

MUD LOG
WellSight Systems
Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: STEVE TUCKER #1-19 (SW)
API: ~~15-069-20496-00-00~~ 15-069-20493-0000
Location: SW - SE - NW -SW of SEC. 19 - 28 S. - 30 W.
License Number: KCC # 5316
Spud Date: 02/19/2015
Surface Coordinates: 1600' FSL & 750' FWL
Region: GRAY CO., KS.
Drilling Completed: 03/07/2015

Bottom Hole
Coordinates:
Ground Elevation (ft): 2814' K.B. Elevation (ft): 2827'
Logged Interval (ft): 1832' To: 5546' Total Depth (ft): 5550'
Formation: MISSISSIPPIAN "SALEM (SPERGEN)"
Type of Drilling Fluid: CHEMICAL/POLYMER/GEL MUD DISPLACEMENT @ 2895'.
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. KSBTP # 88
Company: DW Energy, LLC (DWE)
Address: 312 North Broadview Street
Wichita, Kansas 67208

Casing & Deviation Survey's

Surface Casing: Spud at 6:00 pm on 02/19/15. Drilled 12-1/4" hole to 1836'. Ran 43 joints of new 24#, 8-5/8" casing. Tallied 1817.68', set at 1832' KB. Welded straps on GS & bottom 3 joints, tacked all collars. Float insert top 1st collar. Baskets (3), on 4,17,23. Centralizers (6) 2,11,18,24,32,37. Cemented with 400 sacks A-Conn ; 3% C; 1/4# Poly, then tailed with 150 sks Common plus 2% CC, 1/4# poly. Plug down at 1:00 pm on 02/21/15. Basic Energy Services Ticket #05327. Cement did circulate to surface.

Deviation Survey's Taken: @ 1836' = 1/2 degree; @ 4457' = 3/4 degree; @ 4920' = 3/4 degree; @ 5025' = 3/4 degree; @ 5369' = 3/4 degree; @ 5550' = 1/2 degree.

Production Casing: Ran 123 joints new 15.5#, 5-1/2" casing. Tally 5374'. Set at 5387' KB. Guide shoe on bottom. Latch down baffle in top 1st collar. Centralizers (5) on 2,5,19,25,22. Basket (2) on 8,10. Cemented with 50 sks A-Conn plus 155 sks AA2. Plug down at 3:30 am on 03/08/15. Basic Energy Services ticket #5334. Plugged rathole with 30 sks and mousehole with 20 sks. Sterling reported to KCC (Michelle Pennington) on 03/09/15.

DSTs

~~ DST # 1 ~~ Interval: 4956'-5025'. Times: 5"-90"-60"-90";
 Blow: IF = Very Weak/1/4". FF= No Blow/Died-Flushed Tool @ 15" & Died @ 22". No Help.

Recovery: 10' M (100% M with Few Oil Spots).

Pressures: IH=2366#; FH=2359#; IF=24-26#; FF=27-37#; ISIP= 279#; FSIP=74#; Temp.=118 degrees F..

~~ DST # @ ~~ Interval: 4973'-5103.'. Times: 5"-90"-60"-180";
 Blow: IF= Weak/ Inc/8". No Blow Back ISIP. FF= BOB/ Instant (Bled Off Tool @ 10" & Built BOB/4".

Recovery: 2885' GIP; 180 TF: 60' GO (7% G & 93%O); 60' GCOM (49% G & 62% O & 34% M); 60" GOCM (31% G & 21% O & 48% M).

Pressures: IH=2398#; FH=2378#; IF=40-52#; FF=60-91#; ISIP= 1450#; FSIP=1409#; Temp.=123 degrees F..

~~ DST # 3 ~~ Interval: 5330'-5369'. Times: 5"-90"-30"-60";
 Blow: IF = Very Weak/1/4". FF= No Blow/Died-Flushed Tool @ 15" & Had Surge & Died - No Help

Recovery: 5' M (100% M with Spotty Oil).

Pressures: IH = 2563#; FH=2554#; IF=25-26#; FF= 28-31#; ISIP=1488#; FSIP=923#; Temp.=122 degrees F..

~~ DST #4 ~~ Interval: 5364'-5381'. Times: 5"-90"-90"-120";
 Blow: IF=Very Weak/1/4". FF= Weak Build to BOB/65". No Blow Back During FSIP.

Recovery: 60' GIP & 260' TF: 70 SOMCW (4% O & 35% M & 65% W); 190' SMCW (w/Tr. O & 3% M & 97% W).
 Tool Spl: (3% O & 12% M & 85% W).

Pressures: IH=2587#; FH=2559#; IF=28-47#; FF=55-149#; ISIP= 1574#; FSIP=1502#; Temp = 130 degrees F..


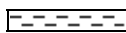

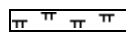
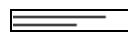
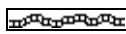




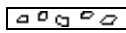







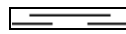




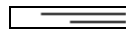
Comments

After review of all geologic samples as examined, combined with the fluid and pressures results from all drill stem tests taken and analysis from the electric logs run, it was determined by all parties that production casing should be run in order to further evaluate this well.

Respectfully submitted,

David P. Williams, P. G.

ROCK TYPES

	Anhy		Clyst		Gry sh		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**
- Anhy
 - Arggrn
 - Arg
 - Bent
 - Bit
 - Brefracg
 - 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
- Gry sh
- Gyp
- Ls
- Mrst
- Sandylms
- Sltstrg

- Ssstrg

TEXTURE

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

OTHER SYMBOLS

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

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

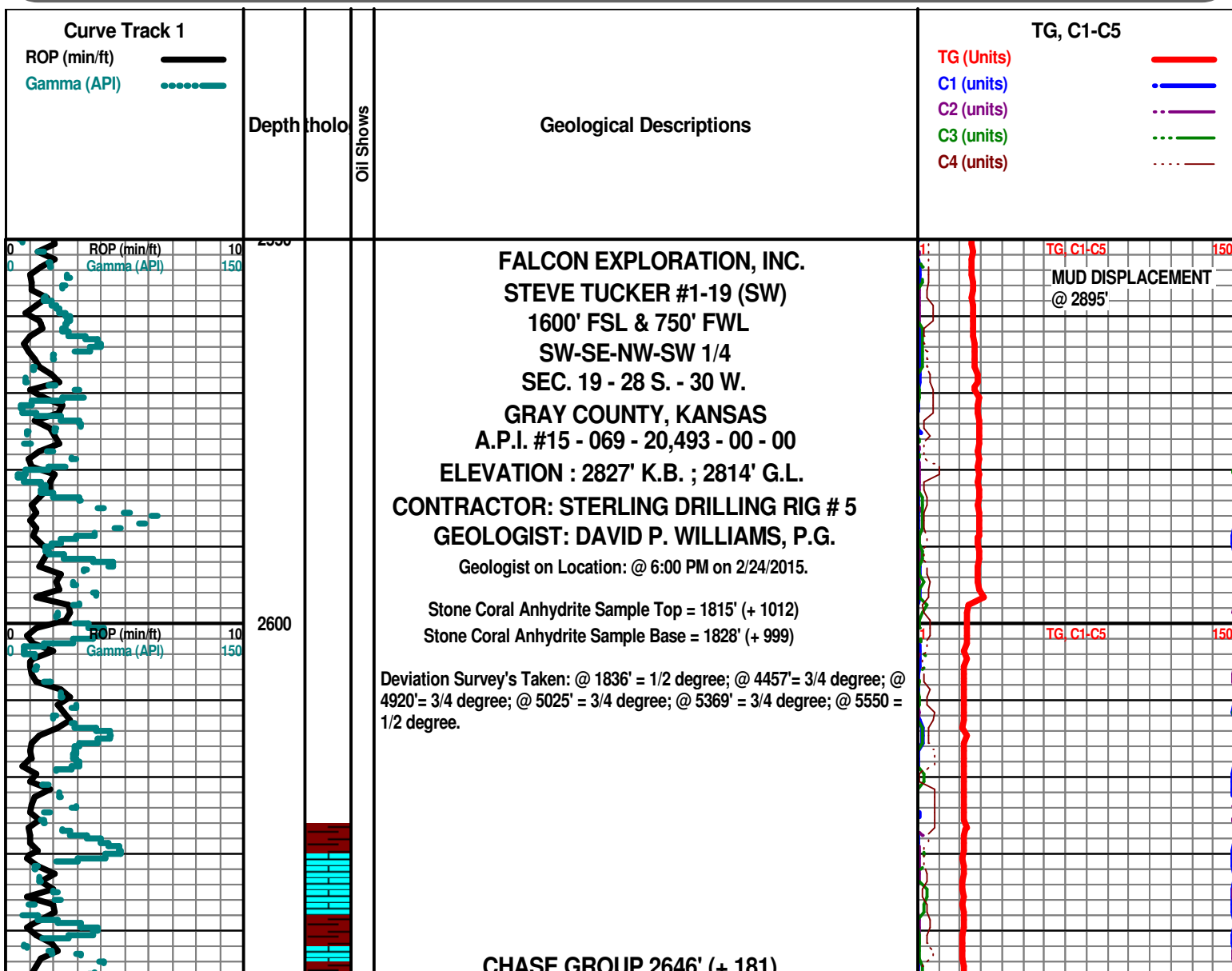
- ROUNDING**
- Rounded
 - Subrnd
 - Subang
 - Angular

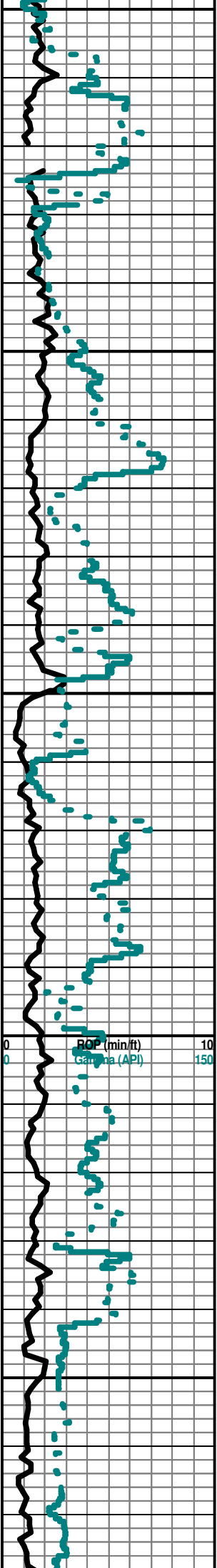
- Even
- Spotted
- Ques
- Dead

- EVENT**
- Rft
 - Sidewall

- OIL SHOW**
- Gas show

- INTERVAL**
- Dst
 - Dst_alt





KRIDER 2674' (+ 153)

Begin 32' Sample Examination @ 2750'.

