Confidentiality Requested:
☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1140690

Form ACO-1
August 2013
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 4767
Name: Ritchie Exploration, Inc.
Address 1: 8100 E 22ND ST N # 700
Address 2: BOX 783188
City: WICHITA State: KS Zip: 67278 + 3188
Contact Person: John Niernberger
Phone: (316) 691-9500
CONTRACTOR: License # 5822
Name: Val Energy, Inc.
Wellsite Geologist: Dave Williams
Purchaser:

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover

☐ Oil ☐ WSW ☐ SWD ☐ SIOW
☐ Gas ☑ D&A ☐ ENHR ☐ SIGW
☐ OG ☐ GSW ☐ Temp. Abd.
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:
Operator:
Well Name:
Original Comp. Date: Original Total Depth:

☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

02/11/2013	02/24/2013	02/24/2013
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-057-20876-00-00
Spot Description: 5'S & 150'W of
SW NW NE NW Sec. 6 Twp. 27 S. R. 22 ☐ East ☑ West
335 Feet from ☑ North / ☐ South Line of Section
1500 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☑ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Ford
Lease Name: Kincheloe 6B Well #: 1
Field Name:
Producing Formation: none
Elevation: Ground: 2436 Kelly Bushing: 2446
Total Vertical Depth: 5170 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 352 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)

Chloride content: 11800 ppm Fluid volume: 1200 bbls
Dewatering method used: Evaporated
Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. ☐ East ☐ West
County: Permit #:

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

☑ **Confidentiality Requested**
Date: 05/21/2013
☑ **Confidential Release Date:** 05/21/2015
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** NAOMI JAMES **Date:** 05/22/2013

1140690

Operator Name: Ritchie Exploration, Inc. Lease Name: Kincheloe 6B Well #: 1

Sec. 6 Twp. 27 S. R. 22 ☐ East ☑ West County: Ford

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Dual Induction Log
Compensated Density/Neutron Log

☐ Log Formation (Top), Depth and Datum ☑ Sample

Name Top Datum

SEE ATTACHED

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12.25	8.633	23	352	Class A	225	3% cc, 2% gel

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate ___ Protect Casing ___ Plug Back TD ___ Plug Off Zone	-			
	-			

Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☐ No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)*	Depth

TUBING RECORD: Size: Set At: Packer At: Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)* _____

PRODUCTION INTERVAL:
_____
_____

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

RITCHIE
EXPLORATION, INC.
Wichita, Kansas

#1 Kincheloe 6B
335' FNL & 1500' FWL
5' S & 150' W of NW NE NW Section 6-27S-22W
Ford County, Kansas
API# 15-057-20876-00-00
Elevation: 2436' GL, 2446' KB

Sample Tops			Ref. Well
Anhydrite	1513'	+933	-11
B/Anhydrite	1527'	+919	+7
Heebner	4186'	-1740	+2
Lansing	4305'	-1859	+14
Muncie Shale	4498'	-2052	+2
Stark Shale	4620'	-2174	-1
Hush. Shale	4658'	-2212	+5
BKC	4698'	-2252	+2
Altamont	4744'	-2298	+6
Pawnee	4824'	-2382	+6
Fort Scott	4852'	-2406	+12
Cherokee Shale	4872'	-2426	+5
Huck	4948'	-2502	+10
Atoka Shale	4964'	-2518	+1
Mississippian	5006'	-2560	-16
RTD	5170'	-2724	

P.O. Box 783188
Wichita, Kansas 67278-3188

(316) 691-9500
Fax (316) 691-9550
rei@ritchie-exp.com

8100 E. 22nd St. N., Bldg. 700
Wichita, Kansas 67226-2328

ALLIED OIL & GAS SERVICES, LLC 059351

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT:
Great Bend
2-12-13

DATE 2-11-13	SEC. 6	TWP 27S	RANGE 22W	CALLED OUT	ON LOCATION	JOB START 11:00pm	JOB FINISH 12:00AM
LEASE Kincheloe 6B	WELL # 1		LOCATION Spearville 6S 1/2W S into			COUNTY Ford	STATE KS
OLD OR (NEW) (Circle one)							

CONTRACTOR Val Energy #1
TYPE OF JOB Surface
HOLE SIZE 12¼ T.D.
CASING SIZE 8 5/8" DEPTH 355
TUBING SIZE DEPTH
DRILL PIPE 4½ DEPTH
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG. 15ft
PERFS.
DISPLACEMENT 21.65

OWNER

CEMENT
AMOUNT ORDERED 225sks Class A
3% cc 2% gel

EQUIPMENT

PUMP TRUCK CEMENTER Dustin Chambers
#398/366 HELPER Josh Feagle / Patrick Helserson
BULK TRUCK
#610-241 DRIVER Kenda Wesy hours 3
BULK TRUCK
DRIVER

COMMON	225	@ 17.90	4.027.50
POZMIX		@	
GEL	4	@ 23.40	93.60
CHLORIDE	8	@ 64.00	512.00
ASC		@	
HANDLING	243.30	@ 2.48	603.38
MILEAGE	11.10 X 50 X	2.60	1.443.00
		TOTAL	6.679.88

REMARKS:

Break circulation with Rig pump
Pump 5bbls fresh water
Mix 225 sks Class A 3% cc 2% gel
Displace 21.65 bbls Fresh water
Cement did circulate
plug down 12:00AM 2-12-13.
Rig down
Wait 1 hr for Pump Truck

SERVICE

DEPTH OF JOB			
PUMP TRUCK CHARGE			1512.35
EXTRA FOOTAGE		@	
MILEAGE	Hvy 50	@ 7.70	385.00
MANIFOLD		@	
	Lum 50	@ 4.40	220.00
		@	
		TOTAL	2.117.35

CHARGE TO: Ruby Chive Exploration
STREET
CITY STATE ZIP

PLUG & FLOAT EQUIPMENT

		@	
		@	
		@	
		@	
		@	
		TOTAL	

To: Allied Oil & Gas Services, LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (If Any)	368.33
TOTAL CHARGES	8.796.73
DISCOUNT	2.199.19 IF PAID IN 30 DAYS
	6.597.54

PRINTED NAME X Easton Fresen

SIGNATURE X

Thank You!!

ALLIED OIL & GAS SERVICES, LLC 059294

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT:
Great Bend, KS

DATE 2-24-13	SEC 6	TWP. 27S	RANGE 22W	CALLED OUT 12:30 AM	ON LOCATION 4:00 AM	JOB START 7:30 AM	JOB FINISH 8:30 AM
LEASE Kinkaloe 6B	WELL # 1		2 mile East of Spearville, South 2 miles, LOCATION West 1 mile, South 6 miles, West 1.5 M			COUNTY Ford	STATE KS
OLD OR (NEW) (Circle one)			South into location				

CONTRACTOR Val 1
TYPE OF JOB PTA
HOLE SIZE 7 7/8" T.D. 5170 ft
CASING SIZE 8 5/8" 23# DEPTH 352 ft
TUBING SIZE DEPTH
DRILL PIPE 4 1/2" 16.6# DEPTH 1530 ft
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG.
PERFS.
DISPLACEMENT WBM + FW

OWNER Ritchie Exploration

CEMENT
AMOUNT ORDERED 250sx 60/40+4%Gel +.25#/sx Flo-Seal

EQUIPMENT

PUMP TRUCK # 398 CEMENTER Charles Elkins
HELPER Josh Isaac
BULK TRUCK # 344/170 DRIVER Kevin Welylous
BULK TRUCK # DRIVER

REMARKS:

Set Plug 1 @ 1550 ft: 6 FW, 12.5 cmt, 2 FW, 14 WBM (50sx)
Set Plug 2 @ 900 ft: 6 FW, 20 cmt, 5 FW (80sx)
Set Plug 3 @ 380 ft: 6 FW, 12.5 cmt, 2 FW (50sx)
Set Plug 4 @ 60 ft & 5 cmt (20sx)
Plug Rat Hole with 7.5 bbls (30sx) Cement
Plug Mouse Hole with 5 bbls (20sx) Cement

CHARGE TO: Ritchie Exploration
STREET
CITY STATE ZIP

COMMON		@	
POZMIX		@	
GEL		@	
CHLORIDE		@	
ASC		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING		@	
MILEAGE			
		TOTAL	

SERVICE

DEPTH OF JOB			
PUMP TRUCK CHARGE			
EXTRA FOOTAGE		@	
MILEAGE		@	
MANIFOLD		@	
		@	
		@	
		TOTAL	

PLUG & FLOAT EQUIPMENT

		@	
		@	
		@	
		@	
		@	
		TOTAL	

To: Allied Oil & Gas Services, LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Walter Purcell

SIGNATURE

SALES TAX (If Any)
TOTAL CHARGES
DISCOUNT IF PAID IN 30 DAYS

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

Well Name:	**KINCHELOE 6B #1**		
Location:	**5' S. & 150' W.- NW - NE - NW**		
License Number:	**A.P.I. # 15-057-20,876-00-00**	**Region:**	**FORD CO,, KS.**
Spud Date:	**02/11/2013**	**Drilling Completed:**	**02/23/2013**
Surface Coordinates:	**SPOT: 335' FNL & 1500' FWL**		
Bottom Hole Coordinates:			
Ground Elevation (ft):	**2436'**	**K.B. Elevation (ft):**	**2446'**
Logged Interval (ft):	**352' To: 5172'**	**Total Depth (ft):**	**5172'**
Formation:	**MISSISSIPPIAN "SALEM (SPERGEN)"**		
Type of Drilling Fluid:	**CHEMICAL/ POLYMER/ GEL**		

OPERATOR

Company: RITCHIE EXPLORATION, INC.
Address: P.O. BOX 783188
WICHITA, KANSAS 67278-3188

GEOLOGIST

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

CASING & DEVIATION

2/11/2013 Spud at 4:00 P.M. Ran 8 jts new 23# 8-5/8" surface casing. Tally at 340', set at 352'. Cemented with 225 sacks Class A, 3% cc, 2% gel. Plug down at 12:00 A.M. Cement circulated.

