por Chalk Wht Soft Cht Wht Transl-Op Shp
 Vit Sh Blk Carb-Char-Grn Fissil F-G SG No Odor No Stn No Flor F-MSG (in Sh
 Blk Carb AA)

DOUGLAS 4190' (- 1357)

30" CFS @ 4214' Ls Crm Fxln Dns Micrite Poor Ixln Por Chalk Wht Soft Cht Wht
 Transl-Op Shp Vit Sh Blk Carb-Char-Grn Fissil F-G SG No Odor No Stn No Flor
 F-MSG (in Sh Blk Carb AA)



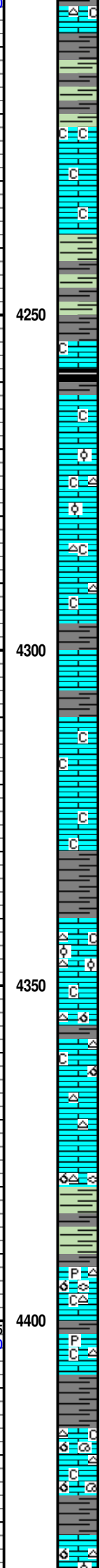
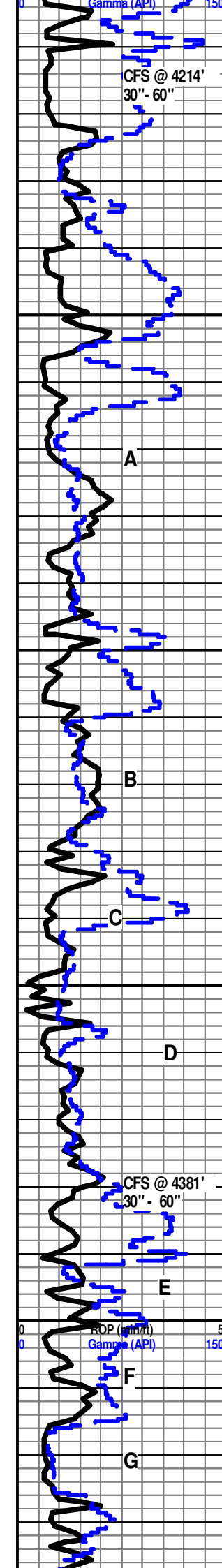
SH GAS KICK
 = 62 UNITS.

Mudco Ck @
 4051' @ 10:50
 AM 01/08/13
 Vis 44;
 WT= 9.45;
 PV= 13;
 YP= 14;
 WL= 13.6;
 Cake= 1;
 Chl= 5100;
 Cal = 1;
 Sol= 7.5%.
 LCM= 1#;
 DMC=\$
 1,807.85;
 CMC=\$
 11,303.65

SH GAS KICK=
 61 UNITS.

SH GAS KICK
 = 171 UNITS.

GAS K
 = 138
 UNITS.



60" CFS @ 4214' Ls Wht-Crm-Tan MicroIn-FxIn Poor-Fair IxIn Por Cht Wht Op Shp Vit Chalk Wht Soft Abd Sh Blk Carb-Char AA Fissil No Odor No Stn ? Min Flor NS

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

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

IATAN (BROWN LIME) 4254' (- 1421)

LANSING 4264' (- 1431)

Ls Crm-Wht-Gry FxIn Dns Micrite Poor IxIn Por Chalk Wht Soft Abd Sh Char-Gry-Grn Soft-Fissil No Odor No Stn No Flor NS

Ls Wht MicroIn-FxIn Micritic w/Calc Xls Includ Grad OOL Fair InterOOL Por w/OOL in pl Tr/Scat Leaching Por Barren FairStn Flor (Lt Grn-Wht of Spl through Tray 60%) Cht Wht-Gry Op Shp Vit V Abd Chalk Wht Soft Sh Char-Gry-Grn Fissil No Odor Fair Scat ? Min Flor ? Stn NS

Ls Crm-Gry MicroIn-FxIn Poor IxIn Por Grad Micritic Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor Dec AA NS

Ls Crm-Gry MicroIn-FxIn Poor IxIn Por Grad Micritic Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor Dec AA NS