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

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

WINFIELD 2718' (+109)

Sh Gry-Red Tr Blk Carb Fissil-Soft Poor Spl (Wash Red V Abd) Dolo/Ls Crm-Gry Poor IxIn Por Dns Micrite Chalky No Odor No Stn No Flor NS

TOWANDA 2789' (+38)

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

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

FORT RILEY 2840' (- 13)

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

GAS KICK = 20 UNITS.

GAS KICK = 25 UNITS.

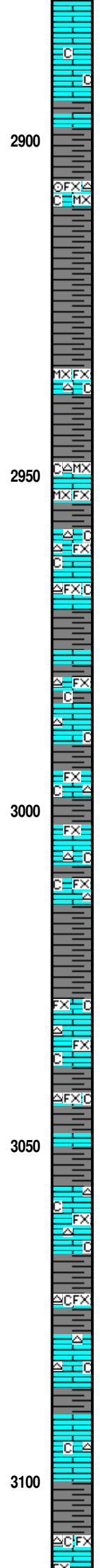
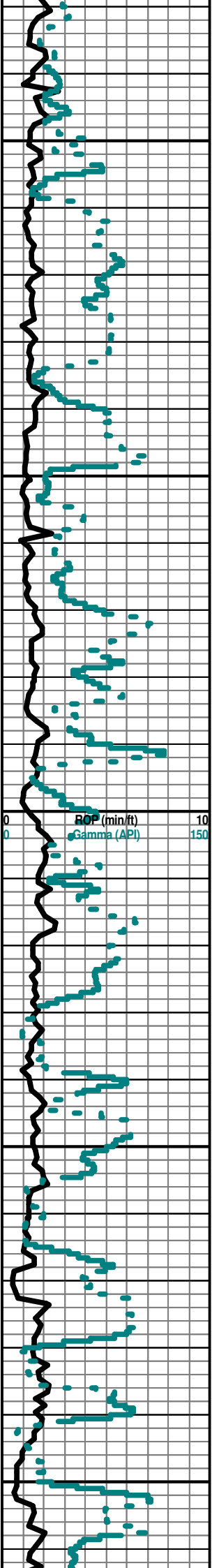
GAS KICK = 20 UNITS.

TG C1-C5 150

RE-ZERO TOOKE
DAQ IN GEOTRAILER
@ 2830' (2820' LAG
DEPTH) . BKGD GAS
SET @ 23 UNITS.

ADJ. ANNULAR
VELOCITY (AV) @
2838' @ 56 SPM =
187.79.

MUD DISPLACEMENT @ 2895'



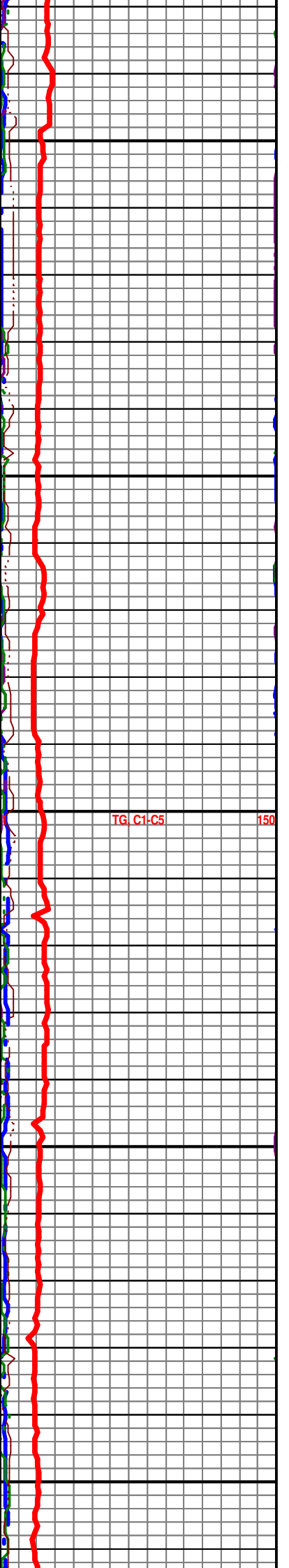
Ls Crm-Gry FxIn-MicroxIn Poor-Fair IxIn Por Grad Poor Dns Micrite Cht Gry (w/Brn Incls) Fos (Crin) Chalky Sh Gry-Red Soft No Odor No Stn No Flor NS

Ls Crm-Gry FxIn-MicroxIn 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

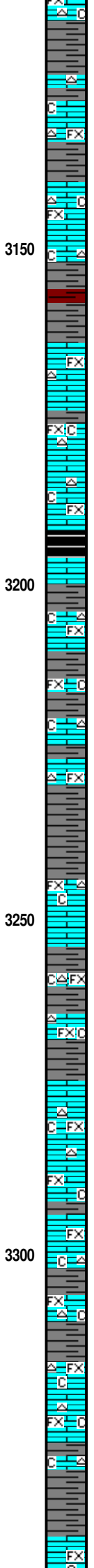
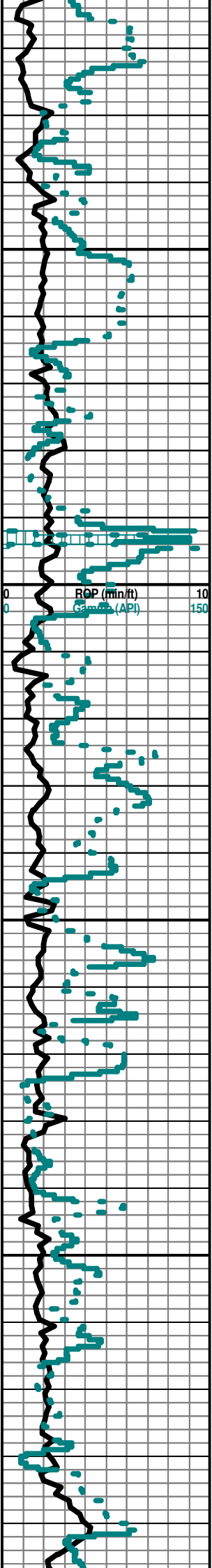
Ls Crm-Wht FxIn Poor IxIn Por Dns Micrite Cht Wht Op Shp Vit Chalky V Abd "Gummy" Sh Gry-Red Soft No Odor No Stn No Flor NS

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



TG C1-C5 150



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

COTTONWOOD 3123' (-296)

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

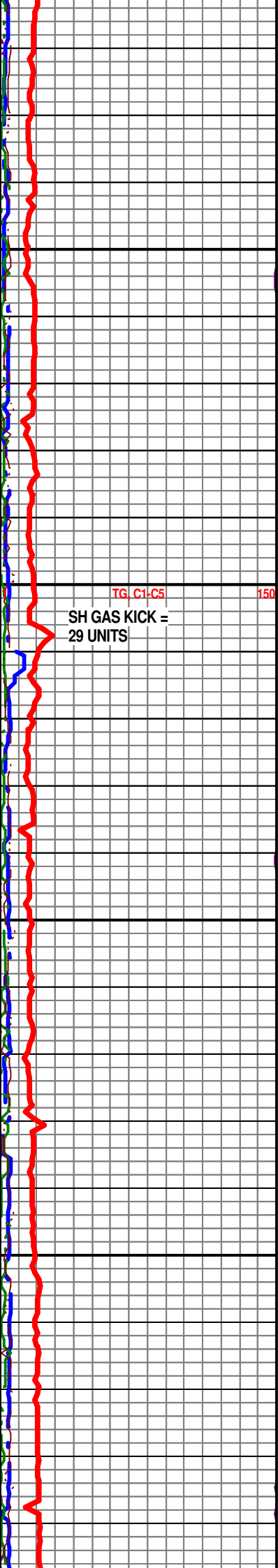
NEVA 3164' (- 337)

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

FORAKER 3274' (- 447)

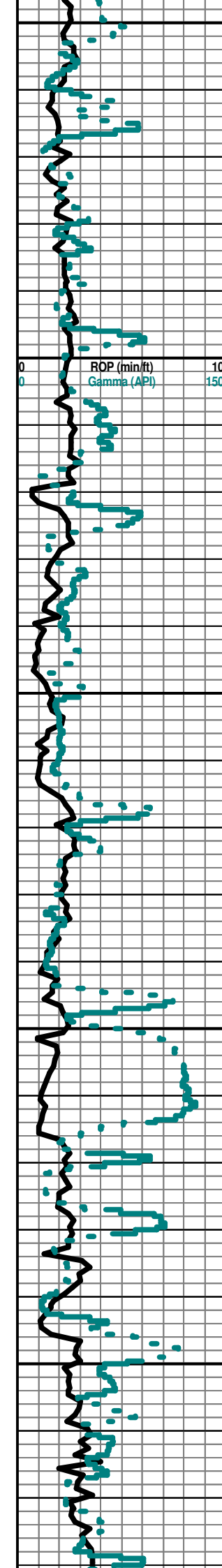
Ls Wht-Crm-Gry FxIn Poor IxIn Por Dns Micrite Cht Wht Transp-Op Shp Vit Chalk Sh Char-Gry-Red-Maroon-Lt Grn Soft-Fissil No Odor No Stn No Flor NS

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



TG C1-C5 150

SH GAS KICK = 29 UNITS



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

Ls Wht-Crm FxIn Poor IxIn 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 FxIn Poor IxIn 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

GAS TEST
EXTRACTOR
= 64 UNITS
OBSERVED.