Deviation Survey's Taken: @ 352'= 3/4 degree; @ 4845'= 1 degree; @ 5095'= 1 degree; @ 5170' = 1 degree.

DSTs

DST #1 4810'-4845'. Times: 30"-45"-30"-30". Blow: IF= Weak Blow Build / Died @ 23"; FF= No Blow Flushed Tool (No Help). Recovery: 15' M. Pressures: IH=2337#; FH=2264#; IF= 15-18#; FF=18-21#;
ISIP = 1405#; FSIP= 1117#; Temp.= 111 degrees F.

DST #2 4900'-4975'. Times: 30"-30"-30"-30". Blow: IF= Weak Blow Build / Died @ 11"; FF= No Blow Flushed Tool @ 10" (No Help).
Recovery: 10' M. Pressures: IH= 2536#; FH= 2394#; IF= 19-19#; FF= 18-23#; ISIP = 36#; FSIP= 38#; Temp.= 112 degrees F.

DST #3 4945'-5095'. Times: 30"-45"-45"-60". Blow: IF= Strong Blow Build/BOB @ 16"; FF= Strong Blow Build/BOB @ 38". Recovery: 585' TF. 75' WCM (5% W & 95% M); 255' WCM (20% W & 80% M); 255' WCM (40% M & 60% M).
Pressures: IH= 2544#; FH=2426#; IF= 33-176#; FF= 184-290#;
ISIP = 1521#; FSIP+ 1517#. Chl=65,000 Ppm.; RW= .21 @ 39 degrees F.; Temp.= 115 degrees F.

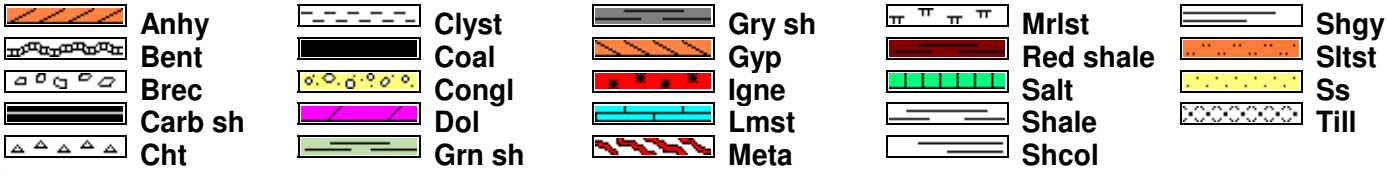
Comments

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 this well appears to be non-commercial and should be plugged and abandoned.

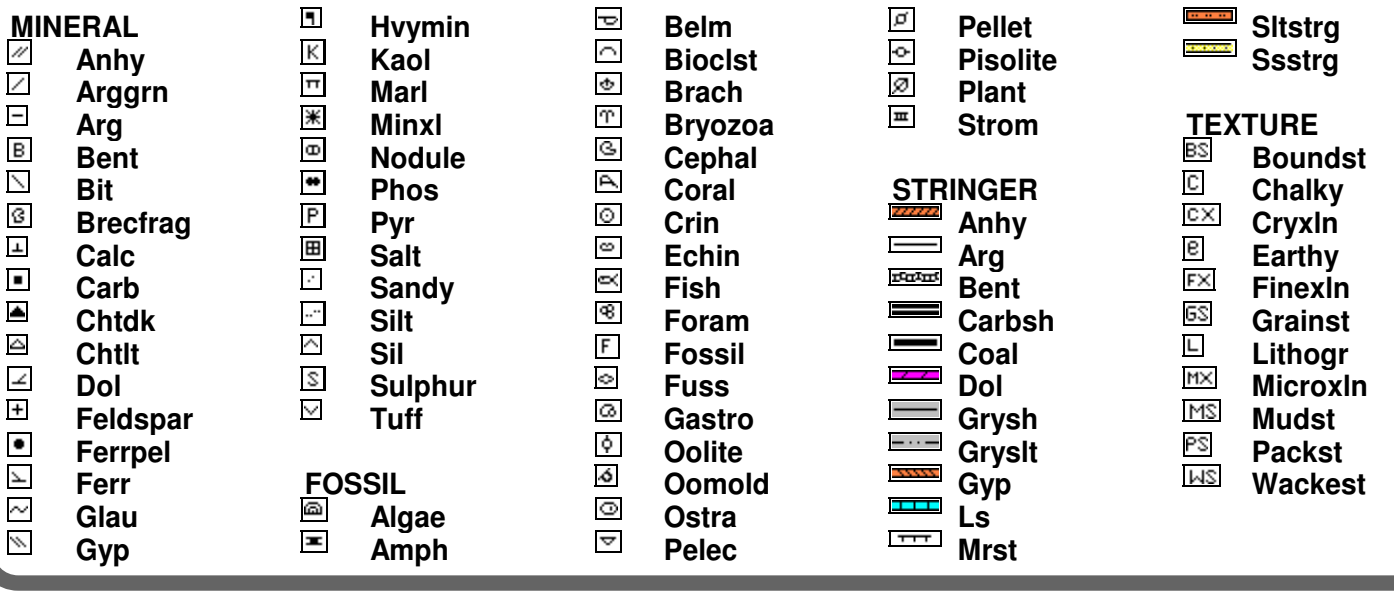
Respectfully submitted,

David P. Williams, P.G

ROCK TYPES



ACCESSORIES



OTHER SYMBOLS

POROSITY
- E Earthy
- B Fenest
- F Fracture
- I Inter
- M Moldic
- O Organic
- P Pinpoint
- V Vuggy

SORTING
- W Well
- M Moderate
- P Poor

ROUNDING
- R Rounded
- r Subrnd
- a Subang
- A Angular

OIL SHOW
- Gas show

ROUNDING
- Even
- Spotted
- Ques
- D Dead

INTERVAL
- Core
- Dst
- Dst_alt

EVENT
- Rft
- Sidewall

Curve Track 1
ROP (min/ft)
Gamma (API)

Depth | Lithology | Oil Shows | Geological Descriptions

TG, C1-C5
TG (Units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)

0 ROP (min/ft) 10
0 Gamma (API) 150

3750
3800
3850

CFS @ 3842'
30" - 60"

RITCHIE EXPLORATION, INC.
KINCHELOE 6B #1
SPOT: 335' FNL & 1500' FWL
5' S. & 150' W.- NW - NE - NW
SEC. 6 - 27 S. - 22 W.
FORD COUNTY, KANSAS
ELEVATION : 2446' K.B. ; 2436' G.L.
A.P.I. # 15-057-20,876-00-00
CONTRACTOR: VAL DRILLING - RIG #1
Geologist: David P. Williams, P. G.

Geologist on location @ (3754') 1:35 PM 2-15-2013

Stone Coral Anhydrite Sample Top = 1513' (+933); Base = 1527' (+919); Stone Coral Anhydrite E. Log Top = 1506' (+940); Base = 1525' (+921).

Deviation Survey's Taken: @ 352'= 3/4 degree; @ 4845'= 1 degree; @ 5095'= 1 degree; @ 5170' = 1 degree.

MUD DISPLACEMENT @ 3600'.

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

Begin 10' Sample Examination @ 3800'.