Chalk Wht Soft V Abd (70% of Spl) Ls Wht-Crm MicroIn-FxIn Poor IxIn Por Grad Micritic Cht Wht-Gry Op Vis Shp Sh Char-Gry-Grn Fissil Abd No Odor No Stn ? V Sli Min Flor NS

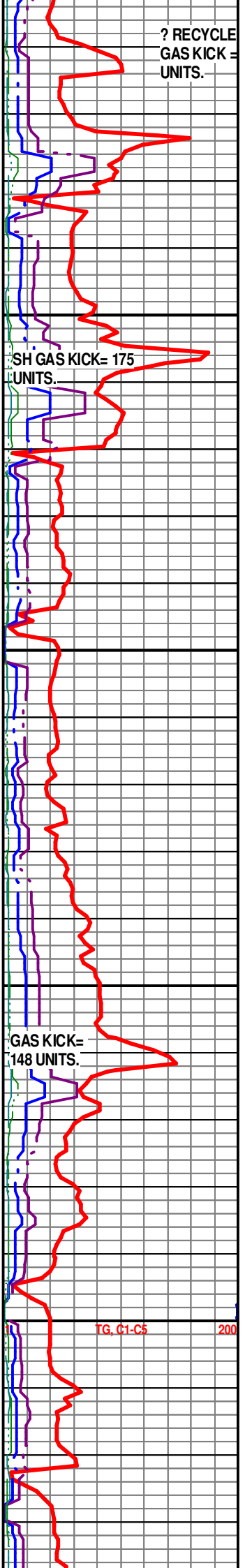
30" CFS @ 4361' Ls Wht-Crm MicroIn-FxIn Poor IxIn Por Grad Grad Tr/Poor OOL Por Poor InterOOL Por w/ Small Ooids in pl Chalk Wht Soft V Abd Sh Char-Gry Fissil Faint Odor No Stn Sli Flor (Lt Grn) ? SSG

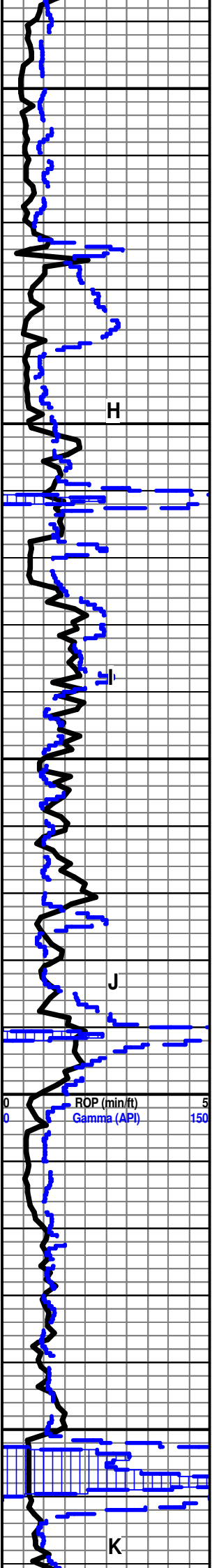
60" CFS @ 4361' Ls Crm-Gry MicroIn-FxIn Poor IxIn Por Grad Micritic Cht Tan-Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor Sh Char-Gry Fissi No Odor No Stn ? Sli Min NS

Ls Wht-Crm MicroIn-FxIn Poor IxIn Por Grad Micritic Grad Tr/Poor OOL Por Poor InterOOL Por w/ Small Ooids in pl Cht Wht w/Fos (Fuss) Includ Op Shp Vit Chalk Wht Soft Sh Char-Gry Fissil No Odor No Stn ? Sli Min Flor NS

Ls Wht-Crm-Gry MicroIn Poor IxIn Por Micritic w/Pyr Includ Grad OOL 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 Cht Wht Op Shp Vit Fos (Crin) Sh Char-Gry-Maroon Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan OOM Por w/OOL (Small-Med Ooid in pl) Poor Inter-OOM/OOL Por Poor Develop Poor Leaching Grad Micrite Cht Wht Op Shp Vit Sh Char-Gry-Maroon Fissil No Odor No Flor No Stn NS