TG, C1-C5 150

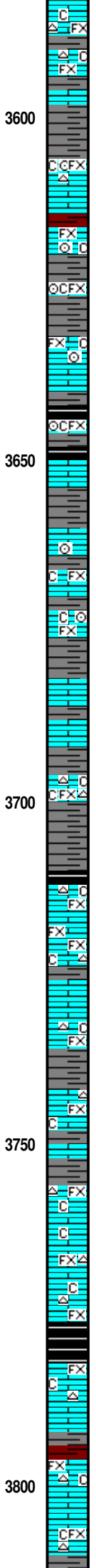
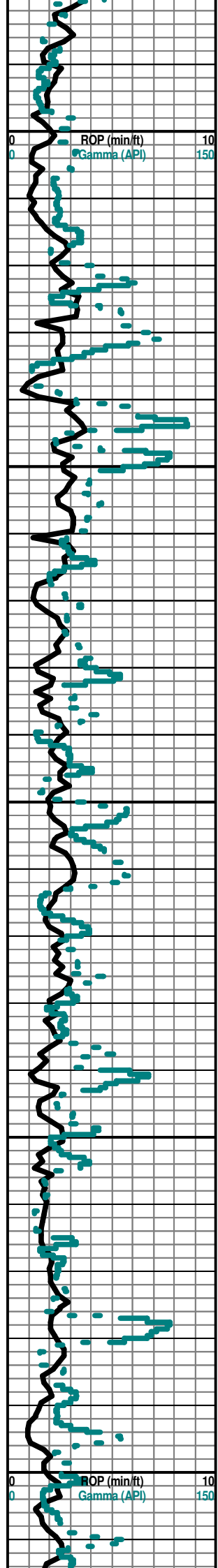
Mudco Ck @ 3406'
@ 12:00 PM
02/25/15
Vis = 48;
WT = 8.9;
PV = 12;
YP = 15;
WL = 10.8;
Cake = 1;
Chl = 3,600;
Cal = 160;
Sol = 4.1%;
LCM = 1#;
DMC=\$3,477.77;
CMC=\$ 9,624.53.

FALL CITY 3426' (- 599)

ROOT SHALE 3494' (- 667)

STOTLER 3514' (- 691)

TARKIO 3581' (- 754)



Ls Wht-Crm FxIn Poor IxIn 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

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

BERN 3660' (- 833)

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

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

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

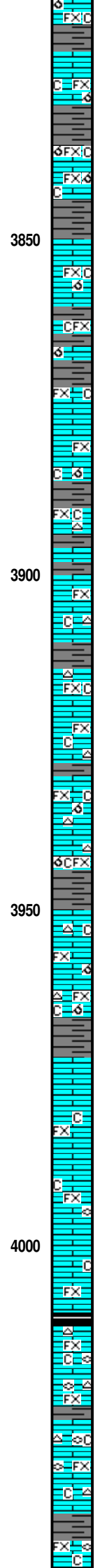
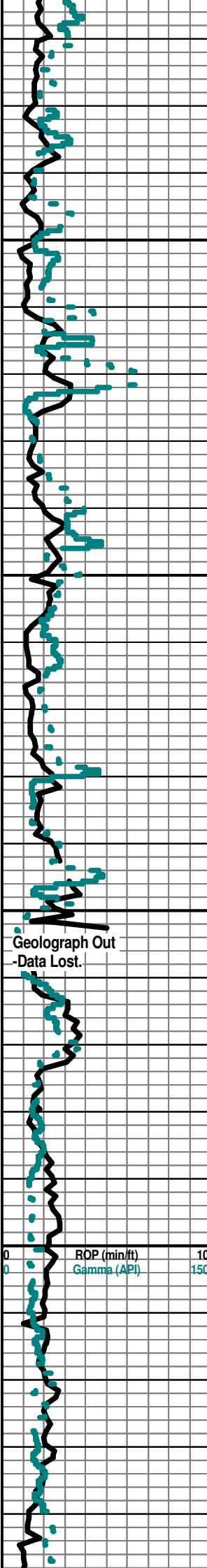
TOPEKA 3781' (- 955)

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

GAS TEST
EXTRACTOR = 157
UNITS OBSERVED.

TG C1-C5 150

TG C1-C5 150



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

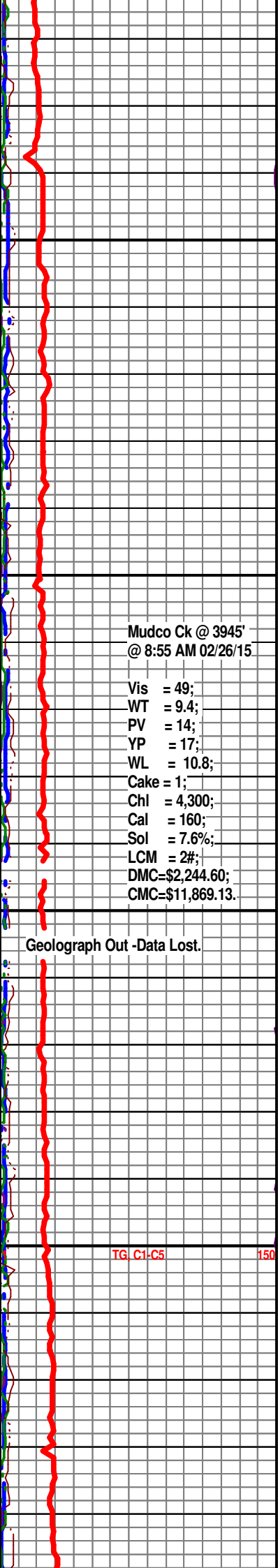
Ls Wht-Crm-Gry FxIn Poor IxIn Por Mostly Micritic Dsn Barren Grad
 Poor OOM Por (Tr Only) Poor Leaching Poor Dussolu Chalk Abd Sh
 Char-Grn Fissil Soft No Odor No Flor No Stn NS

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

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

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



Mudco Ck @ 3945'
 @ 8:55 AM 02/26/15

Vis = 49;
 WT = 9.4;
 PV = 14;
 YP = 17;
 WL = 10.8;
 Cake = 1;
 Chl = 4,300;
 Cal = 160;
 Sol = 7.6%;
 LCM = 2#;
 DMC=\$2,244.60;
 CMC=\$11,869.13.

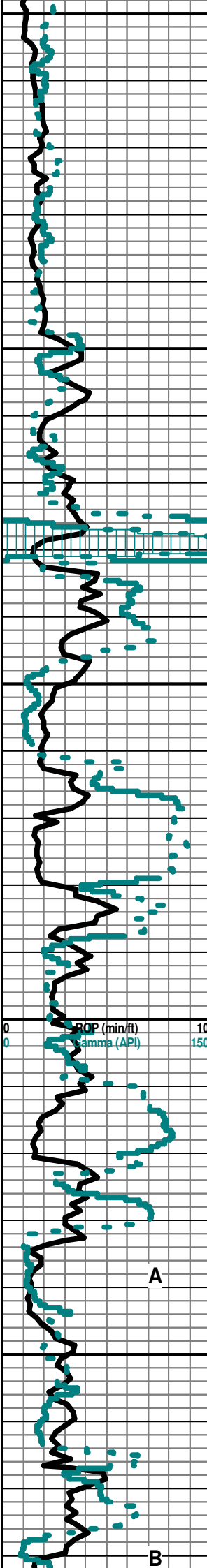
Geograph Out
 -Data Lost.

Geograph Out -Data Lost.

LeCOMPTON 3972'(- 1145)

TG C1-C5 150

OREAD 4044' (- 1217)



4050
4100
4150
4200
4250



Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor Pin-Pt IxIn Por Grad Poor
OOM Por Poor Leaching Poor Develop Cht Wht Op Shp Vit Chalk Abd
Sh Gry-Char Fissil No Odor No Flor No Stn NS

PLATTSMOUTH 4102' (- 1275)

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

HEEBNER 4124' (- 1297)

Sh Blk Carb- Gry-Char Fissil Ls Wht-Crm-Gry FxIn Dns Micrite Grad Poor
Pin-Pt IxIn Por Chalk Abd No Odor No Flor No Stn NS

TORONTO 4146' (- 1319)

DOUGLAS 4161' (- 1334)

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

Ls Crm-Wht-Gry FxIn Dns Micrite Barren Cht Wht-Drk Gry Op Shp Vit
Chalk Abd Sh Blk Carb-Char-Grn/Gry Soft-Fissil No Odor No Stn No Flor
NS

IATAN (BROWN LIME) 4223' (- 1396)

Begin 10' Sample Examination @ 4250' (LAG Is 4230').

LANSING 4231' (- 1404)
Ls Crm-Wht-Gry FxIn Dns Micrite (w/Pyr Inklus) Grad Poor IxIn Gran Por
Barren Cht Wht Op Shp Vit Chalk Abd Sh Blk Carb- Char-Grn/Gry
Soft-Fissil No Odor No Stn No Flor NS

Ls Crm-Wht-Gry FxIn Dns Micrite Cht Wht Op Shp Vit Chalk Abd Sh Blk
Carb-Char-Grn/Gry Soft-Fissil No Odor No Stn No Flor NS

Ls Crm-Wht-Gry FxIn Dns Micrite Cht Gry Op Shp Vit Chalk Abd Sh Blk
Carb-Char-Grn/Gry Soft-Fissil No Odor No Stn No Flor NS

Ls Crm-Wht-Gry FxIn Dns Micrite Cht Gry Op Shp Vit Chalk Abd Sh Blk
Carb-Char-Grn/Gry Soft-Fissil No Odor No Stn No Flor NS

Ls Crm-Wht-Tan-Gry MicroxIn Dns Micrite Cht Wht-Tan Op Shp Vit Chalk
Sh Char-Gry-Aqua Soft-Fissil No Odor No Stn No Flor NS

CHANGEOUT EXTRACTOR
FILTER @ 4143' DE & ADJ.
FINE GAS ZERO IN
GEOTRAILER. BKDG GAS
SET @ (4125') = 32 UNITS.
GAS TEST AT EXTRACTOR
@ 4127' = 112 UNITS.

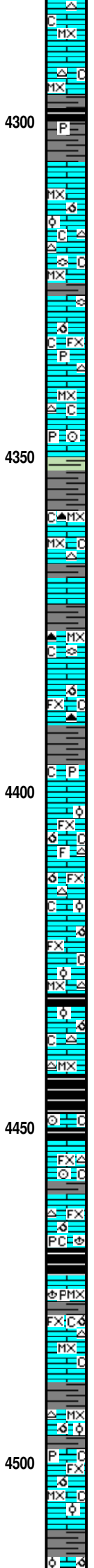
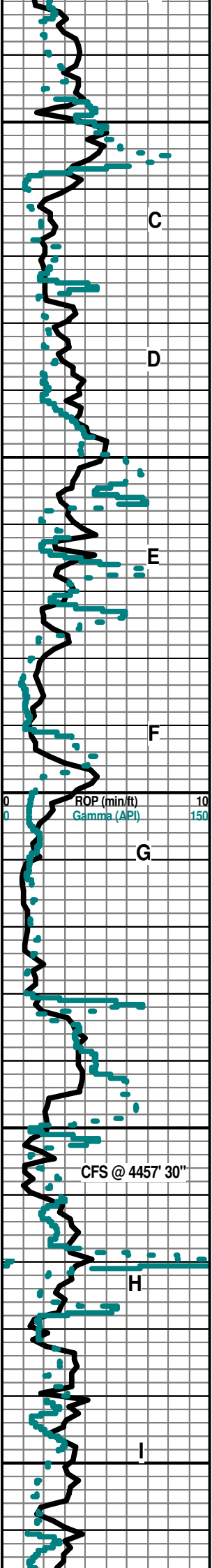
TG, C1-C5 150

ADJ. FINE GAS ZERO IN
GEOTRAILER. BKDG GAS
SET @ (4284') = 33 UNITS.