3800' Ls Wht-Crm-Gry Microxln-Fxln Dns Micrite Grad Poor Gran Por Poor-V Poor Igran Por Sh Red-Maroon-Gry-Char (w/Pyr Inclus) Chalky No Odor No Flor No Stn NS

Ls Wht-Crm Fxln Dns Micrite Grad Poor-Fair IGran OOM Por (w/Small - Med Sized OOids in pl) Barren Poor Develop Poor Leaching Sh AA Chalky AA No Odor No Flor No Stn NS

Ls Tan-Gry Fxln Dns Micrite ? Dec Poor Pin-Pt Ixln Por Fos (Fuss) Cht Wht-Tan Translu-Op Shp Vit Sh Char-Gry-Maroon No Odor No Stn No Flor NS

Ls Tan-Gry Fxln Dns Micrite ? Dec Poor Pin-Pt Ixln Por Fos (Fuss) Cht Wht-Tan Translu-Op Shp Vit Chalk Sh Char-Gry-Maroon Soft No Odor No Stn No Flor NS

Ls Tan-Gry Fxln Dns Micrite Poor Pin-Pt Ixln Por Cht Wht-Tan Translu-Op Shp Vit Sh Char-Gry-Maroon Soft Chalk Inc No Odor No Stn No Flor NS

30" CFS @ 3842' Ls Tan-Gry Fxln Dns Micrite Poor Pin-Pt Ixln Por Cht Wht-Tan Translu-Op Shp Vit Sh Char-Gry-Maroon Soft Chalk Inc No Odor No Stn No Flor NS

60" CFS @ 3842' Ls Tan-Gry Fxln Dns Micrite Poor Pin-Pt Ixln Por Cht Wht-Tan Translu-Op Shp Vit Fos (Brach, Bry) Sh Char-Gry-Maroon Soft Chalk Inc No Odor No Stn No Flor NS

Ls Wht-Crm-Tan-Gry (w/Fos Fuss) Inclus Fxln Dns Micrite Grad Poor Gran Ixln Por Poor-Fair Igran Por Cht Wht Op Shp Vit Sh Red- Maroon-Gry- Char-Grn (w/Pyr Inclus) Chalky No Odor No Flor No Stn NS

Ls Wht-Crm-Tan-Gry (w/Fos Fuss) Inclus Fxln Dns Micrite Grad Poor Gran OOL Por (w/OOL in pl) Poor InterOOL Por No Dissolu No Develop Sh Red-Maroon-Gry-Char-Grn (w/Pyr Inclus) Chalky No Odor No Flor No Stn NS

1 TG, C1-C5 200

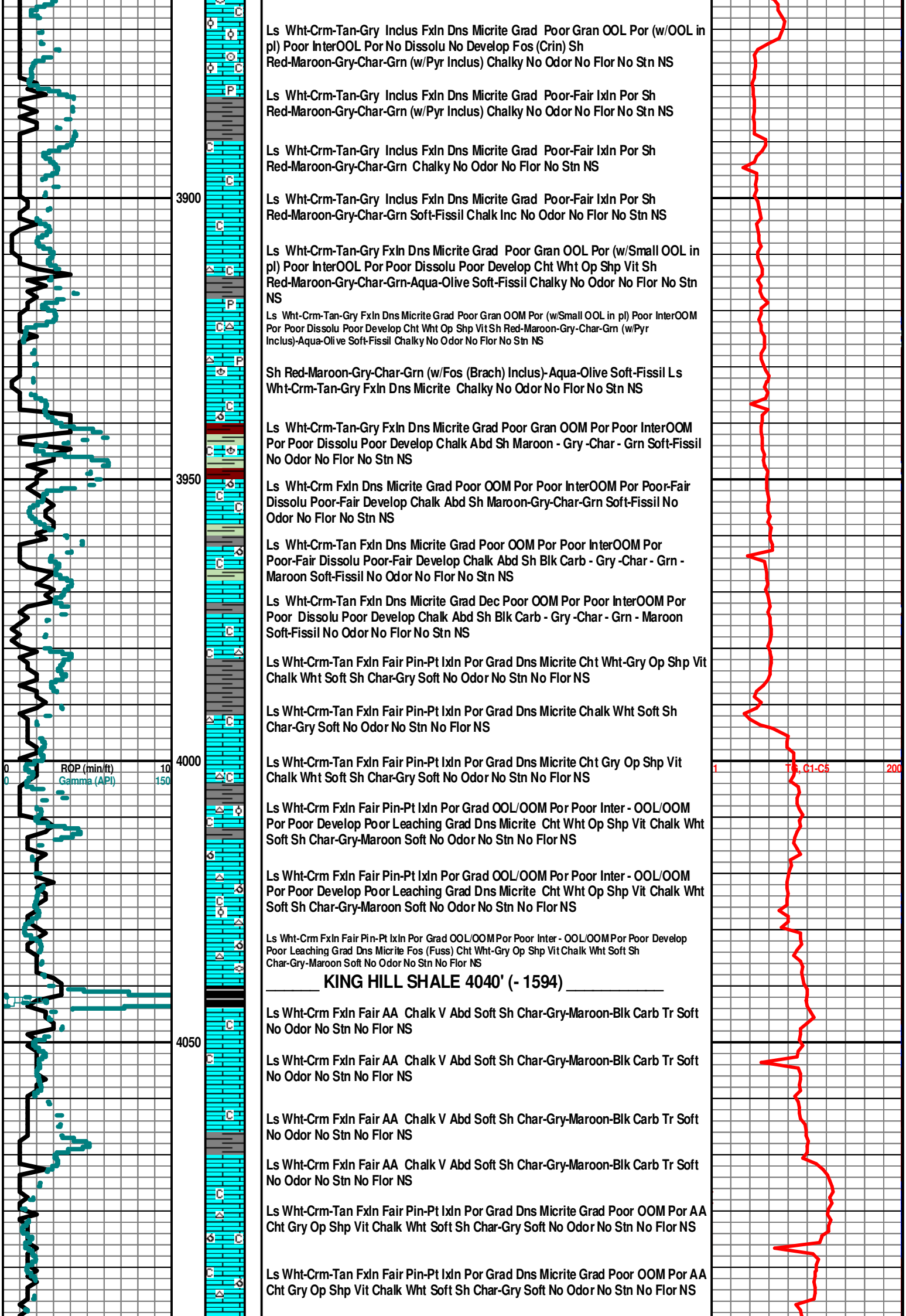
RE-ZERO TOOKE DAQ @ 3732' LAG DEPTH. GAS BKGD SET= 12 UNITS.

BKGD GAS = 48.5 UNITS.

FOOTAGE ERROR IN TOOKE DAQ DATA CORRECTED DEPTH AT 3818'.

GAS KICK = 77.2 UNITS.

RE-ZERO TOOKE DAQ @ 3842' LAG DEPTH. GAS BKGD SET= 12 UNITS.



Ls Wht-Crm-Tan-Gry Inclus Fxln Dns Micrite Grad Poor Gran OOL Por (w/OOL in pl) Poor InterOOL Por No Dissolu No Develop Fos (Crin) Sh Red-Maroon-Gry-Char-Grn (w/Pyr Inclus) Chalky No Odor No Flor No Stn NS

Ls Wht-Crm-Tan-Gry Inclus Fxln Dns Micrite Grad Poor-Fair Ixln Por Sh Red-Maroon-Gry-Char-Grn (w/Pyr Inclus) Chalky No Odor No Flor No Stn NS

Ls Wht-Crm-Tan-Gry Inclus Fxln Dns Micrite Grad Poor-Fair Ixln Por Sh Red-Maroon-Gry-Char-Grn Chalky No Odor No Flor No Stn NS

Ls Wht-Crm-Tan-Gry Inclus Fxln Dns Micrite Grad Poor-Fair Ixln Por Sh Red-Maroon-Gry-Char-Grn Soft-Fissil Chalk Inc No Odor No Flor No Stn NS

Ls Wht-Crm-Tan-Gry Fxln Dns Micrite Grad Poor Gran OOL Por (w/Small OOL in pl) Poor InterOOL Por Poor Dissolu Poor Develop Cht Wht Op Shp Vit Sh Red-Maroon-Gry-Char-Grn-Aqua-Olive Soft-Fissil Chalky No Odor No Flor No Stn NS

Ls Wht-Crm-Tan-Gry Fxln Dns Micrite Grad Poor Gran OOM Por (w/Small OOL in pl) Poor InterOOM Por Poor Dissolu Poor Develop Cht Wht Op Shp Vit Sh Red-Maroon-Gry-Char-Grn (w/Pyr Inclus)-Aqua-Olive Soft-Fissil Chalky No Odor No Flor No Stn NS

Sh Red-Maroon-Gry-Char-Grn (w/Fos (Brach) Inclus)-Aqua-Olive Soft-Fissil Ls Wht-Crm-Tan-Gry Fxln Dns Micrite Chalky No Odor No Flor No Stn NS

Ls Wht-Crm-Tan-Gry Fxln Dns Micrite Grad Poor Gran OOM Por Poor InterOOM Por Poor Dissolu Poor Develop Chalk Abd Sh Maroon - Gry -Char - Grn Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm Fxln Dns Micrite Grad Poor OOM Por Poor InterOOM Por Poor-Fair Dissolu Poor-Fair Develop Chalk Abd Sh Maroon-Gry-Char-Grn Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan Fxln Dns Micrite Grad Poor OOM Por Poor InterOOM Por Poor-Fair Dissolu Poor-Fair Develop Chalk Abd Sh Blk Carb - Gry -Char - Grn - Maroon Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan Fxln Dns Micrite Grad Dec Poor OOM Por Poor InterOOM Por Poor Dissolu Poor Develop Chalk Abd Sh Blk Carb - Gry -Char - Grn - Maroon Soft-Fissil No Odor No Flor No Stn NS

Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht-Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Chalk Wht Soft Sh Char-Gry Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por Poor Develop Poor Leaching Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por Poor Develop Poor Leaching Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por Poor Develop Poor Leaching Grad Dns Micrite Fos (Fuss) Cht Wht-Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Soft No Odor No Stn No Flor NS

_____ KING HILL SHALE 4040' (- 1594) _____

Ls Wht-Crm Fxln Fair AA Chalk V Abd Soft Sh Char-Gry-Maroon-Blk Carb Tr Soft No Odor No Stn No Flor NS