4450
4500
4550
4600
4650

Ls Wht-Crm-Tan OOM Por w/OOL (Small-Med Ooid in pl) Poor Inter-OOM/OOL
Por Poor Develop Poor Leaching Grad Micrite Cht Wht Op Shp Vit Sh
Char-Gry-Maroon Fissil No Odor No Flor No Stn NS

Ls Crm-Tan-Gry Fxln Micritic Grad Med OOM (w/OOL in pl) Por Med Dissolu
Med Develop Good Leaching Barren Chalk Abd Cht Wht-Amber Op Shp Vit Fos
(Crim) Chalky Sh Char-Gry Soft- Fissil No Odor No Flor No Stn NS

MUNCIE CREEK 4484' (- 1651)

Ls Crm-Tan-Gry Fxln Micritic Grad Med OOM (w/OOL in pl) Por Med Dissolu
Med Develop Good Leaching Barren Chalk Abd Cht Wht-Amber Op Shp Vit
Chalky Sh Char-Gry-Blk Carb-Red Soft- Fissil No Odor No Flor No Stn NS

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

SH GAS KICK = 112 UNITS.

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

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

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

Ls Crm-Tan Fxln Micritic Grad Med -Good OOM Por Fair Dissolu Fair Develop
Fair Leaching (Tr/Single Med Ooid in pl) Chalk Abd Cht Wht-Gry Op Shp Vit Sh
Char-Gry-Blk Carb Tr Fissil No Odor No Flor No Stn NS

Ls Wht-Crm Fxln Micritic Grad Med -Good OOM Por Fair Dissolu Fair Develop
Fair Leaching Chalk Abd Cht Wht Op Shp Vit Sh Char-Gry-Grn-Blk Carb Fissil
No Odor No Flor No Stn NS

TG, C1-C5 200

Ls Crm-Tan Fxln Micritic Grad Poor OOM Por (w/OOL in pl) Poor-No Dissolu
Poor Develop Poor Leaching Chalk Abd Cht Wht Op Shp Vit Sh Gry-Grn Fissil
No Odor No Flor No Stn NS

Ls Crm-Tan Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Gry-Grn
Fissil No Odor No Flor No Stn NS

SH GAS KICK = 222 UNITS.

STARK SHALE 4652' (- 1819)

KANSAS CITY "SWOPE" (K) 4660' (-1827)

Sh Blk Carb-Gry-Grn Fissil (w/SG) Ls Crm-Tan Fxln Dns Micritic Barren Chalk
Abd Cht Wht Op Shp Vit No Odor No Flor No Stn NS

SPL TRAP LEFT OPEN.

SH GAS KICK = 22 UNITS.

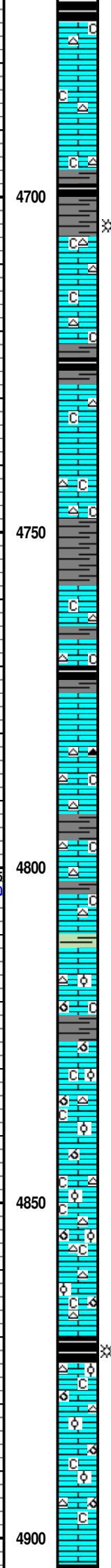
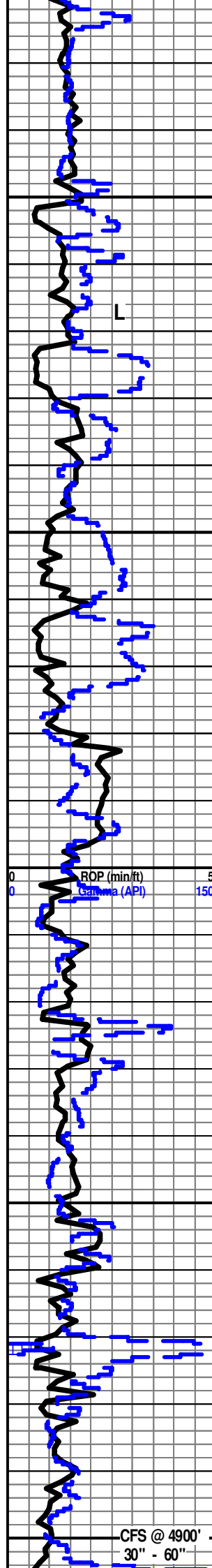
H