A

B

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



Ls Crm-Wht-Gry Microxln Dns Micrite Cht Tan Op Shp Vit Chalk Sh Char-Gry Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry Microxln Dns Micrite Cht Tan Op Shp Vit Chalk Sh Char-Gry Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry Microxln Dns Micrite Cht Tan Op Shp Vit Chalk Sh Char-Gry (w/Pyr Inclus)-Blk Carb (Tr Only) Soft-Fissil No Odor No Stn No Flor NS

Ls Crm-Gry Microxln Dns Micrite Grad Poor OOM Por (w/Small OOids in pl) Poor Dissolu Poor Develop Barren Cht Gry Op Shp Vit Chalk Sh Gry Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry Microxln Dns Micrite Grad Poor PPT Ixln Por Cht Tan (w/Fos (Fuss) Inclus) Op Shp Vit Chalk Sh Char-Gry Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Dns Micrite (w/Pyr Inclus) Grad Poor PPT Ixln-Granular Por Grad Poor OOM Por (w/Small OOids in pl) Poor Dissolu Poor Develop Barren Cht Wht-Gry Op Shp Vit Chalk Sh Gry Fissil No Odor No Stn No Flor NS

Ls Wht-Tan-Gry Microxln-Fxln Dns Micrite (w/Pyr Inclus) Grad Poor PPT Ixln Por (w/Fos Inclus) Barren Cht Wht Op Shp Vit ChalkSh Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Gry Microxln Dns Micrite Cht Amber Gry-Drk Gry-Blk Translu-Op Shp Vit Fos (Crin) Chalk Sh Char-Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Gry Microxln Dns Micrite Cht Gry-Op Shp Vit Chalk Sh Char-Grn/Gry Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Drk Tan Microxln Dns Micrite Cht Gry-Drk Gry-Blk Translu-Op Shp Vit Fos (Fuss) Chalk Sh Char-Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan Fxln Dns Micrite (w/Pyr Inclus) Grad Poor PPT Ixln Por Grad Poor OOM Por (w/Small OOids in pl) Poor Dissolu Poor Develop Barren Cht Gry-Drk Gry Translu-Op Shp Vit Fos (Crin) Chalk Sh Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan Fxln Dns Micrite Grad Poor OOM Por (w/Small OOids in pl) Poor Dissolu Poor Develop Barren Cht Gry-Drk Gry Op Shp Vit Chalk Sh Gry-Aqua Fissil No Odor No Stn No Flor NS

Ls Crm-Tan Fxln Dns Micrite Grad Poor OOM Por (w/Small OOids in pl) Poor Dissolu Poor Develop Barren Cht Tan (w/Fos (Spicule) in pl) Op Shp Vit Chalk Sh Char-Grn/Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan Fxln Dns Micrite Grad Poor OOM Por (w/Small OOids in pl) Poor Dissolu Poor Develop Barren Cht Tan Op Shp Vit Chalk Sh Char-Grn/Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan Fxln Dns Micrite Grad Poor OOM Por (w/Small OOids in pl) Poor Dissolu Poor Develop Barren Cht Wht Op Shp Vit Chalk Sh Char-Grn/Gry-Aqua Fissil No Odor No Stn No Flor NS

Ls Crm-Gry Microxln Dns Micrite Grad Poor OOM Por (w/Small OOids in pl) Poor Dissolu Poor Develop Barren Cht Gry-Op Shp Vit Fos (Crin) Chalk VAbd Sh Char-Grn/Gry Fissil No Odor No Stn No Flor NS

MUNCIE CREEK 4442' (- 1615)

Ls Crm-Gry Microxln Dns Micrite Barren Cht Gry-Op Shp Vit Fos (Crin) Chalk VAbd Sh Char-Grn/Gry Fissil No Odor No Stn No Flor NS

30" CFS @ 4457' Ls Wht Crm-Tan Fxln Good OOM Por (w/Med-Lg OOids in pl) Tr Med Vug OOM Por Good Dissolu Good Develop Barren Cht Wht-Gry Op Shp Vit Fos (Crin) Chalk Pyr Mass Sh Char-Grn/Gry-Aqua Fissil No Odor No Stn No Flor NS

Ls Wht Crm-Tan Fxln Good OOM Por (w/Med-Lg OOids in pl) Tr Med Vug OOM Por Good Dissolu Good Develop Barren Cht Gry Op Shp Vit Fos (Brach) Chalk Pyr Mass Sh Char-Grn/Gry-Aqua Fissil No Odor No Stn No Flor NS

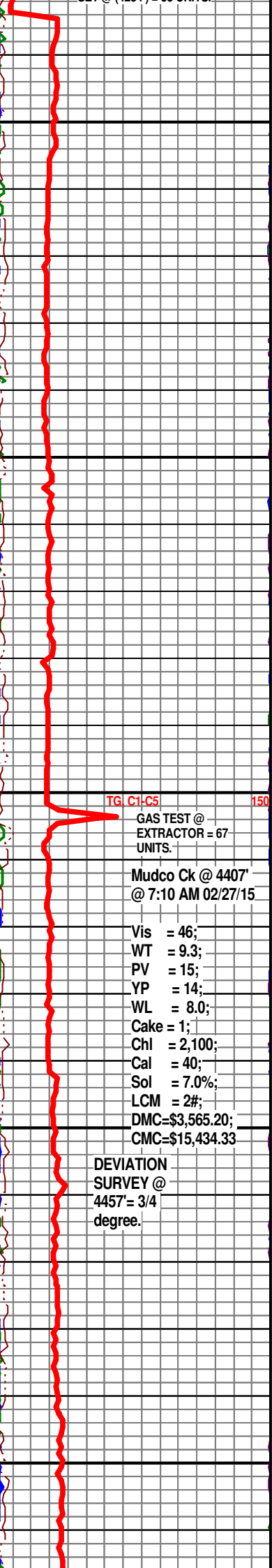
Ls Wht Crm-Tan Fxln-Microxln Good OOM Por (w/Med-Lg OOids in pl) Tr Med Vug OOM Por Good Dissolu Good Develop Barren Grad Dns Micrite No Vis Por Cht Wht Op Shp Vit Fos (Brach) Chalk Pyr Mass Sh Char-Grn/Gry-Aqua Fissil No Odor No Stn No Flor NS

Ls Crm-Tan Microxln Dns Micrite Barren Cht Gry-Op Shp Vit Chalk Sh Char-Grn/Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Gry Fxln-Microxln Good OOM Por (w/Med-Lg OOids in pl) Tr Med Vug OOM Por Good Dissolu Good Develop Barren Grad Dns Micrite No Vis Por Cht Gry Op Shp Vit Chalk Pyr Mass Sh Char-Grn/Gry-Aqua Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Tan-Gry Fxln-Microxln Good OOM Por (w/Med-Lg OOids in pl) Tr Med Vug OOM Por Good Dissolu Good Develop Barren Grad Dns Micrite No Vis Por Cht Gry (w/Small OOid Inclus) Op Shp Vit Chalk Pyr Mass Sh Char-Grn/Gry-Blk Carb (Tr Only) Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Tan-Gry Fxln-Microxln Dns Micrite No Vis Por Grad Fair OOM Por (w/Small OOids in pl) Tr Poor Vug OOM Por Fair Dissolu Fair Develop Barren Chalky Sh



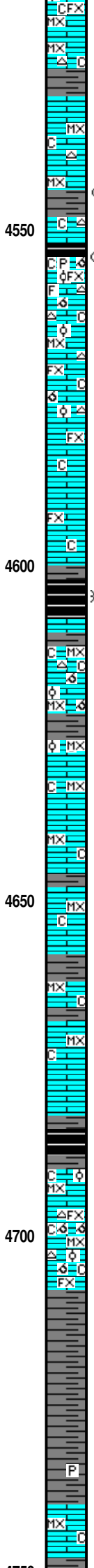
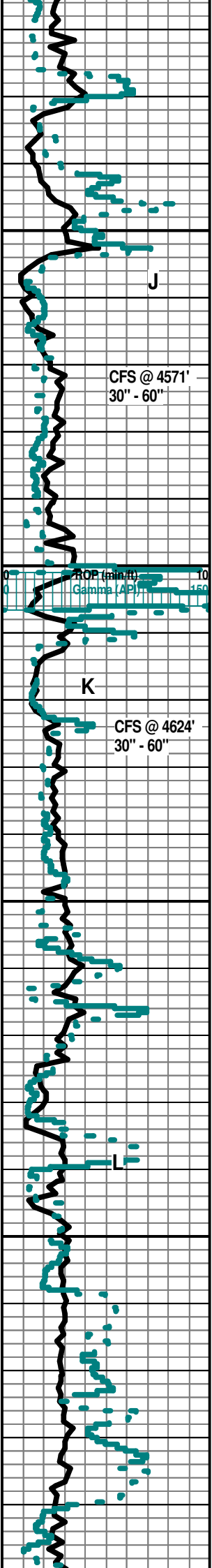
TG C1:C5 150

GAS TEST @ EXTRACTOR = 67 UNITS.

Mudco Ck @ 4407' @ 7:10 AM 02/27/15

Vis = 46;
 WT = 9.3;
 PV = 15;
 YP = 14;
 WL = 8.0;
 Cake = 1;
 Chl = 2,100;
 Cal = 40;
 Sol = 7.0%;
 LCM = 2#;
 DMC=\$3,565.20;
 CMC=\$15,434.33

DEVIATION SURVEY @ 4457' = 3/4 degree.