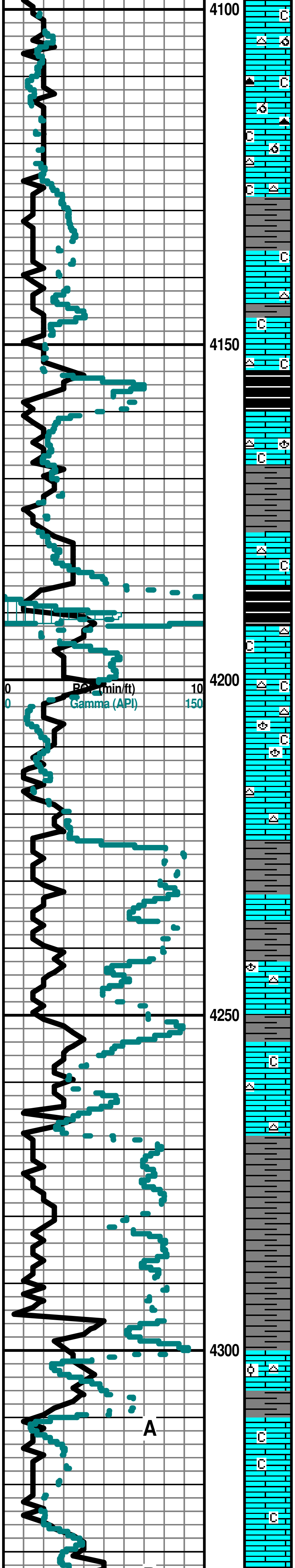
Ls Wht-Crm Fxln Fair AA Chalk V Abd Soft Sh Char-Gry-Maroon-Blk Carb Tr Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair AA Chalk V Abd Soft Sh Char-Gry-Maroon-Blk Carb Tr Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair AA Chalk V Abd Soft Sh Char-Gry-Maroon-Blk Carb Tr Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Grad Poor OOM Por AA Cht Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Grad Poor OOM Por AA Cht Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Soft No Odor No Stn No Flor NS



Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Grad Poor OOM Por AA Cht Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry Soft No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair Pin-Pt Ixln Por Grad Dns Micrite Grad Poor OOM Por AA Cht Gry-Drk Gry-Blk Op Shp Vit Chalk Wht Soft Sh Char-Gry Soft No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair Pin-Pt Ixln Por Grad OOL/OOM Por Poor Inter - OOL/OOM Por AA Poor Develop Poor Leaching Grad Dns Micrite Cht Wht Op Shp Vit Chalk V Abd Wht Soft Sh Char-Gry-Grn-Maroon-Blk Carb Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Grn-Maroon-Tr Blk Carb Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Grn-Maroon-Tr Blk Carb Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Grn-Maroon-Tr Blk Carb Soft-Fissil No Odor No Stn No Flor NS

QUEEN HILL SHALE 4154' (- 1708)

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

Sh Blk Carb-Char-Gry-Tr red Soft-Fissil Ls Wht-Crm Fxln Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Fos (Brach) No Odor No Stn No Flor NS

Ls Crm-Tan Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Aqua-Maroon Soft-Fissil No Odor No Stn No Flor NS

HEEBNER 4186' (- 1740)

Ls Crm-Tan Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Chalk Wht Soft Sh Blk Carb-Char-Gry-Aqua-Maroon Soft-Fissil No Odor No Stn No Flor NS

TORONTO 4202' (- 1756)

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Fos (Brach) Chalk Wht Soft Sh Blk Carb-Char-Gry-Aqua-Maroon Soft-Fissil No Odor No Stn No Flor NS

Sh Char-Gry-Aqua-Grn-Maroon-Tr Blk Carb Soft-Fissil Ls Crm-Tan Fxln Den Micrite Grad Tr Poor Pin-Pt Ixln Por Cht Wht Op Shp Vit No Odor No Stn No Flor NS

DOUGLAS 4224' (- 1778)

Sh Char-Gry-Aqua-Grn-Maroon-Tr Blk Carb Soft-Fissil Ls Crm-Tan Fxln Den Micrite Grad Tr Poor Pin-Pt Ixln Por Cht Wht Op Shp Vit No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Fos (Brach) Chalk Wht Soft Sh Blk Carb-Char-Gry-Aqua-Maroon Soft-Fissil No Odor No Stn No Flor

Ls Wht-Crm Fxln Poor-Fair Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Fos (Brach) Chalk Wht Soft Sh Blk Carb-Char-Gry-Aqua-Maroon Soft-Fissil No Odor No Stn No Flor NS

Sh Char-Gry-Aqua-Grn-Maroon-Tr Blk Carb Soft-Fissil Ls Crm-Tan Fxln Den Micrite Grad Tr Poor Pin-Pt Ixln Por Cht Wht Op Shp Vit No Odor No Stn No Flor NS

Sh Char-Gry-Aqua-Grn-Maroon-Tr Blk Carb Soft-Fissil Ls Crm-Tan Fxln Den Micrite Grad Tr Poor Pin-Pt Ixln Por Cht Wht Op Shp Vit No Odor No Stn No Flor NS

Sh Char-Gry-Aqua-Grn-Maroon-Tr Blk Carb Soft-Fissil Ls Crm-Tan Fxln Den Micrite Grad Tr Poor Pin-Pt Ixln Por Cht Wht Op Shp Vit No Odor No Stn No Flor NS

Sh Char-Gry-Aqua-Grn-Maroon-Tr Blk Carb Soft-Fissil Ls Crm-Tan Fxln Den Micrite Cht Wht Op Shp Vit No Odor No Stn No Flor NS

IATAN (BROWN LIME) 4301' (- 1855)

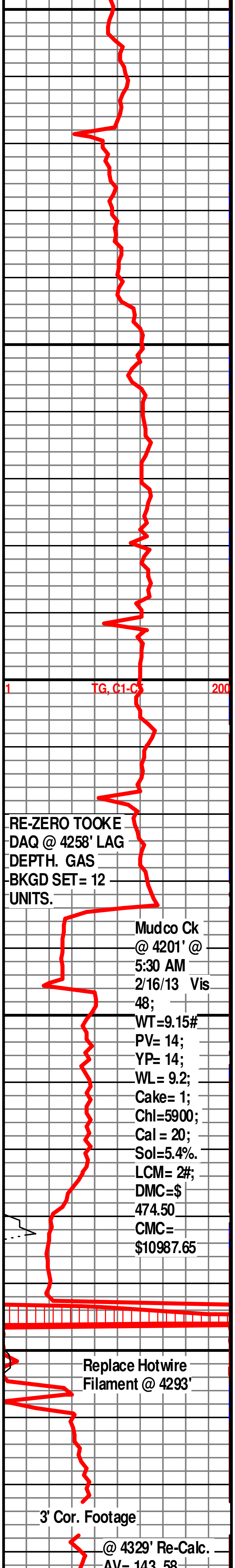
Ls Wht-Crm-Tan Fxln Fair-Poor Dns Micrite Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

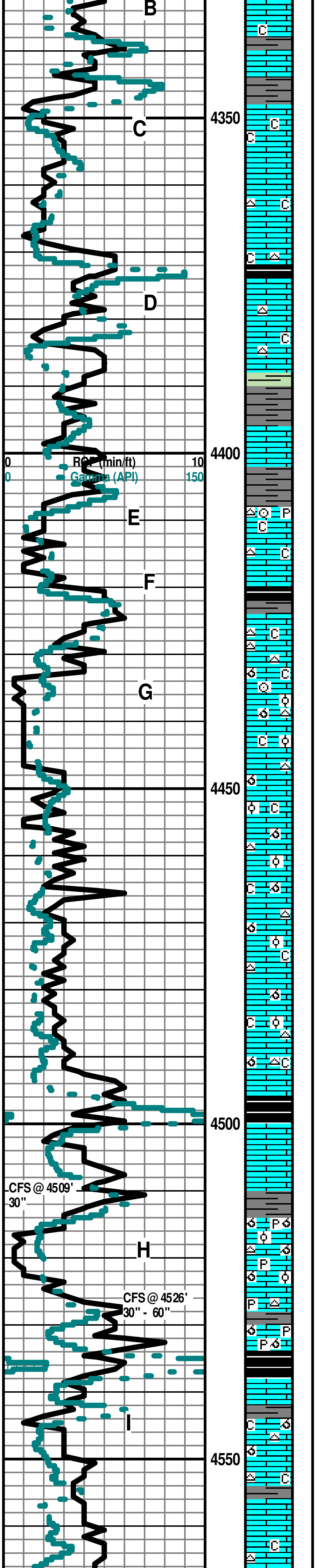
LANSING 4310' (- 1864)

Ls Wht-Crm-Tan Fxln Fair-Poor Dns Micrite Chalk Abd Sh Char - Gry -Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Tan Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS





Ls Wht-Crm-Tan Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Crm-Tan-Gry Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Chalk Wht Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Chalk Soft Sh Char-Gry-Maroon Soft-Fissil No Odor No Stn No Flor NS