I

J

K

ROP (min/ft) 5
Gamma (API) 150



Ls Crm-Tan Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Blk Carb-Gry-Grn Fissil No Odor No Flor No Stn NS

KANSAS CITY "HERTHA" (L) 4706' (-1873)

Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Blk Carb-Gry-Grn Fissil No Odor No Flor No Stn NS

Sh Blk Carb-Gry-Grn Fissil Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn NS

Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Blk Carb-Gry-Grn Fissil No Odor No Flor No Stn NS

Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit Sh Blk Carb-Gry-Grn Fissil No Odor No Flor No Stn NS

MARMATON 4773' (- 1940)

Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Cht Wht-Brn Translu- Op Shp Vit Sh Blk Carb-Gry-Grn Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Cht Wht Op Shp Vit Sh Char-Gry-Grn Fissil No Odor No Flor No Stn NS

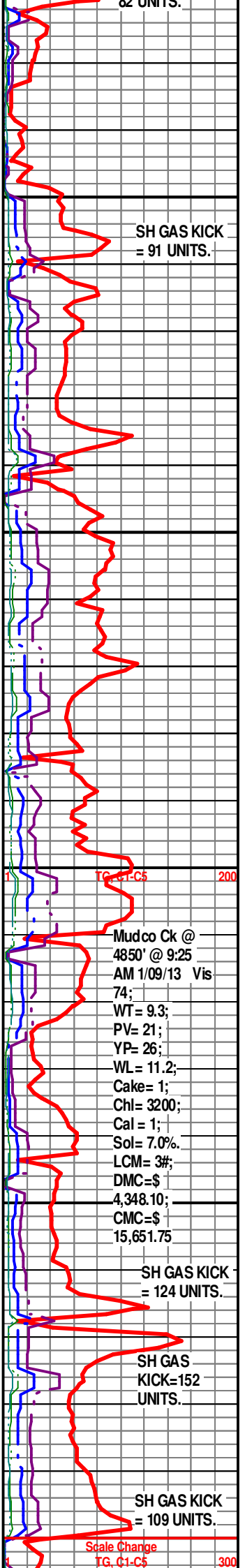
Ls Wht-Gry-Crm Fxln Poor Ixln Por Micritic Dns Barren Grad Poor-Fair OOL Por (w/OOL in pl) Fair Dissolu Fair Leaching Cht Gry Op Shp Vit Chalky Wht Soft Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Ls Wht-Gry-Crm Fxln Poor Ixln Por Micritic Dns Barren Grad Poor-Fair OOL Por (w/OOL in pl) Fair Dissolu Fair Leaching Cht Wht-Gry Translu-Op Shp Vit Chalky Wht Soft Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

PAWNEE 4870' (- 2037)

30" CFS @ 4900' Ls Wht-Gry-Crm Fxln Poor Ixln Por Micritic Dns Barren Grad Poor-Fair OOL Por (w/OOL in pl) Fair Dissolu Fair Leaching Cht Wht-Gry Translu-Op Shp Vit Chalky Wht Soft Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

60" CFS @ 4900' Ls Wht-Gry-Crm Fxln Poor Ixln Por Micritic Dns Barren Grad Poor-Fair OOL Por (w/OOL in pl) Fair Dissolu Fair Leaching Cht Wht-Gry Translu-Op Shp Vit Chalky Wht Soft Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS



SH GAS KICK = 91 UNITS.

TC C1-C5 200

Mudco Ck @ 4850' @ 9:25 AM 1/09/13 Vis 74;
 WT= 9.3;
 PV= 21;
 YP= 26;
 WL= 11.2;
 Cake= 1;
 Chl= 3200;
 Cal= 1;
 Sol= 7.0%.
 LCM= 3#;
 DMC=\$ 4,348.10;
 CMC=\$ 15,651.75

SH GAS KICK = 124 UNITS.