Char-Grn/Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan MicroxIn Dns Micrite Barren Cht Tan-Gry-Op Shp Vit Chalk Sh Char-Grn/Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan MicroxIn Dns Micrite Barren Cht Tan-Gry-Op Shp Vit Chalk Sh Char-Grn/Gry Fissil No Odor No Stn No Flor NS

Ls Crm-Tan MicroxIn Dns Micrite Barren Cht Tan-Gry-Op Shp Vit Chalk Sh Char-Grn/Gry Fissil ? Faint Odor No Stn ? Sli Min Flor (Lt Grn & 15% of Tray) Flor NS

30" CFS @ 4571' Ls Crm FxIn Dns Micrite Grad Poor-Fair IxIn Por Grad Poor-Fair OOM Por (w/Med OOids in pl) Cht Wht-Gry (w/Fos Inklus) Op Shp Vt Chalky Pyr Mass Sh Gry-Grn/Gry Fissil ? Faint Odor Fair ? Scat Min Flor (Lt Grn & 20% of Tray) No Stn NS

60" CFS @ 4571' Ls Crm-Tan MicroxIn Dns Micrite Barren Cht Tan-Gry-Op Shp Vit Chalk Sh Char-Grn/Gry Fissil No Odor No Stn ? Sli Min Flor (Lt Grn & 5% of Tray) Flor NS

Ls Crm-Gry FxIn Dns Micrite Grad Poor-Fair IxIn Por Grad Poor OOM Por (w/Small OOids in pl) Chalk Sh Gry Fissil No Odor Fair No Flor No Stn NS

Ls Crm-Gry FxIn Dns Micrite Grad Poor-Fair IxIn Por Chalk Sh Gry Fissil No Odor Fair No Flor No Stn NS

Ls Crm-Gry FxIn Dns Micrite Grad Poor-Fair IxIn Por Chalk Sh Blk Carb-Gry Fissil No Odor Fair No Flor No Stn NS

STARK SHALE 4600' (- 1773)

Sh Blk Carb Fissil Ls AA No Odor No Stn No Flor NS

KANSAS CITY "SWOPE" (K) 4607' (-1780)

30" CFS @ 4624' Ls Crm-Tan MicroxIn Dns Micrite Cht Tan Op Shp Vit Chalk VAbd Sh Blk Carb Fissil No Odor No Stn ? Scat Min Flor (in Bright Wht Chalk) NS

60" CFS @ 4624' Ls Crm-Tan MicroxIn Dns Micrite Grad Poor OOM Por (w/Small OOids in pl) Poor Dissolu No-Poor Leaching Chalk VAbd Sh Blk Carb Fissil No Odor No Stn No Flor NS

Ls Crm-Gry MicroxIn Dns Micrite Barren Chalky Sh Gry-Blk Carb AA Fissil No Odor No Flor No Stn NS

Ls Gry MicroxIn Dns Micrite Barren Chalky Sh Gry-Blk Carb AA Fissil No Odor No Flor No Stn NS

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

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

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

HUSHPUCKNEY 4683' (- 1856)

Sh Blk Carb Fissil Ls Wth-Crm-Gry MicroxIn Dns Micrite cHALK No Odor No Flor No Stn NS

KANSAS CITY "HERTHA (L)" 4690' (- 1863)

Ls Wht-Crm-Tan MicroxIn Dns Micrite Barren Chalky Sh Gry-Blk Carb AA Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan MicroxIn-FxIn Dns Micrite Grad Fair OOM Por Med Leaching Fair-Med Dissolu Barren Cht Wht Op Shp Vit Chalky Sh Gry-Blk Carb-Char Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan MicroxIn-FxIn Dns Micrite Grad Fair OOM Por Med Leaching Fair-Med Dissolu Barren Cht Wht Op Shp Vit Chalky Sh Gry-Blk Carb-Char Fissil No Odor No Flor No Stn NS

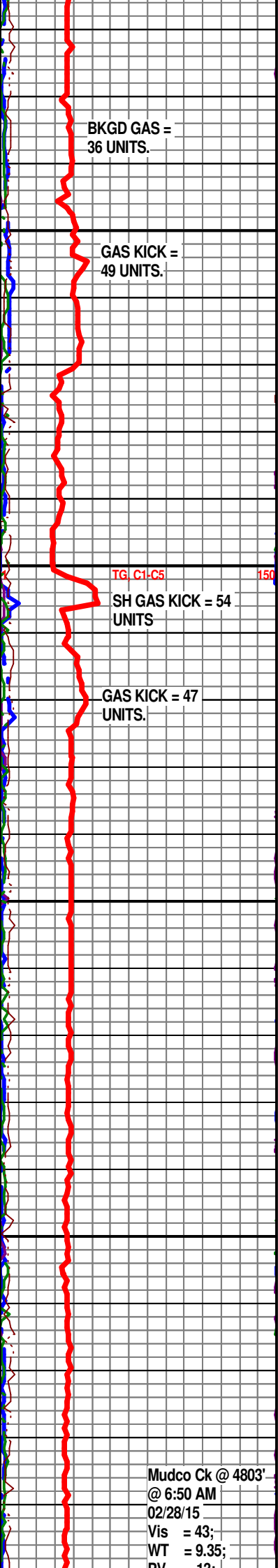
Sh Gry-Char Soft-Fissil Ls AA Chalk No Odor No Flor No Stn NS

Sh Gry-Char Soft-Fissil Ls AA No Odor No Flor No Stn NS

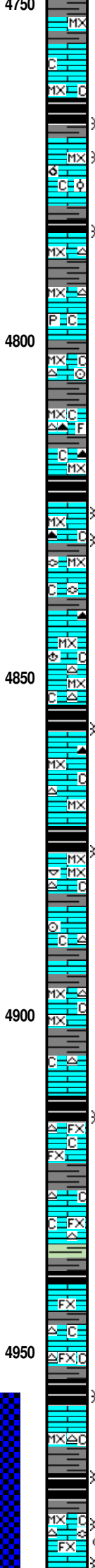
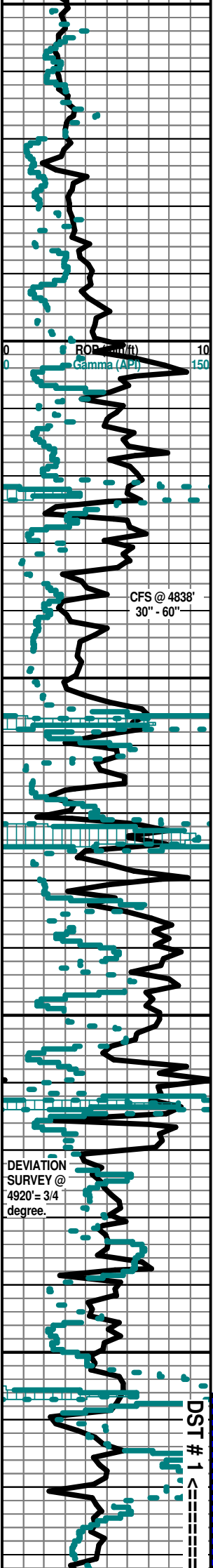
Sh Char-Gry Fissil Ls Wht-Crm-Tan-Gry (w/Pyr Inklus) MicroxIn Poor IxIn Por Micritic Dns Barren Chalk No Odor No Flor No Stn NS

MARMATON 4740' (- 1913)

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



Mudco Ck @ 4803'
 @ 6:50 AM
 02/28/15
 Vis = 43;
 WT = 9.35;
 PV = 12;



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

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

Ls Wht-Crm MicroxIn-FxIn Dns Micritic Grad Fair-Med OOM Por (w/Med-Lg OODs in pl) Med Dissolu Med-Good Leaching Chalk Sh Blk Carb-Gry Fissil No Odor No Flor No Stn NS

Ls Wht-Crm MicroxIn Dns Micrite Cht Gry Op Shp Dull Chalk Sh Blk Carb-Char-Gry Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan MicroxIn Dns Micrite Cht Tan Op Shp Vit Pyr Mass Chalk Sh Blk Carb-Char-Gry Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan MicroxIn Dns Micrite Grad Poor PPT IxIn Granular Por Barren Cht Tan Translu Shp Vit Fos (Crin) Chalk Sh Blk Carb-Char-Gry Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Gry MicroxIn Dns Micrite Grad Poor PPT IxIn Granular Por Barren Cht Tan-Drk Gry/Brn (w/Fos Includ) Translu-Op Shp Vit Chalk Sh Blk Carb-Char-Gry Fissil No Odor No Flor No Stn NS

PAWNEE 4824' (- 1997)

30" CFS @ 4638' Ls AA Sh Blk Carb Abd Fissil Cht Drk Gry/Brn Transl-Op (w/Fos (Fuss) Includ Chalky No Odor No Stn No Flor NS

60" CFS @ 4638' Ls AA Sh Blk Carb Abd) Fissil Cht Drk Gry/Brn Transl-Op (w/Fos (Fuss) Includ Chalky No Odor No Stn No Flor NS

Ls Wht-Crm MicroxIn Dns Micrite Cht Wht-Gry Op Shp Vit Fos (Brach) Chalk Sh Blk Carb-Char-Gry Fissil No Odor No Flor No Stn NS

LABETTE 4856' (- 2029)

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

Ls Wht-Crm MicroxIn Dns Micrite Cht Wht-Gry-Amber Translu- Op Shp Vit Chalk Sh Blk Carb-Char-Gry Fissil No Odor No Flor No Stn NS

Ls Crm-Gry MicroxIn Dns Micrite Grad Poor PPT IxIn Granular Por Barren Cht Wht-Gry-Drk Gry Op Shp Vit Chalk Sh Blk Carb-Char-Gry Fissil No Odor No Flor No Stn NS

CHEROKEE 4871' (- 2044)

Sh Blk Carb-Char-Gry Fissil Ls Crm-Gry MicroxIn Dns Micrite Grad Poor PPT IxIn Granular Por Barren Cht Gry Translu Shp Vit Fos (Pelec) Chalk No Odor No Flor No Stn NS

Ls Crm-Gry MicroxIn Dns Micrite Cht Wht-Gry Op Shp Vit Fos (Crin) Chalk Sh Char-Gry Fissil No Odor No Flor No Stn NS

Ls Crm-Gry MicroxIn Dns Micrite Cht Wht-Gry Op Shp Vit Fos (Crin) Chalk Sh Char-Gry Fissil No Odor No Flor No Stn NS

Sh Char-Gry Fissil Ls Crm-Gry MicroxIn Dns Micrite Cht Wht-Gry Op Shp Vit Chalk No Odor No Flor No Stn NS

SECOND CHEROKEE SHALE 4912' (- 2085)

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

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

Sh Blk Carb-Gry Fissil Abd Ls Crm-Tan-Gry FxIn Poor PPT IxIn Por Grad Dns Micrite Barren Chalk Cht-Amber-Tan Op Shp Vit No Odor No Flor No Stn NS

THIRD CHEROKEE SHALE 4953' (- 2126)

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

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

Ls Wht-Crm-Drk Tan MicroxIn Dns Micrite FxIn Poor-Fair IxIn PPT Pod (w/Fos (Fuss) Includ) Friable Poor SG & Poor SO (On Break Under Heat in Wtr) (5% of Tray) Oil & Gas Do Not Flor Cht Gry Op Shp Vit Chalk Sh Blk Carb-Char Fissil ? Sli Faint Odor Sli Lt Brn Stn No Flor SSG & SSO

Ls Crm-Drk Tan FxIn Fair-Med IxIn PPT Pod (w/Fos (Fuss) Includ Abd) Friable Fair Med SG & Med Good SSG (On Break Under Heat in Wtr)

YP = 13;
 WL = 14;
 WL = 7.6;
 Cake = 1;
 Chl = 2,000;
 Cal = 20;
 Sol = 7.0%;
 LCM = 2#;
 DMC=\$3,204.43;
 CMC=\$18,638.76

? SH GAS KICK = 52 UNITS

Scale Change
 TG: C1-C5 300

SH GAS KICK= 72 UNITS.