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

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

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

Ls Wht-Crm-Gry (w/Pyr Inclus) Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Wht-Gry Op Shp Vit Chalk Wht Soft Sh Char-Gry-Tr Bk Carb Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry (w/Pyr Inclus) Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Wht-Gry Op Shp Vit Fos (Crin w/Pyr Inclus) Chalk Wht Soft Sh Char-Gry-Tr Bk Carb Fissil No Odor No Stn No Flor NS

Ls Wht-Crm-Gry (w/Pyr Inclus) Fxln Fair-Poor Pin-Pt Ixln Por Grad Dns Micrite Cht Wht Op Shp Vit Abd Chalk Wht Soft Sh Char-Gry-Maroon Fissil No Odor No Stn No Flor NS

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

Ls Wht-Crm Fxln Fair-Poor Pin-Pt Ixln Por Grad Poor-Fair OOL/OOM Por (w/Small OOids in Pl) Poor Develop Poor Leaching Cht Wht Op Shp Vit Fos (Crin) Chalk Wht Soft Sh Char-Gry-Maroon Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair-Poor Pin-Pt Ixln Por Grad Poor-Fair OOM Por (w/Small-Med O}Sized OOids in Pl) Poor InterOOM Por Fair Develop Fair Leaching Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Tr Blk Carb Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair-Poor Pin-Pt Ixln Por Grad Poor-Fair OOM Por (w/Small-Med Sized OOids in Pl) Poor InterOOM Por Fair Develop Fair Leaching Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Tr Blk Carb Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair-Poor Pin-Pt Ixln Por Grad Poor-Fair OOM Por (w/Small-Med Sized OOids in Pl) Poor InterOOM Por Grad Fair Vug Leached Por Fair Develop Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Tr Blk Carb Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair-Poor Pin-Pt Ixln Por Grad Poor-Fair OOM Por (w/Small-Med Sized OOids in Pl) Poor InterOOM Por Grad Fair Vug Leached Por Fair Develop Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Tr Blk Carb Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln Fair-Poor Pin-Pt Ixln Por Grad Poor-Fair OOM Por (w/Small-Med Sized OOids in Pl) Poor InterOOM Por Grad Fair Vug Leached Por Fair Develop Cht Wht Op Shp Vit Chalk Wht Soft Sh Char-Gry-Maroon Tr Blk Carb Soft - Fissil No Odor No Stn No Flor NS

Ls Wht-Crm Fxln AA Cht Wht Op Shp Vit Chalk Wht Soft Sh AA No Odor No Stn No Flor NS

________ MUNCIE CREEK 4498' (- 2052) ____________

30' CFS @ 4509' Sh Blk Carb-Char-Gry Fissil w/SSG Ls AA Barren ? Min Flor No Odor No Stn NS

______ KANSAS CITY "DRUM" (H) 4514' (- 2068) _____

30' CFS @ 4526' Ls Crm-Tan-Wht Fxln Abd Good OOM Por (Tr OOL in pl) Good Develop Good Vug Leaching Grad Dns Micrite (w/Pyr Inclus) Barren Cht Wht-Drk Gry Translu-Op Shp Vit ? Min Flor No Odor No Stn NS

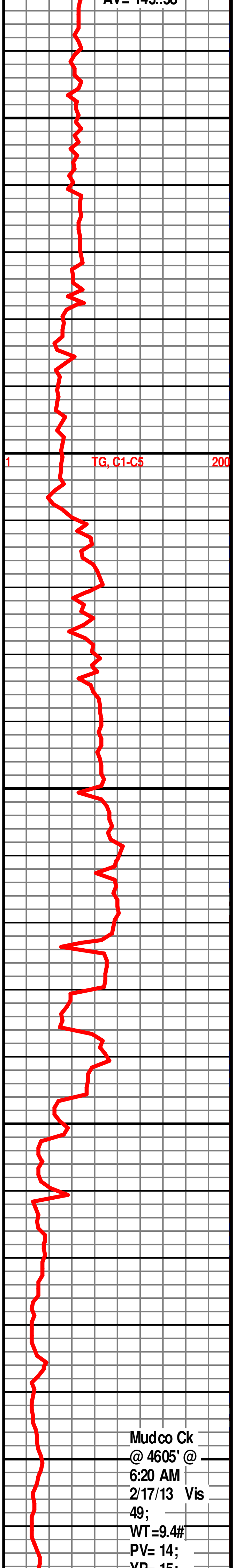
60' CFS @ 4526' Ls Crm-Tan-Wht Fxln Abd Good OOM Por (Tr OOL in pl) Good Develop Good Vug Leaching Grad Dns Micrite (w/Pyr Inclus) Barren Cht Wht-Drk Gry Translu-Op Shp Vit ? Min Flor No Odor No Stn NS

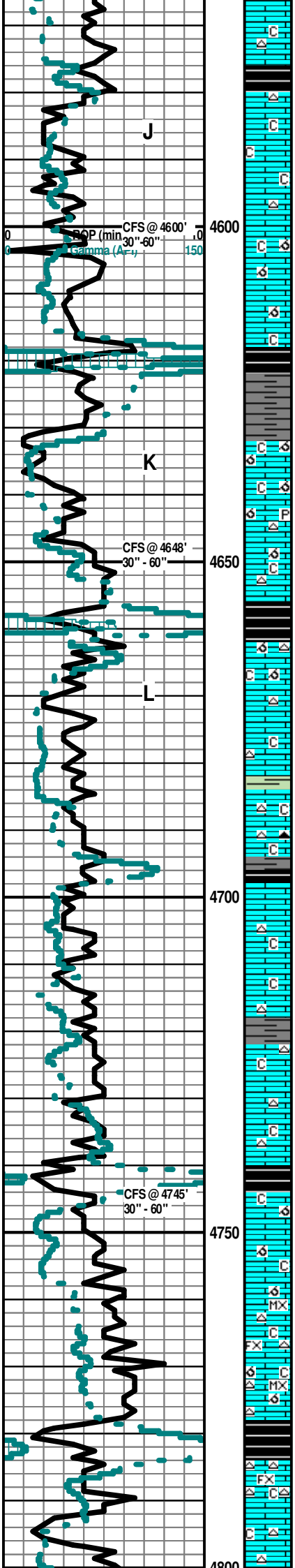
Ls Crm-Tan-Wht Fxln Dns Micrite (w/Pyr Inclus) Barren Grad Tr/Good OOM Por AA Good Develop Good Vug Leaching Cht Wht-Gry Translu-Op Shp Vit Sh Gry-Grn-Char Fissil ? Min Flor No Odor No Stn NS

Ls Crm-Tan-Wht Fxln Dns Micrite Barren Grad Tr/Good OOM Por AA Good Develop Good Vug Leaching Cht Amber Translu Shp Vit Sh Gry-Grn-Char Fissil ? Min Flor No Odor No Stn NS

Ls Crm-Gry Fxln Dns Micrite Cht Wht-Gry–Drk Gry Op Shp Vit Chalk Sh Gry-Grn Soft-Fissil ? Min Flor No Odor No Stn NS

Ls Crm-Gry Fxln Dns Micrite Cht Wht-Gry–Drk Gry Op Shp Vit Chalk Sh Gry-Grn





Soft-Fissil ? Min Flor No Odor No Stn NS

Ls Crm-Gry Fxln Dns Micrite Cht Amber-Gry Op Shp Vit Chalk Sh Blk Gry-Grn Soft-Fissil ? Min Flor No Odor No Stn NS

30" CFS @ 4600' Ls Crm-Gry Fxln Dns Micrite Cht Amber-Gry Op Shp Vit Chalk Sh Blk Gry-Grn Soft-Fissil ? Min Flor No Odor No Stn NS

60" CFS @ 4600' Ls Crm-Gry Fxln Dns Micrite Chalk V Abd Cht Wht-Drk Gry Op Shp Vit (Tr Only) Sh Blk Gry-Grn Soft-Fissil ? Min Flor No Odor No Stn NS

Ls Wht-Crm-Gry Fxln Dns Micrite Tr OOM Por AA Barren Chalk V Abd Sh Gry-Maroon Soft-Fissil ? Min Flor No Odor No Stn NS

Ls Wht-Crm-Gry Fxln Dns Micrite Tr OOM Por AA Barren Chalk V Abd Sh Gry-Maroon Soft-Fissil ? Min Flor No Odor No Stn NS

STARK STARK 4620' (- 2174)

30" CFS @ 4650' Ls Wht-Crm-Gry Fxln Dns Micrite Grad Good Med-Lg OOM Por Good InterOOM Por Good Leaching Good Develop Poor InterOOM Por Barren Chalk V Abd Sh Blk Carb Abd- Gry (w/Pyr Inclus) Soft-Fissil ? Min Flor No Odor No Stn NS

60" CFS @ 4650' Ls Wht-Crm-Gry Fxln Dns Micrite Inc Grad Good (Med-Lg) OOM Por Good InterOOM Por Good Leaching Good Develop Poor InterOOM Por Barren Dec Cht Wht-Gry (Banded) Op Shp Vit Chalk V Abd Sh Blk Carb Tr Dec - Gry (w/Pyr Inclus) Soft-Fissil ? Min Flor No Odor No Stn NS

HUSHPUCKNEY 4658' (- 2212)