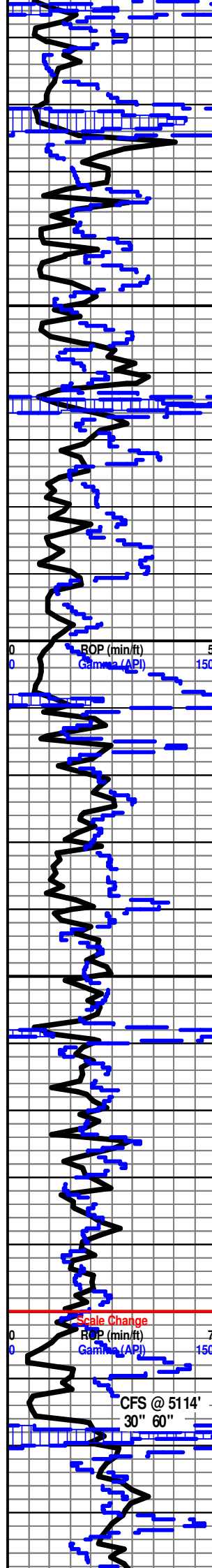
SH GAS KICK=152 UNITS.

SH GAS KICK = 109 UNITS.

Scale Change TG C1-C5 300

LABETTE 4904' (- 2071)

CFS @ 4900' 30" - 60"



CHEROKEE 4920' (- 2087)
 Ls Gry-Crm-Wht Fxln Poor Ixln Por Micritic Dns Barren Grad Poor OOM Por (w/OOL in pl) Poor InterOOM Por Poor Develop Poor Leaching Cht Amber-Tan Translu-Op Shp Vit Chalk Wht Soft Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Ls Crm-Wht Fxln Poor Ixln Por Micritic Dns Barren Grad Fair Pin-Pt Ixln Gran Por Chalk Wht Soft Cht Wht Op Shp Vit Sh Char-Gry Fissil No Odor No Flor No Stn NS

SECOND CHEROKEE SHALE 4962' (- 2129)
 Sh Blk Carb-Gry-Grn Fissil (SSG) Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn SSh Blk Carb

Sh Char-Gry-Grn Fissil Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn NS

THIRD CHEROKEE SHALE 5006' (- 2173)
 Sh Blk Carb-Gry-Grn Fissil (SSG) Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn SSh Blk Carb

Sh Blk Carb-Gry-Grn Fissil (SSG) Ls Crm-Tan-Gry Fxln Dns Micritic Barren Chalk Abd Cht Wht Op Shp Vit No Odor No Flor No Stn SSh Blk Carb

Ls Crm-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 Crm-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 Crm-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

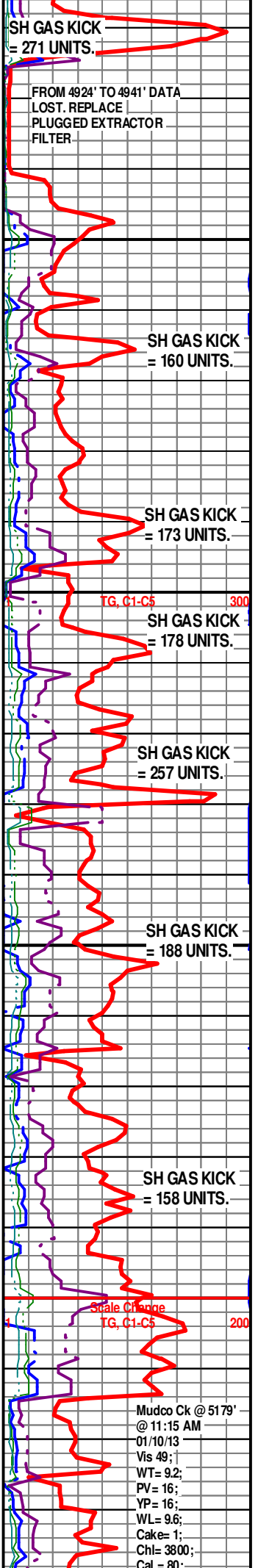
30" CFS @ 5114' Ls Wht-Crm Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Sh Char-Gry- Blk Carb-Maroon-Red Soft-Fissil No Odor No Flor No Stn NS

60" CFS @ 5114' Sh Blk Carb-Gry-Grn Fissil Ls Wht-Crm-Tan-Gry Fxln Dns Micritic Barren Grad Poor-Fair Pin-Pt Ixln Por Chalk Cht Wht Op Shp Vit Fos (Brach) No Odor No Flor No Stn NS