? RECYCLE GAS KICK= 71 UNITS

Mudco Ck @ 4980' @ 11:00 AM 03/01/15
 Vis = 51;
 WT = 9.25;
 PV = 17;
 YP = 18;
 WL = 8.0;
 Cake = 1;
 SH GAS KICK= 64 UNITS,
 Cal = 40;
 Sol = 6.3%;
 LCM = 2#;
 DMC=\$ 310.20;
 CMC=\$18,948.96

SH GAS KICK= 91 UNITS,

Mudco Ck @ 5025' @ 10:55 AM 03/02/15
 Vis = 62;
 WT = 9.35;
 PV = 18;
 YP = 20;
 WL = 7.6;
 Cake = 1;
 Chl = 3,600;
 Cal = 40;
 Sol = 6.9%;
 LCM = 2#;
 DMC=\$ 163.65;
 CMC=\$19,112.61

SH GAS KICK = 75 UNITS.
 Bit Trip @ 4920'

PIPE STRAP= <1.36> LONG TO BOARD.

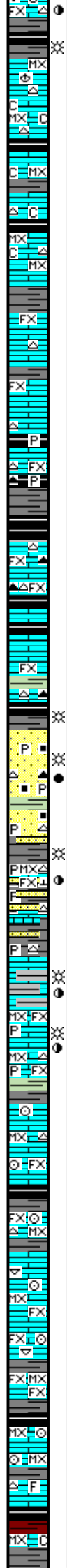
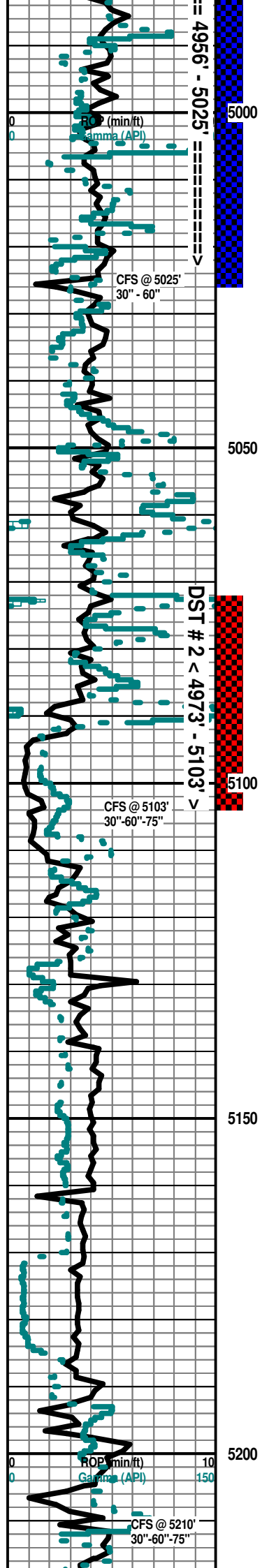
4928' CHANGEOUT EXTRACTOR FILTER & GAS TEST= 65 UNITS.

~~DST # 1~~
 Interval:
 4956'-5025'. Times:
 5"-90"-60"-90";
 Blow: IF = Very Weak/1/4". FF= No Blow/Died-Flushed Tool @ 15" & Died @ 22". No Help.

SH GAS KICK = 85 UNITS.
 Recovery: 10' M (100% M with Few Oil Spots).
 Pressures:
 IH = 2366#;
 GAS KICK_FH = 2359#;
 = 84 IF = 24-26#;

DEVIATION SURVEY @ 4920'= 3/4 degree.

DST # 1 <----->



Frangible Fair-med SG & Med-Good SFO (On Break Under Heat In WTR)
 (15% of Tray) ? Frac Por Oil & Gas Do Not Flor Cht Amber-Tan
 Translu-Op Shp Vit Chalk Sh Blk Carb-Char Fissil Med-Good Odor Brn
 Stn No Flor Fair-Med SG & SO
 Ls Crm-Tan-Gry Microxln Dns Micritic Barren Chalk Wht Cht-Amber-Tan
 Op Shp Vit Fos (Brach) Sh Blk Carb-Gry Fissil No Odor No Flor No Stn
 NS

FOURTH CHEROKEE SHALE 5004' (- 2177)

30" CFS @ 5025' Ls Crm-Tan Microxln Dns Micrite Barren Cht-Tan Op
 Shp Vit Chalk Sh Char-Gry Blk Carb Fissil No Odor No Flor No Stn NS

60" CFS @ 5025' Ls Crm-Tan Microxln Dns Micrite Barren Cht-Tan Op
 Shp Vit Chalk Sh Char-Gry Blk Carb Fissil No Odor No Flor No Stn NS

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

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

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren (w/Pyr Includ) Cht Wht- Amber-Drk
 Gry Op Shp Vit Sh Blk Carb-Char-Gry Fissil No Odor No Flor No Stn NS

ATOKA SHALE 5054' (- 2227)

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

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren (w/Pyr Includ)
 Cht Wht- Amber-Drk Gry Op Shp Vit Sh Blk Carb-Char- Gry Fissil No
 Odor No Flor No Stn NS

Ls Crm-Wht-Tan Fxln Poor Ixln Por Micritic Dns Barren (w/Pyr Includ)
 Cht Wht- Amber-Drk Gry Op Shp Vit Sh Blk Carb-Char- Gry Fissil No
 Odor No Flor No Stn NS

MORROW SHALE 5188' (-2261)

MORROW SAND 5091' (- 2264)

30" CFS @ 5103' Qtz Ss Tan-Lt Brn Small Grn Clusters Med-Good Igran Por (30% in tray)
 Ang-Sub Rd (mL = 250-350 Microns = 2.0-1.5 Ø) Clear-Lt Frosted Well Sort Lt CaCO3
 Matrix (w/Pyr Includ & No Glacu Observed) Sli Friable (w/GSG & GSFO (Lt Brn) in tray &
 Upon Break) Sh Char (Abd) AA Pyr Mass No Flor ? Strong Odor Good (Lt Brn Stn) GSG &
 GSFO

60" & 75" CFS @ 5103' Qtz Ss Tan-Lt Brn-Drk Brn Small-Med Grn Clusters Good Igran Por
 (30% in tray) Ang-Sub Rd (mU= 350-500 Microns = 1.5-1.0 Ø) Clear-Lt Frosted Well Sort Lt
 CaCO3 Matrix (w/Carb Includ & No Glacu Obv) Sli Friable AA (Upwardly Fineing) Cht
 Wht-Blk AA Sh AA Pyr AA No Flor Strong Odor Good (Lt Brn-Drk Brn Hvt Sat Stn) GSG &
 GSFO

MISSISSIPPIAN CHESTER 5127' (- 2299)

5130' Spl (Lag 5110') Qtz Ss Brn-Tan (w/Pyr Includ & FSG & FSO) AA Ls Crm-Wht-Gry
 Microxln-Fxln Dns Micrite Grad Fair-Med Ixln Por (w/Tr Vug Leached (w/Calcite Includ) Por
 (w/Cht Wht Translu-Op & Brn Stn Includ (w/ ? Frac Por & FSG & FSFO)) Fos (Crin & Brach)
 Pyr Mass Sh Char-Grn/Gry- Aqua Fissil Good Odor Fair-Good Stn No Flor MSG & MSO

Sh Char-Grn/Gry-Drab Grn-Aqua Fissil Ls Wht-Crm Microxln-Fxln Dns Micrite AA (Abd)
 Cht Wht-Gry Translu-Op (w/ Brn Stn Includ (w/Poor Vug Trip Por)? Frac Por & FSG &
 FSFO)) Shp Vit Qtz Ss AA (Tr Only ? Sluff) Pyr Fair Dec Odor Stn AA No Flor Sli Dec SG &
 SSO

Ls AA (Abd) Cht AA Qtz Ss (? Sluff) Fos (Crin) Pyr Mass Sh Char-
 Grn/Gry-Aqua Fissil AA (Abd) No Odor No Stn No Flor NS

Ls Wht-Crm Microxln-Fxln Dns Micrite Grad Poor-Fair Ixln PPt Por
 (w/Fos (AA) Includ Abd) Barren Cht Wht Poor-Fair V Sh Char-Gry-Blk
 Carb Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Microxln-Fxln Dns Micrite Grad Poor-Fair Ixln PPt Por
 (w/Fos (AA) Includ Abd) Barren Cht Wht Poor-Fair V Sh Char-Gry-Blk
 Carb Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Microxln-Fxln Dns Micrite Grad Poor-Fair Ixln PPt Por (w/
 Fos (Crin, Pelec) Includ Abd) Barren Sh Char-Gry-Blk Carb Fissil No
 Odor No Stn No Flor NS

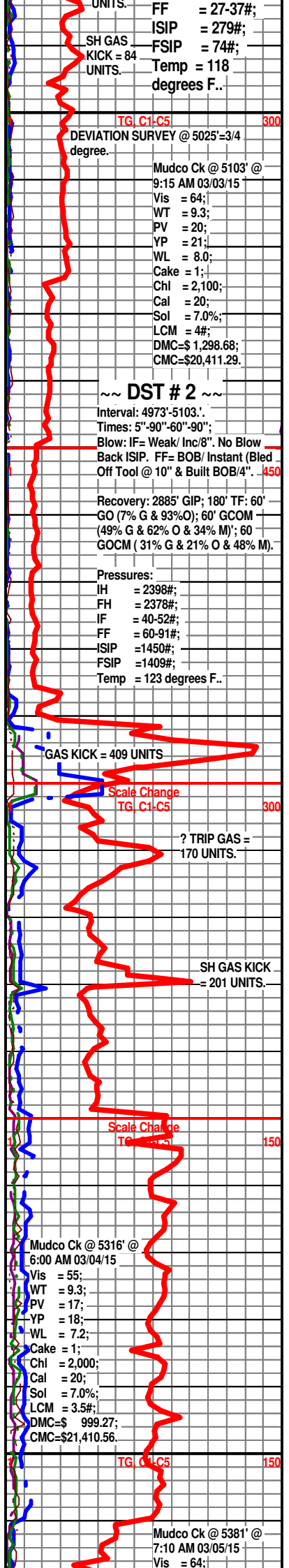
Ls Wht-Crm Microxln-Fxln Dns Micrite Grad Poor-Fair Ixln PPt Por (w/
 Fos (Crin, Pelec) Includ Abd) Barren Sh Char-Gry-Blk Carb Fissil No
 Odor No Stn No Flor NS