Ls Wht Microxln-Fxln Dns Micrite Grad Good Fair-Med OOM Por Poor InterOOM Por Fair Leaching Fair Develop Poor InterOOM Por Barren Dec Cht Wht Op Shp Vit Chalk V Abd Sh Blk Carb Tr Dec Gry Soft-Fissil ? Min Flor No Odor No Stn NS

Ls Wht-Gry Microxln-Fxln Dns Micrite Cht Wht Op Shp Vit Chalk Abd Sh Blk Carb-Gry Soft-Fissil ? Min Flor No Odor No Stn NS

Ls Wht-Crm-Tan Microxln-Fxln Dns Micrite Cht Amber-Wht Op Shp Vit Chalk Abd Sh Blk Carb-Char-Gry-Grn Soft-Fissil ? Min Flor No Odor No Stn NS

Ls Wht Microxln-Fxln Dns Micrite Cht Wht-Drk Brn Op Shp Vit Chalk Abd Sh Blk Carb-Gry Soft-Fissil ? Min Flor No Odor No Stn NS

BASE KANSAS CITY 4694' (- 2248)

MARMATON 4698' (-2252)

Ls Wht-Crm Microxln-Fxln Dns Micrite Cht Wht-Gry Op Shp Vit Chalk Abd Sh Blk Carb-Gry Soft-Fissil ? Min Flor No Odor No Stn NS

Ls Wht-Crm Microxln-Fxln Dns Micrite Cht Wht-Gry (w/Fos Inclus) Op Shp Vit Chalk Abd Sh Blk Carb-Gry Soft-Fissil ? Min Flor No Odor No Stn NS

Ls Crm-Brn Microxln-Fxln Dns Micrite Cht Wht-Gry (w/Fos Inclus) Op Shp Vit Chalk Abd Sh Blk Carb-Gry Soft-Fissil ? Min Flor No Odor No Stn NS

30" CFS @ 4745' Ls Crm-Tan-Gry Microxln-Fxln Dns Micrite Cht Wht-Gry Op Shp Vit Chalk Sh Blk Carb-Gry Soft-Fissil ? Min Flor No Odor No Stn NS

60" CFS @ 4745' Sh Char-Grn-Gry-Maroon Soft-Fissil Ls Wht-Crm-Tan-Gry Microxln-Fxln Dns Micrite Cht Amber-Wht Op Shp Vit Chalk ? Min Flor No Odor No Stn NS

ALTAMONT "A" 4744' (- 2298)

Ls Tan-Gry Microxln Dns Micrite Barren Poor OOM Por Poor Develop Poor Leaching Barren Chalk Sh Char- Gry- Grn -Red Soft-Fissil ? Min Flor No Stn No Odor NS

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

Ls Wht-Crm Microxln-Fxln Dns Micritic Barren Grad Poot OOM Por Poor Leaching Por Develop Cht Gry Op Shp Vit Sh Char-Gry-Grn Soft-Fissil ? Min Flor No Stn No Odor NS

Sh Blk Carb-Gry (w/Pyr Inclus)-Aqua-Maroon Soft-Fissil Ls Wht-Crm-Tan (w/Fos (Fuss) Inclus) Microxln Dns Micrite Cht Wht Op Shp Vit Chalky No Odor No Stn No Flor NS

ALTAMONT "B" 4784' (- 2338)

30" CFS @ 4805' Ls Wht-Gry Fxln Fair Pin-Pt Ixln Por Mostly Micrite Cht Wht-Clear-Gry Translu-Op Shp-Vit Chalky Sh Blk Carb Tr-Cgar-Gry Fissil ? Min Flor No Stn No Odor NS

60" CFS @ 4805' Ls Wht-Gry Fxln Fair Pin-Pt Ixln Por Mostly Micrite Cht Wht-Clear-Gry Translu-Op Shp-Vit Chalky Sh Blk Carb Tr-Cgar-Gry Fissil ? Min

YP= 15;
WL= 9.6;
Cake= 1;
Chl=4100;
Cal = 20;
Sol=7.6%.
LCM= 2#;
DMC=$ 907.15
CMC= $118894.80

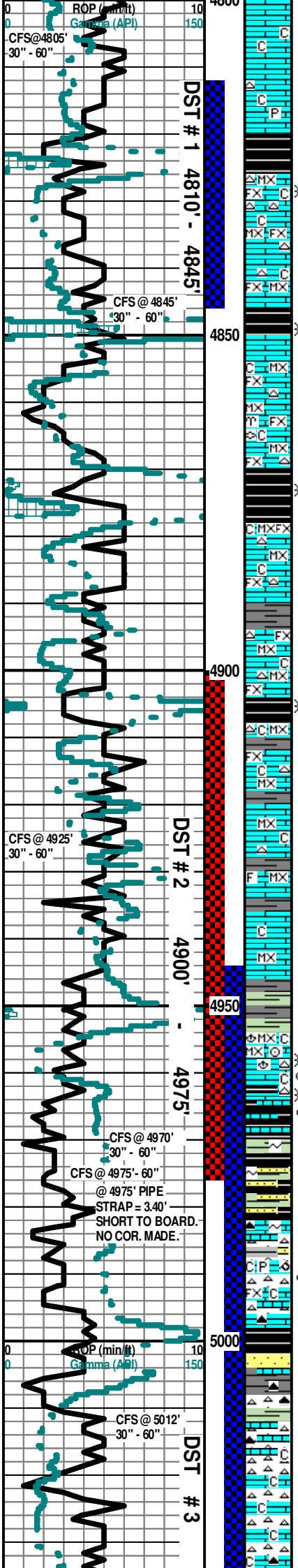
Mudco Ck @ 4625' @ 7:10 AM 2/18/13 Vis 48;
WT=9.15#
PV= 15;
YP= 16;
WL= 8.0;
Cake= 1;
Chl=2900;
Cal = 20;
Sol=5.6%.
LCM= 2#;
DMC=$ 2843.95
CMC= $14738.75

Mudco Ck @ 4975' @ 8:15 AM 2/19/13 Vis 49;
WT=9.3#
PV= 15;
YP= 16;
WL=10.4;
Cake= 1;
Chl=4700;
Cal = 20;
Sol=6.8%.
LCM= 2#;
DMC=$ 37.70
CMC= $14446.45

Note: GEOLOGRAPH CONNECTION WAS LOOSE. BOTH ROP & GAS NOT RECORDING ON TOOKE DAQ FROM 4745' - 4789'. DATA MANUALLY INPUT FROM TIME BASED LOG ON TOOKE DAQ.

@ 4806' AGITATOR FILTER PLUGGED OFF. FUSS BLOWN IN TOOKE DAQ GEOTRAILER. REPLACE FUSE & REPLACE AGITATOR IN SPL. BOX

DST #1 4810'-4845'. Times: 30"-45"-30"-30". Blow: IF= Weak Blow Build / Died @ 23"; FF= No Blow Flushed Tool (No Help). Recovery: 15' M. Pressures: IH=2337#; FH=2264#; IF= 15-18#; FF= 18-21#;



Flor No Stn No Odor NS

Ls Wht-Crm Microxln-Fxln Dns Micritic Barren Chalky Sh Char -Gry- Grn- Red Soft-Fissil No Flor No Stn No Odor NS

Ls Wht Microxln-Fxln Dns Micrite Tr V Poor Ixln Por (w/Pyr Inclus) Barren Cht Tan Translu-Op Shp Vit Chalky Sh Blk Carb-Char-Gry- Grn-Aqua Soft-Fissil Sli ? Min Flor No Stn No Odor NS

PAWNEE 4826' (- 2380)

Ls Wht Microxln-Fxln Dns Micrite Tr V Poor Ixln Por Barren Cht Tan Op Shp Vit Chalky Sh Blk Carb-Char-Gry- Grn-Aqua Soft-Fissil Sli ? Min Flor No Stn No Odor NS

30" CFS @ 4845' Ls Wht Microxln-Fxln Dns Micrite Tr V Poor Ixln Por Barren Cht Tan Op Shp Vit Chalky Sh Blk Carb-Char-Gry- Grn-Aqua Soft-Fissil Sli ? Min Flor No Stn No Odor NS

60" CFS @ 4845' Ls Wht Microxln-Fxln Dns Micrite Tr V Poor Ixln Por Barren Cht Tan Op Shp Vit Chalky Sh Blk Carb-Char-Gry- Grn-Aqua Soft-Fissil Sli ? Min Flor No Stn No Odor NS

FORT SCOTT 4850' (- 2404)

Sh Blk Carb-Char-Gry-Grn-Red Soft-Fissil Ls Wht-Crm Microxln-Fxln Dns Micritic Barren Cht AA Chalky AA Scat ? Min Flor No Stn No Odor NS

Ls Wht-Crn Microxln Dns Micrite Barren Fos (Lg Brach, Lg Fuss) Cht Wht Op Shp Vit Sh Blk Carb AA No Odor No Stn No Flor NS

CHEROKEE SHALE 4870' (- 2424)

Sh Blk Carb V Abd-Char (w/SG)-Gry-Grn Fissil Ls Wht-Crm Microxln-Fxln Dns Micritic Barren Grad Poor PPM Por Poor Dissolu Poor Develop Cht Wht Op Shp Vit Chalky No Flor No Stn No Odor SG in Blk Sh