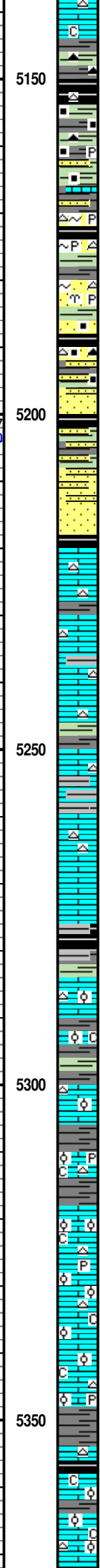
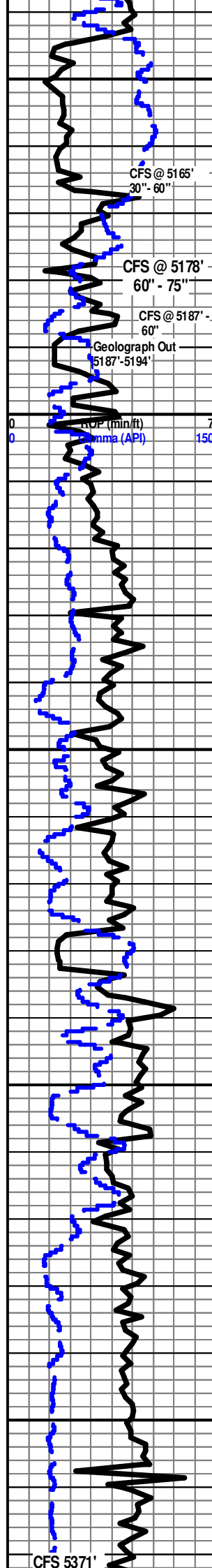
NOTE: @ 5114' TOH TO REPLACE PDC BIT. The Pipe Strap @ 5114' = Was <0.74'> Short To Board. No Correction Has Been Made.

10' Sample Examination Start At 5120'

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



Mudco Ck @ 5179'
 @ 11:15 AM
 01/10/13
 Vis 49;
 WT= 9.2;
 PV= 16;
 YP= 16;
 WL= 9.6;
 Cake= 1;
 Chl= 3800;
 Cal = 80



MORROW SHALE 5144' (- 2311)
 Sh Varicolored Blk Carb-Gry-Grn-Red Fissil Faint Odor Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht Gry-Drk Blk Op Shp Vit Faint Odor No Flor No Stn NS
 30" CFS @ 5165' Sh Varicolored Blk Carb-Gry (w/Carb Includ) Grn-Red Fissil Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht Gry-Drk Blk Op Shp Vit Faint Odor No Flor No Stn NS
 60" CFS @ 5165' Sh Varicolored Blk Carb-Gry (w/Carb Includ) Grn-Red Fissil Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Chalk Wht Soft Cht Lt Gry-Drk-Blk Op Shp Vit Pry Mass Tr/Orz Ss Gry Poor Igran Por Dns ? Faint Odor No Flor No Stn NS

MORROW SAND 5171' (- 2338)
 60" CFS @ 5178' Qrz Ss Wht-Gry Clusters (w/Glacu Includ) Poor-Fair Igran Por Fair Sorting Sh Varicolored AA Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic AA Chalk Wht Soft Cht AA Pry Foss (Brach) Mass No Odor No Flor No Stn NS
 75" CFS @ 5178' Qtz Ss AA Wht FGm-Ang to Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Cht AA Chalk AA Sh AA No Odor No Stn No Flor NS
 NOTE: BIT PLUGGED UP @ 5187' AT 20" INTO CFS.
 60" CFS @ 5187' Qtz Ss Wht-Gry FGm-Ang-Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Fair Igran Por Friable w/Lt-Med CaCO3 Matrix Cht AA Fos (Bry) Pyr Mass Sh AA Tr Aqua No Odor No Stn No Flor NS

Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Qtz Ss Wht-Gry FGm -Ang-Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Fair Igran Por Friable (w/Lt-Med CaCO3 Matrix) Ls AA Cht AA No Odor No Flor No Stn NS
 Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Qtz Ss Wht-Gry FGm -Ang -Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Fair Igran Por Friable (w/Lt-Med CaCO3 Matrix) Ls AA Cht AA No Odor No Flor No Stn NS

Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Qtz Ss Wht-Gry FGm -Ang -Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Fair Igran Por Friable (w/Lt-Med CaCO3 Matrix) Ls AA Cht AA No Odor No Flor No Stn NS
 Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Qtz Ss Wht-Gry FGm -Ang -Sub Ang Well Sort Clusters (w/Glacu & Carb Includ) Fair Igran Por Friable (w/Lt-Med CaCO3 Matrix) Ls AA Cht AA No Odor No Flor No Stn NS

Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil) Ls AA Cht AA No Odor No Flor No Stn NS
 Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Sh Varicolored Blk Carb-Gry-Grn- Aqua-Maroon-Red Fissil Cht AA No Odor No Flor No Stn NS

MISSISSIPPIAN CHESTER 5240' (- 2407)

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Cht AA No Odor No Flor No Stn NS

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil Cht AA No Odor No Flor No Stn NS

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren Sh Varicolored Blk Carb-Gry-Grn-Aqua-Maroon-Red Fissil) Cht AA No Odor No Flor No Stn NS

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

MISSISSIPPIAN "Ste. GEN" 5284' (- 2451)

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

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

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

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

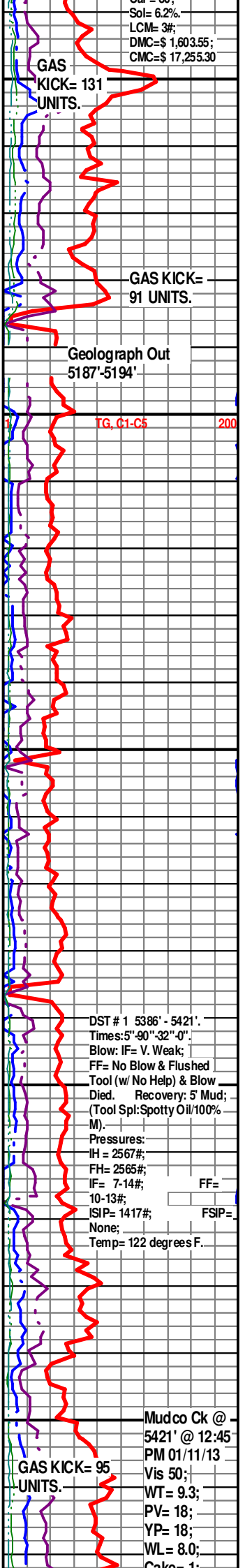
Ls Wht Fxln Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls CrmTan-Gry Fxln Dns Micrite Chalky Sh Char- Blk Carb-Gry-Grn-Aqua-Red-Olive Fissil No Odor No Stn No Flor NS

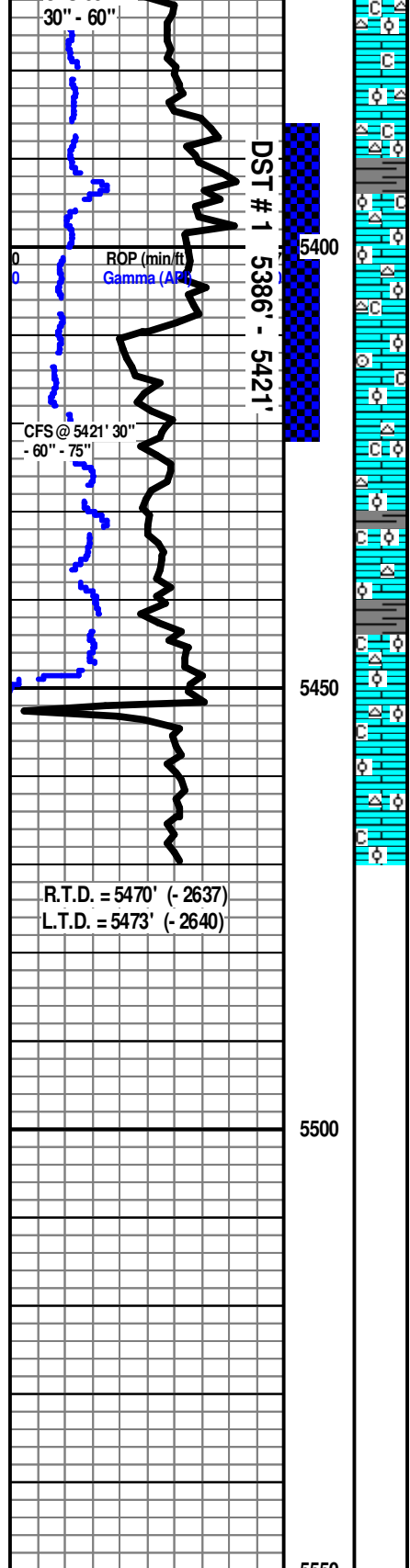
30 CFS @ 5371' Ls Wht Fxln Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry Fxln Dns Micrite Cht Wht Translu-Op Shp Vit Chalky Pyr Mass Sh Char -Gry-Grn-Aqua-Red Fissil No Odor No Stn No Flor NS