30" CFS @ 5210' Ls Wht-Crm-Tan Microxln Dns Micrite (w/Pyr Includ) Grad Fxln Poor Ixln
 PPt Por (w/Fos (Crin) Includ) Cht Gry-Yell Translu-Op Shp Vit Chalk Sh Char-Gry-Blk Carb
 Fissil No Odor No Stn No Flor NS

60" CFS @ 5210' Ls Wht-Crm-Tan Microxln Dns Micrite (w/Pyr Includ) Grad Fxln Poor Ixln
 PPt Por (w/Fos (Crin) Includ) Cht Gry-Yell Translu-Op Shp (w/Cht Gry Translu-Op & Brn
 Stn Includ (w/Poor Vug Trip Por)? Frac Por & FSG & FSFO)) Shp Vit Fos (Brach (?
 Composita) Crin, Trilobite) Chalk Sh Char-Gry-Blk Carb Fissil No Odor No Stn No Flor NS

75" CFS @ 5210' Ls AA Sh AA Fos AA No Odor No Stn No Odor NS

Ls Crm-Grn/Gry-Aqua Fxln Poor "Sandv Ls" (w/Small Qtz Ss Includ)



UNITS. = 27-37#;
 ISIP = 279#;
 SH GAS KICK = 84 UNITS. FSIP = 74#;
 Temp = 118 degrees F..

TG, C1, C5 = 300
 DEVIATION SURVEY @ 5025'=3/4 degree.

Mudco Ck @ 5103' @
 9:15 AM 03/03/15
 Vis = 64;
 WT = 9.3;
 PV = 20;
 YP = 21;
 WL = 8.0;
 Cake = 1;
 Chl = 2,100;
 Cal = 20;
 Sol = 7.0%;
 LCM = 4#;
 DMC=\$ 1,298.68;
 CMC=\$20,411.29.

DST # 2
 Interval: 4973'-5103'.
 Times: 5"-90"-60"-90".
 Blow: IF= Weak/ Inc8". No Blow
 Back ISIP. FF= BOB/ Instant (Bled
 Off Tool @ 10" & Built BOB/4". 450

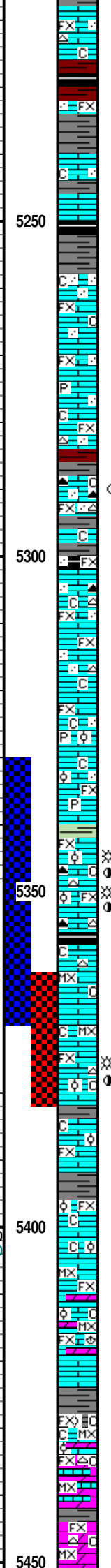
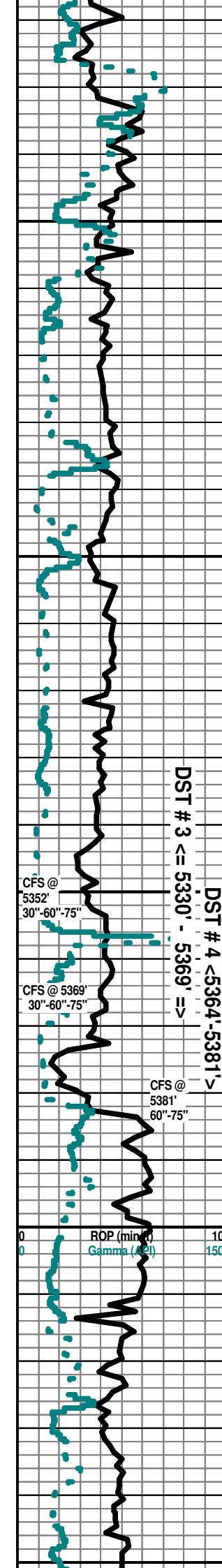
Recovery: 2885' GiP; 180' TF: 60'
 GO (7% G & 93%O); 60' GCOM
 (49% G & 62% O & 34% M); 60'
 GOCM (31% G & 21% O & 48% M).

Pressures:
 IH = 2398#;
 FH = 2378#;
 IF = 40-52#;
 FF = 60-91#;
 ISIP =1450#;
 FSIP =1409#;
 Temp = 123 degrees F..

GAS KICK = 409 UNITS
 Scale Change TG, C1, C5 = 300
 ? TRIP GAS = 170 UNITS.
 SH GAS KICK = 201 UNITS.
 Scale Change TG, C1, C5 = 150

Mudco Ck @ 5316' @
 6:00 AM 03/04/15
 Vis = 55;
 WT = 9.3;
 PV = 17;
 YP = 18;
 WL = 7.2;
 Cake = 1;
 Chl = 2,000;
 Cal = 20;
 Sol = 7.0%;
 LCM = 3.5#;
 DMC=\$ 999.27;
 CMC=\$21,410.56.

TG, C1, C5 = 150
 Mudco Ck @ 5381' @
 7:10 AM 03/05/15
 Vis = 64;



Ls Crm-Tan-Aqua VFGrn Ang-Sub Ang Includ (fL=125-177 Microns= 3.0-2.25 Ø) Barren Grad Micrite Fos (Brach) Chalky Pyr Mass Sh Char (w/Pyr Includ)-Blk Carb-Gry-Drab Grn Fissil No Odor No Stn No Flor NS

MISSISSIPPIAN " STE. GEN 5232' (- 2405)

Ls Crm-Grn/Gry-Tan Fxln Poor "Sandy Ls" (w/Small Qtz Ss Includ) Crm-Tan- Aqua VFGrn Ang-Sub Ang Includ (fL=125-177 Microns= 3.0-2.25 Ø) Barren Grad Micrite Chalky Sh Red (Wash Blood Red V Abd)-Char-Blk Carb-Gry- Drab Grn Fissil No Odor No Stn No Flor NS

No Sample Caught

Ls Wht-Gry Fxln Poor "Sandy Ls" (w/Small Qtz Ss Includ) Wht-Crm-Tan VFGrn Ang-Sub Ang Includ (fL=125-177 Microns= 3.0-2.25 Ø) Barren Grad Dns Micrite Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry Fxln Poor "Sandy Ls" (w/Small Qtz Ss Includ) Wht-Crm-Tan VFGrn Ang-Sub Ang Includ (fL=125-177 Microns= 3.0-2.25 Ø) Barren Grad Fxln Dns Micrite Chalky Sh Char-Gry-Maroon-Aqua Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry-Pink/Red Fxln Poor "Sandy Ls" (w/Small Qtz Ss Includ) Wht-Crm-Tan (w/Pyr Includ) VFGrn Ang Sub Ang Includ (fL=125-177 Microns= 3.0-2.25 Ø) Barren Grad Fxln Dns Micrite Pyr Mass Chalky Sh Char-Gry- Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry Fxln Poor "Sandy Ls" (w/Small Qtz Ss Includ) Wht-Crm-Tan VFGrn Ang-Sub Ang Includ (fL=125-177 Microns= 3.0-2.25 Ø) Barren Grad Gry Microxln Dns Micrite Cht Peach-Lt Red/Org (w/Blk Includ) Translu-Op Shp Vit Chalky Sh Char-Gry Fissil No Odor No Stn No Flor NS

Ls Wht-Gry Fxln Poor "Sandy Ls" (w/Small Qtz Ss Includ) Wht-Crm-Tan VFGrn Ang- Sub Ang Includ (fL=125-177 Microns= 3.0-2.25 Ø) Barren Grad Dns Micrite Cht Peach-Tan-Red.Org Translu-Op Shp Vit Chalky Sh Char-Blk Carb-Aqua Fissil No Odor No Stn No Flor NS

Ls Wht-Gry Fxln Poor "Sandy Ls" (w/Small Qtz Ss Includ) Wht-Crm-Tan VFGrn Ang- Sub Ang Includ (fL=125-177 Microns= 3.0-2.25 Ø) Barren Grad Dns Micrite Cht Peach-Tan-Red.Org Translu-Op Shp Vit Chalky Sh Char-Blk Carb-Aqua Fissil No Odor No Stn No Flor NS

Ls Wht-Gry Fxln Poor "Sandy Ls" (w/Small Qtz Ss Includ) Wht-Crm-Tan VFGrn Ang- Sub Ang Includ (fL=125-177 Microns= 3.0-2.25 Ø) Barren Grad Dns Micrite Cht Peach-Tan-Red Translu-Op Shp Vit Chalky Sh Char-Blk Carb-Aqua Fissil No Odor No Stn No Flor NS

MISSISSIPPIAN "ST. LOUIS" 5322' (- 2495)

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

Ls Wht Fxln Poor OOL Por (w/Small OOL in pl) Barren Grad Ls CrmTan-Gry Fxln 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" Ø 5342' (- 2515)

30" CFS @ 5352' Ls Wht-Crm Fair OOL Por (w/Small-Med OOids in pl) V Friable Fair-Med InterOOL Por Fair-Med Leaching (w/Tr Lt Brn Stn in Pin-Pt InterOOL Por) SG & SFO (Gas & Oil Do Not Flor) Cht Tan-Peach/Red/Org Op Shp Vit Chalk (Tr Only) Sh Blk Carb-Aqua Fissil Faint Inc Odor No Flor SG & SO

60" & 75" CFS @ 5352' Ls Wht-Crm Fair OOL Por (w/Small-Med OOids in pl) V Friable Fair-Med InterOOL Por Fair-Med Leaching (w/Tr Lt Brn Stn in PPT InterOOL Por) SG & SFO (Gas & Oil Do Not Flor) Cht Tan-Peach-Red Translu- Op Shp Vit Chalk (Tr Only) Sh Blk Carb-Aqua Fissil Med-Good Odor No Flor SG & SO

60 & 75" CFS @ 5369' Ls Wht-Crm Microxln Dns Micrite Cht Amber-Wht-Gry Translu-Op Shp Vit Chalk (Tr Only) Sh Char-Gry-Aqua Fissil No Odor No Flor No Flor NS