Ls Wht Microxln-Fxln Dns Micrite Tr V Poor Ixln Por Barren Cht Gry Translu-Op Shp Vit Chalky Sh Blk Carb (w/Pyr Inclus)-Char-Gry-Grn No Flor No Stn No Odor NS

Ls Wht-Crm-Gry-Brn Microxln-Fxln Dns Micrite Poor Ixln Por Barren Cht Gry Translu-Op Shp Vit Chalky Sh Blk Carb-Char -Gry-Grn No Flor No Stn No Odor NS

Ls Wht-Crm-Tan Microxln Dns Micrite Barren Cht Wht-Amber-Gry Translu- Op Shp Vit Chalky Sh Blk Carb-Char-Gry-Grn No Flor No Stn No Odor NS

30" CFS @ 4925' Ls Wht-Crm-Tan Microxln Dns Micrite Barren Cht Wht Op Shp Vit Chalky Sh Blk Carb-Char-Gry-Grn Fissil No Flor No Stn No Odor NS

60" CFS @ 4826' Ls Wht-Crm-Tan Microxln-Fxln Dns Micrite Barren Cht Gry (w/Fos Inclus) Chalky Sh Char-Gry-Grn-Maroon-Red No Flor No Stn No Odor NS

Ls Wht-Crm Microxln Micrite Cht Gry Op Shp Vit Fos (Spicule) Chalky Sh Blk Carb-Char-Gry Fissil No Odor ? Min Flor Sli Stn NS

Ls Wht-Crm-Tan Microxln Micrite Cht Gry Op Shp Vit Chalky Sh Blk Carb-Char-Gry Fissil No Odor ? Min Flor Sli Stn NS

Ls Wht-Crm-Tan Microxln Micrite Cht Gry Op Shp Vit Chalky Sh Blk Carb-Char-Gry-Drk Grn Fissil No Odor ? Min Flor Sli Stn NS

Ls Wht-Crm-Tan Microxln Micrite Chalky Fos (Brach, Crin) Sh Blk Carb-Char-Gry-Aqua Fissil No Odor ? Min Flor Sli Stn NS

HUCK 4954' (- 2508')

30" CFS @ 4970' Ls Wht-Crm Microxln Micrite Tr Poor Pin-Pt Por (w/Gillsonitic Stn) VSSG (8 Pc) ? Frac Por Cht Yel-Wht Op Shp Vit Chalky Sh Char-Gry-Aqua Fissil No Odor ? Min Flor Sli Lt Brn Stn SSG

ATOKA 4962' (- 2516)

60" CFS @ 4970' Ls Wht-Crm-Tan Microxln Micrite Tr Poor Pin-Pt Por (w/Gillsonitic Stn) VSSG (12 Pc) VSSO "Salt & Pepper" Por Tr ? Frac Por Cht Yel-Peach Op Shp Vit (3 Pcs) Chalky Sh Char-Gry-Aqua Fissil No Odor ? Min Flor Sli Stn NS

60" CFS @ 4975' Ls Wht-Crm-Tan Microxln Micrite Tr Poor Pin-Pt Por (w/Gillsonitic Stn) VSSG (6 Pc) VSSO "Salt & Pepper" Por Tr ? Frac Por Cht Yel-Peach Op Shp Vit Fos (Brach) Chalky Sh Char-Gry-Aqua Fissil No Odor ? Min Flor Sli Stn NS

Cht Crm-Tan-Lt Org Op Shp Vit Fresh Ls Wht (w/Pyr Inclus)-Crm Fxln Poor Ixln Por (w/Sli Tr Lt Brn Oil Stn (1 Pc ? Sluff)) Grad Fair OOM Por Good InterOOM Por (1 Pc) Qtz Ss Wht FGrn Well Sort Friable Small Cluster (1 Pc ? Sluff) Barren Chalky Sh Varicolored Blk Carb-Gry SltStn-Drab Grn-Aqua-Maroon-Olive Fissil No Odor ? 1 Pc Lt Brn Stn No Flor ? SO

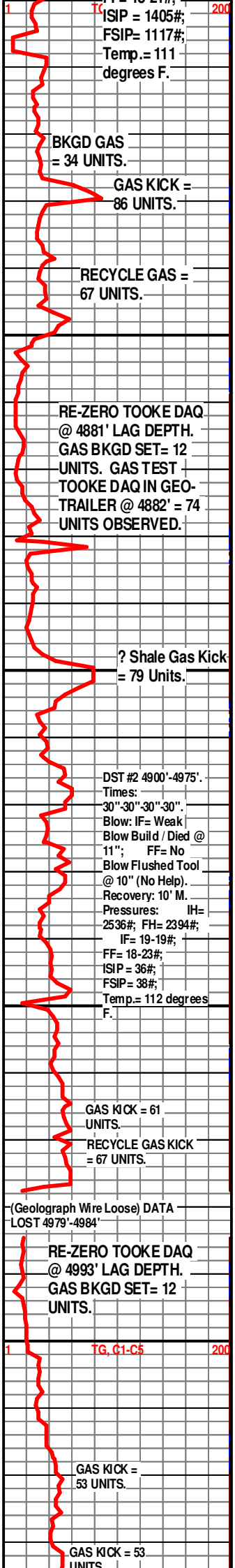
30" CFS @ 5012' Cht Wht--Crm-Lt Org Op Shp Vit Fresh Ls Wht-Crm Microxln-Fxln Poor Ixln Por Qtz Ss Wht FGrn Well Sort Friable Small Sub Ang-Ang Cluster (5 Pc in Assoc Sh Aqya-Blue (w/Tr Glacu Inclus) Barren (Sluff) Chalky Sh Varicolored Blk Carb-Gry SltStn-Drab Grn-Aqua-Blue-Maroon-Olive Fissil No Odor No Flor No Stn NS

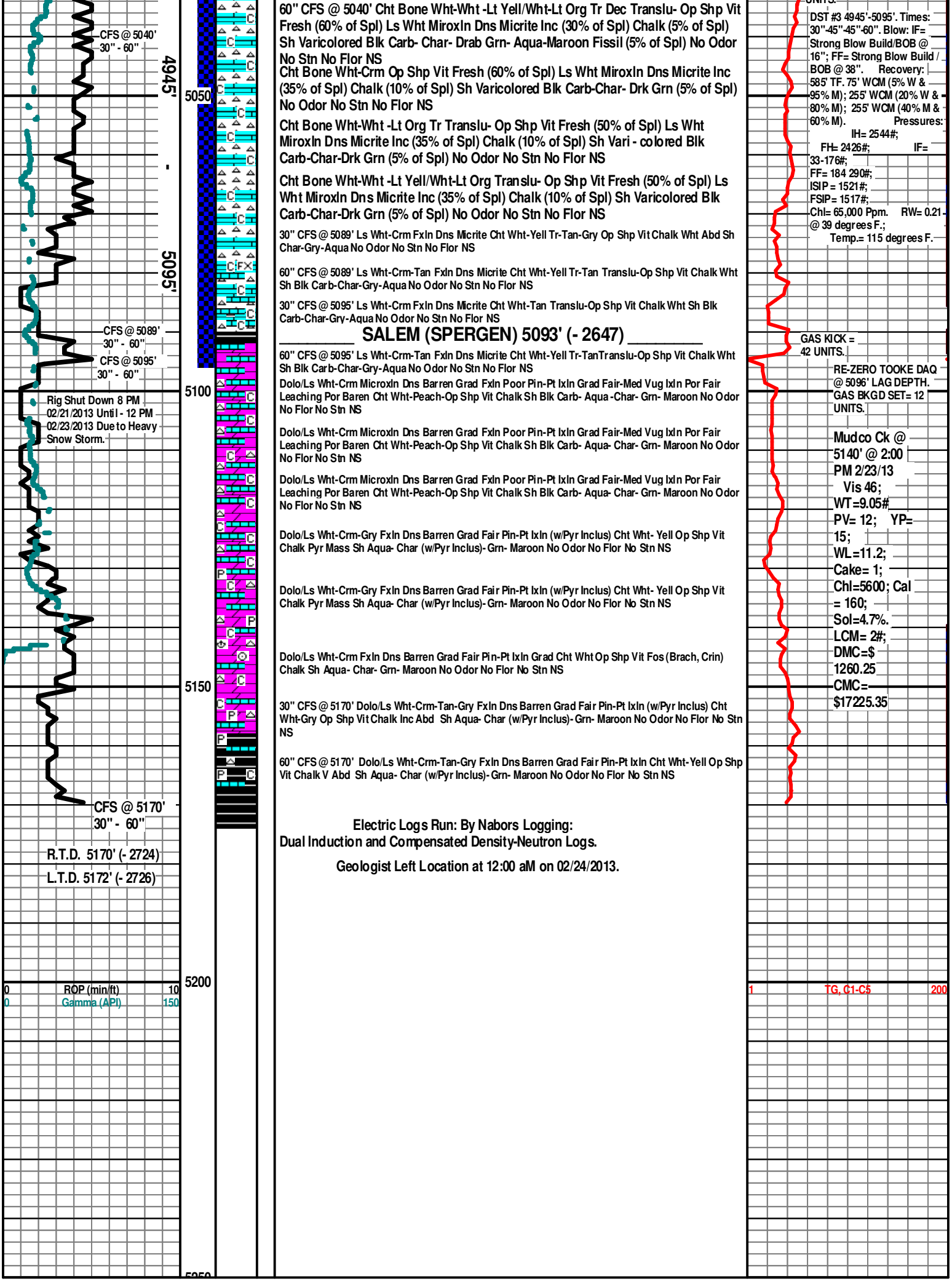
MISSISSIPPIAN 5006' (- 2560)