ST. LOUIS 5353' (- 2520)

60 CFS @ 5371' Ls Wht Fxln Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry Fxln Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua-Red Abd Fissil No Odor No Stn No Flor NS

ST. LOUIS UPPER "B' POROSITY 5372' (- 2539)





Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua 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 Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua 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 Crm-Gry FxIn Dns Micrite Cht Wht Translu-Op Shp Vit (Tr Only) Chalky Sh Char -Gry-Grn-Aqua Fissil No Odor No Stn No Flor NS

30" @ 5421' Sh Char -Gry-Grn-Aqua Fissil Ls Wht FxIn Poor OOL Por (w/Small OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Chalky No Odor No Stn No Flor NS

ST. LOUIS LWR 'B' POROSITY 5410' (- 2577)

60" @ 5421' Sh Char -Gry-Grn-Aqua Fissil Ls Wht FxIn Poor-Fair OOL Por (w/Small-Med OOL in pl) "Sandy OOL Ls" Barren Grad Ls Crm-Gry FxIn Dns Micrite Chalky Fos (Crin) No Odor No Stn No Flor NS

75" @ 5421' Sh Char -Gry-Grn-Aqua Fissil Ls Wht FxIn Poor-Fair OOL Por (w/Small-Med OOL in pl) Barren Chalky No Odor No Stn No Flor NS

Sh Char -Gry-Grn-Aqua Fissil Ls Wht FxIn Poor-Fair OOL Por (w/Small-Med OOL in pl) Barren Chalky No Odor No Stn No Flor NS

Ls Wht FxIn Poor IxIn 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 Fissil No Odor No Stn No Flor NS

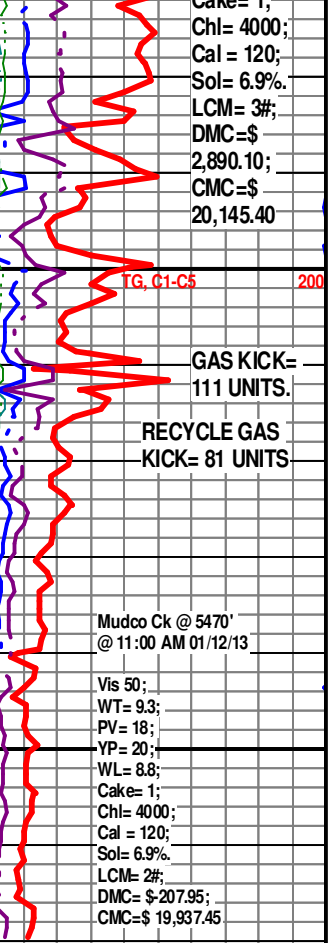
Ls Wht FxIn Poor IxIn Por Micritic Dns Barren Grad Tr OOL Por (w/OOL in pl) Med-Small Ooids AA Barren Cht Wht Translu-Op Shp Vit Sh Char-Gry (w/Pyr Includ) Blk-Carb Fissil No Odor No Stn No Flor NS

30" CFS @ 5470' Ls Wht FxIn Poor IxIn 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 Fissil No Odor No Stn No Flor NS

60" CFS @ 5470' Ls Wht FxIn Poor IxIn 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 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 @ 6:00 PM on 1-12-2013



DST # 1 5386' - 5421'

ROP (min/ft)
Gamma (API)

CFS @ 5421' 30"
- 60" - 75"

R.T.D. = 5470' (- 2637)
L.T.D. = 5473' (- 2640)

5400

5450

5500

5550