ST. LOUIS LOWER "B" Ø 5374' (- 2547)

60" & 75" CFS @ 5381' Ls Wht-Crm Fxln Med-Good OOL Por (w/Med-Lg OOids in pl) V Friable Med-Good InterOOL Por Med Leaching (w/Lt Brn Stn in Pin-Pt InterOOL Por) SG & SO (Gas & Oil Do Not Flor) Cht Tan Translu-Op Shp Vit Chalky Sh Char-Aqua Fissil Strong Odor No Flor SG & SO

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

Ls Crm-Gry Fxln-Microxln Poor Ixln Por Micritic Dns Barren Grad Poor OOL Por (w/Small OOids in pl) Barren Chalky Sh Blk Carb-Char-Gry-Aqua- Maroon Soft-Fissil No Odor No Stn No Flor NS

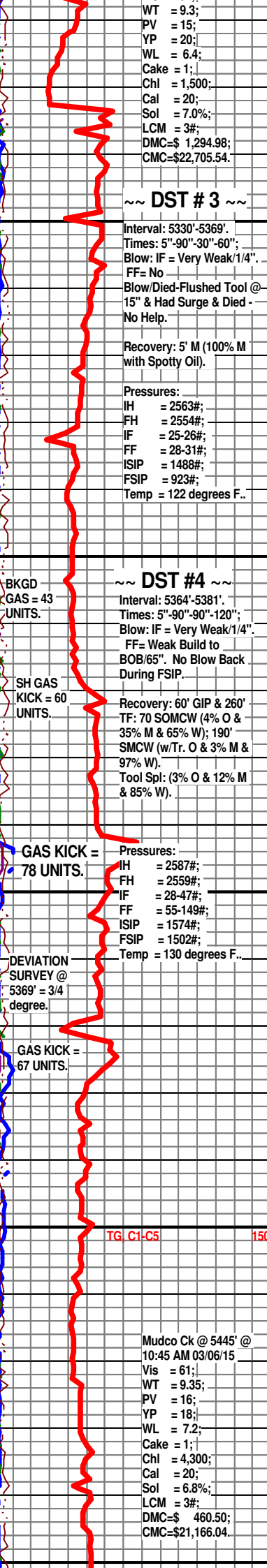
Ls/Dolo Crm-Tan Fxln-Microxln Poor Ixln Por Micritic Dns Barren Grad Poor OOL Por (w/Small OOids in pl) Barren Fos (Brach) Chalky Sh Blk Carb-Char-Gry-Aqua-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls/Dolo Crm-Tan-Lt Gry Fxln-Microxln Dns Poor Ixln Por Micritic Barren Grad Poor OOL Por (w/Small OOids in pl) Barren Chalky Sh Blk Carb-Char- Gry-Aqua Soft-Fissil No Odor No Stn No Flor NS

SALEM (SPERGEN) 5437' (- 2610)

Dolo/Ls Crm-Lt Gry Fxln-Microxln Dns Poor Ixln Por Grad Micritic Barren Grad Poor OOL Por (w/Small OOids in pl) Barren Cht Wht-Gry Translu-Op Shp Vit Chalky Sh Blk Carb-Char-Gry- Aqua Soft-Fissil No Odor No Stn No Flor NS

Dolo/Ls Crm-Lt Gry Fxln-Microxln Dns Poor Ixln Por Grad Micritic Barren Grad Poor OOL Por (w/Small OOids in pl) Barren Cht Wht-Gry Translu-Op Shp Vit Chalky Sh Blk Carb-Char-Gry- Aqua Soft-Fissil No Odor No Stn No Flor NS



WT = 9.3;
PV = 15;
YP = 20;
WL = 6.4;
Cake = 1;
Chl = 1,500;
Cal = 20;
Sol = 7.0%;
LCM = 3#;
DMC=\$ 1,294.98;
CMC=\$22,705.54.

~ DST # 3 ~

Interval: 5330'-5369'.
Times: 5"-90"-30"-60";
Blow: IF = Very Weak/1/4".
FF= No
Blow/Died-Flushed Tool @ 15" & Had Surge & Died - No Help.

Recovery: 5' M (100% M with Spotty Oil).

Pressures:
IH = 2563#;
FH = 2554#;
IF = 25-26#;
FF = 28-31#;
ISIP = 1488#;
FSIP = 923#;
Temp = 122 degrees F..

~ DST # 4 ~

BKGD GAS = 43 UNITS.

Interval: 5364'-5381'.
Times: 5"-90"-90"-120";
Blow: IF = Very Weak/1/4".
FF= Weak Build to BOB/65". No Blow Back During FSIP.

SH GAS KICK = 60 UNITS.

Recovery: 60' GIP & 260' TF: 70 SOMCW (4% O & 35% M & 65% W); 190' SMCW (w/Tr. O & 3% M & 97% W).
Tool Spl: (3% O & 12% M & 85% W).

GAS KICK = 78 UNITS.

Pressures:
IH = 2587#;
FH = 2559#;
IF = 28-47#;
FF = 55-149#;
ISIP = 1574#;
FSIP = 1502#;
Temp = 130 degrees F..

DEVIATION SURVEY @ 5369' = 3/4 degree.

GAS KICK = 67 UNITS.

TG C1-C5 150

Mudco Ck @ 5445' @ 10:45 AM 03/06/15

Vis = 61;
WT = 9.35;
PV = 16;
YP = 18;
WL = 7.2;
Cake = 1;
Chl = 4,300;
Cal = 20;
Sol = 6.8%;
LCM = 3#;
DMC=\$ 460.50;
CMC=\$21,166.04.

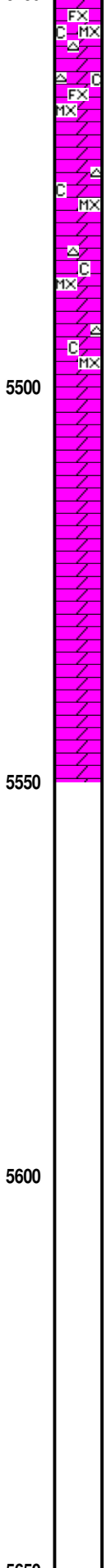
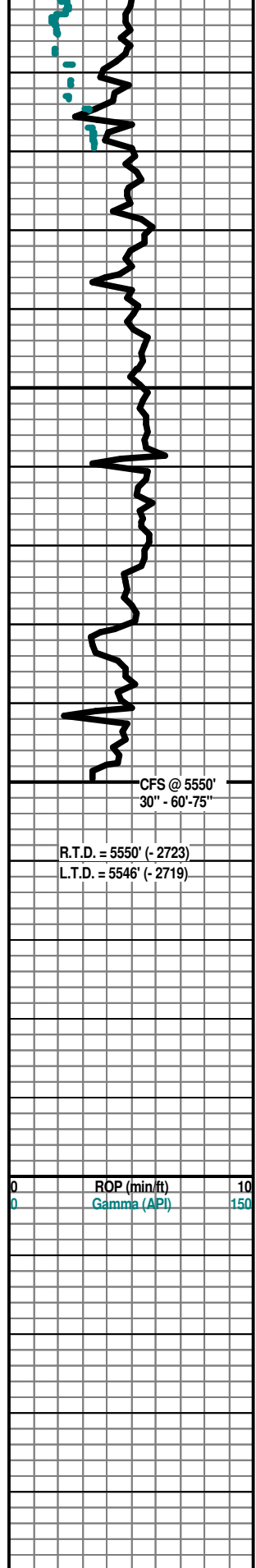
DST # 3 <= 5330' - 5369' =>
DST # 4 <5364'-5381'>

CFS @ 5352' 30"-60"-75"

CFS @ 5369' 30"-60"-75"

CFS @ 5381' 60"-75"

ROP (min) Gamma (A2L)



Dolo/Ls Crm-Lt Gry FxIn-MicroxIn Dns Poor IxIn Por GradMicritic Barren Cht Wht-Gry Translu-Op Shp Vit Chalky Sh Blk Carb- Char-Gry- Aqua Soft-Fissil No Odor No Stn No Flor NS

Dolo Crm-Lt Gry FxIn-MicroxIn Dns Poor IxIn Por GradMicritic Barren Cht Wht Translu-Op Shp Vit Chalky Sh Blk Carb-Char- Gry-Aqua Soft-Fissil No Odor No Stn No Flor NS

Dolo Wht FxIn-MicroxIn Dns Poor IxIn Por Grad Micritic Barren Cht Wht Translu-Op Shp Vit (Abd) Chalky Sh Blk Carb-Char- Gry-Aqua Soft-Fissil No Odor No Stn No Flor NS

Dolo Wht-Crm FxIn-MicroxIn Dns Poor IxIn Por Grad Micritic Barren Cht Wht Translu-Op Shp Vit (Abd) Chalky Sh Blk Carb- Char-Gry-Aqua Soft-Fissil No Odor No Stn No Flor NS

Dolo Crm-Lt Gry FxIn-MicroxIn Dns Poor IxIn Por Grad Micritic Barren Cht Wht Translu-Op Shp Vit (Abd) Chalky Sh Blk Carb- Char-Gry-Aqua Soft-Fissil No Odor No Stn No Flor NS

Dolo Crm-Tan FxIn-MicroxIn Fair-Med IxIn PPt IxIn Por (w/Med OOids in pl) Friable Barren Grad Dms Micrite Cht Wht-Lt Gry Translu-Op Shp Vit Chalky Sh Char-Aqua Fissil No Odor No Stn No Flor NS

Dolo Crm-Tan FxIn-MicroxIn Fair-Med IxIn PPt IxIn Por (w/Med OOids in pl) (Fair-Poor Leaching of OOids)Friable Barren Grad Dms Micrite Cht Wht-Lt Gry Translu-Op Shp Vit Chalky Sh Char-Aqua Fissil No Odor No Stn No Flor NS

Dolo Crm-Tan MicroxIn Dns Micrite Barren Cht Wht-Gry Op Shp Vit (Abd) Chalky Sh Char-Gry Fissil No Odor No Stn No Flor NS

30" CFS @ 5550' Dolo Crm-Tan MicroxIn Dns Micrite Barren Cht Wht-Gry Op Shp Vit (Abd) Chalky Sh Char-Gry Fissil No Odor No Stn No Flor NS

60" & 75" CFS @ 5550' Dolo Crm-Tan MicroxIn Dns Micrite Barren Cht Wht-Gry Op Shp Vit (Abd) Chalky Sh Char-Gry-Aqua Fissil No Odor No Stn No Flor NS

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

Geologist Left Location @ 10:30 A.M. on 03/07/2015