60" CFS @ 5012 Cht Varicolored Wht-Crm-Tan-Gry-Lt Org Translu-Op Shp Vit Fresh Ls Wht-Crm Microxln-Fxln Poor Ixln Por AA Qtz Ss Wht F-M Grn Well Sort Friable Small - Med Sub Ang-Ang Clusters (No Glacu) Barren Chalky Sh Varicolored Blk Carb - Gry SltStn - Drab Grn - Aqua - Blue -Maroon Fissil No Odor No Flor No Stn NS

Cht Bone Wht-- Wht (Banded Brn)- Lt Org Dec Translu- Op Shp Vit Fresh (60% of Spl) Ls Wht Miroxln Dns Micrite Inc (30% of Spl) Chalk (5% of Spl) Sh Varicolored Blk Carb-Char-Drab Grn-Aqua-Maroon Fissil (5% of Spl) No Odor No Stn No Flor NS

30" CFS @ 5040' Cht Bone Wht- Wht -Lt Yell/Wht Dec Translu- Op Shp Vit Fresh (60% of Spl) Ls Wht Miroxln Dns Micrite Inc (30% of Spl) Chalk (5% of Spl) Sh Varicolored Blk Carb-Char-Drab Grn-Aqua-Maroon Fissil (5% of Spl) No Odor No Stn No Flor NS




CFS @ 5040'
30" - 60"
4945'
-
5095'
CFS @ 5089'
30" - 60"
CFS @ 5095'
30" - 60"
Rig Shut Down 8 PM
02/21/2013 Until - 12 PM
02/23/2013 Due to Heavy
Snow Storm.
CFS @ 5170'
30" - 60"
R.T.D. 5170' (- 2724)
L.T.D. 5172' (- 2726)
5050
5100
5150
5200
0
ROP (min/ft)
10
0
Gamma (API)
150
60" CFS @ 5040' Cht Bone Wht-Wht -Lt Yell/Wht-Lt Org Tr Dec Translu- Op Shp Vit Fresh (60% of Spl) Ls Wht Miroxln Dns Micrite Inc (30% of Spl) Chalk (5% of Spl) Sh Varicolored Blk Carb- Char- Drab Grn- Aqua-Maroon Fissil (5% of Spl) No Odor No Stn No Flor NS
Cht Bone Wht-Crm Op Shp Vit Fresh (60% of Spl) Ls Wht Miroxln Dns Micrite Inc (35% of Spl) Chalk (10% of Spl) Sh Varicolored Blk Carb-Char- Drk Grn (5% of Spl) No Odor No Stn No Flor NS
Cht Bone Wht-Wht -Lt Org Tr Translu- Op Shp Vit Fresh (50% of Spl) Ls Wht Miroxln Dns Micrite Inc (35% of Spl) Chalk (10% of Spl) Sh Vari - colored Blk Carb-Char-Drk Grn (5% of Spl) No Odor No Stn No Flor NS
Cht Bone Wht-Wht -Lt Yell/Wht-Lt Org Translu- Op Shp Vit Fresh (50% of Spl) Ls Wht Miroxln Dns Micrite Inc (35% of Spl) Chalk (10% of Spl) Sh Varicolored Blk Carb-Char-Drk Grn (5% of Spl) No Odor No Stn No Flor NS
30" CFS @ 5089' Ls Wht-Crm Fxln Dns Micrite Cht Wht-Yell Tr-Tan-Gry Op Shp Vit Chalk Wht Abd Sh Char-Gry-Aqua No Odor No Stn No Flor NS
60" CFS @ 5089' Ls Wht-Crm-Tan Fxln Dns Micrite Cht Wht-Yell Tr-Tan Translu-Op Shp Vit Chalk Wht Sh Blk Carb-Char-Gry-Aqua No Odor No Stn No Flor NS
30" CFS @ 5095' Ls Wht-Crm Fxln Dns Micrite Cht Wht-Tan Translu-Op Shp Vit Chalk Wht Sh Blk Carb-Char-Gry-Aqua No Odor No Stn No Flor NS
SALEM (SPERGEN) 5093' (- 2647)
60" CFS @ 5095' Ls Wht-Crm-Tan Fxln Dns Micrite Cht Wht-Yell Tr-TanTranslu-Op Shp Vit Chalk Wht Sh Blk Carb-Char-Gry-Aqua No Odor No Stn No Flor NS
Dolo/Ls Wht-Crm Microxln Dns Barren Grad Fxln Poor Pin-Pt Ixln Grad Fair-Med Vug Ixln Por Fair Leaching Por Baren Cht Wht-Peach-Op Shp Vit Chalk Sh Blk Carb- Aqua -Char- Grn- Maroon No Odor No Flor No Stn NS
Dolo/Ls Wht-Crm Microxln Dns Barren Grad Fxln Poor Pin-Pt Ixln Grad Fair-Med Vug Ixln Por Fair Leaching Por Baren Cht Wht-Peach-Op Shp Vit Chalk Sh Blk Carb- Aqua- Char- Grn- Maroon No Odor No Flor No Stn NS
Dolo/Ls Wht-Crm Microxln Dns Barren Grad Fxln Poor Pin-Pt Ixln Grad Fair-Med Vug Ixln Por Fair Leaching Por Baren Cht Wht-Peach-Op Shp Vit Chalk Sh Blk Carb- Aqua- Char- Grn- Maroon No Odor No Flor No Stn NS
Dolo/Ls Wht-Crm-Gry Fxln Dns Barren Grad Fair Pin-Pt Ixln (w/Pyr Inclus) Cht Wht- Yell Op Shp Vit Chalk Pyr Mass Sh Aqua- Char (w/Pyr Inclus)- Grn- Maroon No Odor No Flor No Stn NS
Dolo/Ls Wht-Crm-Gry Fxln Dns Barren Grad Fair Pin-Pt Ixln (w/Pyr Inclus) Cht Wht- Yell Op Shp Vit Chalk Pyr Mass Sh Aqua- Char (w/Pyr Inclus)- Grn- Maroon No Odor No Flor No Stn NS
Dolo/Ls Wht-Crm Fxln Dns Barren Grad Fair Pin-Pt Ixln Grad Cht Wht Op Shp Vit Fos (Brach, Crin) Chalk Sh Aqua- Char- Grn- Maroon No Odor No Flor No Stn NS
30" CFS @ 5170' Dolo/Ls Wht-Crm-Tan-Gry Fxln Dns Barren Grad Fair Pin-Pt Ixln (w/Pyr Inclus) Cht Wht-Gry Op Shp Vit Chalk Inc Abd Sh Aqua- Char (w/Pyr Inclus)- Grn- Maroon No Odor No Flor No Stn NS
60" CFS @ 5170' Dolo/Ls Wht-Crm-Tan-Gry Fxln Dns Barren Grad Fair Pin-Pt Ixln Cht Wht- Yell Op Shp Vit Chalk V Abd Sh Aqua- Char (w/Pyr Inclus)- Grn- Maroon No Odor No Flor No Stn NS
Electric Logs Run: By Nabors Logging:
Dual Induction and Compensated Density-Neutron Logs.
Geologist Left Location at 12:00 aM on 02/24/2013.
DST #3 4945'-5095'. Times: 30"-45"-45"-60". Blow: IF= Strong Blow Build/BOB @ 16"; FF= Strong Blow Build / BOB @ 38". Recovery: 585' TF. 75' WCM (5% W & 95% M); 255' WCM (20% W & 80% M); 255' WCM (40% M & 60% M). Pressures: IH= 2544#; FH= 2426#; IF= 33-176#; FF= 184 290#; ISIP = 1521#; FSIP= 1517#; Chl= 65,000 Ppm. RW= 0.21 @ 39 degrees F.; Temp.= 115 degrees F.
GAS KICK = 42 UNITS.
RE-ZERO TOOKE DAQ @ 5096' LAG DEPTH. GAS BKGD SET= 12 UNITS.
Mudco Ck @ 5140' @ 2:00 PM 2/23/13 Vis 46; WT=9.05#; PV= 12; YP= 15; WL=11.2; Cake= 1; Chl=5600; Cal = 160; Sol=4.7%. LCM= 2#; DMC=$ 1260.25 CMC=$17225.35
1
TG, C1-C5
200

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802

Kansas
Corporation Commission

Phone: 316-337-6200
Fax: 316-337-6211
http://kcc.ks.gov/

May 21, 2013

John Niernberger
Ritchie Exploration, Inc.
8100 E 22ND ST N # 700
BOX 783188
WICHITA, KS 67278-3188

Re: ACO1
API 15-057-20876-00-00
Kincheloe 6B 1
NW/4 Sec.06-27S-22W
Ford County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
John Niernberger